

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

BFI WASTE SYSTEMS OF NORTH AMERICA, LLC)	
)	
Petitioner,)	
)	
v.)	PCB 2024-029
)	(Permit Appeal - RCRA)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,)	
)	
Respondent.)	

NOTICE OF ELECTRONIC FILING

To: *See Attached Service List*

PLEASE TAKE NOTICE that on the of March 13, 2024, I caused to be filed with the Office of the Clerk of the Illinois Pollution Control Board by electronic filing the attached Index of Record, Certification of Record, and Record on Appeal, copies of which are attached hereto and hereby served upon you.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

/s/ Christopher J. Grant
Christopher J. Grant
Senior Assistant Attorney General
Environmental Bureau
Office of the Illinois Attorney General
69 W. Washington Street, 18th Floor
Chicago, IL 60602
312-814-5388
Christopher.Grant@ilag.gov

SERVICE LIST

Don Brown, Clerk of the Board
Illinois Pollution Control Board
60 E. Van Buren St., Suite 630
Chicago, Illinois 60605
Don.Brown@illinois.gov
(by *electronic filing*)

Bradley Halloran
Illinois Pollution Control Board
60 E. Van Buren Street, Suite 630
Chicago, Illinois 60605
Brad.Halloran@illinois.gov
(by electronic mail)

Steve B. Sievers
Claire A. Manning
Brown, Hay & Stephens, LLP
P.O. Box 2459
205 S. Fifth Street
Springfield, IL 62705
ssievers@bhslaw.com
cmanning@bhslaw.com

CERTIFICATE OF SERVICE

I, Christopher J. Grant, a Senior Assistant Attorney General, hereby certify that on the 13th day of March, 2024, I caused to be served the foregoing Notice of Electronic Filing and Index of Record, Certification of and Record on Appeal, upon the parties named on the attached service list by electronic mail and record will be sent via file transfer link.

/s/ Christopher J. Grant

Christopher J. Grant

Senior Assistant Attorney General

Environmental Bureau

Office of the Illinois Attorney General

69 W. Washington Street, 18th Floor

Chicago, IL 60602

312.814.5388

Christopher.Grant@ilag.gov

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

BFI WASTE SYSTEMS OF NORTH)	
AMERICA, LLC)	
)	
Petitioner,)	
)	
v.)	PCB 2024-029
)	(Permit Appeal - RCRA)
ILLINOIS ENVIRONMENTAL PROTECTION)	
AGENCY,)	
)	
Respondent.)	

RECORD ON APPEAL

Respondent, ILLINOIS ENVIRONMENTAL PROTECTION AGENCY ("Illinois EPA"), in accordance with the procedural rules of the Illinois Pollution Control Board as set forth in 35 Ill. Adm. Code 105.212 and 105.116, files as its Record in this cause the Illinois EPA's record of Final Decision approving with certain conditions modifications to RCRA Hazardous Waste Permit No. 1994-160-LF, issued to BFI Waste System of North America, LLC, Davis Junction Landfill Phase I on September 25, 2023, which is attached and consists of the following documents:

Category 1: BFI Solid Waste

Date	Description	Record Number
4/24/2023	BFI Waste Systems, Davis Junction Landfill Significant Modification Permit Application	R 000001-000014
6/8/2023	BFI Waste Systems, Davis Junction Landfill Annual Inflation Factor and Reduction of Post Closure Care Costs Estimates	R 000015-000018
6/12/2023	Email chain M. Maxwell (Weaver) to R. Colwell (IEPA) re Davis Junction Leachate Pumps	R 00019-000020
7/12/2023	Email chain: R. Colwell (IEPA) to M. Maxwell (Weaver) re Davis Junction Landfill Post Closure Costs Estimates	R 000021
7/25/2023	BFI Waste Systems, Davis Junction Landfill Significant Modification Permit Revised Post Closure Plan and Costs Estimates	R 000022-000034
8/17/2023	Draft Denial of BFI Waste Systems, Davis Junction Landfill Significant Modification Permit Post Closure Plan and Costs Estimates Denial	R 000035-000037

Electronic Filing: Received, Clerk's Office 03/14/2024

Date	Description	Record Number
8//21/2023	BFI Waste Systems Letter to IEPA granting additional 45 days to review Permit Application	R 000038
9/28/2023	BFI Waste System Response to IEPA Denial of Permit Application Modification Work Post Closure Plan and Costs Estimates	R 000039-000057
10/20/2023	Email chain between M. Maxwell (Weaver) to R. Colwell (IEPA) re Davis Junction Permit Question	R 000058-000059
10/25/2023	Robert Colwell Review Notes of BFI Waste Systems, Davis Junction Significant Modification to Post Closure Care Cost Estimates	R 000060-000091
11/7/2023	BFI Waste Systems, Davis Junction Landfill Permit Modification No. 41	R 000092-000129

Category II: BFI Waste Systems, Davis Junction Landfill RCRA File

Date	Description	Record Number
9/25/2023	IEPA Permit Approval	R 000130-000136
9/25/2023	RCRA Hazardous Waste Permit issued to BFI Waste Systems, Davis Junction Landfill modified Post Closure	R 000137-000187
9/25/2023	RCRA Hazardous Waste Permit Tracking Sheets, Section 1	R 000188-000200
9/25/2023	RCRA Hazardous Waste Permit, Environmental Justice Determination	R 000201-000202
	RCRA Hazardous Permit, Review Notes: Section 2	R 000203-000230
	RCRA Hazardous Permit, Groundwater Review Notes, Section 3	R 000231-000256
	Groundwater Review Notes File Folder	R 000231
1/5/2023	Email chain between L. Rickard, P. Stine and V. Slayton re BFI Waste Systems Inflation Rates	R 000232-000233
1/19/2023	Email B. Sinnott to J. Nutt enclosing Stine January 9, 2023 Memo re 2022 Post Closure Cost Estimates	R 000234-000237
5/10/2023	Right to Know Evaluation Form BFI Waste Systems, Davis Junction Landfill attached to January 9, 2023 Cost Estimate Memo; Cost Estimates email and memorandums June 8, 2022	R 000238-000255
5/10/2023	Memo: P. Stine to W. Sinnott re BFI Waste Systems, Davis Junction Landfill Changes to Permit Renewal	R 000256
9/25/2023	RCRA Hazardous Waste Permit Subject Submittals	R 000257-000924
	Table of Contents	R 000257
	Class I Permit Modification, BR142R2-M1 File Folder	R 000258
11/16/2018	RCRA Permit Application Class I Modification	R 000259-000855
	Class I Permit Modification, BR142R2-M2 File folder	R 000856
8/27/2019	RCRA Permit Application Modification Class I	R 000857-000869
	Class I Permit Modification, BR142R2-M4 File Folder	R 000870

Electronic Filing: Received, Clerk's Office 03/14/2024

Date	Description	Record Number
5/10/2023	RCRA Permit Application Modification	R 000871-000894
	Class I Permit Modification, BR142R2-M6 File Folder	R 000895
1/22/2022	RCRA Permit Application Modification	R 000896-000909
	Class I Permit Modification, BR142R2-M7 File Folder	R 000910
2/1/2022	RCRA Permit Application Modification	R 000911-000924

Category III: Annual Leachate Reports

Date	Description	Record Number
11/1/2005	BFI Waste Systems, Davis Junction Landfill 2002 Annual Hazardous Waste Comprehensive Report	R 000925
2/23/2004	BFI Waste Systems, Davis Junction Landfill 2003 Annual Hazardous Waste Report	R 000926-000932
2/28/2005	BFI Waste Systems, Davis Junction Landfill 2004 Annual Hazardous Waste Report	R 000933-000937
12/7/2006	BFI Waste Systems, Davis Junction Landfill 2005 Annual Hazardous Waste Comprehensive Report	R 000938
3/6/2007	BFI Waste Systems, Davis Junction Landfill 2006 Annual Hazardous Waste Report	R 000939-000949
1/13/2009	BFI Waste Systems, Davis Junction Landfill 2007 Annual Hazardous Waste Comprehensive Report	R 000950
2/19/2010	BFI Waste Systems, Davis Junction Landfill 2008 Annual Hazardous Waste Comprehensive Report	R 000951
12/29/2010	BFI Waste Systems, Davis Junction Landfill 2009 Annual Hazardous Waste Comprehensive Report	R 000952
2/26/2010	BFI Waste Systems, Davis Junction Landfill 2009 Annual Hazardous Waste Report and Addendum	R 000953-000960
2/29/2012	BFI Waste Systems, Davis Junction Landfill 2011 Annual Hazardous Waste Report	R 000961-000963
2/8/2013	BFI Waste Systems, Davis Junction Landfill 2012 Annual Hazardous Waste Report	R 000964-000966
2/12/2014	BFI Waste Systems, Davis Junction Landfill 2013 Annual Hazardous Waste Report	R 000967-000969
2/25/2015	BFI Waste Systems, Davis Junction Landfill 2014 Annual Hazardous Waste Report	R 000970-000971
3/1/2016	BFI Waste Systems, Davis Junction Landfill 2015 Annual Hazardous Waste Report	R 000972-000973
5/22/2017	BFI Waste Systems, Davis Junction Landfill 2016 Annual Hazardous Waste Report and Addendum	R BFI 000974-000981
3/16/2020	Revised BFI Waste Systems, Davis Junction Landfill 2017 Annual Hazardous Waste Report	R 000982-000990
6/14/2019	BFI Waste Systems, Davis Junction Landfill 2018 Annual Hazardous Waste Report and Amended 2018 Annual Hazardous Waste Report	R 000991-001001

Electronic Filing: Received, Clerk's Office 03/14/2024

2/25/2020	BFI Waste Systems, Davis Junction Landfill 2019 Annual Hazardous Waste Report	R 001002-001009
2/17/2021	BFI Waste Systems, Davis Junction Landfill 2020 Annual Hazardous Waste Report	R 001010-001018
2/17/2022	BFI Waste Systems, Davis Junction Landfill 2021 Annual Hazardous Waste Report	R 001019-001027

Category IV: Other Information Used in Making Decision

Date	Description	Record Number
	Alton Steel Letter re RCRA Post Closure Renewal Permit -Sample Letter	R 001028-001137
	Alton Steel Final Renewed RCRA Post Closure Permit -Sample	R 001138-001253
	Alton Steel Review Notes- Sample	R 001254
	BP North America RCRA Draft Post Closure Renewal Permit -Sample	R 001255-001427
	BP North America RCRA Final Post Closure Renewal RCRA Permit	R 001428-001593
9/20/2023	BP North America Memo (Sample) Groundwater Unit to RCRA Unit BP Response to Draft Permit	R 001594-001626

Respectfully submitted,

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

/s/ Christopher J. Grant

Christopher J. Grant
Senior Assistant Attorney General
Environmental Bureau
Office of the Illinois Attorney General
69 W. Washington Street, 18th Floor
Chicago, IL 60602
312-814-5388
Christopher.Grant@ilag.gov

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

BFI WASTE SYSTEMS
OF NORTH AMERICA, LLC,

Petitioner,

v.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY,

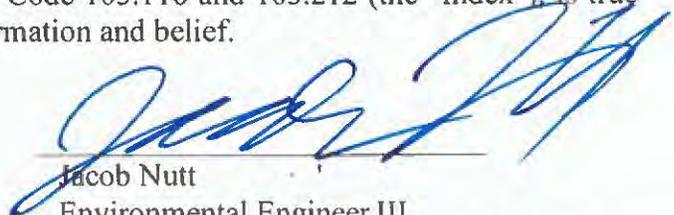
Respondent.

)
)
)
)
)
)
)
)
)
)
)
)

PCB No. 24-29
(Permit Appeal-RCRA)

CERTIFICATE OF RECORD ON APPEAL

I, Jacob Nutt, of the Illinois Environmental Protection Agency hereby certify that the Record on Appeal filed in the above-referenced matter and summarized in the attached Index of the Record on Appeal Pursuant to 35 Ill. Adm. Code 105.116 and 105.212 (the "Index"), is true and complete to the best of my knowledge, information and belief.



Jacob Nutt
Environmental Engineer III
Illinois Environmental Protection Agency



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

Sustainability in Action

April 24, 2023

Ms. Jacqueline M. Cooperider, P.E.
Manager of Permits
Illinois Environmental Protection Agency
Permit Section, Bureau of Land -- #33
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Davis Junction Landfill – Phases II/III
Permit No. 1994-160-LF
IEPA Site No.: 1418210001
Sig Mod Permit Application

RECEIVED
APR 27 2023
IEPA-BOL
PERMIT SECTION

Dear Ms. Cooperider,

Enclosed, please find one original and three copies of the above referenced permit application that being submitted by permittee, BFI Waste Systems of North America, LLC.

If you have any questions, feel free to contact me at (224) 970-1129 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

A handwritten signature in black ink, appearing to read "James Hitzeroth", written over a horizontal line.

James Hitzeroth

Enclosure: Significant Permit Modification Application



April 24, 2023

Ms. Jacqueline M. Cooperider, P.E.
Manager of Permits
Illinois Environmental Protection Agency
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Significant Permit Modification Application
Davis Junction Landfill Phase II/III
1418210001 – Ogle Co.
Permit No. 1994-160-LF
WCG Project No.: 0120-049-01-31

Dear Ms. Cooperider:

On behalf of the permittee for the above referenced facility, Weaver Consultants Group North Central, LLC (WCG) is herein providing the following Application for Significant Permit Modification. The following Illinois Environmental Protection Agency (EPA) Permit Application forms are enclosed:

- General Application for Permit (LPC-PA1);
- Notice of Application for Permit to Manage Waste (LPC-PA16). A copy of the PA16 form was sent via certified mail to the government officials listed on the LPC-PA1 form; and
- 39(i) Certification for Operating a Waste Management Facility.

The permit modification requested herein pertains to the annual update to the Post-Closure Care Cost Estimate.

Annual Update to Post-Closure Care Cost Estimate

Pursuant to 35 Ill. Adm. Code 811.705, an annual inflation adjustment to the post-closure estimate for the closed non-hazardous waste units (Phases II and III) is required. Permit Condition VII.7 of the facility Permit (Mod No. 40, dated September 21, 2022) requires this submittal in the form of a Significant Modification by May 1st of each year to update the cost estimate or a certification that there are no changes to the current cost estimate.

Ms. Jacqueline M. Cooperider, P.E.

April 24, 2023

Prior to this submittal, the last update to the post-closure cost estimate was submitted to Illinois EPA with a Significant Permit Modification Application from WCG dated April 27, 2022 (Log No. 2022-130). Additional information pertaining to this Sig Mod was submitted to Illinois EPA on August 23, 2022. This post-closure cost estimate was approved with the issuance of Permit Modification No. 40 dated September 21, 2022.

The enclosed revised cost estimate includes the following:

- An annual inflation increase in the estimated costs previously approved within Permit Modification No 40; and
- A reduction in the remaining post-closure period from 8 years to 7 years (to account for the completion of one additional year of the post-closure care period).

The attached spreadsheet details the costs approved with Permit Modification No. 40, inflation factor increase and reduction in post-closure period.

If you should have any questions, or require additional information, please do not hesitate to contact our office or Mr. Jim Hitzeroth of BFI at (224) 970-1129.

Sincerely,

Weaver Consultants Group North Central, LLC



Michael B. Maxwell, LPG
Project Director

Cc: Mr. James Hitzeroth (w/ encl.)

Attachments: Illinois EPA Permit Application Forms [LPC-PA1, PA16, 39(i)]
Updated Post-Closure Cost Estimate - Table 1

Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

General Application for Permit (LPC - PA1)

This form must be used for any application for permit from the Bureau of Land, except for landscape waste composting or hazardous waste management facilities regulated in accordance with RCRA, Subtitle C. One original, and two copies, or three if applicable, of all permit application forms must be submitted. Attach the original and appropriate number of copies of any necessary plans, specifications, reports, etc. to fully support and describe the activities and modifications being proposed. Attach sufficient information to demonstrate the compliance with all regulatory requirements. Incomplete applications will be rejected. Please refer to the instructions for further guidance. **Note: Applicants must provide a physical address; the post office will not deliver a certified letter (final action letter) to a P.O. Box only. Please provide an extended ZIP+4 code for the site identification and owner/operator information.**

You may complete this form online, save a copy locally, print, sign and submit it to the Bureau of Land at the address below. Note: Hand-delivered permit applications must be delivered between 8:30 am and 5:00 pm, Monday through Friday (excluding State holidays) to:

Bureau of Land, Permit Section, Mail Code #33
1021 North Grand Avenue East, P.O. Box 19276
Springfield, IL 62794-9276

[Instructions](#)

I. Site Identification

Site Name: BFI Davis Junction (Phase II-III) IEPA BOL No.: 1418210001
Street Address: 8902 N. Illinois Route 251 P.O. Box: _____
City: Davis Junction State: IL Zip + 4: *61020 *Notification letters will not be sent without a 9-digit zip code. County: Ogle
Existing DE/OP Permit Numbers (if applicable): 1994-160-LF

II. Applicant Identification

Owner

Operator (if Different)

Name: BFI Waste Systems of North America
Street Address: 26 West 580 Schick Rd.
PO Box: _____
City: Hanover Park State: IL
Zip + 4: 60103 Phone: 224-970-1129
Contact: Mr. Jim Hitzeroth
Email Address: JHitzeroth@republicservices.com
FEIN ID No. 41-1696636

Name: (Same)
Street Address: _____
PO Box: _____
City: _____ State: _____
Zip + 4: _____ Phone: _____
Contact: _____
Email Address: _____
FEIN ID No. _____

Agency correspondence mailed to:

Owner Operator Other - Explain: _____

TYPE OF SUBMISSION/REVIEW PERIOD:

TYPE OF FACILITY:

TYPE OF WASTE:

- New Landfill/180 days (35 IAC Part 813)
- Landfill Expansion/180 days (35 IAC Part 813)
- Sig. Mod. to Operate/90 days (35 IAC Part 813)
- Other Sig. Mod./90 days (35 IAC Part 813)
- Renewal of Landfill/90 days (35 IAC Part 813)
- Development/90 days (35 IAC Part 807)
- Operating/45 days (35 IAC Part 807)
- Operating/90 days (35 IAC Part 848)
- Supplemental/90 days (35 IAC Part 807)
- Permit Transfer/90 days (35 IAC Part 807)
- Renewal of Experimental Permit (35 IAC Part 807)

- Landfill
- Land Treatment
- Transfer Station
- Treatment Facility
- Storage
- Incinerator
- Composting
- Recycling/Reclamation
- Used Tire Storage/Processing Facility
- Other (Specify) _____

- General Municipal Refuse
- Hazardous
- Special (Non-Hazardous)
- Chemical Only (exec. putrescible)
- Inert Only (exec. chem. & putrescible)
- Used Oil
- Potentially Infectious Medical Waste
- Landscape/Yard Waste
- Used Tires
- Other (Specify) _____

DEC 14 2023

APR 27 2023

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed \$50,000 for the violation and an additional civil penalty of not to exceed \$10,000 for each day during which the violation continues (415 ILCS 5/42).

REVIEWER: MED

III. Description of this Permit Request: (Note: The box below will expand as needed)

Annual Update to post-closure care cost estimate due by May 1, 2023, as required by Permit Condition VII.7.

IV. Completeness Requirements

1. Have all required public notice letters been mailed in accordance with the LPC-PA16 instructions? Yes No N/A
 (If so, provide a list of those recipients of the required public notice letters for Illinois EPA retention.
 Such retention shall not imply any Illinois EPA review and/or confirmation of the list.)

Public Notice Recipients

Name: <u>Hon. Senator Tim Bivins</u>	Title: <u>Senate District 45</u>
Street Address: <u>29 N. Galena, Suite 120</u>	P.O. Box: _____
City: <u>Dixon</u> State: <u>IL</u>	Zip Code: <u>61021</u>
Name: <u>Rep. Tom Demmer</u>	Title: <u>Representative, District 90</u>
Street Address: <u>105 E. First St., Suite 110</u>	P.O. Box: _____
City: <u>Dixon</u> State: <u>IL</u>	Zip Code: <u>61021</u>
Name: <u>Hon. Mike Rock</u>	Title: <u>Ogle Co. States Attorney</u>
Street Address: <u>106 S. 5th St., Suite 110</u>	P.O. Box: _____
City: <u>Oregon</u> State: <u>IL</u>	Zip Code: <u>61061-0357</u>
Name: <u>Kim Gouker</u>	Title: <u>County Chairman</u>
Street Address: <u>105 S. 5th St., Suite 110</u>	P.O. Box: _____
City: <u>Oregon</u> State: <u>IL</u>	Zip Code: <u>61061-0351</u>
Name: <u>Ms. Sharon Baumgartner</u>	Title: <u>Clerk</u>
Street Address: <u>6711 11th St.</u>	P.O. Box: _____
City: <u>Rockford</u> State: <u>IL</u>	Zip Code: <u>61109</u>
Name: <u>Linda James</u>	Title: <u>Village Clerk</u>
Street Address: <u>106 Elm St.</u>	P.O. Box: _____
City: <u>Davis Junction</u> State: <u>IL</u>	Zip Code: <u>61020</u>
Name: <u>Ms. Diane Reed</u>	Title: <u>Clerk</u>
Street Address: <u>425 East State St.</u>	P.O. Box: _____
City: <u>Rockford</u> State: <u>IL</u>	Zip Code: <u>61104</u>

RECEIVED
APR 27 2023
IEPA-BOL
PERMIT SECTION

- | | | | |
|--|-----------------------|----------------------------------|-----------------------|
| | Yes | No | N/A |
| 2. a. Is the Siting Certification Form (LPC-PA8) completed and enclosed? | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |
| b. Is siting approval currently under litigation? | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |
| 3. a. Is a closure, and if necessary a post-closure plan covering these activities being submitted, or | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |

b. has one already been approved?

If yes, provide the permit number: 1994-160-LFM

4. a. For operating waste disposal sites, only: Has any employee, owner, operator, officer or director of the owner or operator had a prior conduct certification denied, canceled or revoked?

b. Have you included a demonstration of how you comply or intend to comply with 35 Ill. Adm. Code 745?

5. a. For waste disposal sites, only: Is the property for the facility held in a beneficial trust?

b. If yes, is a beneficial trust certification form (LPC-PA9) completed and enclosed?

6. a. Does the application contain information or proposals regarding the hydrogeology; groundwater monitoring, modeling or classification; a groundwater impact assessment; or vadosezone monitoring for which you are requesting approval?

b. If yes, have you submitted a third copy of the application (4 total) and supporting documents?

7. Has the required 39(i) certification been attached? A 39(i) certification must be submitted with information concerning the following persons or entities:

a. the owner of the business entity applying for the permit;

b. the operator of the business entity applying for the permit;

c. each employee or officer of the owner or operator who signed the permit application or has managerial authority at the site; and

d. any additional owner, operator, or officer or employee of the owner or operator from whom a certification is requested by the Illinois EPA, including any officer or employee who will be responsible for overseeing or implementing regulated activities governed by the permit.

If no, then complete this certification as indicated.

RECEIVED
APR 27 2023
IEPA-BOL
PERMIT SECTION

V. Signatures:

Original signatures are required. Signature stamps or applications transmitted electronically or by FAX are not acceptable.

All applications shall be signed by the person designated below as a duly authorized representative of the owner an/or operator. A printed name for each signature should also be provided.

Corporation - By a principal executive officer of the level of vice-president or above.

Partnership or Sole Proprietorship - By a general partner or the proprietor, respectively.

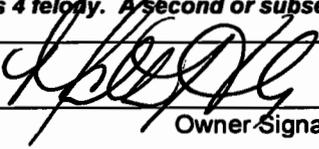
Government - By either a principal executive officer or a ranking elected official.

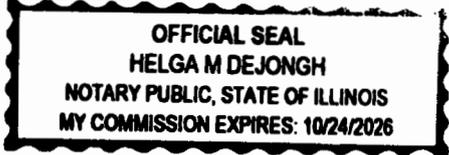
A person is a duly authorized representative of the owner and operator only if:

- 1. They meet the criteria above or the authorization has been granted in writing by a person described above; and
- 2. Is submitted with this application (a copy of a previously submitted authorization can be used).

I hereby affirm that all information contained in this application is true and accurate to the best of my knowledge and belief. I do herein swear that I am a duly authorized representative of the owner/operator and I am authorized to sign this permit application form.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

 _____ Owner Signature	<u>4-17-2023</u> _____ Date
Matthew Healy _____ Printed Name	Vice President _____ Title



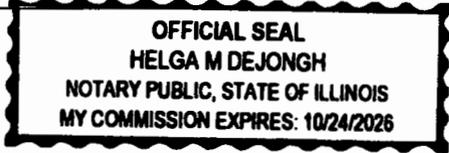
Notary: Subscribed and Sworn before me this 17th day of April 2023.

My commission expires on: 24 October 2026



 Signature & Stamp/Seal of Notary Public

 _____ Operator Signature	<u>4-17-2023</u> _____ Date
Mathew Healy _____ Printed Name	Vice President _____ Title



Notary: Subscribed and Sworn before me this 17th day of April 2023.

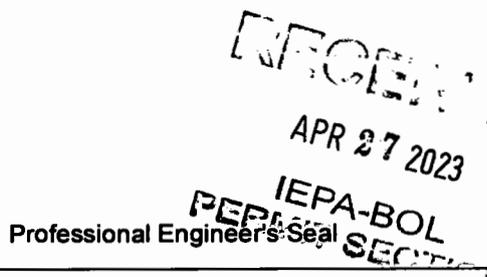
My commission expires on: 24 October 2026



 Signature & Stamp/Seal of Notary Public

Engineer's Name: <u>John Bossert</u>	Engineer's Title: <u>Senior Project Manager</u>
Company: <u>Weaver Consultants Group</u>	Registration Number: <u>062-050455</u>
Street Address: <u>3516 Ogden Road</u>	PO Box: _____
City: <u>Springfield</u> State: <u>IL</u>	Zip Code: <u>62711</u> Phone: <u>217-787-0290</u>
Email Address: <u>jbossert@wcgrp.com</u>	
License Expiration Date: <u>Nov 30, 2023</u>	

Signature: _____
 Date: _____



V. Signatures:

Original signatures are required. Signature stamps or applications transmitted electronically or by FAX are not acceptable.

All applications shall be signed by the person designated below as a duly authorized representative of the owner an/or operator. A printed name for each signature should also be provided.

- Corporation - By a principal executive officer of the level of vice-president or above.
- Partnership or Sole Proprietorship - By a general partner or the proprietor, respectively.
- Government - By either a principal executive officer or a ranking elected official.

A person is a duly authorized representative of the owner and operator only if:

1. They meet the criteria above or the authorization has been granted in writing by a person described above; and
2. Is submitted with this application (a copy of a previously submitted authorization can be used).

I hereby affirm that all information contained in this application is true and accurate to the best of my knowledge and belief. I do herein swear that I am a duly authorized representative of the owner/operator and I am authorized to sign this permit application form.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Owner Signature	Date
Matthew Healy	Vice President
Printed Name	Title

Notary: Subscribed and Sworn before me
 this ____ day of _____ 20 ____ .

My commission expires on: _____

Signature & Stamp/Seal of Notary Public

Operator Signature	Date
Mathew Healy	Vice President
Printed Name	Title

Notary: Subscribed and Sworn before me
 this ____ day of _____ 20 ____ .

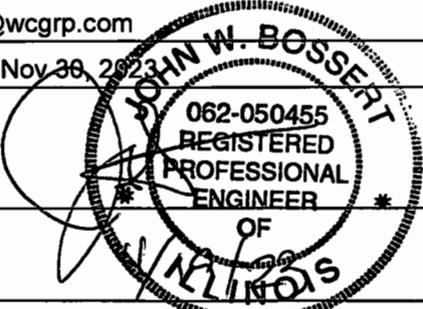
My commission expires on: _____

Signature & Stamp/Seal of Notary Public

Engineer's Name: <u>John Bossert</u>	Engineer's Title: <u>Senior Project Manager</u>
Company: <u>Weaver Consultants Group</u>	Registration Number: <u>062-050455</u>
Street Address: <u>3516 Ogden Road</u>	PO Box: _____
City: <u>Springfield</u> State: <u>IL</u>	Zip Code: <u>62711</u> Phone: <u>217-787-0290</u>
Email Address: <u>jbossert@wcgrp.com</u>	
License Expiration Date: <u>Nov 30, 2023</u>	

Signature: _____

Date: _____



RECEIVED
 APR 27 2023
 IEPA-BOL
 PERMIT SECTION
 Professional Engineer's Seal



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

39(i) Certification for Operating a Waste Management Facility

Pursuant to 415 ILCS 5/39(i), prior to issuing any RCRA permit, or any permit for a waste storage site, sanitary landfill, waste disposal site, waste transfer station, waste treatment facility, waste incinerator, clean construction or demolition debris fill operation, or used tire storage site, the Illinois EPA must conduct an evaluation of the prospective owner's or operator's prior experience in waste management operations, clean construction or demolition debris fill operations, and tire storage site management. As part of that evaluation please complete and submit this form with your permit application.

This form may be completed online and saved locally before printing, signing and submitting it to the Illinois EPA at the address below. If the form is completed manually, please type or print clearly.

Illinois Environmental Protection Agency
Division of Land Pollution Control - #33
39(i) Certification
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

I. Applicant Information

Site Name: BFI Davis Junction Landfill - Phase II/III IEPA BOL No.: 1418210001

Site Address: 8902 North Illinois Route 251

City: Davis Junction State: IL Zip Code: 61020

Permit Numbers (if applicable): 1994-160-LF

Owner

Owner Name: BFI Waste Systems of North America, LLC

Street Address: 26 West 580 Schick Rd.

City: Hanover Pk State: IL Zip: 60133

Operator

Operator Name: BFI Waste Systems of North America, LLC

Street Address: 26 West 580 Schick Rd.

City: Hanover Pk State: IL Zip: 60133

II. Officers and Employees with Site Responsibility

A. Officers: List the name and title of all officers of the owner or operator that will have personal involvement or active participation in the operation or management of the site or facility for which the application is submitted.

Name	Title
Matthew Healy	Vice President

B. Employees: List the name and title of each employee of the owner or operator that will have personal involvement or active participation in the overall operation or management of the site or facility for which the application is submitted (e.g. site managers, site engineers, and other persons who direct or control the overall day-to-day management of the operation, but not persons whose duties are exclusively limited to equipment operation, labor, or similar non-managerial functions).

Name	Title
James Hitzeroth	Environmental Manager

RECEIVED
APR 27 2023
IEPA-BOL
PERMIT SECTION

III. Owner, Operator, Officer, and Employee Information

A. Prior Conduct Identification

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified under Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and include a copy of each final administrative or judicial determination that required an affirmative response. If the information for each owner, operator, officer, and employee has not changed since the applicant's last submission of a 39(i) certification, the applicant can skip to Section III(C), below.

- 1) Has there been a finding that any person named in Section II violated federal, State, or local laws, regulations, standards, or ordinances in the operation of one or more waste management facilities or sites, clean construction or demolition debris fill operation facilities or sites, or tire storage sites? Yes No
- 2) Has any person named in Section II ever been convicted in this or another State of any crime which is a felony under the laws of this State, or convicted of a felony in a federal court; or convicted in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition? Yes No
- 3) Has there been a finding against any person named in Section II of gross carelessness or incompetence in handling, storing, processing, transporting or disposing of waste, clean construction or demolition debris, or used or waste tires, or a finding of gross carelessness or incompetence in using clean construction or demolition debris as fill? Yes No

B. Pending Proceedings

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified in Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and provide information identified in Attachment A regarding the pending proceeding.

- 1. Is there any proceeding currently pending against any person named in Section II that could result in a conviction or finding described in subsection A, above? Yes No
- 2. Is there any proceeding currently pending against any person named in Section II that could result in the reversal of a conviction or finding described in subsection A, above? Yes No

C. Prior Application Information

If (i) the applicant has previously submitted the Attachments required pursuant to subsections A and B above and (ii) the Attachments previously submitted are still complete, true, and correct, then the applicant does not need to include Attachments with this submission if the following box is checked:

By checking this box, I affirm that the Attachments previously submitted are still complete, true, and correct and wish to incorporate them into this Certification.

If the above box is checked, identify the application that contains the previously submitted Attachments that are complete, true, and correct.

[Empty rectangular box for identifying applications]

RECEIVED
APR 27 2023
IEPA-BOL
PERMIT SECTION

Authorization for Release of Information

This Certification must be signed by an officer of the applicant.

The undersigned authorizes any representative of the Illinois Environmental Protection Agency bearing this release to obtain any information from the Illinois State Police pertaining to the criminal records of the applicant and hereby directs the Illinois State Police to release such information upon request of the bearer. The undersigned authorizes a review of and full disclosure of all records, or any part thereof, concerning the applicant's criminal records by and to a duly authorized agent of the Illinois Environmental Protection Agency, whether the records are of public, private, or confidential nature. The intent of this authorization is to give consent for full and complete disclosure of the applicant's criminal records.

The undersigned fully understands that any information which is developed directly or indirectly, in whole or in part, as a result of this authorization will be considered in determining whether a permit shall be issued by the Illinois Environmental Protection Agency under the Environmental Protection Act [415 ILCS 5]. The undersigned further agrees to release the Illinois State Police and the Illinois Environmental Protection Agency, its agents and designees under this release, from any and all liability which may be incurred as a result of compliance with this authorization for release of information.

Certification Statements

I certify under penalty of law that the information submitted, including information on any Attachments submitted as part of or incorporated into this Certification, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))



Signature of Applicant Officer

4-17-2023

Date

Matthew Healy

Printed Name

Vice President

Title

RECEIVED

APR 27 2023

IEPA-BOL
PERMIT SECTION

Attachment A (1 of 1)

This Attachment must be completed for each owner or operator, and for each officer or employee identified in Section II, for whom one or more affirmative responses were included in Section III.

Name: _____ Title: _____

Status: Owner Operator Officer Employee (check all that apply)

A. Prior Findings or Convictions

- 1. Has there been a finding that the person named above violated federal, State, or local laws, regulations, standards, or ordinances in the operation of one or more waste management facilities or sites, clean construction or demolition debris fill operation facilities or sites, or tire storage sites? Yes
 No
- 2. Has the person named above ever been convicted in this or another State of any crime which is a felony under the laws of this State, or convicted of a felony in a federal court; or convicted in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition? Yes
 No
- 3. Has there been a finding against the person named above of gross carelessness or incompetence in handling, storing, processing, transporting or disposing of waste, clean construction or demolition debris, or used or waste tires, or a finding of gross carelessness or incompetence in using clean construction or demolition debris as fill? Yes
 No

If the answer to any of the above questions is Yes, attach a copy of each final administrative or judicial determination that required an affirmative response.

B. Pending Proceedings

Is there any proceeding currently pending that could result in one of the following:

- 1. A conviction or finding described in subsection A, above? Yes
 No
- 2. The reversal of a conviction or finding described in subsection A, above? Yes
 No

If the answer to any of the above questions is Yes, please provide information about the pending proceeding, including the parties involved, the adjudicating body, the docket number, the nature of the proceeding, and the status. The box below will expand as needed. Attach additional sheets if necessary.

RECEIVED

APR 27 2023

IEPA-BOL
PERMIT SECTION



Illinois Environmental Protection Agency

Electronic Filing: Received, Clerk's Office 03/14/2024

R 000013

Bureau of Land • 1021 N. Grand Avenue E. • Box 19276 • Springfield • Illinois • 62794-9276

Notice of Application for Permit to Manage Waste (LPC-PA16)

Date: April 24, 2023

To Elected Officials and Concerned Citizens:

The purpose of this notice is to inform you that a permit application has been submitted to the Illinois EPA, Bureau of Land, for a solid waste project described below. You are not obligated to respond to this notice, however, if you have any comments, please submit them in writing to the Bureau of Land, Attn: Permit Section, at the above address, or contact the Permit Section at 217/524-3300 within 21 days.

NOTE: Please complete this form online, save a copy locally, print and submit it to the Permit Section #33, at the above.

The permit application, which is identified below, is for a project described at the bottom of this page.

Site Identification:

Site Name: BFI Davis Junction Landfill (Phase II-III) IEPA ID Number: 1418210001

Street Address: 8902 North Illinois Rte. 251 P.O. Box: _____

City: Davis Junction State: IL Zip Code: 61020 County: Ogle

TYPE OF PERMIT SUBMISSIONS:

TYPE OF FACILITY:

TYPE OF WASTE:

- New Landfill
- Landfill Expansion
- First Significant Modification
- Significant Modification to Operate
- Other Significant Modification
- Renewal of Landfill
- Development
- Operating
- Supplemental
- Transfer
- Name Change
- Generic

- Landfill
- Land Treatment
- Transfer Station
- Treatment Facility
- Storage
- Incinerator
- Composting
- Recycling/Reclamation
- Other (Specify)

- General Municipal Refuse
- Hazardous
- Special (Non-Hazardous)
- Chemical Only (exec. putrescible)
- Inert Only (exec. chem. & putrescible)
- Used Oil
- Solvents
- Landscape/Yard Waste
- Other (Specify)

Description of Project:

Annual update to post-closure cost estimate due by May 1, 2023, as required by Permit Condition VII.7

RECEIVED
APR 27 2023
IEPA-BOL
PERMIT SECTION

Significant Modification Application
Annual Inflation Factor Adjustment and Reduction in Post-Closure Care Period
Post Closure Cost Estimate
BFI Davis Junction Landfill
Phase II/III Unit
Revised April 24, 2023

IEPA - DIVISION OF RECORDS MANAGEMENT
 RELEASABLE

DEC 14 2023

REVIEWER: MED

Annual Cost Items	Units	Quantity	Approved Unit Cost	Revised Unit Cost	Approved Costs	Revised Costs	Notes
			August-22	Apr-23	August-22	Apr-23	
Applicable Inflation Factor:					1.0143	1.070	On Sept 21, 2022, a cost estimate was approved by IEPA (Permit Mod No. 40) (4.13% inflation factor over the prior year). This April 2023 modified estimate includes revised costs, revised inflation factor utilized by the IEPA financial assurance division (March 2023 communications with IEPA - 1.07 or 7.0%), and a reduction in the post-closure period (to account for one additional year of completed post-closure care activities).
Site Inspection	Quarterly	4	\$607	\$649	\$2,428	\$2,598	Approved cost updated for revised inflation factor.
Repair Cover (erosion and settlement) and Vegetation (4.5 CY/acre/yr over 45 acres)	CY	203	\$18.24	\$19.52	\$3,703	\$3,962	Approved cost updated for revised inflation factor.
Mowing (once per year)	AC	45	\$62.42	\$66.79	\$2,809	\$3,006	Approved cost updated for revised inflation factor.
					\$8,940	\$9,566	
Groundwater Monitoring:							
Sample Collection - Semi-Annual (21 wells x 2 events/yr.)	Wells	42	\$114.00	\$121.98	\$4,788	\$5,123	Approved costs updated for revised inflation factor. Costs include transportation to the facility for sampling, sampling labor, sampling equipment and accessories for groundwater monitoring.
Analytical and Reporting - Semi-Annual List G1 and G2 (21 wells x events/yr.)	Wells	42	\$309.77	\$331.45	\$13,010	\$13,921	Approved costs updated for revised inflation factor.
Measurement of GW Elevations (21 wells x 2 events/yr)	Wells	42	\$12.77	\$13.66	\$536	\$574	Approved costs updated for revised inflation factor. Costs for other two quarterly events during the year included in "sample collection" item above (total of 4 rounds of groundwater elevation measurements required per year).
					\$18,334	\$19,618	
Leachate Monitoring:							
Sample Collection (1 tank x 2 events/yr.)	Tank	2	\$114.00	\$121.98	\$228	\$244	Approved costs updated with revised inflation factor.
Measurement of leachate levels (L1) (8 points x 4 events/yr)	Point	32	\$12.77	\$13.66	\$409	\$437	Approved costs updated with revised inflation factor.
Analytical and Reporting - List L2 (1 tank x 2 events/yr.)	Tank	2	\$1,154	\$1,235	\$2,308	\$2,470	Approved costs updated with revised inflation factor.
Analytical and Reporting - List L3 (RCRA list) (1 tank x 1 event/yr.)	Tank	1	\$802	\$858	\$802	\$858	Approved costs updated with revised inflation factor.
					\$3,747	\$4,009	
Gas Monitoring:							
Annual - 9 perimeter probes and 9 ambient locations	Annual	1	\$363	\$388	\$363	\$388	Approved costs updated with revised inflation factor.
Annual surface emissions monitoring	Annual	1	\$729	\$780	\$729	\$780	Approved costs updated with revised inflation factor.
					\$1,092	\$1,168	
Monitoring of sedimentary basin and perimeter ditches	Year	2	\$760	\$813	\$1,520	\$1,626	Approved costs updated with revised inflation factor.
Leachate/Gas Collection System Inspection	Quarterly	4	\$974	\$1,042	\$3,894	\$4,169	Approved costs updated with revised inflation factor.
					\$5,414	\$5,795	
Leachate/Gas Collection System Operation :							
Power Usage (45 HP x 0.746KW/HP x 24 hr/day x 365 days/yr)	KWhr	294,073	\$0.121	\$0.129	\$35,521	\$38,074	Approved unit cost revised for inflation.
Annual Maintenance Costs	Year	1	\$15,202	\$16,266	\$15,202	\$16,266	Approved cost estimate updated with revised inflation factor.
Operational Labor (4 hrs./wk x 52 wks/yr)	Year	1	\$9,484	\$10,148	\$9,484	\$10,148	Approved cost estimate updated with revised inflation factor.
					\$60,207	\$64,488	

Significant Modification Application
Annual Inflation Factor Adjustment and Reduction in Post-Closure Care Period
Post Closure Cost Estimate
BFI Davis Junction Landfill
Phase II/III Unit
Revised April 24, 2023

Annual Cost Items	Units	Quantity	Approved Unit Cost	Revised Unit Cost	Approved Costs	Revised Costs	Notes
Maintenance of Monitoring Systems - Quarterly	Quarter	4	\$607	\$649	\$2,428	\$2,598	Approved cost estimate updated with revised inflation factor.
Maintenance of Other Site Features - Semi-Annual	Event	2	\$228	\$244	\$456	\$488	Approved cost estimate updated with revised inflation factor.
Annual Report	Report	1	\$7,598	\$8,130	\$7,598	\$8,130	Approved cost estimate updated with revised inflation factor.
Leachate Transportation and Treatment	Gallons	97,441	\$0.0603	\$0.0645	\$5,006	\$6,287	Unit cost adjusted with revised inflation factor. Quantity is average quantity hauled over last three years: 2020 (78,500 gal), 2021 (93,600 gal), and 2022 (120,224 gal). Previously approved unit cost of \$0.0603/gallon also increased based on revised inflation factor of 1.07.
					\$15,488	\$17,503	
Total Annual Cost with Inflation Factor:					\$113,223	\$122,147	
Remaining Post Closure Care Period				X	8	7	Post-Closure period began March 30, 2000. As of March 30, 2023, 7 yrs. remain. Reduced remaining post-closure period from 8 to 7 years.
Total Current Annual Costs (annual cost x years of post closure remaining):					\$905,786	\$855,029	
Lump Sum (One-Time) Cost Items To Be Incurred Prior To End of Post-Closure Care Period							
Abandonment of Groundwater Monitoring Wells	Well	21	\$1,413	\$1,512	\$29,674	\$31,750	Approved unit cost increased to include revised inflation factor.
Decommissioning Gas-to-Energy Plant (See Note 3)			\$113,075	\$120,990	\$91,591	\$98,002	Approved cost increased to include revised inflation factor (Revised Unit Cost column). However, Item a in Note 3 has been completed and therefore costs for this task have been removed (as shown in "Revised Costs" column). Item a represented \$15,000 of the \$80,000 total (0.19) in the original lump sum estimate developed in 2004. Therefore, 0.19 of the total amount (updated for inflation) has been removed.
Final Repair of Cover Following Post-Closure Period	CY	9680	\$62,312	\$66,674	\$62,312	\$66,674	Approved unit cost increased to include revised inflation factor of 1.07.
Abandonment of Gas Probes	Probe	9	\$560	\$599	\$5,042	\$5,393	Approved unit cost increased to include revised inflation factor of 1.07.
Abandonment of Leachate Monitoring Wells and Dual Leachate/Gas Extraction Wells	Lump Sum		\$59,500	\$63,665	\$59,500	\$63,665	Cost based on quote attained from 3rd party contractor on 8/22/2022 for abandonment of 8 leachate monitoring wells and 26 remaining dual leachate/gas extraction wells. Approved 2022 cost increased to include revised inflation factor of 1.07.
Total Lump Sum (One-Time) Costs:					\$248,119	\$265,484	
TOTAL POST CLOSURE COST ESTIMATE:					\$1,153,905	\$1,120,513	

Notes:

1. Thirty year Post-Closure Care Period began March 30, 2000.
2. An Inflation Factor has been included for each Revised Unit Cost based on the most recently approved costs in Permit Mod No. 40.
3. a. Disconnect and remove 2 generators/engine assemblies (*task completed as of May 2012*)
 - b. Decommission the electrical substation and remove the electrical switch gear
 - c. Remove and clean miscellaneous oil tanks
 - d. Disconnect and remove refrigeration skid and flare
 - e. Remove blower building
 - f. Abandon and cap header pipe at waste limits, flare and electrical plant

IEPA - DIVISION OF RECORDS MANAGEMENT
 RELEASABLE

DEC 4 2023

REVIEWER: MLD



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

Sustainability in Action

June 8, 2023

Ms. Jacqueline M. Cooperider, P.E.
Manager of Permits
Illinois Environmental Protection Agency
Permit Section, Bureau of Land -- #33
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Davis Junction Landfill – Phases II/III
Ap. Log No. 2023-150
Permit No. 1994-160-LF
IEPA Site No.: 1418210001
Sig Mod Permit Application

RECEIVED
JUN 14 2023
IEPA-BOL
PERMIT SECTION

Dear Ms. Cooperider,

Enclosed, please find one original and three copies of additional information pertaining to the above referenced permit application that being submitted by permittee, BFI Waste Systems of North America, LLC.

This information is being provided pursuant to a discussion between Weaver Consultants Group and Mr. Robert Colwell of Illinois EPA on June 8, 2023.

If you have any questions, feel free to contact me at (224) 970-1129 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

A handwritten signature in black ink, appearing to read "James Hitzeroth", written over a horizontal line.

James Hitzeroth

Enclosure: Updated Post-Closure Cost Estimate

Significant Modification Application
Annual Inflation Factor Adjustment and Reduction in Post-Closure Care Period
Post Closure Cost Estimate
BFI Davis Junction Landfill
Phase II/III Unit
Revised June 8, 2023

IEPA - DIVISION OF RECORDS MANAGEMENT
 RELEASABLE

DEC 14 2023

REVIEWER: MFD

Annual Cost Items	Units	Quantity	Approved Unit Cost	Revised Unit Cost	Approved Costs	Revised Costs	Notes
			August-22	Jun-23	August-22	Jun-23	
Applicable Inflation Factor:					1.0143	1.070	On Sept 21, 2022, a cost estimate was approved by IEPA (Permit Mod No. 40) (4.13% inflation factor over the prior year). This April 2023 modified estimate includes revised costs, revised inflation factor utilized by the IEPA financial assurance division (March 2023 communications with IEPA - 1.07 or 7.0%), and a reduction in the post-closure period (to account for one additional year of completed post-closure care activities).
Site Inspection	Quarterly	4	\$607	\$649	\$2,428	\$2,598	Approved cost updated for revised inflation factor.
Repair Cover (erosion and settlement) and Vegetation (4.5 CY/acre/yr over 45 acres)	CY	203	\$18.24	\$19.52	\$3,703	\$3,962	Approved cost updated for revised inflation factor.
Mowing (once per year)	AC	45	\$62.42	\$66.79	\$2,809	\$3,006	Approved cost updated for revised inflation factor.
					\$8,940	\$9,566	
Groundwater Monitoring:							
Sample Collection - Semi-Annual (21 wells x 2 events/yr.)	Wells	42	\$114.00	\$121.98	\$4,788	\$5,123	Approved costs updated for revised inflation factor. Costs include transportation to the facility for sampling, sampling labor, sampling equipment and accessories for groundwater monitoring.
Analytical and Reporting - Semi-Annual List G1 and G2 (21 wells x 2 events/yr.)	Wells	42	\$309.77	\$331.45	\$13,010	\$13,921	Approved costs updated for revised inflation factor.
Measurement of GW Elevations (21 wells x 2 events/yr)	Wells	42	\$12.77	\$13.66	\$536	\$574	Approved costs updated for revised inflation factor. Costs for other two quarterly events during the year included in "sample collection" item above (total of 4 rounds of groundwater elevation measurements required per year).
					\$18,334	\$19,618	
Leachate Monitoring:							
Sample Collection (1 tank x 2 events/yr.)	Tank	2	\$114.00	\$121.98	\$228	\$244	Approved costs updated with revised inflation factor.
Measurement of leachate levels (L1) (8 points x 4 events/yr)	Point	32	\$12.77	\$13.66	\$409	\$437	Approved costs updated with revised inflation factor.
Analytical and Reporting - List L2 (1 tank x 2 events/yr.)	Tank	2	\$1,154	\$1,235	\$2,308	\$2,470	Approved costs updated with revised inflation factor.
Analytical and Reporting - List L3 (RCRA list) (1 tank x 1 event/yr.)	Tank	1	\$802	\$858	\$802	\$858	Approved costs updated with revised inflation factor.
					\$3,747	\$4,009	
Gas Monitoring:							
Annual - 9 perimeter probes and 9 ambient locations	Annual	1	\$363	\$388	\$363	\$388	Approved costs updated with revised inflation factor.
Annual surface emissions monitoring	Annual	1	\$729	\$780	\$729	\$780	Approved costs updated with revised inflation factor.
					\$1,092	\$1,168	
Monitoring of sedimentary basin and perimeter ditches	Year	2	\$760	\$813	\$1,520	\$1,626	Approved costs updated with revised inflation factor.
Leachate/Gas Collection System Inspection	Quarterly	4	\$974	\$1,042	\$3,894	\$4,169	Approved costs updated with revised inflation factor.
					\$5,414	\$5,795	
Leachate/Gas Collection System Operation :							
Power Usage (45 HP x 0.746KW/HP x 24 hr/day x 365 days/yr)	KW/hr	294,073	\$0.121	\$0.129	\$35,521	\$38,074	Approved unit cost revised for inflation.
Annual Maintenance Costs	Year	1	\$15,202	\$16,266	\$15,202	\$16,266	Approved cost estimate updated with revised inflation factor.
Operational Labor (4 hrs./wk x 52 wks/yr)	Year	1	\$9,484	\$10,148	\$9,484	\$10,148	Approved cost estimate updated with revised inflation factor.
					\$60,207	\$64,488	

Significant Modification Application
Annual Inflation Factor Adjustment and Reduction in Post-Closure Care Period
Post Closure Cost Estimate
BFI Davis Junction Landfill
Phase II/III Unit
Revised June 8, 2023

Annual Cost Items	Units	Quantity	Approved Unit Cost	Revised Unit Cost	Approved Costs	Revised Costs	Notes
Maintenance of Monitoring Systems - Quarterly	Quarter	4	\$607	\$649	\$2,428	\$2,598	Approved cost estimate updated with revised inflation factor.
Maintenance of Other Site Features - Semi-Annual	Event	2	\$228	\$244	\$456	\$488	Approved cost estimate updated with revised inflation factor.
Annual Report	Report	1	\$7,598	\$8,130	\$7,598	\$8,130	Approved cost estimate updated with revised inflation factor.
Leachate Transportation and Treatment	Gallons	97,441	\$0.0603	\$0.0645	\$5,006	\$6,287	Unit cost adjusted with revised inflation factor. Quantity is average quantity hauled over last three years: 2020 (78,500 gal), 2021 (93,600 gal), and 2022 (120,224 gal). Previously approved unit cost of \$0.0603/gallon also increased based on revised inflation factor of 1.07.
					\$15,488	\$17,503	
Total Annual Cost with Inflation Factor:					\$113,223	\$122,147	
Remaining Post Closure Care Period				X	8	7	Post-Closure period began March 30, 2000. As of March 30, 2023, 7 yrs. remain. Reduced remaining post-closure period from 8 to 7 years.
Total Current Annual Costs (annual cost x years of post closure remaining):					\$905,786	\$855,029	
Lump Sum (One-Time) Cost Items To Be Incurred Prior To End of Post-Closure Care Period							
Abandonment of Groundwater Monitoring Wells	Well	21	\$1,413	\$1,512	\$29,674	\$31,750	Approved unit cost increased to include revised inflation factor.
Decommissioning Gas-to-Energy Plant (See Note 3)			\$113,075	\$120,990	\$91,591	\$98,002	Approved cost increased to include revised inflation factor (Revised Unit Cost column). However, Item a in Note 3 has been completed and therefore costs for this task have been removed (as shown in "Revised Costs" column). Item a represented \$15,000 of the \$80,000 total (0.19) in the original lump sum estimate developed in 2004. Therefore, 0.19 of the total amount (updated for inflation) has been removed.
Final Repair of Cover Following Post-Closure Period	CY	9680	\$62,312	\$0	\$62,312	\$0	Line item removed based on communication between WCG and IEPA on 6/8/2023.
Abandonment of Gas Probes	Probe	9	\$560	\$599	\$5,042	\$5,393	Approved unit cost increased to include revised inflation factor of 1.07.
Abandonment of Leachate Monitoring Wells and Dual Leachate/Gas Extraction Wells	Lump Sum		\$59,500	\$63,665	\$59,500	\$63,665	Cost based on quote attained from 3rd party contractor on 8/22/2022 for abandonment of 8 leachate monitoring wells and 26 remaining dual leachate/gas extraction wells. Approved 2022 cost increased to include revised inflation factor of 1.07.
Total Lump Sum (One-Time) Costs:					\$248,119	\$198,810	
TOTAL POST CLOSURE COST ESTIMATE:					\$1,153,905	\$1,053,839	

Notes:

1. Thirty year Post-Closure Care Period began March 30, 2000.
2. An Inflation Factor has been included for each Revised Unit Cost based on the most recently approved costs in Permit Mod No. 40.
3. a. Disconnect and remove 2 generators/engine assemblies (*task completed as of May 2012*)
 - b. Decommission the electrical substation and remove the electrical switch gear
 - c. Remove and clean miscellaneous oil tanks
 - d. Disconnect and remove refrigeration skid and flare
 - e. Remove blower building
 - f. Abandon and cap header pipe at waste limits, flare and electrical plant

IEPA - DIVISION OF RECORDS MANAGEMENT
 RELEASABLE

DEC 14 2023

REVIEWER: MED

Colwell, Robert

From: Maxwell, Mike <mmaxwell@wcgrp.com>
Sent: Monday, June 12, 2023 7:36 PM
To: Colwell, Robert
Subject: [External] RE: Davis Junction Landfill, BFI Leachate Pumps

Bob,

Yes, this condition references installation of pumps that have already been installed. So, it would be appropriate to remove this condition from the permit, at this point.

Thanks.

Mike

Mike Maxwell, LPG, CHMM
Environmental Practice Group, Chicago Operations Manager

W Weaver Consultants Group
35 E. Wacker Drive | Suite 1250
Chicago, IL 60601
O: 312-922-1030 | D: 312-496-3718 | F: 312-922-0201 | M: 312-617-5858
mmaxwell@wcgrp.com | www.wcgrp.com 



SAFETY FIRST, TRUSTED ADVISORS, 12:1 CULTURE

IMPORTANT NOTICE: The information contained in this email message (including any attachments) may be confidential, privileged or both, and is intended exclusively for the address(es) intended by the sender. If it appears you have received this email message in error, please notify the sender immediately and then delete; any other use of this email message is prohibited. Thank you.

From: Colwell, Robert <Robert.Colwell@Illinois.gov>
Sent: Monday, June 12, 2023 3:34 PM
To: Maxwell, Mike <mmaxwell@wcgrp.com>
Subject: Davis Junction Landfill, BFI Leachate Pumps

MEMO

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hi Mike,

New Question: Condition IV.8 of the facility permit lists gas extraction wells that do/will have leachate extraction pumps installed in them. I'm wondering if this work is complete? If it is, I'll take that condition out of the permit.

Thanks,
Bob

Bob Colwell
Illinois Environmental Protection Agency
Bureau of Land, Permit Section
1021 North Grand Avenue East #33
Springfield, Illinois 62794-9276
(217) 557-8913
Robert.Colwell@Illinois.Gov

State of Illinois - CONFIDENTIALITY NOTICE: The information contained in this communication is confidential, may be attorney-client privileged or attorney work product, may constitute inside information or internal deliberative staff communication, and is intended only for the use of the addressee. Unauthorized use, disclosure or copying of this communication or any part thereof is strictly prohibited and may be unlawful. If you have received this communication in error, please notify the sender immediately by return e-mail and destroy this communication and all copies thereof, including all attachments. Receipt by an unintended recipient does not waive attorney-client privilege, attorney work product privilege, or any other exemption from disclosure.

MS

Colwell, Robert

From: Colwell, Robert
Sent: Wednesday, July 12, 2023 5:17 PM
To: Maxwell, Mike
Subject: FW: BFI, Davis Junction Cost Estimate, Log No. 2023-150

OK, here is the complete e-mail:

From: Colwell, Robert
Sent: Wednesday, July 12, 2023 4:16 PM
To: Maxwell, Mike <mmaxwell@wcgrp.com>
Subject: BFI, Davis Junction Cost Estimate, Log No. 2023-150

Hi Mike,

I've got a couple of things with this application that need addressing:

First, that cost for "Final Repair of Cover Following Post-Closure Period" needs to be restored into the cost estimate. BFI, Davis Junction was permitted to use agricultural drainage tile to address differential settlement and low points [ponding] in the protective layer of Final Cover as long as at the end of the post-closure care period, all locations where the tile had been used were filled in or covered over with soil. That is what that mysterious cost is for.

Second, the post-closure care plan needs to be updated to include this filling-in process. The procedure for "Final Repair of Cover Following Post-Closure Period" never made it into the PCC Plan and that's why we couldn't come up with a reason for that cost in the cost estimate. If BFI, Davis Junction is planning on another permit application submittal "soon", the proposal to add this into the PCC Plan can be added onto that application. We'd prefer to have an application submitted to address this before next year's cost estimate application, but that is a last resort possibility.

In addition to describing the filling-in/repair process, please see Application Log No. 2003-096 [the application that was approved as Modification No. 9], the addendum dated July 11, 2003, Attachment 2, Section 6.0, 2nd paragraph. This paragraph paraphrases 35 IAC 811.111(c)(2) – (5), and should be paraphrased again in the description of the repair process.

Please contact me if you have any questions.

Thanks,
Bob

Bob Colwell
Illinois Environmental Protection Agency
Bureau of Land, Permit Section
1021 North Grand Avenue East #33
Springfield, Illinois 62794-9276
(217) 557-8913
Robert.Colwell@Illinois.Gov

2023-150

Electronic Filing: Received Clerk's Office 03/14/2024

Rockford
Ogle

RCC
R 000022



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

Sustainability in Action

July 25, 2023

Ms. Jacqueline M. Cooperider, P.E.
Manager of Permits
Illinois Environmental Protection Agency
Permit Section, Bureau of Land -- #33
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

RECEIVED

JUL 31 2023

IEPA-BOL
PERMIT SECTION

Re: Davis Junction Landfill – Phases II/III
Ap. Log No. 2023-150
Permit No. 1994-160-LF
IEPA Site No.: 1418210001
Sig Mod Permit Application

Dear Ms. Cooperider,

Enclosed, please find one original and three copies of additional information pertaining to the above referenced permit application that is being submitted by permittee, BFI Waste Systems of North America, LLC.

This information is being provided pursuant to emails from Mr. Robert Colwell of Illinois EPA to Mr. Mike Maxwell of Weaver Consultants Group dated July 12 and July 21, 2023. In response to these emails, the following information is enclosed:

- Updated Post-Closure Cost Estimate with the line item for "Final Repair of Cover Following Post-Closure Period" added.
- Two revisions to Section 6 of the Post-Closure plan that was last revised in July 2019 with the most recent Five Year Renewal Permit Application reviewed and approved by Illinois EPA. These revisions are shown in the attached document with the track changes feature:
 - A new paragraph was added as the 2nd paragraph in Section 6 citing the post-closure inspection/maintenance requirements in 35 Ill. Adm. Code Part 811.111(c) 2-5.

- o Secondly, additional language has been added that we understand from the above emails was a condition of the previous Illinois EPA approval of the option to install a tile drainage system to manage surface water on the final cover. This additional language has been added as a new paragraph at the end of Section 6 of the Post-Closure Plan.

If you have any questions, feel free to contact me at (224) 970-1129 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC



James Hitzeroth

Enclosure: Updated Post-Closure Cost Estimate
Updated Post-Closure Plan

DAVIS JUNCTION LANDFILL PHASE II/III

Original: March 1994

Last Reviewed & Revised: July 2023

Post-Closure Plan

Page 1 of 9

Deleted: Five-Year Renewal Application

Deleted: 2019

1.0 Revised Post-Closure Plan - 35 Illinois Administrative Code (IAC) 812.115

The Davis Junction Facility is comprised of three units, a 19.7 acre RCRA hazardous waste unit (Phase I) on the western side of the landfill, and a 21.2 acre (Phase II) and a 22.7 acre (Phase III) municipal and non-hazardous special waste units located on the eastern part of the site. A re-compacted clay barrier separates Phase I from Phases II and III, and all units have been certified as closed by the Illinois Environmental Protection Agency (IEPA) Bureau of Land. The minimum 30-year post-closure period for Phases II/III began on March 30, 2000.

The only waste of relevance or to be managed at the site during the post-closure period is the leachate generated in the landfill units.

2.0 Post-Closure Cost Estimates - 35 IAC 812.116

As of July 2019, the last approved annual update to the post-closure care cost estimate was approved by Illinois EPA with Permit Modification No. 34 dated August 30, 2018. A copy of the submittal has been included in this 5-Year Permit Renewal Application. During the Post-Closure period, annual adjustments to the Post-Closure Cost estimate will be submitted to the Illinois EPA which will include an adjustment for inflation and a reduction in the post-closure care period.

3.0 Leachate System - 35 IAC 812.307 and 812.308**3.1. *Leachate Generation Rate***

Leachate headwells have been installed in Phases II and III of the facility. The approximate volume of leachate transported from the Phase II and III units in 2017 and 2018 was 76,700 gallons and 80,000 gallons, respectively.

3.2. *Leachate Extraction and Collection System*

BFI Waste Systems of North America, LLC (BFI Waste Systems) installed 14 leachate/gas extraction wells in Phases II/III of the facility, seven wells in Phase II (EW-20, 22, 24, 26, 30, 32, and 34) and seven wells in Phase III (EW-2, 4, 7, 10, 12, 15, and 17). The system has been designed so that gas condensate and leachate from the Phase II and III units are routed to one of two non-hazardous waste leachate storage tanks. Leachate is extracted from each well by a submersible pump and fed to the leachate gas condensate sumps.

As part of the application for significant modification to the dual gas/leachate extraction system, BFI requested and obtained approval from the IEPA for installation and operation of extraction

DAVIS JUNCTION LANDFILL PHASE II/III

Original: March 1994

Last Reviewed & Revised: July 2023

Post-Closure Plan

Page 2 of 9

Deleted: Five-Year Renewal Application

Deleted: 2019

pumps within select dual wells on a periodic and voluntary basis. The objective was to maximize the extraction levels within the network. The wells approved were EW-3, EW-5, EW-6, EW-8, EW-13, EW-23, EW-27, EW-29, and/or EW-31. BFI is able to place and move pumps within the extraction well network when needed to maximize the extraction levels.

3.3 Leachate Head Level Monitoring Wells

Eight wells are permitted for specific use as monitoring points for leachate headwell measurements (EW-20 (L306), EW-23 (L309), EW-27 (L-307), and EW-31 (L308) in Phase II, and EW-01 (L302), EW-03 (L303), EW-12 (L304), and EW-15 (L305) in Phase III). In accordance with the effective Permit, measurements of leachate head are to be conducted on a quarterly basis at monitoring points L302 through L309. In addition, Permit Condition IV.7 requires an annual comparison of the average weekly leachate elevations taken during the month of April with the compliance elevations listed in Attachment A of Modification No. 4 to Permit No. 1994-160-LF. If the average of the four weekly leachate head measurements obtained during April exceeds the compliance elevation, then the following contingency measures will be undertaken:

- The pumping rates in surrounding extraction wells will be examined and adjusted to the extent possible to maximize drawdown;
- If after one additional year, exceedances continue to be observed, then an assessment of the pumping rates of all of the extraction wells in Phase II and III will be conducted and adjusted, if necessary, to maximize drawdown. Monthly evaluation of the counter readings on the extraction well pumps will also be conducted during this one year period to allow for any necessary adjustment of the pumping rates.
- If exceedances continue to be observed for two (2) consecutive Aprils, then additional dual extraction well(s) may be added in the subject area. The proposal to add additional extraction well(s) will be accomplished through a Significant Modification to be submitted within 45 days of the second consecutive exceedance mentioned above;
- If compliance level exceedances continue to be observed for one additional year after additional extraction well(s) are added, then an application for significant permit modification will be submitted that proposes an alternative means of obtaining the compliance level (e.g., drains, horizontal wells, etc.).

DAVIS JUNCTION LANDFILL PHASE II/III

Original: March 1994

Last Reviewed & Revised: July 2023

Post-Closure Plan

Page 3 of 9

Deleted: Five-Year Renewal Application

Deleted: 2019

No exceedances of the average weekly April leachate levels over the past several years have been identified. Documentation is provided in the Five Year Permit Renewal Application.

3.4. *Leachate Sampling*

In accordance with the effective Permit, a representative sample of leachate is to be collected from the nonhazardous waste leachate storage tank (L301). The sample is to be analyzed for List L1 and L2 parameters on a quarterly and semi-annual basis, respectively. List L1 includes the following parameters: Elevation of Leachate Surface, Bottom of Well Elevation and Leachate Level from Measuring Point. These parameters are to be measured at points L302 through L309 within the landfill and not at the leachate storage tank. On an annual basis, the List L3 parameters must be analyzed from a sample of leachate collected from the leachate storage tank.

3.5. *Leachate Disposal*

In 2017 and 2018, approximately 76,700 gallons and 80,000 gallons of non-hazardous waste leachate were extracted from the Phase II/III units, respectively. The leachate is transported to an off-site disposal facility. Copies of the manifests for shipment of the non-hazardous waste are maintained at the facility. The manifests detail the date of shipment, amount hauled, hauling facility and final treatment and/or disposal facility.

Currently, the leachate is transported off-site to the following facility:

Rock River Water Reclamation District
3501 Kishwaukee Street
Rockford, Illinois 61126

Currently, the leachate is transported off-site in a tanker truck by the following transporter:

Elite Environmental Corp.
360C South Curtis Rd.
West Allis, Wisconsin 53214
Transporter's ID No. UPW508337MN
USEPA Id No. WIR000140988
Illinois Special Waste Hauling Permit No. 5363

4.0 Leachate Storage Tank Loading/Unloading Operation

The tank load-out system at the facility consists of a concrete load-out pad adjacent to the existing storage tank containment area. The load-out pad provides spill control during the

DAVIS JUNCTION LANDFILL PHASE II/III**Post-Closure Plan**

Original: March 1994

Last Reviewed & Revised: July 2023

Page 4 of 9

Deleted: Five-Year Renewal Application

Deleted: 2019

loading/unloading of leachate from the hazardous and non-hazardous storage tanks. The 143 foot wide by 55 foot long concrete pad includes:

- a) Footings and 4 foot deep concrete retaining walls.
- b) A floor which slopes to the center of the pad and to a trap drain located on the north side of the load-out pad.
- c) One trap drain for the routing of spilled material and/or stormwater to a dual-contained fiberglass sump that pumps into the hazardous waste containment tank.
- d) The dual contained sump has an automatic float-controlled pump which will convey liquid to the hazardous waste tank. The pump has a manual shutoff system that is used when loading activities occur. This shutoff is used in the event of any emergency measures or repair activities.
- e) The sump and piping of the pad is dual contained.

The combined capacity of the pad is approximately 5,500 gallons, which is the volume of an over-the-road tanker truck.

Because any wastewater or storm water is routed directly to the hazardous waste storage tank through a dedicated trap drain, operation and maintenance practices are covered under the Phase I RCRA Hazardous Waste post closure permit and do not impact Phase II/III leachate management or transportation.

5.0 Landfill Gas Collection System - 35 IAC 812.309 through 812.310

Davis Junction Landfill has a gas collection system consisting of an integrated network of perimeter and central system extraction wells. Nine gas monitoring probes (GMP 1-9) have been installed around the perimeter of the site for purposes of detecting potential migrating gas. The landfill gas is collected from the extraction wells and transported through a series of headers to a centrally located blower building and then to a utility gas flare. The landfill gas system is subject to the operation, monitoring and reporting requirements of a permit issued by the Bureau of Air.

In 2009, during operation and maintenance activities on the gas system, a problem was identified with the existing Condensate Sump No. 2 (CS-2). In June 2009, the area around condensate sump #2 was excavated to evaluate the sump, and a blockage was identified. The existing sump was cut 2 foot below the liner and capped. A new 12-inch SDR 17 HDPE in-line condensate sump was installed. The condensate sump (CS-2) will allow the continued extraction of

DAVIS JUNCTION LANDFILL PHASE II/III

Original: March 1994

Last Reviewed & Revised: July 2023

Post-Closure Plan

Page 5 of 9

Deleted: Five-Year Renewal Application

Deleted: 2019

condensate from within the header pipe and route the condensate through the existing leachate force-main header. Except for the connection to the gas header flange, no other changes were made to the gas header. The existing 3-inch hammerhead submersible pump was re-installed vertically 1 foot above the bottom of the sump. The 3/16 stainless steel cable was attached to the sump prior to installation of the pump, and the discharge tubing was also reinstalled on the pump along with a 1/4 inch bubbler tube. The condensate from new CS-2 will continue to be routed to the existing storage tank and transported offsite to a regulated facility by a licensed waste hauler.

5.1. Landfill Gas Monitoring System

Monitoring of the landfill gas collection system and ambient methane concentrations at the perimeter of the facility is conducted by a third party contractor hired by the permittee. A summary of the monitoring results is included with the Annual Facility Report. Condition VI.2 of the existing permit requires the gas monitoring probes outside the waste boundary to be monitored on an annual basis, and the landfill gas wellheads are monitored on a monthly basis for the following parameters:

- Pressure;
- Temperature;
- Methane;
- Oxygen; and
- Carbon Dioxide.

The landfill gas collection and control system will be operated until the waste has stabilized enough to no longer produce methane in quantities that exceed the maximum allowable concentrations.

In accordance with 35 IAC 811.310(c)(3), three ambient air monitoring locations have been chosen and samples are taken on an annual basis. Samples are taken no higher than 0.025 meters (1 inch) above the ground and 30.49 meters (100 feet) downwind from the units. Due to the location of another operating landfill near Davis Junction, an additional (fourth) sample is taken upgradient of the landfill for purposes of obtaining background information. Survey stakes were placed on all four sides of the landfill to identify the monitoring locations. The protocol when conducting ambient air monitoring is to only sample when the wind speed is 5 miles per hour or

DAVIS JUNCTION LANDFILL PHASE II/III**Post-Closure Plan**

Original: March 1994

Last Reviewed & Revised: July 2023

Page 6 of 9

Deleted: Five-Year Renewal Application

Deleted: 2019

less, identify and document sample locations and measurements, and place a copy of the recorded information in the facility files and forward a copy to BFI Waste Systems.

Additionally, the blower building and building that formerly housed the gas to energy facility located on-site are monitored for methane.

5.2. Gas Condensate

The landfill gas condensate from Phases II and III is routed to the non-hazardous storage tank located in a containment area. The contents of the non-hazardous storage tank are analyzed on a semi-annual and annual basis for listed parameters and transported to a permitted waste treatment facility. The historical analytical data supports the wastewater being handled as non-hazardous.

5.3. Gas Network Inspections

Condition VI.5 of the permit requires that gas wells, probes, condensate drains and condensate knockouts be inspected on a quarterly basis for structural integrity and proper operation. BFI does not propose any changes to this monitoring frequency.

6.0 Inspections - 35 IAC 811.111

In accordance with 35 IAC 811.111(c), after March 30, 2005, annual inspections are conducted of the vegetative cover until settling has stopped and there are no eroded or scoured areas. Condition III.2 requires site surface drainage to be managed in accordance with the approved drainage control plan. Eroded and scoured drainage channels shall be repaired and lining material shall be replaced if necessary.

Additionally, pursuant to 35 IAC 811.111(c) 2-5, rills, gullies, and crevices six inches or deeper identified during an inspection shall be filled. Eroded and scoured drainage channels shall be repaired and lining material shall be replaced, if necessary. Holes and depressions created by settling shall be filled and recontoured so as to prevent standing water. All re-worked surfaces and areas with failed or eroded vegetation in excess of 100 square feet cumulatively, will be re-vegetated.

In order to properly manage standing water, BFI has previously attained Illinois EPA approval to install a tile drainage system above the liner and below the vegetative cover. Cap maintenance activities are conducted at the facility on a routine basis under the post-closure plan. However, due to the natural settlement of municipal solid waste within the landfill, various points/pockets

DAVIS JUNCTION LANDFILL PHASE II/III**Post-Closure Plan**

Original: March 1994

Last Reviewed & Revised: July 2023

Page 7 of 9

Deleted: Five-Year Renewal Application

Deleted: 2019

on the final cover of the landfill settle at a differential rate. This settlement causes some locations to have a lower elevation that does not allow rain fall events to immediately run off to the storm water detention system. This ponding normally stays until evaporation occurs. Davis Junction has previously attained approval of an approach to allow expedited removal of the surface rain water through a field type drain tile system.

The drainage tile will be located in the lower elevation of identified depressions and channeled to an area down slope for discharge. The perforated tile will remove the impounded water at a faster rate than evaporation and maintain a dryer cap in the depressed area. As the drainage tile system drains the water, some visual ponding may be observed. The normal corrective action of adding soil and reseeded only creates additional settlement and damage to the vegetative cover due to weight and ponding is quickly reestablished. The approach outlined should remove the impounded water through natural drainage over time and cause minimal cap disturbance and vegetative destruction.

If this system is deemed necessary by BFI, then horizontal corrugated, flexible, perforated plastic drain pipe will be installed in the applicable area(s). The surface inlet will allow water that would collect in local depressions to freely drain by gravity. The below-ground pipe will be perforated, which will also promote subsurface drainage from within the vegetative soil layer. Once gravity drainage of surface and subsurface water has ceased, any water remaining in the tile will drain through the pipe perforations into the surrounding protective soil.

Tile drainage is a common practice for removing excess water from agricultural cropland, which would otherwise adversely affect growing crops. As stated in the Illinois Drainage Guide (University of Illinois, College of Agriculture, Cooperative Extension Service Circular 1226), the general rule for draining depressions, based on agronomic considerations, is that excess water should be removed within 24 to 48 hours. The Illinois Drainage Guide can be found at www.wq.illinois.edu/DG/DrainageGuide.html. The 48-hour guideline will be followed for evaluating the need for and performance of tiles installed to drain depressions in the cap at Davis Junction Landfill.

If ponding water is observed in a depression on the cap more than 48 hours after a rain event that caused the storm water runoff and ponding, a tile drain may be installed to drain the depression. Similarly, if evidence of ponding water is observed, a tile drain will be installed to drain the depression. Evidence of ponding water may include, but not necessarily be limited to dead or stressed vegetation, a high proportion of hydrophilic vegetation, discoloration due to prolonged

DAVIS JUNCTION LANDFILL PHASE II/III**Post-Closure Plan**

Original: March 1994

Last Reviewed & Revised: July 2023

Page 8 of 9

Deleted: Five-Year Renewal Application

Deleted: 2019

standing water, or deposition of floatable debris such as leaves or chaff in bands around the perimeter of a depression. If an existing tile drain has already been installed to drain a depression that continues to have ponding water, BFI may install an additional tile drain or fill the depression with soil.

The presence of ponded water above the ground surface or other evidence of ponding water in any depression will be assessed by visual observation. Visual observations will be performed quarterly during the post-closure care facility inspections. In addition, personnel are typically on-site on a monthly basis as needed for operation and maintenance of the gas and leachate collection systems. Observations during these other activities can also be used as a basis for evaluating if ponding is occurring.

If ponded water is visually observed above the ground surface in any surface depression on the landfill cap more than 48 hours after a rain event that caused the storm water runoff and ponding, or other evidence of ponding water is visually observed in any surface depression on the landfill cap, a tile drain may be installed to drain the depression. The tile drain will be installed within 90 days of the observed ponding or observation of evidence of ponding, or as soon as weather conditions allow, if the observation is observed during the winter months.

If a depression has a surface low point that is more than 30 inches below the "lip" of the depression at the perimeter, gravity drainage will not be possible without the potential to damage the geosynthetic cap during drain tile installation. Depressions that cannot be gravity drained with drain tile placed at a maximum depth of 30 inches will be filled with soil.

The protective soil thickness above the geosynthetic components of the cap is 36 inches. By maintaining a maximum trench depth of 30 inches, the geosynthetics will be protected from potential damage during drain tile installation by the remaining 6 inches of protective soil. If the final cover geosynthetics are damaged during installation of the drainage tiles, it will be repaired promptly.

The drainage tile system, along with ongoing inspection and maintenance activities on the final cover will allow for the preservation of the liner and vegetative cover throughout the post-closure period. A drawing identifying the placement and location of the drainage tile system will be maintained in the facility record.

DAVIS JUNCTION LANDFILL PHASE II/III

Original: March 1994

Last Reviewed & Revised: July 2023

Post-Closure Plan

Page 9 of 9

Deleted: Five-Year Renewal Application

Deleted: 2019

If the above tile drainage system is installed during the post-closure care period, by the end of the post-closure care period, locations where the tile were installed (if any) will be either filled in or the tile will be covered with soil.

7.0 Groundwater Monitoring 35 IAC 811.319**7.1 *Monitoring Schedule and Frequency***

Under the effective Permit, groundwater sampling and analysis is conducted on a semi-annual basis for the List G1 and G2 parameters at each groundwater monitoring well listed in the permit during the second and fourth quarters.

Groundwater monitoring shall be conducted for the minimum thirty year post-closure period beginning March 30, 2000.

7.3 *Sampling and Analysis*

Dedicated Grundfos Redi-Flo 2 pumps are installed at groundwater monitoring wells at the facility. Groundwater sampling and analysis is conducted in accordance with approved Sampling and Analysis Plan (SAP). No changes to the approved SAP are being proposed at this time.

7.4 *Groundwater Network Inspection*

Groundwater monitoring wells will be inspected for evidence of physical damage to the protective casing or surface grouting during groundwater sampling events. Inspections of all vegetated surfaces around the groundwater wells in Phases II and III will be conducted on an annual basis.

7.5 *Groundwater Monitoring System Maintenance*

Groundwater monitoring wells will be replaced and abandoned in accordance with the permit requirements. In 2008, groundwater monitoring well G69M was replaced with R69M. If groundwater pumps are removed for servicing or if well yield exhibits a pronounced decrease, the pumps will be pulled, cleaned and checked.

8.0 Property Use - 35 IAC 811.111

The property is a closed landfill that does not accept any waste for disposal. BFI Waste Systems does not have any planned use for the property during the post-closure period that will interfere with the implementation of this post-closure plan.

Significant Modification Application
Annual Inflation Factor Adjustment and Reduction in Post-Closure Care Period
Post Closure Cost Estimate
BFI Davis Junction Landfill
Phase II/III Unit
Revised July 25, 2023

DEC 4 2023

REVIEWER: MED

<i>Annual Cost Items</i>	<i>Units</i>	<i>Quantity</i>	<i>Approved Unit Cost</i>	<i>Revised Unit Cost</i>	<i>Approved Costs</i>	<i>Revised Costs</i>	<i>Notes</i>
			<i>August-22</i>	<i>Jul-23</i>	<i>August-22</i>	<i>Jul-23</i>	
Applicable Inflation Factor:					1.0143	1.070	<i>On Sept 21, 2022, a cost estimate was approved by IEPA (Permit Mod No. 40) (4.13% inflation factor over the prior year). This July 2023 modified estimate includes revised costs, revised inflation factor utilized by the IEPA financial assurance division (March 2023 communications with IEPA - 1.07 or 7.0%), and a reduction in the post-closure period (to account for one additional year of completed post-closure care activities).</i>
Site Inspection	Quarterly	4	\$607	\$649	\$2,428	\$2,598	Approved cost updated for revised inflation factor.
Repair Cover (erosion and settlement) and Vegetation (4.5 CY/acre/yr over 45 acres)	CY	203	\$18.24	\$19.52	\$3,703	\$3,962	Approved cost updated for revised inflation factor.
Mowing (once per year)	AC	45	\$62.42	\$66.79	\$2,809	\$3,006	Approved cost updated for revised inflation factor.
					\$8,940	\$9,566	
Groundwater Monitoring:							
Sample Collection - Semi-Annual (21 wells x 2 events/yr.)	Wells	42	\$114.00	\$121.98	\$4,788	\$5,123	Approved costs updated for revised inflation factor. Costs include transportation to the facility for sampling, sampling labor, sampling equipment and accessories for groundwater monitoring.
Analytical and Reporting - Semi-Annual List G1 and G2 (21 wells x events/yr.)	Wells	42	\$309.77	\$331.45	\$13,010	\$13,921	Approved costs updated for revised inflation factor.
Measurement of GW Elevations (21 wells x 2 events/yr)	Wells	42	\$12.77	\$13.66	\$536	\$574	Approved costs updated for revised inflation factor. Costs for other two quarterly events during the year included in "sample collection" item above (total of 4 rounds of groundwater elevation measurements required per year).
					\$18,334	\$19,618	
Leachate Monitoring:							
Sample Collection (1 tank x 2 events/yr.)	Tank	2	\$114.00	\$121.98	\$228	\$244	Approved costs updated with revised inflation factor.
Measurement of leachate levels (L1) (8 points x 4 events/yr)	Point	32	\$12.77	\$13.66	\$409	\$437	Approved costs updated with revised inflation factor.
Analytical and Reporting - List L2 (1 tank x 2 events/yr.)	Tank	2	\$1,154	\$1,235	\$2,308	\$2,470	Approved costs updated with revised inflation factor.
Analytical and Reporting - List L3 (RCRA list) (1 tank x 1 event/yr.)	Tank	1	\$802	\$858	\$802	\$858	Approved costs updated with revised inflation factor.
					\$3,747	\$4,009	
Gas Monitoring:							
Annual - 9 perimeter probes and 9 ambient locations	Annual	1	\$363	\$388	\$363	\$388	Approved costs updated with revised inflation factor.
Annual surface emissions monitoring	Annual	1	\$729	\$780	\$729	\$780	Approved costs updated with revised inflation factor.
					\$1,092	\$1,168	
Monitoring of sedimentary basin and perimeter ditches	Year	2	\$760	\$813	\$1,520	\$1,626	Approved costs updated with revised inflation factor.
Leachate/Gas Collection System Inspection	Quarterly	4	\$974	\$1,042	\$3,894	\$4,169	Approved costs updated with revised inflation factor.
					\$5,414	\$5,795	
Leachate/Gas Collection System Operation :							
Power Usage (45 HP x 0.746KW/HP x 24 hr/day x 365 days/yr)	KW/hr	294,073	\$0.121	\$0.129	\$35,521	\$38,074	Approved unit cost revised for inflation.
Annual Maintenance Costs	Year	1	\$15,202	\$16,266	\$15,202	\$16,266	Approved cost estimate updated with revised inflation factor.
Operational Labor (4 hrs./wk x 52 wks/yr)	Year	1	\$9,484	\$10,148	\$9,484	\$10,148	Approved cost estimate updated with revised inflation factor.
					\$60,207	\$64,488	

Significant Modification Application
Annual Inflation Factor Adjustment and Reduction in Post-Closure Care Period
Post Closure Cost Estimate
BFI Davis Junction Landfill
Phase II/III Unit
Revised July 25, 2023

<i>Annual Cost Items</i>	<i>Units</i>	<i>Quantity</i>	<i>Approved Unit Cost</i>	<i>Revised Unit Cost</i>	<i>Approved Costs</i>	<i>Revised Costs</i>	<i>Notes</i>
Maintenance of Monitoring Systems - Quarterly	Quarter	4	\$607	\$649	\$2,428	\$2,598	Approved cost estimate updated with revised inflation factor.
Maintenance of Other Site Features - Semi-Annual	Event	2	\$228	\$244	\$456	\$488	Approved cost estimate updated with revised inflation factor.
Annual Report	Report	1	\$7,598	\$8,130	\$7,598	\$8,130	Approved cost estimate updated with revised inflation factor.
Leachate Transportation and Treatment	Gallons	97,441	\$0.0603	\$0.0645	\$5,006	\$6,287	Unit cost adjusted with revised inflation factor. Quantity is average quantity hauled over last three years: 2020 (78,500 gal), 2021 (93,600 gal), and 2022 (120,224 gal). Previously approved unit cost of \$0.0603/gallon also increased based on revised inflation factor of 1.07.
					\$15,488	\$17,503	
Total Annual Cost with Inflation Factor:					\$113,223	\$122,147	
Remaining Post Closure Care Period				X	8	7	Post-Closure period began March 30, 2000. As of March 30, 2023, 7 yrs. remain. Reduced remaining post-closure period from 8 to 7 years.
Total Current Annual Costs (annual cost x years of post closure remaining):					\$905,786	\$855,029	
Lump Sum (One-Time) Cost Items To Be Incurred Prior To End of Post-Closure Care Period							
Abandonment of Groundwater Monitoring Wells	Well	21	\$1,413	\$1,512	\$29,674	\$31,750	Approved unit cost increased to include revised inflation factor.
Decommissioning Gas-to-Energy Plant (See Note 3)			\$113,075	\$120,990	\$91,591	\$98,002	Approved cost increased to include revised inflation factor (Revised Unit Cost column). However, Item a in Note 3 has been completed and therefore costs for this task have been removed (as shown in "Revised Costs" column). Item a represented \$15,000 of the \$80,000 total (0.19) in the original lump sum estimate developed in 2004. Therefore, 0.19 of the total amount (updated for inflation) has been removed.
Final Repair of Cover Following Post-Closure Period	CY	9680	\$62,312	\$66,674	\$62,312	\$66,674	Approved unit cost increased to include revised inflation factor of 1.07.
Abandonment of Gas Probes	Probe	9	\$560	\$599	\$5,042	\$5,393	Approved unit cost increased to include revised inflation factor of 1.07.
Abandonment of Leachate Monitoring Wells and Dual Leachate/Gas Extraction Wells	Lump Sum		\$59,500	\$63,665	\$59,500	\$63,665	Cost based on quote attained from 3rd party contractor on 8/22/2022 for abandonment of 8 leachate monitoring wells and 26 remaining dual leachate/gas extraction wells. Approved 2022 cost increased to include revised inflation factor of 1.07.
Total Lump Sum (One-Time) Costs:					\$248,119	\$265,484	
TOTAL POST CLOSURE COST ESTIMATE:					\$1,153,905	\$1,120,513	

Notes:

1. Thirty year Post-Closure Care Period began March 30, 2000.
2. An Inflation Factor has been included for each Revised Unit Cost based on the most recently approved costs in Permit Mod No. 40.
3. a. Disconnect and remove 2 generators/engine assemblies (*task completed as of May 2012*)
 - b. Decommission the electrical substation and remove the electrical switch gear
 - c. Remove and clean miscellaneous oil tanks
 - d. Disconnect and remove refrigeration skid and flare
 - e. Remove blower building
 - f. Abandon and cap header pipe at waste limits, flare and electrical plant

IEPA - DIVISION OF RECORDS MANAGEMENT
 RELEASABLE

DEC 14 2023

REVIEWED

217/524-3301

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

BFI Waste Systems of North America
Attn: Jim Hitzeroth
26 West 580 Schick Road
Hanover Park, Illinois 60103

Re: 1418210001 -- Ogle County
BFI, Davis Junction
Log No. 2023-150
Permit Landfill 811 File
Permit Denial

Dear Mr. Hitzeroth:

This will acknowledge receipt of your application for permit to modify the post-closure care of a solid waste management site, dated April 24, 2023, June 8, 2023, and July 25, 2023; and received by the Illinois Environmental Protection Agency (Illinois EPA) on April 27, 2023, June 14, 2023, and July 31, 2023, respectively.

Your permit application to submit the annual update to the post-closure care cost estimate is denied.

You have failed to provide proof that granting this permit would not result in violations of the Illinois Environmental Protection Act (Act). Section 39(a) of the Act [415 ILCS 5/39(a)] requires the Illinois EPA to provide the applicant with specific reasons for the denial of permit. The following reason(s) are given:

- A. The LPC-PA1 form provided, and the LPC-PA16 form sent to the Public Notice Recipients, shown in Section VI.1 of the LPC-PA1 form, does not state this application is modifying the post-closure care plan. A new LPC-PA1 form must be provided to the Illinois EPA and new LPC-PA16 forms must be sent to the Public Notice Recipients, with a copy provided to the Illinois EPA, notifying them of this increase in scope of this application.

The following deficiencies are noted with the revised post-closure care plan (PCCP):

Page 2

- B. Assurance has not been provided that the operator shall treat, remove from the site, or dispose of all wastes and waste residues within 30-days after receipt of the final volume of waste, as required by 35 Illinois Administrative Code (herein after 35 IAC) 811.111(a). The Illinois EPA requires this assurance in all PCCPs.
- C. Assurance has not been provided that the operator shall remove all equipment or structures not necessary for the post-closure land use, unless otherwise authorized by permit, including a description of all equipment and structures that will be removed, as required by 35 IAC 811.111(b). The Illinois EPA requires this assurance in all PCCPs.
- D. Page 6 of the PCCP states that annual inspections of the landfill are currently being performed, while page 9 of the PCCP states that quarterly inspections of the site continue. This discrepancy must be resolved.
- E. The PCCP provided does not contain deed notation assurances in accordance with 35 IAC 811.110(g).
- F. Assurances are not provided in the PCCP that:
 - a. The operator shall revise the cost estimate whenever a change in the PCCP increases the cost estimate – 35 IAC 811.704(b).
 - b. The cost estimate has been based on the assumption that the Illinois EPA will contract with a third-party to implement the PCCP – 35 IAC 811.704(d).

The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within 35-days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed 90 days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276
217/782-5544

For information regarding the filing of an appeal, please contact:

Page 3

Illinois Pollution Control Board, Clerk
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, IL 60601
312/814-3620

Should you wish to reapply or have any questions regarding this application, please contact Bob Colwell at Robert.Colwell@Illinois.Gov.

Sincerely,

Jacqueline M. Cooperider, P.E. Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

JMC\RCC\1418210001-811LF-2023150-Denial-Rev1.docx

cc:  Mike Maxwell, LPG, CHMM – Weaver Consultants Group



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

Sustainability in Action

August 21, 2023

Ms. Jacqueline M. Cooperider, P.E.
Manager of Permits
Illinois Environmental Protection Agency
Permit Section, Bureau of Land -- #33
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Davis Junction Landfill - Phases II/III
Permit No. 1994-160-LF
IEPA Site No.: 1418210001
Permit Log No. 2023-150
WCG Project No.: 0120-049-01-31

Dear Ms. Cooperider,

Permittee BFI Waste Systems of North America, is herein granting the Illinois Environmental Protection Agency (EPA) an additional 45 days to review the above referenced permit application. This permit application proposes the annual update to the post-closure cost estimate and modifications to the post-closure care plan. The existing deadline for action on this application is August 24, 2023. With this letter, the new deadline will be October 8, 2023.

If you have any questions, feel free to contact me at (224) 970-1129 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

A handwritten signature in black ink, appearing to read "James Hitzeroth", written over a horizontal line.

James Hitzeroth

RECEIVED
AUG. 24 2023
IEPA-BOL
PERMIT SECTION



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

Sustainability in Action

September 28, 2023

Ms. Jacqueline M. Cooperider, P.E.
Manager of Permits
Illinois Environmental Protection Agency
Permit Section, Bureau of Land -- #33
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Davis Junction Landfill – Phases II/III
Ap. Log No. 2023-150
Permit No. 1994-160-LF
IEPA Site No.: 1418210001
Sig Mod Permit Application

RECEIVED
OCT 02 2023
IEPA-BOL
PERMIT SECTION

Dear Ms. Cooperider,

Enclosed, please find one original and three copies of additional information pertaining to the above referenced permit application submitted by permittee, BFI Waste Systems of North America, LLC.

This information is being provided in response to a draft denial letter received from Illinois EPA on August 17, 2023.

If you have any questions, feel free to contact me at (224) 970-1129 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

A handwritten signature in black ink, appearing to read "James Hitzeroth", written over a horizontal line.

James Hitzeroth

Enclosures: Updated LPC-PA1 and LPC-PA16 Forms
Revised Post-Closure Care Plan



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

General Application for Permit (LPC - PA1)

This form must be used for any application for permit from the Bureau of Land, except for landscape waste composting or hazardous waste management facilities regulated in accordance with RCRA, Subtitle C. One original, and two copies, or three if applicable, of all permit application forms must be submitted. Attach the original and appropriate number of copies of any necessary plans, specifications, reports, etc. to fully support and describe the activities and modifications being proposed. Attach sufficient information to demonstrate the compliance with all regulatory requirements. Incomplete applications will be rejected. Please refer to the instructions for further guidance. **Note: Applicants must provide a physical address; the post office will not deliver a certified letter (final action letter) to a P.O. Box only. Please provide an extended ZIP+4 code for the site identification and owner/operator information.**

You may complete this form online, save a copy locally, print, sign and submit it to the Bureau of Land at the address below. Note: Hand-delivered permit applications must be delivered between 8:30 am and 5:00 pm, Monday through Friday (excluding State holidays) to:

Bureau of Land, Permit Section, Mail Code #33
1021 North Grand Avenue East, P.O. Box 19276
Springfield, IL 62794-9276

[Instructions](#)

I. Site Identification

Site Name: BFI Davis Junction (Phase II-III) IEPA BOL No.: 1418210001
Street Address: 8902 N. Illinois Route 251 P.O. Box: _____
City: Davis Junction State: IL Zip + 4: 61020 *Notification letters will not be sent without a 9-digit zip code. County: Ogle
Existing DE/OP Permit Numbers (if applicable): 1994-160-LF

II. Applicant Identification

Owner

Name: BFI Waste Systems of North America
Street Address: 26 West 580 Schick Rd.
PO Box: _____
City: Hanover Park State: IL
Zip + 4: 60103 Phone: 224-970-1129
Contact: Mr. Jim Hitzeroth
Email Address: JHitzeroth@republicservices.com
FEIN ID No. 41-1696636

Operator (if Different)

Name: (Same)
Street Address: _____
PO Box: _____
City: _____ State: _____
Zip + 4: _____ Phone: _____
Contact: _____
Email Address: _____
FEIN ID No. _____

Agency correspondence mailed to:

Owner Operator Other - Explain: _____

TYPE OF SUBMISSION/REVIEW PERIOD:

- New Landfill/180 days (35 IAC Part 813)
- Landfill Expansion/180 days (35 IAC Part 813)
- Sig. Mod. to Operate/90 days (35 IAC Part 813)
- Other Sig. Mod./90 days (35 IAC Part 813)
- Renewal of Landfill/90 days (35 IAC Part 813)
- Development/90 days (35 IAC Part 807)
- Operating/45 days (35 IAC Part 807)
- Operating/90 days (35 IAC Part 848)
- Supplemental/90 days (35 IAC Part 807)
- Permit Transfer/90 days (35 IAC Part 807)
- Renewal of Experimental Permit (35 IAC Part 807)

TYPE OF FACILITY:

- Landfill
- Land Treatment
- Transfer Station
- Treatment Facility
- Storage
- Incinerator
- Composting
- Recycling/Reclamation
- Used Tire Storage/Processing Facility
- Other (Specify) _____

TYPE OF WASTE:

- General Municipal Refuse
- Hazardous
- Special (Non-Hazardous)
- Chemical Only (exec. putrescible)
- Inert Only (exec. chem. & putrescible)
- Used Oil
- Potentially Infectious Medical Waste
- Landscape/Yard Waste
- Used Tires
- Other (Specify) _____

IEPA - DIVISION OF RECORDS MANAGEMENT
1111 N. AIR ST.

RECEIVED
OCT 02 2023
IEPA-BOL
OPERATION

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed \$50,000 for the violation and an additional civil penalty of not to exceed \$10,000 for each day during which the violation continues (415 ILCS 5/42).

III. Description of this Permit Request: (Note: The box below will expand as needed)

Annual Update to post-closure care cost estimate due by May 1, 2023, as required by Permit Condition VII.7 and update to post-closure care plan.

IV. Completeness Requirements

1. Have all required public notice letters been mailed in accordance with the LPC-PA16 instructions? Yes No N/A

(If so, provide a list of those recipients of the required public notice letters for Illinois EPA retention. Such retention shall not imply any Illinois EPA review and/or confirmation of the list.)

Public Notice Recipients

Name: <u>Hon. Senator Tim Bivins</u>	Title: <u>Senate District 45</u>
Street Address: <u>29 N. Galena, Suite 120</u>	P.O. Box: _____
City: <u>Dixon</u> State: <u>IL</u>	Zip Code: <u>61021</u>
Name: <u>Rep. Tom Demmer</u>	Title: <u>Representative, District 90</u>
Street Address: <u>105 E. First St., Suite 110</u>	P.O. Box: _____
City: <u>Dixon</u> State: <u>IL</u>	Zip Code: <u>61021</u>
Name: <u>Hon. Mike Rock</u>	Title: <u>Ogle Co. States Attorney</u>
Street Address: <u>106 S. 5th St., Suite 110</u>	P.O. Box: _____
City: <u>Oregon</u> State: <u>IL</u>	Zip Code: <u>61061-0357</u>
Name: <u>Kim Gouker</u>	Title: <u>County Chairman</u>
Street Address: <u>105 S. 5th St., Suite 110</u>	P.O. Box: _____
City: <u>Oregon</u> State: <u>IL</u>	Zip Code: <u>61061-0351</u>
Name: <u>Ms. Sharon Baumgartner</u>	Title: <u>Clerk</u>
Street Address: <u>6711 11th St.</u>	P.O. Box: _____
City: <u>Rockford</u> State: <u>IL</u>	Zip Code: <u>61109</u>
Name: <u>Linda James</u>	Title: <u>Village Clerk</u>
Street Address: <u>106 Elm St.</u>	P.O. Box: _____
City: <u>Davis Junction</u> State: <u>IL</u>	Zip Code: <u>61020</u>
Name: <u>Ms. Diane Reed</u>	Title: <u>Clerk</u>
Street Address: <u>425 East State St.</u>	P.O. Box: _____
City: <u>Rockford</u> State: <u>IL</u>	Zip Code: <u>61104</u>

RECEIVED
OCT 02 2023
EPA-BOL
PERMIT SECTION

- | | Yes | No | N/A |
|--|----------------------------------|----------------------------------|----------------------------------|
| 2. a. Is the Siting Certification Form (LPC-PA8) completed and enclosed? | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |
| b. Is siting approval currently under litigation? | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |
| 3. a. Is a closure, and if necessary a post-closure plan covering these activities being submitted, or | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |
| b. has one already been approved? | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| If yes, provide the permit number: <u>1994-160-LFM</u> | | | |
| 4. a. For operating waste disposal sites, only: Has any employee, owner, operator, officer or director of the owner or operator had a prior conduct certification denied, canceled or revoked? | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| b. Have you included a demonstration of how you comply or intend to comply with 35 Ill. Adm. Code 745? | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |
| a. For waste disposal sites, only: Is the property for the facility held in a beneficial trust? | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |
| b. If yes, is a beneficial trust certification form (LPC-PA9) completed and enclosed? | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |

- 6. a. Does the application contain information or proposals regarding the hydrogeology; groundwater monitoring, modeling or classification; a groundwater impact assessment; or vadosezone monitoring for which you are requesting approval?
 - b. If yes, have you submitted a third copy of the application (4 total) and supporting documents?
 - 7. Has the required 39(i) certification been attached? A 39(i) certification must be submitted with information concerning the following persons or entities:
 - a. the owner of the business entity applying for the permit;
 - b. the operator of the business entity applying for the permit;
 - c. each employee or officer of the owner or operator who signed the permit application or has managerial authority at the site; and
 - d. any additional owner, operator, or officer or employee of the owner or operator from whom a certification is requested by the Illinois EPA, including any officer or employee who will be responsible for overseeing or implementing regulated activities governed by the permit.
- If no, then complete this certification as indicated.

RECEIVED
 OCT 02 2023
 IEPA-BOL
 PERMIT SECTION

V. Signatures:

Original signatures are required. Signature stamps or applications transmitted electronically or by FAX are not acceptable.

All applications shall be signed by the person designated below as a duly authorized representative of the owner an/or operator. A printed name for each signature should also be provided.

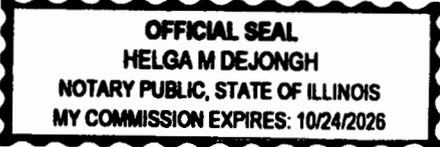
- Corporation - By a principal executive officer of the level of vice-president or above.
- Partnership or Sole Proprietorship - By a general partner or the proprietor, respectively.
- Government - By either a principal executive officer or a ranking elected official.

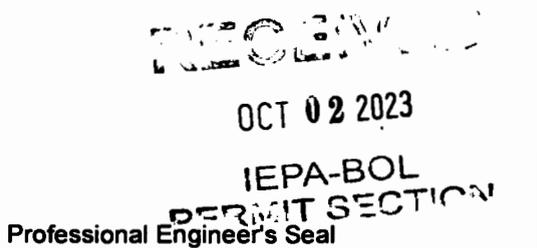
A person is a duly authorized representative of the owner and operator only if:

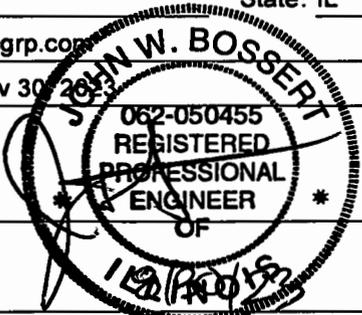
- They meet the criteria above or the authorization has been granted in writing by a person described above; and
- Is submitted with this application (a copy of a previously submitted authorization can be used).

I hereby affirm that all information contained in this application is true and accurate to the best of my knowledge and belief. I do herein swear that I am a duly authorized representative of the owner/operator and I am authorized to sign this permit application form.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

 _____ Owner Signature _____ Matthew Healy Printed Name	_____ 8-25-2023 Date _____ Vice President Title	
Notary: Subscribed and Sworn before me this <u>25th</u> day of <u>August</u> 20 <u>23</u> .		
My commission expires on: <u>24 October 2026</u>		
		
 _____ Operator Signature _____ Mathew Healy Printed Name	_____ 8-25-2023 Date _____ Vice President Title	
Notary: Subscribed and Sworn before me this <u>25th</u> day of <u>August</u> 20 <u>23</u> .		
My commission expires on: <u>24 October 2026</u>		
		

Engineer's Name: <u>John Bossert</u>	Engineer's Title: <u>Senior Project Manager</u>
Company: <u>Weaver Consultants Group</u>	Registration Number: <u>062-050455</u>
Street Address: <u>3516 Ogden Road</u>	PO Box: _____
City: <u>Springfield</u> State: <u>IL</u>	Zip Code: <u>62711</u> Phone: <u>217-787-0290</u>
Email Address: <u>jbossert@wcgrp.com</u>	
License Expiration Date: <u>Nov 30 2023</u>	
Signature: _____	
Date: _____	





Illinois Environmental Protection Agency

Bureau of Land • 1021 N. Grand Avenue E. • Box 19276 • Springfield • Illinois • 62794-9276

Notice of Application for Permit to Manage Waste (LPC-PA16)

Date: September 29, 2023

To Elected Officials and Concerned Citizens:

The purpose of this notice is to inform you that a permit application has been submitted to the Illinois EPA, Bureau of Land, for a solid waste project described below. You are not obligated to respond to this notice, however, if you have any comments, please submit them in writing to the Bureau of Land, Attn: Permit Section, at the above address, or contact the Permit Section at 217/524-3300 within 21 days.

NOTE: Please complete this form online, save a copy locally, print and submit it to the Permit Section #33, at the above.

The permit application, which is identified below, is for a project described at the bottom of this page.

Site Identification:

Site Name: BFI Davis Junction Landfill (Phase II-III) IEPA ID Number: 1418210001
 Street Address: 8902 North Illinois Rte. 251 P.O. Box: _____
 City: Davis Junction State: IL Zip Code: 61020 County: Ogle

TYPE OF PERMIT SUBMISSIONS:

TYPE OF FACILITY:

TYPE OF WASTE:

- New Landfill
- Landfill Expansion
- First Significant Modification
- Significant Modification to Operate
- Other Significant Modification
- Renewal of Landfill
- Development
- Operating
- Supplemental
- Transfer
- Name Change
- Generic

- Landfill
- Land Treatment
- Transfer Station
- Treatment Facility
- Storage
- Incinerator
- Composting
- Recycling/Reclamation
- Other (Specify)

- General Municipal Refuse
- Hazardous
- Special (Non-Hazardous)
- Chemical Only (exec. putrescible)
- Inert Only (exec. chem. & putrescible)
- Used Oil
- Solvents
- Landscape/Yard Waste
- Other (Specify)

RECEIVED

OCT 02 2023

IEPA-BOL
PERMIT SECTION

Description of Project:

Annual update to post-closure cost estimate due by May 1, 2023, as required by Permit Condition VII.7 and update to post-closure care plan.



September 28, 2023

Ms. Jacqueline M. Cooperider, P.E.
Manager of Permits
Illinois Environmental Protection Agency
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Significant Permit Modification Application
Log No. 2023-150
Davis Junction Landfill Phase II/III
1418210001 – Ogle Co.
Permit No. 1994-160-LF
WCG Project No.: 0120-049-01-31

RECEIVED
OCT 02 2023
IEPA-BOL
PERMIT SECTION

Dear Ms. Cooperider:

On behalf of the permittee for the above referenced facility, Weaver Consultants Group North Central, LLC (WCG) is herein providing the following response to a Draft Permit Denial letter regarding the above referenced Application for Significant Permit Modification received from the Illinois Environmental Protection Agency (EPA) in an email dated August 17, 2023.

The following provides a listing of the draft denial comments (in *italics*), followed by our response.

- A. *The LPC-PA1 form provided, and the LPC-PA16 form sent to the Public Notice Recipients, shown in Section VI.1 of the LPC-PA1 form, does not state this application is modifying the post-closure care plan. A new LPC-PA1 form must be provided to the Illinois EPA and new LPC-PA16 forms must be sent to the Public Notice Recipients, with a copy provided to the Illinois EPA, notifying them of this increase in scope of this application.*

A revised LPC-PA1 form is attached. Also, the attached revised LPC-PA16 form has been sent via certified mail to the Public Notice Recipients.

The following deficiencies are noted with the revised post-closure care plan (PCCP):

- B. *Assurance has not been provided that the operator shall treat, remove from the site, or dispose of all wastes and waste residues within 30-days after receipt of the final volume of waste, as required*

Ms. Jacqueline M. Cooperider, P.E.

September 28, 2023

by 35 Illinois Administrative Code (herein after 35 IAC) 811.111(a). The Illinois EPA requires this assurance in all PCCPs.

The above information has been added to Section 6 of the attached revised PCCP. This revision and the revisions discussed below have been implemented using the Track Changes feature of the word processing program as a professional courtesy to facilitate Illinois EPA review.

- C. Assurance has not been provided that the operator shall remove all equipment or structures not necessary for the post-closure land use, unless otherwise authorized by permit, including a description of all equipment and structures that will be removed, as required by 35 IAC 811.111(b). The Illinois EPA requires this assurance in all PCCPs.*

A statement indicating that the operator shall remove all equipment or structures not necessary for the post-closure land use, unless otherwise authorized by permit, has been added to Section 6 of the revised post-closure care plan. The facility has been implementing the post-closure care period since the Illinois EPA approved closure certification in 2000. Therefore, equipment and structures not necessary for the post-closure land use have already been removed. While, 35 IAC 811.111(b) does not require that a "description of all equipment and structures that will be removed" be included in the post-closure care plan, a description of the equipment previously removed was added to the post-closure care plan, in response to this comment, to facilitate Illinois EPA approval of this permit modification.

- D. Page 6 of the PCCP states that annual inspections of the landfill are currently being performed, while page 9 of the PCCP states that quarterly inspections of the site continue. This discrepancy must be resolved.*

35 IAC 811.111(c) allows for annual inspection of the closed landfill after 5 years of the post-closure care period have elapsed. While we found no reference to quarterly inspections on page 9 of the July 2023 post-closure care plan, a reference to quarterly inspections was found on pg. 8/9 of the July 2023 post-closure care plan. Page 8 has been revised to reflect that annual inspections are allowed once five years of the post-closure care period have elapsed and are currently being implemented.

- E. The PCCP provided does not contain deed notation assurances in accordance with 35 IAC 811.110(g).*

The 35 IAC 811.110(g) regulation applies to "Closure and Written Closure Plan" and does not require this information to be contained in the post-closure care plan. This is believed to be the reason Illinois EPA previously approved a prior version of the post-closure care plan without this information.

Ms. Jacqueline M. Cooperider, P.E.

September 28, 2023

Notwithstanding the above, in an effort to cooperate with the Agency and facilitate approval of this permit modification, information referenced in the regulation above concerning deed notation assurances has been added to the post-closure care plan as Section 1.1.

F. Assurances are not provided in the PCCP that:

- a. The operator shall revise the cost estimate whenever a change in the PCCP increases the cost estimate – 35 IAC 811.704(b).*
- b. The cost estimate has been based on the assumption that the Illinois EPA will contract with a third-part to implement the PCCP – 35 IAC 811.704(d).*

The above information has been added to the post-closure care plan in Section 2.0.

The current deadline for action on the above referenced application is October 8, 2023. With the submittal of this additional information, the deadline for action is herein extended until November 8, 2023.

If you should have any questions, or require additional information, please do not hesitate to contact our office or Mr. Jim Hitzeroth of BFI at (224) 970-1129.

Sincerely,

Weaver Consultants Group North Central, LLC



Michael B. Maxwell, CHMM, LPG
Project Director

Cc: Mr. James Hitzeroth (w/ encl.)

Attachments: Illinois EPA Permit Application Forms [LPC-PA1, PA16]
Updated Post-Closure Care Plan

DAVIS JUNCTION LANDFILL PHASE II/III

Original: March 1994

Last Reviewed & Revised: Sept. 2023

Page 1 of 10

Post-Closure Care Plan

Deleted: Five-Year Renewal Application
Deleted: July
Deleted: 2019

1.0 Revised Post-Closure Care Plan - 35 Illinois Administrative Code (IAC) 812.115

The Davis Junction Facility is comprised of three units, a 19.7 acre RCRA hazardous waste unit (Phase I) on the western side of the landfill, and a 21.2 acre (Phase II) and a 22.7 acre (Phase III) municipal and non-hazardous special waste units located on the eastern part of the site. A re-compacted clay barrier separates Phase I from Phases II and III, and all units have been certified as closed by the Illinois Environmental Protection Agency (IEPA) Bureau of Land. The minimum 30-year post-closure period for Phases II/III began on March 30, 2000.

The only waste of relevance or to be managed at the site during the post-closure period is the leachate generated in the landfill units.

1.1 Deed Notation

Following closure of the municipal solid waste landfill (MSWLF) units at the site, the owner or operator must record a notation on the deed to the landfill facility or some other instrument that is normally examined during title search. The owner or operator must place a copy of the instrument in the operating record, and must notify the Agency that the notation has been recorded and a copy has been placed in the operating record. The notation on the deed or other instrument must be made in such a way that in perpetuity notify any potential purchaser of the property that: the land has been used as a landfill facility and its use is restricted pursuant to 35 IAC 811.111(d).

2.0 Post-Closure Cost Estimates - 35 IAC 812.116

As of July 2019, the last approved annual update to the post-closure care cost estimate was approved by Illinois EPA with Permit Modification No. 34 dated August 30, 2018. A copy of the submittal has been included in this 5-Year Permit Renewal Application. During the Post-Closure period, annual adjustments to the Post-Closure Cost estimate will be submitted to the Illinois EPA which will include an adjustment for inflation and a reduction in the post-closure care period. The cost estimates will be based on the assumption that the Illinois EPA will contract with a third-party to implement this post-closure care plan.

Additionally, the operator shall revise the cost estimate whenever a change in the post-closure care plan increases the cost estimate.

Deleted: J:\Projects\0100-0199\0120-49\01\PC Plan Ph II-III July 2023.docx
--

DAVIS JUNCTION LANDFILL PHASE II/III

Post-Closure Care Plan

Original: March 1994
Last Reviewed & Revised: Sept. 2023
Page 2 of 10

Deleted: Five-Year Renewal Application
Deleted: July
Deleted: 2019

3.0 Leachate System – 35 IAC 812.307 and 812.308

3.1 Leachate Generation Rate

Leachate headwells have been installed in Phases II and III of the facility. The approximate volume of leachate transported from the Phase II and III units in 2017 and 2018 was 76,700 gallons and 80,000 gallons, respectively.

3.2 Leachate Extraction and Collection System

BFI Waste Systems of North America, LLC (BFI Waste Systems) installed 14 leachate/gas extraction wells in Phases II/III of the facility, seven wells in Phase II (EW-20, 22, 24, 26, 30, 32, and 34) and seven wells in Phase III (EW-2, 4, 7, 10, 12, 15, and 17). The system has been designed so that gas condensate and leachate from the Phase II and III units are routed to one of two non-hazardous waste leachate storage tanks. Leachate is extracted from each well by a submersible pump and fed to the leachate gas condensate sumps.

As part of the application for significant modification to the dual gas/leachate extraction system, BFI requested and obtained approval from the IEPA for installation and operation of extraction pumps within select dual wells on a periodic and voluntary basis. The objective was to maximize the extraction levels within the network. The wells approved were EW-3, EW-5, EW-6, EW-8, EW-13, EW-23, EW-27, EW-29, and/or EW-31. BFI is able to place and move pumps within the extraction well network when needed to maximize the extraction levels.

3.3 Leachate Head Level Monitoring Wells

Eight wells are permitted for specific use as monitoring points for leachate headwell measurements (EW-20 (L306), EW-23 (L309), EW-27 (L-307), and EW-31 (L308) in Phase II, and EW-01 (L302), EW-03 (L303), EW-12 (L304), and EW-15 (L305) in Phase III). In accordance with the effective Permit, measurements of leachate head are to be conducted on a quarterly basis at monitoring points L302 through L309. In addition, Permit Condition IV.7 requires an annual comparison of the average weekly leachate elevations taken during the month of April with the compliance elevations listed in Attachment A of Modification No. 4 to Permit No. 1994-160-LF. If the average of the four weekly leachate head measurements obtained during April exceeds the compliance elevation, then the following contingency measures will be undertaken:

- The pumping rates in surrounding extraction wells will be examined and adjusted to the extent possible to maximize drawdown;

Deleted: J:\Projects\0100-0199\0120-49\01\PC Plan Ph II-III July 2023.docx

DAVIS JUNCTION LANDFILL PHASE II/III

Post-Closure Care Plan

Original: March 1994
Last Reviewed & Revised: Sept. 2023
Page 3 of 10

Deleted: Five-Year Renewal Application
Deleted: July
Deleted: 2019

- If after one additional year, exceedances continue to be observed, then an assessment of the pumping rates of all of the extraction wells in Phase II and III will be conducted and adjusted, if necessary, to maximize drawdown. Monthly evaluation of the counter readings on the extraction well pumps will also be conducted during this one year period to allow for any necessary adjustment of the pumping rates.
- If exceedances continue to be observed for two (2) consecutive Aprils, then additional dual extraction well(s) may be added in the subject area. The proposal to add additional extraction well(s) will be accomplished through a Significant Modification to be submitted within 45 days of the second consecutive exceedance mentioned above;
- If compliance level exceedances continue to be observed for one additional year after additional extraction well(s) are added, then an application for significant permit modification will be submitted that proposes an alternative means of obtaining the compliance level (e.g., drains, horizontal wells, etc.).

No exceedances of the average weekly April leachate levels over the past several years have been identified. Documentation is provided in the Five Year Permit Renewal Application.

3.4. Leachate Sampling

In accordance with the effective Permit, a representative sample of leachate is to be collected from the nonhazardous waste leachate storage tank (L301). The sample is to be analyzed for List L1 and L2 parameters on a quarterly and semi-annual basis, respectively. List L1 includes the following parameters: Elevation of Leachate Surface, Bottom of Well Elevation and Leachate Level from Measuring Point. These parameters are to be measured at points L302 through L309 within the landfill and not at the leachate storage tank. On an annual basis, the List L3 parameters must be analyzed from a sample of leachate collected from the leachate storage tank.

3.5. Leachate Disposal

In 2017 and 2018, approximately 76,700 gallons and 80,000 gallons of non-hazardous waste leachate were extracted from the Phase II/III units, respectively. The leachate is transported to an off-site disposal facility. Copies of the manifests for shipment of the non-hazardous waste are maintained at the facility. The manifests detail the date of shipment, amount hauled, hauling facility and final treatment and/or disposal facility.

Currently, the leachate is transported off-site to the following facility:

Deleted: J:\Projects\0100-0199\0120-49\01\PC Plan Ph II-III July 2023.docx

DAVIS JUNCTION LANDFILL PHASE II/III

Original: March 1994
Last Reviewed & Revised: Sept. 2023
Page 4 of 10

Post-Closure Care Plan

Four Rivers Sanitation Authority
3501 Kishwaukee Street
Rockford, Illinois 61126

- Deleted: Five-Year Renewal Application
- Deleted: July
- Deleted: 2019
- Deleted: Rock River Water Reclamation District

Currently, the leachate is transported off-site in a tanker truck by the following transporter:

Earth Environmental 2, LLC
1900 E. College Ave., Ste. 100
Cudahy, WI
USEPA Id No. WIR000178954

- Deleted: Elite Environmental Corp.
- Deleted: 360C
- Deleted: South Curtis Rd.
- Deleted: West Allis
- Deleted: isconsin 53214
- Deleted: Transporter's ID No. UPW508337MN
- Deleted: 40988
- Deleted: Illinois Special Waste Hauling Permit No. 5363

4.0 Leachate Storage Tank Loading/Unloading Operation

The tank load-out system at the facility consists of a concrete load-out pad adjacent to the existing storage tank containment area. The load-out pad provides spill control during the loading/unloading of leachate from the hazardous and non-hazardous storage tanks. The 143 foot wide by 55 foot long concrete pad includes:

- a) Footings and 4 foot deep concrete retaining walls.
- b) A floor which slopes to the center of the pad and to a trap drain located on the north side of the load-out pad.
- c) One trap drain for the routing of spilled material and/or stormwater to a dual-contained fiberglass sump that pumps into the hazardous waste containment tank.
- d) The dual contained sump has an automatic float-controlled pump which will convey liquid to the hazardous waste tank. The pump has a manual shutoff system that is used when loading activities occur. This shutoff is used in the event of any emergency measures or repair activities.
- e) The sump and piping of the pad is dual contained.

The combined capacity of the pad is approximately 5,500 gallons, which is the volume of an over-the-road tanker truck.

Because any wastewater or storm water is routed directly to the hazardous waste storage tank through a dedicated trap drain, operation and maintenance practices are covered under the Phase I RCRA Hazardous Waste post closure permit and do not impact Phase II/III leachate management or transportation.

Deleted: J:\Projects\0100-0199\0120\49\01\PC Plan Ph II-III July 2023.docx

DAVIS JUNCTION LANDFILL PHASE II/III

Original: March 1994

Last Reviewed & Revised: Sept. 2023

Page 5 of 10

Post-Closure Care Plan

Deleted: Five-Year Renewal Application

Deleted: July

Deleted: 2019

5.0 Landfill Gas Collection System - 35 IAC 812.309 through 812.310

Davis Junction Landfill has a gas collection system consisting of an integrated network of perimeter and central system extraction wells. Nine gas monitoring probes (GMP 1-9) have been installed around the perimeter of the site for purposes of detecting potential migrating gas. The landfill gas is collected from the extraction wells and transported through a series of headers to a centrally located blower building and then to a utility gas flare. The landfill gas system is subject to the operation, monitoring and reporting requirements of a permit issued by the Bureau of Air.

In 2009, during operation and maintenance activities on the gas system, a problem was identified with the existing Condensate Sump No. 2 (CS-2). In June 2009, the area around condensate sump #2 was excavated to evaluate the sump, and a blockage was identified. The existing sump was cut 2 foot below the liner and capped. A new 12-inch SDR 17 HDPE in-line condensate sump was installed. The condensate sump (CS-2) will allow the continued extraction of condensate from within the header pipe and route the condensate through the existing leachate forcemain header. Except for the connection to the gas header flange, no other changes were made to the gas header. The existing 3-inch hammerhead submersible pump was re-installed vertically 1 foot above the bottom of the sump. The 3/16 stainless steel cable was attached to the sump prior to installation of the pump, and the discharge tubing was also reinstalled on the pump along with a ¼ inch bubbler tube. The condensate from new CS-2 will continue to be routed to the existing storage tank and transported offsite to a regulated facility by a licensed waste hauler.

5.1 Landfill Gas Monitoring System

Monitoring of the landfill gas collection system and ambient methane concentrations at the perimeter of the facility is conducted by a third party contractor hired by the permittee. A summary of the monitoring results is included with the Annual Facility Report. Condition VI.2 of the existing permit requires the gas monitoring probes outside the waste boundary to be monitored on an annual basis, and the landfill gas wellheads are monitored on a monthly basis for the following parameters:

- Pressure;
- Temperature;
- Methane;
- Oxygen; and

Deleted: J:\Projects\0100-0199\0120-49\01\PC Plan Ph II-III July 2023.docx

DAVIS JUNCTION LANDFILL PHASE II/III

Post-Closure Care Plan

Original: March 1994
Last Reviewed & Revised: Sept. 2023
Page 6 of 10

Deleted: Five-Year Renewal Application
Deleted: July
Deleted: 2019

- Carbon Dioxide.

The landfill gas collection and control system will be operated until the waste has stabilized enough to no longer produce methane in quantities that exceed the maximum allowable concentrations.

In accordance with 35 IAC 811.310(c)(3), three ambient air monitoring locations have been chosen and samples are taken on an annual basis. Samples are taken no higher than 0.025 meters (1 inch) above the ground and 30.49 meters (100 feet) downwind from the units. Due to the location of another operating landfill near Davis Junction, an additional (fourth) sample is taken upgradient of the landfill for purposes of obtaining background information. Survey stakes were placed on all four sides of the landfill to identify the monitoring locations. The protocol when conducting ambient air monitoring is to only sample when the wind speed is 5 miles per hour or less, identify and document sample locations and measurements, and place a copy of the recorded information in the facility files and forward a copy to BFI Waste Systems.

Additionally, the blower building and building that formerly housed the gas to energy facility located on-site are monitored for methane.

5.2. Gas Condensate

The landfill gas condensate from Phases II and III is routed to the non-hazardous storage tank located in a containment area. The contents of the non-hazardous storage tank are analyzed on a semi-annual and annual basis for listed parameters and transported to a permitted waste treatment facility. The historical analytical data supports the wastewater being handled as non-hazardous.

5.3. Gas Network Inspections

Condition VI.5 of the permit requires that gas wells, probes, condensate drains and condensate knockouts be inspected on a quarterly basis for structural integrity and proper operation. BFI does not propose any changes to this monitoring frequency.

6.0 Post-Closure Maintenance and Inspections - 35 IAC 811.111

The operator shall treat, remove from the site, or dispose of all wastes and waste residues within 30 days after receipt of the final volume of waste. Additionally, the operator shall remove all equipment or structures not necessary for the post-closure land use, unless otherwise authorized by permit. The Illinois EPA certified closure of this site in 2000 and equipment/structures

Deleted: J:\Projects\0100-0199\0120-49\01\PC Plan Ph II-III July 2023.docx

DAVIS JUNCTION LANDFILL PHASE II/III

Original: March 1994

Last Reviewed & Revised: Sept. 2023

Page 7 of 10

Post-Closure Care Plan

Deleted: Five-Year Renewal Application
Deleted: July
Deleted: 2019

previously associated with prior active waste disposal activities, such as vehicles, excavators, dozers, the scale used to weigh trucks, etc. has previously been removed from the site.

In accordance with 35 IAC 811.111(c), after March 30, 2005, annual inspections are conducted of the vegetative cover until settling has stopped and there are no eroded or scoured areas. Condition III.2 requires site surface drainage to be managed in accordance with the approved drainage control plan. Eroded and scoured drainage channels shall be repaired and lining material shall be replaced if necessary.

Additionally, pursuant to 35 IAC 811.111(c) 2-5, rills, gullies, and crevices six inches or deeper identified during an inspection shall be filled. Eroded and scoured drainage channels shall be repaired and lining material shall be replaced, if necessary. Holes and depressions created by settling shall be filled and recontoured so as to prevent standing water. All re-worked surfaces and areas with failed or eroded vegetation in excess of 100 square feet cumulatively, will be re-vegetated.

In order to properly manage standing water, BFI has previously attained Illinois EPA approval to install a tile drainage system above the liner and below the vegetative cover. Cap maintenance activities are conducted at the facility on a routine basis under the post-closure care plan. However, due to the natural settlement of municipal solid waste within the landfill, various points/pockets on the final cover of the landfill settle at a differential rate. This settlement causes some locations to have a lower elevation that does not allow rain fall events to immediately run off to the storm water detention system. This ponding normally stays until evaporation occurs. Davis Junction has previously attained approval of an approach to allow expedited removal of the surface rain water through a field type drain tile system.

The drainage tile will be located in the lower elevation of identified depressions and channeled to an area down slope for discharge. The perforated tile will remove the impounded water at a faster rate than evaporation and maintain a dryer cap in the depressed area. As the drainage tile system drains the water, some visual ponding may be observed. The normal corrective action of adding soil and reseeded only creates additional settlement and damage to the vegetative cover due to weight and ponding is quickly reestablished. The approach outlined should remove the impounded water through natural drainage over time and cause minimal cap disturbance and vegetative destruction.

If this system is deemed necessary by BFI, then horizontal corrugated, flexible, perforated plastic drain pipe will be installed in the applicable area(s). The surface inlet will allow water that

Deleted: J:\Projects\0100-0199-0120-49\01\PC Plan Ph II-III July 2023.docx

DAVIS JUNCTION LANDFILL PHASE II/III

Original: March 1994

Last Reviewed & Revised: Sept. 2023

Page 8 of 10

Post-Closure Care Plan

Deleted: Five-Year Renewal Application
Deleted: July
Deleted: 2019

would collect in local depressions to freely drain by gravity. The below-ground pipe will be perforated, which will also promote subsurface drainage from within the vegetative soil layer. Once gravity drainage of surface and subsurface water has ceased, any water remaining in the tile will drain through the pipe perforations into the surrounding protective soil.

Tile drainage is a common practice for removing excess water from agricultural cropland, which would otherwise adversely affect growing crops. As stated in the Illinois Drainage Guide (University of Illinois, College of Agriculture, Cooperative Extension Service Circular 1226), the general rule for draining depressions, based on agronomic considerations, is that excess water should be removed within 24 to 48 hours. The Illinois Drainage Guide can be found at www.wq.illinois.edu/DG/DrainageGuide.html. The 48-hour guideline will be followed for evaluating the need for and performance of tiles installed to drain depressions in the cap at Davis Junction Landfill.

If ponding water is observed in a depression on the cap more than 48 hours after a rain event that caused the storm water runoff and ponding, a tile drain may be installed to drain the depression. Similarly, if evidence of ponding water is observed, a tile drain will be installed to drain the depression. Evidence of ponding water may include, but not necessarily be limited to dead or stressed vegetation, a high proportion of hydrophilic vegetation, discoloration due to prolonged standing water, or deposition of floatable debris such as leaves or chaff in bands around the perimeter of a depression. If an existing tile drain has already been installed to drain a depression that continues to have ponding water, BFI may install an additional tile drain or fill the depression with soil.

The presence of ponded water above the ground surface or other evidence of ponding water in any depression will be assessed by visual observation. Visual observations will be performed during the post-closure care facility inspections. Given that the facility has already implemented five years of the post-closure care period, annual inspections are being performed, as of the date of this document. In addition, personnel are typically on-site on a monthly basis as needed for operation and maintenance of the gas and leachate collection systems. Observations during these other activities can also be used as a basis for evaluating if ponding is occurring.

Deleted: quarterly

If ponded water is visually observed above the ground surface in any surface depression on the landfill cap more than 48 hours after a rain event that caused the storm water runoff and ponding, or other evidence of ponding water is visually observed in any surface depression on the landfill cap, a tile drain may be installed to drain the depression. The tile drain will be installed within

Deleted: J:\Projects\0100-0199\0120-49\0118\Plan Ph II-III Sept 2023.docx

DAVIS JUNCTION LANDFILL PHASE II/III

Post-Closure Care Plan

Original: March 1994
Last Reviewed & Revised: Sept. 2023
Page 9 of 10

Deleted: Five-Year Renewal Application
Deleted: July
Deleted: 2019

90 days of the observed ponding or observation of evidence of ponding, or as soon as weather conditions allow, if the observation is observed during the winter months.

If a depression has a surface low point that is more than 30 inches below the "lip" of the depression at the perimeter, gravity drainage will not be possible without the potential to damage the geosynthetic cap during drain tile installation. Depressions that cannot be gravity drained with drain tile placed at a maximum depth of 30 inches will be filled with soil.

The protective soil thickness above the geosynthetic components of the cap is 36 inches. By maintaining a maximum trench depth of 30 inches, the geosynthetics will be protected from potential damage during drain tile installation by the remaining 6 inches of protective soil. If the final cover geosynthetics are damaged during installation of the drainage tiles, it will be repaired promptly.

The drainage tile system, along with ongoing inspection and maintenance activities on the final cover will allow for the preservation of the liner and vegetative cover throughout the post-closure period. A drawing identifying the placement and location of the drainage tile system will be maintained in the facility record.

If the above tile drainage system is installed during the post-closure care period, by the end of the post-closure care period, locations where the tile were installed (if any) will be either filled in or the tile will be covered with soil.

7.0 Groundwater Monitoring 35 IAC 811.319

7.1 Monitoring Schedule and Frequency

Under the effective Permit, groundwater sampling and analysis is conducted on a semi-annual basis for the List G1 and G2 parameters at each groundwater monitoring well listed in the permit during the second and fourth quarters.

Groundwater monitoring shall be conducted for the minimum thirty year post-closure period beginning March 30, 2000.

7.3 Sampling and Analysis

Dedicated Grundfos Redi-Flo 2 pumps are installed at groundwater monitoring wells at the facility. Groundwater sampling and analysis is conducted in accordance with approved Sampling and Analysis Plan (SAP). No changes to the approved SAP are being proposed at this time.

Deleted: J:\Projects\0100-0199\0120-49-01\PC Plan Ph II-III July 2023.docx

DAVIS JUNCTION LANDFILL PHASE II/III

Post-Closure Care Plan

Original: March 1994
Last Reviewed & Revised: Sept. 2023
Page 10 of 10

Deleted: Five-Year Renewal Application
Deleted: July
Deleted: 2019

7.4 Groundwater Network Inspection

Groundwater monitoring wells will be inspected for evidence of physical damage to the protective casing or surface grouting during groundwater sampling events. Inspections of all vegetated surfaces around the groundwater wells in Phases II and III will be conducted on an annual basis.

7.5 Groundwater Monitoring System Maintenance

Groundwater monitoring wells will be replaced and abandoned in accordance with the permit requirements. In 2008, groundwater monitoring well G69M was replaced with R69M. If groundwater pumps are removed for servicing or if well yield exhibits a pronounced decrease, the pumps will be pulled, cleaned and checked.

8.0 Property Use - 35 IAC 811.111

The property is a closed landfill that does not accept any waste for disposal. BFI Waste Systems does not have any planned use for the property during the post-closure period that will interfere with the implementation of this post-closure care plan.

Deleted: J:\Projects\0100-0199\0120-49\01PC Plan Ph II-III July 2023.docx

Colwell, Robert

From: Maxwell, Mike <mmaxwell@wcgrp.com>
Sent: Friday, October 20, 2023 2:57 PM
To: Colwell, Robert
Subject: [External] RE: BFI, Davis Junction Landfill Permit Question

Bob,

Yes, I think the headings for those two columns are transcribed. The IL EPA designation should be the IDs beginning with L and the Applicant designations were EW-XX.

Thanks.

Mike

Mike Maxwell, LPG, CHMM
Environmental Practice Group, Chicago Operations Manager

Weaver Consultants Group

35 E. Wacker Drive | Suite 1250
Chicago, IL 60601

O: 312-922-1030 | D: 312-496-3718 | F: 312-922-0201 | M: 312-617-5858
mmaxwell@wcgrp.com | www.wcgrp.com 



SAFETY FIRST, TRUSTED ADVISORS, 12:1 CULTURE

~~IMPORTANT NOTICE: The information contained in this email message (including any attachments) may be confidential, privileged or both, and is intended exclusively for the addressee(s) intended by the sender. If it appears you have received this email message in error, please notify the sender immediately and then delete; any other use of this email message is prohibited. Thank you.~~

From: Colwell, Robert <Robert.Colwell@Illinois.gov>
Sent: Friday, October 20, 2023 2:36 PM
To: Maxwell, Mike <mmaxwell@wcgrp.com>
Subject: BFI, Davis Junction Landfill Permit Question

MED

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hi Mike,

I have a question about Permit No. 1994-160-LF for Phases II/III at Davis Junction landfill. Section IV, Condition 3 lists the leachate monitoring points at the landfill using both the applicant designation and the Illinois EPA designation. Is this table reversed? Usually the L301, L302, etc. designations are those used by the Illinois EPA, while EW designations are used by the applicant.

Let me know if this needs to be fixed.

Thanks,
Bob

Bob Colwell
Illinois Environmental Protection Agency
Bureau of Land, Permit Section
1021 North Grand Avenue East #33
Springfield, Illinois 62794-9276
(217) 557-8913
Robert.Colwell@Illinois.Gov

State of Illinois - CONFIDENTIALITY NOTICE: The information contained in this communication is confidential, may be attorney-client privileged or attorney work product, may constitute inside information or internal deliberative staff communication, and is intended only for the use of the addressee. Unauthorized use, disclosure or copying of this communication or any part thereof is strictly prohibited and may be unlawful. If you have received this communication in error, please notify the sender immediately by return e-mail and destroy this communication and all copies thereof, including all attachments. Receipt by an unintended recipient does not waive attorney-client privilege, attorney work product privilege, or any other exemption from disclosure.

Mad

STATE PERMIT LOG NO. : 2023-150

NAME : BFI, Davis Junction

OWNER : Jim Hitzeroth

STATUS : I

SITE NO. : 1418210001

COUNTY : Ogle

CITY : Davis Junction

PERMIT TYPE : SM Part 813

REVIEWER : RCC

SR : 90

GA-REQ'D : N

FACILITY TYPE : LF

COMPLETENESS : 05/27/2023

GAU-REV :

RP : 90

MAILED : 11/07/2023

RECEIVED : 04/27/2023 DUE: 07/26/2023

REVIEW TIME : 194

WAIVER : 11/08/2023

FINAL ACTION : ISSUED

NOTIFY IHPA :

PSRP :

PRP :

SITING APP'D: N

NOTIFY DCEO:

NOTIFY DNR:

NOTIFY DELEGATED COUNTY: Y

NOTIFY DOT :

PERMIT EXPIRATION: 10/1/2024

COMMENTS: Annual update to post-closure care cost estimate due by May 1, 2023, as required by Condition VII.7

813 COMPLETENESS REVIEW

	LOG IN PROCESS	:	(5)	:
B.	TO GAU REVIEWER	_____	:	(5)
C.	GAU REVIEW	_____	:	(7)
D.	GAU MEMO TO SW	_____	:	(2)
E.	TO SW REVIEWER	_____	:	(5)
F.	SW REVIEW	_____	:	(7)
G.	SW MANAGER REVIEW	_____	:	(2)
H.	JOINT DECISION	_____	:	(2)
I.	COMPLETENESS LTR SENT	_____	:	(7)
J.	GAU & SW	_____	:	(TECH. MTG.)
K.	DRAFT	_____	,	_____ :
L.	REVIEW MGR	_____	,	_____ :

807/832 COMPLETENESS REVIEW

i.	OWNER'S SIGNATURE	Y	N	
ii.	OPERATOR'S SIGNATURE	Y	N	
iii.	P.E.'S SIGNATURE	Y	N	NA
iv.	SITING OBTAINED	Y	N	NA
v.	CORRECT FORMS UTILIZED	Y	N	WHAT FORMS MISSING?
vi.	COMPLETE	Y	N	IF NO SEND LETTER BY 30TH DAY!

STATE PERMIT LOG NO. : 2023-150

NAME : BFI, Davis Junction
OWNER : Jim Hitzeroth

STATUS : A
SITE NO. : 1418210001

COUNTY : Ogle

CITY : Davis Junction

PERMIT TYPE : SM Part 813

REVIEWER : RCC *lll*
GA-REQ'D : N *9/29/23*

SR : 90

FACILITY TYPE : LF COMPLETENESS : 05/27/2023

GAU-REV :

RP : 90

RECEIVED : 04/27/2023 DUE: 07/26/2023

MAILED :

REVIEW TIME :

WAIVER : 11/08/2023

FINAL ACTION :

NOTIFY IHPA :

PSRP :

PRP :

SITING APP'D: N

NOTIFY DCEO:

NOTIFY DNR:

NOTIFY DELEGATED COUNTY: Y

NOTIFY DOT :

PERMIT EXPIRATION:

COMMENTS: Annual update to post-closure care cost estimate due by May 1, 2023,
as required by Condition VII.7

813 COMPLETENESS REVIEW

	LOG IN PROCESS	:	(5)	:
B.	TO GAU REVIEWER	_____	:	(5)
C.	GAU REVIEW	_____	:	(7)
D.	GAU MEMO TO SW	_____	:	(2)
E.	TO SW REVIEWER	_____	:	(5)
F.	SW REVIEW	_____	:	(7)
G.	SW MANAGER REVIEW	_____	:	(2)
H.	JOINT DECISION	_____	:	(2)
I.	COMPLETENESS LTR SENT	_____	:	(7)
J.	GAU & SW	_____	:	(TECH. MTG.)
K.	DRAFT	_____	:	
L.	REVIEW MGR	_____	:	

807/832 COMPLETENESS REVIEW

i.	OWNER'S SIGNATURE	Y	N	
ii.	OPERATOR'S SIGNATURE	Y	N	
iii.	P.E.'S SIGNATURE	Y	N	NA
iv.	SITING OBTAINED	Y	N	NA
v.	CORRECT FORMS UTILIZED	Y	N	WHAT FORMS MISSING?
vi.	COMPLETE	Y	N	IF NO SEND LETTER BY 30TH DAY!

STATE PERMIT LOG NO. : 2023-150

NAME : BFI, Davis Junction

OWNER : Jim Hitzeroth

STATUS : A

SITE NO. : 1418210001

COUNTY : Ogle

CITY : Davis Junction

PERMIT TYPE : SM Part 813

REVIEWER : RCC *CR*

SR : 90

GA-REQ'D : N

FACILITY TYPE : LF

COMPLETENESS : 05/27/2023

GAU-REV : *8/21/23*

RP : 90

MAILED :

RECEIVED : 04/27/2023 DUE: 07/26/2023

REVIEW TIME :

WAIVER : 10/08/2023

FINAL ACTION :

NOTIFY IHPA :

PSRP :

PRP :

SITING APP'D: N

NOTIFY DCEO:

NOTIFY DNR:

NOTIFY DELEGATED COUNTY: Y

NOTIFY DOT :

PERMIT EXPIRATION:

COMMENTS: Annual update to post-closure care cost estimate due by May 1, 2023,
as required by Condition VII.7

813 COMPLETENESS REVIEW

	LOG IN PROCESS	:	(5)	:
B.	TO GAU REVIEWER	_____	:	(5)
C.	GAU REVIEW	_____	:	(7)
D.	GAU MEMO TO SW	_____	:	(2)
E.	TO SW REVIEWER	_____	:	(5)
F.	SW REVIEW	_____	:	(7)
G.	SW MANAGER REVIEW	_____	:	(2)
H.	JOINT DECISION	_____	:	(2)
I.	COMPLETENESS LTR SENT	_____	:	(7)
J.	GAU & SW	_____	:	(TECH. MTG.)
K.	DRAFT	_____	:	
L.	REVIEW MGR	_____	:	

807/832 COMPLETENESS REVIEW

i.	OWNER'S SIGNATURE	Y	N	
ii.	OPERATOR'S SIGNATURE	Y	N	
iii.	P.E.'S SIGNATURE	Y	N	NA
iv.	SITING OBTAINED	Y	N	NA
v.	CORRECT FORMS UTILIZED	Y	N	WHAT FORMS MISSING?
vi.	COMPLETE	Y	N	IF NO SEND LETTER BY 30TH DAY!

STATE PERMIT LOG NO. : 2023-150

NAME : BFI, Davis Junction

OWNER : Jim Hitzeroth

STATUS : A

SITE NO. : 1418210001

COUNTY : Ogle

CITY : Davis Junction

PERMIT TYPE : SM Part 813

SR : 90

REVIEWER : RCC *AD*
GA-REQ'D : Y 7/26/23

FACILITY TYPE : LF COMPLETENESS : 05/27/2023

GAU-REV :

RP : 90

MAILED :

RECEIVED : 04/27/2023 DUE: 07/26/2023

REVIEW TIME :

WAIVER : 08/24/2023

FINAL ACTION :

NOTIFY IHPA :

PSRP :

PRP :

SITING APP'D: N

NOTIFY DCEO:

NOTIFY DNR:

NOTIFY DELEGATED COUNTY: Y

NOTIFY DOT :

PERMIT EXPIRATION:

COMMENTS: Annual update to post-closure care cost estimate due by May 1, 2023,
as required by Condition VII.7

813 COMPLETENESS REVIEW

	LOG IN PROCESS	:	(5)	:
B.	TO GAU REVIEWER	:	(5)	:
C.	GAU REVIEW	:	(7)	:
D.	GAU MEMO TO SW	:	(2)	:
E.	TO SW REVIEWER	:	(5)	:
F.	SW REVIEW	:	(7)	:
G.	SW MANAGER REVIEW	:	(2)	:
H.	JOINT DECISION	:	(2)	:
I.	COMPLETENESS LTR SENT	:	(7)	:
J.	GAU & SW	:	(TECH. MTG.)	:
K.	DRAFT	:		:
L.	REVIEW MGR	:		:

807/832 COMPLETENESS REVIEW

i.	OWNER'S SIGNATURE	Y	N	
ii.	OPERATOR'S SIGNATURE	Y	N	
iii.	P.E.'S SIGNATURE	Y	N	NA
iv.	SITING OBTAINED	Y	N	NA
v.	CORRECT FORMS UTILIZED	Y	N	WHAT FORMS MISSING?
vi.	COMPLETE	Y	N	IF NO SEND LETTER BY 30TH DAY!

STATE PERMIT LOG NO. : 2023-150

NAME : BFI, Davis Junction

OWNER : Jim Hitzeroth

STATUS : A

SITE NO. : 1418210001

COUNTY : Ogle

CITY : Davis Junction

PERMIT TYPE : SM Part 813

REVIEWER : **RCC**

SR : 90

GA-REQ'D : Y

FACILITY TYPE : LF

COMPLETENESS : 5/27/2023

GAU-REV :

RP : 90

MAILED :

RECEIVED : 4/27/2023 DUE: 7/26/2023

REVIEW TIME :

WAIVER :

FINAL ACTION :

NOTIFY IHPA :

PSRP :

PRP :

SITING APP'D: N

NOTIFY DCEO:

NOTIFY DNR:

NOTIFY DELEGATED COUNTY: Y

NOTIFY DOT :

PERMIT EXPIRATION:

COMMENTS: Annual update to post-closure care cost estimate due by May 1, 2023, as required by Condition VII.7

813 COMPLETENESS REVIEW

	LOG IN PROCESS	<u>4-27-23</u>	:	(5)	:
B.	TO GAU REVIEWER	_____	:	(5)	:
C.	GAU REVIEW	_____	:	(7)	:
D.	GAU MEMO TO SW	_____	:	(2)	:
E.	TO SW REVIEWER	<u>4-27-23</u>	:	(5)	:
F.	SW REVIEW	_____	:	(7)	:
G.	SW MANAGER REVIEW	_____	:	(2)	:
H.	JOINT DECISION	_____	:	(2)	:
I.	COMPLETENESS LTR SENT	_____	:	(7)	:
J.	GAU & SW	_____	:	(TECH. MTG.)	:
K.	DRAFT	_____	:		:
L.	REVIEW MGR	_____	:		:

807/832 COMPLETENESS REVIEW

i.	OWNER'S SIGNATURE	Y	N	
ii.	OPERATOR'S SIGNATURE	Y	N	
iii.	P.E.'S SIGNATURE	Y	N	NA
iv.	SITING OBTAINED	Y	N	NA
v.	CORRECT FORMS UTILIZED	Y	N	WHAT FORMS MISSING?
vi.	COMPLETE	Y	N	IF NO SEND LETTER BY 30TH DAY!

2023-150 REVIEW NOTES**1418210001 – BFI, Davis Junction****Robert Colwell, 4/27/23 – 10/20/2023**

Robert Colwell (sign and date) 10/25/23

Location: 8902 North Illinois Route 251, Davis Junction, IL 61020**Owner:** BFI Waste Systems of North America, 26 West 580 Schick Road, Hanover Park, IL 60103 Contact: Jim Hitzeroth (224) 970-1129**Operator:** SAME**Engineer:** John W. Bossert, P.E. – Weaver Consultants Group, 3516 Ogden Road, Springfield, IL 62711 (217) 787-0290**Nature of Application:**

Significant Modification: Submit the annual revision of the cost estimate for post-closure care.

Recommended Action:

10/20/2023 – Approve the application, issue permit significant modification.

Special Conditions:

Modification 21: The facility is permitted to address ponding and low spots in the protective layer using perforated drainage pipe [agriculture field tile] to aid evaporation in removing water from these locations.

Permit History:

About the facility: Phase I is regulated under RCRA and is separated from Phase II and III by a 10 foot thick vertical compacted clay wall.

Permit No. 1994-160-LF (Log No. 1994-160), 9/30/94

Granted to Browning-Ferris Industries of Illinois, Inc. (BFI), as owner and operator. Approves a Part 814 landfill consisting of Phase II and Phase III of an existing 807 landfill. Waste disposal is permitted in all areas underlain by the liner/barrier permitted by Supplemental Permit 1992-068-SP, with a vertical maximum of <Not Specified in the Permit>. Alternate Daily Cover (ADC) consists of geotextile fabric. Final Cover consists of 2' minimum recompacted clay at less than or equal to 1×10^{-7} cm/sec permeability, overlain by a VLDPE geomembrane, overlain by 1' granular drainage material, overlain by a geotextile filter, overlain by a 2' layer of cover soil and a 6" layer of topsoil. Special waste stream permits are necessary, including ones already issued.

Operating hours are 6:00 am to 6:00 pm, M-F, and 6:00 am to 12:00 pm on Saturdays. Leachate monitoring points include L301 – L309 (Agency designations). Groundwater monitoring wells consist of (1) shallow well, (12) mid-level wells, (17) deep wells, and (2) compliance boundary wells. An active gas collection/management system is in operation at the site. <A list of gas detection probes is not in the permit.> The total cost estimate for closure and post-closure care is \$11,740,266.00, due by 4/9/95.

Modification 1 (Log Nos. 1995-013, 1995-092), 4/10/95

Granted to BFI as owner and operator. Approves: Acceptance of special waste streams without individual special waste authorizations; and an alternative design of the Final Cover system consisting of 2' minimum recompacted clay at less than or equal to 1×10^{-7} cm/sec permeability, overlain by a 40-mil geomembrane, overlain by geonet drainage material, overlain by a geotextile filter, overlain by a 3' of "final protective layer".

Modification 2 (Log No. 1997-271), 3/27/98

Granted to BFI as owner and operator. Approves: The revision of site-specific groundwater quality standards (AGQS and MAPC); and the modification of various groundwater and leachate monitoring requirements. Deleted Section III of the Permit and renumbered remaining sections. Many conditions have minor revisions, not counting the renumbering of sections.

Modification 3 (Log No. 1998-121), 7/6/98

Granted to BFI Waste Systems of North America, Inc., as owner and operator. Approves the transfer of the land ownership and operating rights of this facility from Browning-Ferris Industries of Illinois, Inc. to BFI Waste Systems of North America, Inc.

2/25/1999 – A New Source Performance Standard (NSPS) Permit is in the Bureau File for a landfill gas extraction system, two Waukesha engines for electricity generation using landfill gas, one enclosed flare, and three 20,000 gallon capacity leachate and condensate storage tanks.

Modification 4 (Log Nos. 1999-241 & 1999-261), 2/25/00

Granted to BFI Waste Systems of North America Inc. as owner and operator. Permit Renewal. Also approves a revised groundwater impact assessment and new AGQS and MAPC values. Many conditions were changed.

Modification 5 (Log No. 2000-193), 12/27/00

Granted to BFI Waste Systems of North America, Inc. as owner and operator. Approves a revised AGQS/MAPC value for dissolved ammonia.

Modification 6 (Log No. 2001-055), 3/27/01

Granted to BFI Waste Systems of North America, Inc., as owner and operator. Approves modifications to the Stormwater Drainage System.

Certification of Closure, Modification 7 (Log No. 2000-347), 4/20/01

Granted to BFI Waste Systems of North America, Inc., as owner and operator. The 30-year post-closure care period began on March 30, 2000. [Confirmed to be March, not May, as was stated in previous permit histories] [This is in a regular permit format] References to operating and closure were deleted.

March 17, 2003 – A report on the installation of dual gas/leachate extraction wells EW-17 & EW-18 is marked as part of the Closure Certification, Log No. 2000-347.

May 6, 2003 – A detailed laboratory QA/QC plan, as required by Permit Condition II.E.9 is submitted. This appears to be for the RCRA Unit, Phase I of the landfill.

Folder "T" contains a well installation report for the original Sig Mod groundwater monitoring well installation, dated 1/12/95.

Modification 8 (Log No. 2003-160), 8/22/03

Granted to BFI Waste Systems of North America, Inc., as owner and operator. Approves the installation of dual-contained leachate lines above the geosynthetic layer of Final Cover; and approves the conversion of gas extraction wells EW-5, EW-6, EW-8, EW-13, EW-27, EW-29, and EW-31 to dual extraction wells by adding leachate pumps to the wells. Also contains a CQA plan for the installation/conversion of dual extraction wells.

Modification 9 (Log No. 2003-096), 9/9/03

Granted to BFI Waste Systems of North America, Inc., as owner and operator. Approves: A) Revisions to the post-closure care cost estimates; B) Revisions to the post-closure care plan; C) Revisions to the leachate monitoring list L2; D) The reduction of leachate monitoring frequency to semi-annually; E) Multiple changes to the groundwater monitoring program, including a new SAP and semi-annual monitoring for certain wells.

Modification 10 (Log No. 2004-134), 8/10/04

Granted to BFI Waste Systems of North America, Inc. as owner and operator. Approves the operation of a leachate forcemain, installed within the protective layer of Final Cover.

Modification 11 (Log No. 2004-222), 2/9/05

Granted to BFI Waste Systems of North America, Inc., as owner and operator. Permit Renewal. Also approves: A) Revised post-closure care plan and cost estimates; B) the reduction of inspection frequency for gas wells, probes, and knockouts, to quarterly; C) Revised ambient air monitoring protocol; D) Improvements to the vehicular traffic path; E) Installation of leachate extraction pumps in gas extraction wells EW-3 and EW-23; and F) Installation of a condensate sump near EW-30.

Modification 12 (Log No 2004-373), 3/11/05 [Folder V]

Granted to BFI Waste Systems of North America, Inc., as owner and operator. Approves interwell AGQS and MAPC values for: bicarbonate, boron(t), chloride(t), chromium(t), cobalt(t), iron(t), nickel(t), phosphorous(t), selenium(t), and sulfate(t).

Modification 13 (Log No. 2006-318), 12/7/06

Granted to BFI Waste Systems of North America, Inc., as owner and operator. Revises the cost estimate for post-closure care to \$3,081,914.49.

Modification 14 (Log No. 2007-255), 8/1/07

Granted to BFI Waste Systems of North America, Inc., as owner and operator. Revises the cost estimate for post-closure care to \$2,931,663.88.

Modification 15 (Log No. 2008-045), 4/24/08

Granted to BFI Waste Systems of North America, Inc., as owner and operator. Revises the cost estimate for post-closure care to \$2,607,593.77; and approves modifying the permit in accordance with IPCB R2007-008.

Modification 16 (Log No. 2008-414), 1/27/09

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves the name change of the owner/operator; and approves an ASD for TDS at G64D.

Modification 17 (Log No. 2009-160), 7/8/09

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves interwell AGQS values for chromium(d) and magnesium(d); and in intrawell AGQS value for TDS at G64D.

Modification 18 (Log No. 2009-288), 7/30/09

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Revises the cost estimate for post-closure care to \$2,589,000.14.

Modification 19 (Log No. 2011-132), 7/5/11

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves replacing the existing enclosed gas flare with a utility gas flare.

Modification 20 (Log No. 2011-464), 12/27/11

Granted to BFI Waste systems of North America, LLC, as owner and operator. Approves the CQA Construction Acceptance Report for the utility flare. Also, the gas-to-energy facility has been decommissioned.

Modification 21 (Log Nos. 2009-337, 2010-261, 2011-247), 3/27/12

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Permit Renewal. Also approves a revised GIA, an updated post-closure care plan, replacement of Condensate Sump CS-2, installation of perforated drainpipe within the protective soil layer of Final Cover, (0" – 30" deep from ground surface), and a revised cost estimate for post-closure care to \$2,391,159.00. Leachate extraction is reduced from 100 years to 30 years.

Modification 22 (Log No. 2012-244), 8/29/12

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves a revised cost estimate for post-closure care of \$2,068,794.00.

Modification 23 (Log No. 2012-538), 1/24/13

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves the CQA Construction Acceptance Report for changes to dual extraction wells EW-23 and EW-29.

Modification 24 (Log No. 2013-297), 8/27/13

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Changes the leachate elevation condition IV.7 to use average leachate elevations instead of maximum leachate elevations when comparing to compliance elevation levels.

Modification 25 (Log No. 2013-250), 9/16/13

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves revising the cost estimate for post-closure care to \$1,919,878.00.

Modification 26 (Log No. 2014-224), 8/21/14

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves revising the cost estimate for post-closure care to \$1,847,689.00.

Modification 27 (Log No. 2014-306), 10/7/14

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Permit Renewal. Also revised the leachate monitoring schedule.

Modification 28 (Log No. 2014-592), 3/4/15

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves the newly established AGQS values required by IPCB R08-18 and 35 Ill. Adm. Code 620.

Modification 29 (Log No. 2015-284), 8/27/15

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves revising the cost estimate for post-closure care to \$1,751,516.00.

Modification 30 (Log Nos. 2015-489 & 2016-240), 8/18/16

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves: A) An ASD for dissolved sulfate at G55M; B) Removal of upgradient G62M from the groundwater monitoring program; and C) revising the cost estimate for post-closure care to \$1,642,347.00.

Modification 31 (Log No. 2016-529), 3/8/17

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves the CQA Construction Acceptance Report for a gas collection line between EW-14 and EW-22. Also updates the leachate sampling schedule.

Modification 32 (Log No. 2017-242), 10/27/17

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves the CQA Construction Acceptance Report for a gas lateral to EW-16; and revising the cost estimate for post-closure care to \$1,531,122.00.

Modification 33 (Log No. 2018-003), 3/26/18

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves the CQA Construction Acceptance Report for gas line modifications between EW-7 and EW-16. (Short Permit)

Modification 34 (Log No. 2018-267), 8/30/18

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves revising the cost estimate for post-closure care to \$1,411,184.00. Also requires 39(i) information with every permit application.

Modification 35 (Log No. 2019-178), 7/26/19

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves revising the cost estimate for post-closure care to \$1,334,998.00.

Modification 36 (Log No. 2019-278), 9/26/19

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Permit Renewal Contains a new post-closure care plan.

Modification 37 (Log No. 2019-435), 5/15/20

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves: an alternate source demonstration for specific conductance at G64D; and a new intrawell AGQS value for specific conductance at G64D. Multiple small topographical changes to Section V.

Modification 38 (Log No. 2020-143), 7/23/20

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves the annual revision of the cost estimate for post-closure care to \$1,251,713.00.

Modification 39 (Log No. 2021-143), 7/28/21

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves the annual revision of the cost estimate for post-closure Care to \$1,158,357.00. Also changes leachate parameter 1,4-dichloro-2-butene to trans-1,4-dichloro-2-butene; and changes the units for Bacteria (Fecal Coliform) to CFU/100mL

Modification 40 (Log No. 2022-130), 9/21/22

Granted to BFI Waste Systems of North America, LLC, as owner and operator. Approves the annual revision of the cost estimate for post-closure care to \$1,153,905; and revised AGQS and MAPC values for dissolved chromium.

Other Pertinent Information:

A drainage pipe system will be installed as necessary to address ponding on the final cover protective layer. This is to help drainage of the vegetative layer and to account for differential settlement in the final cover system. These locations will be filled with soil at the end of the post-closure care period.

Non-Routine Conditions:

Two (2) Page 4's of the LPC-PA1 form are submitted, one with the notarized signatures of the owner/operator, and one signed and sealed by the Engineer.

Comments:

Completeness

39i /FaCES Review: 4/27/2023

A 39(i) form is included for the owner/operator with no "yes" boxes checked. The FaCES database shows two (2) open violations and four (4) resolved violations. Both open violations are marked "Compliance Commitment Agreement".

Environmental Justice / SWAP: 4/27/2023

The SWAP tool and the EJ database agree this site is not in an EJ area.

Field Operations (FOS): Rebecca DeMay – FOS Rockford

5/5/2023 – No comments at this time.

CROPA

Financial Assurance (FIN):

Division of Legal Council (DLC):

County:

Groundwater Unit (GU): Ed Wagner (ERW)

6/6/2023 – No Groundwater review needed.

Draft Denials

Approval Memos

Narrative:

4/27/23 – Application received by RCC. Application letter is dated 4/24/23 and stamped "Received" 4/27/2023. The current due date is 7/26/23. Tracking Form indicates log-in on 4/27/2023 and forward to SW reviewer on 4/27/2023. GU review is required, and an 813 completeness review is required. Performed Environmental Justice Check. Siting was granted in application Log No. 1994-160. The current permit was reviewed for outstanding conditions. None were found. The FaCES database was reviewed, and two

(2) open violations were found. Per section policy, I created a memo and sent it to Greg Morris, P.E., solid waste unit manager.

4/28/2023 – Per response from Greg Morris, I sent the memo on to Valerie Davis, Acting Section Manager – Waste Reduction and Compliance Section.

5/3/23 – Valerie Davis informs me that Permit Section is using an out-of-date FaCES system. The current FaCES system indicates these violations have been resolved.

5/4/2023 – Performed Completeness review. The application is Complete. Completeness letter not sent due to workload.

5/5/2023 – Received FOS Comments from Rockford Field Office.

6/5/2023 – Commenced Technical Review.

6/8/2023 – Contacted Michael B. Maxwell, LPG, of Weaver Consultants Group, via telephone. Mr. Maxwell prepared the application. See Decisions Section.

6/14/2023 – Received an addendum, dated 6/8/23 and stamped “Received” on 6/14/2023. The due date does not change because it is greater than 30 days away.

7/12/2023 – Wrote an email to Mr. Maxwell describing issues that need to be resolved, including restoring the deleted costs for final cover repair at the end of the post-closure care period.

7/25/2023 – Received PDF copy of an addendum.

7/26/2023 – Received new tracking sheet reflecting a new due date of 8/24/23.

7/31/2023 – Received hard copy of addendum, stamped “Received” on 7/31/2023.

8/16/2023 -- Commenced review of the addendum dated July 25, 2023 and stamped “Received” on July 31, 2023 (2nd Addendum). Completed review, wrote Draft Denial letter, and forwarded it for approval.

8/17/2023 – E-mailed Draft Denial letter to Mr. Maxwell.

8/21/2023 – Received PDF copy of an extension letter. The new due date is 10/8/23. Received new tracking sheet reflecting the new due date.

8/24/2023 – Received hard copy of extension letter, stamped “Received” on 8/24/2023.

9/28/2023 – Received PDF copy of an extension + addendum. The new due date is 11/8/23.

9/29/2023 – Received new tracking sheet reflecting the new due date.

10/3/2023 – Received hard copy of addendum + extension, stamped “Received” on 10/2/23.

10/19/2023 – Commenced fourth technical review. Completed review, wrote permit letter.

10/23/2023 – Forwarded permit package for approval.

Decisions:

Leachate is transported off-site by truck. What backup system is required? Per 35 IAC 811.309(d) and (e), Standards for Discharge to an Offsite Treatment Works, 5 days' worth of leachate storage must be provided. The post-closure care plan mentions two (2) leachate storage tanks but does not describe their size.

Post-Closure Care Plan (PCCP):

- This plan covers Units II and III only. (Unit I is hazardous waste)
- The Post-Closure Care Period started March 30, 2000 => 7 years remain.
- 7 wells in Phase II and 7 wells in Phase III are leachate/gas extraction wells.
- 4 wells in each Phase are used to measure leachate head levels on a quarterly basis. The average head level of each of the 4 well sets are compared to compliance levels in Attachment A of the permit on an annual basis.
- Extracted landfill gas is routed to a utility gas flare for destruction. Gas condensate is routed to the leachate forcemain header/leachate storage tank.
- Landfill perimeter gas monitoring is performed by a third-party contractor on an annual basis while landfill gas wellheads are monitored on a monthly basis.
- Three ambient air monitoring locations are monitored on an annual basis while a 4th sample is obtained upgradient of the landfill to establish ambient gas background (due to another landfill in close proximity).
- Additionally, the “blower” building and the building that used to house the gas-to-energy plant are monitored on a continual basis.
- The gas network is inspected on a quarterly basis.
- Annual inspections of the landfill.
- Leachate monitoring.
- Groundwater monitoring.
- The owner/operator has no plans for post-closure use of the property that will interfere with the implementation of the PCCP.

Questions about the cost estimate:

- Why are there still costs associated with decommissioning the gas-to-energy plant? Why hasn't remaining equipment been removed since the generators are gone?

- What is the “Final Repair of Cover Following Post-Closure Period” cost for?
9680 yd³.

Contacted Mr. Maxwell on 6/8/2023 to consult about these questions.

Mr. Maxwell confirmed that, other than the generators, the rest of the generator support equipment was still in place and would need to be removed at the end of the post-closure care period. This equipment is described on the second page of the cost estimate, as note 3 at the bottom of the page.

Mr. Maxwell did not know what the “Final Repair of Cover Following Post-Closure Period” is for. It appears in previous cost estimates and so he left it in this cost estimate and inflated it by the inflation factor.

This cost first appears in the cost estimate accompanying the new post-closure care plan in Modification 21. Although the drainage system is described in the post-closure care plan, a specific reason for this cost is not presented.

The drainage system is installed as needed, within 90 days of finding ponded water, so the cost would not be to install the system. Likewise, it would not make sense to remove the system at the end of the post-closure care period when that would disturb 30 years of cover stabilization and vegetation growth.

Mr. Maxwell proposed to send an addendum to this application, removing the cost from the cost estimate.

I consulted with the previous permit engineer for this site, who did the review of Modification 21. On page 6 of his review notes, accompanying application Log No. 2009-337, is a paragraph stating,

“After talking with CJL it was decided that the proposal to install drainage pipe(s) in the vegetative cover will be approved, if the costs for regarding [sic] the final cover at the end of the post closure care period are provided. Accordingly, this addendum includes costs for re-grading 3 acres of final cover with an average depth of 2-feet. Costs for seeding, fertilizing and mulching of these 3-acres is provided as well.”

Per the previous permit engineer, this was intended for the applicant to fill in, with soil, all the depressions previously addressed by a drainage pipe, at the end of the post-closure care period. The associated cost estimate amount became “Final Repair of Cover Following Post-Closure Period”

This information did NOT make it into the approved PCCP.

Page 4 of the Review Notes for 2009-337 notes that in Section 6.0 (Inspections) of the post-closure care plan, language paraphrasing the requirements of 35 IAC 811.111(c)(2), (3), (4), and (5) was deleted, and replaced with a description of the drainage pipe system. The deleted sections all describe filling in depressions, low points, gullies, etc.

The Illinois EPA does not have the authority to waive the regulations, though the items described above state they were paraphrasing of the regulations.

7 years remain in the minimum 30-year post-closure care period.

The applicant has correctly used the approved inflation rate of 7%.

All costs, including water-monitoring costs, have been adjusted for inflation using the 1.07 inflation factor => no laboratory quotations are necessary to justify the costs presented.

The costs presented as last years approved costs have been checked for accuracy and found to agree with last year's estimate.

Multiple costs were spot checked to verify mathematical correctness. All of these costs checked out correctly.

The annual costs include cover repair for erosion, settlement, and vegetation at 4.5 yd³/acre/year over 45 acres (10%).

As the applicant has provided these costs, even though they are in the annual part of the PCCP, I can't fault them for not following the regulations below.

Flaws on the part of the Illinois EPA:

- The language paraphrasing regulations 35 IAC 811.111(c)(2), (3), (4), and (5) should not have been removed from the PCCP. The Illinois EPA does not have this authority.
- Repair/regrade of the depressions addressed by drainage pipe should have been specified in the post-closure care plan. Seeding, fertilizing, and mulching of these areas should have been listed as a separate cost or (3) separate costs.

As the application only describes its purpose as updating the cost estimate, I don't think I can do anything about these defects in the PCCP.

6/14/2023 – The addendum received on this date is a revised cost estimate with the Final Repair of Cover Following Post-Closure Period cost zeroed out.

OK

2nd Addendum Review 8/16/2023

I reviewed the addendum to see if it met the definition of a Significant Modification (35 IAC 810.103). It does not meet the criteria.

Completed a closure/post-closure care plan checklist and found deficiencies in the PCCP submitted. See the checklist.

Facility inspections are conducted on an annual basis. Evaluation of the site stormwater control plan depends on site inspections at 48 hours after a precipitation event. The stormwater control plan only says that it will be evaluated during site inspections. This pretty much excludes any evaluation of the stormwater control plan (drainage tiles) from taking place.

The two flaws noted above have been corrected in the new PCCP. The costs to repair the drainage tile locations have been lumped into a single line item.

4th Technical Review 10/19/2023

- A. *The LPC-PA1 form provided, and the LPC-PA16 form sent to the Public Notice Recipients, shown in Section VI.1 of the LPC-PA1 form, does not state this application is modifying the post-closure care plan. A new LPC-PA1 form must be provided to the Illinois EPA and new LPC-PA16 forms must be sent to the Public Notice Recipients, with a copy provided to the Illinois EPA, notifying them of this increase in scope of this application.***

A new LPC-PA1 form and a copy of the new LPC-PA16 form are provided, which include the PCCP update.

OK

- B. *Assurance has not been provided that the operator shall treat, remove from the site, or dispose of all wastes and waste residues within 30-days after receipt of the final volume of waste, as required by 35 Illinois Administrative Code (herein after 35 IAC) 811.111(a). The Illinois EPA requires this assurance in all PCCPs.***

This assurance has been added to the PCCP.

OK

- C. *Assurance has not been provided that the operator shall remove all equipment or structures not necessary for the post-closure land use, unless otherwise authorized by permit, including a description of all equipment and structures that will be removed, as required by 35 IAC 811.111(b). The Illinois EPA requires this assurance in all PCCPs.***

This assurance has been added to Section 6 of the PCCP. The applicant notes that all such items have already been removed.

OK

- D. *Page 6 of the PCCP states that annual inspections of the landfill are currently being performed, while page 9 of the PCCP states that quarterly inspections of the site continue. This discrepancy must be resolved.***

35 IAC 811.111(c) allows for annual inspections of the closed landfill after five years of the post-closure care period have elapsed. Page eight of the PCCP has been revised to reflect that annual inspections are allowed once five years of the post-closure care period have elapsed and are currently being implemented.

OK

- E. *The PCCP provided does not contain deed notation assurances in accordance with 35 IAC 811.110(g).***

35 IAC 811.110(g) applies to the 'Closure and Written Closure Plan' and does not

require this information to be in a PCCP. This is believed to be the reason Illinois EPA has previously approved a prior version of the PCCP without this information. Notwithstanding the above, in an effort to cooperate with the Agency and facilitate approval of this permit modification, this information has been added to the PCCP as Section 1.1.

OK

F. Assurances are not provided in the PCCP that:

- a. The operator shall revise the cost estimate whenever a change in the PCCP increases the cost estimate – 35 IAC 811.704(b).***
- b. The cost estimate has been based on the assumption that the Illinois EPA will contract with a third-party to implement the PCCP – 35 IAC 811.704(d).***

The above information has been added as Section 2.0.

OK

Apparently, some information required in the PCCP by Agency procedure should only be in the Closure Plan procedure.

I am recommending approval of this application because the applicant has correctly inflated all costs by the appropriate inflation factor to obtain current costs. ~~One cost was removed because it is not part of the PCCP.~~ The applicant has also updated the PCCP to meet the requirements of the regulations.

Changes to the permit:

- Column titles were reversed in Condition IV.3 because L301, L302, etc. were shown as Applicant designations while EW designations were shown as EPA designations.
- The leachate sampling schedule was updated in Condition IV.5 because it was about to end.
- Condition IV.6 had a hyperlink removed in accordance with procedure.
- A reference to the location of the post-closure care plan was changed in Condition IV.7 as this application contains a new post-closure care plan.
- Condition IV.8 was removed because installation of the leachate pumps has been completed.

- Condition VII.5 was revised in accordance with the new cost estimate. In addition, "entire facility" was changed to "Units II and III" because Unit I is not included in this cost estimate.

- Condition VII.8 was added to the permit to identify the current location of the post-closure care plan.

APPENDIX F
Closure and Post-closure Plans

Legend:

PR-Provided, AD-Adequate, NA-Not Applicable, EX-Explanations and notes

PR AD NA EX

I. Closure Plan

The closure plan includes the following:

- A. A map showing the configuration of the facility after closure of all units, with the following: - 812.114(a)
1. The contours of the proposed final topography (after placement of the final cover) of all disturbed areas and showing how the final contours blend with the surrounding topography; - 812.114(a)(1) and 811.110(a)
2. A scale no smaller than 1" = 200' and a contour interval of two feet (5 foot contour intervals may be used on slopes steeper than 5:1); and - 811.114(a)(1)
3. The location of all facility-related structures to remain as permanent features after closure. - 812.114(a)(2)
- B. Identification of the "assumed closure date" - 812.114(b)
- C. Steps necessary for the premature final closure of the site at the assumed closure date. - 812.114(b)
- D. Steps necessary for the final closure of the site at the assumed closure date. - 812.114(c)
- E. Steps necessary to prevent damage to the environment during temporary suspension of waste acceptance. (This is necessary only if the operator wants a permit which would allow temporary suspension of waste acceptance at the site without initialing final closure.) - 812.114(d)
- F. A description of the steps necessary to decontaminate equipment during closure. - 812.114(e)
- G. An estimate of the expected year of closure. - 812.114(f)
- H. Schedules for the premature and final closure which shall include, at a minimum: - 812.14(g)
1. Total time required to close the site: and
2. Time required for closure activities which will allow tracking of the progress of closure.

PR AD NA EX

NOTE: MSWLF units must close under the following timeframe:

3. The owner or operator of a MSWLF unit shall begin closure activities for each MSWLF unit no later than the date determined as follows:

a. 30 days after the date on which the MSWLF unit receives the final receipt of waste; or – 811.110(e)(1)

b. If the MSWLF unit has remaining capacity and there is a reasonable likelihood that the MSWLF unit will receive additional wastes, no later than one year after the most recent receipt of wastes. –811.110(e)(2)

c. The Illinois EPA shall grant extensions beyond this one year deadline for beginning closure if the owner or operator demonstrates that:

i. The MSWLF unit has the capacity to receive additional wastes; and – 811.110(e)(3)(A)

ii. The owner or operator has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed MSWLF unit. – 811.110(e)(3)(B)

4. The owner or operator of a MSWLF unit shall complete closure activities for each unit in accordance with closure plan no later than the dates determined as follows:

a. Within 180 days of the beginning closure, as specified 811.110(e). – 811.110(f)(1)

b. The Illinois EPA shall grant extension of the closure period if the owner or operator demonstrates that:

i. The closure will, of necessity, take longer than 180 days; and – 811.110(f)(2)(A)

ii. The owner or operator has taken and will continue to take all necessary steps to prevent threats to human health and the environment from the unclosed MSWLF unit. – 811.110(f)(2)(B)

I. A description of methods for compliance with all closure requirements of 35 IAC 811 Subpart E. This will necessitate the following information: - 812.114(h)

1. Documentation must be provided that shows that the final slope, vegetation, and other stabilization procedures will meet the following standards:

a. All final slopes shall be designed and constructed to a grade capable of supporting vegetation and which minimizes erosion. – 811.322(a)

PR AD NA EX

b. All slopes shall be designed to drain runoff away from the cover and prevent ponding. No standing water shall be allowed anywhere in or on the unit. – 811.322(b)

c. Vegetation shall be promoted on all reconstructed surfaces to minimize wind and water erosion of the final protective cover. – 811.322(c)(1)

d. Vegetation shall be compatible with (i.e. grow and survive under) local climatic conditions. – 811.322(c)(2)

e. Vegetation shall require little maintenance. – 811.322(c)(3)

f. Vegetation shall consist of a diverse mix of native and introduced species consistent with the post-closure land use. – 811.322(c)(4)

g. Vegetation shall be tolerant of the landfill gas expected to be generated. – 811.322(c)(5)

h. The root depth of the vegetation shall not exceed the depth of the final protective cover system. – 811.322(c)(6)

i. Temporary erosion control measures, including but not limited to, the application (alone or in combination) of mulch, straw, netting, or chemical soil stabilizers, shall be undertaken while vegetation is being established. – 811.322(c)(7)

j. Structures constructed over the unit:

i. Structures constructed over the unit must be compatible with the land use; - 811.322(d)(1)

ii. Such structures shall be designed to vent gasses away from the interior; and – 811.322(d)(2)

iii. Such structures must in no way interfere with the operation of a cover system, gas collection system, leachate collection system, or any monitoring system. – 811.322(d)(3)

2. Final cover must have two layers (i.e. a final protective layer on top of a low permeability layer). The following information must be provided:

a. For final protective layer:

i. Assurance that the final protective layer shall cover the entire low permeability layer. – 811.314(c)(1)

ii. Specification of the thickness (minimum: 3 feet) of the final cover, which must be sufficient to protect the low permeability layer from freezing and minimize root penetration. – 811.313(c)(2)

PR AD NA EX

iii. A description of the soil, including a demonstration that it can support the proposed vegetation. – 811.314(c)(3) and 812.313(d)

iv. Identification of the source of final cover and a demonstration that the proposed source contains an adequate volume of suitable soil. – 812.313(d) and 811.704(f)

v. A demonstration that the final protective layer is sufficiently thick to protect the low permeability layer from root penetration and freezing and to maintain the proposed land use. – 811.314(c)(2) and 812.313(d)

vi. Assurance that the final protective layer shall be installed soon enough after the low permeability layer is constructed to prevent desiccation, cracking, freezing, or other damage to the low permeability layer. – 811.314(c)(4)

vii. A sampling program, based on statistical sampling techniques, that establishes criteria for acceptance or rejection of materials and construction operations to be used in the construction quality assurance program. – 812.313(f)

b. For low permeability layer (may be soil, geomembrane, or other material):

i. Documentation that the low permeability layer shall cover the entire unit and connect with the liner system. – 811.314(b)(2)

ii. A description showing how the low permeability layer will tie into the liner. – 812.313(e)

iii. Estimates of settling – 812.313(c)

iv. Assurance that not later than 60 days after placement of the final lift of solid waste, a low permeability layer shall be constructed. – 811.314(b)(1)

v. A description of the low permeability layer showing that it shall consist of one of the following: - 811.314(b)(3)

- A *Compacted Earth Layer* constructed in accordance with the following standards:

o The minimum allowable thickness shall be 3 feet; - 811.314(b)(3)(A)(i)

o The layer shall be compacted to achieve a permeability of 1×10^{-7} cm per second and minimize void spaces. – 811.314(b)(3)(A)(ii)

PR AD NA EX

- Alternative specifications may be utilized provided that the performance of the low permeability layer is equal to or superior to the performance of a layer meeting the requirements of 811.314(b)(3)(A)(i-ii). – 811.314(b)(3)(A)(iii)

- A *Geomembrane* constructed in accordance with the following standards: - 811.314(b)(3)(B)

- The geomembrane shall provide performance equal to or superior to the compacted earth layer described in 811.314(b)(3)(A). – 811.314(b)(3)(B)(i)

- The geomembrane shall have the strength to withstand the normal stresses imposed by the waste stabilization process. – 811.314(b)(3)(B)(ii)

- The geomembrane shall be placed over a prepared base free from sharp objects and other materials that may cause damage. – 811.314(b)(3)(B)(iii)

- *Any other low permeability layer* construction techniques or materials, provided that they provide equivalent or superior performance to the requirements of 811.314(b)(3)(A)(i-ii). – 811.314(b)(3)(C)

- vi. Design Specifications (i.e. materials specification, thickness, placement techniques, hydraulic conductivity, etc.) – 812.313(a-b)

- vii. Identification of the source and a demonstration that the proposed source contains an adequate volume suitable soil (if soil is going to be used to construct the low permeability layer). – 811.704(f) and 812.313(d)

- viii. A sampling program based on statistical sampling techniques and establishing criteria for acceptance or rejection of materials and construction operations to be used in the construction quality assurance program. – 812.313(f)

- ix. For a MSWLF unit if the bottom liner system permeability is lower than 1×10^{-7} cm/sec, the permeability of the low permeability layer of the final cover system shall be less than or equal to the permeability of the bottom liner system. – 811.314(b)(4)

- 3. A demonstration that all drainage ways and swales were designed to safety pass the runoff from the 100 year, 24 hour precipitation event without scouring or erosion. – 811.110(b)

- 4. A demonstration that the final configuration of the facility has been designed in a manner that minimizes the need for further maintenance. – 811.110(c)

II. POST CLOSURE CARE PLAN – 812.115

The post closure plan shall include the following:

- A. Assurance that the operator shall treat, remove from the site, or dispose of all wastes and waste residues within 30 days after receipt of the final volume of waste. – 811.111(a)
- B. Assurance that the operator shall remove all equipment or structures not necessary for the post-closure land use, unless otherwise authorized by permit, including a description of all equipment and structures that will be removed. – 811.111(b)
- C. Standards for maintenance and inspection of the final cover and vegetation.
1. Frequency and duration of inspections
- a. The operator shall conduct a quarterly inspection of all vegetated surfaces for a minimum of five years after closure, and after five years, the operator may reduce the frequency to annual inspections until settling has stopped and there are no eroded or scoured areas. – 811.111(c)(1)(A)
- b. Inspections shall be continued for a minimum period of 15 years after closure. – 811.111(c)(1)(B)
- Annual inspections are being performed according to Page 6 of the post-closure care plan
2. All rills, gullies, and crevices six inches or deeper identified in the inspection shall be filled. Areas identified by the operator or the Agency inspection as particularly susceptible to erosion shall be recontoured. – 811.111(c)(2)
3. All eroded and scoured drainage channels shall be repaired and lining material shall be replaced if necessary. – 811.111(c)(3)
4. All holes and depressions created by settling shall be filled and recontoured so as to prevent standing water. – 811.111(c)(4)
5. All reworked surfaces, and areas with failed or eroded vegetation in excess of 100 square feet cumulatively, shall be revegetated in accordance with the approved closure plan for the facility. – 811.111(c)(5)
6. Descriptions of the following monitoring programs including the frequency and duration of monitoring:
- a. Leachate monitoring – 811.309(g)
- b. Gas monitoring – 811.310(a-d)
- c. Groundwater Monitoring – 811.318 and 811.319
7. Descriptions of how the following systems will be operated, including their maintenance schedules and the criteria for ceasing to operate them:

PR AD NA EX

a. Gas Collection System – 811.311(d)(4) and (11)

b. Gas Processing/Disposal System – 811.312(b)

c. Leachate Collection and Management Systems – 811.308(a) and (g) and 811.309(a-f) and (h)

D. An estimate of the largest area of the MSWLF unit ever requiring a final cover, as required by 811.314, at any time during the active life and an estimate of the maximum inventory of wastes ever on-site over the active life of the landfill facility. 811.110(d)(3)

Final Cover has been applied for 20+ years

E. Deed notation.

1. Following closure of all MSWLF units at a site, the owner or operator shall record a notation on the deed to the landfill facility property or some other instrument that is normally examined during title search. The owner or operator shall place a copy of the instrument in the operating record, and shall notify the Illinois EPA that the notation has been recorded and a copy has been placed in the operating record. – 811.110(g)(1)

2. The notation on the deed or other instrument must be made in such a way that in perpetuity notify any potential purchaser of the property that:

a. The land has been used as a landfill facility: and – 811.110(g)(2)(A)

b. Its use is restricted pursuant to 811.111(d). – 811.110(g)(2)(B)

3. The Illinois EPA shall allow the owner or operator of a MSWLF unit to remove the notation from the deed only if the owner or operator demonstrates to the Illinois EPA that all wastes have been removed from the facility. – 811.110(h)

F. Planned Uses of property

1. The owner or operator of a MSWLF unit shall include a description of the planned use of the property during the post-closure care period. – 811.111(d)(1)

None planned

2. Post-closure use of the property must not disturb the integrity of the final cover, liner, any other components of the containment system, or the function of the monitoring systems, unless necessary to comply with the requirements of part 811. – 811.111(d)(2)

None planned

3. The Illinois EPA shall approve any other disturbance if the owner or operator demonstrates that the disturbance of the final cover, liner, or other component of the containment system, including any removal of waste, will not increase the potential threat to human health or the environment. – 811.111(d)(3)

None planned

III. COST ESTIMATES – 812.115

Provides the following

A. Closure cost estimates:

- Itemized cost of carrying out the closure plan on the assumed closure date, which includes the following items: - 811.704(a), (c), and (f)
1. The Itemized cost of applying final cover to the entire area that will be filled during the period starting at the beginning of the permit term and ending on the assumed closure date.
2. The cost of completing the gas monitoring and collection systems and the runoff control structures.
3. The cost of equipment decontamination.
4. The cost of certification of closure.

B. Post-closure cost estimates:

1. The itemized cost of carrying out all of the activities described in the post-closure care plan, including: - 811.704(a), (f), and (h)
- a. Inspecting the vegetation and final cover and monitoring the groundwater, leachate, and landfill gas.
- b. Mowing and repairing damage to the vegetation and final cover caused by erosion, settlement, etc.
- c. Maintaining and operating the leachate and gas collection and management systems.
- d. If landfill gas is transported to an off-site processing system, the costs necessary to operate an on-site gas disposal system, should access to the off-site facility become unavailable. The cost estimate must include the following information: installation, operation, maintenance, and monitoring of an on-site gas disposal system.
2. Calculations determining the present value of providing post-closure care based on the following assumptions: - 811.704(g)
- a. Landfill operations will cease on the assumed closure date.
- b. Post-closure care shall continue throughout the remainder of the design period with no reduction in the frequency of stringency of any post-closure

PR AD NA EX

care activity [except for final cover and vegetation inspections and gas monitoring, see 811.111(c)(1)(A) and 811.309(g)(1)].

- c. The discount rate, used to reduce the cost to its Present Value (on the assumed closure date), is based on essentially risk free investments minus inflation. [Reducing costs to present value may only be done when a trust fund is used for the FA instrument.] - (811.718 and Permit Section Policy)

- d. For MSWLF's.

Yes, the post-closure costs are based on the assumption this is a MSWLF.

Note: See pp. F-5 through F-7 of the Instructions to PA15 Appendix F.

- C. The sum of the closure cost plus the present value of the post-closure cost. – 812.116 and 811.704(a)

No closure costs as landfill has been closed for 20+ years.

- D. Assurance/documentation of the following:

1. The operator shall revise the cost estimate whenever a change in the closure plan increases the cost estimate. – 811.704(b)

2. The cost estimate has been based on the assumption that the Agency will contract with a third party to implement the closure plan. – 811.704(d)

3. The cost estimate has not been reduced by allowance for the salvage value of equipment or waste, for the resale value of land, or for the sale of landfill gas. – 811.704(e)

Explanations and notes:

Page 6 refers to annual inspections while page 9 refers to quarterly inspections of the stormwater drainage system. The evaluation of the surface water drain system depends on an inspection of the landfill at 48 hours after a precipitation event.

Completeness and Initial Review Checklist for LPC-PA1**LPC-PA1 Form**

Site No. 1418210001
 Project Name: BFI, Davis Junction
 Reviewer: Bob Colwell

County: Ogle
 Log No. 2023 - 150
 Default Date: 5/27/23

Legend:

PR-Provided, AD-Adequate, NA-Not Applicable, EX-Explanations and notes

PR AD NA EX

I. SITE IDENTIFICATION – 812.104(a)

- A. Site Name and Site Number
- B. City and County
- C. Owner and Operator Name and Address
- D. Type Submission, Type Facility and Type Waste
- E. Description of Project

II. COMPLETENESS REQUIREMENTS

A. Documentation: the Public Notice Letters have been mailed – 807.205(k)

1. Is Section 4.1 yes box checked?
2. Are the public notice recipients listed.

B. Local Siting Approval – 812.105, 813.104(c), and 39(c) of Act

1. Determination as to whether local siting approval is required.
2. Siting Certification Form (LPC-PA8) completed and enclosed.
3. Identification of any litigation contesting siting approval

C. Status of the following items identified:

1. Closure and post-closure care plans – 812.114 and 812.115
2. Prior Conduct Certification of the Chief Operator – 745.202

- D. Beneficial Trust Certification Form (LPC-PA9) completed and enclosed. – 22.19(b) of the Act

- E. Is the latest version of the LPC-PA1 form used? (currently rev. 10/2018)

LANDFILL BAN IN COUNTIES WITH POPULATIONS OVER 2,000,000

Yes No

Does the application propose to develop a new landfill, that will be located in a county with more than 2,000,000 inhabitants (i.e., Cook County)? – Section 22.43a(a) of the Act (Source: P.A. 97-843, eff. 7-23-12.)

Does the application propose to laterally expand a landfill, that is located in a county with more than 2,000,000 inhabitants (i.e., Cook County)? – Section 22.43a(b) of the Act (Source: P.A. 97-843, eff. 7-23-12.)

Note to Reviewer: If the answer to either of the questions directly above is "Yes", the permit application should be hard denied.

III. SIGNATURES

A. Owner's Signature (notarized for 813) – 812.104(b)

B. Operator's Signature (notarized for 813) – 812.104(b)

C. Professional Engineer's Certification, seal required – 812.102

two copies of Page 4 of the LPC-PA1 are enclosed. One has been signed by the owner/operator, and one signed by the consulting engineer.

IV. OTHER

Is the 39(i) certification form provided consistent with Section IV.7?

Is the narrative discussion and supporting data necessary for GAU to perform their review included? (if applicable)

V. FACES DATABASE

Has the FACES Database been reviewed?

VI. ENVIRONMENTAL JUSTICE

Is the site located in an environmental justice area?
(Use the SWAP database to check EJ location status)

If yes, use the EJ Database to submit a review request.

Explanations and notes:



[Site Search](#)

[Review Status](#)

You are logged in as ILLINOIS\Robert.Colwell.

Site Detail

Site ID: 170000132924

EJ Status: **0 - Not an EJ area**

Interests:

Bureau ID	Interest Type	Media Code	Action
141821AAI	PERMIT	AIR	Start Review
1410175004	BOL	LAND	Start Review
1418210001	BOL	LAND	Start Review
1418210001	LFGW	LAND	Start Review
1410175004	SOLID WASTE	LAND	Start Review
1418210001	RCRA	LAND	Start Review
1418210001	SOLID WASTE	LAND	Start Review
W1418210002	BOW	WATER	Start Review
141821AAI	BOA	AIR	Start Review

Rockford

STATE PERMIT LOG NO. : 2023-150

NAME : BFI, Davis Junction

OWNER : Jim Hitzeroth

STATUS : A

SITE NO. : 1418210001

COUNTY : Ogle

CITY : Davis Junction

PERMIT TYPE : SM Part 813

SR : 90

REVIEWER : *ROBERT CALWELL*

GA-REQ'D : Y

FACILITY TYPE : LF

COMPLETENESS : 5/27/2023

GAU-REV :

RP : 90

MAILED :

RECEIVED : 4/27/2023 DUE: 7/26/2023

REVIEW TIME :

WAIVER :

FINAL ACTION :

NOTIFY IHPA :

PSRP :

PRP :

SITING APP'D: N

NOTIFY DCEO:

NOTIFY DNR:

NOTIFY DELEGATED COUNTY: Y

NOTIFY DOT :

PERMIT EXPIRATION:

COMMENTS: Annual update to post-closure care cost estimate due by May 1, 2023, as required by Condition VII.7

5/5/2023 NO COMMENTS AT THIS TIME - REBECCA DeMay

813 COMPLETENESS REVIEW

- A. LOG IN PROCESS : (5) :
- B. TO GAU REVIEWER : (5)
- C. GAU REVIEW : (7)
- D. GAU MEMO TO SW : (2)
- E. TO SW REVIEWER : (5)
- F. SW REVIEW : (7)
- G. SW MANAGER REVIEW : (2)
- H. JOINT DECISION : (2)
- I. COMPLETENESS LTR SENT : (7)
- J. GAU & SW : (TECH. MTG.)
- K. DRAFT :
- L. REVIEW MGR :

RECEIVED
MAY 01 2023

IL Environmental Protection Agency
ROCKFORD REGIONAL OFFICE

807/832 COMPLETENESS REVIEW

- i. OWNER'S SIGNATURE Y N
- ii. OPERATOR'S SIGNATURE Y N
- iii. P.E.'S SIGNATURE Y N NA
- iv. SITING OBTAINED Y N NA
- v. CORRECT FORMS UTILIZED Y N WHAT FORMS MISSING?
- vi. COMPLETE Y N IF NO SEND LETTER BY 30TH DAY!



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

217/524-3301

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

7022 1670 0001 4381 5845

NOV 07 2023

BFI Waste Systems of North America
Attn: Jim Hitzeroth
26 West 580 Schick Road
Hanover Park, Illinois 60103

Re: 1418210001 -- Ogle County
BFI, Davis Junction
Permit No. 1994-160-LF
Modification No. 41
Expiration Date: October 1, 2024
Log No. 2023-150
Permit Landfill 811 File
Permit Approval

Dear Mr. Hitzeroth:

Permit has been granted to BFI Waste Systems of North America, LLC as owner and operator, allowing modification of an existing municipal and non-hazardous special waste landfill all in accordance with the application and plans provided in Log No. 1994-160. Final plans, specifications, application, and supporting documents, as submitted and approved, shall constitute part of this permit and are identified in the records of the Illinois Environmental Protection Agency (the "Illinois EPA"), Bureau of Land, Division of Land Pollution Control by the permit number designated in the heading above.

Permit No. 1994-160-LF, issued September 20, 1994, approved:

1. The Significant Modification of the development and operation of Phase II and III of this landfill so as to comply with the applicable requirements of 35 Illinois Administrative Code, Subtitle G (hereinafter "35 IAC"), Parts 811 and 812, pursuant to 35 IAC 814.101(b)(1), 814.104, 814.301 and 814.302; and
2. Operation (i.e., waste disposal) in all areas underlain by the liner/barrier permitted for development by Permit No. 1992-068-SP up to the vertical maximums entailed by Permit No. 1994-160-LF.

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASEABLE

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

Page 2

Modification No. 7 to Permit No. 1994-160-LF issued April 20, 2001 approved closure certification for the above referenced facility. The minimum post-closure period of thirty (30) years began March 30, 2000.

Permit Modification No. 41 is hereby granted to BFI Waste Systems of North America, LLC as owner and operator, allowing modification of an existing municipal solid waste and non-hazardous special waste landfill all in accordance with Log No. 2023-150, prepared by James Hitzeroth of BFI Waste Systems of North America, LLC, and sealed and signed on April 19, 2023 by John W. Bossert, P.E., of Weaver Consultants Group.

The permit application approved by Modification No. 41 consists of the following documents:

<u>DOCUMENT</u>	<u>DATED</u>	<u>DATE RECEIVED</u>
Original Application Log No. 2023-150	April 24, 2023	April 27, 2023
Addenda	June 8, 2023 July 25, 2023	June 14, 2023 July 31, 2023
Extension	August 21, 2023	August 24, 2023
Addendum + Extension	September 28, 2023	October 2, 2023

Modification No. 41 to Permit No. 1994-160-LF approves the annual revision of the cost estimate for post-closure care to \$1,120,513; and approves a new post-closure care plan.

Except for the differences described in the table below, the conditions in the permit letter for Modification No. 41 to Permit No. 1994-160-LF are identical to the conditions in the permit letter for Modification No. 40, issued September 21, 2022.

Condition No. in Modification No. 40	Condition No. in Modification No. 41	Description of Modification
IV.3	IV.3	Reversed the column titles in the table.
IV.5	IV.5	Updated leachate sampling schedule.
IV.6	IV.6	Removed hyperlink.
IV.7	IV.7	Changed to reference the post-closure care plan approved in this application.
IV.8	None	Deleted as complete.
VII.5	VII.5	Modified financial assurance amount, modification no., and changed "entire facility" to "Units II and III".
None	VII.8	Added to indicate the location of the current post-closure care plan.

Page 3

Pursuant to Section 39(a) of Illinois Environmental Protection Act (hereinafter "the Act") and 35 IAC 813.104(b), this permit is issued subject to the development, operating, and reporting requirements for non-hazardous waste landfills in 35 IAC Parts 810, 811, 812 and 813, as modified by 35 IAC Part 814, Subpart C, the standard conditions attached hereto, and the following conditions. In case of conflict between the permit application and these conditions, the conditions of this permit shall govern.

I. CONSTRUCTION QUALITY ASSURANCE

1. All necessary surface drainage control facilities shall be constructed prior to other disturbance in any area during the post-closure care period.
2. Repair of all structures at this landfill shall be performed in accordance with the construction quality assurance plan approved by relevant Illinois EPA permits issued to this landfill and the requirements of 35 IAC Part 811 Subpart E.
3. The permittee shall designate an independent third-party contractor as the Construction Quality Assurance (CQA) Officer(s). The CQA Officer(s) shall be an Illinois Certified Professional Engineer who is independent from and not under the control or influence of the operator, any employee of the operator, or any other corporation, company or legal entity that is a subsidiary, affiliate, parent corporation or holding corporation associated with the operator.
4. During all construction and testing that is subject to CQA certification pursuant to 35 IAC 811.503(a), the CQA Officer(s) designated pursuant to Condition No. I.3 of this permit shall either personally be present or if the CQA officer(s) is unable to be present as required, then the CQA Officer(s) shall comply with all the requirements of 35 IAC 811.503(b).
5. All standards for testing the characteristics and performance of materials, products, systems, and services shall be those established by the American Society for Testing and Materials (ASTM) unless otherwise stated in the permit application.
6. Pursuant to 35 IAC 811.104(c), all stakes and monuments shall be inspected annually and surveyed no less frequently than once in five years by a professional land surveyor, who shall also replace and re-survey any missing or damaged stakes and monuments discovered during the inspection.

II. OPERATING CONDITIONS

1. The landfill may no longer accept waste.

Page 4

2. The operator of this solid waste facility shall not allow any of the following to occur during the post-closure care period:
 - a. refuse in standing or flowing waters;
 - b. leachate flows entering Waters of the State;
 - c. leachate flows exiting the landfill confines (i.e., the facility boundaries established for the landfill in a permit or permits issued by the Illinois EPA);
 - d. open burning of refuse in violation of Section 9 of the Act;
 - e. scavenging as defined by Illinois Pollution Control Board (Board) regulations;
 - f. failure to submit reports required by permits or Board regulations; and
 - g. failure to submit any cost estimate or financial assurance mechanism for the site as required by Section 21.o.13 of the Act.
3. The maintenance of the final cover shall be carried out in accordance with the requirements of the post-closure care plan approved by relevant Illinois EPA permits and 35 IAC 811.111.
4. Access to areas within the boundaries of the facility shall be controlled by use of fences, gates, and natural barriers to prevent unauthorized entry at all times.
5. The operation of this facility shall not cause a violation of the Noise Control Regulations in 35 IAC Subtitle H, Section 901. .
6. Pursuant to 35 IAC 811.111(d), during the post-closure care period, use of the property must not disturb the integrity of the final cover, liner, any other component of the Containment System, or the function of the monitoring system, unless in compliance with the requirements of 35 IAC Parts 811 through 814.

III. GENERAL CONDITIONS

1. This permit is issued with the express understanding that no process discharge to Waters of the State or to a sanitary sewer will occur from these facilities except as authorized by a permit issued by the Bureau of Water.
2. Site surface drainage, during development, during operation and after the site is closed, shall be managed in accordance with the approved drainage control plan.

Page 5

3. If changes occur which modify any of the information the permittee has used in obtaining a permit for this facility, the permittee shall notify the Illinois EPA. Such changes would include but not be limited to any changes in the names or addresses of both beneficial and legal titleholders to the herein-permitted site. The notification shall be submitted to the Illinois EPA within 15 days of the change and shall include the name or names of any parties in interest and the address of their place of abode; or, if a corporation, the name and address of its registered agent.
4. The Illinois EPA reserves the right to require installation of additional monitoring devices, to require analyses for certain parameters, to alter the sample parameters list, and to modify the method of evaluating the monitoring results as necessary to fulfill the intent and purpose of the Act or Board Regulations.
5. This permit is subject to review and modification by the Illinois EPA as deemed necessary to fulfill the intent and purpose of the Act, and all applicable environmental rules and regulations.
6. Pursuant to 35 IAC 813.201(a), any modifications to this facility shall be proposed in the form of a permit application and submitted to the Illinois EPA.
7. Pursuant to 35 IAC 813.301, an application for permit renewal shall be filed with the Illinois EPA at least 90 days prior to the expiration date of this permit.
8. All elements of this permit, which do not require a significant modification authorizing operation pursuant to 35 IAC 811.505(d) and 813.203, shall be implemented immediately. Examples of such elements include, but are not limited to, groundwater and leachate monitoring of existing monitoring points required by 35 IAC 811.401 - 811.406.
9. This facility shall be operated in accordance with the permit issued by the Illinois EPA's Bureau of Air.
10. The permittee shall submit current 39(i) certifications and supporting documentation with all applications for a permit.

IV. LEACHATE MANAGEMENT/MONITORING

1. Pursuant to 35 IAC 811.309(h)(3), leachate from this municipal solid waste landfill (MSWLF) shall be collected and disposed beginning as soon as it is first produced and continuing for at least 30 years after closure except as otherwise provided by 35 IAC 811.309(h)(4) and (h)(5). Collection and disposal of leachate

Page 6

may cease only when the conditions described in 35 IAC 811.309(h)(2) have been achieved.

Leachate removed from this landfill shall be treated at an Illinois EPA permitted facility in accordance with the leachate management plan proposed in Log Nos. 1994-160 and 1999-241.

2. Leachate removal shall be performed throughout the period that the leachate collection/management system must be operated in accordance with Log Nos. 1994-160 and 1994-241.
3. The following monitoring points are to be used in the Leachate Monitoring Program for this facility:

Leachate Monitoring Points

<u>Illinois EPA Designation</u>	<u>Applicant Designation</u>
L301	Leachate Collection Tank
L302	EW-1
L303	EW-3
L304	EW-12
L305	EW-15
L306	EW-20
L307	EW-27
L308	EW-31
L309	EW-23

4. Pursuant to 35 IAC 811.309(g), 722.111 and 721 Subpart C, leachate monitoring (i.e., sampling, measurements, and analysis) must be conducted in accordance with the permit for this facility. The concentrations or values for the parameters contained in Lists L1 and L2 (below) must be determined on a quarterly and semi-annual basis, respectively, and the results must be submitted with the groundwater reports.

Each year, the permittee shall collect a representative leachate sample and have it tested for the parameters contained in List L3.

Condition IV.5 presents the sampling, testing, and reporting schedules in tabular form. Leachate monitoring at each monitoring point shall continue as long as groundwater monitoring at this landfill is necessary pursuant to 35 IAC 811.319(a)(1)(C).

LIST L1

<u>Leachate Monitoring Parameters</u>	<u>STORET</u>
Elevation Leachate Surface (ft. MSL)	71993
Bottom of Well Elevation (ft. MSL)	72020
Leachate Level from Measuring Point (ft.)	72109

LIST L2

<u>Leachate Monitoring Parameters</u>	<u>STORET</u>
pH (S.U.)	00400
Arsenic (total)	01002
Barium (total)	01007
Cadmium (total)	01027
Iron (total)	01045
Ammonia Nitrogen – N (mg/L)	00610
Bacteria (Fecal Coliform) (CFU/100 mL)	31616
Biochemical Oxygen Demand (BOD5) (mg/L)	00310
1,1,1,2-Tetrachloroethane	77562
1,1,1-Trichloroethane	34506
1,1,2,2-Tetrachloroethane	34516
1,1,2-Trichloroethane	34511
1,1-Dichloroethane	34496
1,1-Dichloroethylene	34501
1,1-Dichloropropene	77168
1,2,3-Trichlorobenzene	77613
1,2,3-Trichloropropane	77443
1,2,4-Trichlorobenzene	34551
1,2,4-Trimethylbenzene	77222
1,2-Dibromo-3-Chloropropane	38760
1,2-Dichloroethane	34531
1,2-Dichloropropane	34541
1,3,5-Trimethylbenzene	77226
1,3-Dichloropropane	77173
1,3-Dichloropropene	34561

LIST L2

<u>Leachate Monitoring Parameters</u>	<u>STORET</u>
1-Propanol	77018
2,2-Dichloropropane	77170
2,4,5-tp (Silvex)	39760
2,4,6-Trichlorophenol	34621
2,4-Dichlorophenol	34601
2,4-Dichlorophenoxyacetic Acid (2,4-D)	39730
2,4-Dimethylphenol	34606
2,4-Dinitrotoluene	34611
2,4-Dinitrophenol	34616
2,6-Dinitrotoluene	34626
2-Chloroethyl Vinyl Ether	34576
2-Chloronaphthalene	34581
2-Chlorophenol	34586
2-Hexanone	77103
2-Propanol (Isopropyl Alcohol)	81310
3,3-Dichlorobenzidine	34631
4,6-Dinitro-O-Cresol	34657
4-Bromophenyl Phenyl Ether	34636
4-Chlorophenyl Phenyl Ether	34641
4-Methyl-2-Pentanone	78133
4-Nitrophenol	34646
Acenaphthene	34205
Acetone	81552
Alachlor	77825
Aldicarb	39053
Aldrin	39330
Aluminum	01105
Anthracene	34220
Antimony	01097
Atrazine	39033
Benzene	34030
Benzo (a) Anthracene	34526
Benzo (a) Pyrene	34247
Benzo (b) Fluoranthene	34230
Benzo (ghi) Perylene	34521

LIST L2

<u>Leachate Monitoring Parameters</u>	<u>STORET</u>
Benzo (k) Fluoranthene	34242
Beryllium (total)	01012
Bicarbonate (mg/L as CaCO3)	00425
Bis (2-Chloro-1-Methylethyl) Ether	73522
Bis (2-Chloroethoxy) Methane	34278
Bis (2-Chloroethyl) Ether	34273
Bis (2-Ethylhexyl) Phthalate	39100
Bis(Chloromethyl) Ether	34268
Boron	01022
Bromobenzene	81555
Bromochloromethane	77297
Bromodichloromethane	32101
Bromoform	32104
Bromomethane	34413
Butanol	45265
Butyl Benzyl Phthalate	34292
Calcium (mg/L)	00916
Carbofuran	81405
Carbon Disulfide	77041
Carbon Tetrachloride	32102
Chemical Oxygen Demand (COD) (mg/L)	00335
Chlordane	39350
Chloride (mg/L)	00940
Chlorobenzene	34301
Chloroethane	34311
Chloroform	32106
Chloromethane	34418
Chromium (total)	01034
Chrysene	34320
Cis-1,2-Dichloroethylene	77093
Cobalt (total)	01037
Copper (total)	01042
Cyanide (mg/L)	00720
DDT	39370
Di-N-Butyl Phthalate	39110

LIST L2

<u>Leachate Monitoring Parameters</u>	<u>STORET</u>
Di-N-Octyl Phthalate	34596
Dibenzo (a,h) Anthracene	34556
Dibromochloromethane	32105
Dibromomethane	77596
Dichlorodifluoromethane	34668
Dichloromethane	34423
Dieldrin	39380
Diethyl Phthalate	34336
Dimethyl Phthalate	34341
Endrin	39390
Endrin Aldehyde	34366
Ethyl Acetate	81585
Ethylbenzene	78113
Ethylene Dibromide (EDB)	77651
Fluoranthene	34376
Fluorene	34381
Fluoride (mg/L)	00951
Heptachlor Epoxide	39420
Heptachlor	39410
Hexachlorobenzene	39700
Hexachlorobutadiene	39702
Hexachlorocyclopentadiene	34386
Hexachloroethane	34396
Indeno (1,2,3-cd) Pyrene	34403
Iodomethane	77424
Isopropylbenzene	77223
Lead (total)	01051
Lindane	39782
Magnesium (total) (mg/L)	00927
Manganese (total)	01055
Mercury (total)	71900
Methoxychlor	39480
Methyl Ethyl Ketone	81595
Naphthalene	34696
Nickel (total)	01067

LIST L2

<u>Leachate Monitoring Parameters</u>	<u>STORET</u>
Nitrate-Nitrogen (mg/L)	00620
Nitrobenzene	34447
Oil, Hexane Soluble (or Equivalent) (mg/L)	00550 or 00552
Parathion	39540
Pentachlorophenol	39032
Phenanthrene	34461
Phenols	32730
Phosphorous (mg/L)	00665
Polychlorinated Biphenyls	39516
Potassium (mg/L)	00937
Pyrene	34469
Selenium	01147
Silver (total)	01077
Specific Conductance (umhos/cm)	00094
Sodium (mg/L)	00929
Styrene	77128
Sulfate (mg/L)	00945
Temperature of Leachate Sample (°F)	00011
Tert-Butylbenzene	77353
Tetrachlorodibenzo-p-Dioxon	34675
Tetrachloroethylene	34475
Tetrahydrofuran	81607
Thallium	01059
Tin	01102
Toluene	34010
Total Organic Carbon (TOC) (mg/L)	00680
Total Dissolved Solids (TDS) (mg/L)	70300
Total Suspended Solids (TSS) (mg/L)	00530
Toxaphene	39400
Trans-1,2-Dichloroethylene	34546
Trans-1,3-Dichlorpropene	34699
Trans-1,4-Dichloro-2-Butene	73547
Trichloroethylene	39180
Trichlorofluoromethane	34488
Vinyl Acetate	77057

LIST L2

<u>Leachate Monitoring Parameters</u>	<u>STORET</u>
Vinyl Chloride	39175
Xylene	81551
Zinc (total)	01092
m-Dichlorobenzene	34566
m+p-Xylene	61283
n-Butylbenzene	77342
n-Nitrosodimethylamine	34438
n-Nitrosodiphenylamine	34433
n-Nitrosodipropylamine	34428
n-Propylbenzene	77224
o-Chlorotoluene	77275
o-Dichlorobenzene	34536
o-Nitrophenol	34591
o-Xylene	77135
p-Chlorotoluene	77277
p-Cresol	77146
p-Dichlorobenzene	34571
p-Isopropyltoluene	77356
sec-Butylbenzene	77350

LIST L3

RCRA Parameters for Leachate and Condensate

<u>RCRA PARAMETERS</u>	<u>STORETS</u>
<u>Ignitability</u>	
Flashpoint, Pensky-Martens Closed Cup (°F)	00497
<u>Corrosivity</u>	
pH (S.U.)	00400
<u>Reactivity</u>	
Reactive Cyanide	99040
Reactive Sulfide	99042

LIST L3

RCRA Parameters for Leachate and Condensate

RCRA PARAMETERSSTORETS

	<u>Toxicity</u>	<u>Total conc. (ug/l)</u>	<u>TCLP conc. (mg/L)</u>
Arsenic		1002	99012
Barium		1007	99014
Cadmium		1027	99016
Chromium		1034	99018
Lead		1051	99020
Mercury		71900	99022
Selenium		1147	99024
Silver		1077	99026
Endrin		39390	99028
Lindane		39782	99030
Methoxychlor		39480	99032
Toxaphene		39400	99034
2,4-D		39730	99036
2,4,5-TP Silvex		39760	99038
Benzene		34030	99128
Carbon tetrachloride		32102	99050
Chlordane		39350	99148
Chlorobenzene		34301	99096
Chloroform		32106	99149
o-Cresol		77152	99150
m-Cresol		77151	99151
p-Cresol		77146	99152
Cresol		79778	99153
1,4-Dichlorobenzene		34571	99154
1,2-Dichloroethane		34531	99155
1,1-Dichloroethylene		34501	99156
2,4-Dinitrotoluene		34611	99157
Heptachlor (and its epoxide)		39410 and	99158

	39420	
Hexachlorobenzene	39700	99159
Hexachloro-1,3-Butadiene	39702	99160
Hexachloroethane	34396	99161
Methyl Ethyl Ketone	81595	99060
Nitrobenzene	34447	99062
Pentachlorophenol	39032	99064
Pyridine	77045	99066
Tetrachloroethylene	34475	99068
Trichloroethylene	39180	99076
2,4,5-Trichlorophenol	77687	99078
2,4,6-Trichlorophenol	34621	99080
Vinyl Chloride	39175	99162

Notes for all leachate monitoring parameters:

- a. Flashpoint shall be reported in degrees Fahrenheit. The parameters for reactivity and toxicity shall be reported in parts per million.
 - b. The permittee shall obtain metals and organics analysis. For List L3 parameters, either procedure may be utilized (i.e., total or TCLP), but any constituent whose total concentration exceeds the TCLP limit specified in 35 IAC 721.124 must be analyzed using the TCLP test and the results reported, unless an alternative test has been approved by the Illinois EPA. TCLP test methods must be in accordance with SW-846 Method 1311.
 - c. The test methods for leachate monitoring shall be those approved in the USEPA's Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846), Third Edition or the equivalent thereof.
 - d. All parameters shall be determined from unfiltered samples.
 - e. The monitoring results should be reported in ug/L units unless otherwise indicated.
5. The schedule for leachate sample collection and submission of monitoring data is illustrated below:

<u>Sampling Period</u>	<u>Sampling Points</u>	<u>Lists</u>	<u>Report Due Date</u>
Jan-Feb	L302 through L309	L1	April 15
April-May	L302 through L309	L1	July 15
April-May	L301	L2	July 15
April-May	LREP	L3	July 15

L1 - Leachate Level Measurements
L2 - Leachate Monitoring Parameters
L3 - RCRA Parameters for Leachate and Condensate
LREP - Representative Leachate Sample

6. The leachate monitoring data must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found on the Illinois EPA website.
7. Annually during the month of April, the operator shall compare average weekly leachate elevations with the compliance elevations (for the years 1 through 30 of the post-closure care period) listed in the Attachment A of Modification No. 4 to Permit No. 1994-160-LF, in accordance with the method described in Section 3.3 of the post-closure care plan approved by Modification No. 41. If the average leachate elevation calculated from four weekly measurements attained in April exceeds the compliance elevation at the permitted compliance monitoring points listed in Condition IV.3 of this permit, the operator shall execute the following contingency measures:
 - a. The pumping rates of the extraction wells must be examined and adjusted to the extent possible to maximize drawdown. Monthly evaluation of the counter readings on the extraction well pumps may be conducted to allow for any necessary adjustment of the pumping rates. Leachate elevations shall be measured on a quarterly basis in accordance with the schedule described in Condition No. IV.5 of this permit and in accordance with the method described in Section 3.3 of the post-closure care plan. If leachate elevations return to compliance levels within one year, the operator shall submit a report to the Illinois EPA stating the same. This report shall also include a description of the contingency measures implemented to return leachate elevations below compliance levels.
 - b. If exceedances continue to be observed during the month of April for two consecutive years, the operator shall submit to the Illinois EPA a plan to bring leachate elevations into compliance. This plan shall be submitted in the form of a permit application for significant modification within 45 days of the second consecutive exceedance mentioned above.

V. GROUNDWATER MONITORING

1. The groundwater monitoring program must be capable of determining background groundwater quality hydraulically upgradient of and unaffected by the units and to detect, from all potential sources of discharge, any releases to groundwater within the facility. The Illinois EPA reserves the right to require

Page 16

installation of additional monitoring wells as may be necessary to satisfy the requirements of this permit.

2. The groundwater monitoring wells shall be constructed and maintained in accordance with the requirements of 35 IAC 811.318(d) and designs approved by the Illinois EPA.
3. Groundwater monitoring wells identified in Table 4 of Log No. 1997-271 shall be maintained at the locations shown in Plan Sheet 1 of 1 of the Monitoring Plan in Log No. 1994-160 (Volume 2 of 3) and screened in the hydrogeologic unit(s) identified as potential contaminant pathway(s).
4. Within 60 days of installation of any groundwater monitoring well, boring logs compiled by a qualified geologist, well development data, and as-built diagrams shall be submitted to the Illinois EPA utilizing the "Well Completion Report" form enclosed with Log No. 1994-160. For each well installed pursuant to this permit, one form must be completed.
5. Groundwater monitoring wells shall be easily visible, labeled with the Illinois EPA monitoring point designations and fitted with padlocked protective covers.
6. In the event that any well becomes consistently dry or unserviceable and therefore requires replacement, a replacement well shall be installed within 10 feet of the existing well. The Illinois EPA shall be notified in writing at least 15 days prior to the installation of all replacement wells. A well that is more than 10 feet from the existing well or which does not monitor the same geologic zone is considered to be a new well and must be approved via a significant modification permit.
7. All borings, wells, and piezometers not used as monitoring points shall be abandoned in accordance with the standards in 35 IAC 811.316, and the decommissioning and reporting procedures contained in 77 IAC Part 920. In the event specific guidance is not found in 77 IAC Part 920, the Illinois EPA monitoring well plugging procedures shall be followed.
8. Groundwater sampling and analysis shall be performed in accordance with the requirements of 35 IAC 811.318(e) and the specific procedures and methods approved by the Illinois EPA.
9. The following monitoring points are to be used in the groundwater detection monitoring program for this facility:

Page 17

Applicant DesignationIllinois EPA DesignationUpgradient Well(s)

Shallow /Mid Level Well(s)

G162S(I)*	+G62M*
G166I	+G66M

Applicant DesignationIllinois EPA Designation

Deep Well(s)

G166D	+G66D
-------	-------

Wells Within Zone of Attenuation

Mid Level Well(s)

G155I	G55M
G167I	G67M
G169I	G69M
G170I	G70M
G171I	G71M
G176I	G76M
G177I	G77M
G178I	G78M

Deep Well(s)

G161D	G61D
G164D	G64D
G167D	G67D
G169D	G69D
G172D	G72D
G173D	G73D
G174D	G74D
G177D	G77D
G179D	G79D

Compliance Boundary Well(s)G300D
G300IGUOD
GUOM**(+)** - designates an upgradient well**(*)** - designates well(s) deleted from the monitoring program

10. The monitoring program, approved by Permit No. 1994-160-LF, shall continue for a minimum period of 30 years after closure and shall not cease until the conditions described in 35 IAC 811.319(a)(1)(C) have been achieved. The operator shall collect samples from all of the monitoring points listed in Condition V.9 of this Section, test the samples for the parameters listed in Condition V.12 (Lists G, G1, and G2) of this Section, and report the results to the Illinois EPA, all in accordance with the schedule in Condition V.17 of this Section.
11. The applicable groundwater quality standards (AGQS) and the maximum allowable predicted concentrations (MAPC), as listed in Attachments 1 and 2 below, are subject to the following conditions:
 - a. Temperature and the field parameters involving depth or elevation are not considered groundwater constituents and do not need AGQS's.
 - b. For constituents which have not been detected in the groundwater, either the practical quantitation limit (PQL) or the method detection limit (MDL) shall be used as the AGQS.
 - c. MAPCs are only applicable to those wells within the zone of attenuation.
 - d. AGQSs are only applicable to upgradient/background and compliance boundary wells.
12. AGQS and MAPC values must be determined for all of the parameters not involving depth or elevation, which appear in either Lists G1 or G2. The AGQS values shall be calculated using four consecutive quarters of groundwater monitoring data and employing the statistical method described in Volume III: Statistical Analysis and Monitoring Program to Log No. 1994-160 and pages 10 through 14 of Log No. 1997-271.

Page 19

List G (Groundwater – Variable)

<u>GROUNDWATER MONITORING PARAMETER</u>	<u>STORETS</u>
Elevation of Bottom of Well (ft. MSL) (Annually without dedicated pumps; every 5 Years with dedicated pumps)	72020

LIST G1 (Groundwater - Quarterly)

<u>FIELD PARAMETERS</u>	<u>STORETS</u>
pH (S.U.)	00400
Specific Conductance (umhos/cm)	00094
Temperature of Water Sample (°F)	00011
Depth to Water (ft. below land surface)	72019
Depth to Water (ft. below measuring point)	72109
Elevation of Measuring Point (Top of casing ft. MSL)	72110
Elevation of Groundwater Surface (ft. MSL)	71993

<u>INDICATOR PARAMETERS</u>	<u>STORETS</u>
Ammonia (as Nitrogen) (Dissolved) (mg/L)	00608
Arsenic (Dissolved)	01000
Boron (Dissolved)	01020
Cadmium (Dissolved)	01025
Chloride (Dissolved) (mg/L)	00941
Chromium (Dissolved)	01030
Cyanide (Total) (mg/L)	00720
Lead (Dissolved)	01049
Magnesium (Dissolved) (mg/L)	00925
Mercury (Dissolved)	71890
Nitrate (as Nitrogen) (Dissolved) (mg/L)	00618
Sulfate (Dissolved) (mg/L)	00946
Total Dissolved Solids (TDS) (180°C) (Dissolved) (mg/L)	70300
Zinc (Dissolved)	01090

NOTE:

- i. All parameters with the "(Dissolved)" label to the right shall be determined using groundwater samples which have been filtered through a 0.45-micron filter. All other parameters shall be determined from unfiltered samples.

Page 20

- ii. Monitoring results should be reported in ug/L units unless otherwise indicated.
- iii. List G1 and List G2 AGQS/MAPC values are included in Attachments 1 and 2.

LIST G2 (Groundwater - Semiannual)

<u>PARAMETERS (ug/L)</u>	<u>STORETS</u>
Acetone	81552
Acrylonitrile	34215
Benzene	34030
Bromobenzene	81555
Bromochloromethane (chlorobromomethane)	77297
Bromodichloromethane	32101
Bromoform (Tribromomethane)	32104
n-Butylbenzene	77342
sec-Butylbenzene	77350
tert-Butylbenzene	77353
Carbon Disulfide	77041
Carbon Tetrachloride	32102
Chlorobenzene	34301
Chloroethane (Ethyl Chloride)	34311
Chloroform (Trichloromethane)	32106
o-Chlorotoluene	77275
p-Chlorotoluene	77277
Dibromochloromethane	32105
1,2-Dibromo-3-Chloropropane	38760
1,2-Dibromoethane	77651
1,2-Dichlorobenzene	34536
1,3-Dichlorobenzene	34566
1,4-Dichlorobenzene	34571
trans-1,4-Dichloro-2-Butene	73547
Dichlorodifluoromethane	34668
1,1-Dichloroethane	34496
1,2-Dichloroethane	34531
1,1-Dichloroethylene	34501
cis-1,2-Dichloroethylene	77093
trans-1,2-Dichloroethylene	34546
1,2-Dichloropropane	34541
1,3-Dichloropropane	77173
2,2-Dichloropropane	77170
1,1-Dichloropropene	77168
1,3-Dichloropropene	34561
cis-1,3-Dichloropropene	34704

LIST G2 (Groundwater - Semiannual) (Cont.)

<u>PARAMETERS (ug/L)</u>	<u>STORETS</u>
trans-1,3-Dichloropropene	34699
Ethylbenzene	78113
Hexachlorobutadiene	39702
2-Hexanone (Methyl Butyl Ketone)	77103
Isopropylbenzene	77223
p-Isopropyltoluene	77356
Methyl Bromide (Bromomethane)	34413
Methyl Chloride (Chloromethane)	34418
Methylene Bromide (Dibromomethane)	77596
Dichloromethane	34423
Methyl Ethyl Ketone	81595
Methyl Iodide (Iodomethane)	77424
4-Methyl-2-Pentanone	78133
Naphthalene	34696
Oil (Hexane-Soluble) (mg/L)	00552
n-Propylbenzene	77224
Styrene	77128
1,1,1,2-Tetrachloroethane	77562
1,1,2,2-Tetrachloroethane	34516
Tetrachloroethylene	34475
Tetrahydrofuran	81607
Toluene	34010
Total Phenolics	32730
1,2,3-Trichlorobenzene	77613
1,2,4-Trichlorobenzene	34551
1,1,1-Trichloroethane	34506
1,1,2-Trichloroethane	34511
Trichloroethylene	39180
Trichlorofluoromethane	34488
1,2,3-Trichloropropane	77443
1,2,4-Trimethylbenzene	77222
1,3,5-Trimethylbenzene	77226
Vinyl Acetate	77057
Vinyl Chloride	39175
Xylenes	81551

NOTE:

- i. All parameters with the "(Dissolved)" label to the right shall be determined using groundwater samples which have been filtered through a 0.45-micron filter. All other parameters shall be determined from unfiltered samples.

Page 22

- ii. **Monitoring results should be reported in ug/L units unless otherwise indicated.**
 - iii. **List G1 and List G2 AGQS/MAPC values are included in Attachments 1 and 2.**
13. **Pursuant to 35 IAC 811.319(a)(4)(A), any of the following events shall constitute an observed increase only if the concentrations of the constituents monitored can be measured at or above the practical quantitation limit (PQL):**
- a. **The concentration of any constituent in List G1 of Condition V.12 of this Section shows a progressive increase over eight consecutive quarters.**
 - b. **The concentration of any constituent in List G1 or List G2 of Condition V.12 of this Section exceeds the applicable MAPC at an established monitoring point within the zone of attenuation.**
 - c. **The concentration of any organic constituent in List G2, monitored in accordance with Condition V.11 of this Section exceeds the preceding measured concentration at any established point.**
 - d. **The concentration of any constituent monitored at or beyond the edge of the zone of attenuation (compliance boundary) exceeds its AGQS, or pursuant to 35 IAC 811.320(d) any constituent monitored at an upgradient well exceeds its AGQS.**
14. **For each round of sampling described in Condition V.10 of this Section, the operator must determine if an observed increase has occurred within 90 days of the initial date the samples were collected. If an observed increase is identified, the operator must also notify the Illinois EPA in writing and follow the confirmation procedures of 35 IAC 811.319(a)(4)(B). Furthermore, the operator must complete the confirmation procedures within 180 days of the initial sampling event.**
15. **Upon confirmation of a monitored increase and within 180 days of the initial sampling event, the operator shall submit a permit application for a significant modification to demonstrate an alternate source per 35 IAC 811.319(a)(4)(B)(ii) or begin an assessment monitoring program in order to determine whether the solid waste disposal facility is the source of the contamination and to provide information needed to carry out a groundwater impact assessment in accordance with 35 IAC 811.319(b).**
16. **In the event that an alternative source demonstration is denied, pursuant to 35 IAC 813.305, the operator must commence sampling for the constituents listed in 35**

IAC 811.319(b)(5) and submit an assessment monitoring plan as a significant permit modification, both within 30 days after the dated notification of Illinois EPA denial. The operator must sample the well or wells that exhibited the confirmed increase.

17. The schedule for sample collection and submission of quarterly monitoring results from monitoring points is as follows:

<u>Sampling Quarter</u>	<u>Sampling Due</u>	<u>Report Due Date</u>
Jan-Feb (1 st)	List G1	April 15
April-May (2 nd)	List G, G1 and G2	July 15
July-Aug (3 rd)	List G1	October 15
Oct-Nov (4 th)	List G1 and G2	January 15

G – Well Depth

G1 – Routine Groundwater Parameters

G2 – Semi-Annual Groundwater Parameters

The schedule for sample collection and submission of semi-annual monitoring results, beginning 4th Quarter 2003 (Log No. 2003-096) is as follows:

<u>Sampling Quarter</u>	<u>Sampling Due</u>	<u>Report Due Date</u>
April-May (2 nd)	Lists G, G1 and G2	July 15
Oct-Nov (4 th)	List G1 and G2	January 15

G – Well Depth

G1 – Routine Groundwater Parameters

G2 – Annual Groundwater Parameters

Groundwater elevations are to be monitored on a quarterly basis.

In the event of a confirmed significant change in groundwater quality due to the facility has occurred, groundwater monitoring at the affected monitoring well(s) will immediately return to the quarterly monitoring schedule for sampling collection and submission of all groundwater monitoring results as provided in the Condition V.17 quarterly monitoring schedule, for all monitored constituents, until the Illinois EPA approves the return to semi-annual monitoring.

18. Elevation of stick-up is to be surveyed and reported to the Illinois EPA:
- a. When the well is installed (with the as-built diagrams),

Page 24

- b. Every two years thereafter, or
 - c. Whenever there is reason to believe that the elevation has changed.
19. Annually, the operator shall prepare an evaluation of the groundwater flow direction and the hydraulic gradients at the facility using the groundwater surface elevations (STORET #71993) determined for each monitoring event. This assessment shall be submitted with the monitoring results due on July 15.
 20. All monitoring points shall be maintained in accordance with the approved permit application such that the required samples and measurements may be obtained.
 21. Information required by Conditions V.10 and V.17 must be submitted in an electronic format. The information is to be submitted, as fixed-width text files formatted as found on the Illinois EPA website.
 22. Background concentrations which exhibit a statistically significant change shall be adjusted in accordance with 35 IAC 811.320(d)(2) and submitted to the Illinois EPA as a permit modification.

VI. LANDFILL GAS MANAGEMENT/MONITORING

1. Gas monitoring, collection, and disposal shall continue at least 30 years after closure and may be discontinued only after the conditions described in 35 IAC 811.310(c)(4) have been achieved.
2. The gas monitoring probes outside the waste boundary shall be monitored on an annual basis for the following parameters:
 - a. Methane;
 - b. Pressure;
 - c. Nitrogen;
 - d. Oxygen; and
 - e. Carbon Dioxide

Gas extraction wells shall be used to sample for landfill gas in accordance with the requirements of 35 IAC 811.310(b)(1).
3. The ambient air monitoring devices described in Log No. 2004-222 shall be used to test the air downwind of the landfill for methane on an annual basis.
4. All buildings within the site boundaries shall be monitored continuously for methane.

Page 25

5. The gas wells, probes, condensate drains, and condensate knockouts shall be inspected at least quarterly for structural integrity and proper operation.
6. Sampling and testing of gas monitoring probes and ambient air monitoring locations shall be performed in accordance with the landfill gas monitoring plan approved in Modification No. 11 to Permit No. 1994-160-LF and 35 IAC 811.310. The test results from gas monitoring for each year shall be submitted to the Illinois EPA in the annual report required by 35 IAC 813.501.
7. At the end of the post-closure care period, the gas monitoring probes shall be decommissioned. The probes outside the waste boundary shall be decommissioned using the method described in the Monitoring Well Plugging procedures enclosed along with Permit No. 1994-160-LF. In decommissioning the gas collection system, the pipes shall be cut off at least two feet below the low permeability layer and plugged. Then the low permeability layer, the geomembrane, the protective layer, and the vegetation shall be restored in the excavated areas.
8. Pursuant to 35 IAC 811.311, in the event of any of the occurrences listed below, the operator must take the steps described in the last two paragraphs of this condition to ensure the protection of human health:
 - a. A methane concentration greater than 50 percent of the lower explosive limit in air is detected in any of the below ground monitoring devices outside the waste boundary;
 - b. A methane concentration greater than 50 percent of the lower explosive limit in air is detected during ambient air monitoring;
 - c. A methane concentration greater than 25 percent of the lower explosive limit in air is detected in any building on or near the facility; or
 - d. Malodors attributed to the unit are detected beyond the property boundary.

First, within two business days of the occurrence, the operator must notify the Illinois EPA in writing using the form LPC-591, pursuant to 35 IAC 811.311(b)(1). The notification must identify the location of the occurrence and describe its nature (quantitatively if possible). If the gas exceedance is corrected within 30 days, a follow up LPC-591 form may be submitted to the Illinois EPA describing the correction and providing confirmation test results.

Second, if a follow up LPC-591 is not submitted, then within 180 days of the occurrence, the operator must submit to the Illinois EPA an application for a significant modification that either: 1) proposes a gas collection/management

Page 26

system or modifications to the existing gas collection/management system, or 2) demonstrates that the facility is not the cause of the occurrence.

9. It should be noted that this permit does not relieve the permittee of responsibility of complying with the provisions of the State of Illinois, Rules and Regulations, 35 IAC Subtitle B, Air Pollution Control, Chapter 1. The permittee may be required to file reports and/or obtain permits through the Illinois EPA – Bureau of Air – Division of Air Pollution Control. For any questions regarding these requirements, contact the Illinois EPA Bureau of Air – Division of Air Pollution Control – Permit Section at 217/782-2113.

VII. POST CLOSURE CARE

1. The Illinois EPA has determined that the referenced site has been closed in accordance with the specifications of the closure plan and relevant Illinois EPA permits issued to this facility. The minimum 30-year post closure care period began March 30, 2000, based on the fact that the closure of the landfill was completed on that day.
2. Inspections of the closed landfill shall be conducted in accordance with the approved post-closure care plan. Records of field investigations, inspections, sampling, and corrective action taken are to be maintained at the site and made available to Illinois EPA personnel or their designee through an Intergovernmental Agreement. During the post-closure care period, these records are to be maintained at the office of the site operator.
3. If necessary, the soil over the entire planting area shall be amended with lime, fertilizer, and/or organic matter. On sideslopes, mulch or some other form of stabilizing material is to be provided to hold seed in place and conserve moisture.
4. The minimum post-closure care period for this municipal solid waste and non-hazardous special waste landfill is 30 years. When the post-closure care period has been completed, the operator shall notify the Illinois EPA utilizing the Illinois EPA's "Affidavit for Certification of Completion of Post-Closure Care for Non-Hazardous Waste Facilities" form.
5. The owner or operator shall maintain financial assurance in the amount of \$1,120,513, as approved by Modification No. 41, for post-closure care of Units II and III pursuant to 35 IAC Part 811 Subpart G. The permittee shall maintain financial assurance in this amount pursuant to 35 IAC 811.701(a).

Page 27

6. The operator shall increase the total amount of financial assurance so as to equal the current cost estimate within 90 days of an increase in the current cost estimate in accordance with 35 IAC 811.701(b).
7. The owner or operator shall adjust the cost estimates for post-closure care and corrective action, for inflation, on an annual basis during the following time periods:
 - a. The active life and post-closure care period for the post-closure cost; and
 - b. Until any corrective action program is completed in accordance with 35 IAC 811.326 for the cost of corrective action.

The owner or operator shall submit, in the form of a permit application for significant modification, by May 1 of each year, an update to the cost estimate or a certification that there are no changes to the current cost estimates.

8. The current post-closure care plan is that approved by Modification No. 41 to Permit No. 1994-160-LF.

VIII. REPORTING REQUIREMENTS

1. The annual certification shall be submitted to the Illinois EPA during the entire post-closure monitoring period, pursuant to 35 IAC 813.501. The certification shall be signed by the operator or duly authorized agent, shall be filed each year by May 1 of the following year, and shall state:
 - a. All records required to be submitted to the Illinois EPA pursuant to 35 IAC 858.207 and 858.308 have been timely and accurately submitted; and
 - b. All applicable fees required by the Act have been paid in full.
2. The annual report for each calendar year shall be submitted to the Illinois EPA by May 1 of the following year pursuant to 35 IAC 813.504. The annual report shall include:
 - a. Information relating to monitoring data from the leachate collection system, groundwater monitoring network, gas monitoring system, and any other monitoring data specified in this permit, including:
 - 1) Summary of monitoring data for the calendar year;

Page 28

- 2) Dates of submittal of comprehensive monitoring data to the Illinois EPA during the calendar year;
 - 3) Statistical summaries and analysis of trends;
 - 4) Changes to the monitoring program; and
 - 5) Discussion of error analysis, detection limits, and observed trends.
- b. Proposed activities:
- 1) Structures to be built within the next year; and
 - 2) New monitoring stations to be installed within the next year.
- c. Any modification or significant modification affecting operation of the facility; and
- d. The signature of the operator or duly authorized agent as specified in 35 IAC 815.102.
3. The permittee shall submit a completed "Solid Waste Landfill Groundwater, Leachate, Facility and Gas Reporting Form" (LPC-591) as a cover sheet for any notices or reports required by the facility's permit for identification purposes. One copy of the LPC-591 form must accompany each report; however, except for electronically formatted data, the permittee must submit one original and a minimum of two copies of each report submitted to the Illinois EPA. The form is not to be used for applications for supplemental permit or significant modification.
4. All certifications, logs, reports, plan sheets, notices, and groundwater and leachate monitoring data, required to be submitted to the Illinois EPA by the permittee shall be mailed to the following address:

Illinois Environmental Protection Agency
Permit Section
Bureau of Land -- #33
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

Page 29

Except for electronic groundwater and leachate monitoring data, the operator shall provide the Illinois EPA with the original and two copies of all certifications, logs, reports, and plan sheets required by this permit.

The applicant may appeal this final decision to the Board pursuant to Section 40 of the Act by filing a petition for a hearing within 35 days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed 90 days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276
217/782-5544

For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, IL 60601
312/814-3620

Page 30

Work required by this permit, the application approved by this permit, or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This permit does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Sincerely,



Jacqueline M. Cooperider, P.E.
Permit Section Manager
Bureau of Land

JMC:RCC\1418210001-811LF-SM41-2023150-Approval.docx

Attachments:

RCC HEM
Standard Conditions

Attachment 1: Facility AGQS/MAPC Interwell Values

Attachment 2: Facility AGQS/MAPC Intrawell Value Table

cc: Steve Rypkema – Ogle County Health Department
John Bossert, P.E. – Weaver Consultants Group

**STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF LAND**

August 22, 2001

The Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

These standard conditions shall apply to all permits which the Agency issues for construction or development projects which require permits under the Bureau of Land. Special conditions may also be imposed in addition to these standard conditions.

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire two years after date of issuance unless construction or development on this project has started on or prior to that date.
2. The construction or development of facilities covered by this permit shall be done in compliance with applicable provisions of Federal laws and regulations, the Act, and Rules and Regulations adopted by the Illinois Pollution Control Board.
3. There shall be no deviations from the approved plans and specifications unless a written request for modification of the project, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.
4. The permittee shall allow any agent duly authorized by the Agency upon the presentation of credentials:
 - a. to enter at reasonable times the permittee's premises where actual or potential effluent, emissions or noise sources are located or where any activity is to be conducted pursuant to this permit.
 - b. to have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit.
 - c. to inspect at reasonable times, including during any hours of operation of equipment constructed or operated under this permit, such equipment or monitoring methodology or equipment required to be kept, used, operated, calibrated and maintained under this permit.
 - d. to obtain and remove at reasonable times samples of any discharge or emission of pollutants.

- e. to enter at reasonable times and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.
5. The issuance of this permit:
- a. shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located;
 - b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;
 - c. does not release the permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;
 - d. does not take into consideration or attest to the structural stability of any units or parts of the project;
 - e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.
6. Unless a joint construction/operation permit has been issued, a permit for operating shall be obtained from the Agency before the facility or equipment covered by this permit is placed into operation.
7. These standard conditions shall prevail unless modified by special conditions.
8. The Agency may file a complaint with the Board for modification, suspension or revocation of a permit:
- a. upon discovery that the permit application contained misrepresentations, misinformation or false statements or that all relevant facts were not disclosed; or
 - b. upon finding that any standard or special conditions have been violated; or
 - c. upon any violation of the Act or any Rule or Regulation effective thereunder as a result of the construction or development authorized by this permit.

JMC\STANDARD CONDITIONS

1418210001 – Ogle County
 BFI, Davis Junction
 Permit No. 1994-160-LF
 Modification No. 41
 Log No. 2023-150

Attachment 1
 Facility AGQS/MAPC Interwell Values

<u>FIELD PARAMETERS</u>	<u>STORETS</u>	<u>MAPC</u>	<u>AGQS</u>
pH (S.U.)	00400	6.13- 8.71	6.13- 8.71
Specific Conductance (umhos/cm)	00094	1397	1397
Temperature of Water Sample (°F)	00011	----	----
Depth to Water (ft. below land surface)	72019	----	----
Depth to Water (ft. below measuring point)	72109	----	----
Elevation of Measuring Point (Top of casing ft. MSL)	72110	----	----
Elevation of Groundwater Surface (ft. MSL)	71993	----	----
Elevation of Bottom of Well (ft. MSL)	72020	----	----
<u>INDICATOR PARAMETERS</u>	<u>STORETS</u>	<u>MAPC</u>	<u>AGQS</u>
Ammonia (as Nitrogen) (Dissolved MG/L)	00608	1.9	1.9
Arsenic (Dissolved) UG/L	01000	11	11
Boron (Dissolved) UG/L	01020	504.2	420
Cadmium (Dissolved) UG/L	01025	6	6
Chloride (Dissolved) MG/L	00941	253	166
Chromium (Dissolved) UG/L	01030	5	5
Cyanide (MG/L) (Total)	00720	0.088	0.073
Lead (Dissolved) UG/L	01049	6.9	5.0
Iron (Dissolved) UG/L	01046	5241	2583
Manganese (Dissolved) UG/L	01056	1314	229
Magnesium (Dissolved) MG/L	00925	72.84	72.84
Mercury (Dissolved) UG/L	71890	0.2	0.2
Nitrate (as N) (Dissolved) MG/L	00618	18.41	15.5
Phenol (Total) UG/L	32730	38.5	30
Potassium (Dissolved) MG/L	00935	11.5	11.5
Sulfate (Dissolved) MG/L	00946	162	131
Total Dissolved Solids (TDS, Dried at 180°C) (Dissolved) MG/L	70300	793.6	793.6
Total Organic Carbon (TOC) MG/L	00680	18	18
Zinc (Dissolved) UG/L	01090	580	420

Attachment 1 (cont.)
Facility AGQS/MAPC Interwell Values

<u>PARAMETERS (UG/L)</u> Unfiltered (totals)	<u>STORETS</u>	<u>MAPC</u>	<u>AGQS</u>
Acenaphthene	34205	10	10
Acetone	81552	100	100
Acrolein	34210	100	100
Acrylonitrile	34215	10	10
Alachlor	77825	2	2
Aldicarb	39053	3	3
Aldrin	39330	10	10
Aluminum	01105	8816	6580
Ammonia (as N) (mg/L)	00610	0.44	0.44
Anthracene	34220	5	5
Antimony	01097	6	6
Arsenic (mg/L)	01002	0.013	0.013
Atrazine	39033	3	3
Alpha-BHC (alpha-Benzene hexachloride)	39337	0.05	0.05
Barium	01007	150	120
Benzene	34030	5	5
Benzo(a)anthracene	34526	0.13	0.13
Benzo(b)fluoranthene	34230	0.18	0.18
Benzo(k)fluoranthene	34242	0.17	0.17
Benzoic Acid	77247	50	50
Beryllium	01012	62.4	50
Bicarbonate as Alkalinity (mg/L)	00425	391.19	391.19
BOD	00310	3.0	3.0
Boron	01022	50	60
Bromobenzene	81555	5	5
Bromochloromethane (chlorobromomethane)	77297	5	5
Bromodichloromethane	32101	5	5
Bromoform	32104	5	5
Bromomethane	34413	10	10
n-Butylbenzene	77342	5	5
sec-Butylbenzene	77350	5	5
tert-Butylbenzene	77353	5	5
Butyl Benzyl Phthalate	34292	10	10
Cadmium	01027	9	9
Calcium (mg/L)	00916	642	505
Carbofuran	81405	40	40

Attachment I (cont.)
Facility AGQS/MAPC Interwell Values

<u>PARAMETERS (UG/L)</u> Unfiltered (totals)	<u>STORETS</u>	<u>MAPC</u>	<u>AGQS</u>
Carbon Disulfide	77041	1	1
Carbon Tetrachloride	32102	5	5
Chemical Oxygen Demand (COD)	00335	320	320
Chlordane	39350	2	2
Chloride (mg/L)	00940	172.92	263.83
Chlorobenzene	34301	5	5
Chloroethane	34311	10	10
Chloroform	32106	5	5
Chloromethane	34418	10	10
Chrysene	34320	1.5	1.5
bis(chloromethyl)Ether	34268	.10	10
o-Chlorotoluene	77275	5	5
p-Chlorotoluene	77277	5	5
Chromium	01034	960	1,324
Chlorodibromomethane(Dibromochloromethane)	32105	5	5
Cobalt	01037	13	18
Copper	01042	35	25
p-Cresol	77146	10	10
Cyanide (mg/L)	00720	0.088	0.073
DDT	39300	10	10
Delta-BHC	46323	0.05	0.05
Dibenzo(a,h)anthracene	34556	0.3	0.3
Dibromomethane	77596	5	5
Dicamba	82052	1.0	1.0
m-Dichlorobenzene	34566	5	5
o-Dichlorobenzene	34536	5	5
p-Dichlorobenzene	34571	5	5
Dichlorodifluoromethane	34668	10	10
Dichloromethane (Methylene Chloride)	34423	10	10
Dieldrin	39380	10	10
Diethyl Phthalate	34336	10	10
Dimethyl Phthlate	34341	10	10
Di-N-Butyl Phthlate	39110	10	10
Endrin	39390	2	2
Di(2-Ethylhexyl)Phthalate	39100	6	6
Ethylbenzene	78113	5	5

Attachment 1 (cont.)
Facility AGQS/MAPC Interwell Values

<u>PARAMETERS (UG/L)</u>	<u>STORETS</u>	<u>MAPC</u>	<u>AGQS</u>
Unfiltered (totals)			
Ethylene Dibromide(EDB)(1,2-Dibromo ethane)	77651	0.05	0.05
Fluoranthene	34376	2.0	2.0
Fluorene	34381	2.0	2.0
Fluoride (mg/L)	00951	0.348	0.348
Heptachlor	39410	.4	.4
Heptachlor Epoxide	39420	.2	.2
Hexachlorobutadiene	39702	10	10
Indeno(1,2,3-cd)pyrene	34403	0.3	0.3
Iodomethane	77424	10	10
Iron	01045	40,831	56,347
Isophorone	34408	10	10
Isopropylbenzene	77223	5	5
p-Isopropyltoluene	77356	5	5
Lead	01051	30	22
Lindane	39782	.2	.2
MCCP (Mecoprop)	38491	5	5
Magnesium (mg/L)	00927	250.7	201
Manganese	01055	4470	780
Mercury	71900	.8	.5
Methoxychlor	39480	10	10
Methyl Tertiary-Butyl Ether (MTBE)	46491	5	5
Naphthalene	34696	10	10
Nickel	01067	840	840
Nitrate-Nitrogen (mg/L)	00620	15.44	13
Oil(Hexane-Soluble or Equivalent)	00552	2	2
Parathion	39540	10	10
Pentachlorophenol	39032	50	50
Perchlorate	61209	4	4
Phosphorus (mg/L)	00665	0.934	1.121
Phenols	32730	38.5	30
Polychlorinated Biphenyls	39516	1	1
Potassium (mg/L)	00937	11.9	11.9
n-Propylbenzene	77224	5	5
Pyrene	34469	2	2
Selenium	01147	17	17
Silver	01077	4.1	3.0

Attachment I (cont.)
Facility AGQS/MAPC Interwell Values

<u>PARAMETERS (UG/L)</u>	<u>STORETS</u>	<u>MAPC</u>	<u>AGQS</u>
Unfiltered (totals)			
Sodium (mg/L)	00929	92.93	71.18
Styrene	77128	10	10
Sulfate (mg/L)	00945	135.72	168.04
Sulfide (mg/L)	00745	1.2	1.0
TDS (Dried at 180°)	70300	793.6	793.6
TOC	00680	18	18
Tetrachloroethylene	34475	10	5
Tetrahydrofuran	81607	20	20
Thallium	01059	2	2
Toluene	34010	5	5
Toxaphene	39400	3	3
Trichloroethylene (or ethene)	39180	5	5
Trichlorofluoromethane	34488	5	5
Vanadium	01087	70	70
Vinyl Chloride	39175	10	10
Vinyl Acetate	77057	50	50
Xylenes	81551	5	5
m-Xylene	77134	5	5
o-Xylene	77135	5	5
p-Xylene	77133	5	5
Zinc	01092	384	278
1,1,1,2-Tetrachloroethane	77562	5	5
1,1,1-Trichloroethane	34506	5	5
1,1,2,2-Tetrachloroethane	34516	5	5
1,1,2-Trichloroethane	34511	5	5
1,1-Dichloroethane	34496	5	5
1,1-Dichloroethylene	34501	5	5
1,1-Dichloropropene	77168	5	5
1,2,3-Trichlorobenzene	77613	5	5
1,2,3-Trichloropropane	77443	15	15
1,2,4-Trichlorobenzene	34551	10	10
1,2,4-Trimethylbenzene	77222	5	5
1,2-Dibromo-3-Chloropropane	38760	25	25
cis-1,2-Dichloroethylene	77093	5	5
trans-1,2-Dichloroethylene	34546	5	5
1,2-Dichloroethane	34531	5	5

Attachment 1 (cont.)
Facility AGQS/MAPC Interwell Values

<u>PARAMETERS (UG/L)</u>	<u>STORETS</u>	<u>MAPC</u>	<u>AGQS</u>
Unfiltered (totals)			
1,2-Dichloropropane	34541	5	5
1,3,5-Trimethylbenzene	77226	5	5
1,3-Dichloropropane	77173	5	5
1,3-Dichloropropene	34561	5	5
cis-1,3-Dichloropropene	34704	10	10
trans-1,3-Dichloropropene	34699	10	10
trans-1,4-Dichloro-2-Butene	73547	20	20
1,4-Dioxane	81582	5	5
2,2-Dichloropropane	77170	15	15
2,4,5-TP (Silvex)	39760	2	2
2,4-Dichlorophenoxyacetic Acid (2,4-D)	39730	10	10
4,6-Dinitro-o-cresol	34657	25	25
2-Butanone(Methyl Ethyl Ketone)	81595	10	10
2-Hexanone	77103	50	50
2-Methylnaphthalene	77416	10	10
2-Methylphenol	77152	10	10
4-Methyl-2-Pentanone	78133	10	10
1,3 Dichlorobenzene	34566	5	5
1,4 Dichlorobenzene	34501	5	5
Methyl Isobutyl Ketone	78113	10	10
bis(2-ethyl hexyl) phthlate	39100	20	20
Benzoic Acid	77247	10	10
2-Methylphenol	77152	10	10
3-Methylphenol	77151	10	10
4-Methylphenol	77146	10	10
Acetophenone	81553	10	10
2,4-Dimethylphenol	34606	10	10
Ethanol	77004	1000	10

RCRA POST-CLOSURE PERMIT
BFI – Davis Junction Landfill – Phase I
LOG No. B-142R2-M-1; M-2; M-4; M-6; M-7

TABLE OF CONTENTS

<u>ITEM</u>	<u>Section</u>
I. Tracking Sheets	1
II. EJ Determination	2
III. RCRA Unit Review Notes	3
IV. Groundwater Unit Review Notes	4
V. Subject Submittals	5

<u>Subject Submittal</u>	<u>Section</u>
I. Class 1* Permit Modification	B142R2 M-1
II. Class 1* Permit Modification	B142R2 M-2
III. Class 1* Permit Modification	B142R2 M-4
IV. Class 1* Permit Modification	B142R2 M-6
V. Class 1* Permit Modification	B142R2 M-7

CPA DIVISION OF RECORDS MANAGEMENT
RELEASABLE

DEC 05 2023

REVIEWER: SAB



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

217/524-3301

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

SEP 25 2023

7022 2410 0001 5388 4425

Matthew Healy
BFI Waste Systems of North America, LLC
26 West 580 Schick Road
Hanover Park, IL. 60103

EPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE

RE: 1418210001 – Ogle County
BFI – Davis Junction Landfill – Phase I
ILD980700751
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
RCRA Permit
Permit Approval

DEC 05 2023

REVIEWER: SAB

Dear Mr. Healy:

This letter is in response to the documents described below which were submitted by Weaver Consultants Group, on behalf of the BFI – Davis Junction Landfill – Phase I (BFI) RCRA permitted facility referenced above.

Submittal No. 1 (B-142R2-M-1) – A document entitled, “Class 1* Permit Modification”, dated November 16, 2018, and received by the Illinois EPA on November 21, 2018. This document provided minor permit language revisions for the above referenced facility. The subject submittal was reviewed as a Class 1* permit modification in accordance with 35 Ill. Adm. Code 703.280.

Submittal No. 2 (B-142R2-M-2) – A document entitled, “Class 1* Permit Modification”, dated August 27, 2019, and received by the Illinois EPA on September 4, 2019. This document provided an updated cost estimate for Post-Closure Care for the above referenced facility. The subject submittal was reviewed as a Class 1* permit modification in accordance with 35 Ill. Adm. Code 703.280.

Submittal No. 3 (B-142R2-M-4) – A document entitled, “Class 1* Permit Modification”, dated August 18, 2020, and received by the Illinois EPA on August 28, 2020. This document provided an updated cost estimate for Post-Closure Care for the above referenced facility. The subject submittal was reviewed as a Class 1* permit modification in accordance with 35 Ill. Adm. Code 703.280.

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page 2

Submittal No. 4 (B-142R2-M-6) – A document entitled, “Class 1* Permit Modification”, dated January 27, 2022, and received by the Illinois EPA on February 1, 2022. This document provided an updated cost estimate for Post-Closure Care for the above referenced facility. The subject submittal was reviewed as a Class 1* permit modification in accordance with 35 Ill. Adm. Code 703.280.

Submittal No. 5 (B-142R2-M-7) – A document entitled, “Class 1* Permit Modification”, dated December 1, 2022, and received by the Illinois EPA on December 5, 2022. This document provided an updated cost estimate for Post-Closure Care for the above referenced facility. The subject submittal was reviewed as a Class 1* permit modification in accordance with 35 Ill. Adm. Code 703.280.

The subject permit modification requests included updated post-closure cost estimates and minor revisions to BFI's current RCRA Post-Closure Permit. The Illinois EPA has reviewed the information contained in the subject submittals and hereby partially approves the subject submittals with the following conditions and modifications.

1. BFI's annual costs and one-time cost for post-closure care in the updated cost estimate can be approved by the Illinois EPA. However, the total post-closure care cost estimate cannot be approved by the Illinois EPA at this time. The Illinois EPA has reevaluated the requirements for post-closure care cost estimates and financial assurance under 35 Ill. Adm. Code Part 724 and has determined the total post-closure care estimate must reflect thirty (30) years of post-closure care as required by 35 Ill. Adm. Code 724.217.
2. Within sixty (60) days of the receipt of this letter, BFI must submit a revised post-closure cost estimate (in 2023 dollars) and financial assurance to reflect thirty (30) years of post-closure care in accordance with 35 Ill. Adm. Code 724.217. This revised cost estimate must include items required in Condition 3 and 4 below.
3. The Permittee must include costs associated with re-surveying the wells every five (5) years in accordance with Condition III.J.5 of the Permittee's RCRA Permit. In addition, copies of the latest well survey information must be provided to the Illinois EPA.
4. The table provided with the itemized cost estimates for post-closure care must be revised to provide a legible copy with a font size of no less than 12 pt.

This determination was based on the Illinois EPA's review of: (1) the RCRA Post-Closure Permit issued to BFI; (2) requirements of 35 Ill. Adm. Code 724.131, 724 Subpart G, 724.410, and 724 Subpart H; the information contained in the subject submittals.

Attachment A to this letter contains a summary of the changes made to the RCRA Post-Closure Permit. A revised RCRA Post-Closure Permit reflecting the partial approval of the subject submittals is enclosed with this letter. Post-closure care and corrective action activities at the above-referenced facility must be in accordance with the RCRA Post-Closure Permit issued to the facility and all subsequent approved modifications to the Permit.

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page 3

Pursuant to 35 Ill. Adm. Code 703.281(a)(2), a notice of this modification shall be sent to all persons on the facility mailing list, maintained by the Illinois EPA in accordance with 35 Ill. Adm. Code 705.163(a)(4), and the appropriate units of state and local government as specified in 35 Ill. Adm. Code 705.163(a)(5). For a Class 1* modification the notice must be made within 90 calendar days after the Illinois EPA approves the request.

Work required by this letter, this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Engineering Practice Act of 1989, the Professional Land Surveyor Act of 1989, the Professional Geologist Licensing Act and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within 35 days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed 90 days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276
217/782-5544

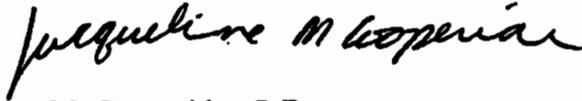
For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, IL 60601
312/814-3620

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page 4

For questions regarding groundwater issues, please call Paula Stine at 217/557-8770. For all other questions, contact Jacob Nutt at 217/524-7048.

Sincerely,



Jacqueline M. Cooperider, P.E.
Permit Section Manager
Bureau of Land

JR JS
JMC:JDN:1418210001-RCRA-B142R2M1-B142R2M2-B142R2M4-B142R2M6-B142R2M7-
Approval.docx *JDN TNH*

Attachment: Attachment A – CHANGES TO THE RCRA POST-CLOSURE PERMIT

cc: Norberto Gonzalez, Emily Keener, U.S. EPA – Region V
James Hitzeroth, BFI Waste Systems of North America, LLC
Mike Maxwell, LPG, CHMM, Weaver Consultants Group

ATTACHMENT A
CHANGES TO THE RCRA POST-CLOSURE PERMIT
BFI – Davis Junction Landfill – Phase I

STATE ID No. 1418210001
USEPA No. ILD980700751
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7

The following changes have been made to BFI's RCRA Post-Closure Permit in response to permit modification requests B-142R2-M-1; B-142R2M-2; B-142R2M-4; B-142R2M-6; B-142R2M-7 reflecting partial approval of updated annual post-closure cost estimates, minor permit language revisions, and correction of grammatical and formatting issues.

1. Permit Condition I.B.2 - Illinois EPA approved certification of closure of the subject ~~surface impoundments~~ landfill on ~~March 16, 1990~~ December 5, 1984. Post-closure care for this unit must then be provided for at least thirty (30) years after that date.
2. Permit Condition I.B.4 - The Survey Plat (Exhibit A) indicating the location and dimension of the ~~former impoundment~~ closed landfill area was recorded in the Ogle County Recorder's Office on April 5, 2006. The Survey Plat was recorded as Document No. 0603382.
3. Permit Condition I.C.2 - The Permittee shall continue to conduct post-closure care for each hazardous waste management unit listed in Section B above. Post-closure care of the unit began on December 5, 1984 and must continue to begin after completion of closure of the unit and continue for at least thirty (30) years after that date. The Illinois EPA has extended post-closure care until at least December 5, 2024.
4. Permit Condition I.C.7 - The Permittee shall maintain a record of all inspections, monitoring, and maintenance activities in the facility's operating record. A copy of the operating record must be kept on-site at the physical location specified in the approved permit application (i.e., the Permittee's offices in Hanover Park, IL).
5. Permit Condition I.E.2 – Numbering corrected
6. Permit Condition I.G.1 - The Permittee shall maintain financial assurance for post-closure care of the Phase I Landfill of at least ~~\$484,460~~ \$2,589,796 in 2022 dollars. The cost estimate for post-closure care of this facility is shown in Attachment C to this permit. The financial assurance maintained by the facility shall be sufficient to meet the requirements at 35 Ill. Adm. Code 724 Subpart H.
7. Permit Conditions II.5 through II.9 – Were added to reflect on the subject Class 1* modifications.
8. Permit Condition III.C.3 – Edited to remove repeated definition of Point of Compliance.

9. Permit Condition III.H.1 - The Permittee shall use the techniques and procedures described in Appendix J Appendix C-3 of the approved permit application except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition III.D.1 above:
10. Permit Condition IV.25 - DOCUMENTS TO BE MAINTAINED AT IN FACILITY SITE FILES. The Permittee shall maintain at in the facility files, until post-closure care is complete, the following documents and amendments, revisions and modifications to these documents:
11. Attachment C – Post-Closure Cost Estimate - The currently approved Post-Closure Cost Estimate in the current RCRA post-closure permit is \$484,4602,589,796 (in 201822 dollars). This estimate must be used updated when establishing financial assurance in accordance with 35 Ill. Adm. Code 724.217(a)(1) and 724.217(a)(2)(B) of Subpart G. Based on the most recent post-closure cost estimate submitted on December 1, 2022 and received by the Illinois EPA on December 5, 2022, The updated breakdown of the estimate is should be updated as follows:

- a. 1. Estimate of post-closure care costs on an annual basis in 2022 dollars:

Post-closure inspections	\$7,421 <u>8,143</u>
Groundwater monitoring	\$9,682 <u>10,636</u>
<u>Leachate Management</u>	\$54,243 <u>59,248</u>
Total	\$71,346 <u>78,027</u>
<u>10% Contingency</u>	\$7,135 <u>7,803</u>
Total Annual Cost (w/Contingency):	\$78,481 <u>85,830</u>

One Time Costs:

Well Abandonment:	\$12,340 <u>13,542</u>
<u>10% Contingency, One-Time Costs:</u>	\$1,234 <u>1,354</u>
Total One-Time Costs:	\$13,574 <u>14,896</u>

- b. ~~2. Facility has 6.0 years of remaining post-closure care.~~
- c. ~~3.2. Total post-closure care cost estimate = (\$78,481~~ 85,830 per year) x (~~630.0~~ years) + ~~\$13,574~~ 14,896 = ~~\$484,460~~ 2,589,796.



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 · (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

RCRA HAZARDOUS WASTE PERMIT

1418210001 - Ogle County
 ILD980700751
 BFI - Davis Junction Landfill - Phase 1
 Permit Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
 RCRA Permit File

Issue Date: 09/26/2018
 Effective Date: 09/26/2018
 Expiration Date: 05/04/2028
 Modification Date: SEP 25 2023

PERMITTEE

BFI Waste Systems of North America, LLC
 Attn: Kevin Bremer
 26 West 580 Schick Road
 Hanover Park, IL 60103

A modified RCRA POST-CLOSURE hazardous waste permit is hereby issued to BFI Waste Systems of North America, LLC as Owner, and Operator, and Permittee pursuant to Section 39(d) of the Illinois Environmental Protection Act and Title 35 Illinois Administrative Code Subtitle G (35 Ill. Adm. Code).

PERMITTED HAZARDOUS WASTE ACTIVITY

This permit requires BFI Waste Systems of North America, LLC to conduct the following hazardous waste activities in accordance with the approved permit application and the conditions in this permit:

Post-Closure Care: Closed landfill
Groundwater Monitoring: Detection Monitoring
Corrective Action: Not currently required at this facility

This permit consists of the conditions contained herein and those in the sections and attachments in this permit. The Permittee must comply with all terms and conditions of this permit and the applicable regulations contained in 35 Ill. Adm. Code Parts 702, 703, 705 and 720 through 729 in effect on the effective date of this permit.

This permit is issued based on the information submitted in the approved permit application identified in Section II of this permit and any subsequent amendments. Any inaccuracies found in the information provided in the permit application may be grounds for the termination or modification of this permit (see 35 Ill. Adm. Code 702.187 and 702.186) and potential enforcement action (415 ILCS 5/44(h)).

Jacqueline M Cooperider

Jacqueline M. Cooperider, P.E.
 Permit Section Manager
 Bureau of Land

JMC:JDN:1418210001-RCRA-B142R2M1-B142R2M2-B142R2M4-B142R2M6-B142R2M7-
 Approval.docx JDN TNH

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
 1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120
 9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
 595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
 412 SW Washington Street, Suite O, Peoria, IL 61602 (309) 671-3022
 4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

RCRA POST-CLOSURE PERMIT

BFI Waste Systems of North America, LLC

Davis Junction, Illinois

LPC No. 1418210001

USEPA ID No. ILD980700751

Log No. B-142R2-M-1; M-2; M-4; M-6; M-7

RCRA POST-CLOSURE PERMIT**BFI Waste Systems of North America, LLC****Davis Junction, Illinois****LPC No. 1418210001****USEPA ID No. ILD980700751****Log No. B-142R2-M-1; M-2; M-4; M-6; M-7****TABLE OF CONTENTS**

<u>SECTION</u>	<u>PAGE</u>
Section I. Post-Closure Care	I-1 to I-6
Section II. Identification of Approved Permit Application	II-1
Section III. Groundwater Detection Monitoring Program	III-1 to III-13
Section IV. Standard Conditions	IV-1 to IV-7
Section V. Corrective Action	V-1 to V-5
Section VI. Reporting and Notification Requirements	VI-1 to VI-3

LIST OF ATTACHMENTS

<u>ATTACHMENT</u>	<u>PAGE</u>
Section A. Groundwater Monitoring Attachments and Figures	A-1 to A-8
Section B. Construction Certification Form	B-1
Section C. Post-Closure Cost Estimate	C-1

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page 1-1 of 1-6

Section I: POST-CLOSURE CARE

A. SUMMARY

Hazardous waste management units where waste is left in place must receive post-closure care for a minimum of 30 years. The Permittee must continue post-closure care for the closed co-disposal landfill at this facility which received hazardous waste from November 1980 to January 1983 until at least December 5, 2024. Activities required during post-closure care include, but are not limited to (1) maintenance of final cover, (2) monitoring of the groundwater, (3) providing financial assurance for post-closure activities pursuant to 35 IAC Part 724.

B. UNIT IDENTIFICATION

1. The Permittee shall provide post-closure care for the following hazardous waste management unit, subject to the terms and conditions of this permit:

The BFI/Davis Junction Landfill is located on 159 acres at the southwest corner of Edson Road and Illinois Route 251 near Davis Junction in Ogle County, Illinois. The Phase I landfill is a hazardous waste co-disposal landfill unit that occupies approximately 25 acres in the southwest corner of the facility between facility coordinates 0 to 900 East and 0 to 1425 North. The unit is excavated down to an elevation of 712 feet MSL at the north end and 717 feet MSL at the south end. The floor of the unit is situated in a layer of in-situ clayey soils. Sides of the unit consist of compacted clay walls that were designed to impede migration into an upper sand layer on the north, south and west sides of the unit and into Phase 2 on the east side of the unit. These clay walls were required by permit to be a minimum of ten feet thick.

Wastes received at the facility included municipal refuse, special wastes, and hazardous waste. Only approximately 2% of the waste disposed in the Phase I landfill was hazardous waste. 35 IAC 703.121 requires owners and operators of landfill units that received waste after January 26, 1982, or certified closure in accordance with 35 IAC 725.215 after January 26, 1983, to obtain post-closure permits, unless closure by removal as described in 35 IAC 703.159 and 160 has been achieved. Since hazardous waste was received in Phase I after January 26, 1982 (the last load of hazardous waste was received on January 25, 1983), a RCRA Post-Closure Permit is required for Phase I.

The existing cover system for the unit is from top to bottom: 1) a 36-inch thick final cover protective layer to support vegetation (the top 6 inches (minimum) of which is topsoil), 2) a geotextile filter fabric, 3) a geonet drainage layer, 4) a 40-mil polyethylene geomembrane, and 5) a 24 inch compacted clay layer composed of materials contained in the old cover system at the facility. The unit's existing leachate collection system consists of 15 leachate extraction points on 250 to 300 foot centers

throughout the landfill unit. Finally, a landfill gas monitoring/management program is implemented for the unit.

2. Illinois EPA approved certification of closure of the subject landfill on December 5, 1984. Post-closure care for this unit must then be provided for at least thirty (30) years after that date. The Illinois EPA has extended post-closure care until at least December 5, 2024.
3. A survey plat indicating the location and dimensions of the Phase I Landfill and any other hazardous waste disposal units with respect to permanently surveyed benchmarks was prepared and certified by a professional land surveyor. The notes on the plat state the owner's and operator's obligation to restrict disturbance of the Phase I Landfill in accordance with the applicable Subpart G regulations. These notes state:
 - a. The waste materials contained in the Phase I Landfill are considered RCRA hazardous wastes. They include 96% heavy metal sludges; 4% spent solvent still bottoms, spent solvent sludges, petroleum refining residues, rodenticides glycol, polystyrene, and phthalic anhydride.
 - b. Any material removed from the Phase I Landfill during future activities must be managed as a hazardous waste in accordance with 35 Ill. Adm. Code Subtitle G: Waste Disposal.
 - c. The use of this area is restricted.
4. The Survey Plat (Exhibit A) indicating the location and dimension of the closed landfill area was recorded in the Ogle County Recorder's Office on April 5, 2006. The Survey Plat was recorded as Document No. 0603382.

The Plat of Survey was attached to the deed to the property and serves as an instrument which is normally examined during title search that will in perpetuity notify any potential purchaser of the property that:

- a. The waste material in the Phase I Landfill is considered a RCRA hazardous waste;
- b. Use of the area is restricted; and
- c. A survey plat and record of the type, location and quantity of waste material in the Phase I Landfill was filed with the Illinois EPA and the County Recorder.

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page I-3 of I-6

C. MONITORING, MAINTENANCE, AND RECORDKEEPING

1. The Permittee shall implement the Post-Closure Care plan contained in the approved permit application. All post-closure care activities must be conducted in accordance with the provisions of the approved Post-Closure Plan and the conditions in this permit.
2. The Permittee shall continue to conduct post-closure care for each hazardous waste management unit in Permit Section I.B.1. Post-closure care of the unit began on December 5, 1984 and must continue for at least thirty (30) years after that date. The Illinois EPA has extended post-closure care until at least December 5, 2024.
3. The Illinois EPA may include restrictions upon the future use of the site if necessary to protect public health and the environment, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment. After administrative and judicial challenges to such restrictions have been exhausted, the Illinois EPA shall file such restrictions of record in the Office of the Recorder of the county in which the hazardous waste disposal site is located.
4. The Permittee shall not allow any use of the units designated in Section B which will disturb the integrity of the final cover, liners any components of the containment system, or function of the facility's monitoring systems during the post-closure care period unless such use is necessary to protect public health or the environment.
5. The Illinois EPA may require, at partial and final closure, continuation of any of the security requirements during part or all of the post-closure care period.
6. The Permittee shall maintain and monitor the groundwater monitoring system and comply with the other applicable regulations of 35 IAC 724 Subpart F (Groundwater Protection) during the post-closure care period.
7. The Permittee shall maintain a record of all inspections, monitoring, and maintenance activities in the facility's operating record. A copy of the operating record must be kept at the physical location specified in the approved permit application (i.e., the Permittee's offices in Hanover Park, IL).
8. The Permittee shall comply with the requirements for landfills described in the approved permit application and the conditions of this permit as follows:
 - a. Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, cracking or other events.

Corrective action shall be taken if ponding has been observed, if cracks or erosion channels greater than one inch wide have formed for whatever reason, if gas,

odor, vegetative or vector problems arise, if leachate popouts or seeps are present, or if vegetation with tap roots is found to be growing in areas which are not designed to accommodate such vegetation.

- b. Continue to operate the leachate collection and removal system throughout the post-closure care period in accordance with Section E of the approved permit application until pumpable quantities of leachate are not present. If operation of the leachate collection and removal system is discontinued under this provision, the Permittee must continue to monitor leachate levels during the Post-Closure Care period. If leachate levels rise to pumpable levels during the Post-Closure Care period, the Permittee must resume operation of the leachate collection and removal system until pumpable levels of leachate are no longer present.

Existing leachate head levels must be reduced within the unit through active vertical extraction to the lowest pumpable levels. Progress towards lowering the leachate head levels must be monitored by taking quarterly leachate level measurements from the leachate head wells. These measurements must be recorded and maintained with the facility operating record. The actual leachate head maintenance level must be established based on the performance of the extraction system over time. The Permittee must maintain the lowest pumpable leachate levels within all vertical extraction wells.

The Permittee must perform leachate sampling in accordance with the Delisting Petition approved by the Illinois Pollution Control Board (AS 08-5) dated December 5, 2008. Leachate samples must be taken semi-annually from the leachate holding tank and analyzed for the constituents identified in the approved Delisting Petition mentioned above as well as the following parameters: Chemical Oxygen Demand (COD); 5-Day Biochemical Oxygen Demand (BOD5), total solids, total suspended solids, iron and pH. Data from the annual leachate analysis must be recorded and maintained with the facility operating record.

- c. Continue to implement the landfill gas monitoring/management program set forth in Section E of the approved permit application.
- d. Continue to operate the leachate collection and removal system, and leak detection systems until leachate is no longer detected.
- e. Prevent run-on and run-off from eroding or otherwise damaging the final cover.
- f. Protect and maintain surveyed benchmarks used in complying with surveying and recordkeeping requirements.

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page 1-5 of 1-6

D. INSPECTIONS

The Permittee shall inspect the components, structures, and equipment at the site in accordance with the inspection schedule in the approved permit application and the conditions in this permit.

E. NOTICES AND CERTIFICATION

1. The person or office specified in the approved Post-Closure Plan must keep the plan during the remainder of the post-closure period.
2. If the Permittee or any subsequent owner or operator of the land upon which a hazardous waste disposal unit is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, or contaminated soils, then they must request a modification to this Post-Closure Permit in accordance with the applicable requirements in 35 IAC Parts 703, 705 and 724. The owner or operator must at a minimum demonstrate that the removal of hazardous wastes will satisfy the criteria of 35 IAC 724.217(c).
3. No later than sixty (60) days after completion of the established post-closure care period for each hazardous waste disposal unit, the Permittee shall submit to the Illinois EPA, by registered mail, a certification that the post-closure care for the hazardous waste disposal unit was performed in accordance with the specifications in the approved Post-Closure Plan and the conditions of this permit. The certification must be signed by the owner or operator and a qualified Professional Engineer registered in the State of Illinois. Documentation supporting the qualified Professional Engineer's certification must be furnished to the Illinois EPA upon request until the Illinois EPA releases the Permittee from the financial assurance requirements for post-closure care.
4. Within 60 days after receiving certifications from the owner or operator and a qualified Professional Engineer that the post-closure care period has been completed for the landfill listed in Condition B of this permit in accordance with the approved Post-Closure Plan, the Agency shall notify the owner or operator that it is no longer required to maintain financial assurance for post-closure care of that unit unless the Illinois EPA determines that post-closure care has not been in accordance with the approved Post-Closure Plan. The Illinois EPA shall provide the owner or operator with a detailed written statement of any such determination that post-closure care has not been in accordance with the approved Post-Closure Plan.
5. Within 90 days of the modification date of this permit, the Permittee shall notify persons on the facility mailing list of the changes to the permit identified in the permit modification. Within 120 days of the modification date, the Permittee shall provide documentation to the Illinois EPA Bureau of Land Permit Section that the required notification was made as specified above. At a minimum, this documentation shall

include a copy of the letter sent and a copy of the facility mailing list of all people who received the notification.

F. 39(i) CERTIFICATION

1. The Permittee shall submit current 39(i) certifications and supporting documentation with all permit applications.

G. FINANCIAL ASSURANCE

1. The Permittee shall maintain financial assurance for post-closure care of the Phase I Landfill of at least \$2,589,796 in 2022 dollars. The cost estimate for post-closure care of this facility is shown in Attachment C to this permit. The financial assurance maintained by the facility shall be sufficient to meet the requirements at 35 Ill. Adm. Code 724 Subpart H.

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page II-1 of II-1

SECTION II: IDENTIFICATION OF APPROVED PERMIT APPLICATION

1. **RCRA Part B Renewal Application dated June 21, 2017**
2. **Addendum to Permit Application dated October 12, 2017**
3. **Addendum to Permit Application dated May 9, 2018**
4. **Addendum to Permit Application July 18, 2018**
5. **Class 1* Permit Modification dated November 16, 2018 (B-142R2-M-1) (Partial Approval)**
6. **Class 1* Permit Modification dated August 27, 2019 (B-142R2-M-2) (Partial Approval)**
7. **Class 1* Permit Modification dated May 10, 2023 (B-142R2-M-4) (Partial Approval)**
8. **Class 1* Permit Modification dated January 27, 2022 (B-142R2-M-6) (Partial Approval)**
9. **Class 1* Permit Modification dated December 1, 2022 (B-142R2-M-7) (Partial Approval)**

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M7
Page III-1 of III-13

SECTION III: GROUNDWATER DETECTION MONITORING PROGRAM

A. SUMMARY

Groundwater parameters monitored in the uppermost aquifer below the BFI Davis Junction Landfill facility indicate that at the present time no groundwater impacts have occurred. Therefore, a Groundwater Detection Monitoring Program meeting the requirements of 35 Ill. Adm. Code 724.198 shall be implemented at the facility.

B. DEFINITION

As used herein, the words or phrases set forth below shall have the following definitions:

1. "BFI Davis Junction" shall refer to BFI Waste Systems of America, LLC Davis Junction Landfill (Phase I).
2. "Site" or "Facility" refers to the location at the southwest corner of the intersection of Edson Road and U.S. Route 251 in Ogle County, Illinois.
3. "Permittee" refers to the Facility.
4. "Illinois EPA" refers to the Illinois Environmental Protection Agency.
5. "RCRA" shall mean the Resource Conservation and Recovery Act as defined by Section 3.425 of the Environmental Protection Act, 415 ILCS 5/1 (2006).
7. "Point of Compliance" refers to the vertical surface located at the hydraulically downgradient limits of the landfill extending down into the uppermost aquifer underlying the regulated unit.
8. "Ft-bgs" refers to the number of feet below the ground surface.
9. "Ft-MSL" refers to the number of feet below the ground surface referenced to mean sea level.
10. "Detected" shall mean a concentration equal to or above the PQL listed in the latest version of USEPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) for the applicable analytical methods specified in the approved Sampling and Analysis Plan, which are incorporated by reference in Condition II.H of the Permit.
11. "Uppermost Aquifer" refers to the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically connected

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page III-2 of III-13

with this aquifer in the vicinity of the facility. The uppermost aquifer in the vicinity of the BFI Davis Junction facility consists of alluvial and outwash deposits and include fine to medium sands with some silts underlain by fine to coarse sand, which is then underlain by a basal fine sand.

12. "Stick-up" refers to the height of the referenced survey datum. This point is determined within ± 0.01 foot in relation to mean sea level, which in turn is established by referenced to an established National Geodetic Vertical Datum.

C. IMPLEMENTATION

1. The Permittee shall implement the Groundwater Detection Monitoring Program upon the effective date of this Permit. On that date, the groundwater monitoring requirements set forth in this Permit shall supersede those previously established.
2. The Permittee shall carry out the detection monitoring specified in this Permit on the groundwater beneath the BFI Davis Junction Landfill in Davis Junction, Illinois. The uppermost aquifer beneath this site is defined as the interconnecting sands and sands and gravels within the Rock Bedrock Valley as well as the underlying and adjacent Galena-Platteville, lower St. Peter Sandstone and the entire thickness of the Cambrian Ordovician Aquifer. The Rock Bedrock Valley contains approximately 250 feet of sand and gravel. For the purpose of this Permit and in accordance with the 35 Ill. Adm. Code Part 620 regulations, the uppermost aquifer has been designated Class I: Potable Resource Groundwater.

NOTE: At this time and pursuant to the information presented in the permit application, only the uppermost portion of the uppermost aquifer shall be monitored since little if any impact has occurred. If an impact to the upper portion of the uppermost aquifer is confirmed, investigation of the lower portions shall be required. Wells designated with an "M" shall be screened in the upper fine sand which occurs between approximately 686 MSL to 700 MSL. Where the fine sand is absent, "M" wells shall be screened in coarser materials within the same approximate interval. Wells with a "D" shall be screened in the most efficient sand and gravel portion at approximately 615 MSL to 686 MSL. Piezometer designations with a "S" are screened in intermittently saturated zones above the intermediate ("M") and deep ("D") wells.

3. The Point of Compliance is delineated by the wells identified as the point of compliance wells in Condition III.D.1.

D. WELL LOCATIONS AND CONSTRUCTION

1. The Permittee shall maintain the groundwater monitoring wells and piezometers identified in the table below to allow for the collection of groundwater samples and elevations from the uppermost aquifer. The location of these wells and piezometers are specified in Figure 2 of the approved permit application.

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page III-3 of III-13

<u>IEPA Well No.</u>	<u>Facility Well No.</u>	<u>Well Depth (Ft-bgs)</u>	<u>Well Depth Elevation (Ft-MSL)</u>	<u>Well Screen Interval (Ft-MSL)</u>
------------------------------	----------------------------------	------------------------------------	--	--

Upgradient Wells

G66M	G166I	70.1	691.1	691.1-696.1
G75M	G175I	73.9	686.6	686.6-691.6

Point of Compliance Wells

G55M	G155I	29.0	694.3	694.3-699.3
G67M	G167I	30.3	691.1	691.1-696.1
G69M	G169I	29.0	696.8	693.8-698.8
G76M	G176I	28.9	694.0	694.0-699.0
G77M	G177I	33.0	691.5	691.5-696.5

Piezometers

G55S	G155S	9.40	714.3	714.3-716.8
G63S	G163S	19.89	701.9	701.9-706.9
G63M	G163I	50.7	670.9	670.9-675.9
G67S	G167S	8.3	713.0	713.0-715.5
G68S	G168S	12.1	707.6	707.6-712.6

<u>IEPA Well No.</u>	<u>Facility Well No.</u>	<u>Well Depth (Ft-bgs)</u>	<u>Well Depth Elevation (Ft-MSL)</u>	<u>Well Screen Interval (Ft-MSL)</u>
------------------------------	----------------------------------	------------------------------------	--	--

Upgradient Wells

G62D	G162D	83.0	654.4	654.4-659.4
G66D	G166D	80.9	681.1	681.1-686.1

Compliance Point Wells

G55D	G155D	52.7	670.3	670.3-675.3
G67D	G167D	55.2	666.4	666.4-671.4
G69D	G169D	55.0	667.7	667.7-672.7
G77D	G177D	56.5	667.3	667.3-672.3

Piezometers

G63D	G163D	164.9	557.5	557.5-562.5
------	-------	-------	-------	-------------

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page III-4 of III-13

2. Construction of each new monitoring well/piezometer must be in accordance with the diagram contained in Attachment A to this Permit unless otherwise approved in writing by the Illinois EPA. Any new monitoring wells/piezometers to be installed must be continuously sampled and logged, except in the case of a shallower well located within 10 feet of a deeper well which has been continuously sampled and logged and must be logged on Illinois EPA boring logs which can be found on the Illinois EPA website.
3. The Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Condition III.D.1 are damaged or the structural integrity has been compromised. A proposal for the replacement of the subject well shall accompany this notification. The well shall not be plugged until the new well is on-line and monitoring data has been obtained and verified, unless the well is extremely damaged and would create a potential route for groundwater contamination. Prior to replacing the subject well, the Permittee shall obtain written approval from the Illinois EPA regarding the proposed installation procedures and construction.
4. Should any well become consistently dry or unserviceable, a replacement well shall be provided within ten (10) feet of the existing well. This well shall monitor the same zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitoring well construction standards at the time the wells are replaced. A well which is more than ten (10) feet from the existing well or does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well.
5. The Permittee shall submit boring logs, construction diagrams and data sheets from installation and development of a new or replacement well to the Illinois EPA at the address below within sixty (60) days of the date that installation of the well is completed. In addition, the Permittee shall submit certification that plugging and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within sixty (60) days of the date that the well is plugged and abandoned. All information should be submitted to the appropriate State Agencies.

Illinois Environmental Protection Agency
Bureau of Land - #33
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

6. All wells/piezometers shall be equipped with protective caps and locks. Monitoring wells or piezometers located in high traffic areas must be protected with bumper guards or other alternate barriers.

1418210001-BFI Davis Junction
 Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
 Page III-5 of III-13

7. All wells/piezometers not utilized in the approved groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 Ill. Adm. Code Part 920 regulations. Monitoring wells that are improperly constructed must be abandoned in accordance with Condition III.D.3.

E. MONITORING PARAMETERS

1. The Permittee shall determine groundwater quality at groundwater monitoring wells identified in Condition III.D.1 at both upgradient and point of compliance locations, or other wells annually during the active life (including closure and post-closure care period) of the landfill. Samples collected during the annual sampling events of each year shall be analyzed for the constituents below.

List G1 Annual Groundwater Sampling

Field Parameters

	Storets Numbers	Background Levels	
		<u>Shallow/Intermediate</u>	<u>Deep</u>
pH (standard)	00400	6.71-8.13	6.62-8.13
Specific Conductance @25° (µmhos/cm)	00094	1608	1608
Temperature of Water Sample (°F)	00011		
Turbidity (Ntus)	45626		
Depth to Water (Ft. below land surface)	72019		
Depth to Water (Ft. below measuring point)	72109		
Elevation of Bottom of Well (Ft. MSL)#	72020		
Elevation of Groundwater Surface (Ft. MSL)	71993		
Elevation of Measuring Point (Top of casing Ft. MSL)##	72110		

Shall be surveyed once every five (5) years, or whenever pumps are removed from the well for maintenance, or at the request of the Illinois EPA, or whenever the elevation changes as required by Condition III.J.6.

Shall be surveyed once every five (5) years; or at the request of the Illinois EPA; or whenever the elevation changes in accordance with Condition III.J.5.a.

Indicator Parameters

	Storets Numbers	Background Levels	
		<u>Shallow/Intermediate</u>	<u>Deep</u>
Arsenic (Dissolved) mg/l	01000	.023	.011
Arsenic (Total) mg/l	01002	.002	.013

1418210001-BFI Davis Junction
 Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
 Page III-6 of III-13

List G1 Annual Groundwater Sampling (cont.)

<u>Parameters (cont.)</u>	<u>Storret Numbers</u>	<u>Background Levels</u>	
		<u>Shallow/Intermediate</u>	<u>Deep</u>
Barium (Dissolved) ug/l	01005	100	100
Barium (Total) ug/l	01007	<100	110
Cadmium (Dissolved) ug/l	01025	8	<5
Cadmium (Total) ug/l	01027	5	5
Chromium (Dissolved) ug/l	01030	14	<10
Chromium (Total) ug/l	01034	760	760
Cyanide (Total) mg/l	00720	.02	.005
Lead (Dissolved) ug/l	01049	40	6
Lead (Total) ug/l	01051	22	11
Selenium (Dissolved) mg/l	01145	<.005	<.002
Selenium (Total) mg/l	01147	2	2
Zinc (Dissolved) mg/l	01090	.074	.04
Zinc (Total) ug/l	01092	26	30
Acetone	81552	100	100
Benzene	34030	5	5
Cobalt (mg/L)	01037	.1	.1
Copper (mg/L)	01042	.01	.025
Dichloromethane (Methylene Chloride)	34423	5	5
Endrin	39390	2	2
Ethylbenzene	78113	5	5
Ethyl Ether (Diethyl Ether)	81576	5	5
Heptachlor	39410	.4	.4
Nickel	01067	510	510
Styrene	77128	10	10
Tetrachloroethylene	34475	5	5
Toluene	34010	5	5
Trichloroethylene	39180	5	5
Vinyl Chloride	39175	2	2
Xylenes	81551	5	5
1,1-Dichloroethane	34496	5	5
cis-1,2-Dichloroethylene	77093	5	5
1,4-Dioxane	82388	5	5
2,4,5 TP (Silvex)	39760	2	2
2,4-Dichlorophenoxyacetic Acid (2,4-D)	39730	10	10
2-Butanone (Methyl Ethyl Ketone)	81595	10	10
1,4(para) Dichlorobenzene	34571	5	5
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	78133	10	10
bis (2-ethyl hexyl) phthalate	39100	20	20

1418210001-BFI Davis Junction
 Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
 Page III-7 of III-13

List G1 Annual Groundwater Sampling (cont.)

<u>Parameters (cont.)</u>	<u>Storet Numbers</u>	<u>Background Levels</u>	
		<u>Shallow/Intermediate</u>	<u>Deep</u>
2-Methylphenol (o-cresol)	77152	10	10
3-Methylphenol (m-cresol)	77151	10	10
4-Methylphenol (p-cresol)	77146	10	10
Acetophenone	81553	10	10
2,4-Dimethylphenol	34606	10	10

NOTE:

- i. Background concentrations are given in ug/L except as otherwise noted. Also, the monitoring results should be reported in ug/L units unless otherwise indicated.
- ii. All parameters with the "(Dissolved)" label to the right shall be determined using groundwater samples which have been filtered through a 0.45 micron filter.
- iii. In cases where log-transformed values better describe a normal distribution and are used to determine groundwater parameters, all future well comparisons within that parameter must be made with log-transformed data for significance or compliance.
- iv. Included in the annual sampling report shall be the calculated rate of migration and direction including the supporting calculations and assumptions using site specific data. Hydraulic conductivity shall be determined utilizing results from field testing rather than estimating the hydraulic conductivity using grain size analysis.

F. DETECTION MONITORING PROGRAM

1. The Permittee shall determine groundwater quality at each monitoring well identified in Condition III.D.1 annually during the active life of the regulated unit (including the closure and post-closure care periods). The Permittee shall express the groundwater quality at each monitoring well in a form necessary for the determination of statistically significant changes (i.e. means, variances, etc.).
2. The Permittee shall determine the groundwater flow rate and direction in the uppermost aquifer annually, and report to the Illinois EPA at least annually from monitoring wells identified in Condition III.D.1
3. The Permittee shall determine whether there is a statistically significant increase, (or decrease in the case of pH) over the background values established for each parameter identified in Condition III.E.1 or the 35 Ill. Adm. Code 620, Class I Groundwater

Quality Standards, whichever is greater, each time groundwater quality is determined at the point of compliance.

G. GROUNDWATER ELEVATION

1. The Permittee shall determine the groundwater surface elevation referenced to Ft-MSL at each well each time groundwater is sampled in accordance with Condition III.J.3.
2. The Permittee shall determine the surveyed elevation of "stick-up" referenced to Ft-MSL when the well is installed (with as-built diagrams) and every five (5) years; or at the request of the Illinois EPA; or whenever the elevation changes in accordance with Condition III.J.5.
3. Elevation, as referenced to Ft-MSL, of the bottom of each monitoring well (Storet 72020) is to be reported once every five (5) years, or whenever the pumps are removed from the well for maintenance; or at the request of the Illinois EPA; or whenever the elevation changes in accordance with Condition III.J.6. The mandatory measurement shall be taken during the annual sampling event.

H. SAMPLING AND ANALYSIS PROCEDURES

1. The Permittee shall use the techniques and procedures described in Appendix C-3 of the approved permit application except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition III.D.1 above:
 - a. Samples shall be collected by the techniques described in Appendix C-3 of the approved permit application.
 - b. Samples shall be preserved and shipped (when shipped off-site for analysis) in accordance with the procedures specified in Appendix C-3 of the approved permit application.
 - c. Samples shall be analyzed in accordance with the procedures specified in Appendix C-3 of the approved permit application.
 - d. Samples shall be tracked and controlled using the chain of custody procedures specified in Appendix C-3 of the approved permit application.
2. Sampling will be collected first from upgradient wells, proceed to non-contaminated downgradient wells, and then proceeding to the downgradient wells which are known to be contaminated.

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page III-9 of III-13

3. Purging of groundwater must continue until measurements of field parameters (pH, specific conductance, temperature, and turbidity) have stabilized within approximately 10% over at least two measurements collected over three to five minute intervals. If a well is purged to dryness or is purged such that the full recovery exceeds two hours, the well should be sampled as soon as sufficient volume of groundwater has entered the well to enable the collection of the necessary groundwater samples.
4. Analytical methods to be utilized by the facility must be in accordance with the latest version of USEPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Third Edition, Final Update III, Revision 4.
5. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all sampling and analysis efforts. In addition, sample collection, handling, preservation, preparation, and analysis must be conducted in accordance with the procedures set forth in SW-846.

I. STATISTICAL PROCEDURES

When evaluating the monitoring results in accordance with Condition III.F, the Permittee shall use the following procedures:

1. The statistical method used to obtain background concentrations shall be as specified in the approved permit application.
2. Non-detects and censored data shall be treated as specified in Appendix Q of the approved permit application first submitted in February 2005. Within ninety (90) days of the effective date of this permit, the permittee shall provide a copy of Appendix Q from the 2005 permit application as a Class I* permit modification to Section C of the approved permit application.
3. A statistically significant increase above background of the parameters identified in Condition III.E.1 is when an observed concentration of such a constituent in a downgradient well exceeds the background concentration (95% tolerance interval) listed in Condition III.E.1.
4. For constituents which have not been detected in the groundwater, the practical quantitation limit (PQL) shall be used as the background concentration.
5. If a given constituent is found above background in the sample, the Permittee may resample within thirty (30) days. This sample shall be analyzed for the constituent(s) detected above background in the initial samples.

J. REPORTING AND RECORDKEEPING

1. The Permittee shall enter all monitoring, testing, and analytical data obtained in accordance with Conditions III.E, III.F, III.G, III.H and III.I in the operating record. The data must include all computations, calculated means, variances, t-statistic values and t-statistic results or results of statistical test that the Illinois EPA has determined to be equivalent.
2. Samples collected to meet the requirements of the groundwater monitoring program described in Conditions III.E, III.F, III.G, and III.I shall be collected and reported, as identified in the table below. All additional information required by the groundwater monitoring program (as specified in Conditions III.E, III.F, III.G and III.I) shall also be submitted to the Illinois EPA at the address listed in Condition III.D.5 in accordance with this schedule.

<u>Samples to be Collected During The Months of</u>	<u>Results Submitted to the Illinois EPA by the Following</u>	<u>Parameters</u>
April - June	July 15	Lists G1

3. Groundwater surface elevation data, measured pursuant to Condition III.G.1 shall be collected annually and submitted to the Illinois EPA as identified in the table above.
4. The Permittee shall report the groundwater flow rate and direction in the uppermost aquifer as required by Condition III.F.2 during the annual sampling event of the year.
5. The Permittee shall report the surveyed elevation, as required by Condition III.G.2, of the top of the well casing "stick-up", referenced to MSL in accordance with the following schedule:
 - a. For wells identified in Condition III.D.1, every five (5) years (during the annual sampling event); or at the request of the Illinois EPA; or whenever the elevation changes.
 - b. For any new wells, at the time of installation and reported in the as-built diagrams, subsequent measurements shall be made every five (5) years (during the annual sampling event), or at the request of the Illinois EPA, or whenever the elevation changes.
6. Elevation of the bottom of each monitoring well identified in Condition III.D.1, as referenced to Ft-MSL, is to be reported every five (5) years. This measurement shall be taken during the annual sampling event (Storet 72020) in accordance with Condition III.G.3.

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page III-11 of III-13

7. Information required by Conditions III.J.2, III.J.3, III.J.5 and III.J.6 must be submitted in an electronic format. The information is to be submitted, as fixed-width text files formatted as found in Attachment A, in accordance with the schedule found in Condition III.J.2 above. Additional guidance regarding the submittal of the information in an electronic format can be found on the Illinois EPA website.
8. The Permittee shall submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC-592) as a cover sheet for any notices or reports required by the permit for identification purposes. Only one copy of the LPC-592 must accompany your submittal. However, the Permittee must submit one (1) original and (excluding the groundwater and leachate monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The form is not to be used for permit modification requests.
9. The Permittee shall report all information to the Illinois EPA in a form which can be easily reviewed. All submittals contain tables of data drawings and text (as necessary) to accurately describe the information contained in the submittal.
10. If the Permittee determines, pursuant to Condition III.F.3 that there is a statistically significant increase for any of the parameters specified in Condition III.E.1 at any monitoring well at the point of compliance, the Permittee shall:
 - a. Notify the Illinois EPA in writing indicating what parameters and wells have shown statistically significant increases and provide all statistical calculations. This notification shall be submitted to the Illinois EPA within seven (7) days of the date that the increases are discovered.
 - b. Sample the groundwater in all wells listed in Condition III.D.1 and determine the concentration of all constituents identified in Appendix I of 35 Ill. Adm. Code Part 724 such that the results will accompany the permit modification required by Condition III.J.10.d below.
 - c. For any Appendix I compounds found in the analysis pursuant to this condition, the Permittee may resample within one month and repeat the analysis for those compounds detected. If results of the second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring. If the Permittee does not resample for the compounds pursuant to this condition, the hazardous constituents found during the initial Appendix I analysis will form the basis for compliance monitoring.
 - d. Submit to the Illinois EPA an application for a permit modification to establish a compliance monitoring program meeting the requirements of 35 Ill. Adm. Code 724.199. The application shall be submitted to the Illinois EPA within ninety (90)

1418210001-BFI Davis Junction

Log No. B-142R2-M-1; M-2; M-4; M-6; M-7

Page III-12 of III-13

days of the date that the increase is discovered. Furthermore, the application must include the following information:

- i. An identification of the concentration of any 35 Ill. Adm. Code Part 724, Appendix I constituents found in the groundwater at each monitoring well at the Point of Compliance;
 - ii. Any proposed changes to the groundwater monitoring system at the facility necessary to meet the requirements 35 Ill. Adm. Code 724.199;
 - iii. Any proposed changes to the monitoring frequency, sampling and analysis procedures, or methods or statistical procedures used at the facility necessary to meet the requirements of 35 Ill. Adm. Code 724.199; and
 - iv. For each hazardous constituent found at the compliance point, a proposed concentration limit under 35 Ill. Adm. Code 724.194(a)(1) or 724.194(a)(2), or a notice of intent to seek an alternate concentration limit for a hazardous constituent under 35 Ill. Adm. Code 724.194(b).
- e. Submit to the Illinois EPA a corrective action feasibility plan to meet the requirements of 35 Ill. Adm. Code 724.200 unless the concentrations of all hazardous constituents identified under Condition III.J.10.b above are listed in 35 Ill. Adm. Code 620.410 and their concentrations do not exceed the respective Groundwater Quality Standards or the Permittee has sought an alternate concentration limits under Condition III.J.10.d.iv above for every hazardous constituent identified under Condition III.J.10.b above. This plan must be submitted to the Illinois EPA within 180 days of the date the increase is discovered.
 - f. Submit to the Illinois EPA all data necessary to justify any alternate concentration limit for a hazardous constituent sought under Condition III.J.10.d.iv above. This plan must be submitted to the Illinois EPA within 180 days of the date the increases is discovered.
11. If the Permittee determines, pursuant to Condition III.F.3, that there is a statistically significant increase above the background values for the parameters specified in Condition III.E.1, the Permittee may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. The Permittee shall submit a permit modification application in accordance with Condition III.J.10.d unless the demonstration successfully shows that a source other than the regulated unit caused the increase or that the increase resulted from errors in sampling, analysis or evaluation and the Illinois EPA concurs.

To make this demonstration, the Permittee shall:

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page III-13 of III-13

- a. **Notify the Illinois EPA in writing that they intend to make this demonstration. This notification must be submitted to the Illinois EPA within seven (7) days of the date that the increase is discovered.**
- b. **Submit a report to the Illinois EPA which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation. This report must be submitted within ninety (90) days of the date that the increase is discovered.**
- c. **Submit to the Illinois EPA an application to make any appropriate changes to the Groundwater Detection Monitoring Program. This application must be submitted within ninety (90) days of the date that the increase is discovered.**
- d. **Continue to monitor in accordance with the detection monitoring program at the facility.**

K. REQUEST FOR PERMIT MODIFICATION

1. **If the Permittee determines that the detection monitoring program no longer satisfies the requirements of 35 Ill. Adm. Code 724.198, the Permittee must, within ninety (90) days, submit an application for a permit modification to the Illinois EPA to make any appropriate changes to the program which will satisfy the regulations.**
2. **Conditions in this section of the Permit may be modified in accordance with 35 Ill. Adm. Code 705.128 if there is cause for such modification, as defined in 35 Ill. Adm. Code 702.184. Causes for modification identified in this section include, but are not limited to, alterations to the permitted facility, additional information which would have justified the application of different permit conditions at the time of issuance, and new regulations.**

SECTION IV: STANDARD CONDITIONS**GENERAL REQUIREMENTS**

1. **EFFECT OF PERMIT.** The existence of a RCRA permit shall not constitute a defense to a violation of the Environmental Protection Act or Subtitle G, except for development, modification or operation without a permit. Issuance of this permit does not convey property rights or any exclusive privilege. Issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or infringement of state or local law or regulations. (35 Ill. Adm. Code 702.181)
2. **PERMIT ACTIONS.** This permit may be modified, reissued or revoked for cause as specified in 35 Ill. Adm. Code 703.270 through 703.273 and Section 702.186. The filing of a request by the Permittee for a permit modification or revocation, or a notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition. (35 Ill. Adm. Code 702.146)
3. **SEVERABILITY.** The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. (35 Ill. Adm. Code 700.107)
4. **PERMIT CONDITION CONFLICT.** In case of conflict between a special permit condition and a standard condition, the special condition will prevail. (35 Ill. Adm. Code 702.160)
5. **DUTY TO COMPLY:** The Permittee shall comply with all conditions of this permit except for the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance constitutes a violation of the Environmental Protection Act and is grounds for enforcement action; permit revocation or modification; or for denial of a permit application. (35 Ill. Adm. Code 702.141 and 703.242)
6. **DUTY TO REAPPLY.** If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee must apply for a new permit at least 180 days before this permit expires, unless permission for a later date has been granted by the Illinois EPA. (35 Ill. Adm. Code 702.142 and 703.125)
7. **PERMIT EXPIRATION.** This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application (see 35 Ill. Adm. Code 703.181-703.209) and through no fault of the Permittee the Illinois EPA has not issued a new permit as set forth in 35 Ill. Adm. Code 702.125.

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page IV-2 of IV-7

8. **NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE.** It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (35 Ill. Adm. Code 702.143)
9. **DUTY TO MITIGATE.** In the event of noncompliance with the permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. (35 Ill. Adm. Code 702.144)
10. **PROPER OPERATION AND MAINTENANCE.** The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory, and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. (35 Ill. Adm. Code 702.145)
11. **DUTY TO PROVIDE INFORMATION.** The Permittee shall furnish to the Illinois EPA, within a reasonable time, any relevant information which the Illinois EPA may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Illinois EPA, upon request, copies of records required to be kept by this permit. (35 Ill. Adm. Code 702.148)
12. **INSPECTION AND ENTRY.** The Permittee shall allow an authorized representative of the Illinois EPA, upon the presentation of credentials and other documents as may be required by law, to:
 - a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location. (35 Ill. Adm. Code 702.149)

13. **MONITORING AND RECORDS.** (35 Ill. Adm. Code 702.150)
- a. **Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste must be the appropriate method from Appendix A of 35 Ill. Adm. Code Part 721. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, latest versions; Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, latest versions; or an equivalent method as specified in the approved Waste Analysis Plan.**
 - b. **The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report or application. These periods may be extended by request of the Illinois EPA at any time. The permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations; for the active life of the facility, and for disposal facilities for the post-closure care period as well.**
 - c. **Records of monitoring information shall include:**
 - i. **The date(s), exact place, and time of sampling or measurements;**
 - ii. **The individual(s) who performed the sampling or measurements;**
 - iii. **The date(s) analyses were performed;**
 - iv. **The individual(s) who performed the analyses;**
 - v. **The analytical technique(s) or method(s) used; and**
 - vi. **The result(s) of such analyses. (35 Ill. Adm. Code 702.150)**
14. **REPORTING PLANNED CHANGES.** The Permittee shall give written notice to the Illinois EPA as soon as possible of any planned physical alterations or additions to the permitted facility. In general, proposed changes to the facility will need to be submitted to the Illinois EPA as permit modification request that complies with the requirements of 35 Ill. Adm. Code 703.280. (35 Ill. Adm. Codes 702.152(a))
15. **ANTICIPATED NONCOMPLIANCE.** The Permittee shall give advanced written notice to the Illinois EPA of any planned changes in the permitted facility or activity which may

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page IV-4 of IV-7

result in noncompliance with permit requirements, regulations, or the Act. (35 Ill. Adm. Code 702.152(b))

16. **TRANSFER OF PERMITS.** This permit may not be transferred by the Permittee to a new owner or operator unless the permit has been modified or reissued pursuant to 35 Ill. Adm. Code 703.260(b) or 703.272. Changes in the ownership or operational control of a facility must be made as a Class 1 modification with the prior written approval of the Illinois EPA. The new owner or operator shall submit a revised permit application no later than 90 days prior to the scheduled change. (35 Ill. Adm. Code 703.260)
17. **MONITORING REPORTS.** Monitoring results shall be reported at the intervals specified in the permit. (35 Ill. Adm. Code 702.152(d))
18. **COMPLIANCE SCHEDULES.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than specified in 35 Ill. Adm. Code 702.162. (35 Ill. Adm. Code 702.152(e))
19. **TWENTY-FOUR HOUR REPORTING.**
 - a. The Permittee shall report to the Illinois EPA any noncompliance with the permit which may endanger health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the following circumstances. This report shall include the following:
 - i. Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.
 - ii. Information concerning the release or discharge of any hazardous waste or of a fire or explosion at the Hazardous Waste Management (HWM) facility, which could threaten the environment or human health outside the facility.
 - b. The description of the occurrence and its cause shall include:
 - i. Name, address, and telephone number of the owner or operator;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident;
 - iv. Name and quantity of material(s) involved;
 - v. The extent of injuries, if any;

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page IV-5 of IV-7

- vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where applicable; and
 - vii. Estimated quantity and disposition of recovered material that resulted from the incident.
- c. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Illinois EPA may waive the five-day written notice requirement in favor of a written report within fifteen days. (35 Ill. Adm. Code 702.152(f) and 703.245(b))
20. **OTHER NONCOMPLIANCE.** The Permittee shall report all instances of noncompliance not otherwise required to be reported under Standard Conditions 14, 15, and 16, at the time monitoring reports, as required by this permit, are submitted. The reports shall contain the information listed in Standard Condition 20. (35 Ill. Adm. Code 702.152(g))
21. **OTHER INFORMATION.** Where the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Illinois EPA, the Permittee shall promptly submit such facts or information. (35 Ill. Adm. Code 702.152(h))
22. **SUBMITTAL OF REPORTS OR OTHER INFORMATION.** All written reports or other written information required to be submitted by the terms of this permit shall be sent to:
- Illinois Environmental Protection Agency
Bureau of Land #33
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
23. **SIGNATORY REQUIREMENT.** All permit applications, reports or information submitted to the Illinois EPA shall be signed and certified as required by 35 Ill. Adm. Code 702.126. (35 Ill. Adm. Code 702.151)
24. **CONFIDENTIAL INFORMATION.** Any claim of confidentiality must be asserted in accordance with 35 Ill. Adm. Code 702.103 and 35 Ill. Adm. Code Part 161.

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page IV-6 of IV-7

25. **DOCUMENTS TO BE MAINTAINED IN FACILITY FILES.** The Permittee shall maintain in the facility files, until post-closure care is complete, the following documents and amendments, revisions and modifications to these documents:
- a. Post-closure plan as required by 35 Ill. Adm. Code 724.218(a) and this permit.
 - b. Cost estimate for post-closure care as required by 35 Ill. Adm. Code 724.244(d) and this permit.
 - c. Operating record as required by 35 Ill. Adm. Code 724.173 and this permit.
 - d. Inspection schedules as required by 35 Ill. Adm. Code 724.115(b) and this permit.

GENERAL FACILITY STANDARDS

26. **GENERATOR REQUIREMENTS.** Any hazardous waste generated at this facility shall be managed in accordance with the generator requirements at 35 Ill. Adm. Code Part 722.
27. **SECURITY.** The Permittee shall comply with the security provisions of 35 Ill. Adm. Code 724.114(b) and (c).
28. **GENERAL INSPECTION REQUIREMENTS.** The Permittee shall follow the approved inspection schedule. The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by 35 Ill. Adm. Code 724.115(c). Records of inspections shall be kept as required by 35 Ill. Adm. Code 724.115(d).

PREPAREDNESS AND PREVENTION

29. **DESIGN AND OPERATION OF FACILITY.** The Permittee shall maintain and operate the facility to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. (35 Ill. Adm. Code 724.131)

RECORD KEEPING

31. **OPERATING RECORD.** The Permittee shall maintain a written operating record at the facility in accordance with 35 Ill. Adm. Code 724.173.

POST-CLOSURE

32. **CARE AND USE OF PROPERTY.** The Permittee shall provide post-closure care for the facility as required by 35 Ill. Adm. Code 724.217 and in accordance with the approved post-closure plan.

33. **AMENDMENT TO POST-CLOSURE PLAN.** The Permittee must amend the post-closure plan whenever a change in the facility operation plans or facility design affects the post-closure plan or when an unexpected event has occurred which has affected the post-closure plan pursuant to 35 Ill. Adm. Code 724.218(d).
34. **COST ESTIMATE FOR POST-CLOSURE.** The Permittee's original post-closure cost estimate, prepared in accordance with 35 Ill. Adm. Code 724.244, must be:
- a. Adjusted for inflation either 60 days prior to each anniversary of the date on which the first closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year.
 - b. Revised whenever there is a change in the facility's post-closure plan increasing the cost of closure.
 - c. Kept on record at the facility and updated. (35 Ill. Adm. Code 724.244)
35. **FINANCIAL ASSURANCE FOR POST-CLOSURE CARE.** The Permittee shall demonstrate compliance with 35 Ill. Adm. Code 724.245 by providing documentation of financial assurance, as required by 35 Ill. Adm. Code 724.251, in at least the amount of the cost estimates required by the previous Permit Condition. Changes in financial assurance mechanisms must be approved by the Agency pursuant to 35 Ill. Adm. Code 724.245.

Financial assurance documents submitted to Illinois EPA should be directed to the following address:

Illinois Environmental Protection Agency
Bureau of Land #33
Permit Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

36. **INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS.** The Permittee shall comply with 35 Ill. Adm. Code 724.248 whenever necessary.

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page V-1 of V-5

SECTION V
CORRECTIVE ACTION

A. INTRODUCTION

1. In accordance with Section 3004 of RCRA and 35 IAC 724.201, the Permittee shall institute such corrective action as necessary to protect human health and the environment from all releases of hazardous wastes or hazardous constituents from any solid waste management unit (SWMU) at its facility in Davis Junction, Illinois. This section contains the conditions which must be followed to ensure these requirements are met.
2. The original RCRA permit was issued by Illinois EPA for this facility on July 21, 1995; Section IV of this permit contained corrective action requirements. As required by this permit, the facility conducted a Phase I RCRA Facility Investigation for two SWMUs. On September 17, 1996, Illinois EPA determined that no further action was necessary, based on the results of this investigation.
3. The Permittee must provide corrective action, as appropriate, for: (1) any newly discovered SWMUs; or (2) future releases for existing SWMUs.
4. The requirements of 35 Ill. Adm. Code Part 742 must be met, when applicable, for establishing remediation objectives for corrective action efforts.
5. A former non-hazardous waste landfill is located adjacent to the former hazardous waste landfill addressed in this permit. The former non-hazardous waste landfill (typically referred to as Phases II and III) has been closed in accordance with a plan approved by Illinois EPA; its 30-year post-closure care period began on March 30, 2000. Development, operation, closure and post-closure care of the non-hazardous waste landfill has been carried out in accordance with permits issued by Illinois EPA. Post-closure care of the non-hazardous waste landfill will be carried out in accordance with Permit No. 1994-160-LF and associated modifications.

B. OVERVIEW OF CORRECTIVE ACTION EFFORTS COMPLETED TO DATE

The Permittee has completed all corrective action requirements set forth in the original RCRA permit issued on July 21, 1995.

- a. Condition IV.B.1 of the permit issued July 21, 1995 required that a RCRA Facility Investigation be conducted at the following two SWMUs:
 - (1) Spill Control Area
 - (2) Runoff Water Disposal Area

- b. A workplan to conduct a Phase I RCRA Facility Investigation at the two SWMUs identified above was approved by Illinois on May 17, 1996 (Log No. B-142-CA-1).
- c. A report documenting the results of the approved Phase I RCRA Facility Investigation was approved by Illinois EPA on September 17, 1996 (Log No. B-142-CA-6). Based upon a review of the information in the report, Illinois EPA determined that no further action was necessary at the two SWMUs of concern at the facility.

C. FINANCIAL ASSURANCE FOR CORRECTIVE ACTION

1. The Permittee shall prepare a cost estimate for the completion of any corrective action required under this permit, in order to provide financial assurance for completion of corrective action, as required under 35 IAC 724.201(b). Such a cost estimate will be based upon the cost of contamination investigations and assessments for the SWMU(s), and design, construction, operation, inspection, monitoring, and maintenance of the corrective measure(s) to meet the requirements of 35 IAC 724.201 and this permit. This cost estimate must be included in each workplan or report submitted to Illinois EPA, including those required by Subsections D or E below.
2. The Permittee shall demonstrate continuous compliance with 35 IAC 724.201 by providing documentation of financial assurance using a mechanism specified in 35 IAC 724.243, in at least the amount of the cost estimate required under Condition IV.D.1. The words "completion of corrective action" shall be substituted for "closure and/or post-closure", as appropriate in the financial instrument specified in 35 IAC 724.251. This documentation shall be submitted to the Illinois EPA within 60 days after the Illinois EPA's approval of the initial or revised cost estimates required under Condition IV.D.1. The Illinois EPA may accept financial assurance for completion of corrective action in combination with another financial mechanism that is acceptable under 35 IAC 724.246 at its discretion.
3. The Permittee has completed all corrective action efforts to date. Thus, the Permittee is not required, at this time, to provide financial assurance for corrective action efforts. However, it will be necessary to submit cost estimates and establish financial assurance for any corrective action efforts carried out in accordance with Subsections D or E below.

D. REQUIREMENTS FOR ADDRESSING NEWLY- IDENTIFIED SWMU(s)

1. The Permittee shall notify the Illinois EPA in writing of any newly-identified SWMU(s) discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, no later than thirty (30)

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page V-3 of V-5

calendar days after discovery. The notification shall provide the following information, as available:

- a. The location of the newly-identified SWMU in relation to other SWMUs on a scaled map or drawing;
 - b. The type and past and present function of the unit;
 - c. The general dimensions, capacities, and structural description of the unit (available drawings and specifications provided);
 - d. The period during which the unit was operated;
 - e. The specifics on all materials, including but not limited to, wastes and hazardous constituents, that have been or are being managed at the SWMU, to the extent available; and
 - f. The results of any relevant available sampling and analysis which may aid in determining whether releases of hazardous wastes or hazardous constituents have occurred or are occurring from the unit.
2. If the submitted information demonstrates a potential for a release of hazardous waste or hazardous waste constituents from the newly identified SWMU, the Illinois EPA may request in writing, that the Permittee prepare a SWMU Assessment Plan and a proposed schedule of implementation and completion of the Plan for any additional SWMU(s) discovered subsequent to the issuance of this Permit. This SWMU Assessment Plan must also propose investigations, including field investigations if necessary, to determine the release potential to specific environmental media for the newly-identified SWMU. The SWMU Assessment Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste and hazardous constituents from the newly-discovered SWMU(s) to the environment.
 3. Within 60 calendar days after receipt of the Illinois EPA request for a SWMU Assessment Plan, the Permittee shall submit a SWMU Assessment Plan.
 4. After the Permittee submits the SWMU Assessment Plan, the Illinois EPA shall either approve, approve with conditions or disapprove the Plan in writing. If the plan is approved, the Permittee shall begin to implement the Plan within forty-five (45) calendar days of receiving such written notification. If the Plan is disapproved, the Illinois EPA shall notify the Permittee in writing of the Plan's deficiencies and specify a due date for submittal of a revised plan.

5. The Permittee shall submit a report documenting the results of the approved SWMU Assessment Plan to the Illinois EPA in accordance with the schedule in the approved SWMU Assessment Plan. The SWMU Assessment Report shall describe all results obtained from the implementation of the approved SWMU Assessment Plan.
6. Supplemental SWMU Assessment Plans and Reports may be needed, as necessary, to fully characterize any contamination present at the SWMU.
7. The Permittee must implement a Corrective Measures Program, as necessary, to properly address any contamination encountered during the SWMU assessment. Guidance regarding the implementation of this program will be provided at the time Illinois EPA notifies the Permittee of the need for such a program.
8. All plans and report submitted in accordance with this subsection must contain a detailed estimate of the cost to complete the proposed corrective action activity.
9. Illinois EPA decisions on all plans and reports submitted under this subsection shall be subject to the appeal provisions of Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

E. FUTURE RELEASES FROM SWMUs

There exists a potential that a release may occur in the future from SWMUs identified in the RFA which did not require any corrective action at the time that the RFA or RFI was completed. If the Permittee discovers that a release has occurred from such a SWMU in the future, then the Illinois EPA must be notified of this release within thirty (30) days after its discovery following the procedures set forth in Condition IV.D.1 above. Additional investigation and, as necessary, corrective measures efforts at this SWMU must be carried out in accordance with the procedure set forth in Subsection E above. The results of all corrective action efforts required by this condition must meet the requirements of 35 Ill. Adm. Code 724.201 and Part 742.

F. INTERIM MEASURES/STABILIZATION

At any time during the corrective action process, the Permittee may initiate interim measures for the purpose of preventing continuing releases and/or mitigating the results of releases and/or mitigating the migration of hazardous wastes or hazardous constituents. It shall not be necessary to conduct all phases of the corrective action process prior to implementing an interim measure if the Illinois EPA and the Permittee agree that a problem can be corrected, or a release cleaned up, without additional study.

- a. Prior to implementing any interim measures beyond those specified above, the Permittee must submit detailed information regarding the proposed

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page V-5 of V-5

interim measure to the Illinois EPA's DLPC for approval. This information shall include, at a minimum:

- (1) Objectives of the interim measures: how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long-term solution at the facility;
 - (2) Design, construction, and maintenance requirements;
 - (3) Schedules for design and construction; and
 - (4) Schedules for progress reports.
- b. If the Illinois EPA's DLPC determines that a release cannot be addressed without additional study, then the Illinois EPA's DLPC will notify the Permittee that the additional study must be performed. Any proposal made under this provision or any other activity resulting from such proposal, including the invocation of dispute resolution, shall not affect the schedule for implementation of the corrective action effort or of any other portion of the permit.
- c. If the Illinois EPA determines that interim measures are necessary to protect human health or the environment, the Permittee will be notified by way of a permit modification.

1418210001-BFI Davis Junction
 Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
 Page VI-1 of VI-3

**SECTION VI
 REPORTING AND NOTIFICATION REQUIREMENTS**

The reporting and notification requirements of each section of the RCRA permit are summarized below. This summary is provided to highlight the various reporting and notification requirements of this permit.

<u>Condition</u>	<u>Submittal</u>	<u>Due Date</u>
SECTION I: POST-CLOSURE		
E.2	Request permit modification to remove the liner or hazardous wastes.	Prior to removing the liner or wastes.
E.3	Certify to the Illinois EPA that post-closure care was performed in accordance with the specifications.	Within 60 days after completion of the post-closure care period.
SECTION III: GROUNDWATER DETECTION MONITORING PROGRAM		
J.2	Groundwater monitoring data and statistical calculations required annually.	During the <u>Months of April-June</u> Samples Collected Results Due to the EPA by July 15 (List G1)
J.3	Groundwater Surface Elevation.	Annually
J.4	Groundwater flow rate and direction.	Annually with the groundwater data due July 15
J.5	Surveyed Elevation.	Every 5 years <u>or</u> at the request of Illinois EPA <u>or</u> whenever the elevation changes. In addition, for new wells, at the time of installation.
J.6	Elevation of the bottom of each well.	Every 5 years due July 15.
<u>Condition</u>	<u>Submittal</u>	<u>Due Date</u>
J.10.a	Notify the Illinois EPA in writing of	Within 7 days after the

1418210001-BFI Davis Junction
 Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
 Page VI-2 of VI-3

	statistically significant increase.	increase was discovered.
J.10.b	Sample groundwater in all wells for Appendix I constituents.	Immediately after increase is discovered.
J.10.d	Apply for permit modification establishing compliance monitoring program.	Within 90 days after the increase was discovered.
J.10.e	Provide the Illinois EPA with corrective action feasibility plan.	Within 180 days after the increase was discovered.
J.11.a	Notify the Illinois EPA in writing of intent to make demonstration.	Within 7 days after the increase was discovered.
J.11.b	Submit a report to the Illinois EPA which demonstrates that a source other than a regulated unit caused the increase, or resulted from error.	Within 90 days after the increase was discovered.
J.11.c	Submit to the Illinois EPA application to change detection monitoring program.	Within 90 days after the increase was discovered.

SECTION IV: STANDARD CONDITIONS

6	Complete application for new permit.	At least 180 days prior to permit expiration.
11	Information requested by Illinois EPA and copies of records required to be kept by this permit.	Submittal date to be determined by the Illinois EPA.
14	Notify Illinois EPA of planned physical alterations or additions.	At least 15 days prior to planned change.
15	Notify Illinois EPA of changes which may result in permit noncompliance.	Within 15 days of change.

<u>Condition</u>	<u>Submittal</u>	<u>Due Date</u>
16	Application for permit modification indicating permit is to be transferred.	At least 90 days prior to transfer date.
18	Submission of any information	Within 14 days after

- | | | |
|-----------|--|---|
| | required in a compliance schedule. | each schedule date. |
| 19 | Report to Illinois EPA any non-compliance which may endanger health or environment. | |
| | telephone | Within 24 hours after discovery. |
| | in writing | Within 5 days after discovery. |
| 20 | Report all other instances of noncompliance. | March 1 of each year along with Annual Report. |

Attachment A

Groundwater Monitoring Attachments and Figures

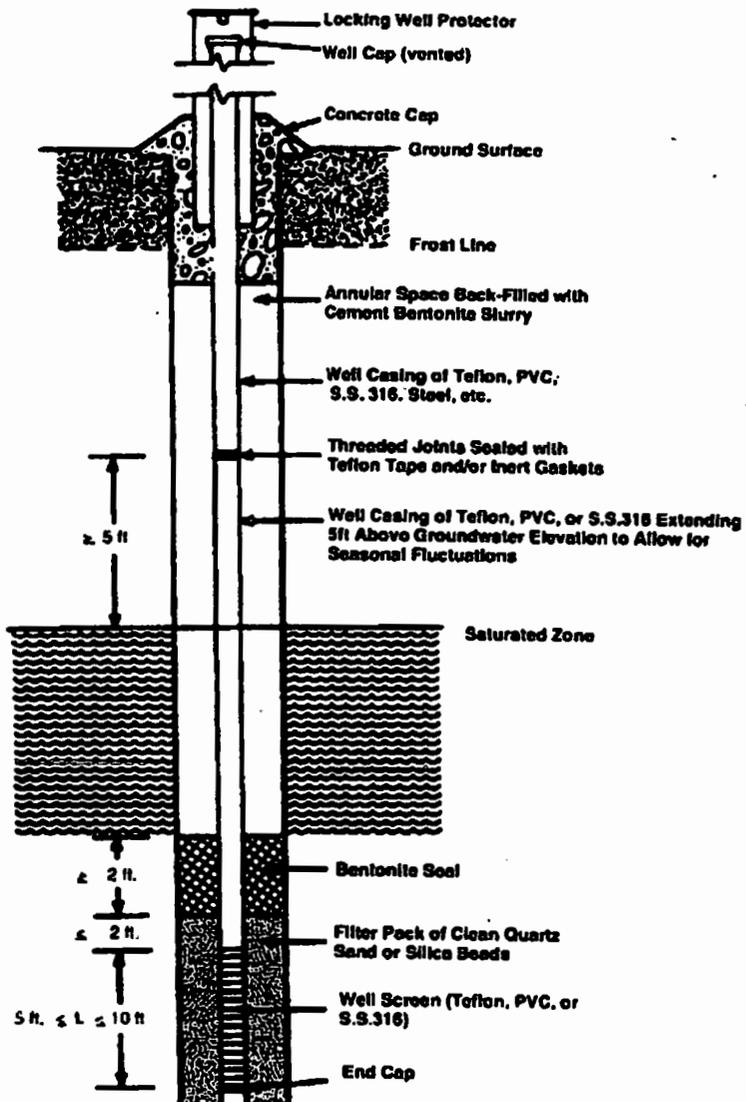
LPC #1418210001

ILD980799751

Permit Log No. B-142R2-M-1; M-2; M-4; M-6; M-7

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page A-1 of A-8

Monitoring Well Diagram



1418210001-BFI Davis Junction
 Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
 Page A-2 of A-8



Illinois Environmental Protection Agency

Well Completion Report

Site Number _____ County _____

Site Name _____ Well #: _____
 State _____ Borehole # _____
 Plane Coordinate X _____ Y _____ (or) Latitude _____ Longitude _____

Surveyed by _____ IL Registration # _____
 Drilling Contractor _____ Driller _____
 Consulting Firm _____ Geologist _____
 Drilling Method _____ Drilling Fluid (Type): _____
 Logged By _____ Date Started _____ Date Finished _____
 Report Form Completed By _____ Date _____

ANNULAR SPACE DETAILS

Elevations (MSL)* _____ Depths (BGS) _____ (.01ft.) _____

Type of Surface Seal _____		_____	Top of Protective Casing
Type of Annular Sealant: _____		_____	Top of Riser Pipe
Installation Method _____		_____	Ground Surface
Setting Time _____		_____	Top of Annular Sealant
Type of Bentonite Seal -- Granular, Pellet, Slurry (Choose One) _____		_____	Static Water Level (After Completion)
Installation Method _____		_____	Top of Seal
Setting Time _____		_____	Top of Sand Pack
Type of Sand Pack _____		_____	Top of Screen
Grain Size: _____ (Sieve Size)		_____	Bottom of Screen
Installation Method _____		_____	Bottom of Well
Type of Backfill Material: _____ (if applicable)	_____	Bottom of Borehole	

* Referenced to a National Geodetic Datum

CASING MEASUREMENTS

Diameter of Borehole (inches)	_____
ID of Riser Pipe (inches)	_____
Protective Casing Length (feet)	_____
Riser Pipe Length (feet)	_____
Bottom of Screen to End Cap (feet)	_____
Screen Length (1" slot to last slot) (feet)	_____
Total Length of Casing (feet)	_____
Screen Slot Size **	_____

**Hand-Slotted Well Screens are Unacceptable

WELL CONSTRUCTION MATERIAL

(Choose one type of material for each area)

Protective Casing	SS104, SS116, PTFE, PVC, or Other
Riser Pipe Above W.T.	SS104, SS116, PTFE, PVC, or Other
Riser Pipe Below W.T.	SS104, SS116, PTFE, PVC, or Other
Screen	SS104, SS116, PTFE, PVC, or Other

1418210001-BFI Davis Junction
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
Page A-4 of A-8



Illinois
Environmental
Protection Agency

Bureau of Land
1021 North Grand Avenue East
Box 19276
Springfield, IL 62794-9276

RCRA FACILITY GROUNDWATER, LEACHATE AND GAS REPORTING FORM

This form must be used as a cover sheet for the notices and reports, identified below as required by: (1) a facility's RCRA interim status closure plan; (2) the RCRA interim status regulations; or (3) a facility's RCRA permit. All reports must be submitted to the Illinois EPA's Bureau of Land Permit Section. This form is for use by Hazardous Waste facilities only. Reporting for Solid Waste facilities should be submitted on a separate form. All reports submitted to the Illinois EPA's Bureau of Land Permit Section must contain an original, plus a minimum of two copies.

Note This form is not to be used with permit or closure plan modification requests. The facility's approved permit or closure plan will state whether the document you are submitting is required as a report or a modification request.

Facility Name: _____ Site ID #: _____
Facility Address: _____ Fed ID #: _____

Check the appropriate heading. Only one heading may be checked for each corresponding submittal. Check the appropriate sub-heading, where applicable. Attach the original and all copies behind this form.

- ___ **LPC-160 Forms**
 - ___ **Groundwater**
 - ___ Quarterly - Indicate one: 1 2 3 4
 - ___ Semi-Annual
 - ___ Annual
 - ___ Biennial
 - ___ **Leachate**
 - ___ Quarterly - Indicate one: 1 2 3 4
 - ___ Semi-Annual
 - ___ Annual
 - ___ Biennial
- ___ **Groundwater Data (without LPC-160 Forms)**
 - ___ Quarterly - Indicate one: 1 2 3 4
 - ___ Annual ___ Semi-Annual ___ Biennial
- ___ **Well Construction Information**
 - ___ Well Construction Forms, Boring Logs and/or Abandonment Forms
 - ___ Well Survey Data (e.g., Stick-up Elevation Data)
- ___ **Notice of Statistically Significant Evidence of Groundwater Contamination (35 Ill. Adm. Code 724.198)**
- ___ **Notice of Exceedence of Groundwater Concentration Limit (35 Ill. Adm. Code 724.199(h))**
- ___ **Notice of Alternate Source or Error in Sampling Analysis or Evaluation of Groundwater (35 Ill. Adm. Code 724.199(i))**
- ___ **Gas Monitoring Reports**
- ___ **Other (Identify) _____**

1418210001-BFI Davis Junction
 Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
 Page A-5 of A-8

**Formatting Requirements for the 01 Record of the Electronically Submitted
 Groundwater and Leachate Data (the 01 Record portion of the I.P.C-160 is included
 for example purposes)**

**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
 DIVISION OF LAND POLLUTION CONTROL
 CHEMICAL ANALYSIS FORM**

Page 1 of _____

<p>RECORD CODE</p> <p>L P C S M O I</p>	<p>TRANS CODE</p> <p>A</p>							
<p>REPORT DUE DATE _____</p> <p style="text-align: center;">M M D Y 41</p>		<p>FEDERAL ID NUMBER _____</p>						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"> <p>SITE INVENTORY NUMBER _____</p> <p style="text-align: center;">V 10</p> </td> <td style="width: 50%;"> <p>MONITOR POINT NUMBER _____</p> <p style="text-align: center;">(see instructions) 11 22</p> </td> </tr> <tr> <td> <p>REGION _____ CO. _____</p> </td> <td> <p>DATE COLLECTED _____</p> <p style="text-align: center;">23 14 D Y 25</p> </td> </tr> <tr> <td colspan="2"> <p>FACILITY NAME _____</p> </td> </tr> </table>			<p>SITE INVENTORY NUMBER _____</p> <p style="text-align: center;">V 10</p>	<p>MONITOR POINT NUMBER _____</p> <p style="text-align: center;">(see instructions) 11 22</p>	<p>REGION _____ CO. _____</p>	<p>DATE COLLECTED _____</p> <p style="text-align: center;">23 14 D Y 25</p>	<p>FACILITY NAME _____</p>	
<p>SITE INVENTORY NUMBER _____</p> <p style="text-align: center;">V 10</p>	<p>MONITOR POINT NUMBER _____</p> <p style="text-align: center;">(see instructions) 11 22</p>							
<p>REGION _____ CO. _____</p>	<p>DATE COLLECTED _____</p> <p style="text-align: center;">23 14 D Y 25</p>							
<p>FACILITY NAME _____</p>								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%; padding: 5px;"> <p>FOR IEPA USE ONLY</p> <p>LAB _____</p> <p style="text-align: center;">19</p> <p>DATE RECEIVED _____</p> <p style="text-align: center;">42 14 D Y 47</p> </td> <td style="width: 60%;"> <p>BACKGROUND SAMPLE (X) _____ TIME COLLECTED _____</p> <p style="text-align: center;">(24 Hr. Clock) 50 11 M 58</p> <p>UNABLE TO COLLECT SAMPLE _____</p> <p style="text-align: center;">(see instructions) 59</p> <p>MONITOR POINT SAMPLED BY _____</p> <p style="text-align: center;">(see instructions) 60 OTHER (SPECIFY) _____</p> <p>SAMPLE FIELD FILTERED -- INORGANICS (X) _____ ORGANICS (X) _____</p> <p style="text-align: center;">61 62</p> </td> </tr> </table>			<p>FOR IEPA USE ONLY</p> <p>LAB _____</p> <p style="text-align: center;">19</p> <p>DATE RECEIVED _____</p> <p style="text-align: center;">42 14 D Y 47</p>	<p>BACKGROUND SAMPLE (X) _____ TIME COLLECTED _____</p> <p style="text-align: center;">(24 Hr. Clock) 50 11 M 58</p> <p>UNABLE TO COLLECT SAMPLE _____</p> <p style="text-align: center;">(see instructions) 59</p> <p>MONITOR POINT SAMPLED BY _____</p> <p style="text-align: center;">(see instructions) 60 OTHER (SPECIFY) _____</p> <p>SAMPLE FIELD FILTERED -- INORGANICS (X) _____ ORGANICS (X) _____</p> <p style="text-align: center;">61 62</p>				
<p>FOR IEPA USE ONLY</p> <p>LAB _____</p> <p style="text-align: center;">19</p> <p>DATE RECEIVED _____</p> <p style="text-align: center;">42 14 D Y 47</p>	<p>BACKGROUND SAMPLE (X) _____ TIME COLLECTED _____</p> <p style="text-align: center;">(24 Hr. Clock) 50 11 M 58</p> <p>UNABLE TO COLLECT SAMPLE _____</p> <p style="text-align: center;">(see instructions) 59</p> <p>MONITOR POINT SAMPLED BY _____</p> <p style="text-align: center;">(see instructions) 60 OTHER (SPECIFY) _____</p> <p>SAMPLE FIELD FILTERED -- INORGANICS (X) _____ ORGANICS (X) _____</p> <p style="text-align: center;">61 62</p>							
<p>SAMPLE APPEARANCE _____</p> <p style="text-align: center;">63</p>								
<p>COLLECTOR COMMENTS _____</p> <p style="text-align: center;">102</p>								
<p>LAB COMMENTS _____</p> <p style="text-align: center;">103</p>								

IL 532 8213
 I.P.C. 160/01 90

This Agency is authorized to require this information under Illinois Revised Statutes, 1979 Chapter 111 1/2, Section 1074 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$25,000 for each day the failure continues a fine up to \$1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

*Only Key-punch with Data in Columns 35 or Columns 38-47

1418210001-BFI Davis Junction
 Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
 Page A-6 of A-8

KEY:

<u>Spaces Numbered</u>	<u>Description</u>	<u>Format</u>
Spaces 1-7	Record Code	LPCSM01
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	G000
Spaces 23-28	Date Collected	000000
Space 29	Lab	
Spaces 30-35	Filler	
Spaces 36-41	Report Due Date	000000
Spaces 42-47	Date Received	000000
Spaces 48-53	Filler 2	
Space 54	Background Sample	
Spaces 55-58	Time Collected	0000
Space 59	Unable to Collect Sample	
Space 60	Monitoring Point Sampled By	
Space 61	Field Filtered - Inorganic	
Space 62	Field Filtered - Organic	
Spaces 63-102	Sample Appearance	
Spaces 103-142	Collector Comments	
Spaces 143-149	Filler 3	
Spaces 150-199	Lab Comments	

1418210001-BFI Davis Junction
 Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
 Page A-7 of A-8

**Formatting Requirements for the 02 Record of the Electronically Submitted
 Groundwater and Leachate Data (the 02 Record portion of the LPC-160 is included
 for example purposes)**

RECORD CODE		L	P	C	S	M	O	2	TRANS CODE		A	(COLUMNS 9-29 FROM ABOVE)				
	FIELD MEASUREMENTS CONSTITUENT DESCRIPTION AND REQUIRED UNIT OF MEASURE	STORET NUMBER	Remarks Start Date	Replicate	< or >	VALUE										
Q	TEMP OF WATER (unfiltered °F)	0 0 0 1 1				-----										
Q	SPEC COND (unfiltered umhos)	0 0 0 9 4				-----										
Q	pH (unfiltered units)	0 0 4 0 0				-----										
Q	ELEV OF GW SURF (ft ref MSL)	7 1 9 9 3				-----										
Q	DEPTH OF WATER (ft below LS)	7 2 0 1 9				-----										
A	BTM WELL ELEV (ft ref MSL)	7 2 0 2 0				-----										
Q	DEPTH TO WATER FR MEA PT (ft)	7 2 1 0 9				-----										

IL 532 1213
 LPC 160 01 90

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1004 and 1031. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$25,000 for each day the failure continues a fine up to \$1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical Chemical Methods," SW-846, 3rd Edition September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

*Only Keypunch with Data in Column 35 or Columns 38-47

KEY:

<u>Spaces Numbered</u>	<u>Description</u>	<u>Format</u>
Spaces 1-7	Record Code	LPCSM02
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	
Spaces 23-28	Date Collected	
Space 29	Lab	
Spaces 30-34	STORET Number	
Space 35	Remarks	
Space 36	Replicate	
Space 37	< or >	
Space 38-47	Value	

ILLINOIS EPA MONITOR WELL PLUGGING AND ABANDONMENT PROCEDURES

		Well Construction	Plugging Procedure
I. Unconsolidated Sediment Wells	I-A	...if backfilled with cement grout above bentonite seal and/or sandpack:	<ol style="list-style-type: none"> 1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 3. Insert tremie pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through tremie pipe. 5. Slowly withdraw tremie pipe - making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.
	I-B	...if backfilled with soft sediments (cuttings) above bentonite seal and/or sandpack:	<ol style="list-style-type: none"> 1. Knock out and remove thin surface concrete plug, if present. 2. Re-auger entire length of well. 3. Remove well casing from re-augured borehole. 4. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 5. Insert tremie pipe (1" i.d. pvc) into augers and extend to bottom. 6. Slowly pump slurry under low pressure through tremie pipe. 7. Continue slow pumping until all formation water and the water slurry mix is displaced from top of casing. 8. Slowly withdraw tremie pipe - making sure bottom of pipe remains below pure slurry. 9. Pull a flight of augers (5" if in unstable materials and hole collapse is likely or 10" if in competent material and collapse is unlikely). 10. Top off cement slurry after each flight is removed.
	I-C	...if monitor well construction is unknown:	<ol style="list-style-type: none"> 1. Follow procedures in I-A.
II. Bedrock Wells	II-A	...All bedrock monitor wells:	<ol style="list-style-type: none"> 1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 3. Insert tremie pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through tremie pipe. 5. Slowly withdraw pipe making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.

Attachment B

Construction Certification Form

LPC #1418210001

ILD980799751

Permit Log No. B-142R2-M-1; M-2; M-4; M-6; M-7

CERTIFICATION

This statement is to be completed by both the responsible officer and the registered professional engineer upon completion of any construction required by this permit in accordance with 35 Ill. Adm. Code 702.126. Submit one copy of the certification with original signatures and two additional copies. Forward these certification statements and any information required by the permit to the following address:

Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

FACILITY NAME: Browning Ferris Industries - Davis Junction Landfill
IEPA SITE CODE: 1418210001
USEPA ID NO.: ILD 980700751
PERMIT LOG NO. B-142R2-M-1; M-2; M-4; M-6; M-7
PERMIT (OR MODIFICATION) ISSUANCE DATE:
PERMIT CONDITION NO. REQUIRING CERTIFICATION:

The has been constructed in accordance with the specifications in the post-closure permit application. Documentation that the construction was in accordance with the permit is contained in the enclosed report. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Owner/Operator

Name and Title

Signature of Registered P.E.

Name of Registered P.E. and
Illinois Registration Number

(P.E license expiration date)

(P.E. Seal)

DATE

JC:JDN:1418210001-RCRA-B142R2M1-B142R2M2-B142R2M4-B142R2M6-B142R2M7-
Approval.docx

Attachment C

Post-Closure Cost Estimate

LPC #1418210001

ILD980799751

Permit Log No. B-142R2-M-1; M-2; M-4; M-6; M-7

Post-Closure Cost Estimate

The currently approved post-closure cost estimate in the current RCRA Post-Closure Permit is \$2,589,796 (in 2022 dollars). This estimate must be updated when establishing financial assurance in accordance with 35 Ill. Adm. Code 724, Subpart G. Based on the most recent post-closure cost estimate submitted December 1, 2022, and received by the Illinois EPA on December 5, 2022, the updated breakdown of the estimate should be updated as follows:

1. Estimate of post-closure care costs on an annual basis in 2022 dollars:

Post-closure inspections	\$8,143
Groundwater monitoring	\$10,636
<u>Leachate Management</u>	<u>\$59,248</u>
Total	\$78,027
<u>10% Contingency</u>	<u>\$7,803</u>
Total Annual Cost (w/Contingency):	\$85,830

One Time Costs:

Well Abandonment:	\$13,542
<u>10% Contingency, One-Time Costs:</u>	<u>\$1,354</u>
Total One-Time Costs:	\$14,896

2. Total post-closure care cost estimate =
(\$85,830 per year) x (30.0 years) + \$14,896 = \$2,589,796

Tracking Sheets
Section #1

Tracking Sheets

BOL Permit Section RCRA Tracking Sheet

BOLSiteCode 1418210001

Federal ID(s) ILD980700751

Respond by: 10/25/2023

Site: *BFI, Davis Junction*

Region: *Rockford*

City: Davis Junction

County: Ogle

Data Regarding Logged Submittal(s) per Log # *B-142R2-M-1*

Review Status	PermitClass	AppType	Reviewers:	RCRA
Inactive	Class 1* Mod	RCRA Part B	JDN	PMS

DocTitle_Description	Submittal Type	Review Type	Agency Response
Class 1* permit Mod required by Permit Renewal 2 issued 9/26/18.	1st Submittal	Technical	
Date Received	11/20/2018	Date Due	02/18/2019
		Date Mailed	

Submittal Comment:

Final Action Data

For Log No: B-142R2-M-1

Units Addressed	Final Action Status	Date FA Issued	Date NFA	Date Closure Cert Accepted	Acres Remediated
	Approved	09/25/2023			0

Closure Type:	Institutional Control	Clean Closed:	1 Institutional Control:	2 Institutional Control:
	<input type="checkbox"/>			

BOL Permit Section RCRA Tracking Sheet

BOLSiteCode 1418210001

Federal ID(s) ILD980700751

Respond by: 10/25/2023

Site: *BFI, Davis Junction*

Region: *Rockford*

City: Davis Junction

County: Ogle

Data Regarding Logged Submittal(s) per Log # *B-142R2-M-2*

Review Status	PermitClass	AppType	Reviewers:	RCRA
Inactive	Class I* Mod	RCRA Part B	JDN	PMS

DocTitle_Description	Submittal Type	Review Type	Agency Response
Annual update to post-closure cost estimates	1st Submittal	Technical	
Date Received	07/04/2019	Date Due	10/02/2019
		Date Mailed	

Submittal Comment:

Final Action Data

For Log No: B-142R2-M-2

Units Addressed	Final Action Status	Date FA Issued	Date NFA	Date Closure Cert Accepted	Acres Remediated
	Approved	09/25/2023			0

Closure Type:	Institutional Control	Clean Closed:	1 Institutional Control:	2 Institutional Control:
	<input type="checkbox"/>			

BOL Permit Section RCRA Tracking Sheet

BOLSiteCode 1418210001

Federal ID(s) ILD980700751

Respond by: 10/25/2023

Site: *BFI, Davis Junction*

Region: *Rockford*

City: Davis Junction

County: Ogle

Data Regarding Logged Submittal(s) per Log # *B-142R2-M-4*

Review Status	PermitClass	AppType	Reviewers: RCRA RCRA, CAU, DAU, GAU		
Inactive	Class 1* Mod	RCRA Part B	JDN		PMS

DocTitle_Description	Submittal Type	Review Type	Agency Response		
Signed and notarized copies of the application forms	Additional Info	Technical			
	Date Received	05/12/2023	Date Due	08/10/2023	Date Mailed

Submittal Comment:

Annual update to post closure cost estimate	1st Submittal	Technical			
	Date Received	08/28/2020	Date Due	11/26/2020	Date Mailed

Submittal Comment:

Final Action Data

For Log No: *B-142R2-M-4*

Units Addressed	Final Action Status	Date FA Issued	Date NFA	Date Closure Cert Accepted	Acres Remediated
	Approved	09/25/2023			0

Closure Type:	Institutional Control	Clean Closed:	1 Institutional Control:	2 Institutional Control:
	<input type="checkbox"/>			

BOL Permit Section RCRA Tracking Sheet

BOLSiteCode 1418210001

Federal ID(s) ILD980700751

Respond by: 10/25/2023

Site: *BFI, Davis Junction*

Region: *Rockford*

City: Davis Junction

County: Ogle

Data Regarding Logged Submittal(s) per Log # *B-142R2-M-6*

Review Status	PermitClass	AppType	Reviewers:	RCRA
Inactive	Class 1* Mod	RCRA Part B	JDN	PMS

DocTitle_Description	Submittal Type	Review Type	Agency Response
Annual update to post-closure cost estimate required by permit condition IV.34	1st Submittal	Technical	
	Date Received: 02/01/2022	Date Due: 05/02/2022	Date Mailed:

Submittal Comment:

Final Action Data

For Log No: B-142R2-M-6

Units Addressed	Final Action Status	Date FA Issued	Date NFA	Date Closure Cert Accepted	Acres Remediated
	Approved	09/25/2023			0

Closure Type:	Institutional Control	Clean Closed:	1 Institutional Control:	2 Institutional Control:
	<input type="checkbox"/>			

BOL Permit Section RCRA Tracking Sheet

BOLSiteCode 1418210001

Federal ID(s) ILD980700751

Respond by: 10/25/2023

Site: *BFI, Davis Junction*

Region: *Rockford*

City: Davis Junction

County: Ogle

Data Regarding Logged Submittal(s) per Log # *B-142R2-M-7*

Review Status	PermitClass	AppType	Reviewers:		
			RCRA	CAU	DAU, GAU
Inactive	Class 1* Mod	RCRA Part B	JDM		PMS

DocTitle_Description	Submittal Type	Review Type	Agency Response	
Annual update to post-closure cost estimate	1st Submittal	Technical		
	Date Received	Date Due	Date Mailed	
	12/05/2022	03/05/2023		

Submittal Comment:

Final Action Data

For Log No: B-142R2-M-7

Units Addressed	Final Action Status	Date FA Issued	Date NFA	Date Closure Cert Accepted	Acres Remediated
	Approved	09/25/2023			0

Closure Type:	Institutional Control	Clean Closed:	1 Institutional Control:	2 Institutional Control:
	<input type="checkbox"/>			

BOL Permit Section RCRA Tracking Sheet

BOLSiteCode 1418210001

Federal ID(s) ILD980700751

Respond by: 10/25/2023

Site: *BFI, Davis Junction*

Region: *Rockford*

City: Davis Junction

County: Ogle

Data Regarding Logged Submittal(s) per Log # *B-142R2-M-7*

Review Status	PermitClass	AppType	Reviewers: RCRA RCRA, CAU, DAU, GAU		
Inactive	Class I* Mod	RCRA Part B	JDM		PMS

DocTitle_Description	Submittal Type	Review Type	Agency Response		
Annual update to post-closure cost estimate	1st Submittal	Technical			
	Date Received	Date Due	Date Mailed		
	12/05/2022	03/05/2023			

Submittal Comment:

Final Action Data

For Log No: B-142R2-M-7

Units Addressed	Final Action Status	Date FA Issued	Date NFA	Date Closure Cert Accepted	Acres Remediated
	Approved	09/25/2023			0

Closure Type:	Institutional Control	Clean Closed:	1 Institutional Control:	2 Institutional Control:
	<input type="checkbox"/>			

BOL Permit Section RCRA Tracking Sheet

BOLSiteCode 1418210001

FedID: ILD980700751

Respond by: 4/19/2020

Site: **BFI, Davis Junction**

Region: **Rockford**

City: Davis Junction

County: Ogle

Facility Permit Universe: OperatingUniverse PostClosureUniverse CorrActionUniverse UIC

Facility Type: Right-to-Know Status: RTK Status Change Date:

Site Comments:

Data Regarding Log #: **B-142R2-M-1**

Review Status	PermitClass	AppType	Reviewers:			
			RCRA	GAU	DAU	GU
Active	Class 1* Mod	RCRA Part B	WTS			KWJ

JPN

LogComments:

Submittals:

DocTitle_Description	Submittal Type	Review Type	Agency Response
Class 1* permit Mod required by Permit Renewal 2 issued 9/26/18.	1st Submittal	Technical	Approved

Submittal Received: 11/20/2018

Date Due: 02/18/2019

Date Mailed:

Submittal Comments:

Final Action Data

For Log No: **B-142R2-M-1**

Units-Addressed	Final Action Status	Date FA Issued	Date NFA	Date Closure Cert Accepted	Acres Remediated
					0

Closure Type:	Institutional Control	Clean Closed:	1 Institutional Control:	2 Institutional Control:
	<input type="checkbox"/>			

BOL Permit Section RCRA Tracking Sheet

BOLSiteCode 1418210001

FedID: ILD980700751

Respond by: 10/5/2019

Site: BFI, Davis Junction

Region: Rockford

City: Davis Junction

County: Ogle

Facility Permit Universe: OperatingUniverse PostClosureUniverse CorrActionUniverse UIC

Facility Type: **Right-to-Know Status:** **RTK Status Change Date:**

Site Comments:

Data Regarding Log #: B-142R2-M-2

Review Status	PermitClass.	AppType	Reviewers:
Active	Class I* Mod	RCRA Part B	RCRA CAU DAU GU WTS MC KWJ

JDN

LogComments:

Submittals for Log

DocTitle_Description	Submittal Type	Review Type	Agency Response
Annual update to post-closure cost estimates	1st Submittal	Technical	Approved
Submittal Received: 07/04/2019	Date Due: 10/02/2019	Pub Notice/Date Mailed:	

Submittal Comments:

Final Action Data

For Log No: B-142R2-M-2

Units Addressed	Final Action Status	Date FA Issued	Date NFA	Date Closure Cert Accepted	Acres Remediated
					0
Closure Type:					
Institutional Control <input type="checkbox"/>		Clean Closed:		1 Institutional Control:	
				2 Institutional Control:	

BOL Permit Section RCRA Tracking Sheet

BOLSiteCode 1418210001

Federal ID(s) ILD980700751

Respond by: 6/15/2023

Site: **BFI, Davis Junction**

Region: **Rockford**

City: **Davis Junction**

County: **Ogle**

Data Regarding Logged Submittal(s) per Log # **B-142R2-M-4**

Review Status	PermitClass	AppType	Reviewers:	RCRA
Active	Class 1* Mod	RCRA Part B	RCRA, CAU, DAU, GAU	
			WTS	PMS

DocTitle_Description	Submittal Type	Review Type	Agency Response
Signed and notarized copies of the application forms	Additional Info	Technical	JDN APPROVED
	Date Received: 05/12/2023	Date Due: 08/10/2023	Date Mailed: <input type="text"/>

Submittal Comment:

Annual update to post closure cost estimate	1st Submittal	Technical	
	Date Received: 08/28/2020	Date Due: 11/26/2020	Date Mailed: <input type="text"/>

Submittal Comment:

Final Action Data

For Log No: **B-142R2-M-4**

Units Addressed	Final Action Status	Date FA Issued	Date NFA	Date Closure Cert Accepted	Acres Remediated
<input type="text"/>	0				

Closure Type:	Institutional Control	Clean Closed:	1 Institutional Control:	2 Institutional Control:
<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

BOL Permit Section RCRA Tracking Sheet

BOLSiteCode 1418210001

Fed ID(s): ILD980700751

Respond by: 6/3/2023

Site: BFI, Davis Junction

Region: Rockford

City: Davis Junction

County: Ogle

Facility Permit Universe: OperatingUniverse PostClosureUniverse CorrActionUniverse UIC

Facility Type: _____ **Right-to-Know Status:** _____ **RTK Status Change Date:** _____

Site Comments: _____

Data Regarding Log #: B-142R2-M-4

Review Status	PermitClass	AppType	Reviewers:
			RCRA CAU DAU GU
Active	Class 1* Mod	RCRA Part B	<input checked="" type="checkbox"/> WTS <input type="checkbox"/> CAU <input type="checkbox"/> DAU <input type="checkbox"/> GU <input type="checkbox"/> PMS

LogComments: _____

JDN

Submittals for Log

DocTitle_Description	Submittal Type	Review Type	Agency Response
Annual update to post closure cost estimate	1st Submittal	Technical	Approved
Submittal Received: 08/28/2020	Date Due: 11/26/2020	Pub Notice/Date Mailed: _____	

Submittal Comments: _____

Final Action Data

For Log No: B-142R2-M-4

Units Addressed	Final Action Status	Date FA Issued	Date NFA	Date Closure Cert Accepted	Acres Remediated
_____	_____	_____	_____	_____	0
Closure Type:					
Institutional Control	<input type="checkbox"/>	Clean Closed:	1 Institutional Control:	2 Institutional Control:	
_____		_____	_____	_____	

BOL Permit Section RCRA Tracking Sheet

BOLSiteCode 1418210001

Federal ID(s) ILD980700751

Respond by: 3/3/2022

Site: *BFI, Davis Junction*

Region: Rockford

City: Davis Junction

County: Ogle

Data Regarding Logged Submittal(s) per Log # *B-142R2-M-6*

Review Status	PermitClass	AppType	Reviewers: RCRA, CAU, DAU, GAU
Active	Class 1* Mod	RCRA Part B	<input type="checkbox"/> WTS <input checked="" type="checkbox"/> PMS

DocTitle_Description	Submittal Type	Review Type	Agency Response
Annual update to post-closure cost estimate required by permit condition IV.34	1st Submittal	Technical	<i>APPROVED</i>
	Date Received: 02/01/2022	Date Due: 05/02/2022	Date Mailed: <input type="text"/>

Submittal Comment:

Final Action Data

For Log No: B-142R2-M-6

Units Addressed	Final Action Status	Date FA Issued	Date NFA	Date Closure Cert Accepted	Acres Remediated
<input type="text"/>	0				

Closure Type:	Institutional Control	Clean Closed:	1 Institutional Control:	2 Institutional Control:
<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

BOL Permit Section RCRA Tracking Sheet

BOLSiteCode 1418210001

Federal ID(s) IED980700751

Respond by: 1/4/2023

Site: *BFI, Davis Junction*

Region: Rockford

City: Davis Junction

County: Ogle

Data Regarding Logged Submittal(s) per Log # *B-142R2-M-7*

Review Status	PermitClass	AppType	Reviewers:	RCRA
Active	Class 1* Mod	RCRA Part B	WTS	PMS

JDN

DocTitle_Description	Submittal Type	Review Type	Agency Response
Annual update to post-closure cost estimate	1st Submittal	Technical	- Approval
	Date Received 12/05/2022	Date Due 03/05/2023	Date Mailed

Submittal Comment:

Final Action Data

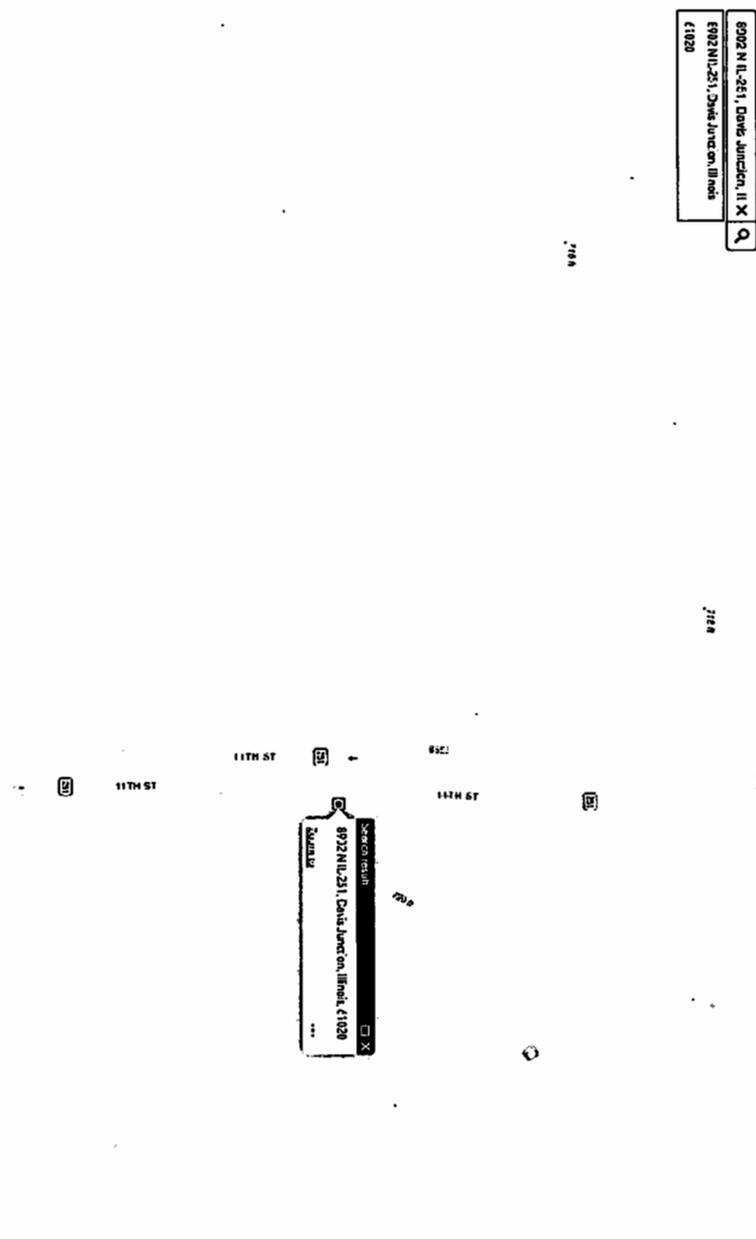
For Log No: B-142R2-M-7

Units Addressed	Final Action Status	Date FA Issued	Date NFA	Date Closure Cert Accepted	Acres Remediated
					0

Closure Type:	Institutional Control	Clean Closed:	1 Institutional Control:	2 Institutional Control:
	<input type="checkbox"/>			

EJ Determination
Section #2

EJ Determination



Not in an EJ area as of 5/15/2023

RCRA Unit Review Notes
Section #3

RCRA
Notes

Review of

REVIEW NOTE CHECKLIST	
General Information	
1418210001 – Ogle County BFI – Davis Junction Landfill – Phase I ILD980700751 Log No. B-142R2-M-1; M-2; M-4; M-6; M-7	
Start of Review (Date)	04/16/2023
Project Manager	Jacob Nutt <i>JDN 7/14/23</i>
Groundwater Unit Reviewer	Paula Stine & Kyle Janusick
Corr. Action Reviewer	Jacob Nutt
Brief Description of Project	Updating annual post-closure cost estimates and minor permit language revisions
Site Name/Location	BFI – Davis Junction Landfill – Phase I 8902 N RTE 251, Davis Junction, IL, 61020
Facility Contact <input type="checkbox"/> - Operator <input checked="" type="checkbox"/> - Owner	BFI – Davis Junction Landfill – Phase I Phone #: 224-970-1129 Attn: James Hitzeroth, Owner Email: JHitzeroth@republicservices.com 26 West 580 Schick Road Hanover Park, IL. 60103
Owner <input checked="" type="checkbox"/> - Same as Facility Contact	BFI – Davis Junction Landfill – Phase I Phone #: 224-970-1129 Attn: James Hitzeroth, Owner Email: JHitzeroth@republicservices.com 26 West 580 Schick Road Hanover Park, IL. 60103
Consultant	Weaver Consultants Group Phone #: 312-496-3718 Attn: Michael B. Maxwell, LPG Email: mmaxwell@wcgrp.com 35 E. Wacker Drive, Suite 1250 Chicago, IL, 60601
Forms, Certifications and Original Signatures	<input checked="" type="checkbox"/> - All required forms are provided with the application. <input type="checkbox"/> - Professional Engineer and Licensed Professional Geologist have provided a certification statement and seal as required. * <input type="checkbox"/> - Original signatures present on all documents/forms provided with application. * * Original signatures/seals are not required on additional copies of the application.
Siting (Sec. 3.330 of Act) Cert. of Siting (LPC-PA8)	Has siting for facility been approved: <input type="checkbox"/> -Yes <input type="checkbox"/> -No <input checked="" type="checkbox"/> -NA
Environmental Justice Evaluation (See Procedure I.28)	Determine if the submittal requires an Environmental Justice (EJ) evaluation, if so use the <u>SWAP for BOL Permits</u> website tool to determine if the facility is located within an EJ area. See <u>BOL Permit Procedure I.28</u> for information on applicability, and performing an EJ evaluation. See the <u>EJ Review Request System Guide</u> for

<p>SWAP for BOL Permits <u>EJ Review Request Webpage</u> <u>EJ Review Request System Guide</u></p>	<p>information on submitting an EJ Review Request.</p> <p>a. EJ Evaluation Required: <input type="checkbox"/>-Yes <input checked="" type="checkbox"/>-No</p> <p>b. EJ SWAP Results: <input checked="" type="checkbox"/>-Not in an EJ Area <input type="checkbox"/>-Blue (1) Minority <input type="checkbox"/>-Yellow (2) Low Income <input type="checkbox"/>-Red (3) Minority & Low Inc.</p> <p>c. EJ Review Request: If the facility is in an EJ area submit an EJ Review Request to the EJ Office using the <u>EJ Review Request</u> webpage.</p> <p>d. Final EJ Office Evaluation Response: (Note: Projects with an EJ status of "Outreach in Progress" will not be signed by the Permit Section Manager). <input checked="" type="checkbox"/>-Complete – No Outreach <input type="checkbox"/>-Complete – With Outreach</p> <p>e. Documentation: Emails from EJ Office documenting the EJ review should be attached to review notes.</p> <p>Notes: SWAP tool indicated not in EJ area</p>
<p>39(i) Certification <u>39(i) Cert. form (LPC 643)</u></p> <p>a. Review (See <u>Procedure I.25, 39(i) Investigations Memo & Sec. 39(i) of the Act</u>)</p>	<p><input type="checkbox"/>-Not Applicable as this is not an application for a RCRA permit, permit modification, waste storage site, landfill/disposal site, transfer station, treatment facility, incinerator, waste transportation, CCDD fill operation, or tire storage site.</p> <p><u>Review of 39(i) Certification:</u></p> <p>I. Applicant Information: <input checked="" type="checkbox"/>-Complete/adequate <input type="checkbox"/>-Not complete/not adequate</p> <p>II. Officers & Employees: <input checked="" type="checkbox"/>-Complete/adequate <input type="checkbox"/>-Not complete/not adequate</p> <p>III. Owner, Operator, Officer, and Employee Information:</p> <p>A. Prior Conduct Identification: <input type="checkbox"/>-Yes <input checked="" type="checkbox"/>-No: Are one or more of the questions in this section marked "Yes"? If so, an Attachment A must be included (see below).</p> <p>B. Pending Proceedings: <input type="checkbox"/>-Yes <input checked="" type="checkbox"/>-No: Are one or more of the questions in this section marked "Yes"? If so, an Attachment A must be included (see below).</p> <p>C. Prior Application Information: i. <input type="checkbox"/>- Yes <input checked="" type="checkbox"/>-No: Are Previously submitted <u>Attachment A</u>'s incorporated into this Certification? ii. <input type="checkbox"/>- Yes <input type="checkbox"/>-Not complete/adequate: If C.i. is checked yes; are the applications containing the previously submitted <u>Attachment A</u>'s identified?</p> <p>Certification Statement: <input checked="" type="checkbox"/>-Yes <input type="checkbox"/>-Not complete/not adequate: Has the certification been signed by responsible corporate officer who meets the requirements of 702.126(a)(1)?</p> <p>Attachment A – Information for Individual Persons: Required if item III A. and/or B. above is check Yes. <input checked="" type="checkbox"/>-N/A <input type="checkbox"/>-Yes <input type="checkbox"/>-Not complete/adequate: Attachment A has been completed and contains the required information for individuals, identified in Section II that have</p>

<p>b. FACES Database Review <u>FACES-DB</u> <u>FACES – 39i Guidance</u> <u>FACES User Manual</u></p> <p>c. Full Compliance History (FCH) Review</p> <p>d. Other Information</p> <p>e. 39i violations identified that may require permit denial.</p> <p>f. Revised Permit Condition for 39(i)</p>	<p>prior findings, convictions or pending proceedings.</p> <p><input type="checkbox"/>-Yes <input checked="" type="checkbox"/>-No: Facility has more than two consent decrees. If “Yes” request Full Compliance History (FCH), see item c. below. Notes: 2 open CCAs – 1/30/2020 and 11/10/2020</p> <p>FCH Requested: <input type="checkbox"/>-Yes <input checked="" type="checkbox"/>-N/A: If item b above is checked yes, request a full report of the site compliance history for the facility from the Waste Reduction and Compliance Section, Manager.¹ Date FCH request made:</p> <p>Other Information: <input type="checkbox"/>-Yes <input checked="" type="checkbox"/>-No: Other information has been identified that suggest that applicant has not been truthful, or information provided is incomplete. Other information can be from public comments, news reports, personal knowledge, etc.</p> <p><input type="checkbox"/>-Yes <input checked="" type="checkbox"/>-No: 39i violations identified that may require permit denial. If yes, a memo to the Unit Manager should be prepared detailing the violations. i. <input type="checkbox"/>-A memo, dated _____, has been forwarded to the Unit Manager for evaluation.</p> <p><input checked="" type="checkbox"/>-Yes <input type="checkbox"/>-N/A: Permit Condition I.F.1 _____ has been revised to require the submittal of 39(i) Certification Forms with all applications (see item 4 of Procedure I.25).</p>
<p>Field Office Section</p>	<p>a. FOS Region/Contact: Rebecca DeMay Email: rebecca.demay@illinois.gov Phone: 815-987-7272</p> <p>b. Field Inspection Required: <input type="checkbox"/>-Yes <input checked="" type="checkbox"/>-No If yes, a memo/email should be prepared and sent to the FOS contact, copy FOS Regional Manager. i. <input type="checkbox"/>-A memo/email, dated _____, has been forwarded to the FOS.</p> <p>c. Comments Received from FOS: <input type="checkbox"/>-Yes <input checked="" type="checkbox"/>-No</p>
<p>CROPA Memo <u>Procedure I.31</u> <u>CROPA Template</u></p>	<p>a. <input type="checkbox"/>-Yes <input checked="" type="checkbox"/>-No : CROPA Memo distributed on _____.</p> <p>i. <input type="checkbox"/>-Yes <input checked="" type="checkbox"/>-No: Permit(s) from other Bureaus required.</p>
<p>Name Change Requested</p>	<p>a. <input type="checkbox"/>-Yes <input checked="" type="checkbox"/>-No If yes:</p> <ul style="list-style-type: none"> • <input type="checkbox"/>-Reviewer has completed <u>Site Inventory Data Input Form</u> -OR- • <input type="checkbox"/>-Facility has submitted an <u>Illinois EPA Inventory Application</u>.

¹ See item 2 of June 26, 2018 39(i) Investigations Memo

<p>Right to Know Evaluation <u>Sec. 25d of Act</u> <u>Right-to-Know Evaluation Form (April 2021)</u> <u>Right-to-Know Fact Sheet</u> <u>Issued Right-to-Know Notifications (IEPA website)</u></p>	<p>a. <input type="checkbox"/>-N/A No release near the property boundary has been documented, -OR- b. <input checked="" type="checkbox"/>- Right-to-Know Evaluation Performed: Soil, soil gas and/or groundwater contamination warranted the completion of a Right-to-Know Evaluation. The evaluation determined:</p> <ul style="list-style-type: none"> • <input type="checkbox"/>-Further evaluation required. • <input type="checkbox"/>-Additional information is required to make an evaluation. • <input checked="" type="checkbox"/>-No criteria met; site does not warrant further evaluation. <p>If an evaluation has been conducted the Right-to-Know Evaluation Form must be attached to the review notes. Notes: Log No. B-142R2-M-7 Right-to-Know Evaluation performed by Paula Stine</p>
<p>RCRA Permit / Corrective Action Submittals <u>USEPA RCRAInfo Database</u> <u>IEPA RCRAInfo Data Entry Guidance (Draft)</u> <u>USEPA R1 RCRAInfo Data Entry Walk Through</u> <u>USEPA Comprehensive RCRAInfo Help & Guidance</u> <u>USEPA RCRAInfo Data Element Dictionary</u></p>	<p><input type="checkbox"/>- N/A</p> <p>a. RCRA Info: Enter data into the <u>USEPA RCRAInfo Database</u> for RCRA permits, permit modifications, and Corrective Action submittals as required. See linked documents to the left for additional guidance.</p> <p>b. <input checked="" type="checkbox"/>-Yes <input type="checkbox"/>-No <input type="checkbox"/>-N/A: Confirm Permit Modification Class Correctly Identified: The submittal has been properly classified by the applicant i.e., as a Class I, Class I*, Class II or Class III modification (35 IAC 703.280) or as a Corrective Action submittal.</p> <p>If the permit class was <u>not</u> correct:</p> <ul style="list-style-type: none"> • <input type="checkbox"/>- Admin Support was contacted to correct the permit class in the RCRA Database, and the Tracking Sheet was updated and was redistributed to the FOS regional office and other staff. • <input type="checkbox"/>-Yes <input type="checkbox"/>-N/A: If necessary, the applicant has been notified of the change in the permit modification Class of the submittal. (35 IAC 703.280(d)(2)(A); 703.282(f)).

REVIEW NOTES

1418210001 – Ogle County
BFI – Davis Junction Landfill – Phase I
ILR980700751
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
RCRA Permit

Reviewer: Jacob Nutt
Date Received by IEPA: December 5, 2022

PERMIT MODIFICATIONS:

JDN REVIEW NOTES

Submittal B-142R2-M-1 – A document submitted by Weaver Consultants Group on behalf of BFI – Davis Junction Landfill – Phase I (BFI) entitled, “Class 1* permit mod required by permit renewal 2 issued 9/26/18”, dated November 16, 2018, and received by the Illinois EPA on November 21, 2018. This document provided an updated cost estimate for Post-Closure Care for the above referenced facility. The subject submittal was reviewed as a Class 1* permit modification in accordance with 35 Ill. Adm. Code 703.280.

Submittal B-142R2-M-2 – A document submitted by Weaver Consultants Group on behalf of BFI entitled, “Annual Update to Post-Closure Estimates”, dated August 27, 2019, and received by the Illinois EPA on September 4, 2019. This document provided an updated cost estimate for Post-Closure Care for the above referenced facility. The subject submittal was reviewed as a Class 1* permit modification in accordance with 35 Ill. Adm. Code 703.280.

Submittal B-142R2-M-4 – A document submitted by Weaver Consultants Group on behalf of BFI entitled, “Annual Update to Post-Closure Estimates”, dated August 18, 2020, and received by the Illinois EPA on August 28, 2020. This document provided an updated cost estimate for Post-Closure Care for the above referenced facility. The subject submittal was reviewed as a Class 1* permit modification in accordance with 35 Ill. Adm. Code 703.280.

Submittal B-142R2-M-6 – A document submitted by Weaver Consultants Group on behalf of BFI entitled, “Class 1* Permit Modification”, dated January 27, 2022, and received by the Illinois EPA on February 1, 2022. This document provided an updated cost estimate for Post-Closure Care for the above referenced facility. The subject submittal was reviewed as a Class 1* permit modification in accordance with 35 Ill. Adm. Code 703.280.

Submittal B-142R2-M-7 – A document submitted by Weaver Consultants Group on behalf of BFI entitled, “Class 1* Permit Modification”, dated December 1, 2022, and received by the Illinois EPA on December 5, 2022. This document provided an updated cost estimate for Post-Closure Care for the above referenced facility. The subject submittal was reviewed as a Class 1* permit modification in accordance with 35 Ill. Adm. Code 703.280.

Log No. B-142R2-M-1; M-2; M-4; M-6; M-7	
RCRA Permit	
Date	Description
11/16/2018	Class 1* Permit Modification (M-1)
05/10/2023	Groundwater unit review notes to above 1* mod (M-1)
08/27/2019	Class 1* Permit Modification (M-2)
09/26/2019	Groundwater unit review notes to above 1* mod (M-2)
05/10/2023	Signed and notarized copies of application forms (M-4)

08/18/2020	Class 1* Permit Modification (M-4)
12/10/2020	Groundwater unit review notes to above 1* mod (M-4)
01/27/2022	Class 1* Permit Modification (M-6)
06/08/2022	Groundwater unit review notes to above 1* mod (M-6)
12/01/2022	Class 1* Permit Modification (M-7)
01/09/2023	Groundwater unit review notes to above 1* mod (M-7)
5/24/2023	JDN review Notes

REVIEW NOTES – JACOB NUTT

BFI – Davis Junction Landfill – Phase I
ILD980700751
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
RCRA Permit

Source Contact -- James Hitzeroth
BFI Waste Systems of North America, LLC
26 West 580 Schick Road
Hanover Park, IL. 60103
(224)970-1129
jhitzeroth@republicservices.com

INTRODUCTION (4/20/2023)

Weaver Consulting Group (WCG) submitted this RCRA Hazardous Waste Management Permit application on behalf of BFI Waste Systems of North America, LLC. for the property located at 26 West 580 Schick Road, Hanover Park, IL. 60103, Illinois and BFI Waste Systems of North America, LLC. is updated annual post-closure cost estimates and minor permit language revisions. The below are my notes.

PROJECT DESCRIPTION

Basis for Submittals:

1. Submittals Summary (4/20/2023)

- a. BFI has submitted multiple updated annual post-closure cost estimates, of which the most recent which was submitted in December of 2022. This cost estimate accurately reflected the annual cost for post closure care but as with all previous submittals it “pro-rated” the 30 years of post-closure care. BFI also has submitted a Class 1* mod which addresses minor permit language revisions from the most recently issued RCRA permit.

Contents of Submittals:

2. Submittal B-142R2-M-7 - Class 1* Permit Modification (5/10/2023)

Proposed Changes From BFI:

- a. BFI submitted revised post-closure cost estimates to be included in their RCRA Permit which were received by the Illinois EPA on December 5, 2022
3. **Submittal B-142R2-M-6 - Class 1* Permit Modification (5/3/2023)**

Proposed Changes From BFI:

- a. BFI submitted revised post-closure cost estimates to be included in their RCRA Permit which were received by the Illinois EPA on February 1, 2022.
4. **Submittal B-142R2-M-4 - Annual Update to Post-Closure Estimates (5/3/2023)**

Proposed Changes From BFI:

- a. BFI submitted revised post-closure cost estimates to be included in their RCRA Permit which were received by the Illinois EPA on August 28, 2020.
5. **Submittal B-142R2-M-2 - Annual Update to Post-Closure Estimates (5/1/2023)**

Proposed Changes From BFI:

- a. BFI submitted revised post-closure cost estimates to be included in their RCRA Permit which were received by the Illinois EPA on September 4, 2019.
6. **Submittal B-142R2-M-1 - Class 1* permit mod required by permit renewal 2 issued 9/26/18 (5/9/2023 – 5/11/2023)**

a. **In regard to proposed changes to Permit Condition I.B.2:**

Proposed Changes From BFI:

- i. Illinois EPA approved certification of closure of the subject ~~surface impoundments landfill~~ on ~~March 16, 1990~~ December 5, 1984. Post-closure care for this unit must then be provided at least until December 5, 2024 ~~for at least thirty (30) years after that date.~~

b. **In regard to proposed changes to Permit Condition I.B.4:**

Proposed Changes From BFI:

- i. Another reference to a “former surface impoundment” is included in this Permit Condition. This reference should be changed to a “closed landfill”.

c. In regard to proposed changes to Permit Condition I.C.2:

Proposed Changes From BFI:

- i. The Permittee shall continue to conduct post-closure care for each hazardous waste management unit listed in Section B above. Post closure care of the unit began on December 5, 1984 and must continue until at least December 5, 2024. ~~to begin after completion of closure of the unit and continue for at least thirty (30) years after that date.~~

d. In regard to proposed changes to Permit Condition I.C.7:

Proposed Changes From BFI:

- i. The Permittee shall maintain a record of all inspections, monitoring, and maintenance activities in the facility's operating record. A copy of the operating record must ~~on-site~~ at the physical location specified in the approved permit application (i.e., the permittee's offices in Hanover Park, IL).

e. In regard to proposed changes to Permit Condition I.E.2:

Proposed Changes From BFI:

- i. Please note that two items in this section of the Permit are numbered as "2".

f. In regard to proposed changes to Permit Condition I.G.1:

Proposed Changes From BFI:

- i. The Permittee shall maintain financial assurance for post-closure care of the Phase I Landfill of at least \$484,460 in 2022 dollars. The cost estimate for post-closure care of this facility is shown in Attachment C to this permit. The financial assurance maintained by the facility shall be sufficient to meet the requirements at 35 Ill. Adm. Code 724 Subpart H.

g. In regard to proposed changes to Permit Condition III.H.1:

Proposed Changes From BFI:

- i. The Permittee shall use the techniques and procedures described in ~~Appendix J~~ Appendix C-3 of the approved Permit Renewal Application except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition III.D.1 above:

h. In regard to proposed changes to Permit Condition IV.25:

Proposed Changes From BFI:

- i. DOCUMENTS TO BE MAINTAINED AT IN FACILITY SITE FILES.
The Permittee shall maintain ~~at~~ in the facility files, until post-closure care is complete, the following documents and amendments, revisions and modifications to these documents:

PERTINENT SITE HISTORY (4/25/2023 and 4/27/2023)

a. Summary

- i. Illinois EPA approved certification of closure of the subject landfill on December 5, 1984. Post-closure care for this unit must then be provided for at least thirty (30) years after that date. With the Permittee anticipating end of post closure care in 2024 these Class 1* modifications need to be issued in order to correctly indicate that 30 years of post-closure care is to be ongoing. The Illinois EPA has extended post-closure care for BFI until at least December 5, 2024.

b. RCRA Activities at the Facility

- i. The existing cover system for the unit is from top to bottom: 1) a 36-inch thick final cover protective layer to support vegetation (the top 6 inches (minimum) of which is topsoil), 2) a geotextile filter fabric, 3) a geonet drainage layer, 4) a 40-mil polyethylene geomembrane, and 5) a 24 inch compacted clay layer composed of materials contained in the old cover system at the facility. The unit's existing leachate collection system consists of 15 leachate extraction points on 250 to 300 foot centers throughout the landfill unit. Finally, a landfill gas monitoring/management program is implemented for the unit.

DETAILED REVIEW OF SUBMITTALS

a. Applicable regulations (5/1/2023)

- i. BFI was required to update financial assurance based on 35 Ill. Adm. Code 724.217(a)(1) and 724.217(a)(2)(B) of Subpart G. The current RCRA permit has the financial assurance in 2018 dollars and these modifications will update the permit to 2022 dollars and accurately reflect 30 years of required post closure care. BFI also submitted a modification to correct minor permit language errors which were included in the currently issued RCRA permit.

b. Review Memos (5/11/2023)

i. Log No. B-142R2-M-1

1. Paula Stine from the Groundwater Unit reviewed groundwater related aspects of this Class 1* Modification and approved the groundwater related aspects of this modification with the receipt of Appendix Q. A memo in this regard is included and dated May 10, 2023.

ii. Log No. B-142R2-M-2

1. Kyle Janusick from the Groundwater Unit reviewed groundwater related aspects of this Class 1* Modification and approved the groundwater related aspects of this modification. A memo in this regard is included and dated September 26, 2019. This submittal was superseded by Log No. B-142R2-M-7.

iii. Log No. B-142R2-M-4

1. Paula Stine from the Groundwater Unit reviewed groundwater related aspects of this Class 1* Modification and found it to be incomplete. A memo in this regard is included and dated December 10, 2020. This submittal was superseded by Log No. B-142R2-M-7.

iv. Log No. B-142R2-M-6

1. Paula Stine from the Groundwater Unit reviewed groundwater related aspects of this Class 1* Modification and found it to be incomplete. A memo in this regard is included and dated June 8, 2022. This submittal was superseded by Log No. B-142R2-M-7.

v. Log No. B-142R2-M-7

1. Paula Stine from the Groundwater Unit reviewed groundwater related aspects of this Class 1* Modification and found it to be incomplete. A memo in this regard is included and dated January 9, 2023.

c. Evaluation of Submittals (Week of 5/16/2023)

i. **Submittal B-142R2-M-7 - Class 1* Permit Modification.**

IEPA Reviewer's Comments:

1. The annual cost estimate which was included in B-142R2-M-7 was accurate and acceptable for updating BFI's RCRA permit. However, in B-142R2-M-7 BFI anticipated only 2 years remaining of post closure care.
2. Internal discussion with lead workers and co-workers in the RCRA unit determined that the "pro-rating" of post closure care which has been historically included in RCRA permits is not the correct manner in which to require cost estimates of post closure care.
3. Due to the change in post closure care estimate acceptances the portions B-142R2-M-7 which notes 2 years of post-closure care remaining and total post closure care estimates can't be accepted.
4. Since the "pro-rated" post closure care cost estimate cannot be accepted, I calculated the total post closure care estimate based on the annual post closure care estimate included in B-142R2-M-7 but corrected for the full 30 years of continued post closure care which is required by 35 Ill. Adm. Code 724.217(a)(1) and 724.217(a)(2)(B) of Subpart G as described in Attachment A.
5. Due to the previously accepted post closure cost estimate was from 2018 I have also included a notation in the RCRA permit which states that this update to the post closure care estimate is based on 2022 dollars which is reflected in the B-142R2-M-7 1* mod.
6. Post closure cost estimate needs to be updated to reflect 30 years.
7. Currently BFI is operating on assumption of concluding post closure care in 2024.
8. Issuance of the five 1* mods to be in line with the act will likely cause an appeal.

ii. **Submittal B-142R2-M-6 - Class 1* Permit Modification.**

IEPA Reviewer's Comments:

1. The post-closure cost estimates included in this Permit Modification were superseded by the post-closure cost estimates which were included in the class 1* permit modification B-142R2-M-7 received by the Agency on December 5, 2022.

iii. **Submittal B-142R2-M-4 - Annual Update to Post-Closure Estimates.**

IEPA Reviewer's Comments:

1. The post-closure cost estimates included in this Permit Modification were superseded by the post-closure cost estimates which were included in the class 1* permit modification B-142R2-M-7 received by the Agency on December 5, 2022.

iv. **Submittal B-142R2-M-2 - Annual Update to Post-Closure Estimates.**

IEPA Reviewer's Comments:

1. The post-closure cost estimates included in this Permit Modification were superseded by the post-closure cost estimates which were included in the class 1* permit modification B-142R2-M-7 received by the Agency on December 5, 2022.

v. **Submittal B-142R2-M-1 - Class 1* permit mod required by permit renewal 2 issued 9/26/18.**

1. **In regard to proposed changes to Permit Condition I.B.2:**

IEPA Reviewer's Comments:

- a. I reviewed B-142R2-M-1, this class 1* mod included minor permit language corrections which I evaluated and determined acceptability and applicability of said changes.
- b. The first change in regard to permit condition I.B.2 which changed the permit language which references surface impoundments to being landfill with is in line with the facility.
- c. The 2nd change requested was a change of the date of closure from March 16, 1990 to December 5, 1984 which accurately reflects the closure date of the facility landfill.
- d. The 3rd change requested to this permit condition was to change "Post-closure care for this unit must then be provided for at least thirty (30) years after that date." To "Post-closure care for this unit must then be provided at least until December 5, 2024". This change was not accepted due to a terminal date being included in the

RCRA permit for the end of post closure care. This end of post closure care language can't be included as the site needs to maintain at least 30 years of financial assurance for post closure care and not the current terminal 30 years language.

2. In regard to proposed changes to Permit Condition I.B.4:

IEPA Reviewer's Comments:

- a. I reviewed B-142R2-M-1, this class 1* mod included minor permit language corrections which I evaluated and determined acceptability and applicability of said changes.
- b. The change requested to permit condition I.B.4 is acceptable and as it changes the wording in the RCRA permit from being a former impoundment to a closed landfill with accurately reflects the facility.

3. In regard to proposed changes to Permit Condition I.C.2:

IEPA Reviewer's Comments:

- a. I reviewed B-142R2-M-1, this class 1* mod included minor permit language corrections which I evaluated the acceptability and applicability of said changes.
- b. BFI requested that the changed language include a terminal date of December 5, 2024 which was not included in my changes as this is not allowed per the internal discussions in the RCRA unit.
- c. BFI requested that permit condition I.C.2 also include the date in which post closure care began of December 5, 1984, which is an acceptable and accurate change to the RCRA permit.
- d. I also changed the language requested to reflect that the correct post closure care must continue for at least 30 years after the beginning date. This allows for post closure care to be extended beyond 30 years without a terminal date.

4. In regard to proposed changes to Permit Condition I.C.7:

IEPA Reviewer's Comments:

- a. I reviewed B-142R2-M-1, this class 1* mod included minor permit language corrections which I evaluated and determined acceptability and applicability of said changes.
- b. In the change requested to permit condition I.C.7 only the word “site” is removed.
- c. In the place of “site” the permittee requested more specific language to ensure that a copy of the permit is kept at their physical office rather than at the landfill which was accepted.

5. In regard to proposed changes to Permit Condition I.E.2:

IEPA Reviewer's Comments:

- a. I reviewed B-142R2-M-1, and the minor permit language change for this request was in regard to permit condition I.E.2 and in that condition the numbering was incorrect as condition 2 was listed twice.
- b. For this condition I corrected the permit to accurately number the conditions in permit condition I.E.

6. In regard to proposed changes to Permit Condition I.G.1:

IEPA Reviewer's Comments:

- a. I reviewed B-142R2-M-7, which supersedes, B-142R2-M-6, B-142R2-M-4, B-142R2-M-2, and minor permit language revisions included in B-142R2-M-1.
- b. In B-142R2-M-1 the permittee requests additional language added to permit condition I.G.1 which specifies post-closure care rather than previous language of closure. This additional language is appropriate for the RCRA permit and was changed.
- c. Permit condition I.G.1 includes the previously accepted total post closure care cost which was included in the current RCRA permit.
- d. However due to the modifications being made to the RCRA permit changing the total post closure care amounts

needing to be for 30 years this number was changed to reflect the actual amount of financial assurance for post closure care as calculated for Attachment C in the RCRA permit.

- e. Additionally language was added to indicate that this new number was based on 2022 dollars.

7. In regard to proposed changes to Permit Condition III.H.1:

IEPA Reviewer's Comments:

- a. I reviewed B-142R2-M-1, and the currently issued RCRA permit.
- b. In the current permit in condition III.H.3 the permit incorrectly references Appendix J. Which the permittee has requested to have corrected to be a reference to Appendix C-3.
- c. Due to this incorrect citation in the permit needing to be corrected to be Appendix C-3 that change was made to the RCRA permit.

8. In regard to proposed changes to Permit Condition IV.25:

IEPA Reviewer's Comments:

- a. I reviewed B-142R2-M-1, and the current language in the RCRA permit.
- b. In permit condition IV.25 the permittee requested minor language changes to reflect that the documents are to be maintained in facility files. This is earlier specified to be in the permittee's physical office.
- c. This change is so that documents are not required to be maintained at the landfill and instead can be maintained at the facilities proper mailing location.

CONCLUSIONS/RECOMMENDATIONS (Week of 5/16/2023):

1. Submittal B-142R2-M-7 - Class 1* Permit Modification.

Changes made to RCRA permit:

a. Attachment C – Post-Closure Cost Estimate - The currently approved Post-Closure Cost Estimate in the current RCRA post closure permit is \$484,460,589,796 (in 201822 dollars). This estimate must be used updated when establishing financial assurance in accordance with 35 Ill. Adm. Code 724.217(a)(1) and 724.217(a)(2)(B) of Subpart G. Based on the most recent post-closure cost estimate submitted December 1, 2022, and received by the Illinois EPA on December 5, 2022, ~~the~~ the updated breakdown of the estimate is should be updated as follows:

i. 1. Estimate of post-closure care costs on an annual basis in 2022 dollars:

Post-closure inspections	\$7,421 8,143
Groundwater monitoring	\$9,682 10,636
Leachate Management	\$54,243 59,248
Total	\$71,346 78,027
10% Contingency	\$7,135 7,803
Total Annual Cost (w/Contingency):	\$78,481 85,830

One Time Costs:

Well Abandonment:	\$12,340 13,542
10% Contingency, One-Time Costs:	\$1,234 1,354
Total One-Time Costs:	\$13,574 14,896

ii. ~~2. Facility has 6.0 years of remaining post closure care.~~

iii. ~~3-2. Total post-closure care cost estimate = (\$78,481 85,830 per year) x (630.0 years) + \$13,574 14,896 = \$484,460 2,589,796.~~

2. Submittal B-142R2-M-6 - Class 1* Permit Modification.

Changes made to RCRA permit:

a. Due to this Class 1* Permit modification being superseded by permit modification B-142R2-M-7, there were no changes to the RCRA permit from this mod.

3. Submittal B-142R2-M-4 - Annual Update to Post-Closure Estimates.

Changes made to RCRA permit:

a. Due to this Class 1* Permit modification being superseded by permit modification B-142R2-M-7, there were no changes to the RCRA permit from this mod.

4. Submittal B-142R2-M-2 - Annual Update to Post-Closure Estimates.

Changes made to RCRA permit:

- a. Due to this Class 1* Permit modification being superseded by permit modification B-142R2-M-7, there were no changes to the RCRA permit from this mod.

5. Submittal B-142R2-M-1 - Class 1* permit mod required by permit renewal 2 issued 9/26/18.

a. In regard to proposed changes to Permit Condition I.B.2:

Changes made to RCRA permit:

- i. Illinois EPA approved certification of closure of the subject ~~surface impoundments~~ landfill on ~~March 16, 1990~~ December 5, 1984. Post-closure care for this unit must then be provided for at least thirty (30) years after that date.

b. In regard to proposed changes to Permit Condition I.B.4:

Changes made to RCRA permit:

- i. The Survey Plat (Exhibit A) indicating the location and dimension of the ~~former impoundment~~ closed landfill area was recorded in the Ogle County Recorder's Office on April 5, 2006. The Survey Plat was recorded as Document No. 0603382.

c. In regard to proposed changes to Permit Condition I.C.2:

Changes made to RCRA permit:

- i. The Permittee shall continue to conduct post-closure care for each hazardous waste management unit listed in Section B above. Post closure care of the unit began on December 5, 1984 and must ~~continue to begin after completion of closure of the unit and continue~~ continue for at least thirty (30) years after that date.

d. In regard to proposed changes to Permit Condition I.C.7:

Changes made to RCRA permit:

- i. The Permittee shall maintain a record of all inspections, monitoring, and maintenance activities in the facility's operating record. A copy of the operating record must be kept ~~on-site~~ at the physical location specified in

the approved permit application (i.e., the permittee's offices in Hanover Park, IL).

e. In regard to proposed changes to Permit Condition I.E.2:

Changes made to RCRA permit:

- i. Corrected numbering in Permit Condition I.E.2 to correct duplication of section numbered 2.

f. In regard to proposed changes to Permit Condition I.G.1:

Changes made to RCRA permit:

- i. The Permittee shall maintain financial assurance for post-closure care of the Phase I Landfill of at least ~~\$484,460~~ \$2,589,796 in 2022 dollars. The cost estimate for post-closure care of this facility is shown in Attachment C to this permit. The financial assurance maintained by the facility shall be sufficient to meet the requirements at 35 Ill. Adm. Code 724 Subpart H.

g. In regard to proposed changes to Permit Condition III.H.1:

Changes made to RCRA permit:

- i. The Permittee shall use the techniques and procedures described in ~~Appendix J~~ Appendix C-3 of the approved Permit Renewal Application except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition III.D.1 above:

h. In regard to proposed changes to Permit Condition IV.25:

Changes made to RCRA permit:

- i. DOCUMENTS TO BE MAINTAINED AT IN FACILITY SITE FILES. The Permittee shall maintain ~~at in the facility files~~, until post-closure care is complete, the following documents and amendments, revisions and modifications to these documents:

i. IEPA Reviewer's Comments (5/19/2023):

- i. As a result of the review of B-142R2-M-7 which supersedes B-142R2-M-6, B-142R2-M-4, and B-142R2-M-2, in addition to minor permit language revisions in B-142R2-M-1, I believe that the above changes should be made to the current RCRA permit in order to approve B-142R2-M-7, B-142R2-M-6, B-142R2-M-4, B-142R2-M-2, and B-142R2-M-1 so long as

Log No. B-142R2-M-1; M-2; M-4; M-6; M-7

JDN REVIEW NOTES

BFI submits a revised post-closure care financial assurance estimate within 60 days of receipt of notification which accurately reflects 30 years of post-closure care going forward.

- ii. Due to the change in Cost Estimate for Financial Assurance for the BFI Landfill the following Attachment A has been added in order to provide additional information.

Attachment: Attachment A – Extending Post-Closure Care Period and Requiring 30-Year Cost Estimate for Financial Assurance for RCRA Hazardous Waste Landfill

Attachment A
Extending the Post-Closure Care Period and Requiring 30-Year Cost Estimate for Financial Assurance for RCRA Hazardous Waste Landfill

1. Purpose

This supplemental review notes, as Attachment A, provides this reviewer's rational and reasoning for requiring Condition III.H for post-closure care of the Landfill in the subject RCRA Permit Mod for BFI – Davis Junction Landfill. Condition III.H (Post-Closure Care Cost Estimate/Financial Assurance) will require BFI to provide financial assurance for 30 years of post-closure care cost to the Illinois EPA.

2 Discussion of Updated Permit Conditions in Section III: Post-Closure Care

The following issue to be addressed with the updated conditions in the renewal permit.

1. **Financial Assurance Requirements for Post-Closure Care of a Hazardous Waste Landfill**
Illinois EPA's previous requirements for the number of years for the post-closure care cost estimate was 30 years OR prorated with a number of years completed with a minimum of 10-year. This decision was thought to be based on the fact that each RCRA permit was effective for a period of 10-years. I have no record of how this decision was changed from 30-year requirement.

The minimum of 10-year requirements did not include the consideration when the facilities go bankrupt, in which case the State (or a Third Party) has to take the responsibilities of post-closure care of a hazardous waste landfill. It is a general knowledge that 10-year cost of post-closure care would not come close to being enough to cover the cost to maintain the landfill in perpetuity or to remediate a hazardous waste landfill. As discussed in Section 3 below, it is necessary to require a minimum of 30 years of Post-Closure Care cost estimate for financial assurance as the maintenance effort must continue in perpetuity if the waste remains in place. As required in Section 724.217 (a) (1), a minimum of 30-years of post-closure is required while a RCRA permit is in effect. As the requirements specifies 30-years although as mentioned in Item 2 above the future maintenance of a close hazardous waste landfill should continue in perpetuity, 30 years in general is used as required for cost estimate for financial assurance purpose. If any evidence shows that the estimated cost should be higher than the 30-year cost, then it should be adjusted to a higher number of years.

3. Illinois EPA's Evaluation of Post-Closure Requirements of Hazardous Waste Management Units

As many hazardous waste management facilities are nearing the 30-year mark from the date their post-closure care began, Illinois EPA, other States, and USEPA began to examine and evaluate

the applicable requirements in the regulations to determine whether and how the completion of the required post-closure can be met.

The afore-mentioned permit conditions and requirements regarding post-closure care of a hazardous waste landfill were developed based on the following applicable regulations and reference materials:

- a. 35 IAC Part 724 Section 724.131, Subpart G Sections 724.210 through 724.220, Section 724.410 and 35 Ill. Adm. Code 724 Subpart H;
- b. 35 IAC 703 Section 241(a)(2) and 35 IAC 703 Appendix A.E.2;
- c. Sections 12(a), 21(n) and 39(g) of the Environmental Protection Act (Act);
- d. USEPA's Guideline for Evaluating Post-Closure Care Period, dated December 15, 2016;
- b. ASTSWMO Position Paper, dated July 20, 2022 "Post-Closure Care Beyond 30 Years at RCRA Subtitle C Facilities"; and
- c. Illinois EPA's recent decisions regarding extending post-closure care at other RCRA facilities in Illinois.

3.1 Post-Closure Care Requirements under 35 IAC724

35 IAC 724 is applicable to all RCRA permitted facilities. Section 724.131, Subpart G has specific requirements regarding the post-closure care, the property use and extending the post-closure care period.

Maintenance of Facility

In accordance with Section 724.131, facilities must be designed, constructed, maintained and operated to minimize the possibility of any release of hazardous waste or hazardous waste constituents to air, soil, or surface water that could threaten human health or the environment.

Post-Closure Care Period

In accordance with Section 724.217 (Post-Closure Care and Use of Property), under Subsection 724.217(a)(1), post-closure of a hazardous waste management unit must begin after completion of closure of the unit and continue for 30 years after that date.

Post-Closure Use of Property

Subsection 724.217(c)(1) prohibits any disturbance of the integrity of the final cover, liner, or any other components of the containment system or the function of the monitoring system unless it is necessary to protect and reduce the threat to human health and the environment.

Extending the Post-Closure Care Period under Section 724.217

Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
JDN REVIEW NOTES

- Subsection 724.217(b)(2)(B) allows for extending the post-closure care period when it is necessary to adequately protect human health and the environment (e.g., leachate or groundwater monitoring results indicate a potential for migration of hazardous wastes at levels that may be harmful to human health and the environment). The extension can be done through an adjusted standard issue by the Board pursuant to Section 28.1 of the Act and 35 IAC Parts 101 and 104.
- In the case that Amendment of Plan for Post-Closure Care is necessary, Illinois EPA may request the facility to submit a permit modification to amend the post-closure care plan allowed under Section 724.218(d)(2) in accordance with Section 724.218(d)(4). Any modification submitted per request of Illinois EPA must meet the requirements of 35 IAC Parts 703 and 705. Section 703.270 requires that facility must submit a permit modification requested by the Illinois EPA or the Illinois EPA may initiate the permit modification.

Notes: It has been advised by the Illinois EPA DLC that above sections are written to be applied for facility to initial extending of the post closure care. Thus, it is applicable when the facility requests for extending of post-closure care.

Land Disposal Unit Specific Requirements for Closure/Post-Closure under Section 724.410
Section 724.410 lists specific closure/post-closure requirements for landfills. Subsection 724.410(a) specifies the minimum standards for construction of the final closure of a landfill, which includes, among other things, long-term minimization of liquid through the closed landfill and maintenance of the cover integrity be maintained.

Subsection 724.410 (b) requires the facility to maintain the integrity and maintenance of the final cover and requirement to continue operation of leachate collection and removal. It also requires monitoring of Leachate Detection System (LDS) and groundwater monitoring.

Required Financial Assurance

- Under 35 IAC Part 724 Subpart H, Sections 724.244 and 724.245, the post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under Section 724.217. Also under Section 724.244(b), the cost estimate must be adjusted for inflation.

According to the applicable regulations listed above, it is determined that it is necessary to continue the maintenance for Landfill by extending the post-closure care period to adequately protect human health and the environment. In evaluating the current conditions of the landfill by assessment of leachate or groundwater monitoring results or potential for any migration of hazardous wastes which may threaten human health and the environment, the Illinois EPA may request the facility submit a permit modification.

3.2 Permit Conditions and Modification Requirements in 35 IAC Part 703 Sections 703.241(a)(2) and 703 Appendix A.E.2

35 IAC Part 703, Section 703.241 has specific requirements regarding Establishing Permit Conditions, which reads:

Each RCRA permit issued pursuant to Section 39(d) of the Environmental Protection Act [415 ILCS 5/39(d)] must contain terms and conditions that the Agency determines are necessary to adequately protect human health and the environment

Section 39(d) of the Act specifies that all RCRA permits must contain terms and conditions, schedules of compliance, which may be required to accomplish the purpose and provisions of the Act.

It is further specified that extending the Post-Closure Care is classified as a Class 2 Modification request in Section 703, Appendix A.E.2. Therefore, it is appropriate for the Illinois EPA to require the facility to submit a request to extend the post-closure care period by a specified date in a compliance schedule of the RCRA permit. Extending post-closure care is a necessary requirement to meet the terms of 35 IAC Part 724 included in Section 3.1 above and the requirements of the Act (also discussed in Section 3.3 below). A minimum of 180-day prior to the end date of the initial 30-years of post-closure care period is recommend timeline for a facility to submit a Class 2 Modification to the permit as it involves a public comment period before making the final decision.

3.3 Sections 12(a), 21(n) and 39(g) of the Act

The following three sections of the Act apply for the post-closure care of hazardous waste landfills in Illinois:

ACT – 12(a): No person shall: Cause or threaten or allow the discharge of any contaminants into the environment in any State so as to cause or tend to cause water pollution in Illinois, either alone or in combination with matter from other sources, or so as to violate regulations or standards adopted by the Pollution Control Board under this Act.

ACT - 21(n): Use any land which has been used as a hazardous waste disposal site except in compliance with conditions imposed by the Agency under subsection (g) of Section 39.

ACT - 39(g): The Agency shall include as conditions upon all permits issued for hazardous waste disposal sites such restrictions upon the future use of such sites as are reasonably necessary to protect public health and the environment, including permanent prohibition of the use of such sites for purposes which may create an unreasonable risk of injury to human health or to the environment. After administrative and judicial challenges to such restrictions have been exhausted, the Agency shall file such restrictions of record in the Office of the Recorder of the county in which the hazardous waste disposal site is located.

In accordance with 39(g) and 21(n) of the Act, the Illinois EPA must include land use restrictions for the hazardous waste landfill under post-closure care to protect public health and the

environment. The establishment of the land use restrictions is also necessary to meet the conditions of 12(a) of the Act to prohibit discharge of any contaminants into the environment.

3.4 USEPA Guideline for Evaluating Post-Closure Care Period, dated December 15, 2016

A Guideline for Evaluating Post-Closure Care Period, dated December 15, 2016 was distributed by USEPA. Because many hazardous wastes degrade slowly or do not degrade under containment in these units, the continued presence of hazardous waste in the unit (*i.e.*, any case other than clean closure) indicates the potential for unacceptable impacts on human health and the environment in the future if post-closure care is not maintained. For example, there are often uncertainties in whether controls will continue to function as planned and whether future activities will lead to unplanned exposures to human and environmental receptors. Even if there is no current evidence of actual releases from the facility, significant factors can change over time.

As far as the 30-yr post-closure period goes, the regulations' identification of a default 30-year post-closure care period does **not** reflect a determination by EPA that 30 years of post-closure care is necessarily sufficient to eliminate potential threats to human health and the environment in all cases. Nor is the full 30-year period always necessary.

The evaluation criteria listed in the guidance document include:

- Nature of waste in the unit. EPA recommends that current data from regulatory standards be used for comparison to facility-specific performance goals articulated in the post-closure plan, and that, as necessary, the plan be updated to account for any new information on toxicity and carcinogenicity and understand constituents of concern which may change over time.
- Design of the Unit. It is recommended that the permitting authority consider any unit-specific design, in concert with applicable closure and post-closure care requirements, when evaluating whether adjustment of the post-closure care period is warranted to protect against any potential risk on human health and the environment.
- Leachate: Monitoring for leachate generation serves as the most effective way of examining the integrity of the waste management unit
- Groundwater: Groundwater monitoring serves as the primary means of detecting leachate releases and groundwater contamination.
- Siting & Site hydrogeology: Relevant facility location characteristics (which might have changed since the post-closure plan was approved) may include proximity to vulnerable areas such as residential areas and surface and drinking water sources. The current and reasonably anticipated future land use of the facility and surrounding properties may also be relevant. Location in potentially vulnerable areas increases the likelihood and potential

severity of releases.

- **Facility History:** All waste management must be adequately managed to prevent releases of contaminants to the environment. Good compliance records, routine maintenance and inspections, emergency procedures to handle natural disasters, and prompt and efficient response to spills and other incidents, are some of the management practices that help demonstrate whether the unit has been adequately managed.
- **Integrity of cover system:** A viable cover is the most important mechanism in preventing leachate generation and, ultimately, releases of contaminants.
- **Long Term Care:** Establishment and maintenance of physical and legal controls are necessary to prevent unacceptable exposure to hazardous waste or contaminated environmental media left in place.

A long-term stewardship is necessary to be established to maintain the physical and legal controls that are necessary to prevent unacceptable exposure to hazardous waste or contaminated environmental media left in place at a site or closed facility. EPA also recommends that consideration be given as to whether a funding source is available to support any necessary ECs and ICs in the future.

It is Illinois EPA's determination that as long as hazardous waste is left in place, the risk of future potential for the contamination continues to exist at the hazardous waste landfill. In order to prevent unacceptable exposure to hazardous waste or contaminated environmental media left in place, hazardous waste management units with waste left in place, Long Term Stewardship (LTS) for all hazardous waste management units is necessary to continue the maintenance of the landfill in perpetuity. Furthermore, as USEPA recommends, the funding for the LTS is necessary to implement the LTS.

3.5 ASTSWMO Position Paper, dated July 20, 2022 "Post-Closure Care Beyond 30 Years at RCRA Subtitle C Facilities

The ASTSWMO (Association of State and Territorial Solid Waste Management Organization) Board of Directors prepared and sent a Position Paper, entitled POST-CLOSURE CARE BEYOND 30 YEARS AT RCRA SUBTITLE C FACILITIES, dated July 20, 2022, to the USEPA to recommend that USEPA either revise the RCRA regulations for post-closure or issue supplemental guidance on the implementation of the post-closure regulations under Subtitle C of RCRA. Such guidance should be congruent with the key issues highlighted in the issues section of this position paper. ASTSWMO remains ready to work with EPA to achieve a mutually satisfactory outcome on this very important issue.

This Position paper highlighted the issues that the USEPA guidance needs to be made clear to:

- State that there is a presumption that a Subtitle C post-closure care obligation remains as long as hazardous waste remains in a closed land disposal unit, even if there is no evidence of a release after 30 years of post-closure care ;

Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
JDN REVIEW NOTES

- Require Financial assurance obligation during the extended post-closure care period must be maintained;
- Allow for an alternate endorsable document such as EC can be used to control such requirements and restrictions;
- Provide guidance for monitoring for any new emerging or newly listed wastes.

Illinois EPA agrees with above, and the subject permit conditions reflect the issues and concerns addressed in the Position paper within the currently applicable regulations and the guidance.

3.6 Illinois EPA's Decisions Regarding Extending Post-Closure Care at other IL RCRA Facilities and Communications from Other States

The Illinois EPA recently has made the following decisions regarding post-closure care beyond the initial 30-years for the following permitted and interim status facilities:

- On August 19, 2022, Illinois EPA issued its proposed decision to deny the request for the completion of post-closure care and extend the post-closure care period beyond the initial 30 years at the City of North Chicago site (0971250007). After a public notice and the comment period, the Illinois EPA's final decision to extend the post-closure care period at the City of North Chicago was issued on August 19, 2022.
- On November 15, 2022, Illinois EPA issued its proposed decision to extend the post-closure care period beyond the initial 30 years at the RCH Newco site (1978030005). The final decision is currently pending on the public hearing to be held by the Illinois EPA.
- In addition to the extending the post-closure care period, a renewed RCRA Post-Closure Permit was issued for CID site (0310390001) on January 19, 2023, This permit has post-closure requirements in Section I of the permit, which contains the updated requirements in the Post-closure Section, which were the reflection of the updated template for the post-closure section to require that post-closure care may be extend if necessary to protect human health and the environment and that the environmental covenant (EC) is necessary to be established prior to exiting the permit.

When questions were raised regarding the extending of Post-Closure at other States during the USEPA-Lead Post-Closure Care Implementation Group (which met generally on a Bi-Weekly bases in 2022 through April 2023), it was general concurrence among USEPA and States representatives that if the waste remains in place, post-closure care must continue to be implemented. Among those States that have extended the post-closure care beyond 30-years were Wisconsin (which is one of Region 5 States) and Florida. In response to this reviewer's inquiry about how these states implemented extending of post-closure care ta RCRA sites, the following responses were received both on 4/23/2023:

- Doug Coenen, P.E of Wisconsin Department of Natural Resources called initially to discuss on the phone. He indicated that WI Statute requires long-term care (a.k.a Post-Closure Care) to be implemented in perpetuity. He indicated that this is why they do not even need to address extending of post-closure crea as if the waste remains in place, post-

BFI – Davis Junction Landfill – Phase I
Log No. B-142R2-M-1; M-2; M-4; M-6; M-7
JDN REVIEW NOTES

closure care continues and there is not need to address post-closure care period. However, WI still uses rolling 30-years for financial assurance. He then sent me an email to quote the Statue of WI (289.41(1.m) (c).

- Merline Russell, P.G. of Florida Department of Environmental Protection has indicated they have extended post-closure care in a couple of ways. One is to simply add another 30-years to initial 30-years and requires 60 years of Post-Closure care. In another way, FL requires the facility to have “rolling” 30-years, which means it always have 30 years as required post-closure care period regardless of how many years of post-closure care the facility completed. This rolling 30-year is also reflected in the financial assurance requirements.

Groundwater Unit Review Notes
Section #4

GWU
Review
Notes

Stine, Paula

From: Rickard, Logan
Sent: Thursday, January 5, 2023 9:27 AM
To: Stine, Paula
Cc: Slayton, Victoria
Subject: RE: Inflation Rates

Good Morning,

As of this moment, we are still using 1.041 or 4.1% as our inflation rate.

Last year we didn't receive an updated rate till around March or April, so I'd expect we'll have new figures sometime this spring.

Let me know if you have any more questions or concerns around financial assurance, I'm always happy to help!

Thanks,
Logan Rickard
Materials Management and Compliance Section
Illinois EPA
(217) 524-7948

From: Slayton, Victoria <Victoria.Slayton@Illinois.gov>
Sent: Thursday, January 5, 2023 9:09 AM
To: Rickard, Logan <Logan.Rickard@Illinois.gov>
Cc: Stine, Paula <Paula.Stine@Illinois.gov>
Subject: FW: Inflation Rates

Forwarding this to Logan as it is in his Region.

Logan – can you help Paula with her question?

Thank You,

Victoria L. Slayton BSW MPA
W: 217-524-2891

From: Stine, Paula <Paula.Stine@Illinois.gov>
Sent: Tuesday, January 3, 2023 4:09 PM
To: Slayton, Victoria <Victoria.Slayton@Illinois.gov>
Subject: Inflation Rates

Can you tell me the current inflation rates. I working on BFI-Davis Junction (1418210001) and they state in the letter that they communicated with Illinois EPA and were giving and inflation adjustment of 4.13% but this was back in April 2022. I was wondering if the inflation rates have changes and if so can you tell me what they are today?

Thank you,

Paula Stine
Geologist, Groundwater Unit
Bureau of Land, Permit Section
Paula.Stine@illinois.gov
217-557-8770



State of Illinois - CONFIDENTIALITY NOTICE: The information contained in this communication is confidential, may be attorney-client privileged or attorney work product, may constitute inside information or internal deliberative staff communication, and is intended only for the use of the addressee. Unauthorized use, disclosure or copying of this communication or any part thereof is strictly prohibited and may be unlawful. If you have received this communication in error, please notify the sender immediately by return e-mail and destroy this communication and all copies thereof, including all attachments. Receipt by an unintended recipient does not waive attorney-client privilege, attorney work product privilege, or any other exemption from disclosure.

Nutt, Jacob

From: Sinnott, Bill
Sent: Thursday, January 19, 2023 12:38 PM
To: Nutt, Jacob
Subject: FW: BFI-DJ Log No. B-142R-M-7
Attachments: 1418210001-RCRA-B142R2-M-7-Memo.pdf; 1418210001-RCRA-B142R2-M-7-Memo.docx

Good Afternoon Jacob! I thought you might like an electronic copy of a memo I recently received from Paula regarding BFI-Davis Junction.

Bill

From: Stine, Paula <Paula.Stine@Illinois.gov>
Sent: Monday, January 9, 2023 9:37 AM
To: Sinnott, Bill <Bill.Sinnott@Illinois.gov>
Cc: Rhoades, Joshua <Joshua.Rhoades@Illinois.gov>; DeMay, Rebecca <Rebecca.DeMay@Illinois.gov>
Subject: BFI-DJ Log No. B-142R-M-7

Please see attached memo for BFI-DJ 2022 Post-Closure Care Cost Estimates. Let me know if you have any questions. Bill I will give you my original copy shortly. Please note, that I've included the e-mail correspondence with Logan Rickard regarding the inflation rate in my scanned (pdf) document.

Paula Stine
Geologist, Groundwater Unit
Bureau of Land, Permit Section
Paula.Stine@illinois.gov
217-557-8770



State of Illinois - CONFIDENTIALITY NOTICE: The information contained in this communication is confidential, may be attorney-client privileged or attorney work product, may constitute inside information or internal deliberative staff communication, and is intended only for the use of the addressee. Unauthorized use, disclosure or copying of this communication or any part thereof is strictly prohibited and may be unlawful. If you have received this communication in error, please notify the sender immediately by return e-mail and destroy this communication and all copies thereof, including all attachments. Receipt by an unintended recipient does not waive attorney-client privilege, attorney work product privilege, or any other exemption from disclosure.



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

MEMORANDUM

DATE: January 9, 2023

TO: William T. Sinnott – RCRA Unit

FROM: Paula Stine – Groundwater Unit

SUBJECT: 2022 Post-Closure Care Cost Estimates

RE: 1418210001 -- Ogle County
BFI Waste Systems of North America, Inc. – Davis Junction Landfill
ILD980700751
Log No. B-142R2-M-7
RCRA Permit

As requested, I have completed a review of the groundwater portions of a document submitted by James Hitzeroth of BFI Waste Systems of North America, LLC (BFI-Davis Junction (DJ)) and prepared by Michael B. Maxwell, P.G. of Weaver Consultants Group on behalf of BFI-DJ. The subject document is dated December 1, 2022 and was received by the Illinois EPA on December 5, 2022. The purpose of this document is to provide an updated cost estimate for the Post-Closure Care period for the facility. Only groundwater aspects of this document are reviewed herein.

ENVIRONMENTAL JUSTICE (EJ), RTK, and FOS

A search within the SWAP Database was performed by this reviewer, and the Permittee is not located in an EJ Area.

A Right to Know (RTK) evaluation was completed in May of 2022. The site does not meet the requirements of a Bureau of Land Right to Know (RTK) site at this time.

On May 18, 2022, the field inspector Rebecca DeMay contacted me via e-mail to provide comments. Rebecca's comments are that the cost for re-surveying every five years was not included in the post-closure cost estimates and that she doesn't believe the wells have been resurveyed since 2015. Rebecca's comments are included in my comments and conditions have been added regarding the submission of the cost estimates of re-surveying the wells every five years and the submission of the most recent re-survey well data.

BACKGROUND

The Davis Junction Landfill is a closed landfill owned and operated by BFI Waste Systems of North America, Inc. (BFI). BFI-DJ Landfill is comprised of three solid waste disposal units, referred to as Phases I, II, and III. This Permittee occupies 159 acres with Phase I comprising

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

approximately 25 of these acres. Phase I is a hazardous waste management unit which operated as a combined municipal solid waste and RCRA Subpart C waste disposal facility for approximately seven years. Phases II and III (closed municipal solid waste disposal facilities) are separated from Phase I by a clay berm.

The Permittee currently monitors groundwater in a 35 Ill. Adm. Code 620, Class I hydrostratigraphic unit comprised of alluvial and outwash deposits on an annual basis in accordance with Section III of the Permittee's Permit.

SUBJECT SUBMITTAL

The subject submittal provides updated cost estimates for the remaining three years of Post-Closure Care required for the facility. The cost estimate presented in the subject submittal provides costs in 2022 dollars and removes one year of Post-Closure Care activities. The inflation factor of 4.13% was used per a conversation with Illinois EPA in April of 2022. The updated annual Post-Closure Care cost estimate proposed for groundwater monitoring, which includes sample collection of 14 wells, laboratory analysis and groundwater reporting, is \$10,636.

Attachment D to the Permit contains the Post-Closure Care cost estimate. An updated version of this table is provided in the subject submittal. This table includes annual groundwater monitoring costs of \$11,700 (includes 10% contingency cost) and a one-time cost for groundwater program costs of \$14,896 (includes 10% contingency cost). The one-time costs provide for well abandonment upon completion of groundwater monitoring requirements. The groundwater monitoring program costs for the remaining two years of Post-Closure Care at the facility total \$186,556 in 2022 dollars. This estimate must be used in establishing financial assurance in accordance with 35 Ill. Adm. Code 724, Subpart G.

ILLINOIS EPA COMMENT

I have reviewed the groundwater related technical aspects of the subject submittal and have the following comments:

1. The updated annual Post-Closure Care cost estimate proposed for groundwater monitoring, which includes sample collection of 14 wells, laboratory analysis and groundwater reporting, is \$11,700. The one-time costs for monitoring well abandonment is \$14,896. Costs for re-surveying the well every five years in accordance with Condition III.G.2 and 3 were not provided. The Permittee must submit cost associated with re-surveying of the groundwater monitoring wells on a frequency of every five years. In addition, the Permittee must provide a copy of the most recent well survey data collected.
2. The small font on Table 1 of the subject submittal was difficult to read. The Permittee should resubmit the cost-estimates using a font of no less than 12 pt.
3. The Post-Closure Care cost estimate should be based on actual costs and include the sum of the total annual costs multiplied by either the full 30-year PCC period, or the Post-Closure

Care period remaining at the time the estimate is prepared, provided that a minimum of 10 years Post-Closure Care costs is maintained, including Post-Closure Care notices, surveys, and deed notices, and the addition of a minimum 10% contingency fee for unknowns and omissions.

4. The Post-Closure Care cost estimates was provided in the current 2022 numbers, which the current inflation rate is 4.1%. This can be approved.
5. All previous post-closure cost estimates will be approved (Log Nos. B-142R-M-2, M-4 and M-6). However, the current post-closure cost estimates will be required to make the necessary corrections as detailed in this memo.

ILLINOIS EPA RECOMMENDATION

I have reviewed the post-closure cost estimates for BFI-DJ and have determined the cost to be incomplete. The following costs must be included in the post-closure cost estimates:

1. Post-Closure Care Cost Estimates provided in 2019 dollars (Log No. B-142R-M-2), 2020 dollars (Log No. B-142R-M-4), 2021 dollars (Log No. B-142R-M-6) can be approved at this time. However, the Post-Closure Care Cost Estimates provided in 2022 dollars (Log No. B-142R-M-7) cannot be approved at this time. The following conditions and modifications below must be made.
2. The Permittee must include cost associated with re-surveying the wells every five years in accordance with Condition III.J.5 of the Permittee's RCRA Part B Permit. In addition, copies of the latest well survey information must be provided to the Illinois EPA.
3. The Post-Closure Care cost estimate must include the sum of the total annual costs multiplied by either the full 30-year Post-Closure Care period, or the Post-Closure Care period remaining at the time the estimate is prepared, provided that a minimum of 10 years Post-Closure Care costs is maintained, including Post-Closure Care notices, surveys, and deed notices, and the addition of a minimum 10% contingency fee for unknowns and omissions.
4. The Table provided with the itemized cost estimates for Post-Closure Care must be revised to provide a legible copy with a font of no less than 12 pt.
5. Within 30 days of receipt of this letter, the Permittee must submit the information required in Conditions 2, 3, and 4 above, to the Illinois EPA at the address below:

Illinois Environmental Protection Agency
Bureau of Land-#33
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

cc: Rebecca DeMay, Rockford Region FOS

Right-to-Know Evaluation Form

(2023)

Date: May 10, 2023

Site Information	Staff Information
BFI Davis Junction Landfill-Phase 1	Paula Stine <i>PS</i>
1418210001-Ogle County	Permit Section-Groundwater Unit
8902 North Illinois Route 251	217/557-8770
Davis Junction, IL 61020	Paula.Stine@illinois.gov
Criteria (check all that apply)	
<input type="checkbox"/> Measured or modeled groundwater contamination (including soil contamination exceeding the applicable remediation objectives for the soil component of the groundwater ingestion exposure route) poses a threat of exposure to the public above the Class I groundwater quality standards or the Tier 1, Class I groundwater remediation objectives within the setback zone or regulated recharge area of a community water system (CWS) well, or within the setback zone of a private, semi-private, or non-CWS well; <input type="checkbox"/> Limited community relations: Five or fewer potable wells, other than a CWS well, are affected by the release. <input type="checkbox"/> Expanded community relations: More than five potable wells, or one or more CWS wells, are affected by the release.	
<input type="checkbox"/> Groundwater or soil gas contamination beyond the boundary of the site where the release occurred poses a threat of exposure to the public above the appropriate Tier 1 indoor inhalation remediation objectives, based on the current use of the offsite property; <input type="checkbox"/> Limited community relations: Five or fewer offsite properties are affected by the release. <input type="checkbox"/> Expanded community relations: More than five offsite properties are affected by the release.	
<input type="checkbox"/> Soil contamination beyond the boundary of the site where the release occurred poses a threat of exposure to the public above the appropriate Tier 1 remediation objectives, based on the current use of the offsite property; <input type="checkbox"/> Limited community relations: Five or fewer offsite properties are affected by the release. <input type="checkbox"/> Expanded community relations: More than five offsite properties are affected by the release.	
<input type="checkbox"/> The Agency refers a matter for enforcement under Section 43(a) of the Act;	
<input type="checkbox"/> The Agency issues a seal order under Section 34 of the Act; or	
<input type="checkbox"/> The Agency, USEPA, or a third party under Agency or USEPA oversight performs an immediate/emergency removal under the federal Comprehensive Environmental Response, Compensation, and Liability Act.	
Summary	
<input checked="" type="checkbox"/> None of the above criteria are met and the site does not warrant further evaluation.	
<input type="checkbox"/> At least one of the above criteria is met and the site must be further evaluated by submittal of a Contaminant Evaluation Group (CEG) Referral Memorandum to the Office of Community Relations.	



MEMORANDUM

DATE: January 9, 2023

TO: William T. Sinnott – RCRA Unit

FROM: Paula Stine – Groundwater Unit *PS*

SUBJECT: 2022 Post-Closure Care Cost Estimates

RE: 1418210001 -- Ogle County
BFI Waste Systems of North America, Inc. – Davis Junction Landfill
ILD980700751
Log No. B-142R2-M-7
RCRA Permit

As requested, I have completed a review of the groundwater portions of a document submitted by James Hitzeroth of BFI Waste Systems of North America, LLC (BFI-Davis Junction (DJ)) and prepared by Michael B. Maxwell, P.G. of Weaver Consultants Group on behalf of BFI-DJ. The subject document is dated December 1, 2022 and was received by the Illinois EPA on December 5, 2022. The purpose of this document is to provide an updated cost estimate for the Post-Closure Care period for the facility. Only groundwater aspects of this document are reviewed herein.

ENVIRONMENTAL JUSTICE (EJ), RTK, and FOS

A search within the SWAP Database was performed by this reviewer, and the Permittee is not located in an EJ Area.

A Right to Know (RTK) evaluation was completed in May of 2022. The site does not meet the requirements of a Bureau of Land Right to Know (RTK) site at this time.

On May 18, 2022, the field inspector Rebecca DeMay contacted me via e-mail to provide comments. Rebecca's comments are that the cost for re-surveying every five years was not included in the post-closure cost estimates and that she doesn't believe the wells have been resurveyed since 2015. Rebecca's comments are included in my comments and conditions have been added regarding the submission of the cost estimates of re-surveying the wells every five years and the submission of the most recent re-survey well data.

BACKGROUND

The Davis Junction Landfill is a closed landfill owned and operated by BFI Waste Systems of North America, Inc. (BFI). BFI-DJ Landfill is comprised of three solid waste disposal units, referred to as Phases I, II, and III. This Permittee occupies 159 acres with Phase I comprising

approximately 25 of these acres. Phase I is a hazardous waste management unit which operated as a combined municipal solid waste and RCRA Subpart C waste disposal facility for approximately seven years. Phases II and III (closed municipal solid waste disposal facilities) are separated from Phase I by a clay berm.

The Permittee currently monitors groundwater in a 35 Ill. Adm. Code 620, Class I hydrostratigraphic unit comprised of alluvial and outwash deposits on an annual basis in accordance with Section III of the Permittee's Permit.

SUBJECT SUBMITTAL

The subject submittal provides updated cost estimates for the remaining three years of Post-Closure Care required for the facility. The cost estimate presented in the subject submittal provides costs in 2022 dollars and removes one year of Post-Closure Care activities. The inflation factor of 4.13% was used per a conversation with Illinois EPA in April of 2022. The updated annual Post-Closure Care cost estimate proposed for groundwater monitoring, which includes sample collection of 14 wells, laboratory analysis and groundwater reporting, is \$10,636.

Attachment D to the Permit contains the Post-Closure Care cost estimate. An updated version of this table is provided in the subject submittal. This table includes annual groundwater monitoring costs of \$11,700 (includes 10% contingency cost) and a one-time cost for groundwater program costs of \$14,896 (includes 10% contingency cost). The one-time costs provide for well abandonment upon completion of groundwater monitoring requirements. The groundwater monitoring program costs for the remaining two years of Post-Closure Care at the facility total \$186,556 in 2022 dollars. This estimate must be used in establishing financial assurance in accordance with 35 Ill. Adm. Code 724, Subpart G.

ILLINOIS EPA COMMENT

I have reviewed the groundwater related technical aspects of the subject submittal and have the following comments:

1. The updated annual Post-Closure Care cost estimate proposed for groundwater monitoring, which includes sample collection of 14 wells, laboratory analysis and groundwater reporting, is \$11,700. The one-time costs for monitoring well abandonment is \$14,896. Costs for re-surveying the well every five years in accordance with Condition III.G.2 and 3 were not provided. The Permittee must submit cost associated with re-surveying of the groundwater monitoring wells on a frequency of every five years. In addition, the Permittee must provide a copy of the most recent well survey data collected.
2. The small font on Table 1 of the subject submittal was difficult to read. The Permittee should resubmit the cost-estimates using a font of no less than 12 pt.
3. The Post-Closure Care cost estimate should be based on actual costs and include the sum of the total annual costs multiplied by either the full 30-year PCC period, or the Post-Closure

Care period remaining at the time the estimate is prepared, provided that a minimum of 10 years Post-Closure Care costs is maintained, including Post-Closure Care notices, surveys, and deed notices, and the addition of a minimum 10% contingency fee for unknowns and omissions.

4. The Post-Closure Care cost estimates was provided in the current 2022 numbers, which the current inflation rate is 4.1%. This can be approved.
5. All previous post-closure cost estimates will be approved (Log Nos. B-142R-M-2, M-4 and M-6). However, the current post-closure cost estimates will be required to make the necessary corrections as detailed in this memo.

ILLINOIS EPA RECOMMENDATION

I have reviewed the post-closure cost estimates for BFI-DJ and have determined the cost to be incomplete. The following costs must be included in the post-closure cost estimates:

1. Post-Closure Care Cost Estimates provided in 2019 dollars (Log No. B-142R-M-2), 2020 dollars (Log No. B-142R-M-4), 2021 dollars (Log No. B-142R-M-6) can be approved at this time. However, the Post-Closure Care Cost Estimates provided in 2022 dollars (Log No. B-142R-M-7) cannot be approved at this time. The following conditions and modifications below must be made.
2. The Permittee must include cost associated with re-surveying the wells every five years in accordance with Condition III.J.5 of the Permittee's RCRA Part B Permit. In addition, copies of the latest well survey information must be provided to the Illinois EPA.
3. The Post-Closure Care cost estimate must include the sum of the total annual costs multiplied by either the full 30-year Post-Closure Care period, or the Post-Closure Care period remaining at the time the estimate is prepared, provided that a minimum of 10 years Post-Closure Care costs is maintained, including Post-Closure Care notices, surveys, and deed notices, and the addition of a minimum 10% contingency fee for unknowns and omissions.
4. The Table provided with the itemized cost estimates for Post-Closure Care must be revised to provide a legible copy with a font of no less than 12 pt.
5. Within 30 days of receipt of this letter, the Permittee must submit the information required in Conditions 2, 3, and 4 above, to the Illinois EPA at the address below:

Illinois Environmental Protection Agency
Bureau of Land-#33
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

cc: Rebecca DeMay, Rockford Region FOS

Sinnott, Bill

From: Stine, Paula
Sent: Wednesday, June 8, 2022 2:38 PM
To: Sinnott, Bill
Subject: 1418210001-RCRA-B142R2-M-6-Memo.docx
Attachments: 1418210001-RCRA-B142R2-M-6-Memo.docx

Bill,

Here is my memo for BFI-DJ, cost estimates. Rob said to approved the last two M-2 and M-4 and then deny this one. Please see my conditions. I've included language for them maintaining a minimum of 10 years for post-closure costs. I'll be in the office tomorrow and we can discuss a path forward. See you then!

Paula Stine
Geologist, Groundwater Unit
Bureau of Land, Permit Section
Paula.Stine@illinois.gov
217-557-8770



State of Illinois - CONFIDENTIALITY NOTICE: The information contained in this communication is confidential, may be attorney-client privileged or attorney work product, may constitute inside information or internal deliberative staff communication, and is intended only for the use of the addressee. Unauthorized use, disclosure or copying of this communication or any part thereof is strictly prohibited and may be unlawful. If you have received this communication in error, please notify the sender immediately by return e-mail and destroy this communication and all copies thereof, including all attachments. Receipt by an unintended recipient does not waive attorney-client privilege, attorney work product privilege, or any other exemption from disclosure.



MEMORANDUM

DATE: June 8, 2022

TO: William T. Sinnott – RCRA Unit

FROM: Paula Stine – Groundwater Unit

SUBJECT: 2021 Post-Closure Care Cost Estimates

RE: 1418210001 -- Ogle County
BFI Waste Systems of North America, Inc. – Davis Junction Landfill
ILD980700751
Log No. B-142R2-M-6
RCRA Permit

As requested, I have completed a review of the groundwater portions of a document submitted and prepared by Michael B. Maxwell, P.G. of Weaver Consultants Group on behalf of BFI Waste Systems of North America-Davis Junction Landfill (BFI-DJ). The subject document is dated January 27, 2022 and was received by the Illinois EPA on February 1, 2022. The purpose of this document is to provide an updated cost estimate for the Post-Closure Care period for the facility. Only groundwater aspects of this document are reviewed herein.

ENVIRONMENTAL JUSTICE (EJ), RTK, FOS

A search within the SWAP Database was performed by this reviewer, and the Permittee is not located in an EJ Area.

The site does not meet the requirements of a Bureau of Land Right to Know (RTK) site at this time.

On May 18, 2022, the field inspector Rebecca DeMay contacted me via e-mail to provide comments. Rebecca's comments are that the cost for re-surveying every five years was not included in the post-closure cost estimates and that she doesn't believe the wells have been resurveyed since 2015. Rebecca's comments are included in my comments and conditions have been added regarding the submission of the cost estimates of re-surveying the wells every five years and the submission of the most recent re-survey well data.

BACKGROUND

The Davis Junction Landfill is a closed landfill owned and operated by BFI Waste Systems of North America, Inc. (BFI). BFI-DJ Landfill is comprised of three solid waste disposal units, referred to as Phases I, II, and III. This Permittee occupies 159 acres with Phase I comprising approximately 25 of these acres. Phase I is a hazardous waste management unit which operated

as a combined municipal solid waste and RCRA Subpart C waste disposal facility for approximately seven years. Phases II and III (closed municipal solid waste disposal facilities) are separated from Phase I by a clay berm.

The Permittee currently monitors groundwater in a 35 Ill. Adm. Code 620, Class I hydrostratigraphic unit comprised of alluvial and outwash deposits on an annual basis in accordance with Section III of the Permittee's Permit.

SUBJECT SUBMITTAL

The subject submittal provides updated cost estimates for the remaining four years of Post-Closure Care required for the facility. The cost estimate presented in the subject submittal provides costs in 2021 dollars and removes one year of Post-Closure Care activities. The inflation factor of 1.21% was used. The updated annual Post-Closure Care cost estimate proposed for groundwater monitoring, which includes sample collection of 14 wells, laboratory analysis and groundwater reporting, is \$10,208.

Attachment D to the Permit contains the Post-Closure Care cost estimate. An updated version of this table is provided in the subject submittal. This table includes annual groundwater monitoring costs of \$10,331 (includes 10% contingency cost) and one-time groundwater program costs of \$13,163 (includes 10% contingency cost). The one-time costs provide for well abandonment upon completion of groundwater monitoring requirements. The groundwater monitoring program costs for the remaining eight years of Post-Closure Care at the facility total \$95,811 in 2016 dollars.

ILLINOIS EPA COMMENT

I have reviewed the groundwater related technical aspects of the subject submittal and have the following comments:

1. The updated annual Post-Closure Care cost estimate proposed for groundwater monitoring, which includes sample collection of 14 wells, laboratory analysis and groundwater reporting, is \$10,208. The one-time costs for monitoring well abandonment is \$13,005. Costs for re-surveying the well every five years in accordance with Condition III.G.2 and 3 were not provided. The Permittee must submit cost associated with re-surveying of the groundwater monitoring wells on a frequency of every five years. In addition, the Permittee must provide a copy of the most recent well survey data collected.
2. The small font on Table 1 of the subject submittal was difficult to read. The Permittee should resubmit the cost-estimates using a font of no less than 12 pt.
3. The Post-Closure Care cost estimate should be based on actual 2022 costs and include the sum of the total annual costs multiplied by either the full 30-year PCC period; or the Post-Closure Care period remaining at the time the estimate is prepared, provided that a minimum of 10 years Post-Closure Care costs is maintained, including Post-Closure Care notices,

surveys, and deed notices, and the addition of a minimum 10% contingency fee for unknowns and omissions.

4. The Post-Closure Care cost estimates must be brought to current 2022 numbers. The current 2022 inflation rate is 4.1%. The permittee must revise its cost estimates to reflect the 2022 inflation rate.
5. All previous post-closure cost estimates will be approved (Log Nos. B-142R-M-2 and M-4). However, the current post-closure cost estimates will be required to make the necessary corrections as detailed in this memo.

ILLINOIS EPA RECOMMENDATION

I have reviewed the post-closure cost estimates for BFI-DJ and have determined the cost to be incomplete. The following costs must be included in the post-closure cost estimates:

1. The Permittee must include cost associated with re-surveying the wells every five years in accordance with Condition III.J.5 of the Permittee's RCRA Part B Permit. In addition, copies of the latest well survey information must be provided to the Illinois EPA.
2. The Post-Closure Care cost estimate must include the sum of the total annual costs multiplied by either the full 30-year Post-Closure Care period, or the Post-Closure Care period remaining at the time the estimate is prepared, provided that a minimum of 10 years Post-Closure Care costs is maintained, including Post-Closure Care notices, surveys, and deed notices, and the addition of a minimum 10% contingency fee for unknowns and omissions.
3. The Post-Closure Care cost estimates must be based on current 2022 numbers. The current 2022 inflation rate is 4.1%. The permittee must revise its cost estimates to reflect the 2022 inflation rate.
4. The Table provided with the itemized cost estimates for Post-Closure Care must be revised to provide a legible copy with a font of no less than 12 pt.
5. Within 30 days of receipt of this letter, the Permittee must submit the information required in Conditions 1, 2, 3, and 4 above, to the Illinois EPA at the address below:

Illinois Environmental Protection Agency
Bureau of Land-#33
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276



MEMORANDUM

DATE: June 8, 2022

TO: William T. Sinnott – RCRA Unit

FROM: Paula Stine – Groundwater Unit

SUBJECT: 2021 Post-Closure Care Cost Estimates

RE: 1418210001 -- Ogle County
BFI Waste Systems of North America, Inc. – Davis Junction Landfill
ILD980700751
Log No. B-142R2-M-6
RCRA Permit

As requested, I have completed a review of the groundwater portions of a document submitted and prepared by Michael B. Maxwell, P.G. of Weaver Consultants Group on behalf of BFI Waste Systems of North America-Davis Junction Landfill (BFI-DJ). The subject document is dated January 27, 2022 and was received by the Illinois EPA on February 1, 2022. The purpose of this document is to provide an updated cost estimate for the Post-Closure Care period for the facility. Only groundwater aspects of this document are reviewed herein.

ENVIRONMENTAL JUSTICE (EJ), RTK, FOS

A search within the SWAP Database was performed by this reviewer, and the Permittee is not located in an EJ Area.

The site does not meet the requirements of a Bureau of Land Right to Know (RTK) site at this time.

On May 18, 2022, the field inspector Rebecca DeMay contacted me via e-mail to provide comments. Rebecca's comments are that the cost for re-surveying every five years was not included in the post-closure cost estimates and that she doesn't believe the wells have been resurveyed since 2015. Rebecca's comments are included in my comments and conditions have been added regarding the submission of the cost estimates of re-surveying the wells every five years and the submission of the most recent re-survey well data.

BACKGROUND

The Davis Junction Landfill is a closed landfill owned and operated by BFI Waste Systems of North America, Inc. (BFI). BFI-DJ Landfill is comprised of three solid waste disposal units, referred to as Phases I, II, and III. This Permittee occupies 159 acres with Phase I comprising approximately 25 of these acres. Phase I is a hazardous waste management unit which operated

as a combined municipal solid waste and RCRA Subpart C waste disposal facility for approximately seven years. Phases II and III (closed municipal solid waste disposal facilities) are separated from Phase I by a clay berm.

The Permittee currently monitors groundwater in a 35 Ill. Adm. Code 620, Class I hydrostratigraphic unit comprised of alluvial and outwash deposits on an annual basis in accordance with Section III of the Permittee's Permit.

SUBJECT SUBMITTAL

The subject submittal provides updated cost estimates for the remaining four years of Post-Closure Care required for the facility. The cost estimate presented in the subject submittal provides costs in 2021 dollars and removes one year of Post-Closure Care activities. The inflation factor of 1.21% was used. The updated annual Post-Closure Care cost estimate proposed for groundwater monitoring, which includes sample collection of 14 wells, laboratory analysis and groundwater reporting, is \$10,208.

Attachment D to the Permit contains the Post-Closure Care cost estimate. An updated version of this table is provided in the subject submittal. This table includes annual groundwater monitoring costs of \$10,331 (includes 10% contingency cost) and one-time groundwater program costs of \$13,163 (includes 10% contingency cost). The one-time costs provide for well abandonment upon completion of groundwater monitoring requirements. The groundwater monitoring program costs for the remaining eight years of Post-Closure Care at the facility total \$95,811 in 2016 dollars.

ILLINOIS EPA COMMENT

I have reviewed the groundwater related technical aspects of the subject submittal and have the following comments:

1. The updated annual Post-Closure Care cost estimate proposed for groundwater monitoring, which includes sample collection of 14 wells, laboratory analysis and groundwater reporting, is \$10,208. The one-time costs for monitoring well abandonment is \$13,005. Costs for re-surveying the well every five years in accordance with Condition III.G.2 and 3 were not provided. The Permittee must submit cost associated with re-surveying of the groundwater monitoring wells on a frequency of every five years. In addition, the Permittee must provide a copy of the most recent well survey data collected.
2. The small font on Table 1 of the subject submittal was difficult to read. The Permittee should resubmit the cost-estimates using a font of no less than 12 pt.
3. The Post-Closure Care cost estimate should be based on actual 2022 costs and include the sum of the total annual costs multiplied by either the full 30-year PCC period, or the Post-Closure Care period remaining at the time the estimate is prepared, provided that a minimum of 10 years Post-Closure Care costs is maintained, including Post-Closure Care notices,

surveys, and deed notices, and the addition of a minimum 10% contingency fee for unknowns and omissions.

4. The Post-Closure Care cost estimates must be brought to current 2022 numbers. The current 2022 inflation rate is 4.1%. The permittee must revise its cost estimates to reflect the 2022 inflation rate.
5. All previous post-closure cost estimates will be approved (Log Nos. B-142R-M-2 and M-4). However, the current post-closure cost estimates will be required to make the necessary corrections as detailed in this memo.

ILLINOIS EPA RECOMMENDATION

I have reviewed the post-closure cost estimates for BFI-DJ and have determined the cost to be incomplete. The following costs must be included in the post-closure cost estimates:

1. The Permittee must include cost associated with re-surveying the wells every five years in accordance with Condition III.J.5 of the Permittee's RCRA Part B Permit. In addition, copies of the latest well survey information must be provided to the Illinois EPA.
2. The Post-Closure Care cost estimate must include the sum of the total annual costs multiplied by either the full 30-year Post-Closure Care period, or the Post-Closure Care period remaining at the time the estimate is prepared, provided that a minimum of 10 years Post-Closure Care costs is maintained, including Post-Closure Care notices, surveys, and deed notices, and the addition of a minimum 10% contingency fee for unknowns and omissions.
3. The Post-Closure Care cost estimates must be based on current 2022 numbers. The current 2022 inflation rate is 4.1%. The permittee must revise its cost estimates to reflect the 2022 inflation rate.
4. The Table provided with the itemized cost estimates for Post-Closure Care must be revised to provide a legible copy with a font of no less than 12 pt.
5. Within 30 days of receipt of this letter, the Permittee must submit the information required in Conditions 1, 2, 3, and 4 above, to the Illinois EPA at the address below:

Illinois Environmental Protection Agency
Bureau of Land-#33
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276



1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

BRUCE RAUNER, GOVERNOR

ALEC MESSINA, ACTING DIRECTOR

MEMORANDUM

DATE: December 10, 2020
TO: William T. Sinnott – RCRA Unit
FROM: Paula Stine – Groundwater Unit *PS*
SUBJECT: 2020 Post-Closure Care Cost Estimates
RE: 1418210001 -- Ogle County
BFI Waste Systems of North America, Inc. – Davis Junction Landfill
ILD980700751
Log No. B-142R2-M-4
RCRA Permit

As requested, I have completed a review of the groundwater portions of a document submitted and prepared by Michael B. Maxwell, P.G. of Weaver Consultants Group on behalf of BFI Waste Systems of North America-Davis Junction Landfill (BFI-DJ). The subject document is dated August 18, 2020 and was by the Illinois EPA on August 28, 2020. The purpose of this document is to provide an updated cost estimate for the post-closure care period for the facility. Only groundwater aspects of this document are reviewed herein.

ENVIRONMENTAL JUSTICE (EJ), 39i, RTK, FOS

A search within the SWAP Database was performed by this reviewer, and the facility is not located in an EJ Area.

A current 39i form was submitted as part of the Permit Modification. The document was not reviewed by the Groundwater Unit and is being handled by the RCRA Unit.

The site does not meet the requirements of a Bureau of Land Right to Know (RTK) site at this time.

On September 25, 2020, the field inspector Rebecca DeMay contacted me via e-mail to provide comments. Rebecca's comments are that the cost for re-surveying every five years was not included in the post-closure cost estimates and that she doesn't believe the wells have been resurveyed since 2015. Rebecca's comments are included in my comments and conditions have been added regarding the submission of the cost estimates of re-surveying the wells every five years and the submission of the most recent re-survey well data.

BACKGROUND

The Davis Junction Landfill is a closed landfill owned and operated by BFI Waste Systems of North America, Inc. (BFI). BFI-DJ Landfill is comprised of three solid waste disposal units, referred to as Phases I, II, and III. This facility occupies 159 acres with Phase I comprising approximately 25 of these acres. Phase I is a hazardous waste management unit which operated as a combined municipal solid waste and RCRA Subpart C waste disposal facility for approximately seven years. Phases II and III (closed municipal solid waste disposal facilities) are separated from Phase I by a clay berm.

The facility currently monitors groundwater in a 35 Ill. Adm. Code 620, Class I hydrostratigraphic unit comprised of alluvial and outwash deposits on an annual basis in accordance with Section III of the facility's Permit.

SUBJECT SUBMITTAL

The subject submittal provides updated cost estimates for the remaining four years of post-closure care required for the facility. The cost estimate presented in the subject submittal provides costs in 2019 dollars and removes one year of post-closure care activities. The inflation factor of 1.018 was used. The updated annual post-closure care cost estimate proposed for groundwater monitoring, which includes sample collection of 14 wells, laboratory analysis and groundwater reporting, is \$10,083.

Attachment D to the Permit contains the post-closure care cost estimate. An updated version of this table is provided in the subject submittal. This table includes annual groundwater monitoring costs of \$10,331 (includes 10% contingency cost) and one-time groundwater program costs of \$13,163 (includes 10% contingency cost). The one-time costs provide for well abandonment upon completion of groundwater monitoring requirements. The groundwater monitoring program costs for the remaining eight years of post-closure care at the facility total \$95,811 in 2016 dollars.

ILLINOIS EPA COMMENT

The updated annual post-closure care cost estimate proposed for groundwater monitoring, which includes sample collection of 14 wells, laboratory analysis and groundwater reporting, is \$10,083. However, the costs do not include monitoring well abandonment and re-surveying the well every five years in accordance with Condition III.G.2 and 3. The facility must submit cost associated with well abandonment of the 14 groundwater monitoring wells and for re-surveying of the groundwater monitoring wells every five years. In addition, the facility must provide a copy of the most recent well survey data collected.

ILLINOIS EPA RECOMMENDATION

I have reviewed the post-closure cost estimates for BFI-DJ and have determined the cost to be incomplete. The following costs must be included in the post-closure cost estimates:

The facility must include in the annual post-closure cost estimates cost associated with abandonment of all groundwater monitoring wells. This cost must include reporting of well abandonment to the proper state agencies and local government.

1. The facility must include cost associated with re-surveying the wells every five years in accordance with Condition III.J.5 of the facility's RCRA Part B Permit. In addition, copies of the latest well survey information must be provided to the Illinois EPA.
2. Within 30 days of receipt of this letter, the facility must submit the information required in Conditions 1 and 2 to the Illinois EPA at the address below:

Illinois Environmental Protection Agency
Bureau of Land-#33
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276



MEMORANDUM

DATE: September 26, 2019
TO: Bill Sinnott
FROM: Kyle Janusick – Groundwater Unit *mss 9/27/19*
SUBJECT: *NO* Annual Update to Post-Closure Cost Estimates
RE: 1418210001 – Ogle County
BFI Davis Junction
ILD980700751
Log No. B-142R2-M-2
RCRA Permit

A review has been completed on the subject document prepared and submitted by Weaver Consultants Group North Central, LLC on behalf of the above-referenced facility. A submittal addressing Updated Cost Estimate for Post-Closure Care, dated August 27, 2019, received by the Illinois EPA on September 4, 2019, and assigned Log No. B-142R2-M-2. The purpose of this submittal is to update the post-closure care cost estimates. The subject submittal provides post-closure care cost estimates to the annual inflation increase in the costs approved within Permit B-142R2 and reduced by one year. Only groundwater issues are addressed herein.

Environmental Justice (EJ), 39(i), FOS, and CROPA

The RCRA Unit Project Manager will verify the status of EJ and 39(i) requirements.

FOS was contacted and as of September 18, 2019 has no comments.

The subject submittal does not require a CROPA review.

BACKGROUND

The Davis Junction Landfill is a closed landfill owned and operated by BFI Waste Systems of North America, Inc. (BFI). The BFI – Davis Junction Landfill is comprised of three solid waste disposal units, referred to as Phases I, II, and III. This facility occupies 159 acres with Phase I comprising approximately 25 of these acres. Phase I is a hazardous waste management unit which operated as a combined municipal solid waste and RCRA Subpart C waste disposal

Log B-142R2-M-2

Page 3 of 3

facility for approximately seven years. Phases II and III (closed municipal solid waste disposal facilities) are separated from Phase I by a clay berm.

The facility currently monitors groundwater in a 35 Ill. Adm. Code 620, Class I hydrostratigraphic unit comprised of alluvial and outwash deposits. Pursuant to Section II of its Hazardous Waste Management RCRA Post Closure Permit (Permit) dated December 20, 2007 and last modified November 23, 2016 (Log No. B-142R-M-19), the facility currently conducts a Groundwater Detection Monitoring Program at Phase I of the BFI – Davis Junction Landfill. Groundwater monitoring frequency was reduced to annual and post-closure care was extended by 10 years in an October 21, 2014 Illinois EPA letter (Log No. B-142R-M-15).

SUBJECT SUBMITTAL

The subject submittal provides updated cost estimates for the remainder of the post-closure care required for the facility. The cost estimate presented in the subject submittal provides costs in 2019 dollars and removes one year of post-closure care activities. The most recent Post-Closure Care Cost Estimate approved by the Illinois EPA was included with the Permit Renewal issued by the Illinois EPA on September 26, 2018 (Log No. B-142R2). The costs in the aforementioned Permit Renewal were presented in 2018 dollars.

The Post-Closure Care Cost Estimate portions that are proposed to be modified in the Permit Renewal are as follows:

1. The annual inflation increases in costs. The inflation adjustment to adjust from 2018 to 2019, obtained in an April 2019 communication with the Illinois EPA, is 2.3%. That is an increase by a factor of 1.023; and
2. Removal of one year from the post-closure care period to account for post-closure activities conducted since the last approved update.

As presented in the submittal, the total post-closure care costs are proposed to be modified from \$484,460 to \$408,021. The sections of the Permit Renewal being modified are:

1. Permit Condition I.G: replacing the value of \$484,460 with the updated value of \$408,021; and
2. Attachment C: Replace the page entitled, "Post-Closure Cost Estimate" included in the September 2018 Permit, with the page supplied with this submittal containing the updated Post-Closure Care Cost Estimate (Attachment 1). A revision date of August 2019 is shown on the supplied page.

ILLINOIS EPA COMMENTS

The Illinois EPA has determined that the subject submittal can be approved. At this time, the updated cost estimates provided in the subject submittal appear to be accurate and

Log B-142R2-M-2

Page 3 of 3

adequate for the remaining post-closure care activities that must be conducted at the facility. Therefore, the groundwater portions of these cost estimates can be approved.

ILLINOIS EPA RECOMMENDATIONS

The Illinois EPA has determined that the groundwater portions of the subject document are acceptable and can be approved at this time. This reviewer requests the RCRA Unit modify the following sections of the Permit:

1. Permit Condition I.G: replace the value of \$484,460 with the updated value of \$408,021; and
2. Attachment C: Replace the page entitled, "Post-Closure Cost Estimate", included in the September 2018 Permit with the page supplied with this submittal containing the updated Post-Closure Care Cost Estimate (Attachment 1). A revision date of August 2019 is shown on the supplied page.

Attachment: (1) Post-Closure Cost Estimate

Revised August 2019

Post-Closure Cost Estimate

The approved Post-Closure Cost Estimate is \$408,021, (in 2019 dollars). This estimate must be used when establishing financial assurance in accordance with 35 Ill. Adm. Code 724, Subpart G. The break down of this estimate is as follows:

1. Estimate of post-closure care costs on an annual basis:

Post-closure inspections	\$7,591
Groundwater monitoring	\$9,907
<u>Leachate Management</u>	<u>\$54,163</u>
Total	\$71,661
<u>10% Contingency:</u>	<u>\$7,166</u>
Total Annual Cost (w/ Contingency):	\$78,827

One-Time Costs:

Well Abandonment:	\$12,624
<u>10% Contingency, One-Time Costs:</u>	<u>\$1,262</u>
Total One-Time Costs:	\$13,886

- Facility has 5.0 years of remaining post-closure care.
- Total post-closure care cost estimate =
 $(\$78,827 \text{ per year}) \times (5.0 \text{ years}) + \$13,886 = \$408,021$



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

R 000256

MEMORANDUM

DATE: May 10, 2023

TO: William T. Sinnott – RCRA Unit

FROM: Paula Stine – Groundwater Unit 

SUBJECT: Class 1* Permit Modification: Changes to the Permit as Required by the Renewed Permit

RE: 1418210001 -- Ogle County
BFI Waste Systems of North America, Inc. – Davis Junction Landfill
ILD980700751
Log No. B-142R2-M-1
RCRA Permit

As requested, I have completed a review of the groundwater portions of the Class 1* Modification submitted by James Hitzeroth of BFI Waste Systems of North America, LLC (BFI-Davis Junction (DJ)) and prepared by Michael B. Maxwell, P.G. of Weaver Consultants Group on behalf of BFI-DJ. The subject document is dated November 16, 2018 and was received by the Illinois EPA on November 21, 2018. The purpose of this document is to provide the required information requested in the issued Renewed Permit dated September 26, 2018 (effective October 31, 2018).

Attachment 1, Item 6, to the issued Renewed Permit required that the missing Appendix Q, which contained the statistical procedures for handling non-detects and censored groundwater monitoring data be provided. This data was previously provided in the 2005 Permit Renewal Application but was not provided in the 2017 Permit Renewal Application. BFI includes Appendix Q within this Class 1* Permit Modification request. BFI also inadvertently refers to the Permit Condition III.I.2, however, the correct Condition is II.I.2.

ILLINOIS EPA COMMENTS AND RECOMMENDATIONS

I have reviewed the groundwater related technical aspects of the Class 1* Modification. With receipt of the Appendix Q: Procedures for Calculating Background Levels, the groundwater aspects of this modification can be approved. This will not require a change to the Permit. Therefore, I have no further comments.

ec: Josh Rhoades, Groundwater Unit Manager

RCRA POST-CLOSURE PERMIT
BFI – Davis Junction Landfill – Phase I
LOG No. B-142R2-M-1; M-2; M-4; M-6; M-7

TABLE OF CONTENTS

<u>ITEM</u>	<u>Section</u>
I. Tracking Sheets	1
II. EJ Determination	2
III. RCRA Unit Review Notes	3
IV. Groundwater Unit Review Notes	4
V. Subject Submittals	5

<u>Subject Submittal</u>	<u>Section</u>
I. Class 1* Permit Modification	B142R2 M-1
II. Class 1* Permit Modification	B142R2 M-2
III. Class 1* Permit Modification	B142R2 M-4
IV. Class 1* Permit Modification	B142R2 M-6
V. Class 1* Permit Modification	B142R2 M-7

Subject Submittal
Class 1* Permit Modification
B142R2 M-1

B142R2 M-1



November 16, 2018

Illinois EPA
Bureau of Land - #33
1021 North Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276

Re: 1418210001 – Ogle County
BFI - Davis Junction Landfill – Phase I
ILD 980 700 751
Class 1* Permit Modification
Log No. B-142R2
Project No.: 0120-049-01-19

RECEIVED
NOV 21 2018
IEPA-BOL
PERMIT SECTION

To Whom It May Concern:

On behalf of the permittee for the above referenced facility, BFI Waste Systems of North America, LLC, (BFI), Weaver Consultants Group North Central, LLC hereby provides the following Class 1* Permit Modification. The original signed RCRA Permit Application Form (LPC-PA23) is enclosed, along with the 39(i) Certification Form.

Appendix Q From 2005 Permit Renewal Application

Submission of a Class 1* Permit Modification within nine (90) days of the effective date of the permit was required within Item 6 to Attachment 1 (Changes to Draft Permit) and Permit Condition III.I.2 to the RCRA Permit Renewal Log No. B-142R (Permit) dated September 26, 2018 (effective October 31, 2018). Both of these locations in the Permit required the submission of Appendix Q of the approved Permit Renewal Application first submitted in February 2005. Appendix Q is referenced in Permit Condition III.I.2 as containing the statistical procedures for handling non-detects and censored groundwater monitoring data. A copy of this information is enclosed.

Other Requested Permit Modifications

As mentioned in the Permit, certain revisions to the Permit were introduced by Illinois EPA between issuance of the Draft Permit in July 2018 and the Final Permit in September 2018. These changes were

Illinois EPA

November 16, 2018

listed in Attachment 1 under the heading, "Changes to Draft Permit Initiated by the Agency" and were intended to make the Permit consistent with the regulations and the Environmental Protection Act. However, the specific revisions were not reviewed by the permittee's representative before they were included in the Final Permit. Upon our review of the Permit, various inconsistencies were noted with some of the above Permit revisions introduced by Illinois EPA between issuance of the Draft and Final Permits. We believe that most of these items would be considered clerical revisions. We are herein requesting Illinois EPA approval to modify these items, which are listed below.

Permit Condition I.B.2

This Permit Condition references a surface impoundment that was certified closed on March 16, 1990. However, the subject facility is considered a landfill that was certified closed on December 5, 1984. The minimum required 30 year post-closure period has already been completed and the permittee has agreed to extend the post-closure care period until at least December 5, 2024 within prior permitting documents. Consequently, this Permit Condition should be modified as follows:

Illinois EPA approved certification of closure of the subject ~~surface impoundments~~ landfill on ~~March 16, 1990~~ December 5, 1984. Post-closure care for this unit must then be provided at least until December 5, 2024 ~~for at least thirty (30) years after that date~~.

Permit Condition I.B.4

Another reference to a "former surface impoundment" is included in this Permit Condition. This reference should be changed to a "closed landfill".

Permit Condition I.C.2

This Permit Condition states that post-closure care is "to begin after completion of closure of the unit and continue for at least thirty (30) years", when in fact, the post-closure period began many years ago and 30 years of post-closure care have already been completed. We request that this Permit Condition be modified as follows to reflect the current post-closure requirements for this specific facility, as included in the expiring permit:

The Permittee shall continue to conduct post-closure care for each hazardous waste management unit listed in Section B above. Post closure care of the unit began on December 5, 1984 and must continue until at least December 5, 2024. ~~to begin after completion of closure of the unit and continue for at least thirty (30) years after that date.~~

Illinois EPA

November 16, 2018

Permit Condition I.C.7

The approved Permit Application explains that because the facility is closed, it is not staffed on a regular basis. Consequently, facility records are kept at a nearby facility that is staffed by permittee personnel on a regular basis. Therefore, this Permit Condition is herein requested to be modified as follows:

The Permittee shall maintain a record of all inspections, monitoring, and maintenance activities in the facility's operating record. A copy of the operating record must be kept ~~on-site~~ at the physical location specified in the approved permit application (i.e., the permittee's offices in Hanover Park, IL).

Permit Condition I.E.2

Please note that two items in this section of the Permit are numbered as "2".

Permit Condition I.G.1

The facility has been previously closed, therefore there are no additional costs required associated with closure of the facility, yet this Permit Condition references financial assurance for closure. This condition should be revised as follows:

The Permittee shall maintain financial assurance for post-closure care of the Phase I Landfill of at least \$484,460. The cost estimate for post-closure care of this facility is shown in Attachment C to this permit. The financial assurance maintained by the facility shall be sufficient to meet the requirements at 35 Ill. Adm. Code 724 Subpart H.

Permit Condition III.H.1

Pursuant to our comments on the Draft Permit, the references to "Appendix J" of the approved Permit Renewal Application in this Permit Condition should be changed to "Appendix C-3". While references were changed to Appendix C-3 in items a, b, c, and d to this Permit Condition, a reference to Appendix J remained in Permit Condition III.H.1.

Permit Condition IV.25

As mentioned previously above, the facility is not staffed on a regular basis, therefore facility documents will be kept at the permittee's offices in Hanover Park, IL, rather than maintained at the facility, as indicated in this Permit Condition. Consequently, we request the following revision to this Permit Condition:

Illinois EPA

November 16, 2018

DOCUMENTS TO BE MAINTAINED ~~AT~~ IN FACILITY SITE FILES. The Permit shall maintain ~~at~~ in the facility files, until post-closure care is complete, the following documents and amendments, revisions and modifications to these documents:

Feel free to contact permittee's representative, Mr. Jim Hitzeroth at (630) 894-5001 or myself at (312) 496-3718 with any questions concerning this Class 1* Permit Modification.

Sincerely,

Weaver Consultants Group North Central, LLC



Michael B. Maxwell, LPG
EPG Chicago Operations Manager

Cc: Mr. Jim Hitzeroth, BFI

Enclosure: LPC-PA23 and 39i Forms
Appendix Q - 2005 Permit Application (Procedures for Calculating Background Levels)

**LPC-PA23 and 39i
Forms**



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

RCRA Permit Application Form (LPC-PA23)

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. One original and three (3) copies, of all permit applications must be submitted. Attach the original and appropriate number of copies of a cover letter, any necessary plans, specifications, reports, forms, (e.g., corrective action certification form), and any other certifications etc. to fully support and describe the activities or modifications being proposed. Attach sufficient information to demonstrate compliance with all applicable regulatory requirements. Applications without this form will be deemed incomplete. Please refer to the RCRA checklist and decision guide documents for further guidance. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

Note: Permit applications which are hand-delivered to the Bureau of Land Permit Section must be delivered to 1021 North Grand Avenue East between the hours of 8:30 a.m. to 5:00 p.m., Monday through Friday (excluding State holidays).

RECEIVED
NOV 21 2018
IEPA-BOL
PERMIT SECTION

Please type or print all information legibly.

I. Site Identification

Site # (Illinois EPA): 1418210001 USEPA ID Number: ILD 980700751
Site Name: Davis Junction Landfill (Phase I)
Physical Site Location (street, road, etc.): 8902 North Illinois Route 251
City: Davis Junction Zip Code: 61020 County: Ogle
Existing RCRA Permit (if applicable): B-142R2

II. Owner/Operator Identification

Owner Information

Name: BFI Waste Systems of North America, LLC
Mailing Address:
26 West 580 Schick Rd.
Hanover Park, IL 60133
Contact Name: James Hitzeroth
Phone #: 630-894-5001
Email: JHitzeroth@republicservices.com

Operator Information

Name: BFI Waste Systems of North America, LLC
Mailing Address:
26 West 580 Schick Rd.
Hanover Park, IL 60133
Contact Name: James Hitzeroth
Phone #: 630-894-5001
Email: JHitzeroth@republicservices.com

A 39(i) certification must be submitted with information concerning the following persons or entities:

- the owner of the business entity applying for the permit;
- the operator of the business entity applying for the permit;
- each employee or officer of the owner or operator who signed the permit application or has managerial authority at the site; and
- any additional owner, operator, or officer or employee of the owner or operator from whom a certification is requested by the Illinois EPA, including any officer or employee who will be responsible for overseeing or implementing regulated activities governed by the permit.

III. Permit Application Identification

Application Type

- | | | |
|--|--|---|
| <input type="checkbox"/> New Part B Permit | <input type="checkbox"/> Class 1 Modification | <input type="checkbox"/> Remedial Action Plan Permit (RAPP) |
| <input type="checkbox"/> Part B Permit Renewal | <input checked="" type="checkbox"/> Class 1* (prior approval required) Modification | <input type="checkbox"/> Sig RAPP Modification |
| | <input type="checkbox"/> Class 2 Modification | <input type="checkbox"/> Non Sig RAPP Modification |
| | <input type="checkbox"/> Class 3 Modification | <input type="checkbox"/> Major UIC Modification |
| | <input type="checkbox"/> Additional information to supplement UIC Class I application Log Number | <input type="checkbox"/> Minor UIC Modification |

This Application Involves

- | | | | |
|--------------------------------------|--|--|---------------------------------------|
| <input type="checkbox"/> Storage | <input type="checkbox"/> Treatment | <input checked="" type="checkbox"/> Disposal | <input type="checkbox"/> Incineration |
| <input type="checkbox"/> Groundwater | <input type="checkbox"/> Corrective Action | <input type="checkbox"/> UIC Class I | <input type="checkbox"/> UIC Class V |

Description of This Permit Request: (Include a brief narrative description here.)

Class 1* Permit Modification required by Permit Renewal 2 dated September 26, 2018 and various clerical clarifications to Permit.

IV. SIGNATURES

Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable. All applications shall be signed by the person in accordance with 35 IAC 702.126(a).

Please check the box of the appropriate certification.

Owner

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Alternative owner certification. For remedial action plans (RAPs) permit under Subpart H of 35 IAC 703, the owner may choose to make the following certification instead of the certification above.

Based on my knowledge of the conditions of the property described in the RAP and my inquiry of the person or persons that manage the system referenced in the operator's certification, or those persons directly responsible for gathering the information, the information submitted is, upon information and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Name (Printed or Typed): Kevin P. Bremer

Owner Signature: *Kevin Bremer* Date: 4/8/2018

Title: Vice President

Operator

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Operator Name (Printed or Typed): Kevin P. Bremer

Operator Signature: *Kevin Bremer* Date: 11/8/2018

Title: Vice President

Notary (Required for both owner and operator signatures)

Subscribed and Sworn before me this 8 day of November 2018.

Notary Signature: *Yadira Potts*

My commission expires on: April 27, 2021



Notary Seal

Engineer

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Engineer Name (Print or Type): John Bossert

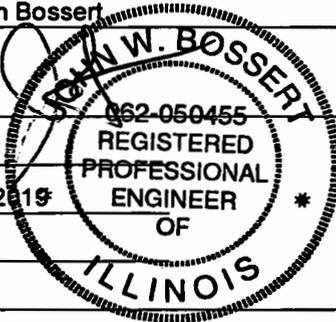
Engineer Signature: _____

Illinois License No.: 062-050455

Expiration Date of License: Nov 30, 2019

Engineer Phone No. 217-787-0290

Email: JBossert@wcgrp.com



Engineer Address:

3516 Ogden Road
Springfield, IL 62711

Engineer Seal

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

**Instructions for
RCRA Permit Application Form LPC-PA23**

The following instructions are designed to aid in the completion of the RCRA Permit Application Form LPCPA23. If you have additional questions regarding the form, or the informational requirements, please contact the Illinois EPA Bureau of Land (BOL) Permit Section at 217-524-3300.

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. If an application has already been submitted to the Agency, a completed RCRA Permit Application Form must accompany all additional information that is submitted to the agency for that application. An example of "additional information" would be a response to verbal or written comments from the Agency. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

I. Site Identification

Enter all of the required information in the space provided. If you do not have an Illinois or USEPA identification number, call the Illinois EPA BOL Waste Reduction and Compliance Section at 217-785-8604 to obtain these numbers prior to completing the form.

II. Owner/Operator Identification

The terms "owner" and "operator" are defined at 35 IAC 720.110 and 702.110. If the facility has the same owner and operator, you may type in "same" under operator information. Also, if the contact person for an application is different from the owner or operator (i.e. the consultant), please indicate this in the cover letter for the application.

III. Permit Application Identification

Indicate both the type of application and the kind of waste management involved. For instance, if the application involves more than one type of waste management, check all applicable options.

IV. Signatures

The signatory requirements for permit applicants are identified at 35 IAC 702.126 and 702.151. If the facility has the same owner and operator, you may type in "same" under operator information.

Notary Public: A notary public's signature and stamp are required for both the owner and operator signatures on the form.

Engineer Certification: A professional engineer that is licensed in the State of Illinois must certify all technical information provided in a permit application. 35 IAC 703.182 describes the types of information that must be certified by a professional engineer.



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

39(i) Certification for Operating a Waste Management Facility

Pursuant to 415 ILCS 5/39(i), prior to issuing any RCRA permit, or any permit for a waste storage site, sanitary landfill, waste disposal site, waste transfer station, waste treatment facility, waste incinerator, clean construction or demolition debris fill operation, or used tire storage site, the Illinois EPA must conduct an evaluation of the prospective owner's or operator's prior experience in waste management operations, clean construction or demolition debris fill operations, and tire storage site management. As part of that evaluation please complete and submit this form with your permit application.

This form may be completed online and saved locally before printing, signing and submitting it to the Illinois EPA at the address below. If the form is completed manually, please type or print clearly.

Illinois Environmental Protection Agency
Division of Land Pollution Control - #33
39(i) Certification
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

RECEIVED
NOV 21 2018
IEPA-BOL
PERMIT SECTION

I. Applicant Information

Site Name: Davis Junction Landfill (Phase I) IEPA BOL No.: 1418210001

Site Address: 8902 North Illinois Route 251

City: Davis Junction State: IL Zip Code: 61020

Permit Numbers (if applicable): B-142R2

Owner
Owner Name: BFI Waste Systems of North America
Street Address: 26 West 580 Schick Rd.
City: Hanover Pk State: IL Zip: 60133

Operator
Operator Name: BFI Waste Systems of North America
Street Address: 26 West 580 Schick Rd.
City: Hanover Pk State: IL Zip: 60133

II. Officers and Employees with Site Responsibility

A. Officers: List the name and title of all officers of the owner or operator that will have personal involvement or active participation in the operation or management of the site or facility for which the application is submitted.

Name	Title
Kevin P. Bremer	Vice President

B. Employees: List the name and title of each employee of the owner or operator that will have personal involvement or active participation in the overall operation or management of the site or facility for which the application is submitted (e.g. site managers, site engineers, and other persons who direct or control the overall day-to-day management of the operation, but not persons whose duties are exclusively limited to equipment operation, labor, or similar non-managerial functions).

Name	Title
James Hitzeroth	Environmental Manager

III. Owner, Operator, Officer, and Employee Information

A. Prior Conduct Identification

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified under Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and include a copy of each final administrative or judicial determination that required an affirmative response. If the information for each owner, operator, officer, and employee has not changed since the applicant's last submission of a 39(i) certification, the applicant can skip to Section III(C), below.

- 1) Has there been a finding that any person named in Section II violated federal, State, or local laws, regulations, standards, or ordinances in the operation of one or more waste management facilities or sites, clean construction or demolition debris fill operation facilities or sites, or tire storage sites? Yes
 No
- 2) Has any person named in Section II ever been convicted in this or another State of any crime which is a felony under the laws of this State, or convicted of a felony in a federal court; or convicted in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition? Yes
 No
- 3) Has there been a finding against any person named in Section II of gross carelessness or incompetence in handling, storing, processing, transporting or disposing of waste, clean construction or demolition debris, or used or waste tires, or a finding of gross carelessness or incompetence in using clean construction or demolition debris as fill? Yes
 No

B. Pending Proceedings

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified in Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and provide information identified in Attachment A regarding the pending proceeding.

- 1. Is there any proceeding currently pending against any person named in Section II that could result in a conviction or finding described in subsection A, above? Yes
 No
- 2. Is there any proceeding currently pending against any person named in Section II that could result in the reversal of a conviction or finding described in subsection A, above? Yes
 No

C. Prior Application Information

If (i) the applicant has previously submitted the Attachments required pursuant to subsections A and B above and (ii) the Attachments previously submitted are still complete, true, and correct, then the applicant does not need to include Attachments with this submission if the following box is checked:

By checking this box, I affirm that the Attachments previously submitted are still complete, true, and correct and wish to incorporate them into this Certification.

If the above box is checked, identify the application that contains the previously submitted Attachments that are complete, true, and correct.

Authorization for Release of Information

This Certification must be signed by an officer of the applicant.

The undersigned authorizes any representative of the Illinois Environmental Protection Agency bearing this release to obtain any information from the Illinois State Police pertaining to the criminal records of the applicant and hereby directs the Illinois State Police to release such information upon request of the bearer. The undersigned authorizes a review of and full disclosure of all records, or any part thereof, concerning the applicant's criminal records by and to a duly authorized agent of the Illinois Environmental Protection Agency, whether the records are of public, private, or confidential nature. The intent of this authorization is to give consent for full and complete disclosure of the applicant's criminal records.

The undersigned fully understands that any information which is developed directly or indirectly, in whole or in part, as a result of this authorization will be considered in determining whether a permit shall be issued by the Illinois Environmental Protection Agency under the Environmental Protection Act [415 ILCS 5]. The undersigned further agrees to release the Illinois State Police and the Illinois Environmental Protection Agency, its agents and designees under this release, from any and all liability which may be incurred as a result of compliance with this authorization for release of information.

Certification Statements

I certify under penalty of law that the information submitted, including information on any Attachments submitted as part of or incorporated into this Certification, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Kevin Bremer

Signature of Applicant Officer

11/8/2018

Date

Kevin P. Bremer

Printed Name

Vice President

Title

Appendix Q - 2005 Permit Application
(Procedures for Calculating Background Levels)

Appendix Q

Procedures For Calculating Background Levels

DAVIS JUNCTION LANDFILL; PHASE 1

STATISTICAL ANALYSES

**UPGRADIENT WELLS
and
DOWNGRADIENT WELLS**

**REPORT DATE
AUGUST, 1994**

**ROBERTA L. JENNINGS
CONSULTING HYDROGEOLOGIST**

**BROWNING-FERRIS INDUSTRIES
DAVIS JUNCTION LANDFILL**

Reported by: _____
Marilynn J. Lund, Ph.D.
Laboratory Director

Reported by: _____
Terese M. Laciak
President

TABLE OF CONTENTS

RECEIVED

REPORT SUMMARY

NOV 21 2018

IEPA-BOL
PERMIT SECTION

SUMMARY..... 1

STATISTICAL ANALYSIS

INTRODUCTION..... 4

DATA EVALUATION.....

Wells Evaluated..... 5

Parameters Evaluated.....

Groundwater Contamination Indicator Parameters.... 10

Groundwater Quality Parameters..... 10

RCRA Metals..... 11

Volatile Organic Compound Parameters..... 11

STATISTICAL PROCEDURES.....

Graphical Analysis of Trend..... 13

Statistical Analysis..... 14

DISCUSSION OF DAVIS JUNCTION, PHASE 1 DATA.....

Proposal Applicable Groundwater Quality Standards..... 29

Intra and Inter Well Parameter Evaluation..... 46

Indicator Parameters..... 49

Groundwater Parameters..... 76

RCRA Metal Parameters..... 156

Volatile Organic Compounds..... 174

Other Inorganic Parameters..... 176

Summary of Data..... 177

CONCLUSIONS 181

BIBLIOGRAPHY 184

RECEIVED

NOV 27 2018

LIST OF TABLES

PERMIT SECTION
JOB-BOL

TABLE 1: Summary of Upper Aquifer Pooled Data:..... 31
Inorganics

TABLE 2: Summary of Upper Aquifer Pooled Data:..... 32
Metals

TABLE 3: Summary of Upper Aquifer Pooled Data:..... 34
Background/Drinking Water Organics

TABLE 4: Summary of Main Aquifer Pooled Data:..... 36
Inorganics

TABLE 5: Summary of Main Aquifer Pooled Data:..... 37
Metals

TABLE 6: Summary of Main Aquifer Pooled Data:..... 39
Background/Drinking Water Organics

TABLE 7: Summary of Deep Aquifer Pooled Data:..... 41
Inorganics

TABLE 8: Summary of Deep Aquifer Pooled Data:..... 42
Metals

TABLE 9: Summary of Deep Aquifer Pooled Data:..... 44
Background/Drinking Water Organics

TABLE 10: Summary of pH Data..... 55

TABLE 11:	Summary of Specific Conductance Data.....	63
TABLE 12:	Summary of Total Organic Carbon Data.....	71
TABLE 13:	Summary of Total Organic Halogens Data.....	74
TABLE 14:	Summary of Alkalinity Data.....	82
TABLE 15:	Summary of Boron Data.....	85
TABLE 16:	Summary of Calcium Data.....	93
TABLE 17:	Summary of Chloride Data.....	101
TABLE 18:	Summary of Iron Data.....	108
TABLE 19:	Summary of Magnesium Data.....	116
TABLE 20:	Summary of Manganese Data.....	124
TABLE 21:	Summary of Phenol Data.....	130
TABLE 22:	Summary of Sodium Data.....	138
TABLE 23:	Summary of Sulfate Data.....	146
TABLE 24:	Summary of Total Dissolved Solids Data.....	154
TABLE 25:	Summary of Arsenic Data.....	158
TABLE 26:	Summary of Barium Data.....	160

TABLE 27:	Summary of Cadmium Data.....	162
TABLE 28:	Summary of Chromium Data.....	164
TABLE 29:	Summary of Lead Data.....	166
TABLE 30:	Summary of Mercury Data.....	168
TABLE 31:	Summary of Selenium Data.....	170
TABLE 32:	Summary of Silver Data.....	172

LIST OF FIGURES

Figure 1:	Generalized Geology and Monitored Aquifer Levels	7
Figure 2:	Example of Normal Probability Plot.....	22
Figure 3:	pH: Upper Aquifer.....	51
Figure 4:	pH: Main Aquifer.....	52
Figure 5:	pH: Main Aquifer.....	53
Figure 6:	pH: Surficial.....	54
Figure 7:	Specific Conductance: Upper Aquifer.....	59
Figure 8:	Specific Conductance: Main Aquifer.....	60
Figure 9:	Specific Conductance: Main Aquifer.....	61
Figure 10:	Specific Conductance: Surficial.....	62
Figure 11:	Total Organic Carbon: Upper Aquifer.....	67
Figure 12:	Total Organic Carbon: Main Aquifer.....	68
Figure 13:	Total Organic Carbon: Main Aquifer.....	69
Figure 14:	Total Organic Carbon: Surficial.....	70
Figure 15:	Alkalinity: Upper Aquifer.....	78
Figure 16:	Alkalinity: Main Aquifer.....	79

Figure 17:	Alkalinity: Main Aquifer.....	80
Figure 18:	Alkalinity: Surficial.....	81
Figure 19:	Calcium: Upper Aquifer.....	89
Figure 20:	Calcium: Main Aquifer.....	90
Figure 21:	Calcium: Main Aquifer.....	91
Figure 22:	Calcium: Surficial.....	92
Figure 23:	Chloride: Upper Aquifer.....	97
Figure 24:	Chloride: Main Aquifer.....	98
Figure 25:	Chloride: Main Aquifer.....	99
Figure 26:	Chloride: Surficial.....	100
Figure 27:	Iron: Upper Aquifer.....	105
Figure 28:	Iron: Main Aquifer.....	106
Figure 29:	Iron: Main Aquifer.....	107
Figure 30:	Magnesium: Upper Aquifer.....	112
Figure 31:	Magnesium: Main Aquifer.....	113
Figure 32:	Magnesium: Main Aquifer.....	114
Figure 33:	Magnesium: Surficial.....	115
Figure 34:	Manganese: Upper Aquifer.....	120

Figure 35:	Manganese: Main Aquifer.....	121
Figure 36:	Manganese: Main Aquifer.....	122
Figure 37:	Manganese: Surficial.....	123
Figure 38:	Phenol: Upper Aquifer.....	127
Figure 39:	Phenol: Main Aquifer.....	128
Figure 40:	Phenol: Main Aquifer.....	129
Figure 41:	Sodium: Upper Aquifer.....	134
Figure 42:	Sodium: Main Aquifer.....	135
Figure 43:	Sodium: Main Aquifer.....	136
Figure 44:	Sodium: Surficial.....	137
Figure 45:	Sulfate: Upper Aquifer.....	142
Figure 46:	Sulfate: Main Aquifer.....	143
Figure 47:	Sulfate: Main Aquifer.....	144
Figure 48:	Sulfate: Surficial.....	145
Figure 49:	Total Dissolved Solids: Upper Aquifer.....	150
Figure 50:	Total Dissolved Solids: Main Aquifer.....	151
Figure 51:	Total Dissolved Solids: Main Aquifer.....	152
Figure 52:	Total Dissolved Solids: Surficial.....	153

LIST OF APPENDICES

- APPENDIX A: ORIGINAL DATA: ANALYTICAL REPORT SHEETS
VOL 1 DATA - 1990
VOL 2 DATA - 1991 and 1992
VOL 3 DATA - 1993
VOL 4 DATA - 1994
- APPENDIX B: POOLED DATA: UPPER AQUIFIER
- APPENDIX C: POOLED DATA: MAIN AQUIFIER
- APPENDIX D: POOLED DATA: SURFICIAL
- APPENDIX E: POOLED DATA: BEDROCK VALLEY AQUIFER
- APPENDIX F: DESCRIPTIVE STATISTICS: UPPER AQUIFIER
- APPENDIX G: DESCRIPTIVE STATISTICS: MAIN AQUIFIER
- APPENDIX H: DESCRIPTIVE STATISTICS: SURFICIAL
- APPENDIX I: DESCRIPTIVE STATISTICS: BEDROCK VALLEY AQUIFER
- APPENDIX J: REPRINTS AND TABLES: STATISTICAL PROCEDURES
- APPENDIX K: BROWNING-FERRIS INDUSTRIES: STATISTICAL PROCEDURES

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

***REPORT
SUMMARY***

SUMMARY

Browning-Ferris Industries of Illinois, Inc. (BFI) owns and operates an existing waste management area in Davis Junction, Illinois. According to information provided by BFI, Phase I of this facility received hazardous waste consisting mainly of heavy metal sludge, containing D001 through D011 wastes, and hazardous waste containing F006 wastes or waste treatment sludge from electroplating processes. The main hazardous wastes contained in these metal sludges are monitored in groundwater by the analysis for eight (8) listed Resource Conservation and Recovery Act (RCRA) metals, which are arsenic, barium, cadmium, chromium, mercury, lead, selenium and silver. Also, groundwater is monitored for volatile organic compounds using Method 8240, as well as for additional inorganic and metal parameters.

In February of 1994, BFI submitted three documents as part of their Application for RCRA Part B Post Closure Permit for Phase I of the Davis Junction Landfill. These documents were a Report of Hydrogeological Investigations and a Modelling and Monitoring Plan prepared by Jennings and Staurowsky, and a Statistical Analysis and Monitoring Program prepared by Analytical Chemistry & Environmental Services, Inc (AC&E Services, Inc.) . These reports were prepared

to address Section E of the RCRA Part B Permit Application Decision Guide. The only item excluded from those documents was an evaluation of groundwater monitoring throughout the history of the site with respect to upgradient and downgradient wells. During a meeting between BFI and IEPA on October 6, 1993, this material was discussed and it was agreed that the upgradient/downgradient evaluation would be submitted at a later date, and that data from the past five years would be used for the study. The background groundwater studies prepared during 1993 were prerequisite to the upgradient/ downgradient evaluation which caused a delay between submittal of the background report and submittal of this evaluation. In addition, only the past five years of monitoring data could be evaluated due to the abandonment of many previously monitored wells, installation of several new wells having better construction, and changes over the years in parameters which were monitored.

The purpose of this report is to present a detailed evaluation of downgradient groundwater quality compared to upgradient groundwater quality and background data pools in order to determine whether or not any statistically significant increases have occurred at the BFI Davis Junction Landfill. In order to accomplish this, in accordance with the proposed full site monitoring program, all monitoring wells surrounding Phases I, II, and III of the facility are included in the study.

Applicable Groundwater Quality Standards (AGQS) for this site were proposed based upon previous studies of the background groundwater quality and were presented to the Illinois Environmental Protection Agency (IEPA) in the February, 1994 Statistical Analysis and Monitoring Program. That report established the proposed background groundwater quality standards based upon the data provided by BFI from previous groundwater and leachate monitoring programs. Detailed recommendations for the future groundwater detection monitoring and sampling programs also were presented in that report. This report utilizes the data established from the previous groundwater quality studies as well as new data to compare upgradient groundwater quality to downgradient groundwater quality in the upper silts and fine sands aquifer (upper aquifer) and the main sand and gravel aquifer (main aquifer) underlying the waste management area of the existing Davis Junction Landfill. Data is presented also for a deeper portion of the main aquifer (deep aquifer), for surficial sediments (surficial), and for one well located deep within the buried bedrock valley aquifer (buried bedrock valley aquifer).

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

***STATISTICAL
ANALYSIS***

INTRODUCTION

The requirements for evaluation of groundwater quality data are described in Title 35 Illinois Administration Code (IAC), Section 725.192. This regulation describes the collation of water analyses for the purpose of establishing background concentrations or values for specific parameters. Also, this regulation specifies the statistical method used to compare water analysis results for each well to itself and to background concentrations or values for specific indicator parameters.

The proper development of background data is of great importance because it establishes the criteria upon which subsequent statistical analysis of upgradient wells and downgradient wells are based. The statistical evaluation of groundwater monitoring data is used to determine significant increases in any of the monitored constituents over time. The use and selection of proper statistical tools, from compiling the data to determining data population distributions and other preliminary statistical measures, cannot be overstated.

Some of the procedures utilized to evaluate the Davis Junction Landfill, data are described in the U.S. Environmental Protection Agency (USEPA) 1989, Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities: Interim Final Guidance and the (USEPA) 1992, Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities: Addendum to Interim Final Guidance (Draft).

Also reviewed was the Fisher and Potter, 1989, Methods for Determining Compliance with Groundwater Quality Regulations at Waste Disposal Facilities:- Final Report, submitted to the Wisconsin Department of Natural Resources.

DATA EVALUATION

WELLS EVALUATED

The following list enumerates the existing Davis Junction Landfill wells from which sample data was obtained and used for this report. The wells are grouped according to their location, either upgradient or midgradient and downgradient within each aquifer. The upper aquifer, as referred to in this report, includes the silts and fine sands which was termed the shallow aquifer in the previous Analytical Chemistry and Environmental Services, Inc. report. Likewise, the main aquifer, including the sand and gravel, was referred to as the intermediate aquifer in the previous report. The deep aquifer cited in this report is the same deep aquifer described in the previous background study report and represents a deep level of the main aquifer. A single, very deep well, G163D, monitors sand and gravel within the buried bedrock valley at a depth of 160 feet below ground surface; and this is referred to herein as the bedrock valley aquifer. Figure 1 shows

the locations of these monitored levels with respect to site geology.

The surficial wells are positioned to sample groundwater located within the surficial deposits and kettles at the waste management facility. These wells demonstrated a commonality in the diversity found in the water quality data characterizing the wells. There was repeated diversity between individual downgradient wells as compared to the one upgradient well, G166S, as well as a repeated diversity between each of the individual downgradient wells. Conversations with R. Jennings, the site Hydrogeologist, emphasized that these wells are screened in geologically diverse surficial deposits and are subject to surface conditions such as rainfall and run-off, as well as any effects from nearby traffic or construction activities.

A complete description of these wells and their location can be found in Jennings' Report of Hydrogeological Investigations, submitted to the IEPA in February, 1994, and the wells are listed below.

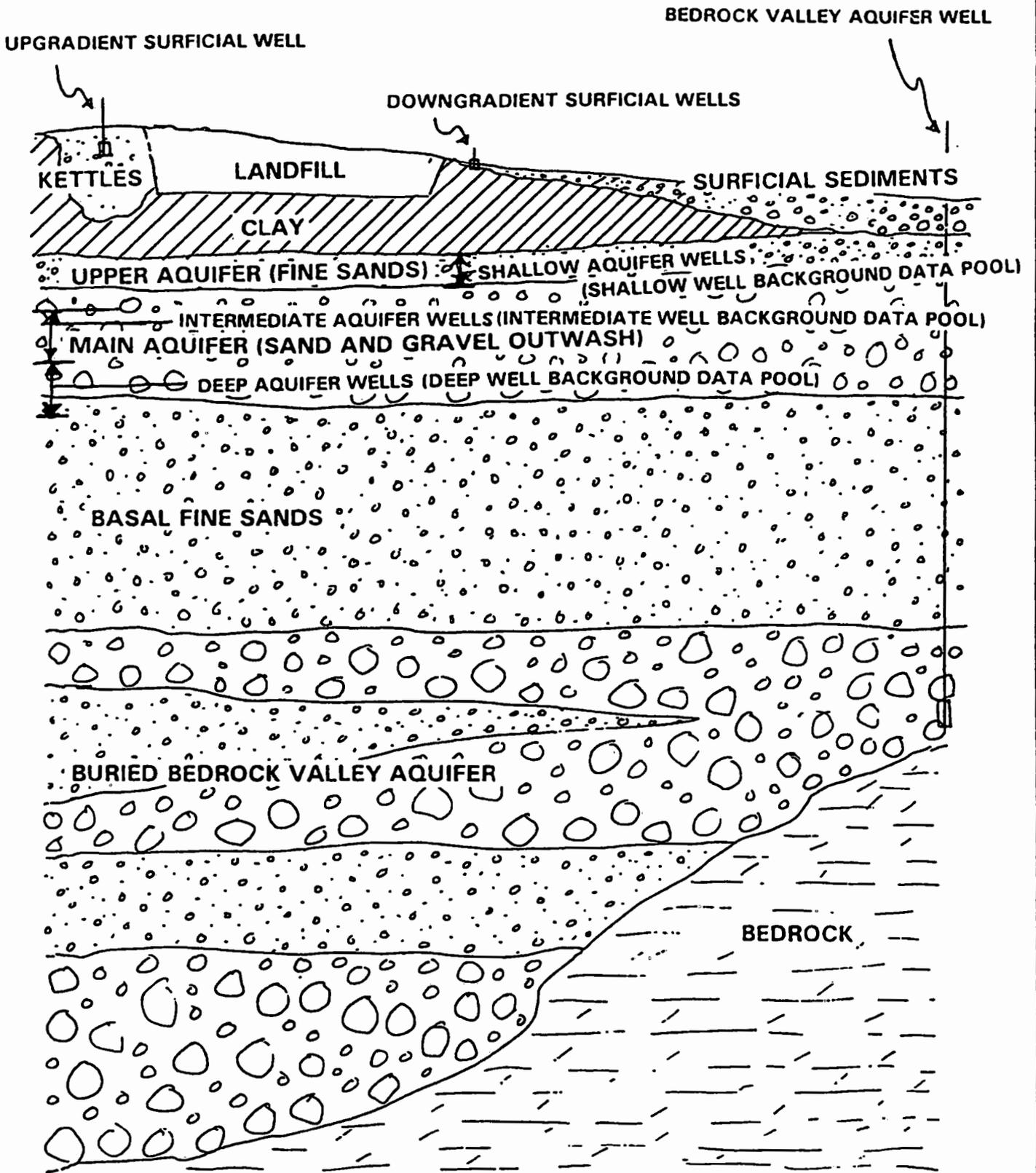


FIGURE 1

GENERALIZED GEOLOGY AND MONITORED AQUIFER LEVELS

EXISTING DAVIS JUNCTION WELLS

UPPER AQUIFER

UPGRADIENT WELLS

G166S
G162S
G166I

MIDGRADIENT

G161I
G164I

DOWNGRADIENT WELLS

G155I G169I
G161I G170I
G163S G171I
G167I

MAIN AQUIFER

UPGRADIENT WELLS

G162D
G166D

MIDGRADIENT

G161D
G164D

DOWNGRADIENT WELLS

G155D G170D
G161D G171D
G163I G172D
G167I G173D
G169I G174D

SURFICIAL

UPGRADIENT WELLS

G166S

MIDGRADIENT

G164S

DOWNGRADIENT WELLS

G164S G167S
G155S G168S

BEDROCK VALLEY AQUIFER

DOWNGRADIENT WELLS

G163D

It is noted here that intermediate and deep wells in AC&E Services, Inc. report, 1994, were used for separate background pools; in this report, the intermediate well data pool was used to represent the main aquifer. At the existing site, only G172D, G173D, and G174D were screened at the deeper levels. Consequently, all wells screened in the main aquifer are compared to the intermediate data set. G163D, screened at a depth of 160 feet below the ground surface, has no background data set to which it can be compared at this time. For the purposes of a broad general comparison, it is discussed with respect to the "deep aquifer" data set which represents the deepest portion of the main sand and gravel aquifer. It is acknowledged that this is a deficient comparison and well G163D does show some variations with respect to the deep aquifer data set, which are discussed in the parameter evaluation sections.

The data for all parameters evaluated were obtained from laboratory data reported by National Environmental Testing, Inc. (NET) analyses reports and were provided by the client. A complete set of NET's analytical reports are contained in Appendix A, Volumes 1, 2, 3, and 4 which are in separate binders, included as attachments to this report.

PARAMETERS EVALUATED**GROUNDWATER CONTAMINATION INDICATOR PARAMETERS**

For purposes of this report, the analyses have been grouped into several categories. All of the data evaluations included the Indicators of Groundwater Contamination per the 35 Illinois Administrative Code 725.192 (a):

- pH
- Specific Conductance
- Total Organic Carbon
- Total Organic Halogens

GROUNDWATER QUALITY PARAMETERS

The parameters used to establish groundwater quality per the 35 Illinois Administrative Code 725.192 (c) also were monitored and evaluated within the present water study for all the wells:

- Chloride
- Iron
- Manganese
- Phenols
- Sodium
- Sulfate
- Calcium
- Alkalinity
- Magnesium
- Total Dissolved Solids

RCRA METALS

As required by the IEPA June 18, 1992 Notification of Deficiency (NOD), Section E-7, the eight RCRA metals also were examined during the monitoring period covered in this report:

- Arsenic
- Barium
- Cadmium
- Chromium
- Lead
- Mercury
- Selenium
- Silver

VOLATILE ORGANIC COMPOUND PARAMETERS

Additionally, according to the NOD requirements, water samples obtained between the first quarter of 1990 through the first quarter of 1994 were analyzed for volatile organic compounds determined by Method 8240 and these include:

- | | |
|---------------------------|-----------------------------|
| • Acrolein | • Acrylonitrile |
| • Benzene | • Bromodichloromethane |
| • Bromoform | • Bromomethane |
| • Carbon tetrachloride | • Chlorobenzene |
| • Chloroethane | • 2-Chloroethyl vinyl ether |
| • Chloroform | • Chloromethane |
| • Dibromochloromethane | • 1,2-Dichlorobenzene |
| • 1,3-Dichlorobenzene | • 1,4-Dichlorobenzene |
| • 1,1-Dichloroethane | • 1,2-Dichloroethane |
| • 1,1-Dichloroethene | • trans-1,2-Dichloroethene |
| • cis-1,2-Dichloroethene | • 1,2-Dichloropropane |
| • cis-1,3-Dichloropropene | • trans-1,3-Dichloropropene |
| • Ethylbenzene | • Methylene Chloride |
| • Methyl ethyl ketone | • Methyl isobutyl ketone |

- 1,1,2,2-Tetrachloroethane
- Toluene
- 1,1,2-Trichloroethane
- Xylenes
- Carbon disulfide
- 2-Hexanone
- Tetrahydrofuran
- Vinyl Acetate
- Ethyl Methacrylate
- trans-1,4-Dichloro-2-Butene
- Tetrachloroethene
- 1,1,1-Trichloroethane
- Vinyl chloride
- Acetone
- Dichlorodifluoromethane
- Styrene
- Trichlorofluoromethane
- m,p-Xylene
- Iodomethane

Separate tables, containing the pooled groundwater data for each parameter included in this study, are contained in the Appendix sections of this report. Appendix B contains all the input data for the upper aquifer; Appendix C contains all the input data for the main aquifer; Appendix D contains the input data for the surficial deposits and kettles; Appendix E contains the input data for the bedrock valley aquifer. The pooled and collated data in these appendices are arranged in tables according to well site designations. The tables contain a list of concentration values for each parameter, include the measuring units reported and list the reporting quarter during which the data was collected. The majority of reporting quarters span the first quarter of 1990 through the first quarter of 1994.

During the monitoring history at the Davis Junction Landfill, parameters in addition to those contained in the above lists were analyzed. In many instances, these chemical constituents were reported as not detected or the parameter was very infrequently monitored. The parameters not discussed in this report tended to

be characterized by both of those qualifiers. Since there were very few analyses, statistical evaluation would be highly suspect because of the insufficient data and therefore these parameters were not further examined. Likewise, the non-detect parameters, if not found in any location, either upgradient or downgradient, needed no further study.

STATISTICAL PROCEDURES

GRAPHICAL ANALYSIS OF TREND

The data for each parameter with measurable chemical concentrations were graphically depicted displaying concentration values versus time. Graphs were prepared for each parameter studied; the upgradient data were shown in one plot and the downgradient data in a second in order to facilitate the comparison of each well's concentration range to its aquifer's upgradient concentrations. With few exceptions, the graphs were constructed with the same concentration range in order to facilitate review and comparison and to minimize analysis bias.

Display of the groundwater data in this manner was a particularly integral step for the data evaluation. These plots

demonstrated the trend of a chemical parameter within the individual well in addition to its trend and concentration level with respect to the other groundwater data obtained from similarly located wells in the aquifers. A strong statement of support for this type of visualization and evaluation of monitoring data was included in the summary statement contained in the Fisher and Potter, 1989, Methods for Determining Compliance with Groundwater Quality Regulations at Waste Disposal Facilities: Final Report, submitted to the Wisconsin Department of Natural Resources. "Graphical displays are by far the most valuable and essential tools" in a regulatory context. Along with an explanation of geology, the creation of graphs for the chemical data as concentration versus time is essential and illustrates the relative groundwater quality between wells.

STATISTICAL ANALYSIS

While graphical presentations aid the understanding of water quality, the application of statistics to the evaluation process is equally necessary. Following data input and collation, a set of descriptive statistics was generated for each parameter. This same procedure was the initial step used to characterize each chemical constituent included in the background groundwater quality study, which established a ninety-five percent upper tolerance interval or proposed applicable groundwater quality standard for each parameter monitored. Throughout this report, the downgradient groundwater chemical constituents will be compared to this standard in order to

determine whether the waste management area has affected the groundwater quality.

The groundwater obtained from the downgradient surficial deposits and kettles were compared with the upgradient surficial well or described against the individual well's own historic data. The groundwater obtained from these wells was not comparable to the groundwater obtained from the upper aquifer and were unique as to their position and location within the waste management facility. Jennings' Report of Hydrogeological Investigations further describes these wells.

DESCRIPTIVE STATISTICS

A set of descriptive statistics was generated for each of the measured inorganic parameters within each well which had less than fifteen percent of non-detect data. Within this report, a non-detected parameter means that the measured concentration value was below the analytical detection limit. These values are reported as "less than" or <DL (detection limit) with an actual-concentration-value substituted for the DL.

In general, the parameters which had measurable concentrations included pH, specific conductance and total organic carbon from the indicators of groundwater contamination, (725.192 (a)). Among the parameters used to establish groundwater quality, (725.192 (c)), all

the chemical constituents were reported above their respective detection limits. The eight RCRA metals and method 8240 volatile organic compounds were consistently reported below their detection limit and therefore could not be described by this method.

Appendix F contains the tables of descriptive statistics for the parameters measured in wells monitoring the upper aquifer, Appendix G contains the descriptive statistics for the parameters measured in wells monitoring the main aquifer, Appendix H contains the tables of descriptive statistics for the parameters measured in the surficial wells, and Appendix I contains the descriptive statistics for the parameters measured in the bedrock valley aquifer.

These tables include the arithmetic mean, median, variance, standard deviation, coefficient of skewness, coefficient of Kurtosis and the coefficient of variation. These data tables of descriptive statistics were calculated by the statistical program, STATGRAPHICS-Plus, Version 6. STATGRAPHICS-Plus is a menu-driven microcomputer software package that integrates data transformation and generation capabilities, a wide variety of statistical and mathematical analyses, and high resolution color graphics. The system provides the tools to run a statistical process and contains two types of procedures. The nonanalytical tasks include data development by way of importing files and joining files, modifying graphs, as well as editing and recoding data. The statistical procedures allow for the analysis of data and the output production

in both text and graphics forms. Documentation for the calculations utilized within the STATGRAPHICS-Plus program used in this report are contained in Appendix J. Included in this appendix is a copy of the STATGRAPHICS-Plus Reference Manual's complete section on the mathematical treatment of the descriptive statistics calculations as performed within the program.

In order to manage sets of chemical data within the STATGRAPHICS-Plus program when the data set contained measurements reported below the analytical detection limit, the directional guidelines available in the USEPA, 1989, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Interim Final Guidance and the USEPA, 1992, Addendum to the Interim Final Guidance, were followed. When a set of data for one parameter contained less than fifteen percent non-detects or censored data, the detection limit concentration value was replaced with a value equal to one-half the detection limit. Following that simple procedure, a set of descriptive statistics were then computed for each parameter.

If the percentage of censored data lies between fifteen and fifty percent, either Cohen's or Aitchison's adjustment to the mean and standard deviation were used to determine the values. Cohen's adjustment assumes that all the data come from the same population, but that the censored data values lie below the analytical equipment detection limits. Aitchison's adjustment assumes that the censored data are free of contamination and are regarded as

zero concentrations. Garry L. Routledge, Ph.D., an independent consultant from Alpine Analytics, Vancouver, Washington, developed a set of macros which would work in conjunction with the STATGRAPHICS-Plus program and generate either Cohen's or Aitchison's adjusted mean and standard deviation. Appendix J contains reprints of the discussions as presented in the USEPA, 1989, Interim Final Guidance and the USEPA, 1992, Addendum to the Interim Final Guidance, including the mathematical calculations involved with these adjustments. A section of Dr. Routledge's documentation Environmental Statistics Macros for STATGRAPHICS-Plus, which describes the macros developed, also is contained in Appendix J.

Both procedures assume that the underlying data are normally distributed. In that respect, the original concentration values routinely were log-transformed in the process of computing either Cohen's or Aitchison's adjustment of the means and standard deviations, since most environmental concentration data, that is, water, air or soil measurements, tend to be positively skewed.

Mean and Median Values

The arithmetic mean and median were included as a measure of the constituent's central tendency. The arithmetic mean is the most familiar average, takes into account every data point and is

used repeatedly with statistical methods. The median or middle score approximates the arithmetic mean of a symmetrical (bell shaped or Gaussian) data population. It should be noted that with a non-symmetrical data population, the median value lies well to either side of the mean and its variation from the mean is used as one indicator of a skewed population. Non-symmetrical or skewed data populations contain extreme data points in comparison to the main body of data. These extreme data values are positioned at the ends and determine the elongated tails of the bell shaped curve. The presence of one or more outermost data points has a disproportionate affect upon an arithmetic mean. In these cases, the median becomes a better description of central tendency in that the median or middle value is not effected by the size of drastic data values. However, the arithmetic mean is always included in a set of descriptive statistics since it remains a statistically unbiased estimate of the mean value no matter how the particular population is distributed.

Data Dispersion

Both variance and standard deviations values are a measure of data dispersion with the standard deviation being the most common value used in subsequent calculations describing the data population. The lower the value for a standard deviation the more consistency displayed by a set of sample data.

The coefficients of variation, skewness and kurtosis are useful for examining the distributional properties of the sample data and are important tools used to characterize a normal distribution for data pools containing less than fifteen percent non-detect values. A coefficient of variation is described as the ratio of the standard deviation relative to a sample mean. The STATGRAPHICS-Plus statistical program presents this ratio value as a number which has been multiplied by 100. A ratio of standard deviation to the mean above a value of one (1.0), or over one hundred (100) in this report, is one indicator that the sampled population is not a normal distribution and that the data are highly skewed.

Another descriptive statistic in each table is the coefficient of skewness. This number also can be used as a quick indication of a symmetrical data population or a normal distribution. Generally, a coefficient of skewness, much larger than one (1.0), correlates with sample data that is positively skewed and probably not from a normal distribution.

The kurtosis coefficient reveals how flat or steep the population distribution is with respect to the shape of the Gaussian curve. Since there are any number of symmetric distributions, this characteristic further distinguishes the normal distribution. For a normal distribution the kurtosis coefficient is zero. When the coefficient is less than zero, the curve is flat

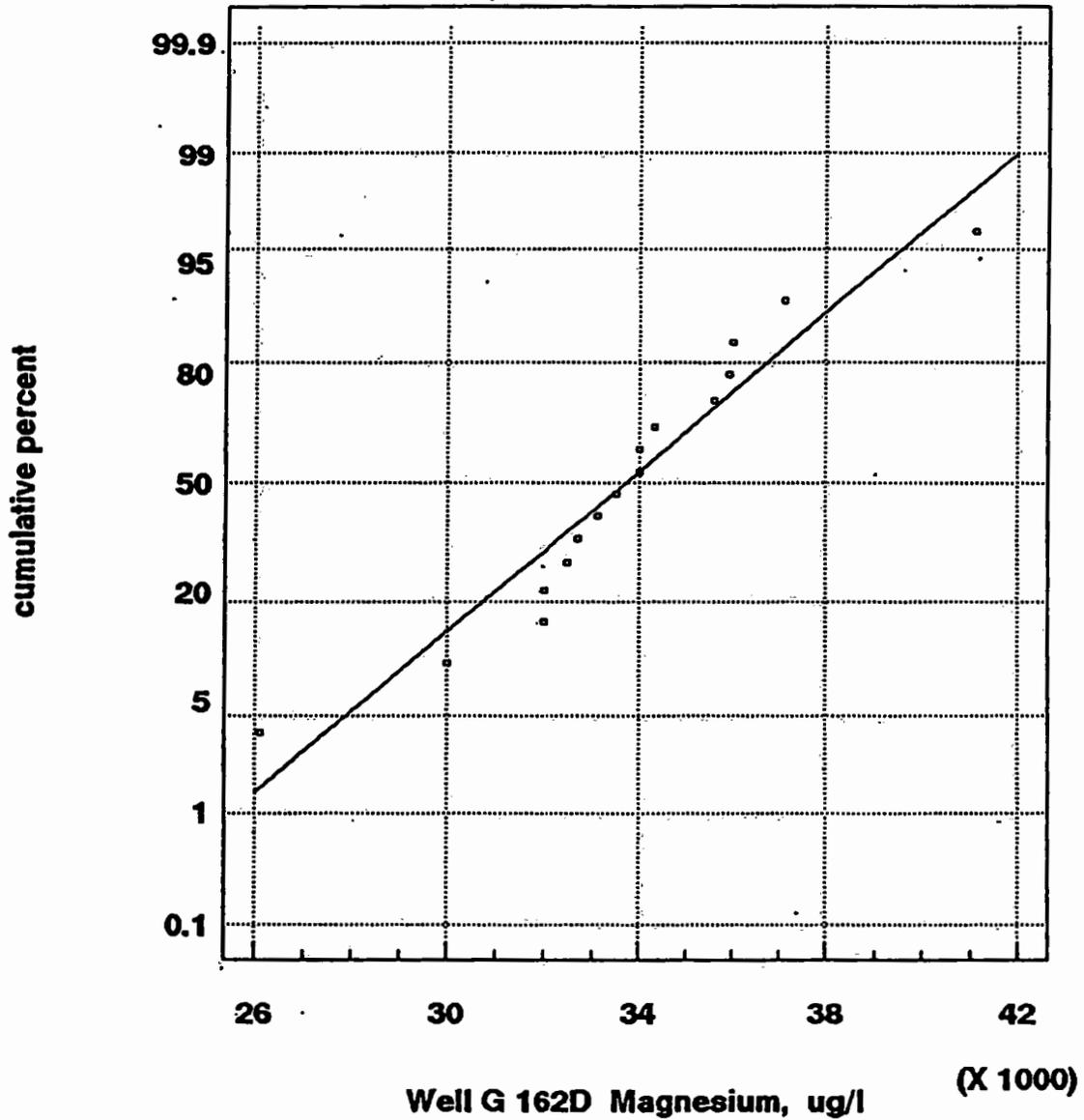
with short tails; when the coefficient is greater than zero, the curve is either very steep at the center or has long tails.

Normal Population Distribution

A vast majority of statistical tests are based upon the assumption that the values within a data population can be described by a normal distribution. A normally distributed population is pictorially represented by the bell shaped or Gaussian curve. Failure of a data population to follow a normal distribution can lead to incorrect conclusions involving a data set if parametric or normal distribution based statistical tests are used.

As suggested in the USEPA, 1989, Interim Final Guidance, a normal probability plot, which is a qualitative method, is used to test for distribution and is useful for illustrating deviations from normality. Figure 2 represents the type of plot produced by the statistical program, STATGRAPHICS-Plus. This plot is routinely constructed while examining the population distribution for a set of data values with less than fifteen percent non-detects. A set of observations will plot as a reasonably straight line in the case of a normally distributed population. In this plot, the y-axis is scaled to represent probabilities (cumulative distribution function in the STATGRAPHICS-Plus program) according to the normal

FIGURE 2
Example of Normal Probability Plot



BFI Davis Junction Landfill

distribution and the data values are arranged on the x-axis in increasing order.

The same techniques can be used to check whether a set of observations follow a lognormal distribution. The statistical analysis is the same except that each observation is replaced by its natural logarithm. Most environmental concentration data tend to be positively skewed; therefore a lognormal distribution is a better default model and should be accepted unless the distribution-fit test results strongly suggest rejecting the lognormal. The manipulation is expressed by:

$$Y = \ln (x)$$

where x represents the original concentration
 \ln signifies the natural logarithm

However, such transformations can introduce a bias to some summary statistics such as the mean and standard deviation when original units are obtained simply by exponentiating the respective summary statistics of the log-transformed data. In cases where log-transformed values better describe a normal distribution and are used to determine groundwater parameters, all future well comparisons within that parameter must be made with log-transformed data for significance or compliance.

Before computing either Cohen's or Aitchison's adjustment for data pools containing between fifteen and fifty percent non-detects, similar probability plots are constructed under each adjustment's distribution assumptions. A decision as to which approach is more appropriate for any individual sample data can be made by examining the resulting probability plots. If a visual comparison of the probability plots do not clearly reveal the most linear relationship, probability plot correlation coefficients can be computed. The method resulting in the higher correlation coefficient, obtained from either adjustment, represents the most linear relationship and therefore the best assumption for normality. The critical probability plot correlation coefficient value below which the assumed distribution was rejected is based upon sample size. The relationship between probability plot correlation coefficient and sample size at varying confidence levels is contained in a table available in statistical literature. A copy of the table, reprinted from the USEPA, 1989, Interim Final Guidance is included in Appendix J. Together all these pieces of information ultimately reveal the least biased statistical method which should be chosen to describe the particular data set. If neither the normal or lognormal distribution criterion were satisfied, a non-normal population distribution was accepted for the particular sample pool.

Statistical Intervals

After examining the normal or lognormal distribution for a set of observations, a statistical interval is constructed from the data. According to the USEPA, 1989, Interim Final Guidance, three types of intervals are often constructed from data: confidence intervals, tolerance intervals and prediction intervals. Most commonly, a confidence interval for a parameter such as the population mean is encountered. The usual confidence interval for the mean gives information about the average concentration level at a particular site. This particular interval offers little information about the highest sample concentration that is likely to be observed over time. Therefore, by definition, a confidence interval for the mean defines with a chosen confidence limit only the average value. It does not describe the distribution that contributed to that mean value. It was suggested that the confidence interval be used "when downgradient samples are compared to a ground water protection standard representing the average of on-site background data, as is sometimes the case with an alternate contaminant level" (Addendum to Interim Final Guidance). A common mistake is to use confidence intervals when tolerance or prediction intervals will better answer the environmental question asked.

Whereas confidence intervals are used to determine the limits on the mean data, prediction intervals are designed to contain a specific future observation within one population with a specified degree of confidence. This interval is most useful during

detection monitoring. Intra-well comparisons can be made between the data obtained from a current sampling event and the background data pool for the monitor well. Similarly, data collected from a group of compliance wells during one sampling event can be compared to the background groundwater data. Prediction interval analysis is similar to the calculations involved with a tolerance interval. Familiarity and personal preference "would be the only reason for selecting them over the method for tolerance limits" (USEPA, 1989, Interim Final Guidance).

The purpose of the tolerance interval is to define a concentration range from background data within which a designated proportion of the population is contained or to define standard exceedances. Two coefficients are associated with a tolerance interval. One is the proportion of the population that the interval contains, called the coverage. The second is the degree of confidence with which the interval reaches the specific coverage. A general choice is to construct a confidence level of 95 percent so that the interval will contain at least 95 percent of the distribution of the observations obtained from the background data. A tolerance interval will define a concentration range from background well data, within which the chosen proportion of the monitoring observations should fall. Concentrations from compliance wells that fall within this tolerance interval demonstrate evidence of non-contamination.

A tolerance interval is calculated using the arithmetic mean and standard deviation obtained from the sample data. A one-sided upper tolerance interval with an average coverage of ninety-five (95%) percent can be constructed directly with the aid of a Student's t-distribution table.

$$k = t \sqrt{1 + \frac{1}{n}}$$

where :

k is the one sided upper tolerance factor

t is the 0.95 (95%) quantile obtained from a t-distribution table with (n-1) degrees of freedom

n is the sample size

The interval is then calculated:

$$\text{Tolerance Interval (TL)} = \bar{x} + kS$$

\bar{x} = is the sample mean

S is the sample standard deviation

As the percent of censored data for an individual parameter data pool rises above fifty percent, a nonparametric tolerance interval is constructed. Likewise, when the assumptions of normal or lognormal population distribution cannot be justified with a non-censored or non-detect data pool below fifty percent, a

nonparametric tolerance interval is computed. In order to obtain a nonparametric tolerance limit with an equivalent confidence level established for the parametric test, more data points are required than for the corresponding parametric interval based upon an assumed normal or lognormal distribution. In other words, for smaller sample sizes a nonparametric tolerance interval necessarily has a lower confidence level associated with it for the same coverage. With a small sample size, it may not be possible to construct a nonparametric ninety-five percent coverage tolerance limit with a ninety-five percent confidence level.

The upper tolerance limit in a nonparametric interval with the highest possible confidence is constructed using an order statistic of the sample data, with the maximum value taken as the upper tolerance limit.

When more than ninety percent of the data pool is censored data, the detected values are modeled by using the Poisson distribution. The Poisson model describes the detected values over a large number of trials, where the probability of occurrence is low but constant. In this model, each concentration value is counted separately but cumulatively, and the higher detected concentration values contributes a greater proportion to the interval value than a lower concentration detected value would. The tolerance interval in this case is also calculated so that the desired confidence probability is ninety-five percent and the population coverage is ninety-five percent. Appendix J contains

reprinted sections from the USEPA, 1992, Addendum to the Interim Final Guidance as well as documentation describing the macro developed for STATGRAPHICS-Plus, written by Dr. Routledge, to facilitate the use of the Poisson Model.

DISCUSSION: DAVIS JUNCTION PHASE I DATA

PROPOSED APPLICABLE GROUNDWATER QUALITY STANDARDS

As stated earlier, applicable groundwater quality standards were proposed in the February, 1994 submittal to the IEPA. Table 1 contains a summary of the standards recommended for the upper aquifer for all the inorganic parameters monitored at the Davis Junction Landfill site. Table 1 lists the population distribution, sample size, mean value, standard deviation and the upper tolerance interval for each parameter. Table 2 contains the same information for the metals monitored. None of the volatile organic compounds were detected in the AC&E Services, Inc. background groundwater quality study. For these parameters, the practical quantitation limits were used to establish the groundwater quality standards and are listed in Table 3.

Summary information obtained in the previous background groundwater quality study for the intermediate level of the main

aquifer are also included. Table 4 contains the information for the inorganic parameters, Table 5 contains the information for the metal parameters and Table 6 contains the data for the volatile organic compounds.

Tables 7, 8, and 9 contain the information as described above for the inorganic, metal and volatile organic compounds, respectively, which was obtained for the deeper level within the main sand and gravel outwash aquifer.

These proposed applicable groundwater quality standards will be used in the following section to evaluate whether significant changes have occurred in groundwater quality at the existing Davis Junction site.

TABLE 1
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF UPPER AQUIFER POOLED DATA
INORGANICS

Parameter units	Distribution	Sample Size	Mean	Standard Deviation	Upper 95% Confidence Tolerance Interval
Alkalinity, mg/l	Normal	40	308.2	41.8	385.5
BOD, mg/l	Non-Normal 92% ND	26	Median <2.0		3.0
Boron, mg/l	Non-Normal 63% ND	38	Median <0.1		0.23
Chloride, mg/l	Log Normal** 20% ND	39	ln 2.6924 / 14.77	ln 1.5919 / 4.91	ln 5.4460 / 231.84
COD, mg/l	Non-Normal 65% ND	26	Median <20		107
Conductivity, uhmos/cm	Normal	40	514.5	152.2	777.3
Cyanide, mg/l	100% ND	40	Median <0.02		<0.02
Fluoride, mg/l	Normal	35	0.23	0.045	0.303
FOG, mg/l	Non-Normal 63% ND	16	Median <1.0		2.0
Ammonia-N, mg/l	Normal* 28% ND	28	0.179	0.119	0.389
Nitrate, mg/l	Non-Normal 64% ND	33	<0.13		14.7
pH, units	Normal	40	7.42	0.41	6.71 - 8.13
Phenol, mg/l	Non-Normal 75% ND	36	Median <0.002		0.049
Phosphorus, mg/l	Log Normal* 50% ND	36	ln -3.0286 / 0.048	ln 0.8512 / 2.34	ln -1.5497 / 0.212
Dissolved Solids, mg/l	Normal	19	378.9	61.8	491.7
Sulfate, mg/l	Normal	40	50.8	28.7	100.4
Temperature, F	Normal	38	52.9	4.7	61.0
TOC, mg/l	Log Normal* 40% ND	42	ln 0.1856 / 1.20	ln 1.4369 / 4.21	ln 2.6620 / 14.3
TOX, mg/l	Non-Normal 74% ND	42	Median <0.01		0.038

* Aitchison's adjustment to the average and standard deviation

** Cohen's adjustment to the average and standard deviation

TABLE 2
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF UPPER AQUIFER POOLED DATA
METALS

Parameter mg/l	Distribution	Sample Size	Mean mg/l	Standard Deviation	Upper 95% Confidence Tolerance Interval mg/l
Aluminum	Log Normal* 35% ND	17	ln 0.0465 / 1.05	ln 0.5881 / 1.80	ln 1.1337 / 3.11
Aluminum, dissolved	88% ND	26	Median <0.5		0.78
Arsenic	69% ND	16	Median <0.001		0.002
Arsenic, dissolved	78% ND	40	Median <0.001		0.023
Barium	100% ND	16	Median <0.1		< 0.1
Barium, dissolved	93% ND	42	Median <0.1		0.48
Beryllium	100% ND	16	Median <0.05		< 0.05
Beryllium, dissolved	100% ND	26	Median <0.05		< 0.05
Cadmium	100% ND	16	Median <0.005		< 0.005
Cadmium, dissolved	91% ND	34	Median <0.005		0.008
Calcium	Normal	16	93.05	14.95	120.95
Calcium, dissolved	Normal	40	83.48	13.54	119.16
Chromium	94% ND	16	Median <0.01		0.017
Chromium, dissolved	94% ND	36	Median <0.01		0.014
Cobalt	100% ND	21	Median <0.1		< 0.1
Cobalt, dissolved	100% ND	26	Median <0.1		< 0.1
Copper	100% ND	17	Median <0.01		< 0.01
Copper, dissolved	100% ND	26	Median <0.01		< 0.01
Iron	Normal	16	1.58	0.91	3.22
Iron, dissolved	Log Normal* 26% ND	40	ln -0.2859 / 0.75	ln 0.6888 / 1.99	ln 0.9035 / 2.47
Lead	88% ND	16	Median <0.005		0.022
Lead, dissolved	79% ND	29	Median <0.005		0.04
Magnesium	Normal	16	43.24	6.07	54.21
Magnesium, dissolved	Normal	42	38.59	7.92	52.24

* Aitchison's adjustment to the average and standard deviation

** Cohen's adjustment to the average and standard deviation

TABLE 2 (CONT.)
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF UPPER AQUIFER POOLED DATA
METALS

Parameter mg/l	Distribution	Sample Size	Mean mg/l	Standard Deviation	Upper 95% Confidence Tolerance Interval mg/l
Manganese	Normal* 25% ND	16	0.026	0.062	0.138
Manganese, dissolved	Log Normal 10% ND	39	ln -2.8451 / 0.058	ln 1.0475 / 2.85	ln -1.0331 / 0.356
Mercury	88% ND	16	Median <0.0002		0.0005
Mercury, dissolved	80% ND	40	Median <0.0002		0.0004
Nickel	81% ND	16	Median <0.05		0.05
Nickel, dissolved	76% ND	41	Median <0.05		0.03
Potassium	Log Normal* 19% ND	16	ln 0.0843 / 1.09	ln 0.6267 / 1.87	ln 1.2167 / 3.38
Potassium, dissolved	Log Normal** 38% ND	40	ln 0.0587 / 1.06	ln 0.7082 / 2.03	ln 1.2816 / 3.60
Selenium	100% ND	16	Median <0.002		< 0.002
Selenium, dissolved	100% ND	40	Median <0.002		< 0.005
Silicon	Normal 6% ND	16	8.64	3.13	14.30
Silicon, dissolved	Normal 4% ND	26	7.29	2.00	10.77
Silver	100% ND	16	Median <0.01		< 0.01
Silver, dissolved	100% ND	39	Median <0.01		< 0.01
Sodium	Normal	16	6.86	3.33	12.88
Sodium, dissolved	Log Normal 2% ND	42	ln 2.4032 / 11.06	ln 1.1138 / 3.05	ln 4.3227 / 75.39
Thallium	100% ND	16	Median <0.2		< 0.2
Thallium, dissolved	100% ND	26	Median <0.2		< 0.2
Vanadium	94% ND	16	Median <0.05		0.07
Vanadium, dissolved	100% ND	26	Median <0.05		< 0.05
Zinc	67% ND	18	Median <0.02		0.026
Zinc, dissolved	92% ND	37	Median <0.02		0.074

* Aitchison's adjustment to the average and standard deviation

** Cohen's adjustment to the average and standard deviation

**TABLE 3
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF UPPER AQUIFER POOLED DATA
BACKGROUND / DRINKING WATER ORGANICS**

PARAMETER	SAMPLE SIZE	METHOD	DETECTION LIMIT ug/l	PQL ug/l	STANDARD ug/l
ACROLEIN	28	8240	100.0		
ACRYLONITRILE	28	8240	10.0		
• BENZENE	28	8240	1.0	5.0	5.0 ♦
• BROMODICHLOROMETHANE	28	8240	1.0		
• BROMOFORM	28	8240	1.0		
• BROMOMETHANE	28	8240	10.0		
• CARBON TETRACHLORIDE	28	8240	1.0	1.0	5.0 ♦
• CHLORO BENZENE	28	8240	1.0	5.0	100.0 ~
• CHLOROETHANE	28	8240	10.0		
2-CHLOROETHYL VINYL ETHER	28	8240	2.0		
• CHLOROFORM	28	8240	1.0		
• CHLOROMETHANE	28	8240	10.0		
• DIBROMOCHLOROMETHANE	28	8240	1.0		
• 1,2-DICHLORO BENZENE	28	8240	1.0	10.0	60.0 ~
• 1,3-DICHLORO BENZENE	28	8240	1.0	5.0	
• 1,4-DICHLORO BENZENE	28	8240	1.0	5.0	75.0 ♦
• 1,1-DICHLOROETHANE	28	8240	1.0	5.0	
• 1,2-DICHLOROETHANE	28	8240	1.0		5.0 ♦
• 1,1-DICHLOROETHENE	28	8240	1.0		7.0 ♦
• trans-1,2-DICHLOROETHENE	28	8240	1.0	1.0	100.0 ~
• cis-1,2-DICHLOROETHENE	28	8240	1.0	5.0	70.0 ~
• 1,2-DICHLOROPROPANE	28	8240	1.0	5.0	5.0 ~
• cis-1,3-DICHLOROPROPENE	28	8240	1.0		
• trans-1,3-DICHLOROPROPENE	28	8240	1.0		
• ETHYLBENZENE	28	8240	1.0	5.0	700.0 ~
• METHYLENE CHLORIDE	28	8240	5.0	10.0	
• METHYL ETHYL KETONE	28	8240	5.0	10.0	
• METHYL ISOBUTYL KETONE	28	8240	5.0	50.0	
• 1,1,2,2-TETRACHLOROETHANE	28	8240	1.0		
• TETRACHLOROETHENE	28	8240	1.0	5.0	5.0 ~
• TOLUENE	28	8240	1.0	5.0	1000.0 ~
• 1,1,1-TRICHLOROETHANE	28	8240	1.0	5.0	200.0 ♦
• 1,1,2-TRICHLOROETHANE	28	8240	1.0		
• TRICHLOROETHENE	28	8240	1.0	10.0	5.0 ♦
• VINYL CHLORIDE	28	8240	10.0	10.0	2.0 ♦
• XYLENES	28	8240	5.0	5.0	10 ~

(*) DENOTES 620.410 LIST OF ORGANIC COMPOUNDS INCLUDING EIGHT DRINKING WATER STANDARD AND FIFTY-ONE (51) UNREGULATED ORGANICS

(♦) STANDARDS FROM 620.410 LIST OF ORGANIC COMPOUNDS

(~) DENOTES EIGHT (8) DRINKING WATER AND FIFTY-ONE (51) UNREGULATED ORGANIC COMPOUNDS STANDARDS

(#) CONSTITUENT FOUND IN LEACHATE

TABLE 3 (CONT.)
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF UPPER AQUIFER POOLED DATA
BACKGROUND / DRINKING WATER ORGANICS

PARAMETER		SAMPLE SIZE	METHOD	DETECTION LIMIT ug/l	PQL ug/l	STANDARD ug/l
ACETONE	#	28	8240	5.0	100	
* BROMOBENZENE		28	8240	2.0		
* BROMOCHLOROMETHANE		28	8240	1.0		
* n-BUTYLBENZENE		28	8240	2.0		
* sec-BUTYLBENZENE		28	8240	2.0		
* tert-BUTYLBENZENE		28	8240	2.0		
* ISOPROPYLBENZENE		28	8240	2.0		
CARBON DISULFIDE		28	8240	1.0		
* DIBROMOMETHANE		28	8240	1.0		
* o-CHLOROTOLUENE		28	8240	1.0		
* p-CHLOROTOLUENE		28	8240	1.0		
* 1,2-DIBROMO-3-CHLORO PROPAN	#	28	8240	1.0	25.0	
trans-1,4-DICHLORO-2-BUTENE		28	8240	1.0		
* DICHLORODIFLUOROMETHANE		28	8240	10.0		
* 1,1-DICHLOROPROPENE		28	8240	1.0		
* 1,3-DICHLOROPROPANE		28	8240	1.0		
* 2,2-DICHLOROPROPANE		28	8240	1.0		
* 1,3-DICHLOROPROPENE		28	8240	1.0		
* 1,2,3-TRICHLOROPROPANE		28	8240	2.0		
* ETHYLENE DIBROMIDE (EDB)		28	8240	1.0		
2-HEXANONE	#	28	8240	5.0	50.0	
* HEXACHLOROBUTADIENE		28	8240	2.0		
IODOMETHANE		28	8240	1.0		
ETHYL METHACRYLATE		28	8240	5.0		
* p-ISO PROPYLTOLUENE		28	8240	2.0		
* STYRENE	#	28	8240	1.0	10.0	100 **
* n-PROPYLBENZENE		28	8240	2.0		
* 1,1,1,2-TETRACHLOROETHANE		28	8240	1.0		
TETRAHYDROFURAN	#	28	8240	20.0	20.0	
* 1,2,3-TRICHLOROBENZENE		28	8240	5.0		
* 1,2,4-TRICHLOROBENZENE		28	8240	5.0		
* 1,2,4-TRIMETHYLBENZENE		28	8240	2.0		
* 1,3,5-TRIMETHYLBENZENE	#	28	8240	2.0	5.0	
* TRICHLOROFLUOROMETHANE		28	8240	1.0		
VINYL ACETATE		28	8240	1.0		
* m,p-XYLENE	#	28	8240	1.0	5.0	
* o-XYLENE	#	28	8240	1.0	5.0	

(*) DENOTES 820.410 LIST OF ORGANIC COMPOUNDS INCLUDING EIGHT DRINKING WATER STANDARD AND FIFTY-ONE (51) UNREGULATED ORGANICS

(#) CONSTITUENT FOUND IN LEACHATE

(*) STANDARDS FROM 820.410 LIST OF ORGANIC COMPOUNDS

(**) DENOTES EIGHT (8) DRINKING WATER AND FIFTY-ONE (51) UNREGULATED ORGANIC COMPOUNDS STANDARDS

TABLE 4
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF MAIN AQUIFER POOLED DATA
INORGANICS

Parameter units	Distribution	Sample Size	Mean	Standard Deviation	Upper 95% Confidence Tolerance Interval
Alkalinity, mg/l	Normal	52	309.7	41.8	381.11
BOD, mg/l	92% ND	38	Median <2.0		2.0
Boron, mg/l	Non-Normal 78% ND	50	Median <0.1		0.122
Chloride, mg/l	Normal** 38% ND	52	11.40	28.87	60.72
COD, mg/l	Normal* 43% ND	28	20.7	31.9	77.0
Conductivity, uhmos/cm	Normal	52	471.6	115.7	669.3
Cyanide, mg/l	100% ND	54	Median <0.005		< 0.005
Fluoride, mg/l	Normal	48	0.21	0.05	0.30
FOG, mg/l	Non-Normal 64% ND	28	Median <1.0		2.0
Ammonia/N, mg/l	Normal** 45% ND	40	0.133	0.167	0.421
Nitrate, mg/l	Non-Normal 66% ND	43	Median <0.1		15.6
pH, units	Normal	52	7.38	0.44	6.62 - 8.13
Phenol, mg/l	Non-Normal 78% ND	40	Median <0.002		0.032
Phosphorus, mg/l	Non-Normal 69% ND	48	Median <0.05		0.30
Dissolved Solids, mg/l	Normal	30	379.7	48.3	464.5
Sulfate, mg/l	Normal	52	46.4	28.6	95.3
Temperature, F	Normal	50	53.5	4.5	61.2
TOC, mg/l	Non-Normal 52% ND	54	Median <1.0		18.0
TOX, mg/l	Non-Normal 87% ND	54	Median <0.01		0.03

* Aitchison's adjustment to the average and standard deviation

** Cohen's adjustment to the average and standard deviation

TABLE 5
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF MAIN AQUIFER POOLED DATA
METALS

Parameter mg/l	Distribution	Sample Size	Mean mg/l	Standard Deviation	Upper 95% Confidence Tolerance Interval mg/l
Aluminum	Log Normal* 47% ND	30	ln -0.6515 / 0.52	ln 1.0533 / 2.87	ln 1.1977 / 3.31
Aluminum, dissolved	848% ND	38	Median <0.5		0.80
Arsenic	64% ND	28	Median <0.001		0.013
Arsenic, dissolved	87% ND	54	Median <0.001		0.011
Barium	93% ND	28	Median <0.1		0.11
Barium, dissolved	98% ND	54	Median <0.1		< 0.1
Beryllium	100% ND	28	Median <0.05		< 0.05
Beryllium, dissolved	100% ND	38	Median <0.05		< 0.05
Cadmium	89% ND	28	Median <0.005		< 0.005
Cadmium, dissolved	100% ND	54	Median <0.005		< 0.005
Calcium	Non-Normal	28	130.5		505.0
Calcium, dissolved	Normal	54	86.1	16.3	113.9
Chromium	93% ND	28	Median <0.01		0.03
Chromium, dissolved	100% ND	45	Median <0.01		< 0.01
Cobalt	100% ND	28	Median <0.1		< 0.1
Cobalt, dissolved	100% ND	38	Median <0.1		< 0.1
Copper	89% ND	28	Median <0.01		0.025
Copper, dissolved	100% ND	38	Median <0.01		< 0.01
Iron	Log Normal	28	ln 0.3064 / 1.36	ln 1.2647 / 3.54	ln 2.5029 / 12.2
Iron, dissolved	Normal 8% ND	52	0.71	0.43	1.44
Lead	79% ND	28	Median <0.005		0.011
Lead, dissolved	76% ND	54	Median <0.01		0.006
Magnesium	Log Normal	28	ln 3.8726 / 48.1	ln 0.4559 / 1.58	ln 4.6644 / 106.1
Magnesium, dissolved	Log Normal	54	ln 3.6530 / 38.6	ln 0.1590 / 1.17	ln 3.9244 / 520.62

* Aitchison's adjustment to the average and standard deviation

** Cohen's adjustment to the average and standard deviation

TABLE 5 (CONT.)
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF MAIN AQUIFER POOLED DATA
METALS

Parameter mg/l	Distribution	Sample Size	Mean mg/l	Standard Deviation	Upper 95% Confidence Tolerance Interval mg/l
Manganese	Log Normal 11% ND	28	ln -2.4241 / 0.089	ln 1.3458 / 3.84	ln -0.0870 / 0.92
Manganese, dissolved	Log Normal 6% ND	52	ln -2.8451 / 0.058	ln 0.7964 / 2.22	ln -1.5753 / 0.21
Mercury	89% ND	28	Median <0.0004		0.0004
Mercury, dissolved	87% ND	54	Median <0.0004		0.0004
Nickel	86% ND	28	Median <0.05		0.05
Nickel, dissolved	100% ND	54	Median <0.05		<0.05
Potassium	Log Normal* 39% ND	28	ln 0.2255 / 1.25	ln 0.5460 / 1.72	ln 1.16 / 3.19
Potassium, dissolved	Log Normal** 50% ND	52	ln -0.0097 / 0.99	ln 0.7435 / 2.10	ln 1.2606 / 3.53
Selenium	100% ND	28	Median <0.002		< 0.002
Selenium, dissolved	100% ND	54	Median <0.002		< 0.002
Silicon	Log Normal	28	ln 1.9891 / 7.31	ln 0.5306 / 1.70	ln 2.9250 / 18.6
Silicon, dissolved	Normal 8% ND	38	7.02	2.35	11.09
Silver	100% ND	28	Median <0.01		< 0.01
Silver, dissolved	100% ND	54	Median <0.01		< 0.01
Sodium	Normal	28	7.87	3.31	13.7
Sodium, dissolved	Normal	54	8.07	3.30	13.7
Thallium	100% ND	28	Median <0.2		< 0.2
Thallium, dissolved	100% ND	40	Median <0.2		< 0.2
Vanadium	93% ND	28	Median <0.05		0.07
Vanadium, dissolved	100% ND	40	Median <0.05		< 0.05
Zinc	80% ND	30	Median <0.02		0.03
Zinc, dissolved	84% ND	50	Median <0.02		0.04

* Aitchison's adjustment to the average and standard deviation

** Cohen's adjustment to the average and standard deviation

**TABLE 6
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF MAIN AQUIFER POOLED DATA
BACKGROUND / DRINKING WATER ORGANICS**

PARAMETER	SAMPLE SIZE	METHOD	DETECTION LIMIT ug/l	PQL ug/l	STANDARD ug/l
ACROLEIN	28	8240	100.0		
ACRYLONITRILE	28	8240	10.0		
* BENZENE	# 28	8240	1.0	5.0	5.0 ♦
* BROMODICHLOROMETHANE	28	8240	1.0		
* BROMOFORM	28	8240	1.0		
* BROMOMETHANE	28	8240	10.0		
* CARBON TETRACHLORIDE	28	8240	1.0	1.0	5.0 ♦
* CHLOROBENZENE	# 28	8240	1.0	5.0	100.0 ~
* CHLOROETHANE	28	8240	10.0		
2-CHLOROETHYL VINYL ETHER	28	8240	2.0		
* CHLOROFORM	28	8240	1.0		
* CHLOROMETHANE	28	8240	10.0		
* DIBROMOCHLOROMETHANE	28	8240	1.0		
* 1,2-DICHLOROETHANE	28	8240	1.0	10.0	60.0 ~
* 1,3-DICHLOROETHANE	# 28	8240	1.0	5.0	
* 1,4-DICHLOROETHANE	# 28	8240	1.0	5.0	75.0 ♦
* 1,1-DICHLOROETHANE	# 28	8240	1.0	5.0	
* 1,2-DICHLOROETHANE	28	8240	1.0		5.0 ♦
* 1,1-DICHLOROETHENE	28	8240	1.0		7.0 ♦
* trans-1,2-DICHLOROETHENE	28	8240	1.0	1.0	100.0 ~
* cis-1,2-DICHLOROETHENE	# 28	8240	1.0	5.0	70.0 ~
1,2-DICHLOROPROPANE	28	8240	1.0	5.0	5.0 ~
cis-1,3-DICHLOROPROPENE	28	8240	1.0		
trans-1,3-DICHLOROPROPENE	28	8240	1.0		
* ETHYLBENZENE	# 28	8240	1.0	5.0	700.0 ~
* METHYLENE CHLORIDE	# 28	8240	5.0	10.0	
METHYL ETHYL KETONE	# 28	8240	5.0	10.0	
METHYL ISOBUTYL KETONE	# 28	8240	5.0	50.0	
* 1,1,2,2-TETRACHLOROETHANE	28	8240	1.0		
* TETRACHLOROETHENE	# 28	8240	1.0	5.0	5.0 ~
* TOLUENE	# 28	8240	1.0	5.0	1000.0 ~
* 1,1,1-TRICHLOROETHANE	# 28	8240	1.0	5.0	200.0 ♦
* 1,1,2-TRICHLOROETHANE	28	8240	1.0		
* TRICHLOROETHENE	# 28	8240	1.0	10.0	5.0 ♦
* VINYL CHLORIDE	28	8240	10.0	10.0	2.0 ♦
* XYLENES	# 28	8240	5.0	5.0	10 ~

(*) DENOTES 620.410 LIST OF ORGANIC COMPOUNDS INCLUDING EIGHT DRINKING WATER STANDARD AND FIFTY-ONE (51) UNREGULATED ORGANICS

(#) CONSTITUENT FOUND IN LEACHATE

(♦) STANDARDS FROM 620.410 LIST OF ORGANIC COMPOUNDS

(~) DENOTES EIGHT (8) DRINKING WATER AND FIFTY-ONE (51) UNREGULATED ORGANIC COMPOUNDS STANDARDS

TABLE 6 (CONT.)
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF MAIN AQUIFER POOLED DATA
BACKGROUND / DRINKING WATER ORGANICS

PARAMETER		SAMPLE SIZE	METHOD	DETECTION LIMIT ug/l	PQL ug/l	STANDARD ug/l
ACETONE	#	28	8240	5.0	100	
BROMO BENZENE		28	8240	2.0		
BROMOCHLOROMETHANE		28	8240	1.0		
n-BUTYLBENZENE		28	8240	2.0		
sec-BUTYLBENZENE		28	8240	2.0		
tert-BUTYLBENZENE		28	8240	2.0		
ISOPROPYLBENZENE		28	8240	2.0		
CARBON DISULFIDE		28	8240	1.0		
DIBROMOMETHANE		28	8240	1.0		
o-CHLOROTOLUENE		28	8240	1.0		
p-CHLOROTOLUENE		28	8240	1.0		
1,2-DIBROMO-3-CHLOROPROPAN	#	28	8240	1.0	25.0	
trans-1,4-DICHLORO-2-BUTENE		28	8240	1.0		
DICHLORODIFLUOROMETHANE		28	8240	10.0		
1,1-DICHLOROPROPENE		28	8240	1.0		
1,3-DICHLOROPROPANE		28	8240	1.0		
2,2-DICHLOROPROPANE		28	8240	1.0		
1,3-DICHLOROPROPENE		28	8240	1.0		
1,2,3-TRICHLOROPROPANE		28	8240	2.0		
ETHYLENE DIBROMIDE (EDB)		28	8240	1.0		
2-HEXANONE	#	28	8240	5.0	50.0	
HEXACHLOROBUTADIENE		28	8240	2.0		
IODOMETHANE		28	8240	1.0		
ETHYL METHACRYLATE		28	8240	5.0		
p-ISOPROPYLTOLUENE		28	8240	2.0		
STYRENE	#	28	8240	1.0	10.0	100 "
n-PROPYLBENZENE		28	8240	2.0		
1,1,1,2-TETRACHLOROETHANE		28	8240	1.0		
TETRAHYDROFURAN	#	28	8240	20.0	20.0	
1,2,3-TRICHLOROBENZENE		28	8240	5.0		
1,2,4-TRICHLOROBENZENE		28	8240	5.0		
1,2,4-TRIMETHYLBENZENE		28	8240	2.0		
1,3,5-TRIMETHYLBENZENE	#	28	8240	2.0	5.0	
TRICHLOROFLUOROMETHANE		28	8240	1.0		
VINYL ACETATE		28	8240	1.0		
m,p-XYLENE	#	28	8240	1.0	5.0	
o-XYLENE	#	28	8240	1.0	5.0	

(*) DENOTES 820.410 LIST OF ORGANIC COMPOUNDS INCLUDING EIGHT DRINKING WATER STANDARD AND FIFTY-ONE (51) UNREGULATED ORGANICS

(#) CONSTITUENT FOUND IN LEACHATE

(*) STANDARDS FROM 820.410 LIST OF ORGANIC COMPOUNDS

(") DENOTES EIGHT (8) DRINKING WATER AND FIFTY-ONE (51) UNREGULATED ORGANIC COMPOUNDS STANDARDS

TABLE 7
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF DEEP AQUIFER POOLED DATA
INORGANICS

Parameter units	Distribution	Sample Size	Mean	Standard Deviation	Upper 95% Confidence Tolerance Interval
Alkalinity, mg/l	Normal	28	284.1	32.5	341.4
BOD, mg/l	75% ND	28	Median <2.0		3.0
Boron, mg/l	79% ND	28	Median <0.1		0.42
Chloride, mg/l	29% ND – Normal *	28	5.9	11.3	25.8
COD, mg/l	39% ND – Log Normal *	28	ln 1.5359 / 4.64	ln 2.0955 / 8.13	ln 5.2319 / 187.2
Conductivity, uhmos/cm	Normal	112	482.3	138.4	726.4
Cyanide, mg/l	100% ND	28	<0.02		<0.02
Fluoride, mg/l	Normal	28	0.21	0.04	0.28
FOG, mg/l	54% ND	28	Median <1.0		2.0
Ammonia/N, mg/l	46% ND *	28	0.11	0.15	0.38
Nitrate, mg/l	43% ND – Log Normal *	28	ln 0.0006 / 1.0	ln 2.0458 / 7.74	ln 3.6090 / 36.9
pH, units	Normal	112	7.30	0.49	6.44 – 8.16
Phenol, mg/l	64% ND	28	Median <0.002		0.03
Phosphorus, mg/l	61% ND	28	Median <0.05		1.17
Dissolved Solids, mg/l	Normal	28	398.7	57.9	500.8
Sulfate, mg/l	Normal	28	53.8	25.2	98.2
Temperature, F	Log Normal	28	ln 3.9957 / 54.4	ln 0.0870 / 1.09	ln 4.1492 / 63.4
TOC, mg/l	57% ND	28	Median <1.0		16.0
TOX, mg/l	100% ND	28	<0.01		<0.01

* Aitchison's adjustment to mean and standard deviation.

**TABLE 8
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF DEEP AQUIFER POOLED DATA
METALS**

Parameter mg/l	Distribution	Sample Size	Mean mg/l	Standard Deviation	Upper 95% Confidence Tolerance Interval mg/l
Aluminum	79% ND	14	Median <0.50		1.50
Aluminum, dissolved	100% ND	14	Median <0.50		<0.50
Arsenic	64% ND	14	Median <0.001		0.003
Arsenic, dissolved	64% ND	14	Median <0.001		0.003
Barium	93% ND	14	Median <0.1		0.11
Barium, dissolved	100% ND	14	Median <0.1		<0.10
Beryllium	100% ND	14	Median <0.05		<0.05
Beryllium, dissolved	100% ND	14	Median <0.05		<0.05
Cadmium	100% ND	14	Median <0.005		<0.005
Cadmium, dissolved	100% ND	14	Median <0.005		<0.005
Calcium	Normal	14	100.12	12.09	123.06
Calcium, dissolved	Normal	14	93.83	8.10	109.20
Chromium	93% ND	14	Median <0.01		0.026
Chromium, dissolved	100% ND	14	Median <0.01		<0.01
Cobalt	100% ND	14	Median <0.10		<0.10
Cobalt, dissolved	100% ND	14	Median <0.10		<0.10
Copper	100% ND	14	Median <0.01		<0.01
Copper, dissolved	100% ND	14	Median <0.01		<0.01
Iron	Normal	14	0.801	0.452	1.659
Iron, dissolved	36% ND	14	ln -0.3365 / 0.69	ln 0.7667 / 2.15	ln 1.0891 / 2.97
Lead	93% ND	14	Median <0.005		0.0061
Lead, dissolved	100% ND	14	Median <0.005		<0.005
Magnesium	Normal	14	40.66	4.11	48.46
Magnesium, dissolved	Normal	14	37.60	4.76	46.63

ANALYTICAL CHEMISTRY & ENVIRONMENTAL SERVICES, INC.

TABLE 8 (CONT.)
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF DEEP AQUIFER POOLED DATA
METALS

Parameter mg/l	Distribution	Sample Size	Mean	Standard Deviation	Upper 95% Confidence Tolerance Interval mg/l
Manganese	14% ND	14	0.14	0.10	0.32
Manganese, dissolved	14% ND	14	0.12	0.09	0.29
Mercury	93% ND	14	Median <0.0002		0.0009
Mercury, dissolved	100% ND	14	Median <0.0002		<0.0002
Nickel	71% ND	14	Median <0.02		0.04
Nickel, dissolved	93% ND	14	Median <0.02		0.02
Potassium	Normal	14	1.47	0.32	2.08
Potassium, dissolved	Normal	14	1.38	0.37	2.08
Selenium	100% ND	14	Median <0.002		<0.002
Selenium, dissolved	100% ND	14	Median <0.002		<0.002
Silicon	Log Normal	14	ln 1.9509 / 7.03		ln 2.4934 / 12.10
Silicon, dissolved	Normal	14	6.22		9.67
Silver	100% ND	14	Median <0.01		<0.01
Silver, dissolved	100% ND	14	Median <0.01		<0.01
Sodium	Normal	14	14.09	8.79	30.77
Sodium, dissolved	Normal	14	13.59	8.05	28.86
Thallium	100% ND	14	Median <0.20		<0.20
Thallium, dissolved	100% ND	14	Median <0.20		<0.20
Vanadium	100% ND	14	Median <0.05		<0.05
Vanadium, dissolved	100% ND	14	Median <0.05		<0.05
Zinc	64% ND	14	Median <0.01		0.022
Zinc, dissolved	100% ND	14	Median <0.01		<0.02

TABLE 9
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF DEEP AQUIFER POOLED DATA
BACKGROUND / DRINKING WATER ORGANICS

PARAMETER	SAMPLE SIZE	METHOD	DETECTION LIMIT ug/l	PQL ug/l	STANDARD ug/l
ACROLEIN	28	8240	100.0		
ACRYLONITRILE	28	8240	10.0		
* BENZENE	28	8240	1.0	5.0	5.0 *
* BROMODICHLOROMETHANE	28	8240	1.0		
* BROMOFORM	28	8240	1.0		
* BROMOMETHANE	28	8240	10.0		
* CARBON TETRACHLORIDE	28	8240	1.0	1.0	5.0 *
* CHLORO BENZENE	28	8240	1.0	5.0	100.0 **
* CHLOROETHANE	28	8240	10.0		
2-CHLOROETHYL VINYL ETHER	28	8240	2.0		
* CHLOROFORM	28	8240	1.0		
* CHLORO METHANE	28	8240	10.0		
* DIBROMOCHLOROMETHANE	28	8240	1.0		
* 1,2-DICHLOROBENZENE	28	8240	1.0	10.0	60.0 **
* 1,3-DICHLOROBENZENE	28	8240	1.0	5.0	
* 1,4-DICHLOROBENZENE	28	8240	1.0	5.0	75.0 *
* 1,1-DICHLOROETHANE	28	8240	1.0	5.0	
* 1,2-DICHLOROETHANE	28	8240	1.0		5.0 *
* 1,1-DICHLOROETHENE	28	8240	1.0		7.0 *
* trans-1,2-DICHLOROETHENE	28	8240	1.0	1.0	100.0 **
* cis-1,2-DICHLOROETHENE	28	8240	1.0	5.0	70.0 **
1,2-DICHLOROPROPANE	28	8240	1.0	5.0	5.0 **
cis-1,3-DICHLOROPROPENE	28	8240	1.0		
trans-1,3-DICHLOROPROPENE	28	8240	1.0		
* ETHYLBENZENE	28	8240	1.0	5.0	700.0 **
* METHYLENE CHLORIDE	28	8240	5.0	10.0	
METHYL ETHYL KETONE	28	8240	5.0	10.0	
METHYL ISOBUTYL KETONE	28	8240	5.0	50.0	
* 1,1,2,2-TETRACHLOROETHANE	28	8240	1.0		
* TETRACHLOROETHENE	28	8240	1.0	5.0	5.0 **
* TOLUENE	28	8240	1.0	5.0	1000.0 **
* 1,1,1-TRICHLOROETHANE	28	8240	1.0	5.0	200.0 *
* 1,1,2-TRICHLOROETHANE	28	8240	1.0		
* TRICHLOROETHENE	28	8240	1.0	10.0	5.0 *
* VINYL CHLORIDE	28	8240	10.0	10.0	2.0 *
* XYLENES	28	8240	5.0	5.0	10 **

(*) DENOTES 620.410 LIST OF ORGANIC COMPOUNDS INCLUDING EIGHT DRINKING WATER STANDARD AND FIFTY-ONE (51) UNREGULATED ORGANICS

(#) CONSTITUENT FOUND IN LEACHATE

(*) STANDARDS FROM 620.410 LIST OF ORGANIC COMPOUNDS

(**) DENOTES EIGHT (8) DRINKING WATER AND FIFTY-ONE (51) UNREGULATED ORGANIC COMPOUNDS STANDARDS

**TABLE 9 (CONT.)
BFI DAVIS JUNCTION LANDFILL BACKGROUND STUDY
SUMMARY OF DEEP AQUIFER POOLED DATA
BACKGROUND / DRINKING WATER ORGANICS**

PARAMETER		SAMPLE SIZE	METHOD	DETECTION LIMIT ug/l	PQL ug/l	STANDARD ug/l
ACETONE	#	20	8240	5.0	100	
* BROMOBENZENE		20	8240	2.0		
* BROMOCHLOROMETHANE		20	8240	1.0		
* n-BUTYLBENZENE		20	8240	2.0		
* sec-BUTYLBENZENE		20	8240	2.0		
* tert-BUTYLBENZENE		20	8240	2.0		
* ISOPROPYLBENZENE		20	8240	2.0		
CARBON DISULFIDE		20	8240	1.0		
* DIBROMOMETHANE		20	8240	1.0		
* o-CHLOROTOLUENE		20	8240	1.0		
* p-CHLOROTOLUENE		20	8240	1.0		
* 1,2-DIBROMO-3-CHLOROPROPANE	#	20	8240	1.0	25.0	
trans-1,4-DICHLORO-2-BUTENE		20	8240	1.0		
* DICHLORODIFLUOROMETHANE		20	8240	10.0		
* 1,1-DICHLOROPROPENE		20	8240	1.0		
* 1,3-DICHLOROPROPANE		20	8240	1.0		
* 2,2-DICHLOROPROPANE		20	8240	1.0		
* 1,3-DICHLOROPROPENE		20	8240	1.0		
* 1,2,3-TRICHLOROPROPANE		20	8240	2.0		
* ETHYLENE DIBROMIDE (EDB)		20	8240	1.0		
2-HEXANONE	#	20	8240	5.0	50.0	
* HEXACHLOROBUTADIENE		20	8240	2.0		
IODOMETHANE		20	8240	1.0		
ETHYL METHACRYLATE		20	8240	5.0		
* p-ISO PROPYLTOLUENE		20	8240	2.0		
* STYRENE	#	20	8240	1.0	10.0	100 **
* n-PROPYLBENZENE		20	8240	2.0		
* 1,1,1,2-TETRACHLOROETHANE		20	8240	1.0		
TETRAHYDROFURAN	#	20	8240	20.0	20.0	
* 1,2,3-TRICHLOROBENZENE		20	8240	5.0		
* 1,2,4-TRICHLOROBENZENE		20	8240	5.0		
* 1,2,4-TRIMETHYLBENZENE		20	8240	2.0		
* 1,3,5-TRIMETHYLBENZENE	#	20	8240	2.0	5.0	
* TRICHLOROFLUOROMETHANE		20	8240	1.0		
VINYL ACETATE		20	8240	1.0		
* m,p-XYLENE	#	20	8240	1.0	5.0	
* o-XYLENE	#	20	8240	1.0	5.0	

(*) DENOTES 820.410 LIST OF ORGANIC COMPOUNDS INCLUDING EIGHT DRINKING WATER STANDARD AND FIFTY-ONE (51) UNREGULATED ORGANICS

(#) CONSTITUENT FOUND IN LEACHATE

(*) STANDARDS FROM 820.410 LIST OF ORGANIC COMPOUNDS

(**) DENOTES EIGHT (8) DRINKING WATER AND FIFTY-ONE (51) UNREGULATED ORGANIC COMPOUNDS STANDARDS

INTRA- and INTER-WELL PARAMETER EVALUATIONS

An intra-well comparison, that is, an evaluation of the changes for a parameter's concentration monitored within a well over time is accomplished by the following series of graphs. The plotting of concentration versus time allows for a visual examination of any changes. Measured changes within a well, referred to as temporal variability, may indicate seepage from the waste area or normal fluctuations associated with seasonal effects such as precipitation, recharge events and irrigation pumping.

An inter-well comparison is also accomplished by examination of the same parameter graphs for both the upgradient and downgradient wells. The graphical displays are constructed so that the vertical and horizontal coordinates are equivalent and variations between wells can be easily demonstrated. Natural groundwater quality is known to display natural spatial variability, often due to geological variations occurring within very short distances at a site. Studying the patterns shown by the clusters of upgradient and downgradient wells in the same aquifer for each parameter is a very powerful evaluation tool for assessing whether or not a significant impact has happened within the aquifer.

It is noted here that of the wells used for this study, G161I, G163I, G164I and G164D are not treated graphically, but summary data has been included in the tables for each parameter following

the graphs. G163I was not monitored beyond the second quarter of 1991 and G164I and G164D have not been monitored for the same parameters as the other wells. Due to space limitations, midgradient well G161I has not been included on the graphs for the upper aquifer. Well G161I has been included on the tables listing summary data. All of these wells are included in the pooled data appendices for their respective aquifer.

It is also noted that upgradient well G166S is shown graphically for both surficial sediments and the upper aquifer. It is actually screened in a surficial kettle deposit, but overlies the upper aquifer where the clay between the kettle and aquifer is thin. The depiction of its results with those for the upper aquifer allows a comparison between the kettle deposit and the underlying aquifer.

Additionally, according to site hydrogeologist Roberta L. Jennings, the comparison between G166S as an upgradient well, screened in a kettle having limited areal extent, and downgradient wells screened in entirely different surficial deposits, may not be a valid comparison (see Figure 1). Because downgradient surficial wells are screened much closer to the surface than the upgradient G166S, they are much more prone to impacts from surface runoff and nearby construction activities and, consequently, may be expected to exhibit higher results than the upgradient well.

The following sections show, very specifically, by the use of these concentration versus time and upgradient to downgradient graphical comparisons, a depiction of the groundwater quality throughout the existing Davis Junction facility.

Indicator Parameters

pH:

The mean value for pH established during the background groundwater quality study for the upper aquifer was 7.42 pH units with a ninety-five percent tolerance interval of 6.71 to 8.13 pH units. None of the mean values obtained from the upgradient and downgradient, upper aquifer water studies exceeded this tolerance interval. The changes in concentration values over the monitoring period is depicted in Figure 3.

The mean value for pH established during the background, groundwater quality study for the main aquifer was 7.38 with a tolerance interval of 6.62 to 8.13 pH units. None of the mean values obtained from the upgradient and downgradient wells, located in the main aquifer exceeded this tolerance interval. The concentration values for the upgradient and downgradient wells over the monitoring period is depicted in Figures 4 and 5.

Graphically, pH as monitored in these wells, does not remain a constant value over time and does not demonstrate a repeating seasonal cycle. However, the upper and main aquifer display a similar pattern of change over a longer term, being generally higher prior to the second quarter of 1992, and relatively lower thereafter. Individual well measurements taken during the fourth quarter of 1992 in wells G171I, G171D and G172D are below the

ninety-five percent tolerance interval, but returned to values within the tolerance interval during their next monitoring quarter and therefore do not indicate a change in groundwater quality.

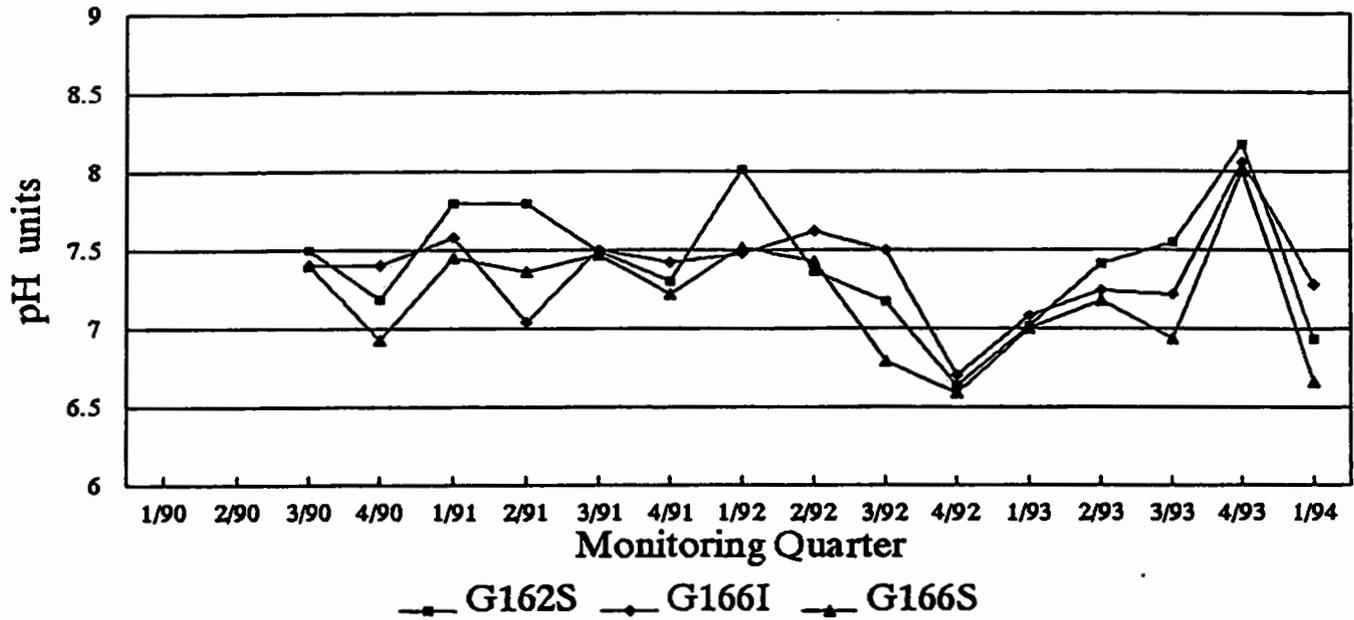
The mean value for pH with the surficial deposits and kettles within the downgradient wells does not differ significantly from the mean value obtained from samples taken from the upgradient well.

The downgradient well in the bedrock valley aquifer was not depicted graphically, but the summary data included in Table 7 demonstrates that the recorded mean value for the pH data obtained did not exceed the ninety-five percent tolerance interval. The standard deviation for well G163D pH data was 0.22, indicating a smaller variance within this well in comparison to the entire population of deep wells contained in the background study.

FIGURE 3

UPGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL

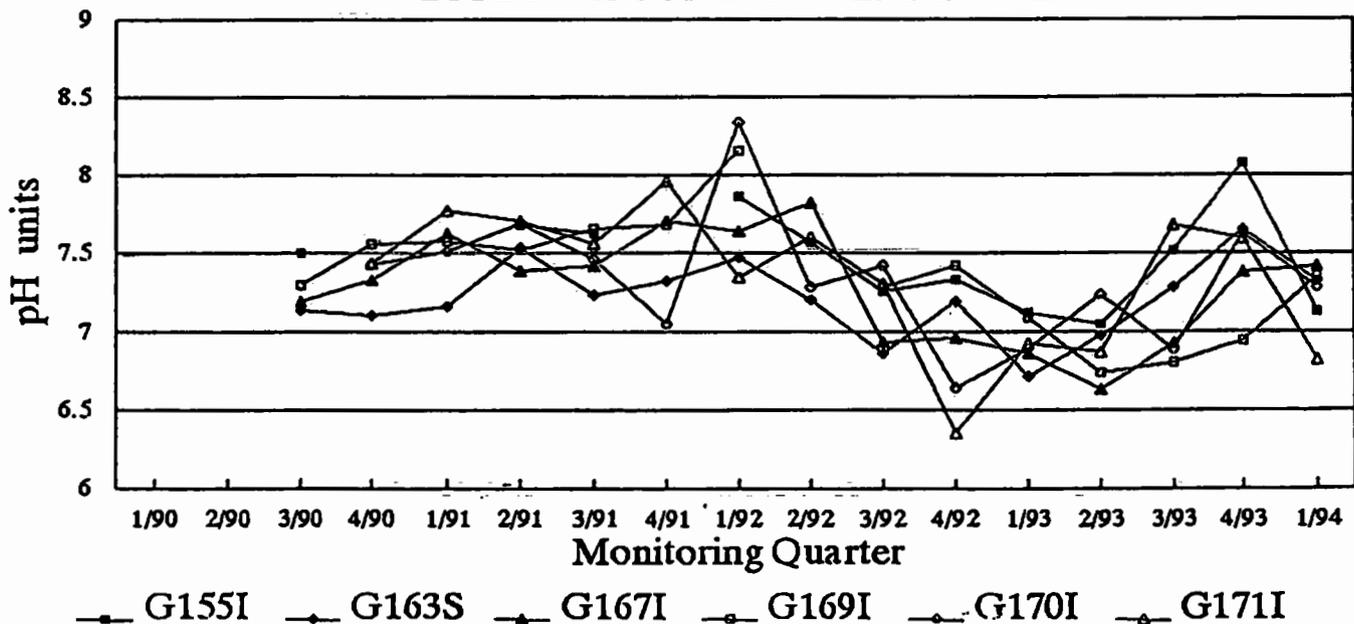
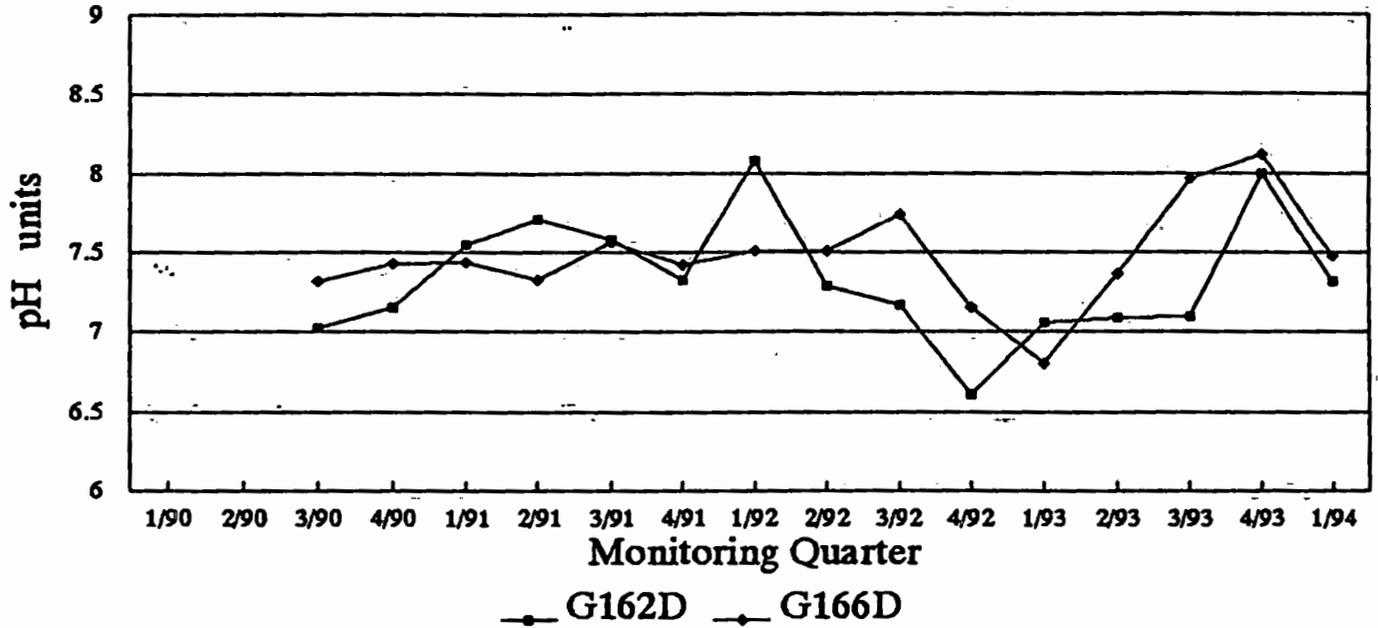


FIGURE 4

UPGRADIENT — MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT — MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

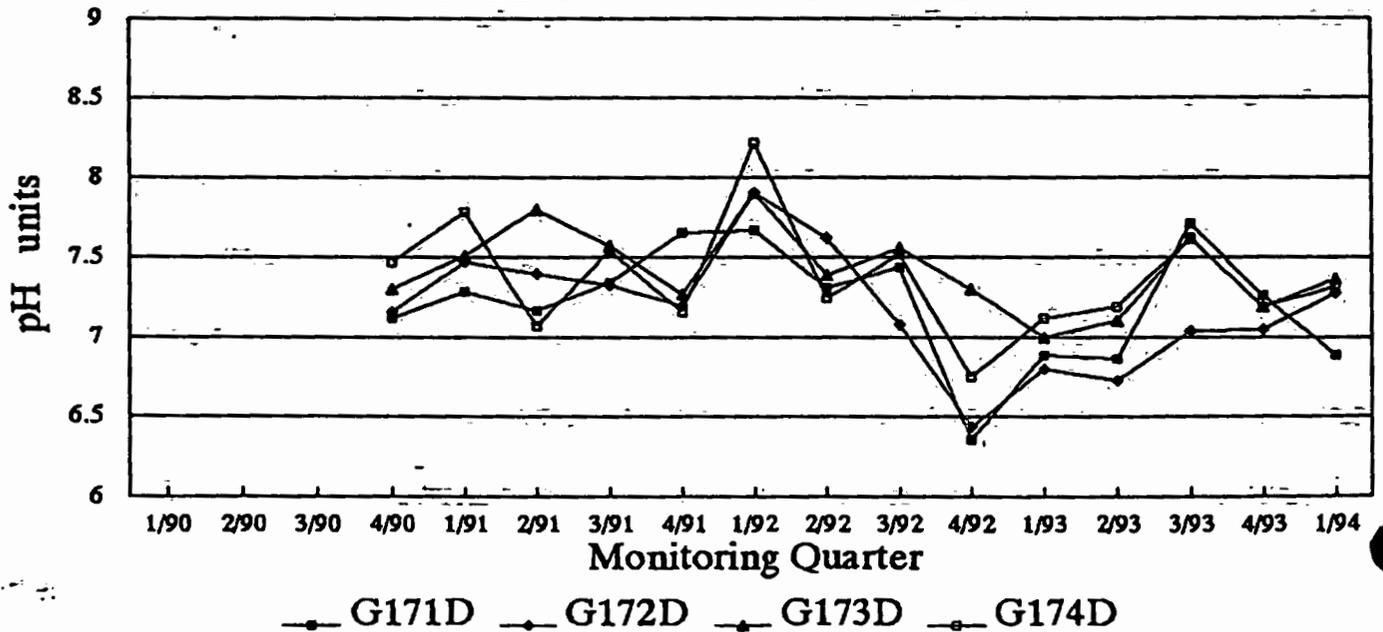
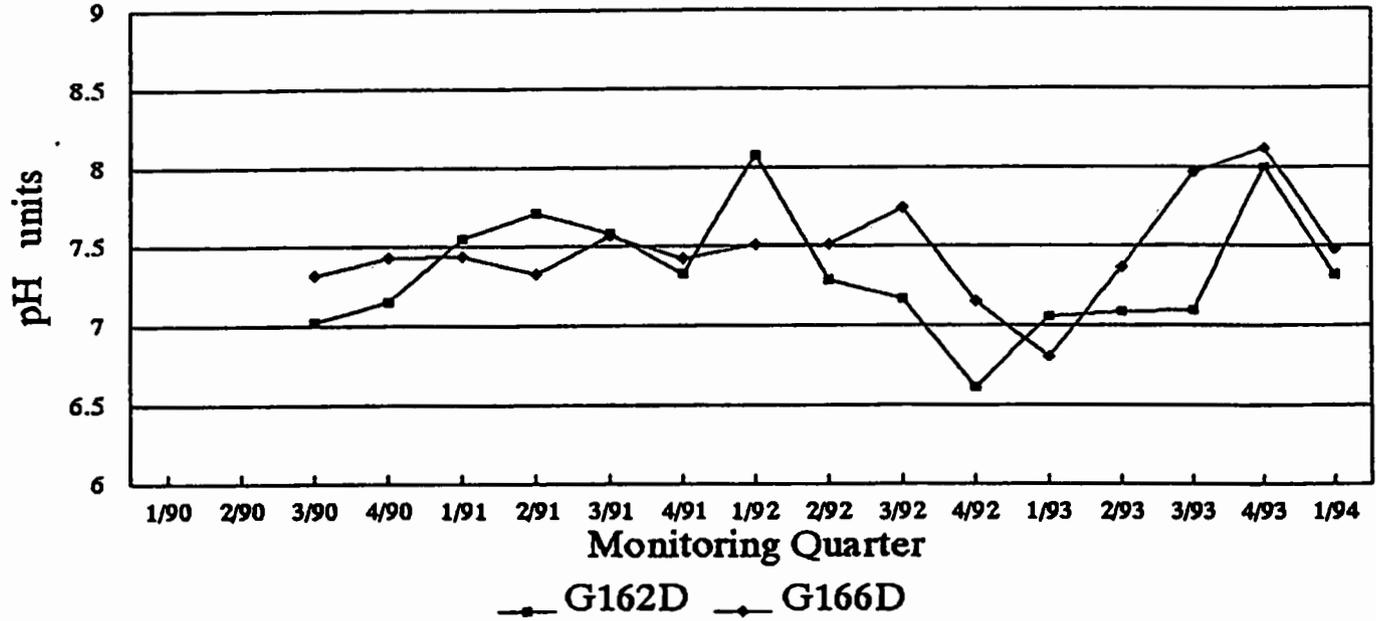


FIGURE 5

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

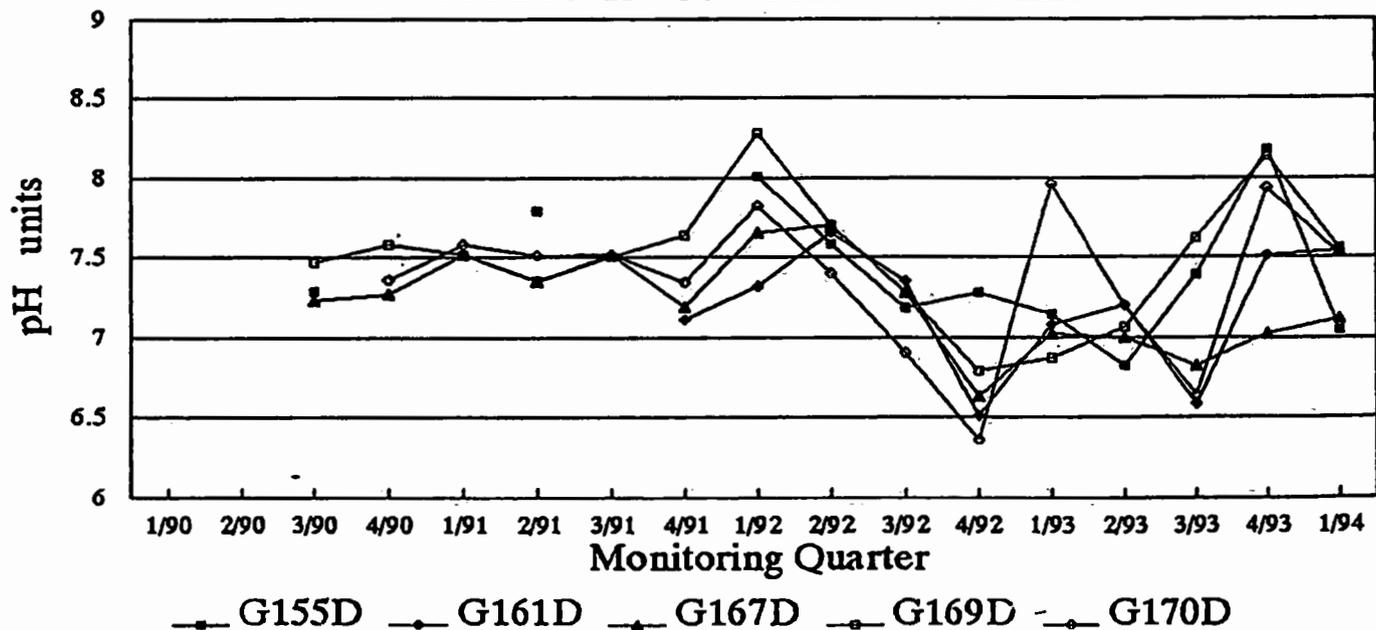
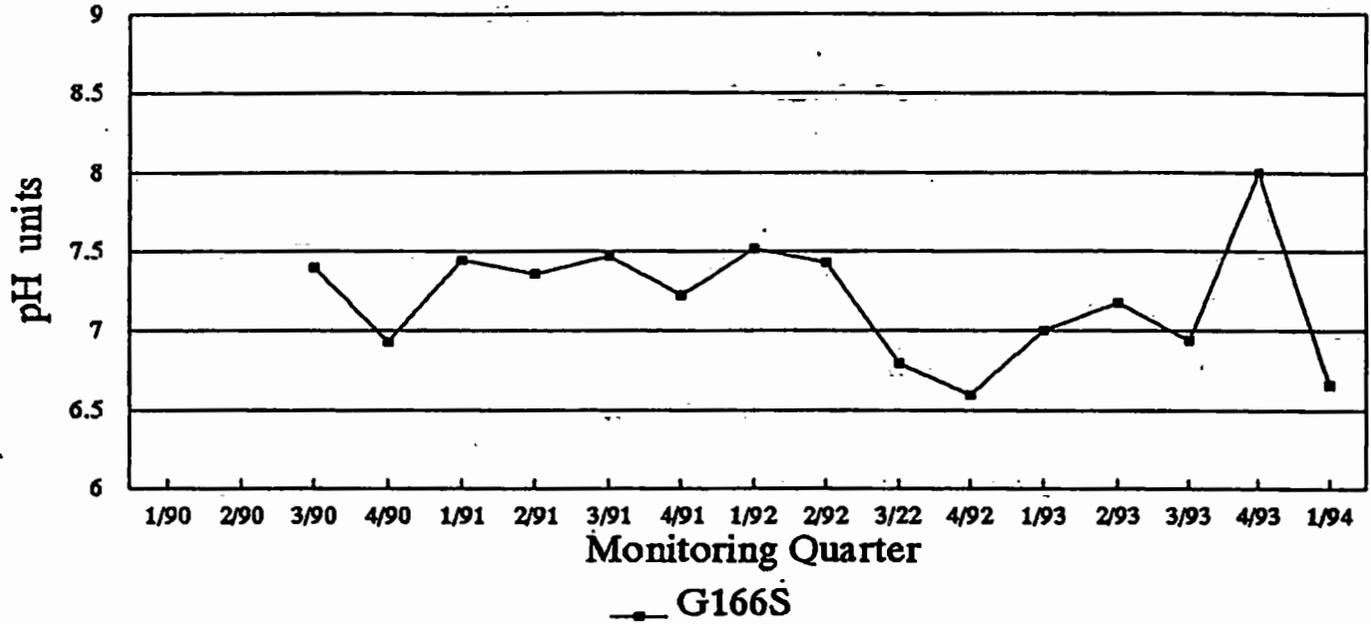


FIGURE 6

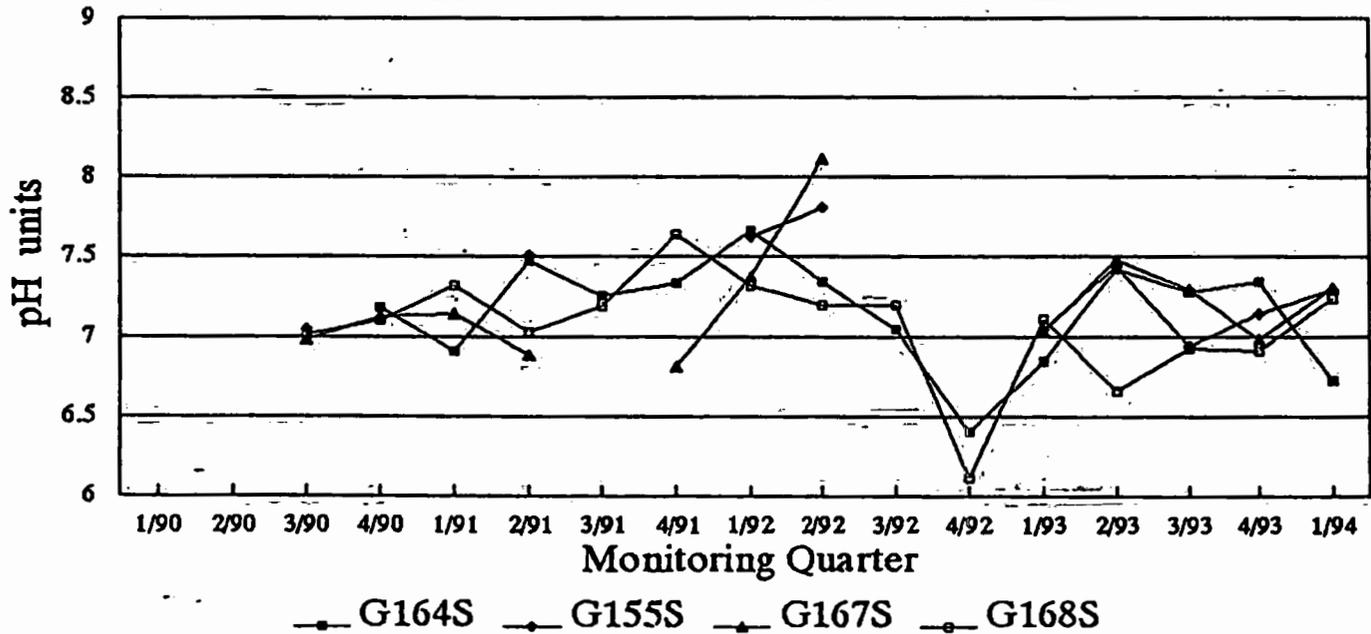
UPGRADIENT, SURFICIAL

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT, SURFICIAL

BFI DAVIS JUNCTION LANDFILL



**TABLE 10
SUMMARY OF pH DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	7.20 units	0.38
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	7.15 units	0.33
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	7.31 units	0.28
G 167 S	7.21 units	0.12
G 168 S	7.06 units	0.35

UPPER AQUIFER BACKGROUND MEDIAN 7.42 units	UPPER AQUIFER BACKGROUND STANDARD DEVIATION 0.41	UPPER 95% TOLERANCE INTERVAL 6.71- 8.13 units
---	---	--

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	7.42 units	0.41
G 166 I	7.37 units	0.31
G 166 S	7.20 units	0.38
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	7.37 units	0.41
G164 I	7.24 units	0.29
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	7.48 units	0.31
G 163 S	7.21 units	0.25
G 167 I	7.28 units	0.35
G 169 I	7.36 units	0.38
G 170 I	7.34 units	0.41
G 171 I	7.35 units	0.45

**TABLE 10 (continued)
SUMMARY OF pH DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 7.38 units	MAIN AQUIFER BACKGROUND STANDARD DEVIATION 0.44	UPPER 95% TOLERANCE INTERVAL 6.62 - 8.13 units
--	--	---

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	7.33 units	0.39
G 166 D	7.48 units	0.31
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	7.22 units	0.38
G 164 D	7.23 units	0.32
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	7.43 units	0.42
G 163 I	7.39 units	0.27
G 167 D	7.22 units	0.40
G 169 D	7.36 units	0.46
G 170 D	7.21 units	0.37
G 171 D	7.18 units	0.37
G 172 D	7.42 units	0.26
G 173 D	7.37 units	0.36
G 174 D	7.37 units	0.36

BEDROCK VALLEY AQUIFER BACKGROUND MEAN 7.30 units	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION 0.49	UPPER 95% TOLERANCE INTERVAL 6.44 - 8.16 units
--	--	---

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	7.48 units	0.22

Specific Conductance:

The mean value for specific conductance established during the background groundwater quality study for the upper aquifer was 514.5 umhos/cm with a 95% tolerance interval of 777.3 umhos/cm. None of the upgradient and downgradient, upper aquifer water data values exceeded this tolerance interval, including wells G166I and G166S which cycle at an elevated specific conductance value. In addition, both wells G166I and G166S are located upgradient to the waste managed area and are used to set standards for the downgradient wells. This is an example of a natural, spatial variation. Specific conductance measurements in the upgradient wells has historically and consistently been higher than the values obtained in the downgradient well locations.

The mean value for specific conductance established during the background, groundwater study for the main aquifer was 471.6 umhos/cm with a 95% tolerance interval of 669.3 umhos/cm. None of the upgradient or downgradient, main aquifer water values exceeded this tolerance interval.

No significant increase in concentration was observed and no impact upon the downgradient groundwater quality was noted based upon the examination of this parameter.

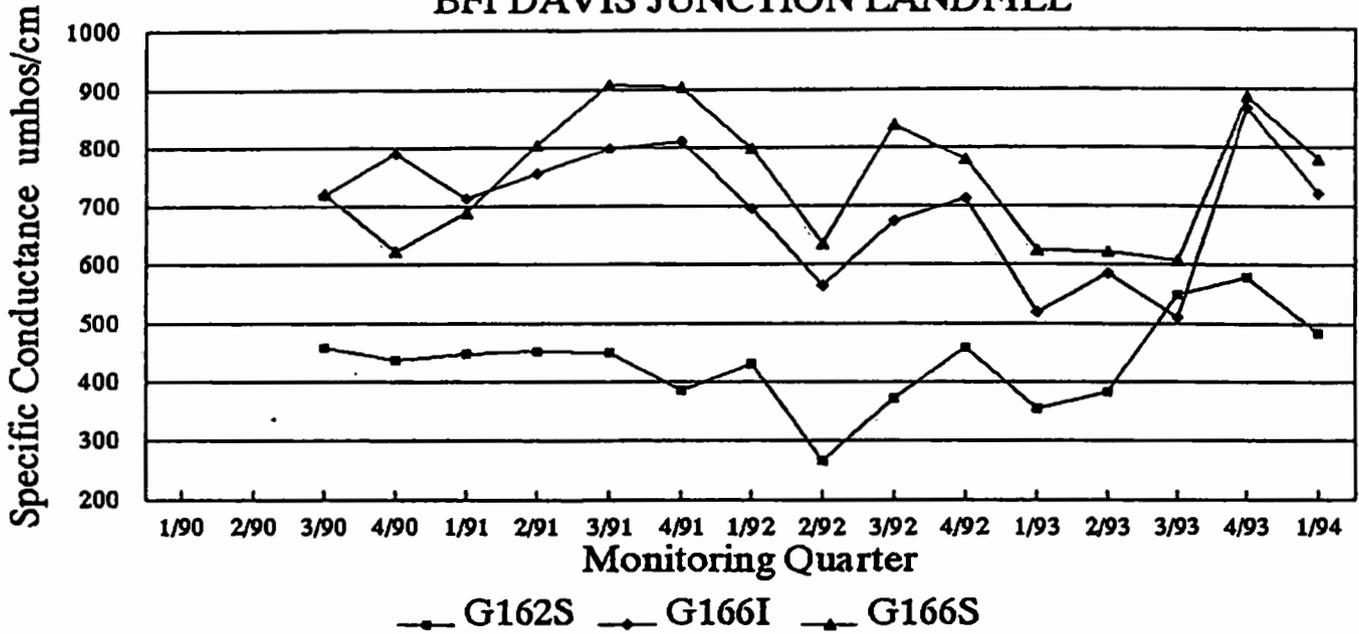
The data obtained from the deep well is included in the summary Table 8. The mean value for well G163D indicates no significant deviation over the monitoring period and therefore no change in groundwater quality.

Surficial well water sample, specific conductance measurements contained the largest variations between quarterly measurements and this variation is reflected in Figure 10 graphical depiction of the data. The summary data found in Table 11 supports this statement and a multifactor analysis of variation, which allows pairwise comparisons between the means for the individual wells, determined a significant difference between well G166S and G167S.

FIGURE 7

UPGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL

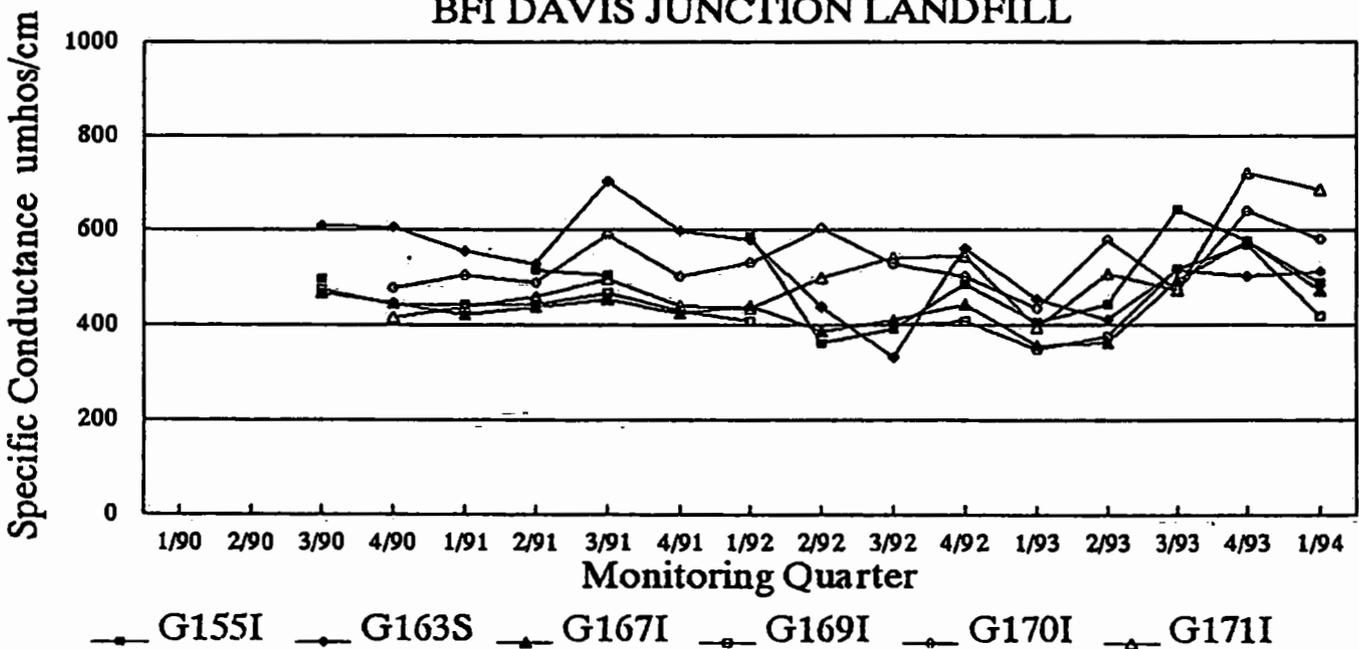
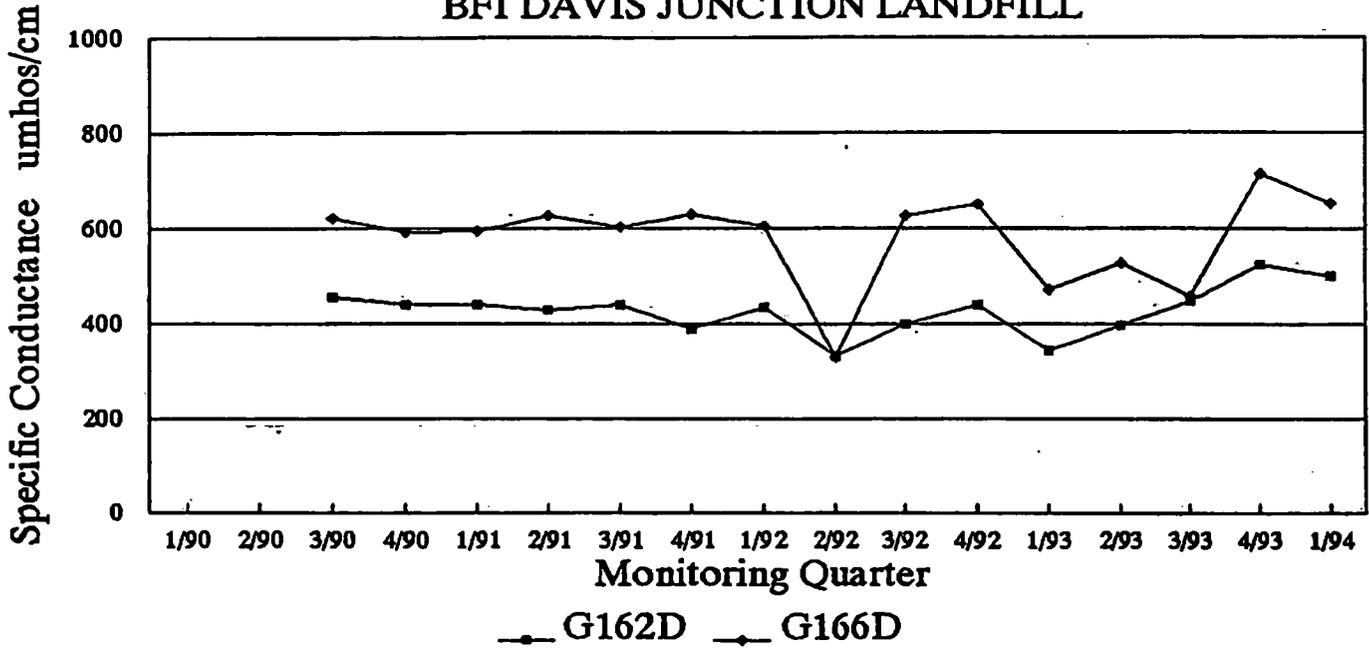


FIGURE 8

UPGRADIENT — MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT — MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

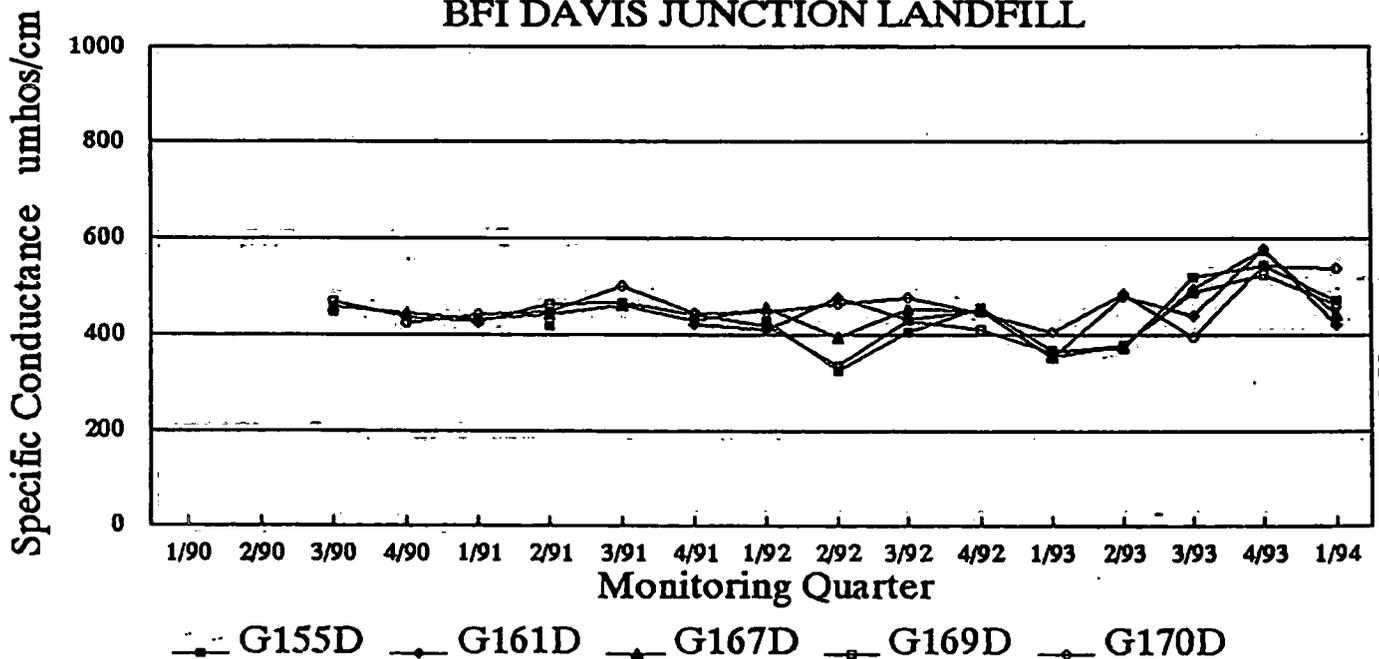


FIGURE 9

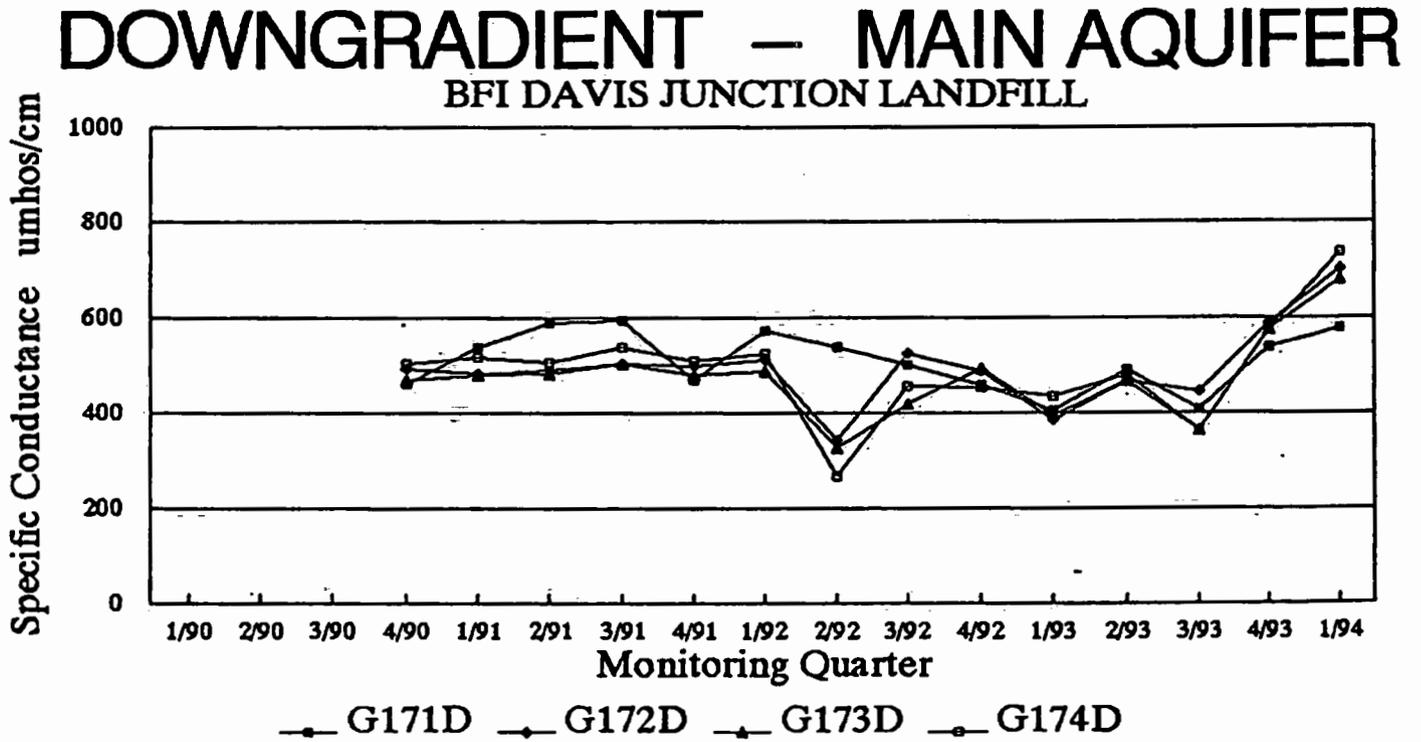
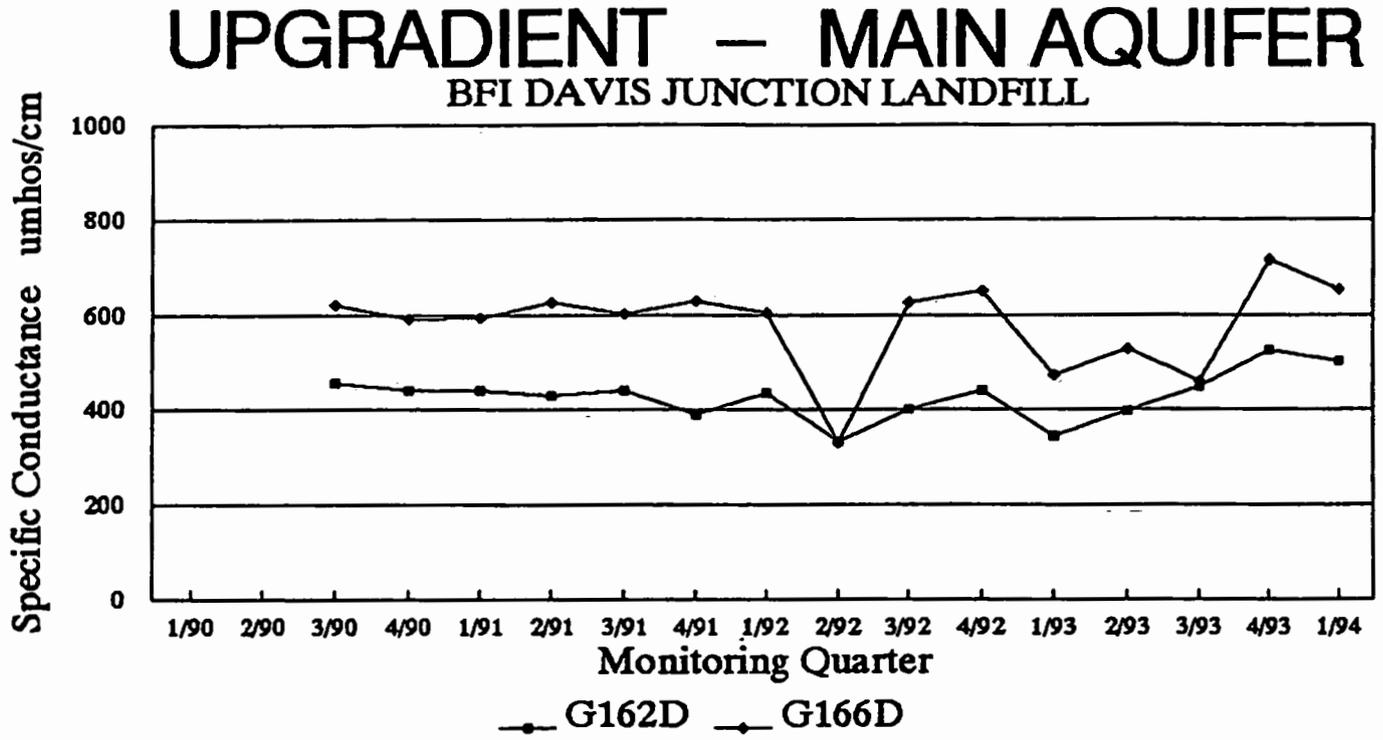
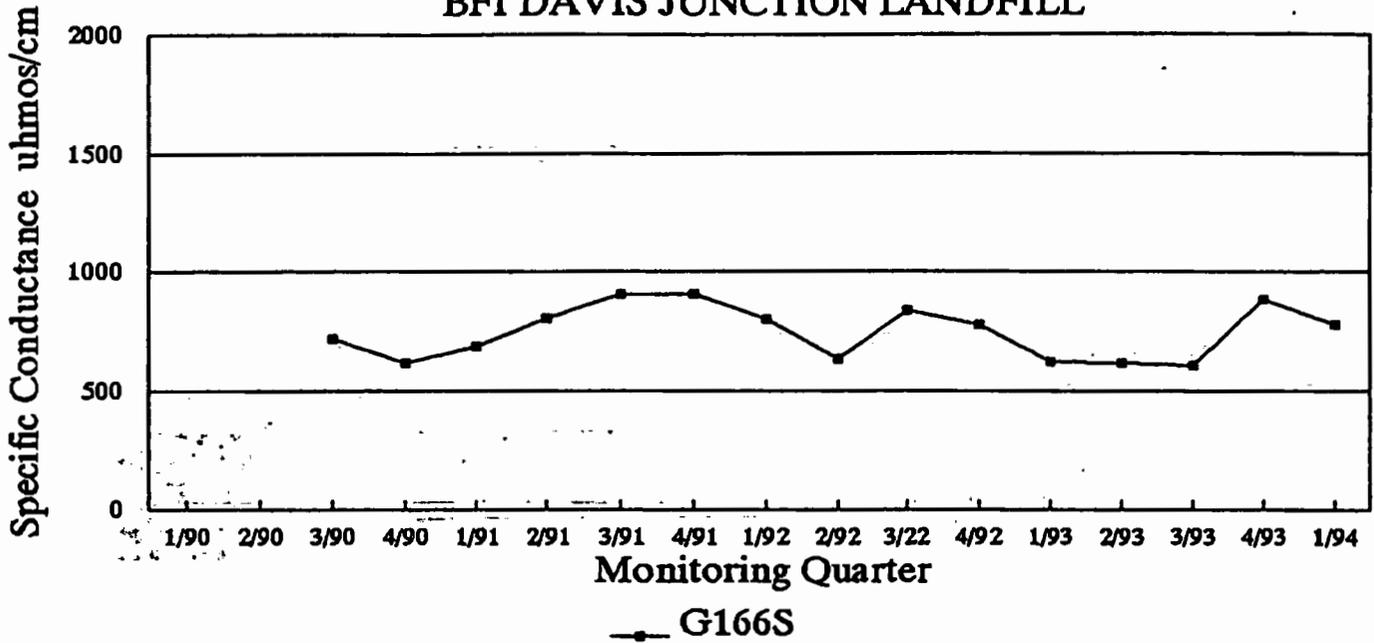


FIGURE 10

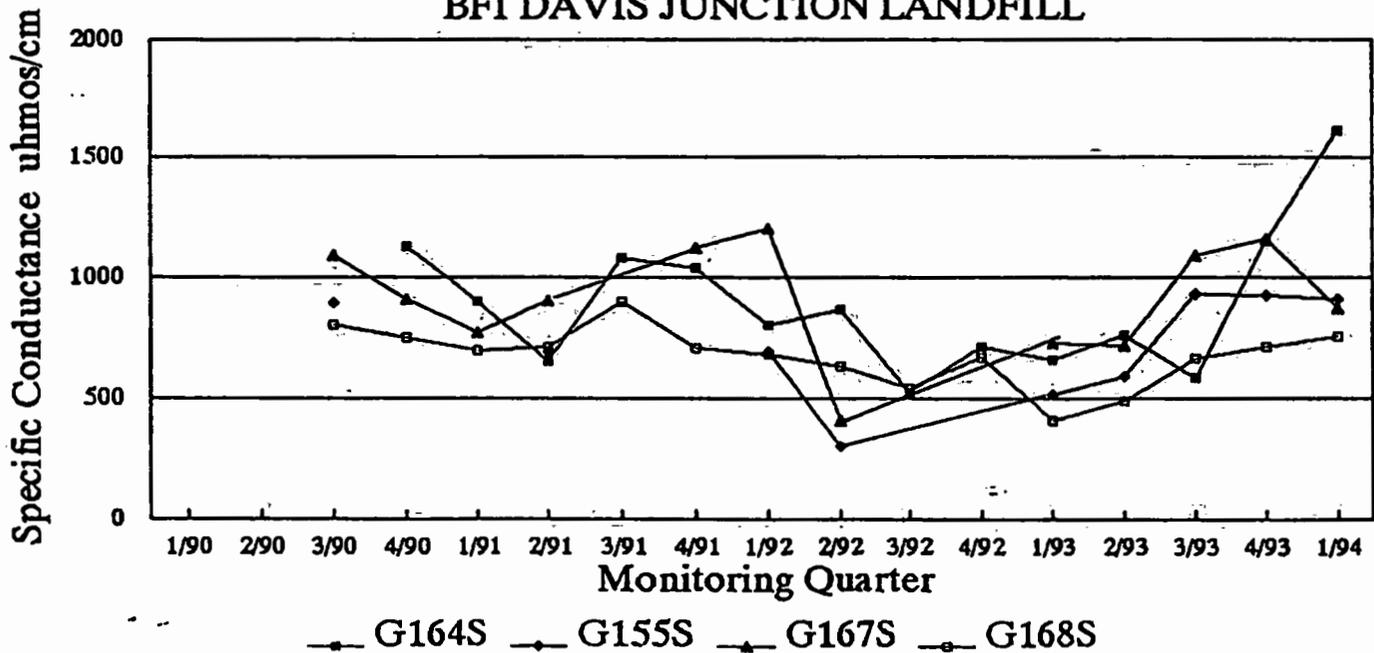
UPGRADIENT, SURFICIAL

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT, SURFICIAL

BFI DAVIS JUNCTION LANDFILL



**TABLE 11
SUMMARY OF SPECIFIC CONDUCTANCE DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	747.5 umhos/cm	110.0
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	892.0 umhos/cm	283.1
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	718.0 umhos/cm	212.1
G 167 S	916.0 umhos/cm	226.5
G 168 S	675.6 umhos/cm	119.0

UPPER AQUIFER BACKGROUND MEDIAN 514.5 umhos/cm	UPPER AQUIFER BACKGROUND STANDARD DEVIATION 152.2	UPPER 95% TOLERANCE INTERVAL 777.3 umhos/cm
---	--	--

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	431.7 umhos/cm	78.0
G 166 I	695.4 umhos/cm	107.9
G 166 S	747.5 umhos/cm	110.0
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	507.5 umhos/cm	84.4
G164 I	805.3 umhos/cm	191.2
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	491.0 umhos/cm	84.3
G 163 S	526.5 umhos/cm	92.4
G 167 I	438.6 umhos/cm	54.0
G 169 I	438.4 umhos/cm	56.4
G 170 I	530.5 umhos/cm	59.1
G 171 I	503.1 umhos/cm	96.4

**TABLE 11 (continued)
SUMMARY OF SPECIFIC CONDUCTANCE DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 471.6 umhos/cm	MAIN AQUIFER BACKGROUND STANDARD DEVIATION 115.7	UPPER 95% TOLERANCE INTERVAL 669.3 umhos/cm
---	--	---

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	408.0 umhos/cm	112.4
G 166 D	580.5 umhos/cm	95.9
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	443.9 umhos/cm	56.2
G 164 D	589.0 umhos/cm	230.5
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	431.8 umhos/cm	65.7
G 163 I	444.2 umhos/cm	20.0
G 167 D	444.0 umhos/cm	51.1
G 169 D	434.1 umhos/cm	48.9
G 170 D	461.4 umhos/cm	44.2
G 171 D	510.1 umhos/cm	63.7
G 172 D	493.7 umhos/cm	84.2
G 173 D	472.2 umhos/cm	86.9
G 174 D	490.0 umhos/cm	105.5

BEDROCK VALLEY AQUIFER BACKGROUND MEAN 482.3 umhos/cm	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION 138.4	UPPER 95% TOLERANCE INTERVAL 726.4 umhos/cm
---	--	---

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	416.25 umhos/cm	78.6

Total Organic Carbon:

Figures 11, 12, 13 and 14 all demonstrate a similar pattern in the trends over the monitoring period. The data collected during the three quarters in 1990 all present elevated and scattered value ranges. After this time period, the measured concentration values remained quite constant through the first quarter of 1994.

Despite the early variation in concentration values, none of the mean concentration values for total organic carbon exceeded the 95% upper tolerance interval of 14.3 mg/l in the upper aquifer background study or the 18.0 mg/l 95% upper tolerance interval established for the main aquifer.

The elevated total organic carbon (TOC) value for the fourth quarter 1990 has to be the result of either a sampling and analysis error or some reason based upon the location's geology. The high and scattered values are present in both the upgradient and downgradient locations. A systematic error may have occurred with this set of samples, all taken at the same time. Jennings' Report of Hydrogeological Investigations documents the presence of organic matter throughout surficial sediments and the aquifer. Early well installation and development may have been a factor as well.

The jump in TOC concentration in well G174D during the first quarter of 1992 has to be an anomalous value. Isolated, individual

and elevated parameters are no indication of change in water quality.

Well G163D monitoring the bedrock valley aquifer was very consistent; a greater percent of the TOC measurements were below the detection limit as compared to the background study for the Deep Aquifer.

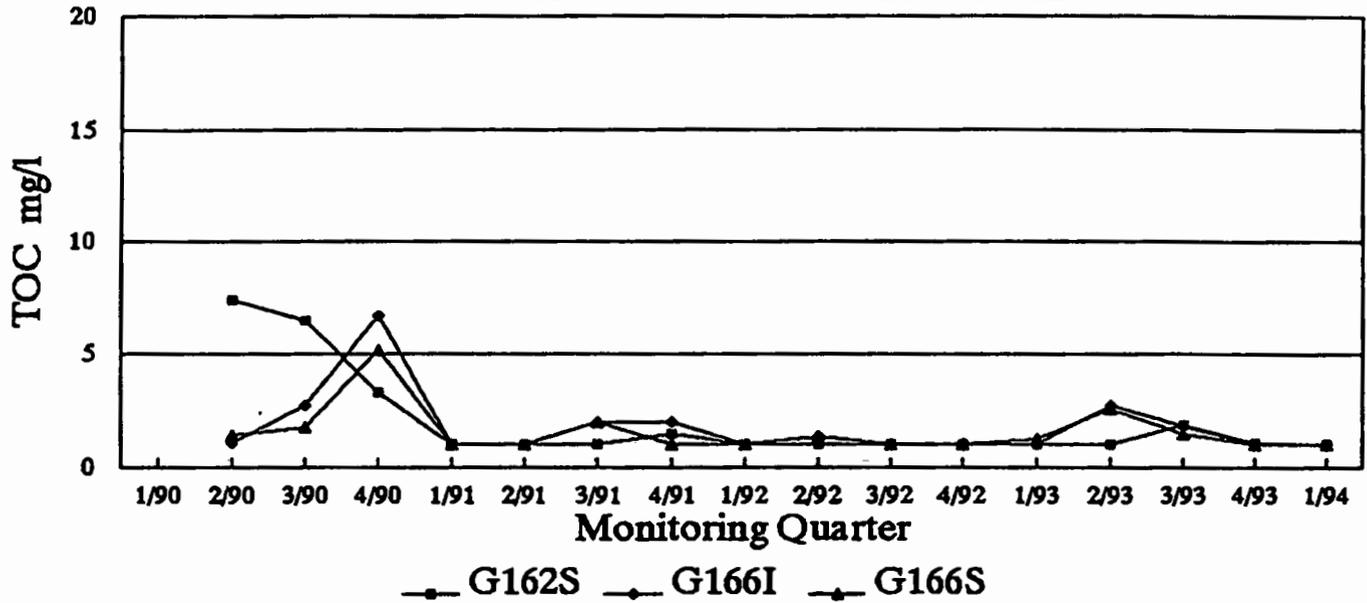
The surficial well data for TOC as shown in Figure 14 contain a similar set of scattered and elevated values during the first three quarters of 1990. In the remaining quarters, the TOC data was much more consistent at a lower but reportable value. In none of the surficial wells does the TOC values consistently trend upward over any reporting period.

Many of the high TOC values could be the result of an incomplete sample preparation involving the removal of carbon dioxide. During sample preparation procedures, the presence of silts can easily complicate the removal process of all of the inorganic carbonates. This situation is suspect especially in the analysis of concentration trends when the high TOC value is only intermittent.

FIGURE 11

UPGRADIENT – UPPER AQUIFER

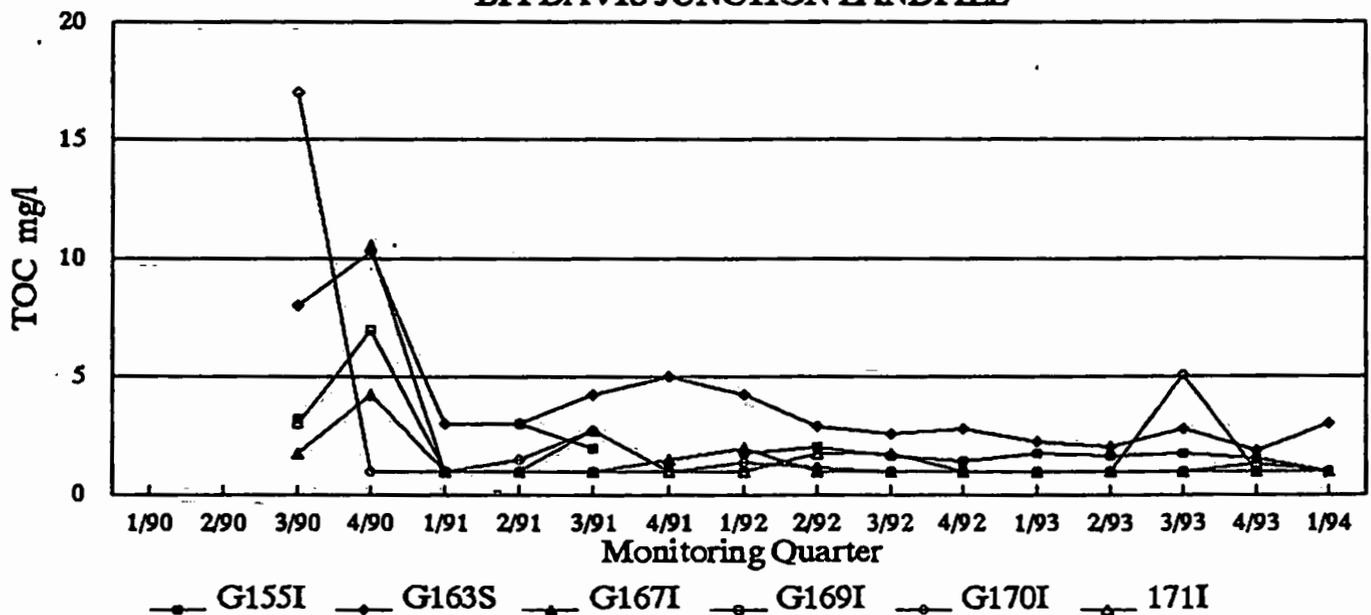
BFI DAVIS JUNCTION LANDFILL



Detection Limit: 1 mg/l

DOWNGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL

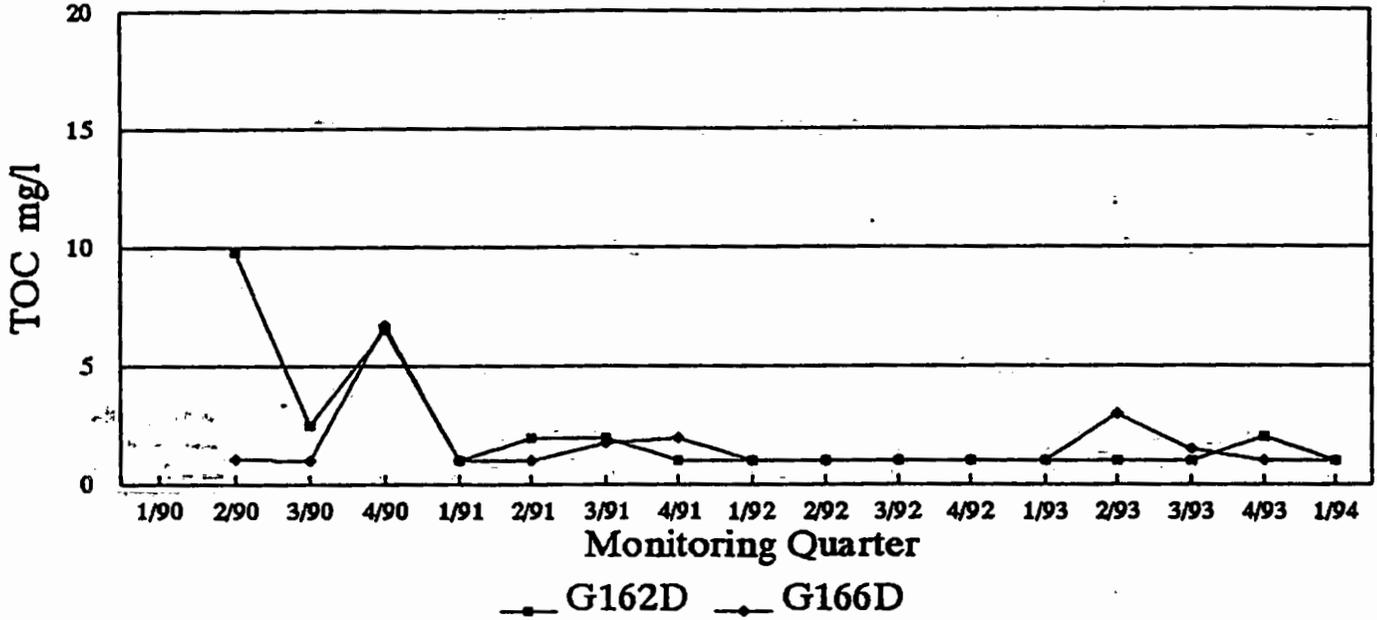


Detection Limit: 1 mg/l

FIGURE 12

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIANT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

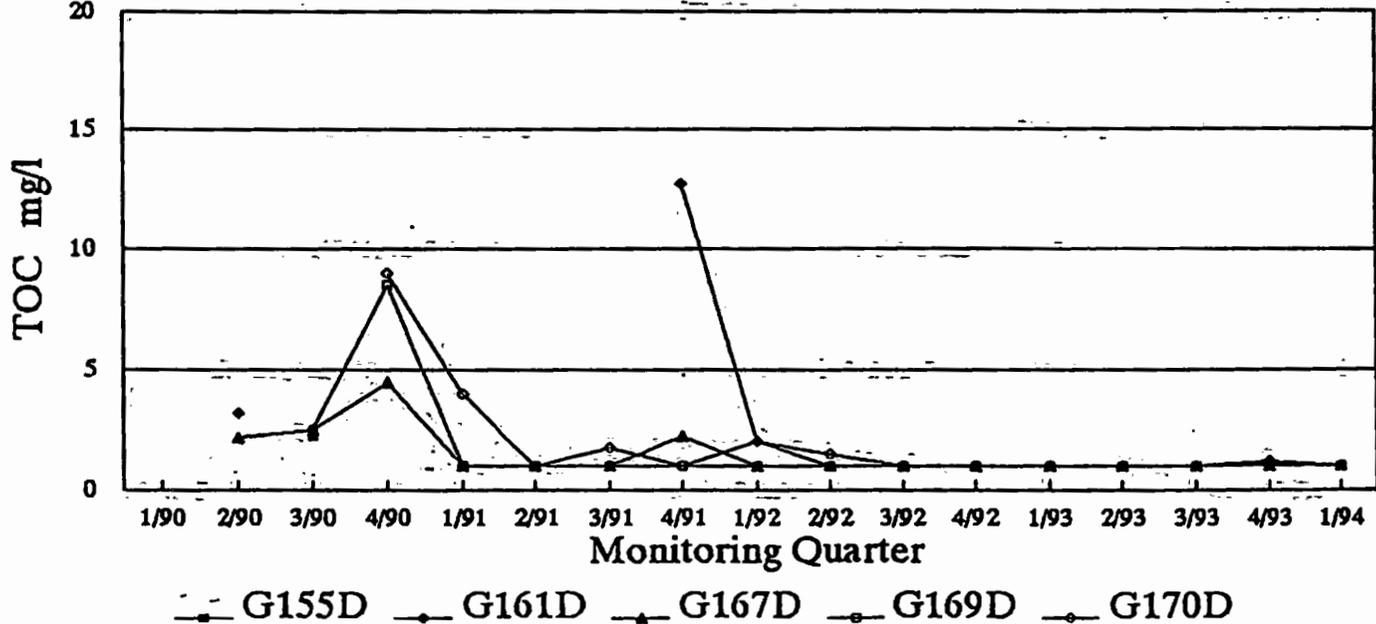
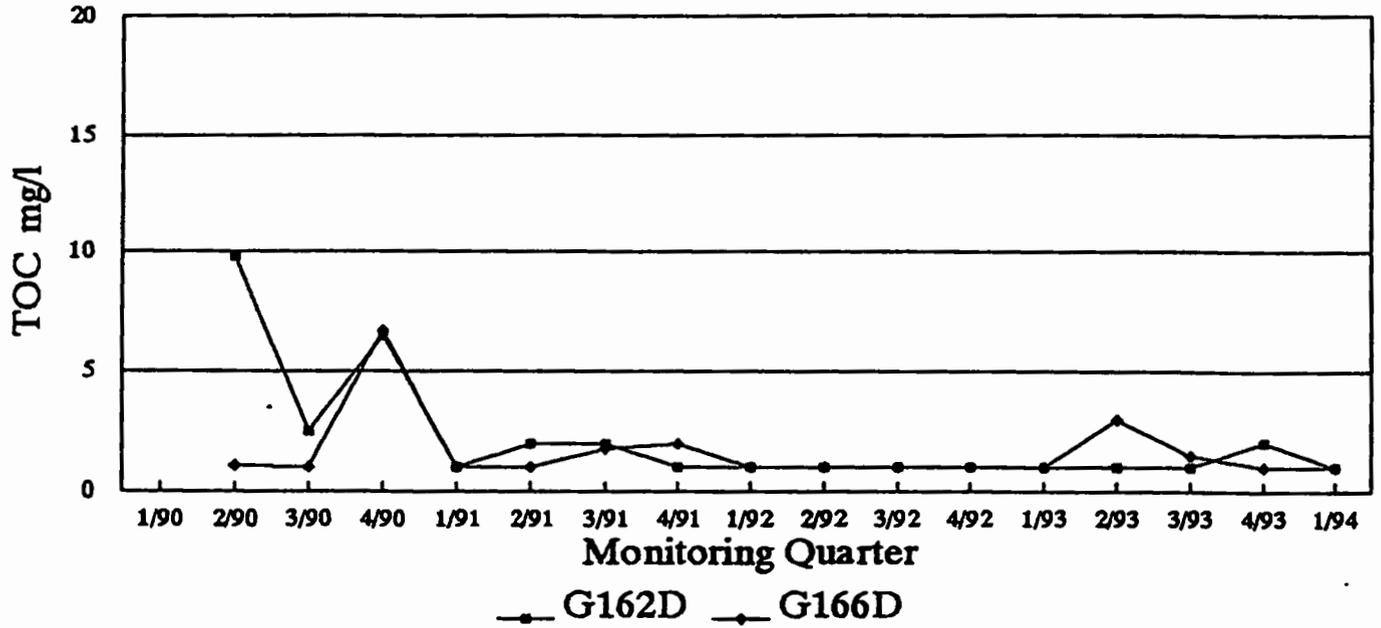


FIGURE 13

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

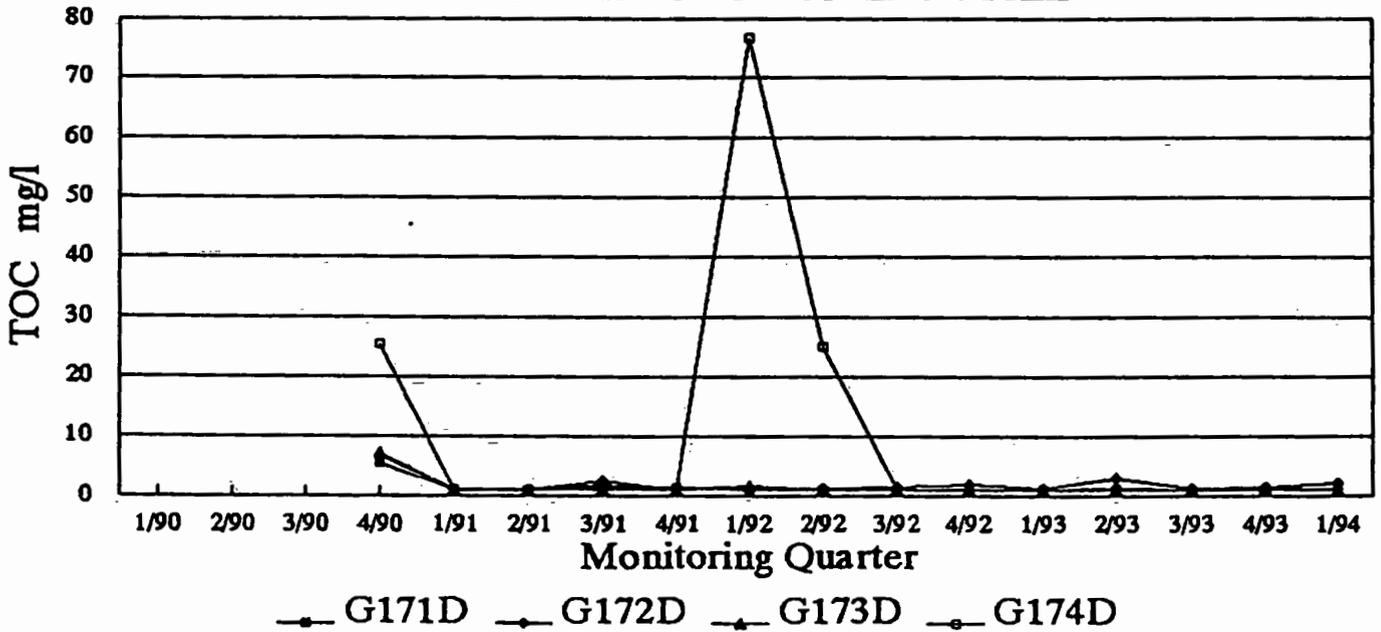
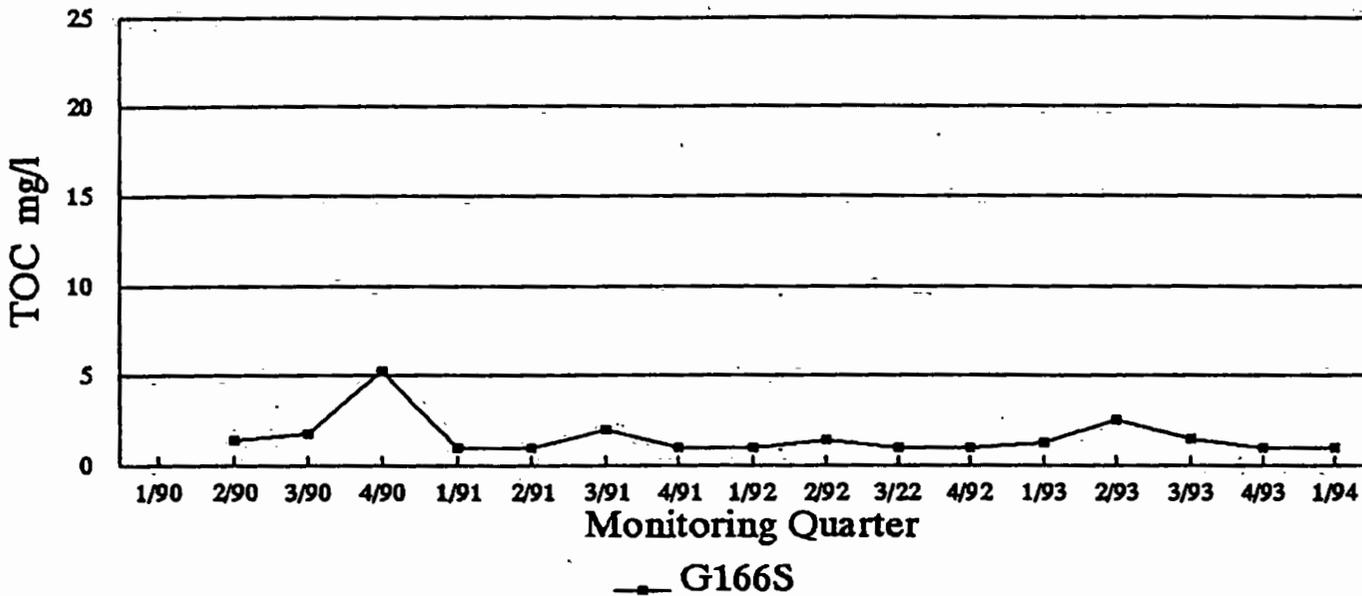


FIGURE 14

UPGRADIENT, SURFICIAL

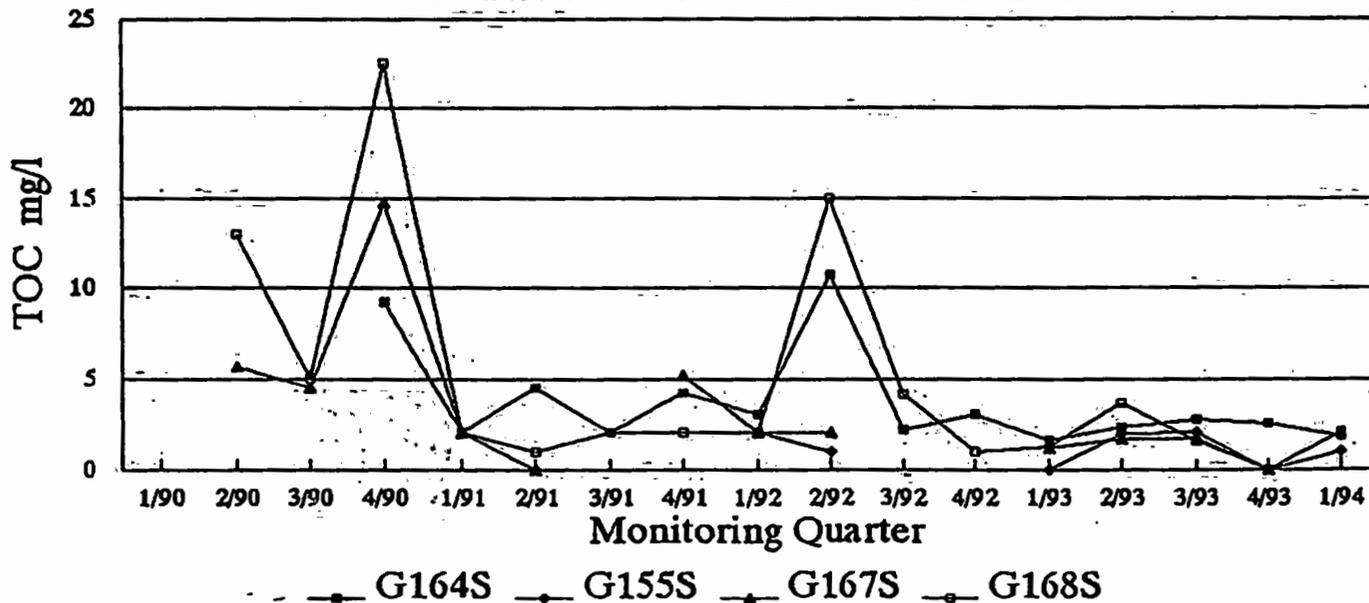
BFI DAVIS JUNCTION LANDFILL



Detection Limit: 1 mg/l

DOWNGRADIENT, SURFICIAL

BFI DAVIS JUNCTION LANDFILL



Detection Limit: 1 mg/l

**TABLE 12
SUMMARY OF TOTAL ORGANIC CARBON DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	1.8 mg/l	1.33
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	3.71 mg/l	2.75
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	1.80 mg/l	1.67
G 167 S	3.24 mg/l	3.78
G 168 S	3.57 mg/l	5.50

UPPER AQUIFER BACKGROUND MEDIAN 1.20 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION 4.21	UPPER 95% TOLERANCE INTERVAL 14.3 mg/l
--	---	---

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	2.0 mg/l	2.03
G 166 I	1.8 mg/l	1.46
G 166 S	1.8 mg/l	1.33
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	58%ND <1.0 mg/l	
G164 I	1.92 mg/l	1.38
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	3.7 mg/l	2.6
G 163 S	3.9 mg/l	2.33
G 167 I	67%ND <1.0 mg/l	
G 169 I	73%ND <1.0 mg/l	
G 170 I	2.6 mg/l	4.28
G 171 I	57%ND <1.0 mg/l	

TABLE 12 (continued)
SUMMARY OF TOTAL ORGANIC CARBONS DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER

MAIN AQUIFER BACKGROUND MEDIAN <1.0 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 18.0 mg/l
--	---	---

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	2.2 mg/l	2.46
G 166 D	1.6 mg/l	1.47
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	75%ND <1.0 mg/l	
G 164 D	1.02 mg/l, (Cohens adj.)	3.09, (Cohens adj.)
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	92%ND <1.0 mg/l	
G 163 I	2.69 mg/l	2.9
G 167 D	81%ND <1.0 mg/l	
G 169 D	75%ND <1.0 mg/l	
G 170 D	57%ND <1.0 mg/l	
G 171 D	1.4 mg/l	1.19
G 172 D	2.0 mg/l	1.49
G 173 D	1.5 mg/l	1.65
G 174 D	10.0 mg/l	21.1

BEDROCK VALLEY AQUIFER BACKGROUND MEAN 57%ND <1.0 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 16.0 mg/l
--	---	---

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	67%ND <1.0 mg/l	

Total Organic Halogens:

Total organic halogens (TOX) is used as a "generic" indicator of organic compounds that contain halogenated species, that is, organochlorides. When organic analyses are not performed the total organic halogen parameter can be used to show whether organochlorides are entering the aquifer. This organic screening technique can serve to direct the Landfill Operator to do a more comprehensive organic analyses if this component begins to increase.

All of the concentration values resulting from pooled data obtained in both the upgradient and downgradient wells in the upper, main and bedrock valley aquifers are either non-detects or within the tolerance interval for the background groundwater standard. The same was reported for the surficial wells.

**TABLE 13
SUMMARY OF TOTAL ORGANIC HALOGENS DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	83%nd <0.01 mg/l	
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	100%ND <0.01 mg/l	
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	89%ND <0.01 mg/l	
G 167 S	77%ND <0.01 mg/l	
G 168 S	75%ND <0.01 mg/l	

UPPER AQUIFER BACKGROUND MEDIAN 74%ND <0.01 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.038 mg/l
--	--	---

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	93%ND <0.01 mg/l	
G 166 I	100%ND <0.01 mg/l	
G 166 S	83%ND <0.01 mg/l	
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	90%ND <0.01 mg/l	
G164 I	56%ND <0.01 mg/l	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	83%ND <0.01 mg/l	
G 163 S	79%ND <0.01 mg/l	
G 167 I	93%ND <0.01 mg/l	
G 169 I	79%ND <0.01 mg/l	
G 170 I	100%ND <0.01 mg/l	
G 171 I	100%ND <0.01 mg/l	

**TABLE 13 (continued)
SUMMARY OF TOTAL ORGANIC HALOGENS DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 87%nd <0.01 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.03 mg/l
---	---	--

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	87%ND <0.01 mg/l	
G 166 D	73%ND <0.01 mg/l	
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	100%ND <0.01 mg/l	
G 164 D	75%ND <0.01mg/l	
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	91%ND <0.01 mg/l	
G 163 I	100%ND <0.01 mg/l	
G 167 D	100%ND <0.01 mg/l	
G 169 D	93%ND <0.01 mg/l	
G 170 D	100%ND <0.01 mg/l	
G 171 D	50%ND <0.01 mg/l	
G 172 D	75%ND <0.01 mg/l	
G 173 D	75%ND <0.01 mg/l	
G 174 D	50%ND 0.03 mg/l	

BEDROCK VALLEY AQUIFER BACKGROUND MEAN <0.01 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.01 mg/l
---	---	---

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	100%ND <0.01 mg/l	

Groundwater Quality Parameters

Alkalinity:

The mean value for alkalinity established during the background, groundwater study for the upper aquifer was 308.2 mg/l with a 95% tolerance interval of 385.5 mg/l. The mean value for alkalinity in well G170I located downgradient in the upper aquifer exceeded the background mean value, however the variability for this measurement equaled that in the background, groundwater study as demonstrated by the equivalent standard deviations for both quantities, that is 40.1 for well G170I and 41.8 for the background upper aquifer groundwater study. Examination of the graphical demonstration of concentration over time for well G170I in comparison to the remaining downgradient wells confirms the spatial variability exhibited by this well. The data reveals no particular increasing trends, instead the alkalinity concentrations cycle around an elevated level.

Examination of the upgradient and downgradient wells located in the main aquifer confirms that none of the wells exceed the 95% tolerance interval established in the background, groundwater study. The mean value for alkalinity in the main aquifer was 308.2 mg/l and the 95% tolerance interval was set at 381.1 mg/l. The one extreme concentration value seen in well G174D raises no significant questions since the concentration value was not remarkable for the succeeding five monitoring quarters. This value

might be considered to be an "outlier" because it is over six standard deviations beyond the rest of the data pool for that well. Even though this value strongly appears to be outlying the remaining population, without confirmation of sampling or analytical anomalies, the value cannot be simply dismissed from the data pool due to its skewed position. The mean value for well G174D was 347.8 mg/l and would have been 312.0 mg/l without the skewed value. This presents a very good example of the effect a few skewed values can have upon an otherwise normally distributed population.

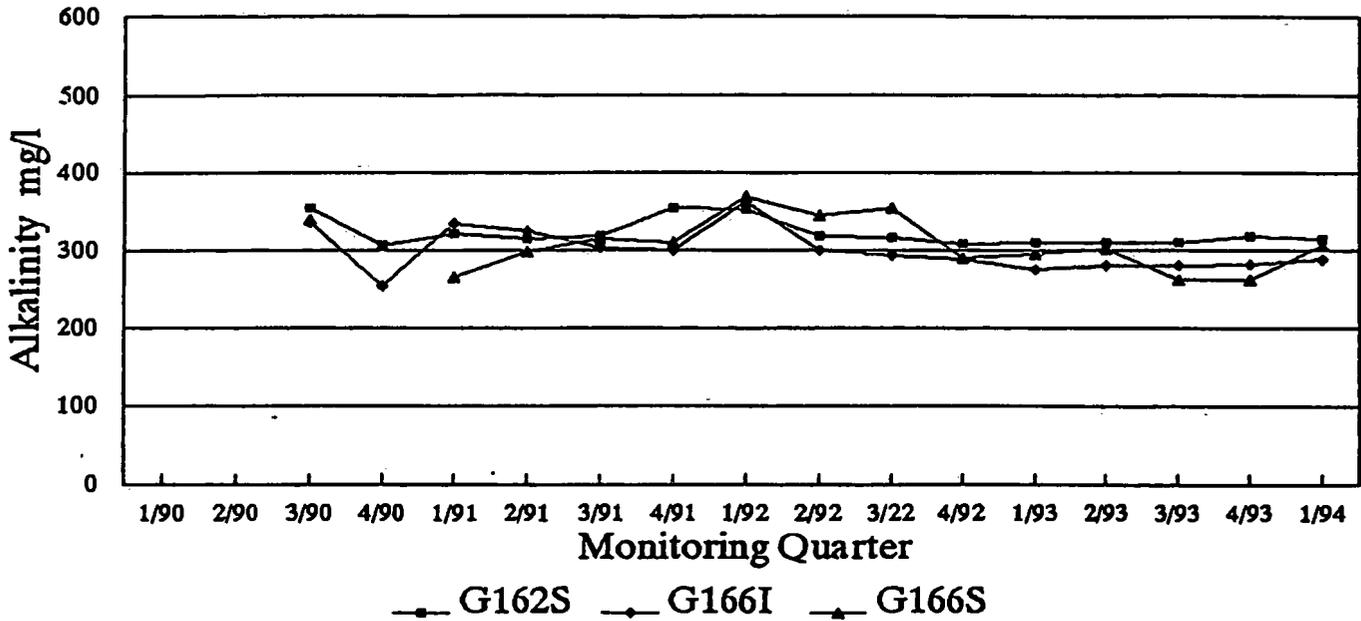
The bedrock valley aquifer well, G163D, did not exceed the 95% tolerance interval established in the background, groundwater study.

The surficial alkalinity data for wells G155S and G167S are "set" at a higher mean value than the upgradient G166S but does not demonstrate any increasing trends over time.

FIGURE 15

UPGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIANT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL

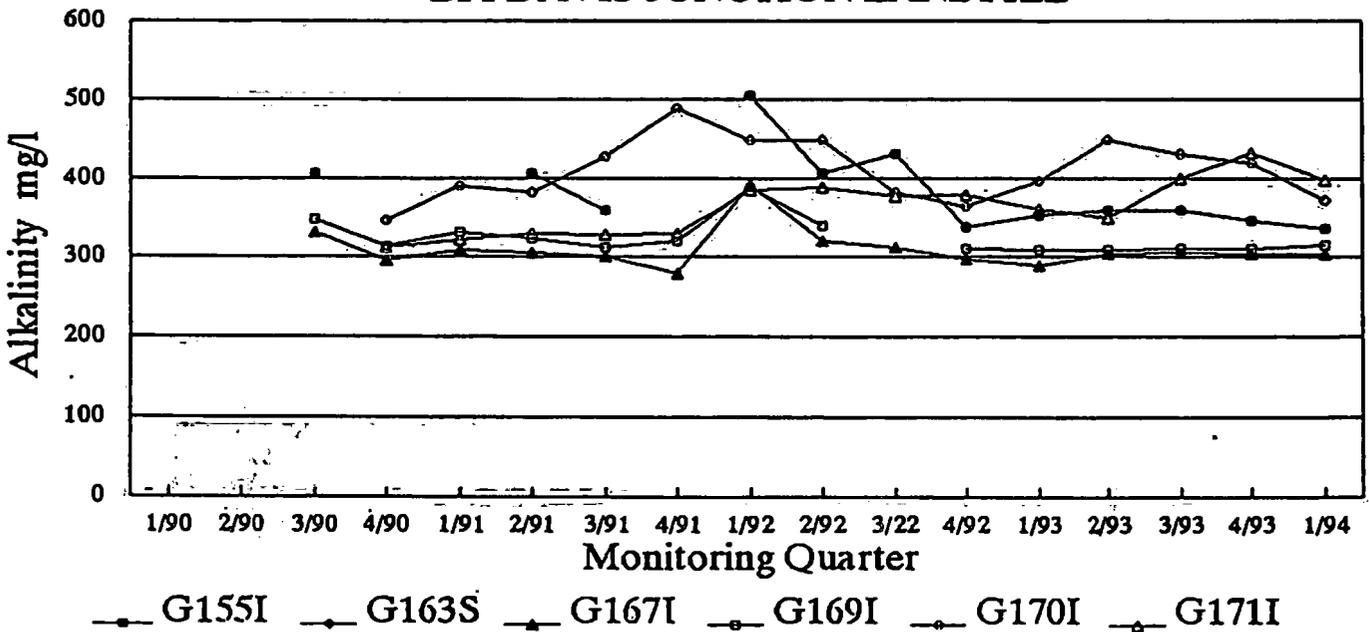
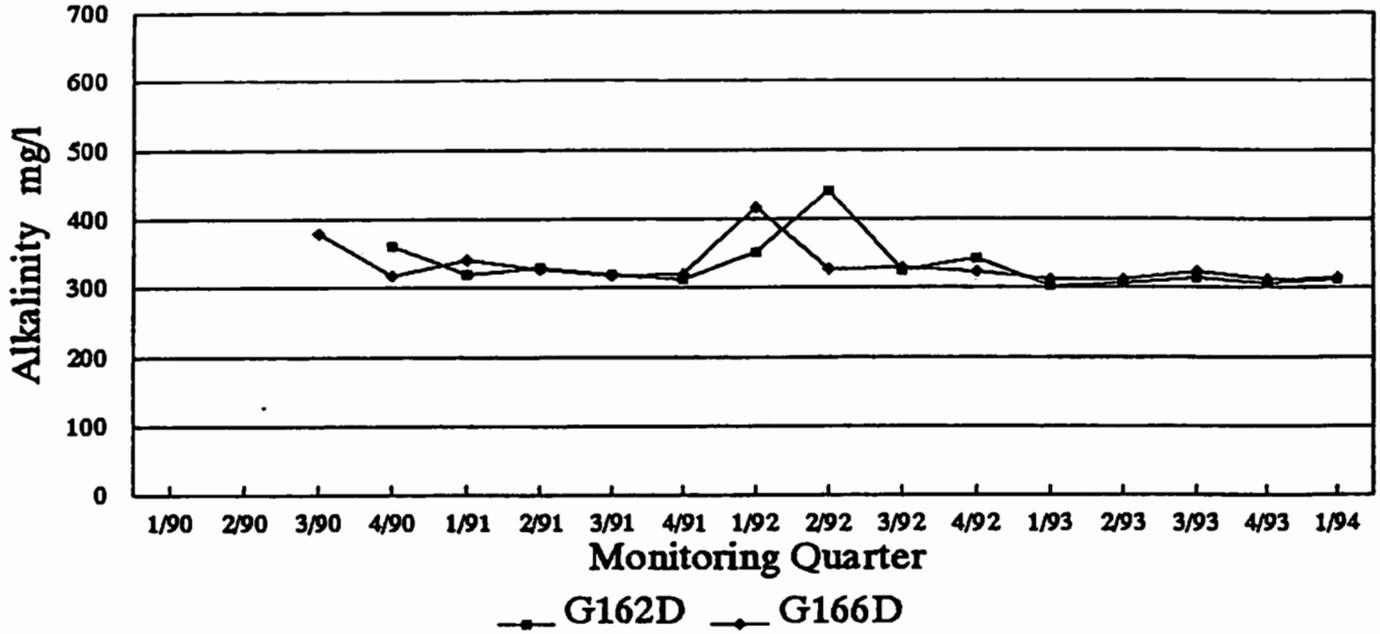


FIGURE 16

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

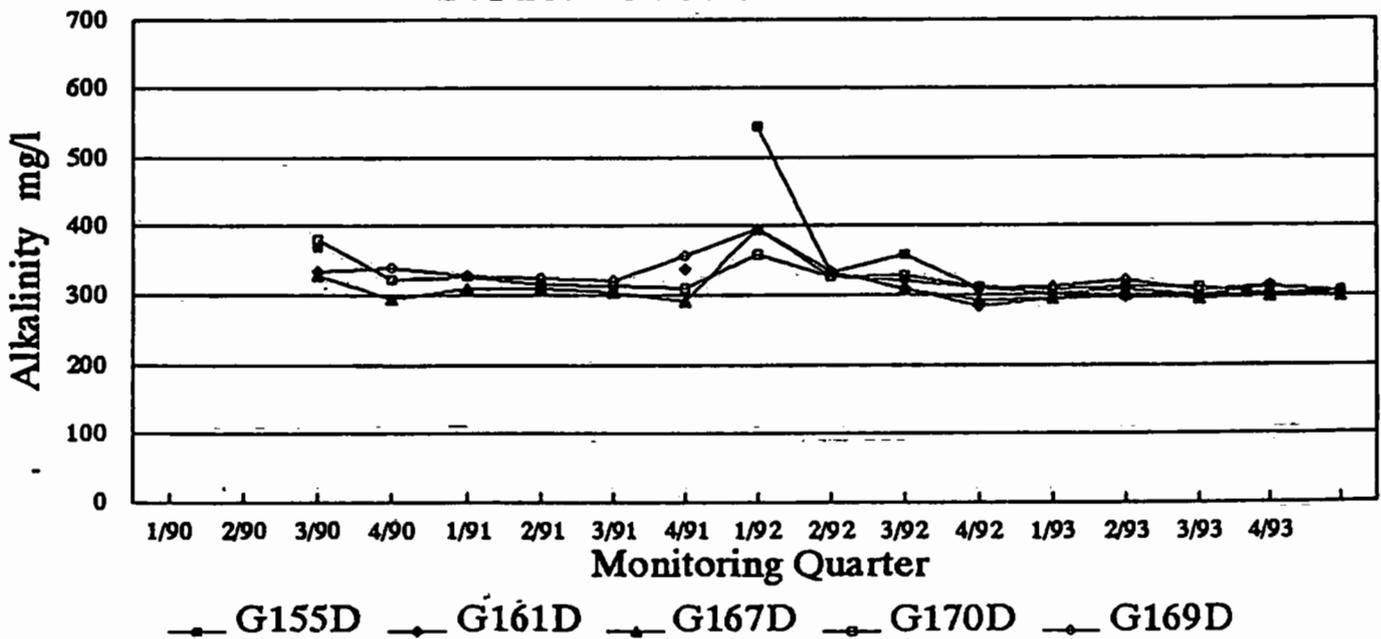
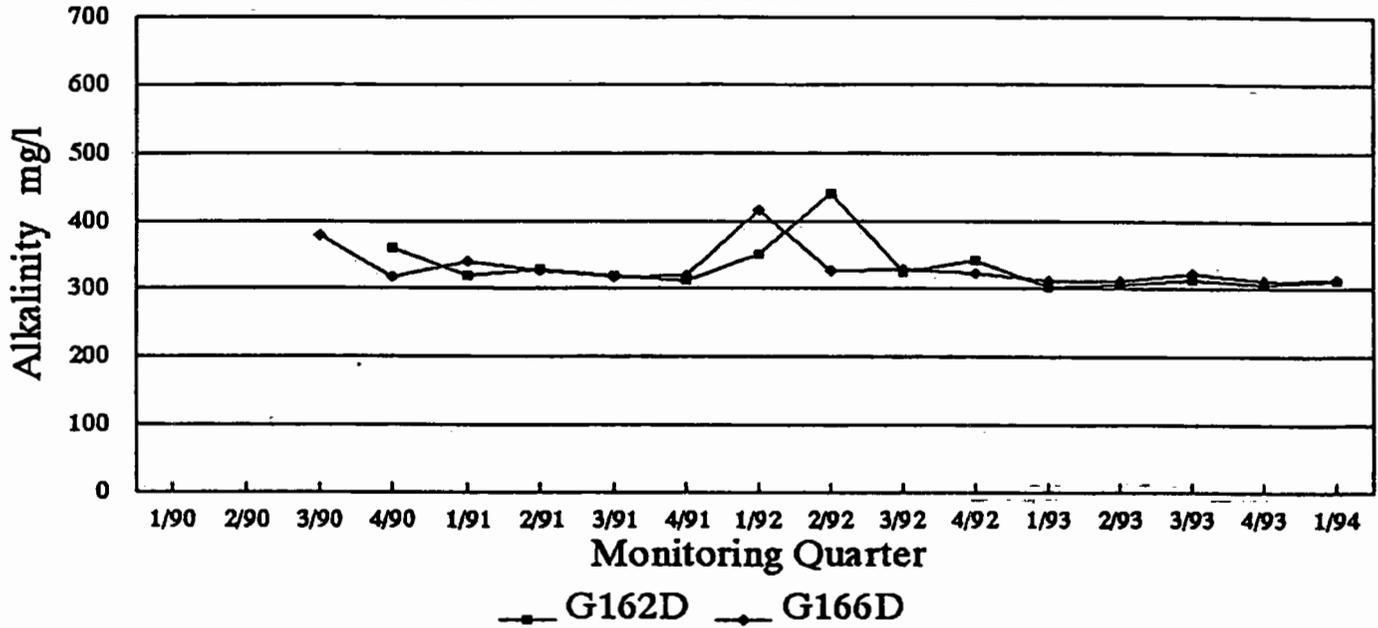


FIGURE 17

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

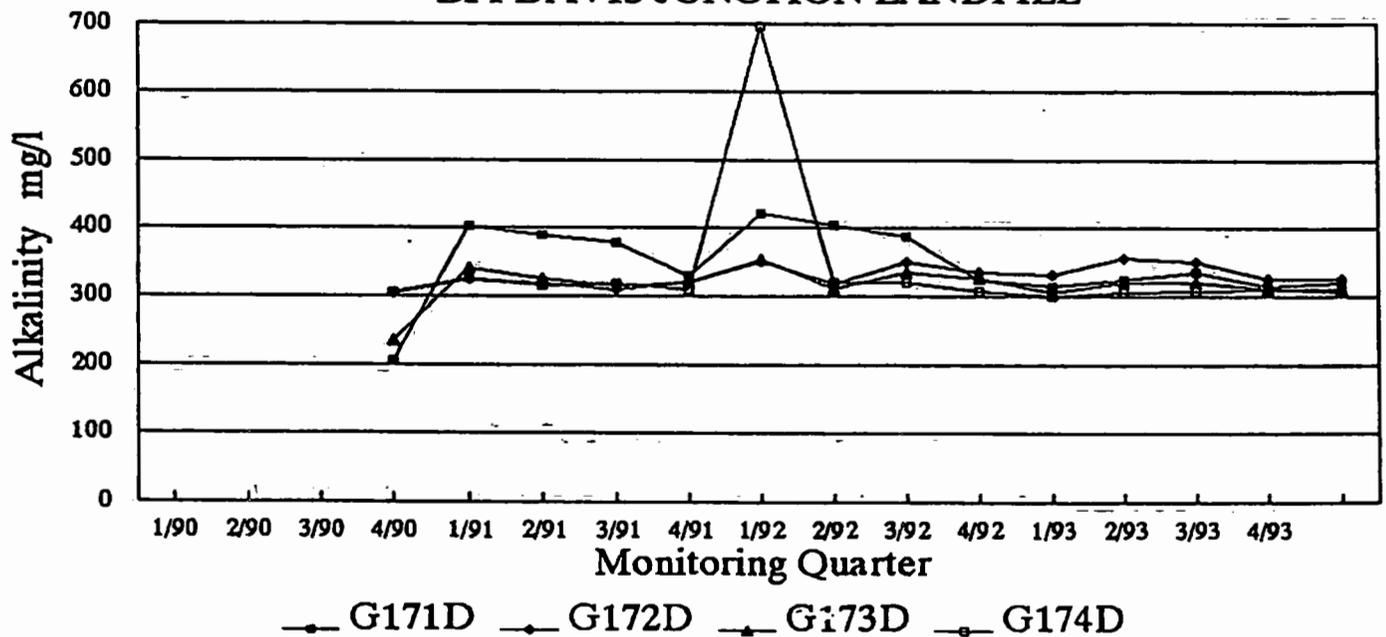
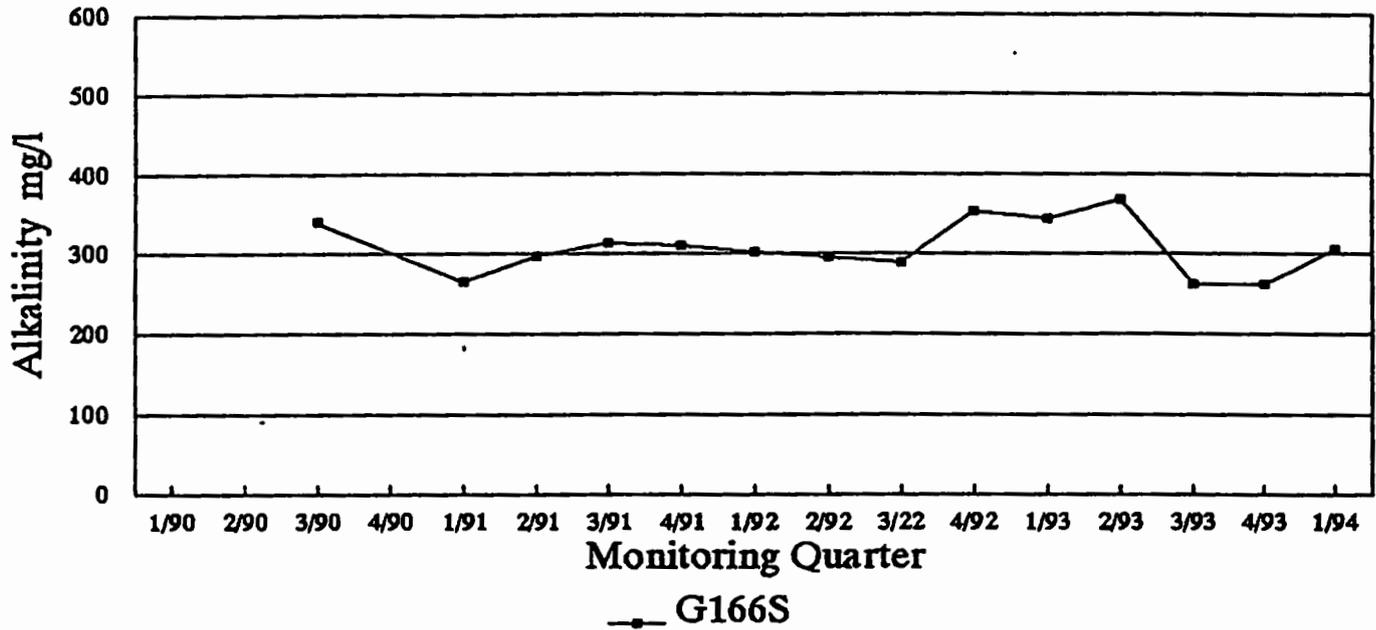


FIGURE 18

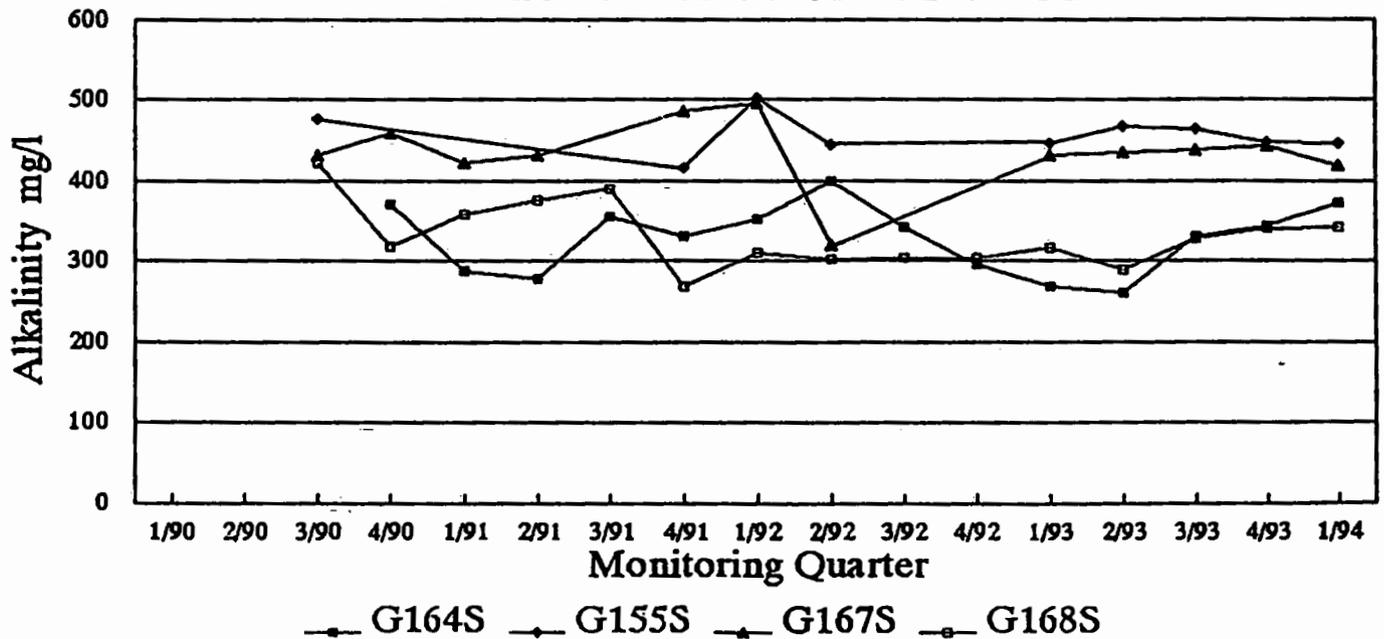
UPGRADIENT, SURFICIAL

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT, SURFICIAL

BFI DAVIS JUNCTION LANDFILL



**TABLE 14
SUMMARY OF ALKALINITY DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	308.0 mg/l	33.6
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	327.4 mg/l	43.0
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	456.4 mg/l	24.2
G 167 S	433.3 mg/l	43.2
G 168 S	331.2 mg/l	41.0

UPPER AQUIFER BACKGROUND MEDIAN	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL
308.2 mg/l	41.8	381.11 mg/l

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	312.6 mg/l	17.0
G 166 I	300.1 mg/l	28.0
G 166 S	308.0 mg/l	33.6
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	334.9 mg/l	19.7
G164 I	325.8 mg/l	23.3
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	383.2 mg/l	49.4
G 163 S	261.7 mg/l	45.5
G 167 I	310.1 mg/l	25.6
G 169 I	324.3 mg/l	22.2
G 170 I	409.9 mg/l	40.1
G 171 I	363.4 mg/l	35.8

**TABLE 14 (continued)
SUMMARY OF ALKALINITY DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 309.7 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION 41.8	UPPER 95% TOLERANCE INTERVAL 381.11 mg/l
--	--	---

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	334.5 mg/l	37.68
G 166 D	355.0 mg/l	31.15
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	306.9 mg/l	17.0
G 164 D	337.8 mg/l	25.0
MAIN AQUIFER DOWNGRAIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	341.1 mg/l	71.2
G 163 I	311.0 mg/l	30.2
G 167 D	283.3 mg/l	79.09
G 169 D	326.0 mg/l	21.69
G 170 D	333.3 mg/l	24.51
G 171 D	353.1 mg/l	61.78
G 172 D	329.0 mg/l	17.32
G 173 D	317.6 mg/l	30.39
G 174 D	347.8 mg/l	34.89

BEDROCK VALLEY AQUIFER BACKGROUND MEAN 284.1 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION 32.5	UPPER 95% TOLERANCE INTERVAL 341.4 mg/l
--	--	--

BEDROCK VALLEY AQUIFER DOWNGRAIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	313.7 mg/l	29.0

Boron:

Examination of concentration values reported for Boron is summarized in Table 15. The median value for the background groundwater upper aquifer concentration was <0.1 mg/l for a population of measurements with sixty-three percent non-detected values. The 95% tolerance interval established for this parameter was 0.23 mg/l. None of the concentrations measured in the downgradient, upper aquifer exceeded this value.

Seventy eight percent of the water samples examined for the background, groundwater study in the main aquifer presented boron concentration below the detection limit. The median value for boron from this study was <0.1 mg/l and the upper 95% tolerance interval was .122 mg/l. None of the concentration values measured in the downgradient wells in the main aquifer exceeded this level.

Too few samples were analyzed for boron in the deep well G163D to make a valid comparison to the background, groundwater results.

The downgradient surficial well analytical reports contained minimal data for this parameter. Three downgradient wells exceeded the less than 0.1 mg/l measured in the upgradient G166S well; these mean values did not exceed the 95% upper tolerance interval for the upper aquifer.

**TABLE 15
SUMMARY OF BORON DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	54.5%ND <1.0 mg/l	
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	0.146 mg/l	0.07
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	N/A	
G 167 S	0.107 mg/l	0.09
G 168 S	0.134 mg/l	0.049

UPPER AQUIFER BACKGROUND MEDIAN <1.0 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.23 mg/l

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	0.102 mg/l	0.07
G 166 I	0.102 mg/l	0.04
G 166 S	54.5%ND <1.0 mg/l	
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	N/A	
G164 I	0.167 mg/l	0.09
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	N/A	
G 163 S	0.10 mg/l	0.02
G 167 I	80%ND <1.0 mg/l	
G 169 I	80%ND <1.0 mg/l	
G 170 I	0.16 mg/l	0.07
G 171 I	0.13 mg/l	0.04

**TABLE 15 (continued)
SUMMARY OF BORON DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN <1.0 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.122 mg/l
--	---	--

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	0.107 mg/l	0.085
G 166 D	63.6%ND <1.0 mg/l	
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	N/A	
G 164 D	0.125 mg/l	0.08
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	N/A	
G 163 I	0.1 mg/l	0.04
G 167 D	80%ND <1.0 mg/l	
G 169 D	0.102 mg/l	0.06
G 170 D	0.105 mg/l	0.06
G 171 D	25%ND <1.0 mg/l	
G 172 D	0.125 mg/l	
G 173 D	50%ND <1.0 mg/l	
G 174 D	50%ND <1.0 mg/l	

BEDROCK VALLEY AQUIFER BACKGROUND MEAN <1.0 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.42 mg/l
--	---	---

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	N/A	

Calcium:

The mean value for calcium established during the background, groundwater study for the upper aquifer was 83.48 mg/l and the upper 95% tolerance interval was 119.16 mg/l. The spread in mean values for calcium in the upgradient, upper aquifer wells demonstrated a spatial variability between the three wells. Examination of the downgradient wells depicted in Figure 19 reveals no significant changing trends and all of the mean values for these wells did not exceed the background parameters or the upgradient well data.

The mean concentration value for calcium in the main aquifer was 86.1 mg/l with an upper 95% tolerance interval of 113.9 mg/l. None of the downgradient concentration values for calcium exceeded this standard.

The data for the downgradient, bedrock valley aquifer well G163D was not significantly different from background, groundwater study calcium value.

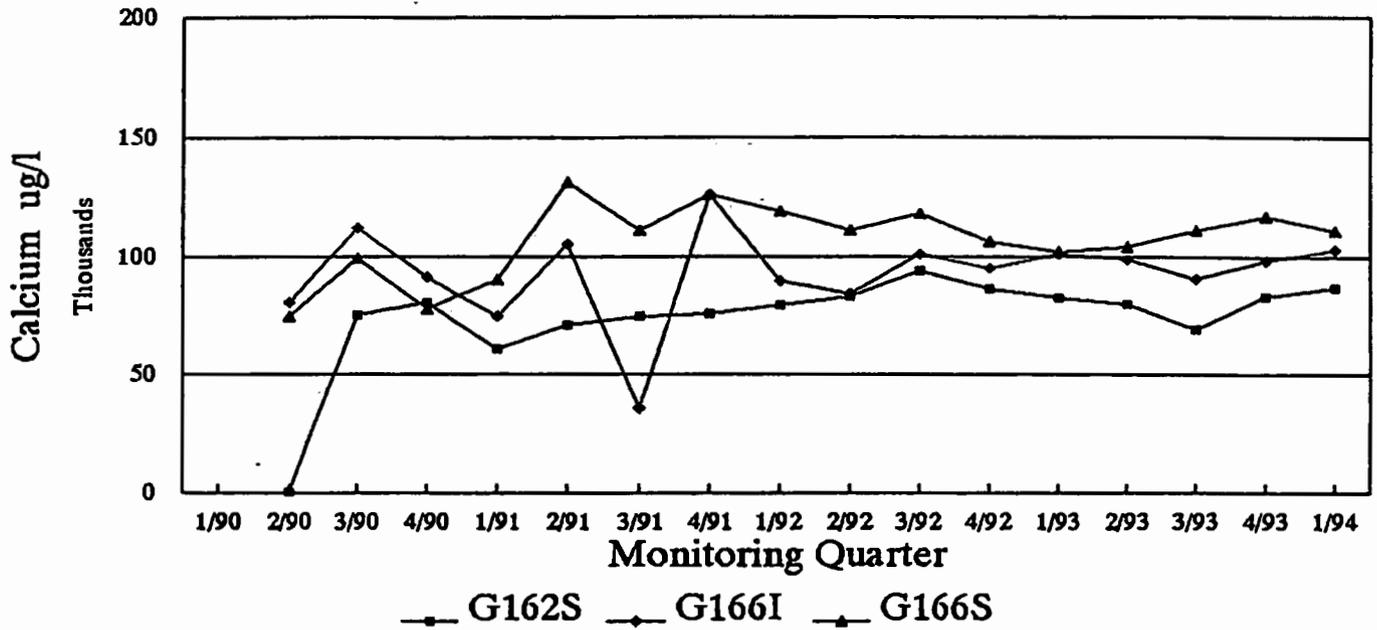
Surficial well G167S presented concentration data for calcium which was significantly higher than the other downgradient

surficial wells and the one upgradient surficial well. However, the elevated calcium concentration is consistent with the elevated alkalinity value and higher specific conductance measurements already noted, demonstrating a natural spatial variation.

FIGURE 19

UPGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL

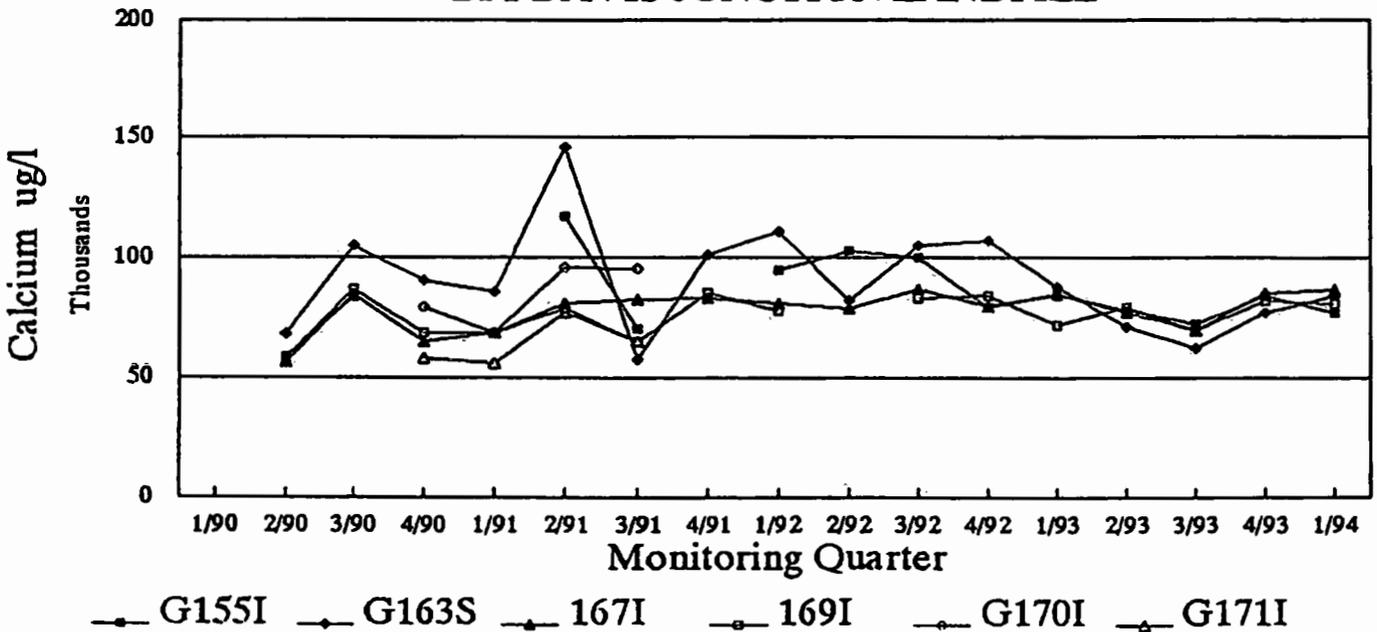
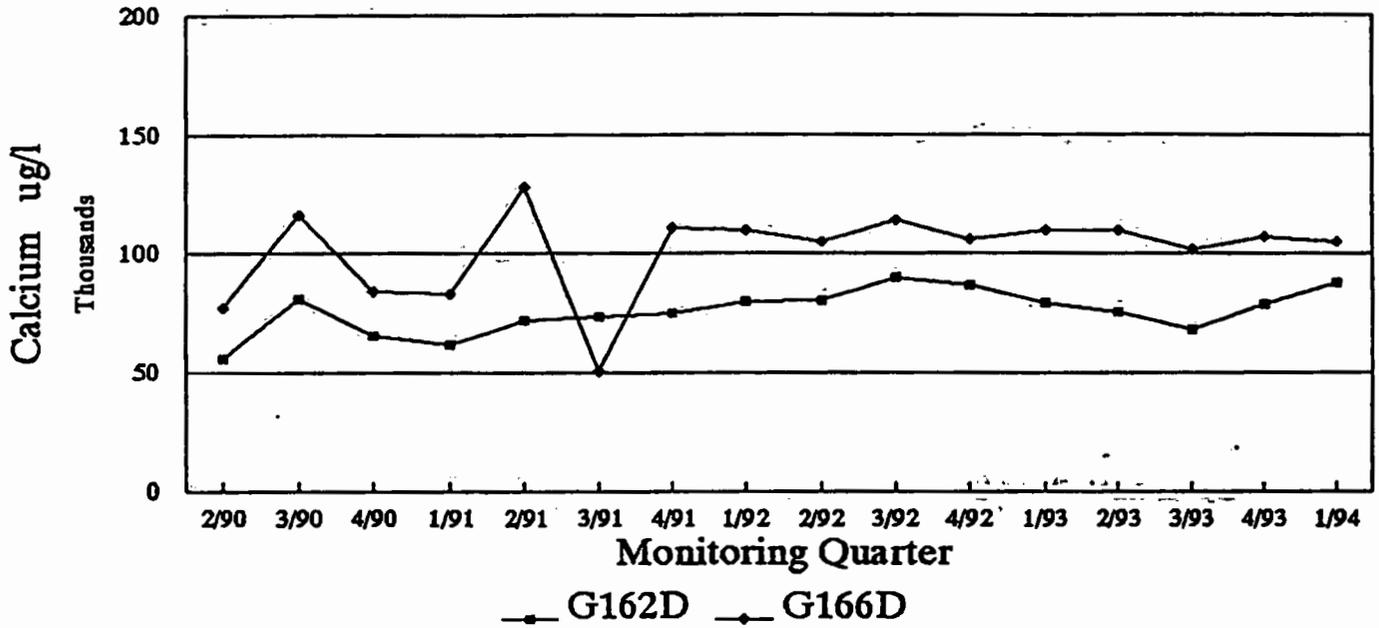


FIGURE 20

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIANT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

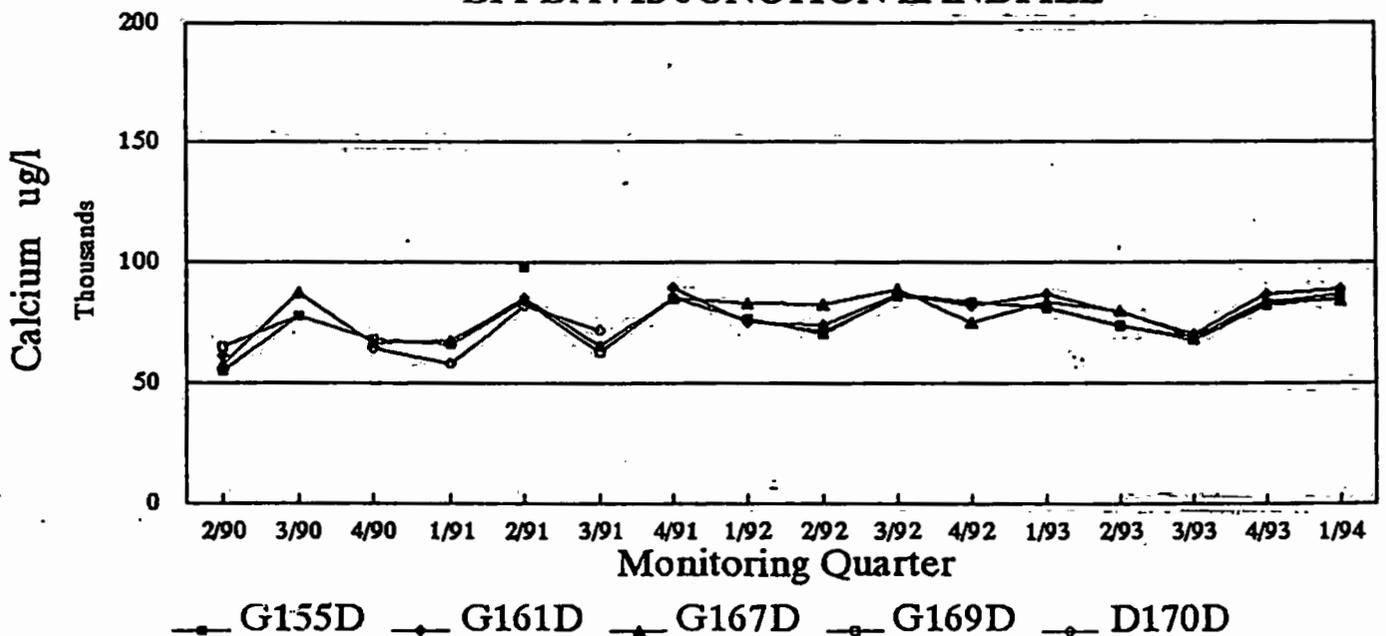
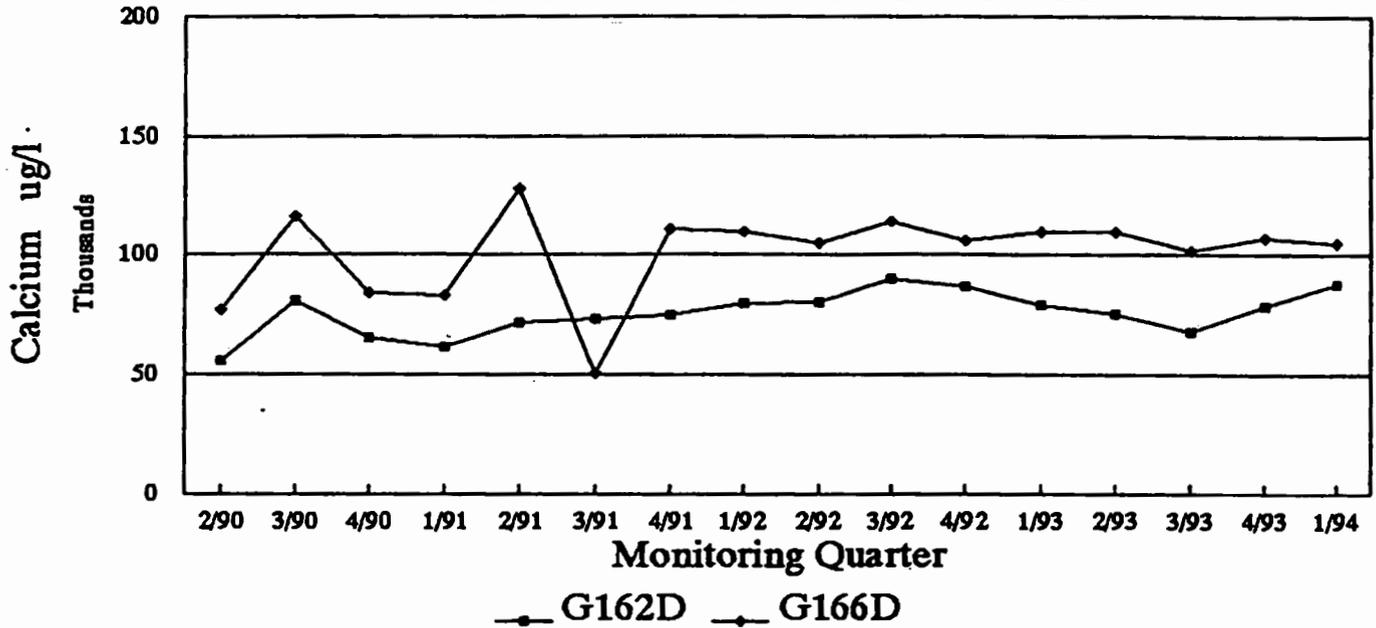


FIGURE 21

UPGRADIENT — MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIANT — MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

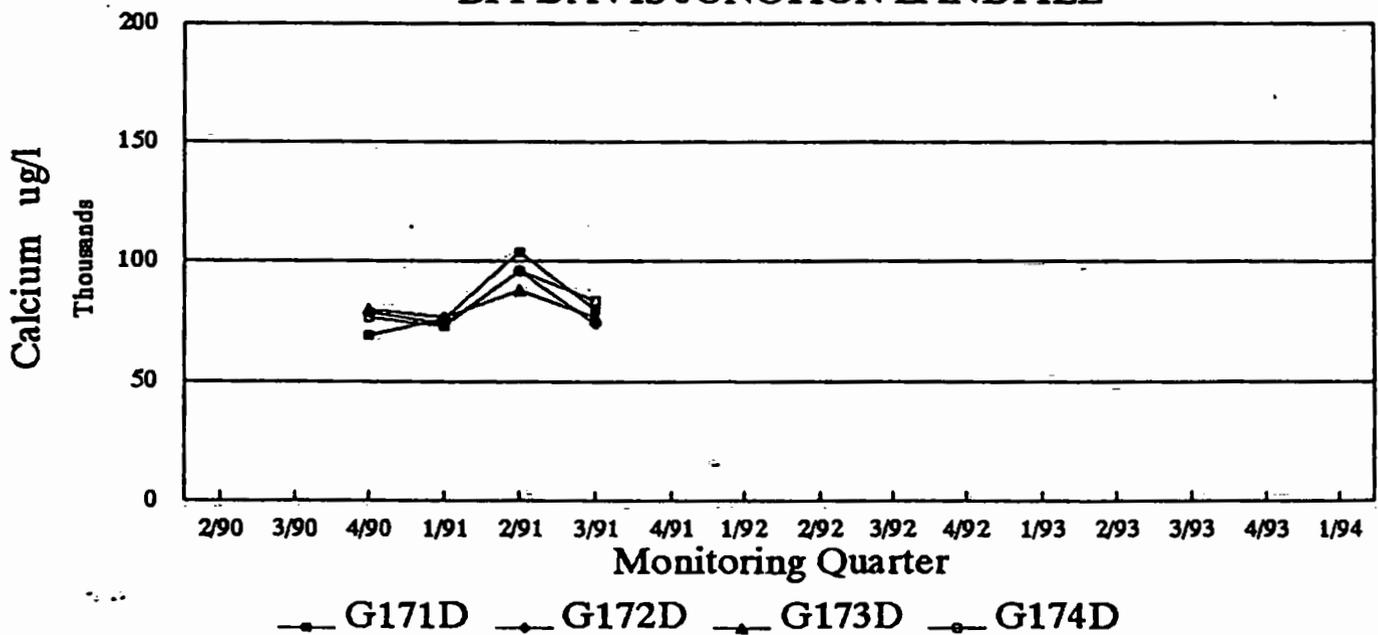
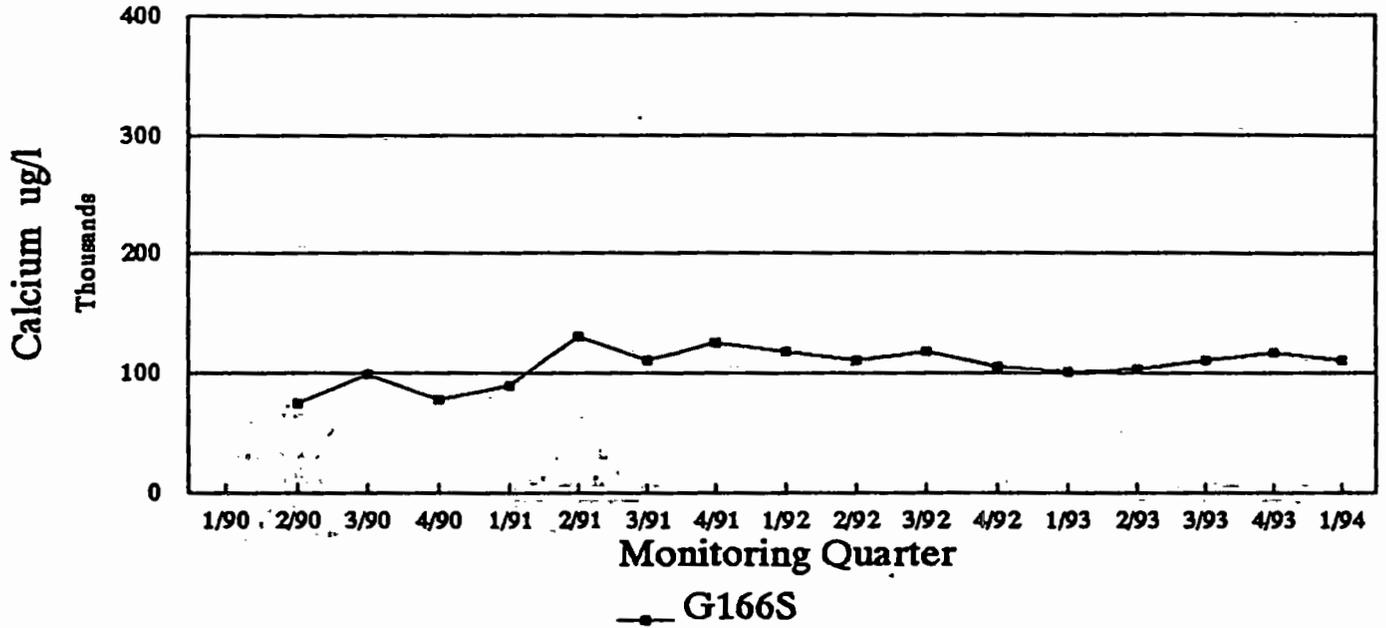


FIGURE 22

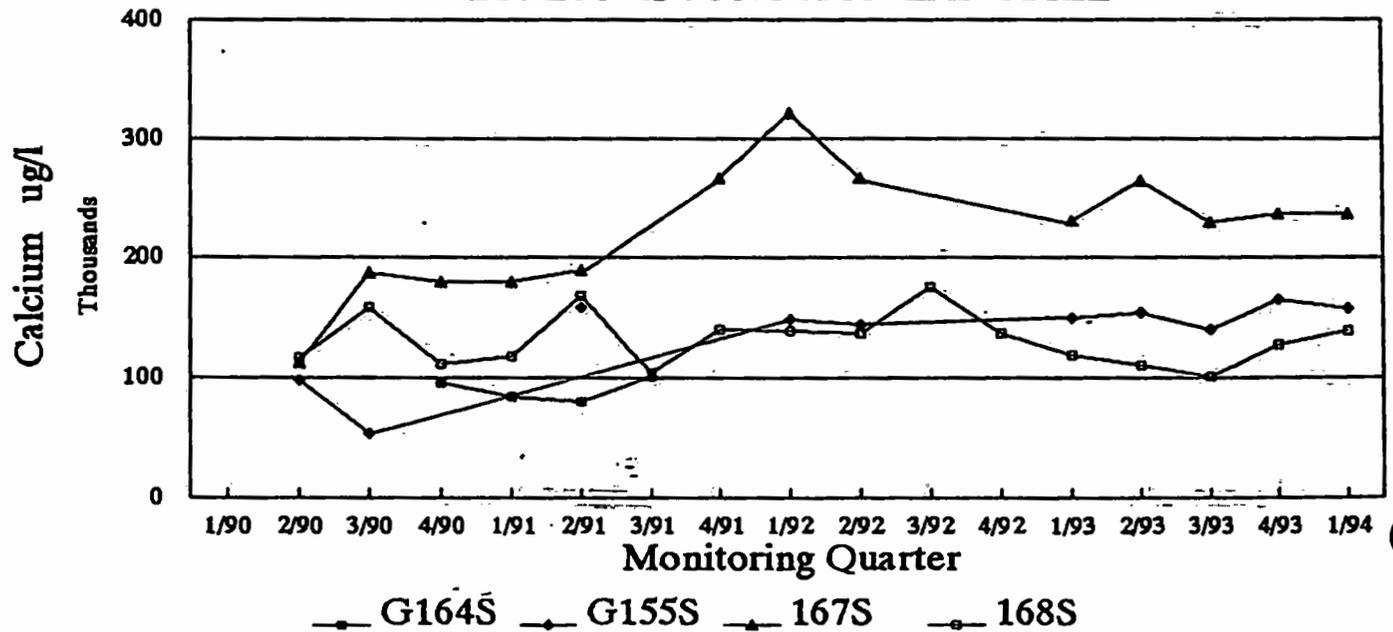
UPGRADIENT – SURFICIAL

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIANT – SURFICIAL

BFI DAVIS JUNCTION LANDFILL



**TABLE 16
SUMMARY OF CALCIUM DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	106.79 mg/l	15.59
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	90.1 mg/l	9.8
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	137.2 mg/l	35.0
G 167 S	223.8 mg/l	53.4
G 168 S	132.0 mg/l	22.3

UPPER AQUIFER BACKGROUND MEDIAN 83.48 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION 13.24	UPPER 95% TOLERANCE INTERVAL 119.16 mg/l

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	69.7 mg/l	27.30
G 166 I	89.05 mg/l	29.74
G 166 S	106.79 mg/l	15.59
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	69.6 mg/l	24.45
G164 I	N/A	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	84.8 mg/l	15.5
G 163 S	90.1 mg/l	22.16
G 167 I	78.0 mg/l	9.0
G 169 I	76.0 mg/l	8.4
G 170 I	78.2 mg/l	12.5
G 171 I	64.0 mg/l	9.5

**TABLE 16 (continued)
SUMMARY OF CALCIUM DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 86.1 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION 16.3	UPPER 95% TOLERANCE INTERVAL 113.9 mg/l
---	--	--

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	75.8 mg/l	9.47
G 166 D	101.2 mg/l	18.6
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	79.1 mg/l	9.4
G 164 D	N/A	
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	78.2 mg/l	10.8
G 163 I	78.1 mg/l	15.43
G 167 D	76.8 mg/l	10.1
G 169 D	76.2 mg/l	8.3
G 170 D	69.1 mg/l	10.3
G 171 D	82.3 mg/l	15.1
G 172 D	81.0 mg/l	10.4
G 173 D	80.3 mg/l	5.4
G 174 D	82.4 mg/l	10.1

BEDROCK VALLEY AQUIFER BACKGROUND MEAN 86.8 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION 12.2	UPPER 95% TOLERANCE INTERVAL 108.3 mg/l
---	--	--

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	68.6 mg/l	21.1

Chloride:

The three upgradient, upper aquifer wells present a clear picture of spatial variation as seen in Figure 23. Well G166I and G166S contain a significantly greater concentration of chloride in comparison to well G162S. These wells demonstrated a typical seasonal cyclical trend with the exception that they were set at a higher midpoint. As the concentration values obtained from these wells continue to be added to the background concentration studies they will effect a change in the background pooled data statistics over a period of time. However, at present, the values still do not exceed the tolerance interval of 231.84 mg/l. The spatial variations demonstrated by these wells are discussed in Jennings' Modelling and Monitoring Plan.

The downgradient, upper aquifer wells were not remarkable and none of the concentration values for chloride exceeded the background concentration values.

A similar statement can be made concerning the concentration values demonstrated for the wells located in the main aquifer. Well G166D revealed a similar location influenced elevated chloride concentration. The downgradient wells contained chloride

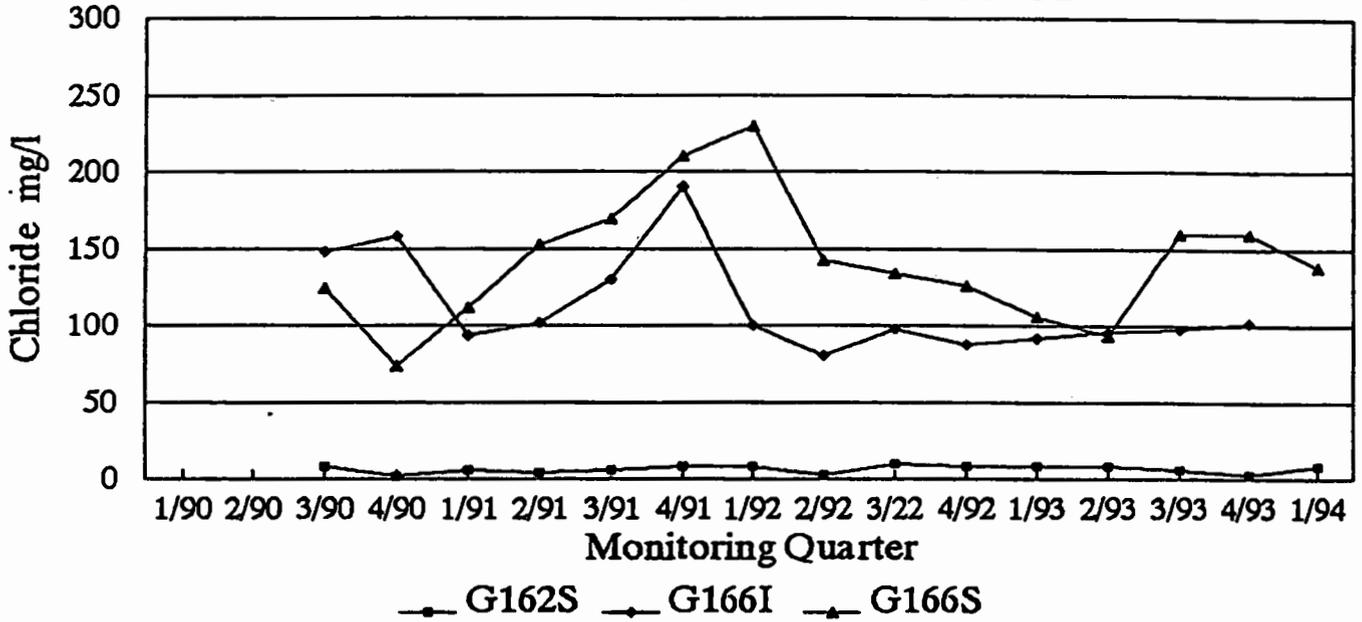
concentrations which did not exceed the main aquifer tolerance interval of the proposed groundwater standard of 60.72 mg/l.

Chloride concentration values in the bedrock valley aquifer well G163D were reported below the detection limit seventy three percent of the time and demonstrated no significant difference from the background, groundwater study for the deep level of the main aquifer.

Surficial well analytical data for chloride again demonstrates the variability between wells which monitor the surficial deposits and kettles. The downgradient geological location contains three wells, G155S, G167S and G168S which exhibited low concentrations of chloride in comparison to the upgradient surficial well G166S. Well G164S, which is screened in the same kettle as G166S, reported mean concentration values elevated as found in the upgradient well, but not greater than the 95% tolerance interval determined for the upper aquifer.

FIGURE 23

UPGRADIENT – UPPER AQUIFER BFI DAVIS JUNCTION LANDFILL



DOWNGRAIDENT – UPPER AQUIFER BFI DAVIS JUNCTION LANDFILL

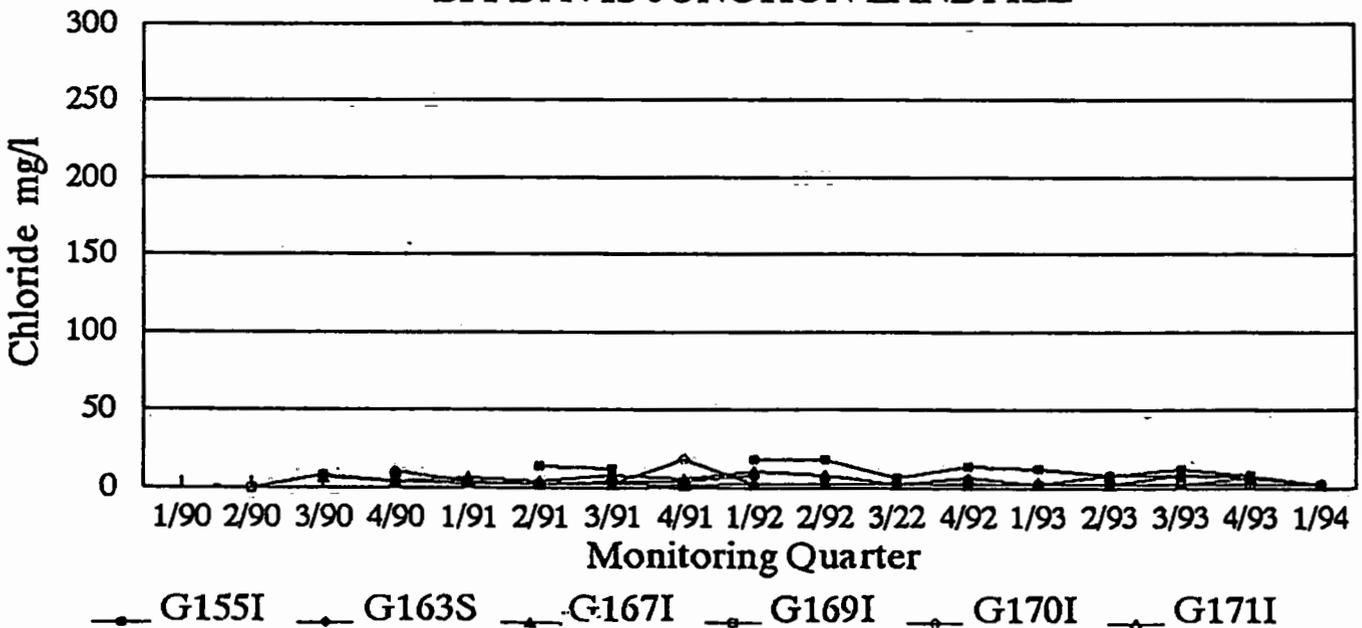
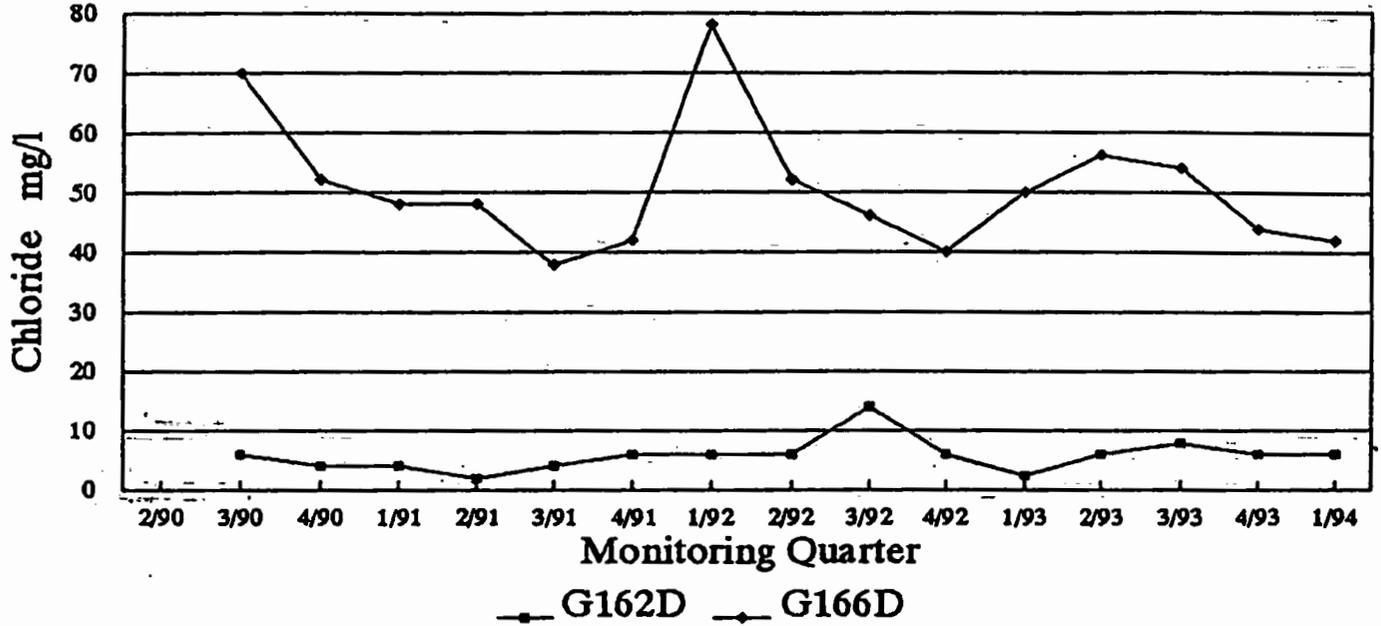


FIGURE 24

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

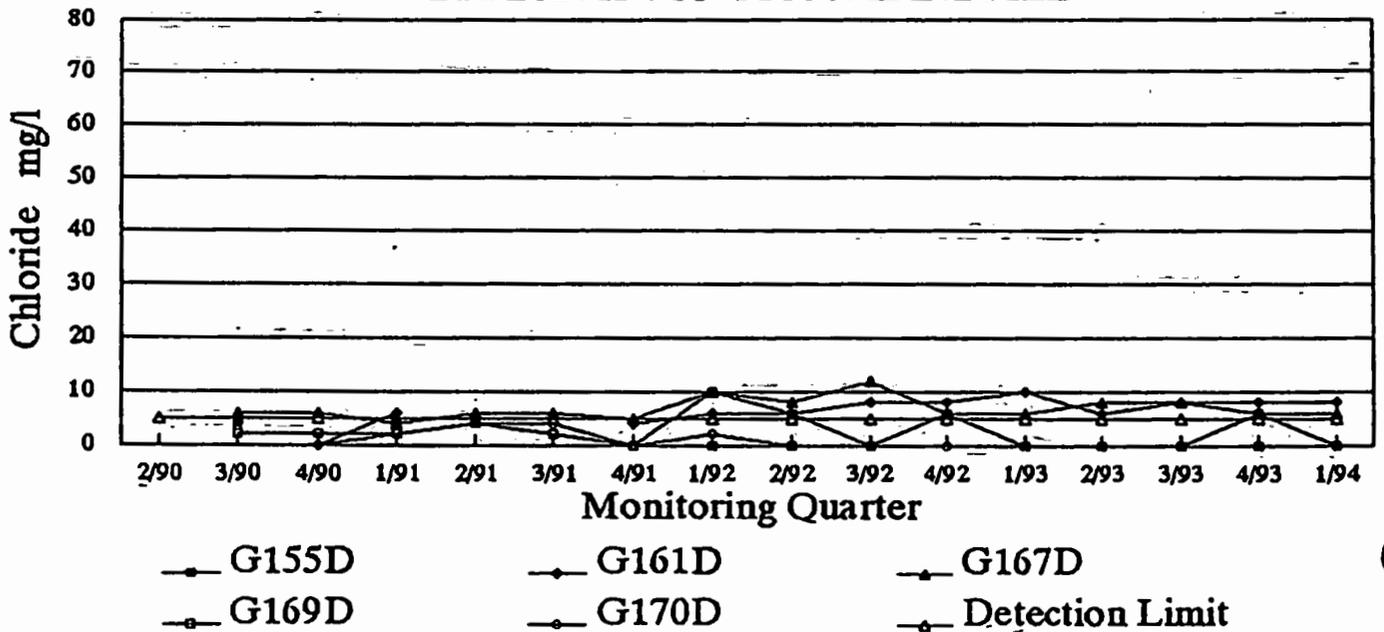
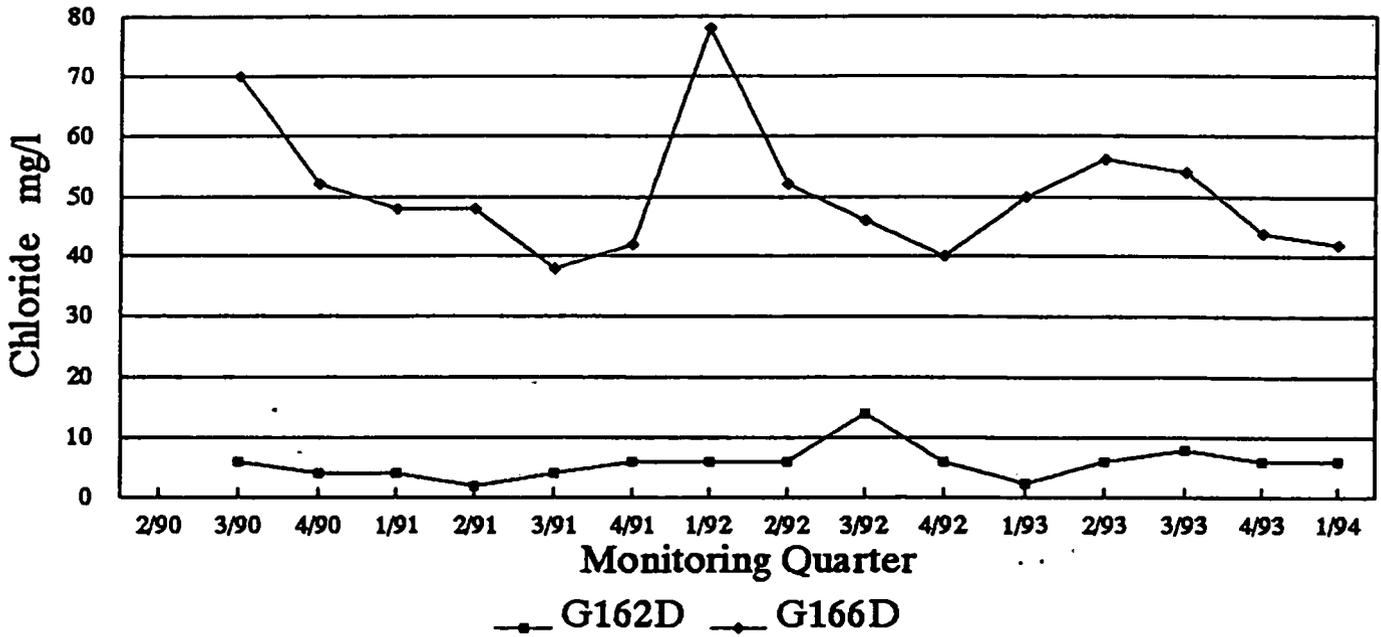


FIGURE 25

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

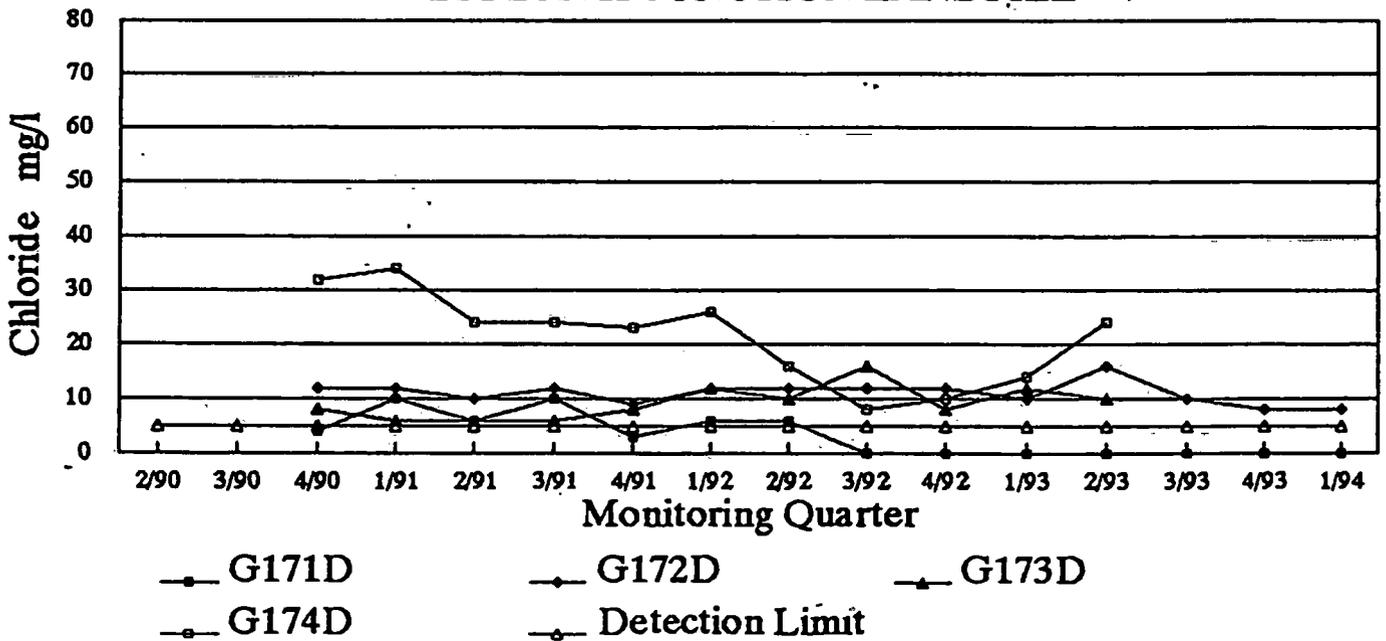
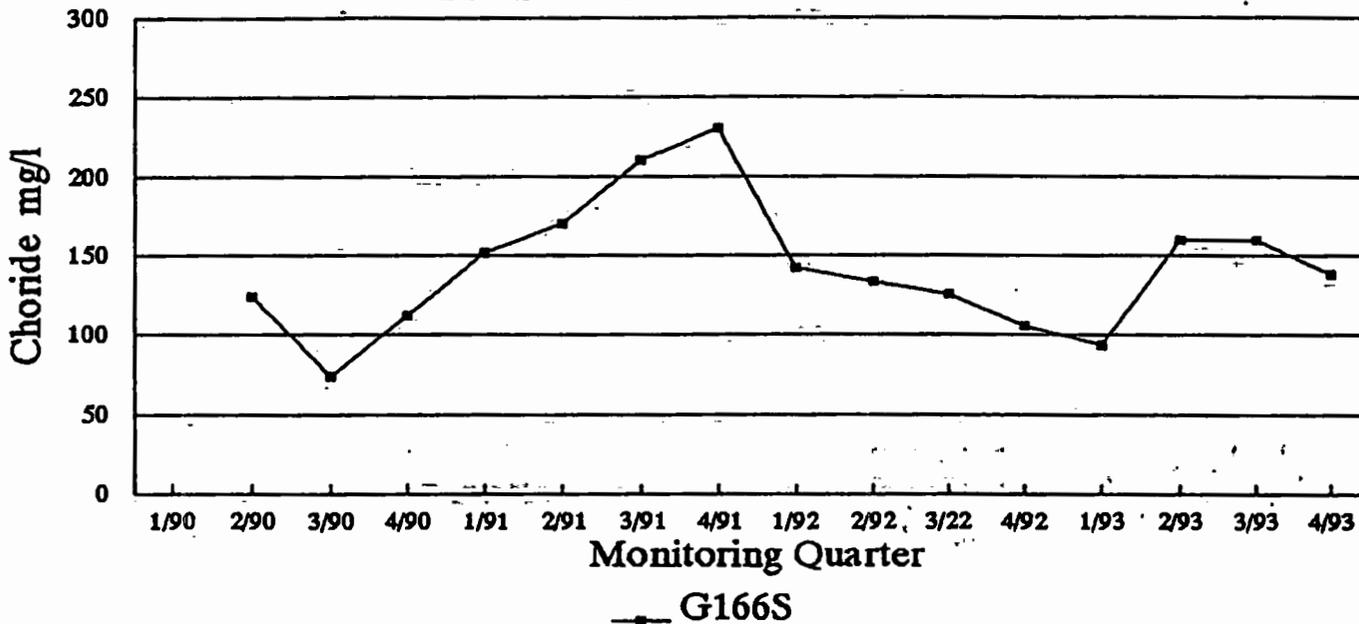


FIGURE 26

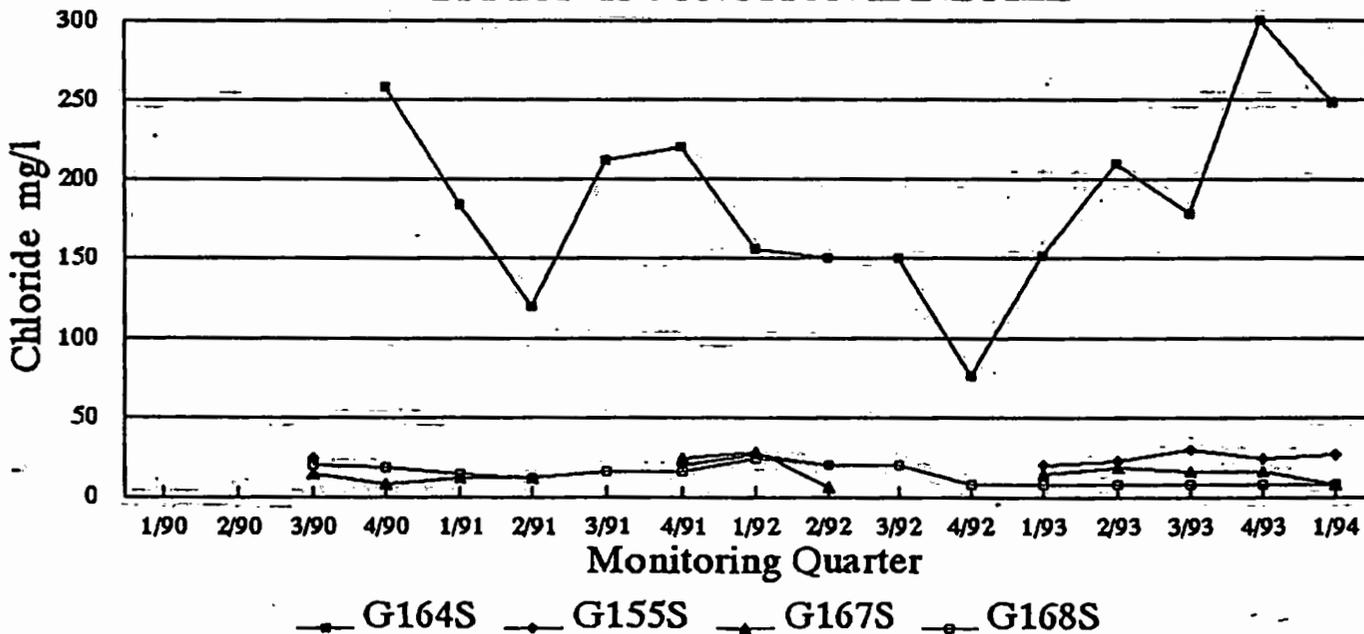
UPGRADIENT, SURFICIAL

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT, SURFICIAL

BFI DAVIS JUNCTION LANDFILL



**TABLE 17
SUMMARY OF CHLORIDE DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	142.1 mg/l	41.13
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	186.71 mg/l	59.22
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	23.56 mg/l	3.43
G 167 S	14.67 mg/l	6.46
G 168 S	13.9 mg/l	5.69

UPPER AQUIFER BACKGROUND MEDIAN 14.77 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION 4.91	UPPER 95% TOLERANCE INTERVAL 231.84 mg/l
--	--	--

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	6.3 mg/l	2.49
G 166 I	111.3 mg/l	31.0
G 166 S	142.1 mg/l	41.13
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	5.31 mg/l	3.03
G164 I	156.9 mg/l	20.0
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	11.2 mg/l	4.38
G 163 S	12.5 mg/l	4.24
G 167 I	6.0 mg/l	2.56
G 169 I	4.0 mg/l	1.93
G 170 I	65%ND <5.0 mg/l	
G 171 I	86%ND <5.0 mg/l	

**TABLE 17 (continued)
SUMMARY OF CHLORIDE DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 11.4 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION 28.87	UPPER 95% TOLERANCE INTERVAL 60.72 mg/l
---	---	--

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	6.0 mg/l	2.77
G 166 D	50.6 mg/l	10.91
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	6.6 mg/l	1.74
G 164 D	41.32 mg/l	41.08
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	3.1 mg/l	1.13
G 163 I	7.5 mg/l	1.0
G 167 D	7.0 mg/l	2.09
G 169 D	5.6 mg/l	2.32
G 170 D	2.64 mg/l	0.6
G 171 D	4.5 mg/l	2.74
G 172 D	11.1 mg/l	2.09
G 173 D	9.3 mg/l	3.13
G 174 D	21.4 mg/l	8.41

BEDROCK VALLEY AQUIFER BACKGROUND MEAN 5.9 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION 11.3	UPPER 95% TOLERANCE INTERVAL 25.8 mg/l
--	--	---

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	73%ND <5.0 mg/l	

Iron:

There may be an upward trend in the iron content measured in the upper aquifer, downgradient well G155I based upon the few measurements taken at this site. The mean value significantly exceeds the upper tolerance interval established for the background, groundwater study. Based upon conversations with the site Hydrogeologist, there may be reasons for these high iron values due to the presence of oxidized sediments at the screen location. Additionally, well construction may be a factor. Apparently some of the outer protective casings and some of the well covers show signs of rust and some are actually flaking. These and other factors need to be studied and the well should continue to be monitored on a quarterly basis to better follow the changes in iron concentrations. However, an upward trend in one parameter does not indicate that an impact upon groundwater quality has occurred.

The remaining wells in the upper aquifer are not significantly different from the background, groundwater mean value and do not exceed the 95% tolerance interval established during that study.

The bedrock valley aquifer well G163D was only monitored four times over the time span of this study. The mean concentration value for iron exceeded the 95% tolerance interval established by

the background, groundwater study for the deep level of the main aquifer. Also, this well is so far downgradient from the unit boundary, that any impact from the landfill, particularly with respect to a highly retarded metal, is precluded. Again, a true background for the bedrock valley aquifer has not yet been established, and comparison to background for upper levels does not constitute an unbiased comparative value.

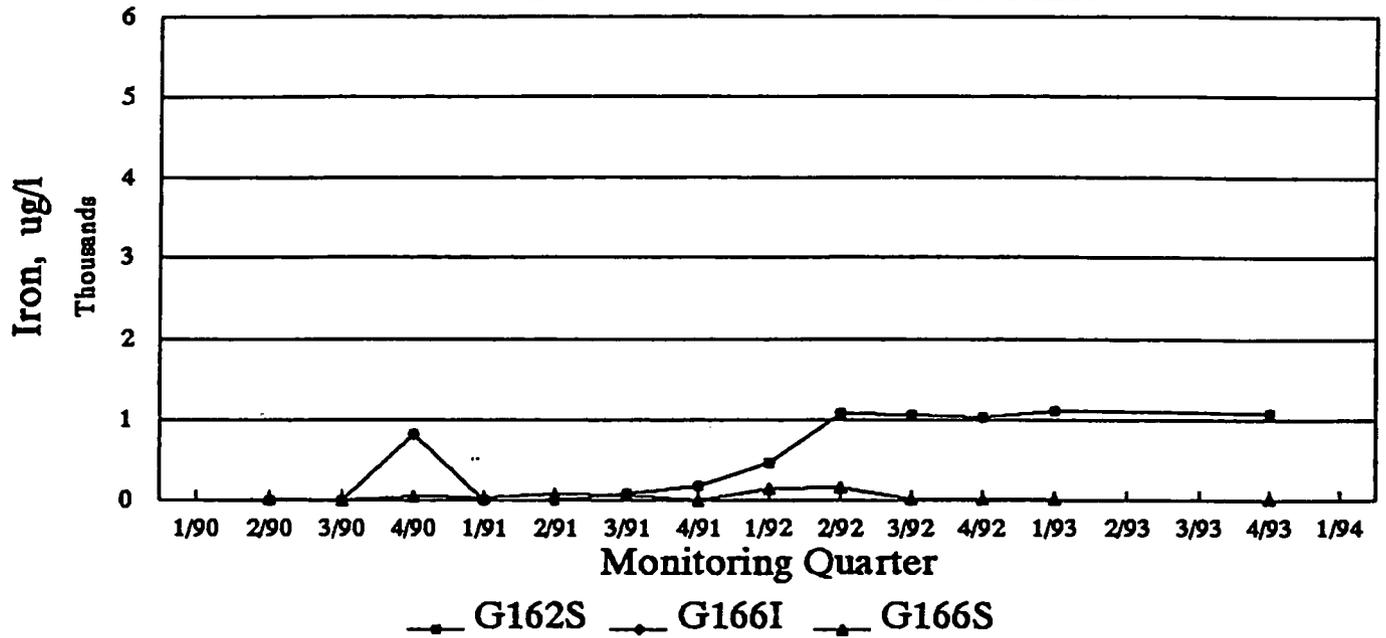
The surficial well iron content was unremarkable. All the measured concentration values for iron content were well below the values measured in the upgradient, surficial well G166S. The iron data was monitored infrequently and therefore no graphs were prepared. Overall, it is noted that iron contents tend to be relatively higher in some wells through 1992 and 1993. The lowered pH noted throughout this time period may affect reactions with iron which occurs naturally in the aquifer.

This same cyclical change in pH was noted in well G155I, which screens oxidized sediments and demonstrated the upward trend in measured iron content. Future quarterly monitoring for iron should assist in defining the trend of the iron content in this well as well as determining whether an actual increase in iron is occurring at this well.

FIGURE 27

UPGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRAIDENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL

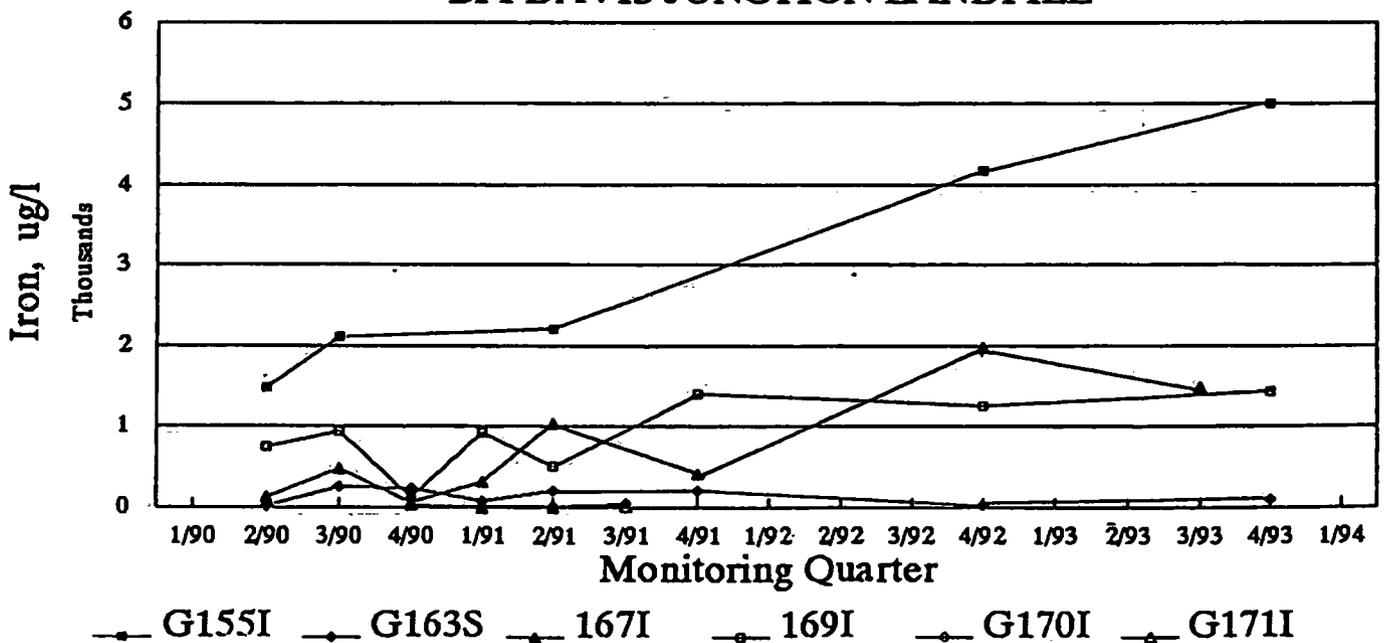
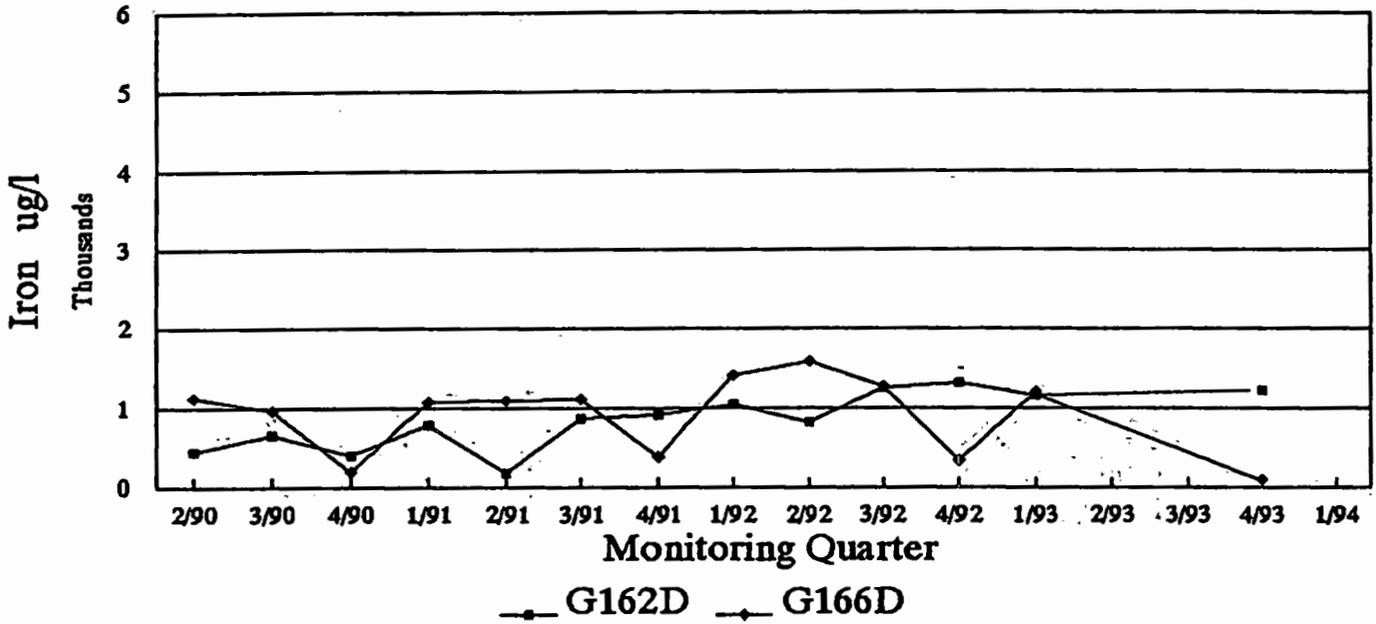


FIGURE 28

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

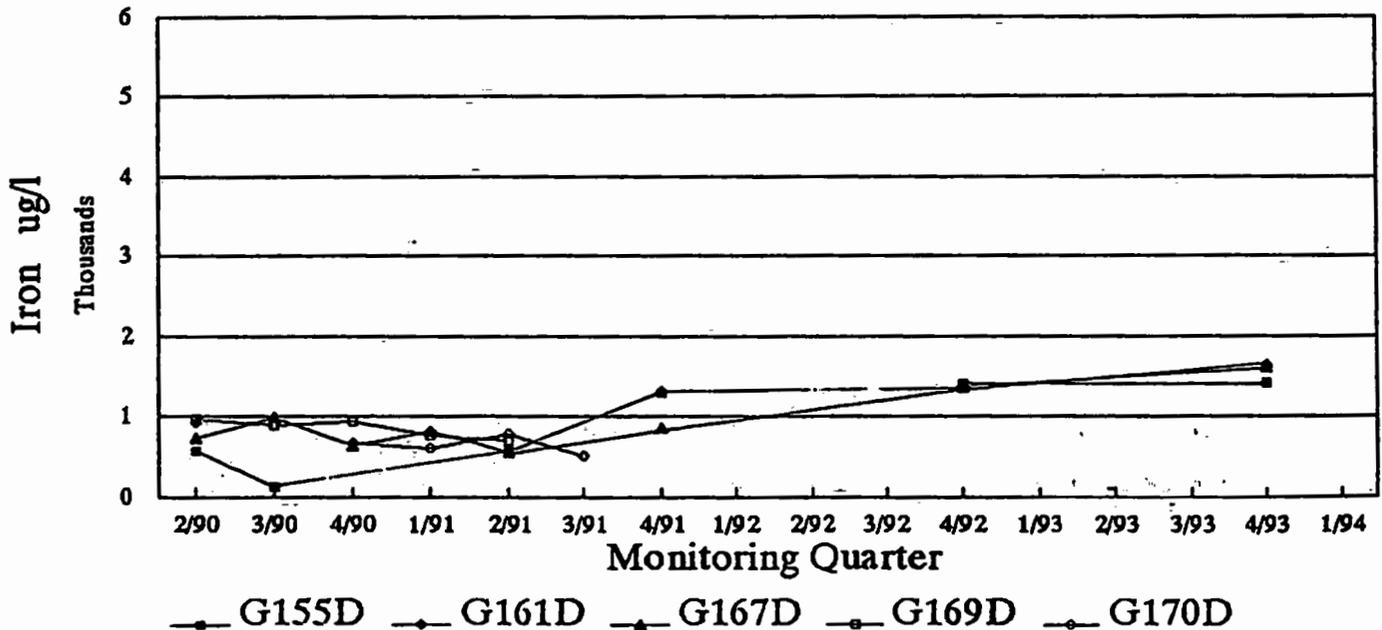
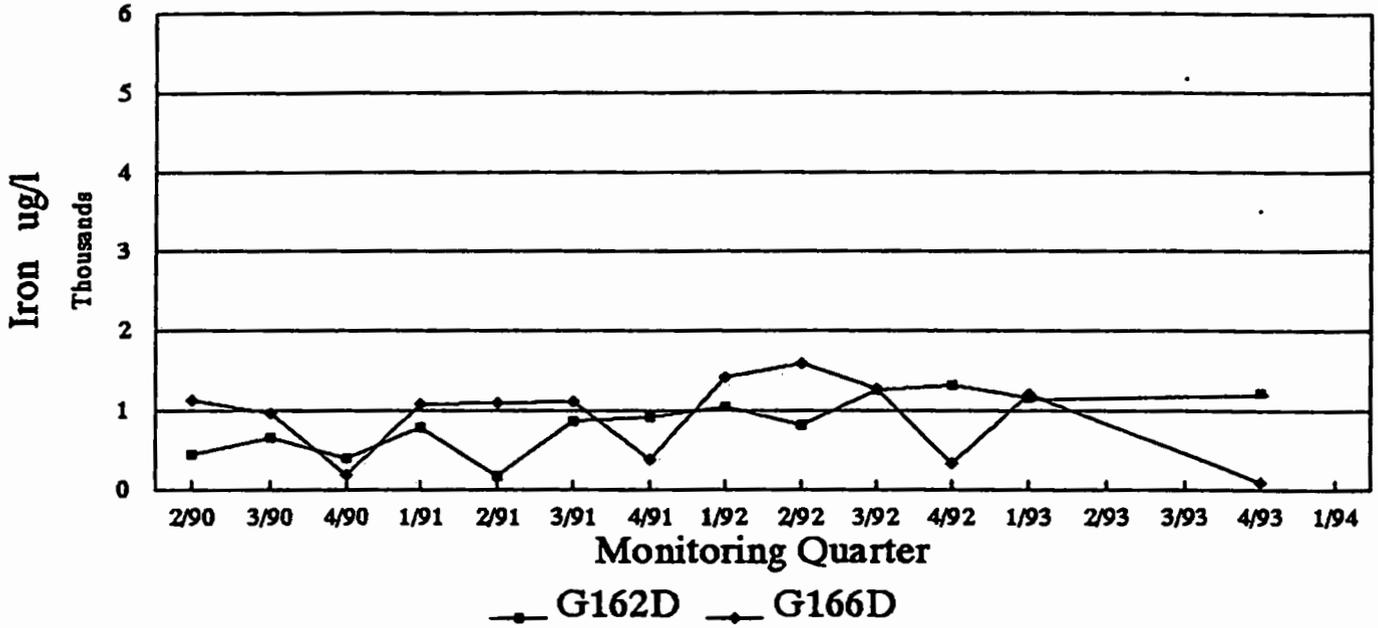


FIGURE 29

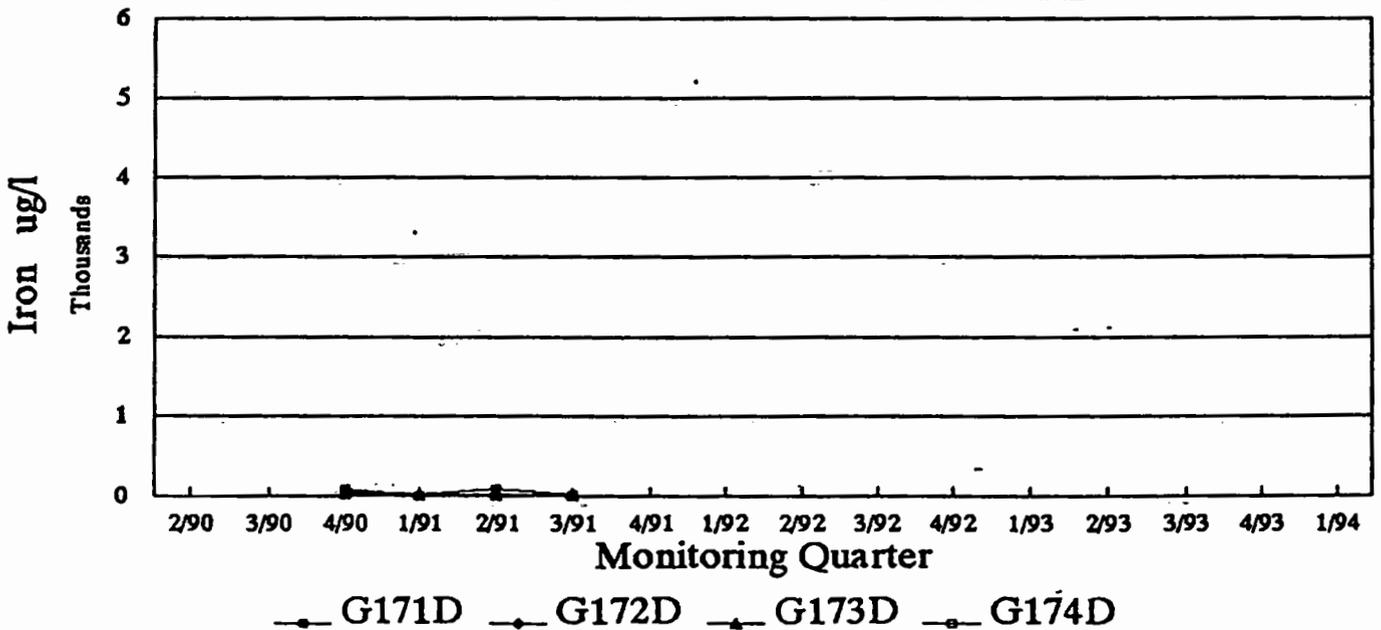
UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



**TABLE 18
SUMMARY OF IRON DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	0.24 mg/l	0.27
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	0.02 mg/l	0.013
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	0.011 mg/l	0.009
G 167 S	85%ND <50.0 mg/l	
G 168 S	0.02 mg/l	0.014

UPPER AQUIFER BACKGROUND MEDIAN	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL
0.71 mg/l	0.43	1.44 mg/l

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	0.7 mg/l	0.35
G 166 I	0.23 mg/l	0.09
G 166 S	0.24 mg/l	0.27
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	N/A	
G164 I	N/A	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	2.29 mg/l	1.5
G 163 S	0.14 mg/l	0.09
G 167 I	0.7 mg/l	0.7
G 169 I	0.9 mg/l	0.5
G 170 I	0.02 mg/l	0.02
G 171 I	0.015 mg/l	0.01

**TABLE 18 (continued)
SUMMARY OF IRON DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 0.71 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION 0.43	UPPER 95% TOLERANCE INTERVAL 1.44 mg/l
---	--	---

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	0.86 mg/l	0.35
G 166 D	0.91 mg/l	0.48
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	1.21 mg/l	0.34
G 164 D	N/A	
MAIN AQUIFER DOWNGRAIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	0.82 mg/l	0.54
G 163 I	0.61 mg/l	0.14
G 167 D	0.95 mg/l	0.36
G 169 D	1.05 mg/l	0.28
G 170 D	0.64 mg/l	0.11
G 171 D	0.05 mg/l	0.04
G 172 D	0.03 mg/l	0.02
G 173 D	0.02 mg/l	0.01
G 174 D	0.01 mg/l	0.002

BEDROCK VALLEY AQUIFER BACKGROUND MEAN 0.19 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION 0.39	UPPER 95% TOLERANCE INTERVAL 0.88 mg/l
---	--	---

BEDROCK VALLEY AQUIFER DOWNGRAIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	0.92 mg/l	0.25

Magnesium:

Examination of Figure 30 which compares the upgradient and downgradient, upper aquifer, magnesium concentrations reveals the consistent nature of measurements from samples collected during the monitoring period. The background, groundwater upper aquifer mean concentration value for magnesium was 38.6 mg/l and the 95% tolerance interval was 52.2 mg/l. None of the wells monitored exceeded this value.

The mean value for magnesium established during the background, groundwater study for the main aquifer was 38.6 mg/l and the upper 95% tolerance interval was 50.6 mg/l. This value was not exceeded by the downgradient wells located in the main aquifer. There was no significant change in the upgradient wells which indicates, at least for this parameter, no background variations are occurring.

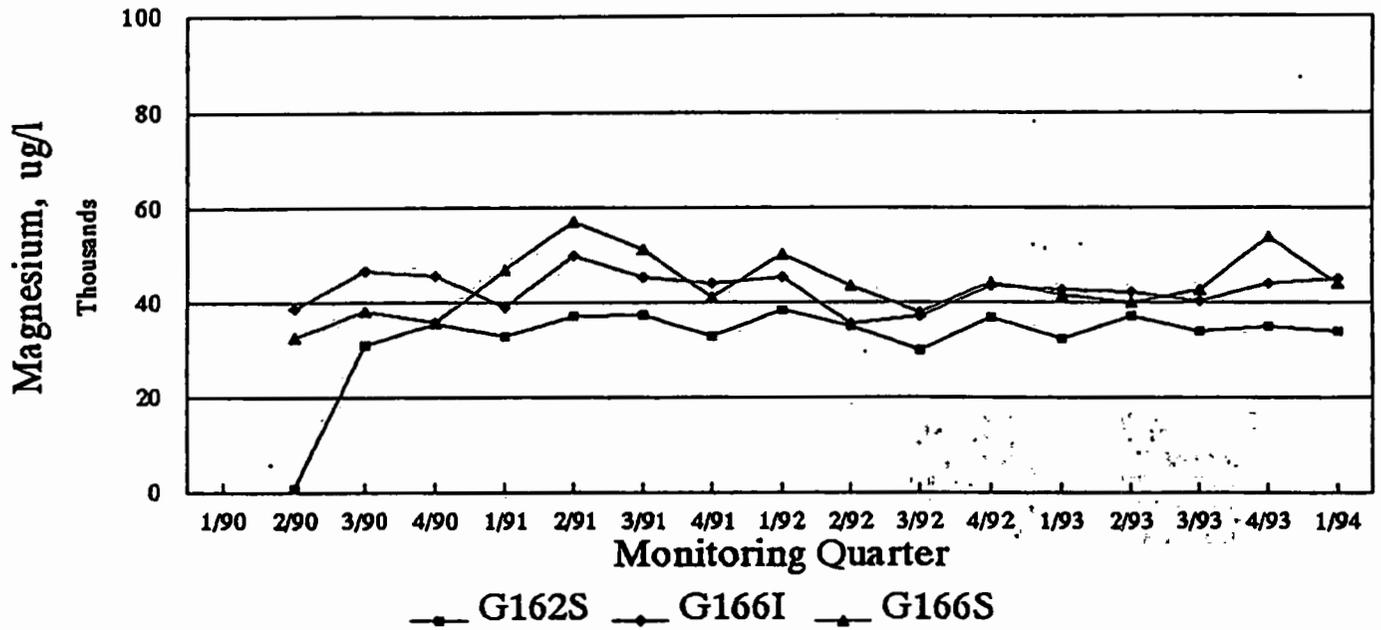
The mean value for well G163D, monitoring the bedrock valley aquifer, is situated directly within the population pool used to establish the background, groundwater study for deep levels of the main aquifer.

The elevated, mean concentration value for the surficial well G167S, tracked with infrequent and spiking data, is consistent with the other elevated parameters monitored in this well, such as magnesium. The mean value exceeds the value obtained from the upgradient, surficial well G166S as well as the background, groundwater value established for the upper aquifer.

FIGURE 30

UPGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL

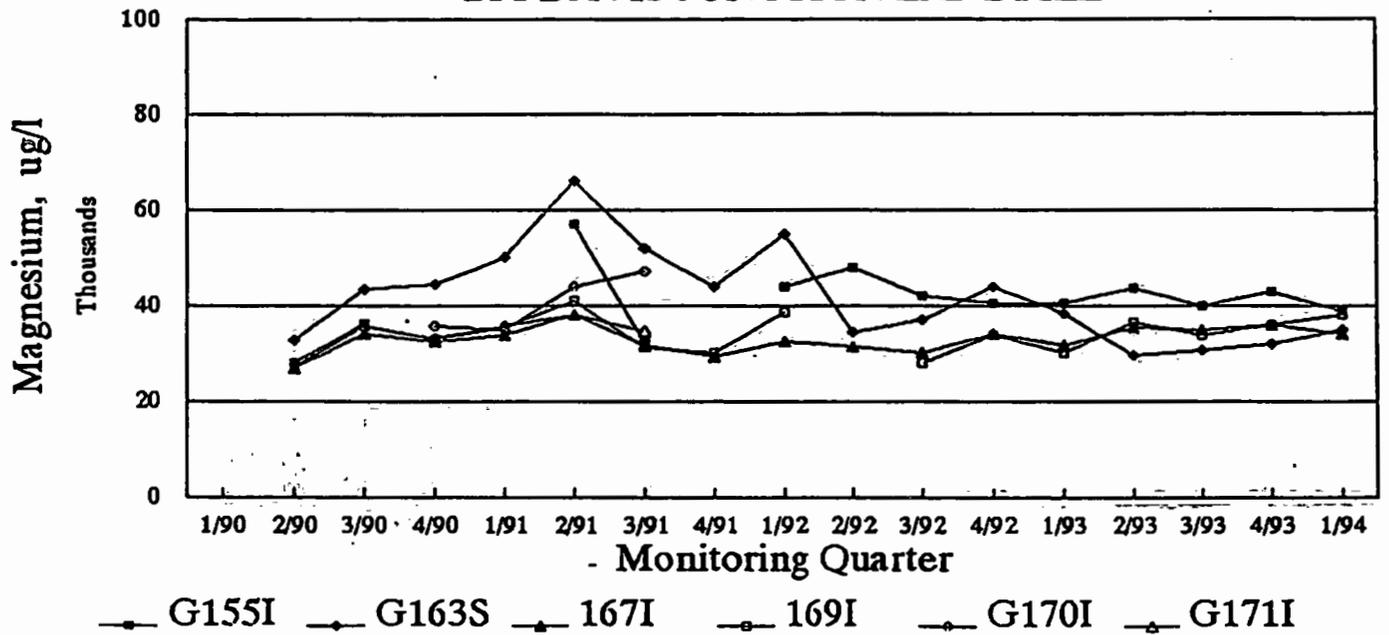
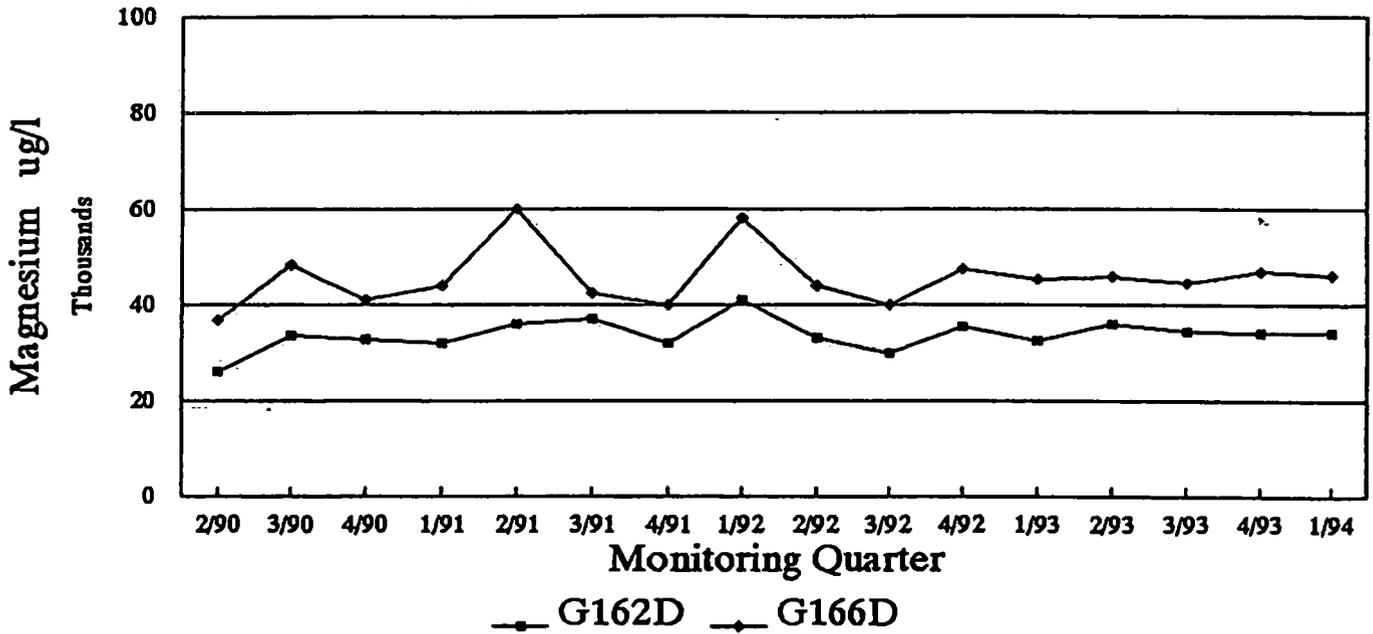


FIGURE 31

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

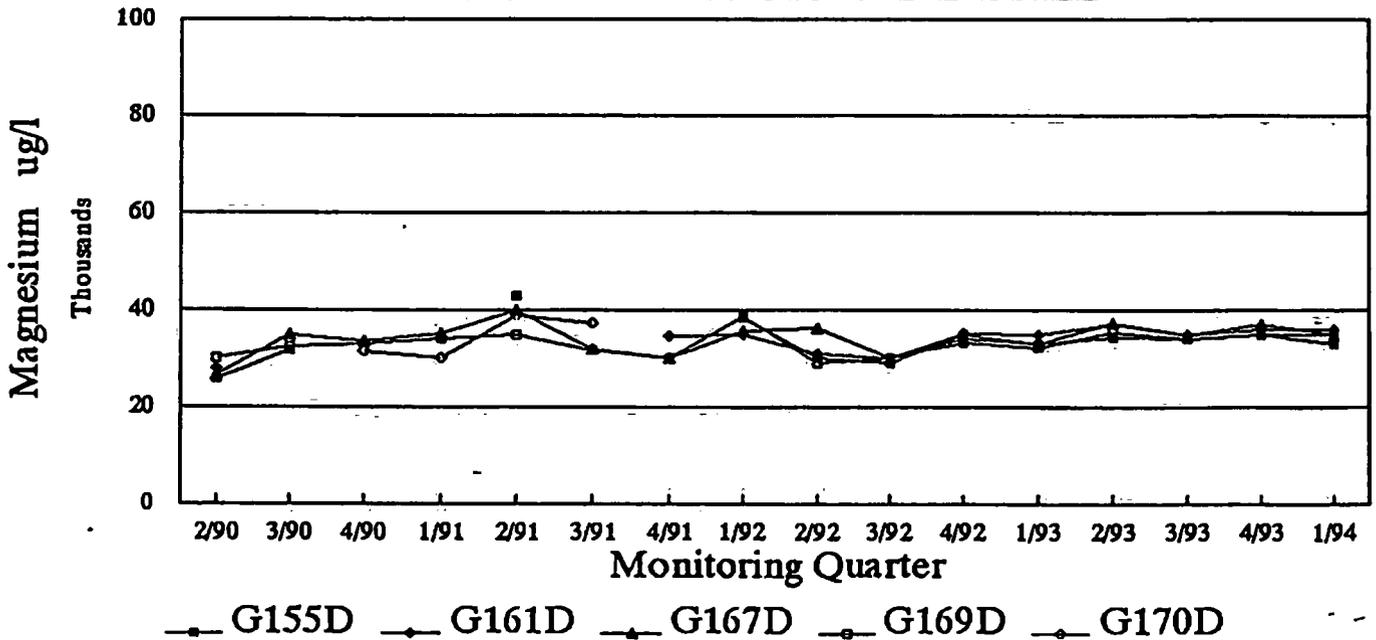
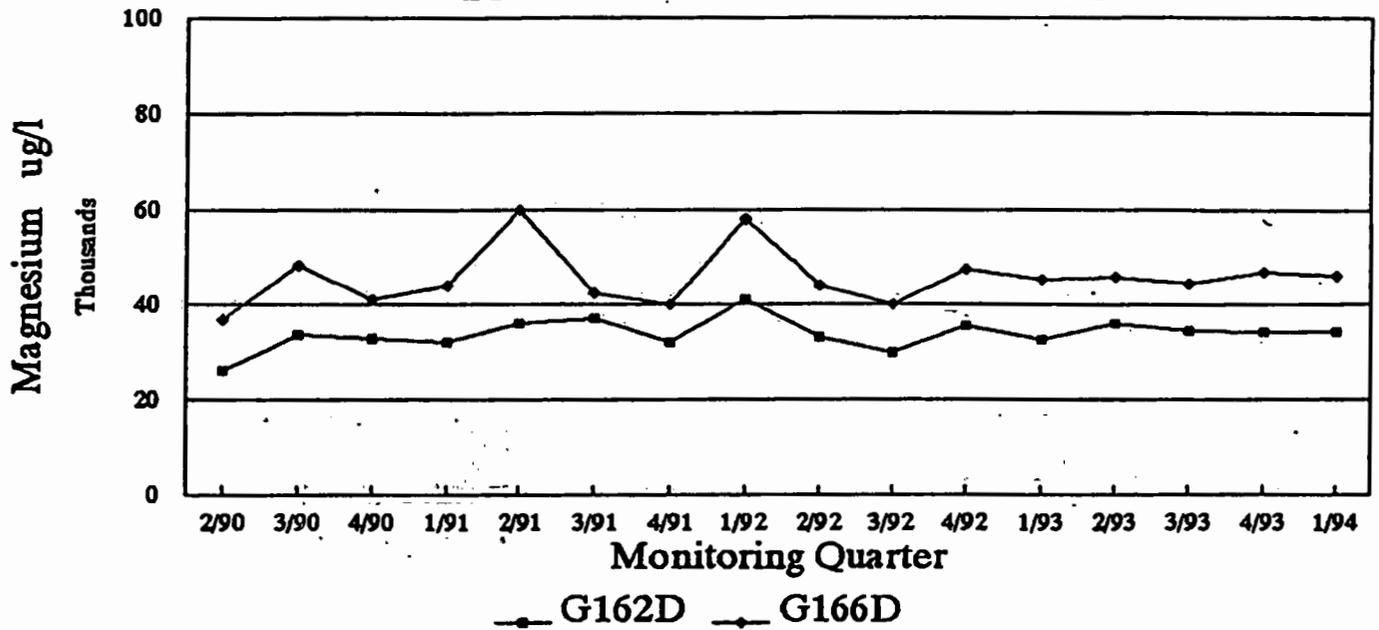


FIGURE 32

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

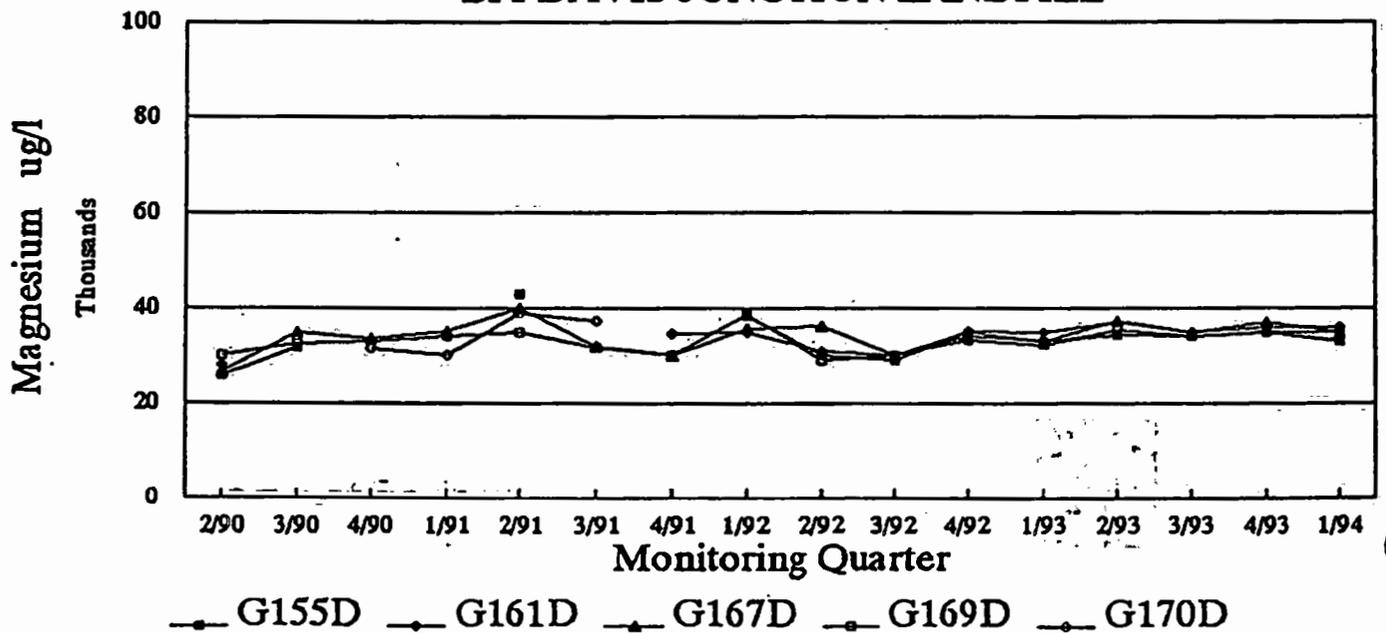
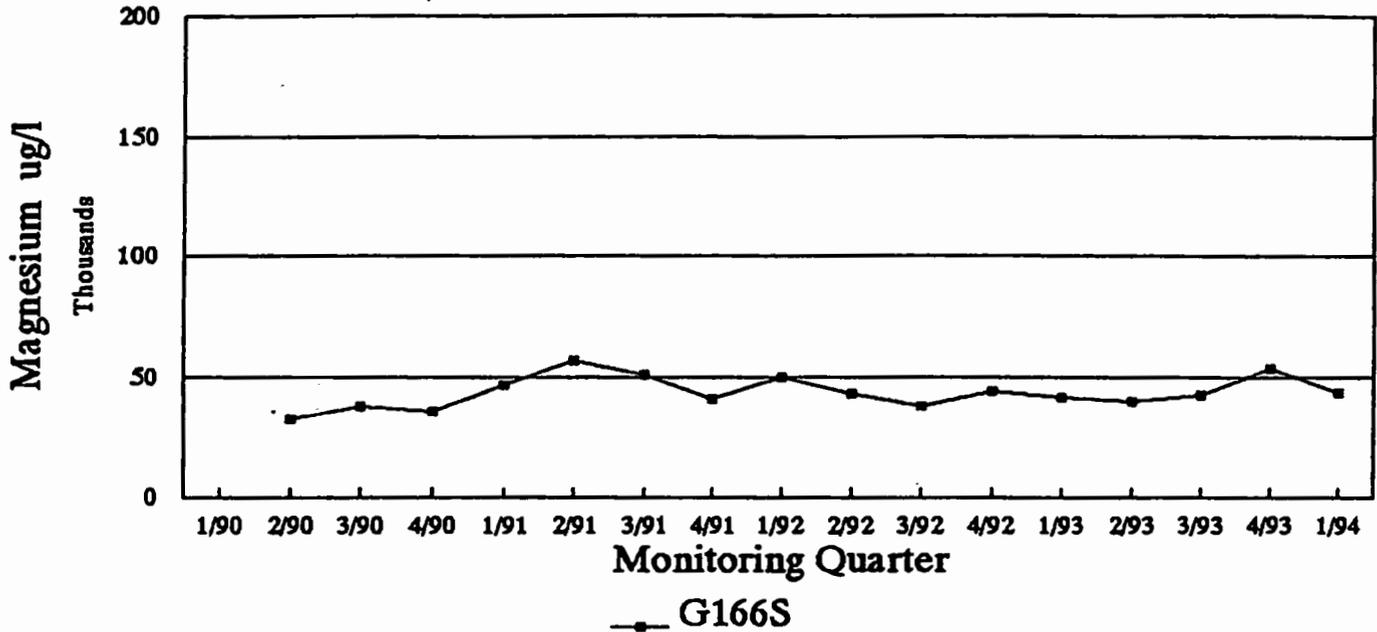


FIGURE 33

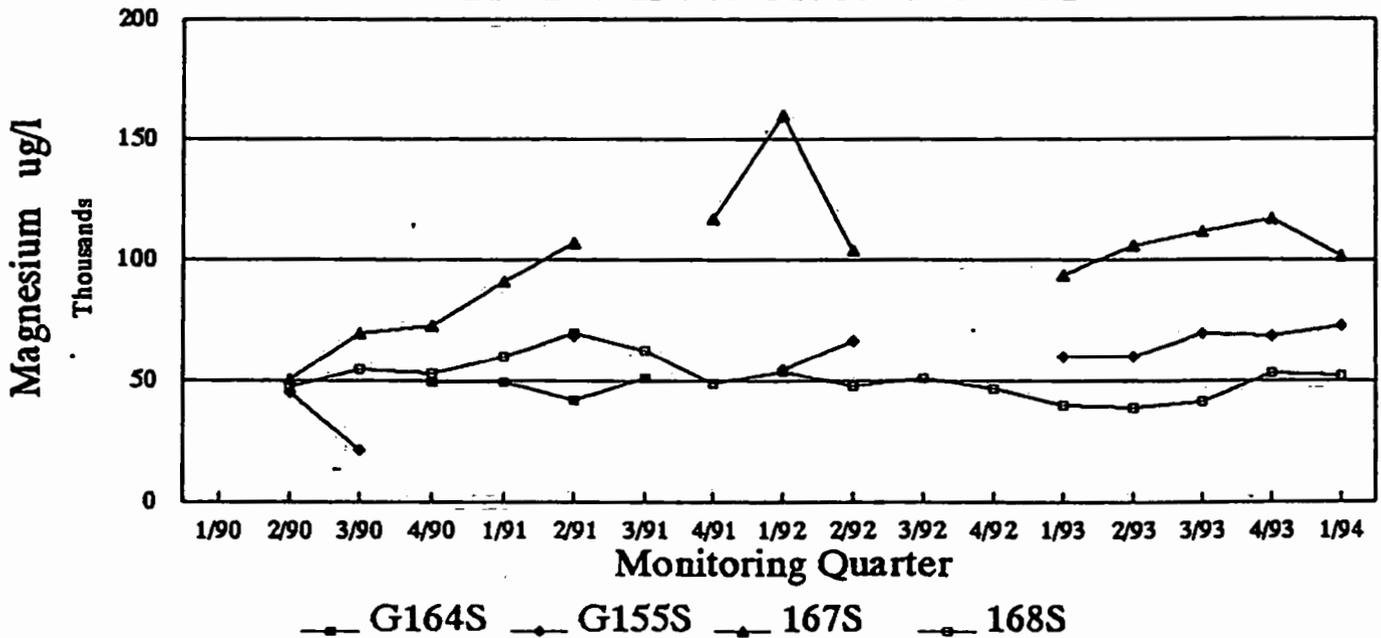
UPGRADIENT – SURFICIAL

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIANT – SURFICIAL

BFI DAVIS JUNCTION LANDFILL



**TABLE 19
SUMMARY OF MAGNESIUM DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	43.8 mg/l	6.68
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	48.12 mg/l	41.5
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	59.0 mg/l	15.56
G 167 S	100.26 mg/l	26.8
G 168 S	51.38 mg/l	8.52

UPPER AQUIFER BACKGROUND MEDIAN	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL
38.6 mg/l	1.17	50.62 mg/l

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	32.5 mg/l	8.7
G 166 I	0.23 mg/l	3.82
G 166 S	0.24 mg/l	6.68
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	31.2 mg/l	10.23
G164 I	N/A	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	37.1 mg/l	10.7
G 163 S	42.2 mg/l	10.3
G 167 I	33.0 mg/l	2.7
G 169 I	33.3 mg/l	4.8
G 170 I	40.5 mg/l	6.04
G 171 I	35.5 mg/l	2.0

**TABLE 19 (continued)
SUMMARY OF MAGNESIUM DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 38.6 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION 1.17	UPPER 95% TOLERANCE INTERVAL 50.62 mg/l
---	--	--

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	33.75 mg/l	3.27
G 166 D	46.0 mg/l	6.06
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	33.88 mg/l	2.72
G 164 D	N/A	
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	33.55 mg/l	4.38
G 163 I	35.1 mg/l	4.03
G 167 D	34.06 mg/l	3.27
G 169 D	32.54 mg/l	3.51
G 170 D	34.4 mg/l	4.35
G 171 D	40.1 mg/l	5.33
G 172 D	40.0 mg/l	4.95
G 173 D	38.0 mg/l	1.64
G 174 D	42.0 mg/l	1.94

BEDROCK VALLEY AQUIFER BACKGROUND MEAN 37.8 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION 4.3	UPPER 95% TOLERANCE INTERVAL 45.4 mg/l
---	---	---

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	31.44 mg/l	27.29

Manganese:

Manganese, as with sulfate, generally follow the same trend and falls within a relatively narrow concentration range. There are some exceptions to this as seen in Figure 34 in the upper aquifer graphs tracking the upgradient wells G162S and G166I manganese concentration values and in the downgradient wells G163S and G171I. In these wells there is an inconsistent trend observed. In well G171I, there is insufficient data to accurately evaluate, although the concentration value initially was reported high and then dropped off as the data collection terminated. Well G166I initially maintained a high concentration value which suddenly dropped and cycled within the data population of the remaining upgradient wells. Well G162S concentration values followed a similar but more reserved pattern of high to low changes as did well G166I.

The downgradient well G163S consistently demonstrated a high concentration value, however, which has shown a downward trend during the last two quarters it was sampled.

This data appears to be consistent with an upward concentration trend for many of the wells seen at the beginning of their monitoring programs; this trend reverses after a time and the concentration values establish a new lower level. Some of this

variation may be due to the initial disturbances following installation and development of the wells.

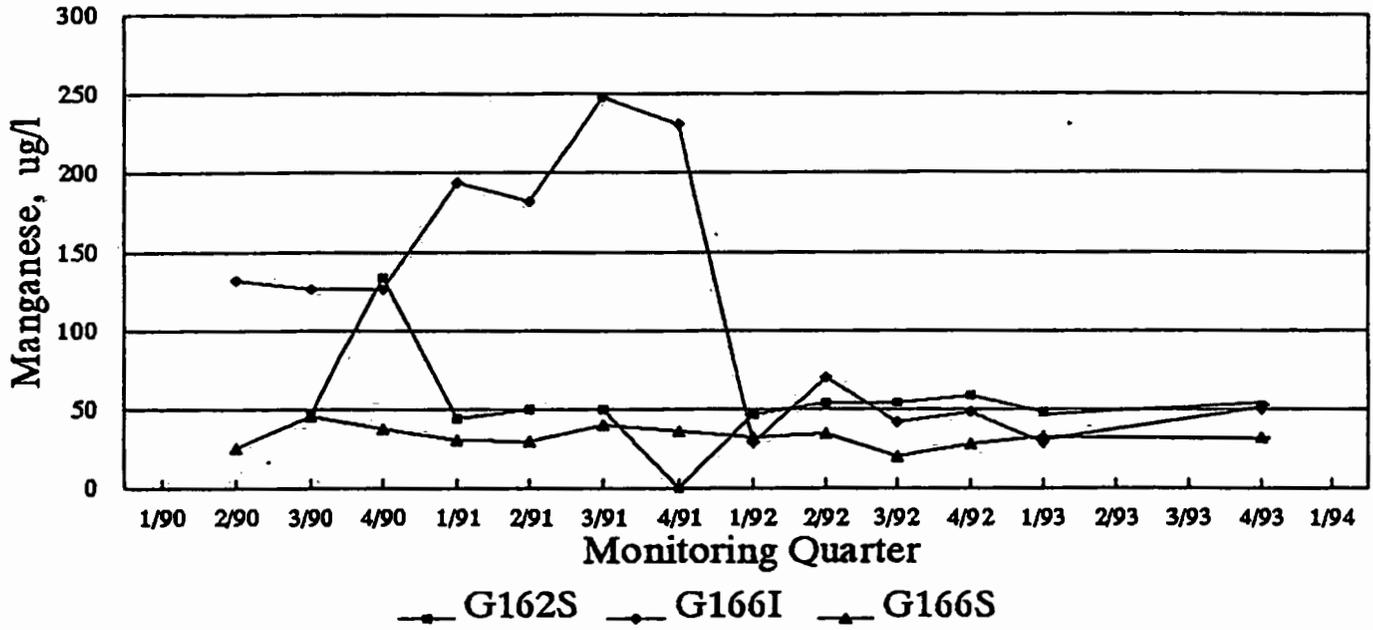
In the case of manganese, there is sparse data available for the downgradient, main aquifer wells. None of the mean concentration values for the wells exceed the 95% tolerance interval established during the background, groundwater study. The upgradient, main aquifer wells are unremarkable.

There is insufficient data to accurately address the manganese trends in the surficial layer. The upgradient well data is consistent and maintains a level concentration value for the quarter monitored. The downgradient wells are represented by very infrequently monitored concentration values and therefore should not be further evaluated.

FIGURE 34

UPGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL

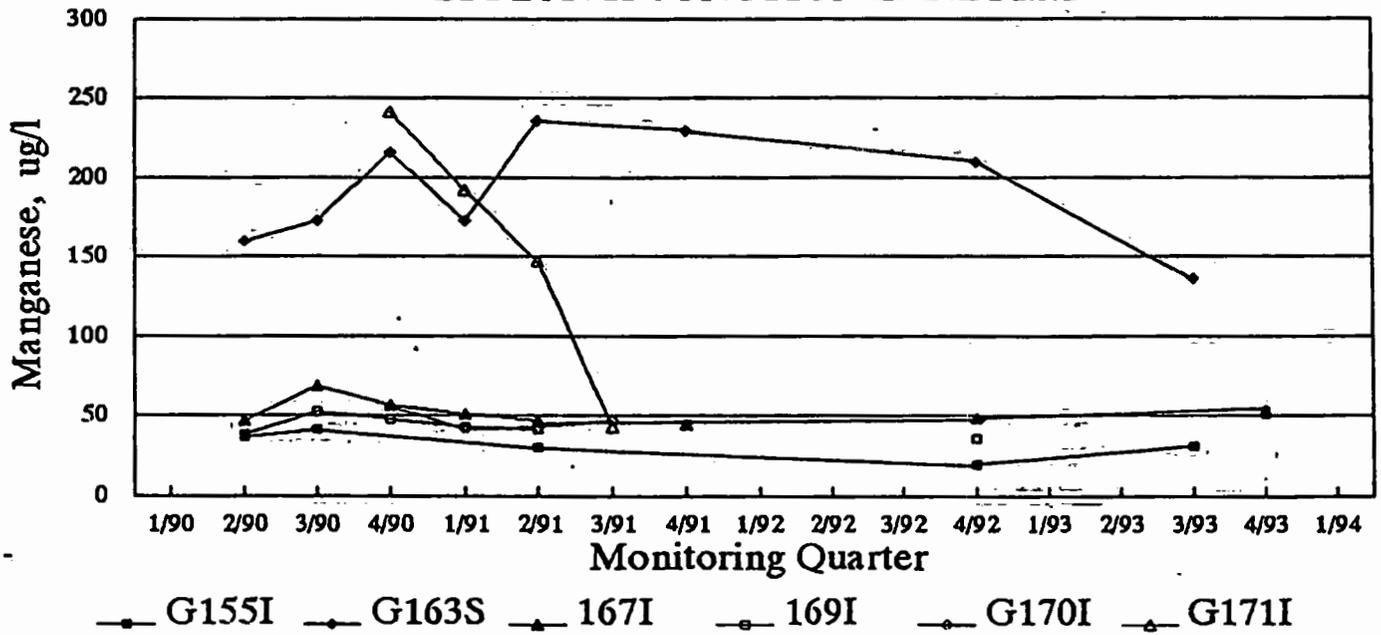
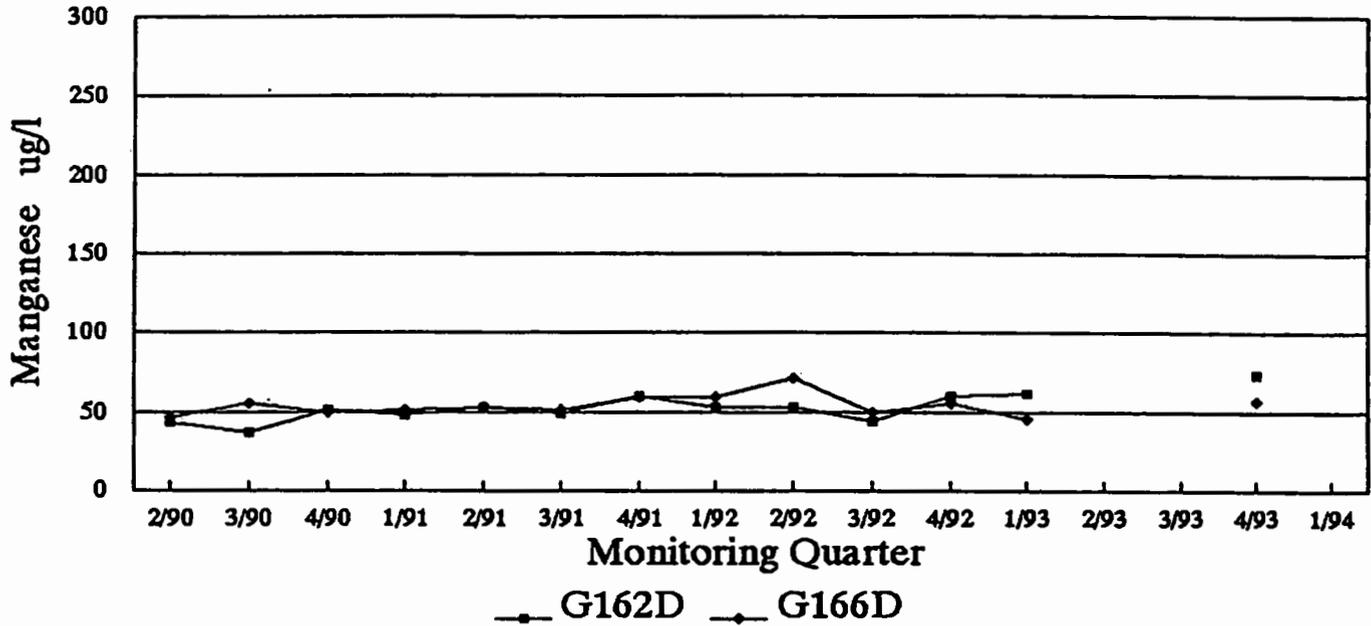


FIGURE 35

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRAIDENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

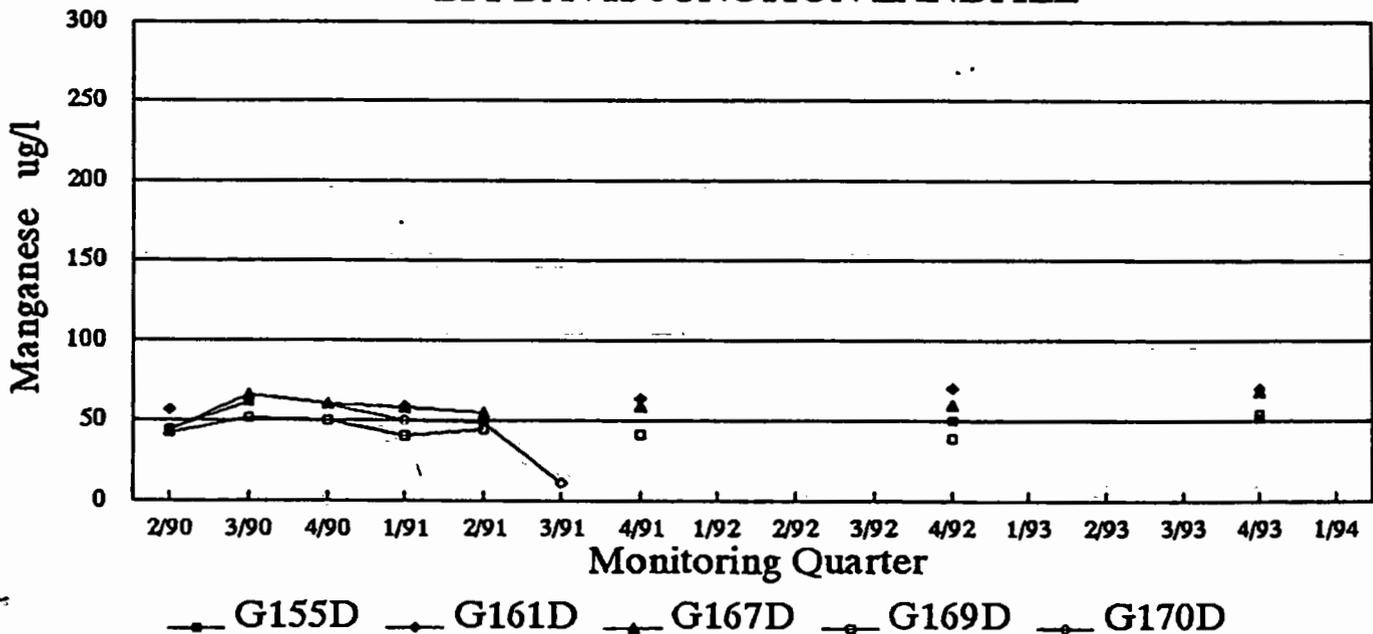
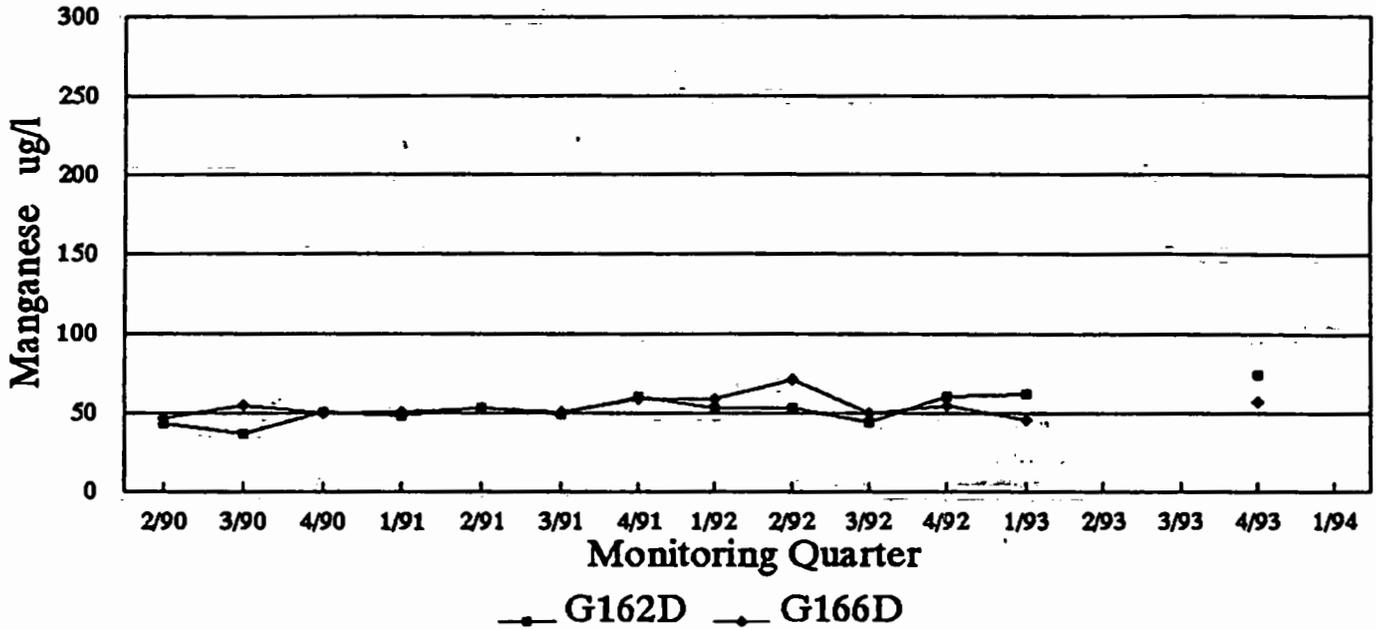


FIGURE 36

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

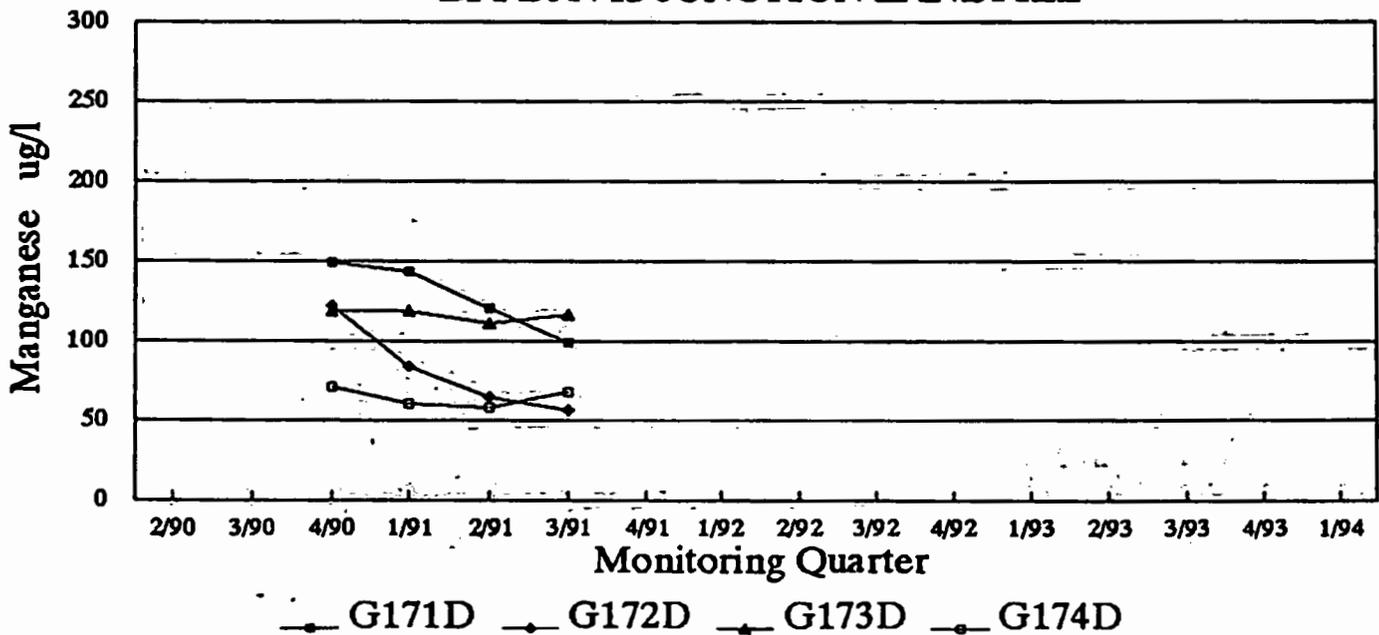
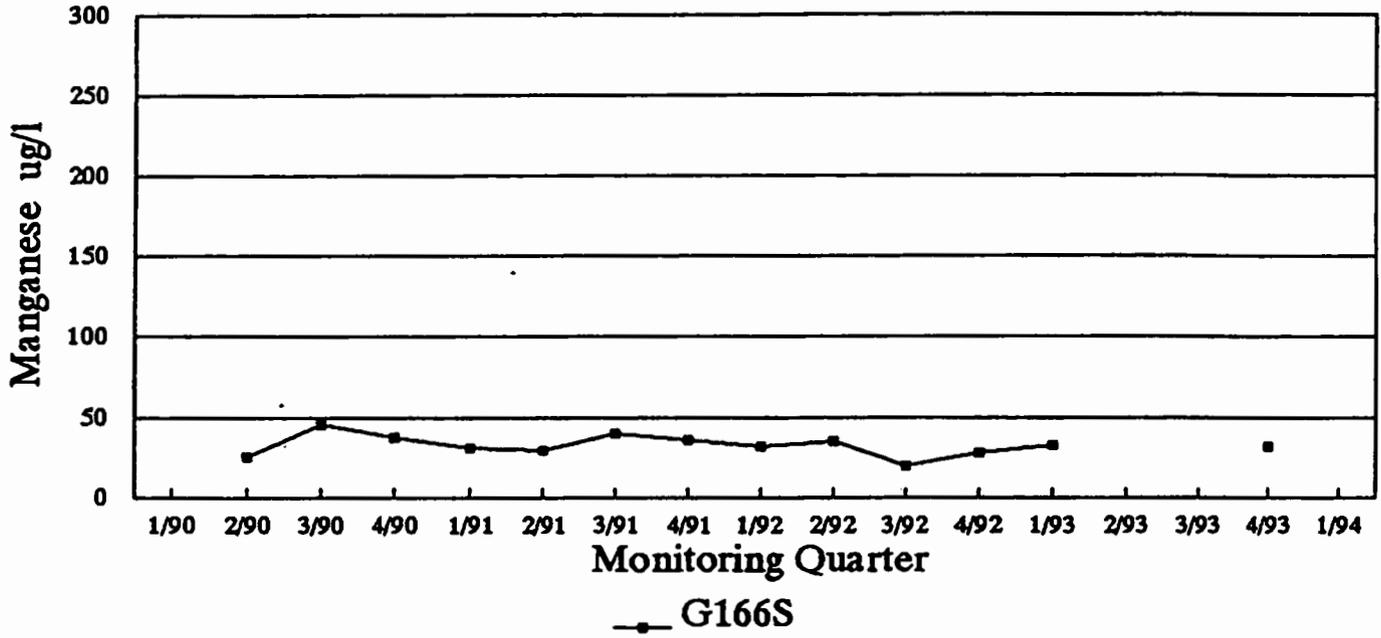


FIGURE 37

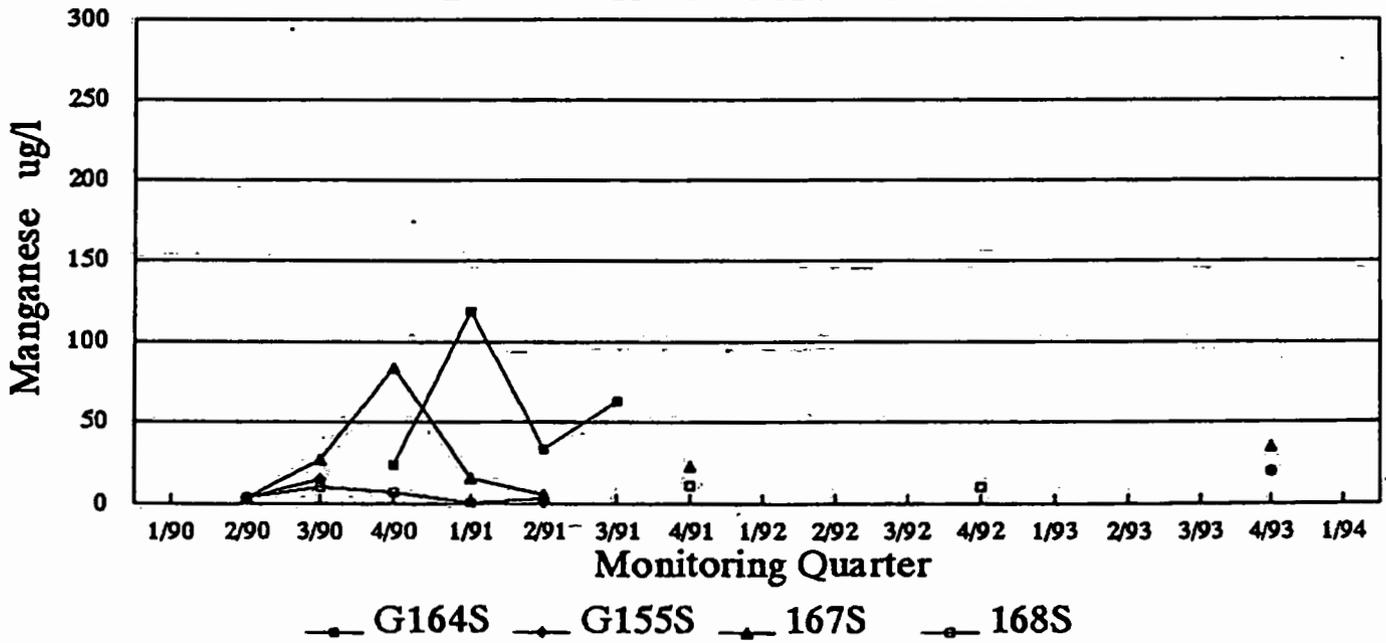
UPGRADIENT – SURFICIAL

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – SURFICIAL

BFI DAVIS JUNCTION LANDFILL



**TABLE 20
SUMMARY OF MANGANESE DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	0.032 mg/l	0.006
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	0.006 mg/l	0.042
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	100%ND <20.0 mg/l	
G 167 S	0.027 mg/l	0.027
G 168 S	0.006 mg/l	0.004

UPPER AQUIFER BACKGROUND MEDIAN 0.026 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION 0.062	UPPER 95% TOLERANCE INTERVAL 0.138 mg/l
---	--	--

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	0.058 mg/l	0.024
G 166 I	0.12 mg/l	0.077
G 166 S	0.032 mg/l	0.006
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	0.064 mg/l	0.14
G164 I	N/A	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	0.032 mg/l	0.008
G 163 S	0.191 mg/l	0.036
G 167 I	0.052 mg/l	0.008
G 169 I	0.044 mg/l	0.006
G 170 I	0.047 mg/l	0.006
G 171 I	0.155 mg/l	0.084

**TABLE 20 (continued)
SUMMARY OF MANGANESE DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 0.053 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION 2.22	UPPER 95% TOLERANCE INTERVAL 0.21 mg/l
--	--	---

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	0.053 mg/l	0.009
G 166 D	0.054 mg/l	0.006
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	0.064g/l	0.006
G 164 D	N/A	
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	0.051 mg/l	0.006
G 163 I	0.66 mg/l	0.008
G 167 D	0.059 mg/l	0.007
G 169 D	0.046 mg/l	0.006
G 170 D	0.043 mg/l	0.021
G 171 D	0.128 mg/l	0.022
G 172 D	0.082 mg/l	0.028
G 173 D	0.117 mg/l	0.003
G 174 D	0.064 mg/l	0.006

BEDROCK VALLEY AQUIFER BACKGROUND MEAN 0.11 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION 0.09	UPPER 95% TOLERANCE INTERVAL 0.27 mg/l
---	--	---

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	0.086 mg/l	0.041

Phenol:

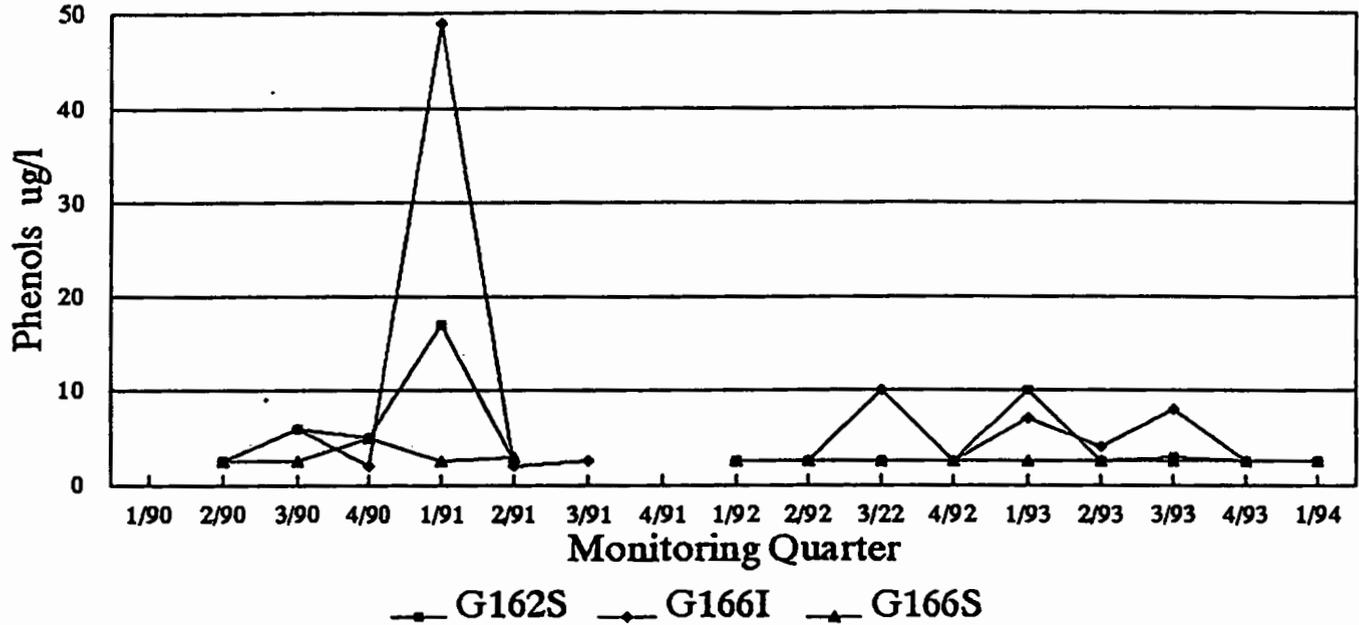
Phenol concentration values were reported as non-detects within the upper and main aquifer equal to the frequency reported during the background, groundwater study. Figures 38, 39, and 40 were drawn to illustrate the sporadic nature of reported values, none of which exceeded the 95% upper tolerance interval established by the background study for both aquifers.

The main difference between the reported phenol concentration value in the deep well G163D and the background, groundwater study value was the higher detection limit introduced into the data pool describing well G163D.

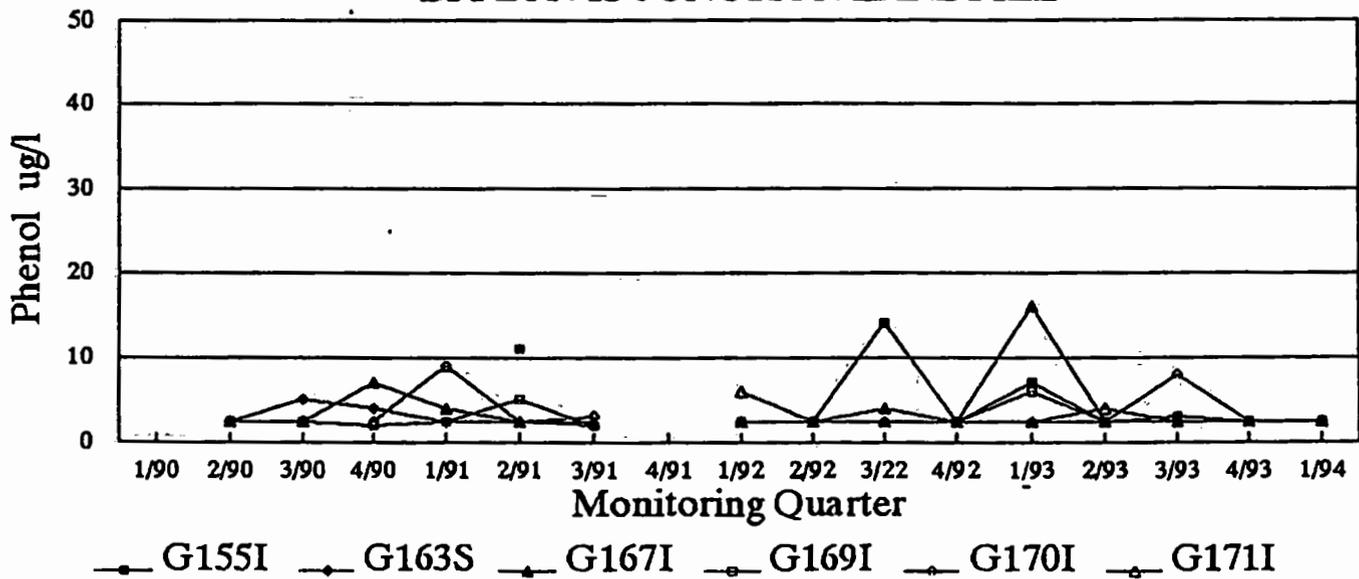
Phenol concentration values measured in the downgradient, surficial wells were not significantly different from the concentrations measured in the upgradient, surficial well. These values were not presented in a figure.

FIGURE 38

UPGRADIENT – UPPER AQUIFER
BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – UPPER AQUIFER
BFI DAVIS JUNCTION LANDFILL



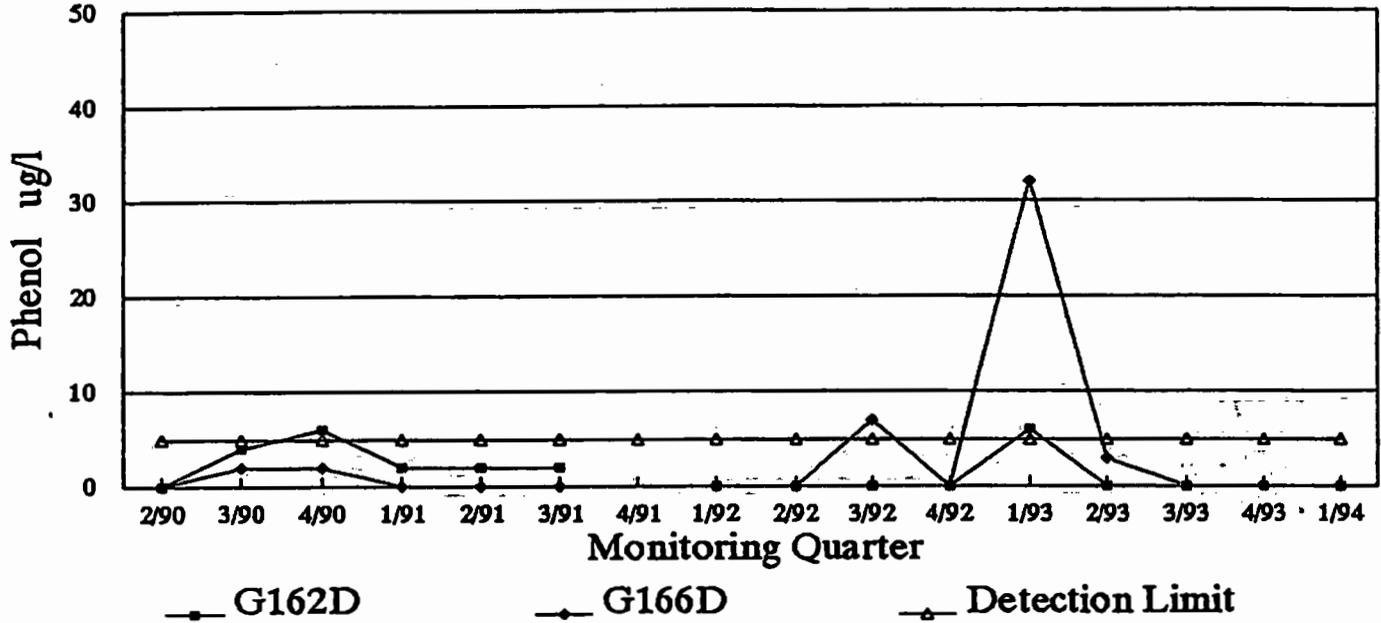
Detection Limit set at less than 5.0 ug/l

Quantities reported as less than a detection limit are represented by one-half value on the graphs

FIGURE 39

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

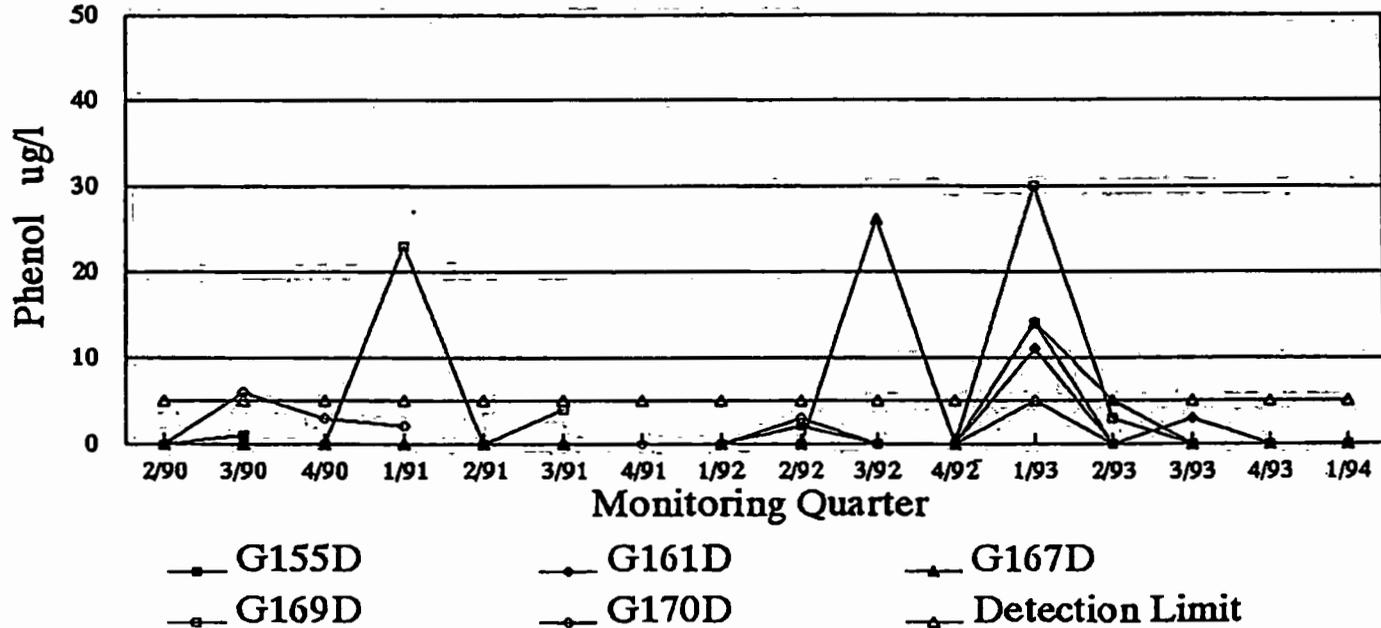
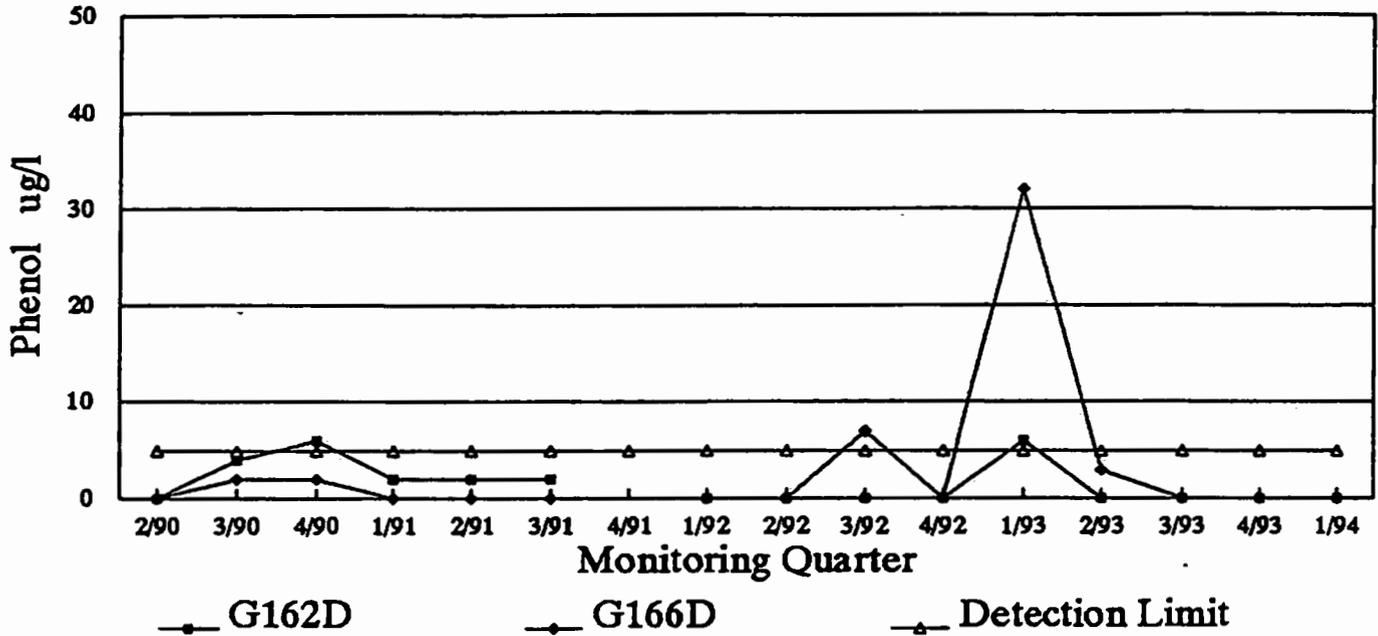


FIGURE 40

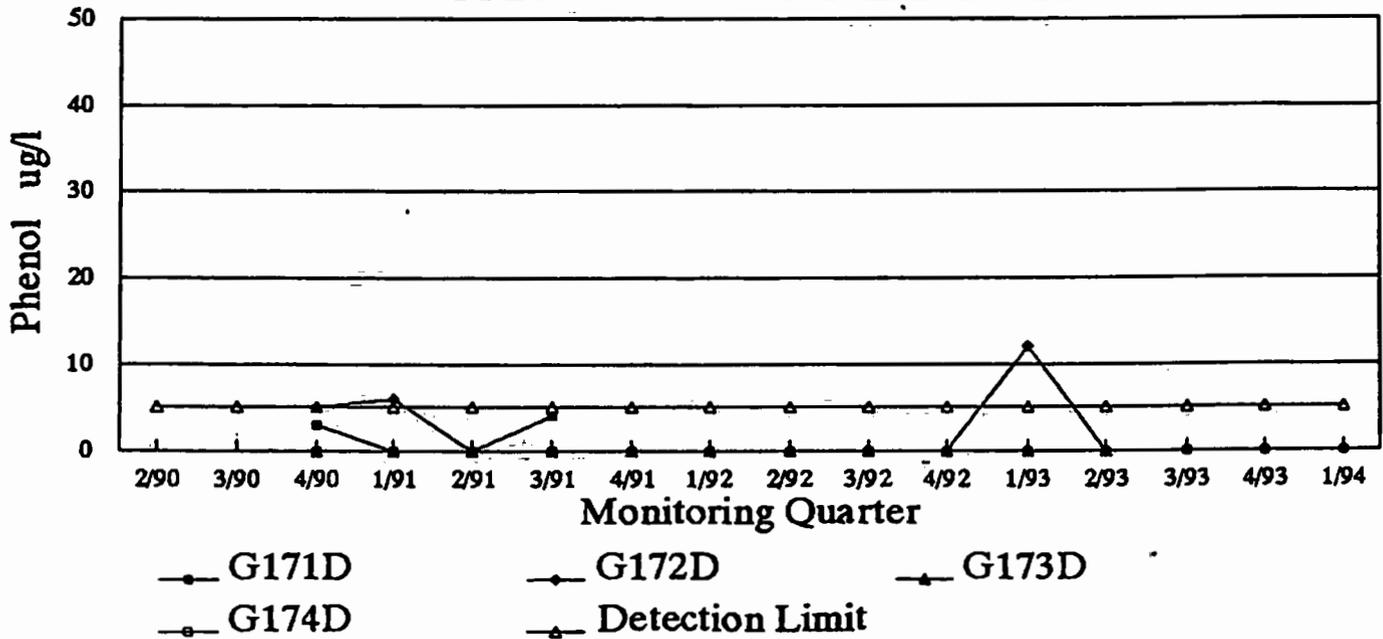
UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



**TABLE 21
SUMMARY OF PHENOL DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	92.8%ND <0.005 mg/l	
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	77%ND <0.005 mg/l	
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	66.6%ND <0.005 mg/l	
G 167 S	72.7%ND <0.005 mg/l	
G 168 S	73.3%ND <0.005 mg/l	

UPPER AQUIFER BACKGROUND MEDIAN 75%ND <0.005 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.049 mg/l
---	--	--

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	71.4%ND <0.005 mg/l	
G 166 I	71.4%ND <0.005 mg/l	
G 166 S	92.8%ND <0.005 mg/l	
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	73%ND <0.005 mg/l	
G164 I	85%ND <0.005 mg/l	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	75%ND <0.005 mg/l	
G 163 S	93%ND <0.005 mg/l	
G 167 I	86.7%ND <0.005 mg/l	
G 169 I	86%ND <0.005 mg/l	
G 170 I	84.6%ND <0.005 mg/l	
G 171 I	84.6%ND <0.005 mg/l	

**TABLE 21 (continued)
SUMMARY OF PHENOL DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 78%ND <0.005 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.032 mg/l
--	---	---

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	0.053 mg/l	
G 166 D	0.054 mg/l	
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	90%ND <0.005 mg/l	
G 164 D	92%ND <0.005 mg/l	
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	91.6%ND <0.005 mg/l	
G 163 I	75%ND <0.005 mg/l	
G 167 D	80%ND <0.005 mg/l	
G 169 D	86.6%ND <0.005 mg/l	
G 170 D	84.6%ND <0.005 mg/l	
G 171 D	100%ND <0.005 mg/l	
G 172 D	77%ND <0.005 mg/l	
G 173 D	77%ND <0.005 mg/l	
G 174 D	77%ND <0.005 mg/l	

BEDROCK VALLEY AQUIFER BACKGROUND MEAN <0.002 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.03 mg/l
--	---	--

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	90.9%ND <0.005 mg/l	

Sodium:

Figures 41, 42, 43, and 44 contain the summary data from the analyses of sodium in all the aquifers. Table 22 contains a summary of the calculated mean, standard deviation and upper 95% tolerance interval proposed for each aquifer as well as the individual well mean values and standard deviations.

Figure 41 depicts the trends shown by sodium in the Upper Aquifer, for the upgradient and downgradient wells. It is quite apparent that the upgradient wells demonstrate the greatest diversity and that the G166S and G166I wells historically contained an elevated level of sodium in comparison to G162S and the remaining downgradient wells.

Background groundwater for this aquifer contained an average of 11.06 mg/l of dissolved Sodium and based upon this value an upper tolerance interval of 75.39 mg/l was established. The average for each of the upgradient wells did not exceed this value; the highest average value, 57.0 mg/l, was obtained from well G166S, an upgradient well. The downgradient wells maintained a consistent measurable level of sodium throughout the monitoring interval.

No significant increase in concentration was observed and no impact upon the groundwater quality was noted based upon the examination of this parameter.

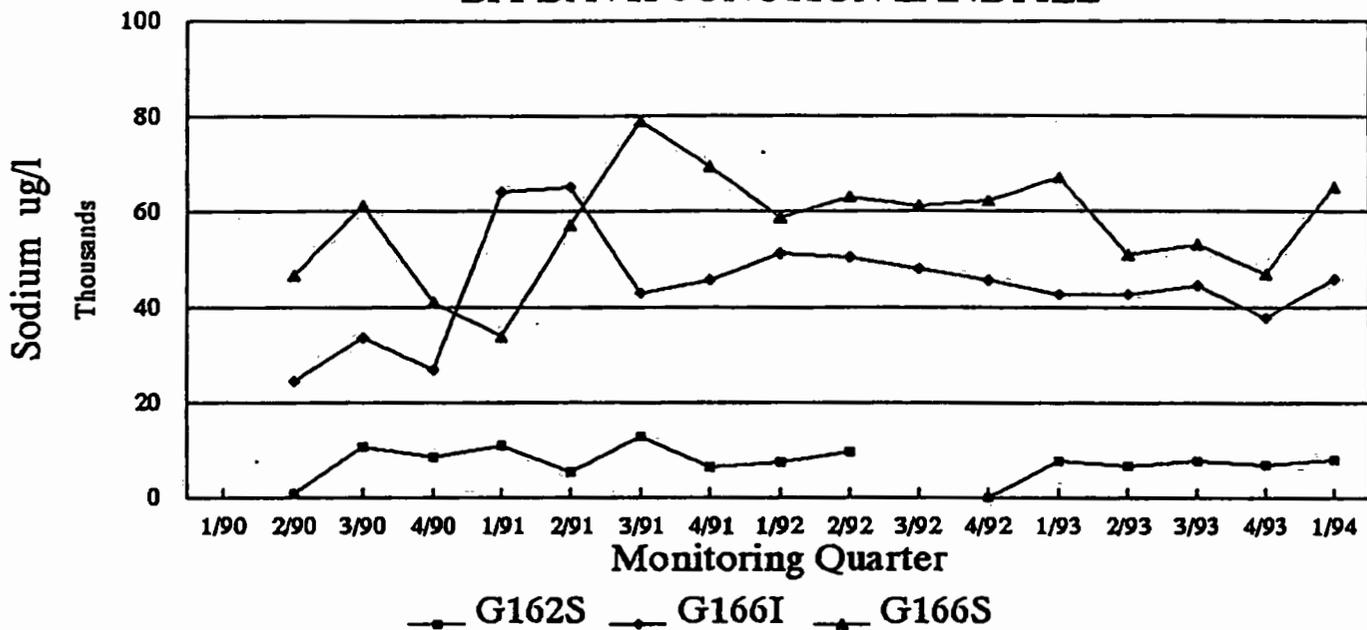
The mean value for sodium content in the bedrock valley well G163D was positioned well within the 95% tolerance interval established by the background, groundwater study for the deep level of the main aquifer. Consistent with the approach taken throughout this study, one value measured during the first quarter of 1992 was over six times the values in the remaining population of data determined at this well and was included in the values used to determine the descriptive statistics. However, this spike, one time values should be tagged, as this one is, as potential outlier data values.

Evaluating the sodium concentration values for the surficial layer lends even more support to the argument that obvious outlying data, when identified, should be set aside from the remain data population. G155S, G167S and G168S are very consistent and the concentration values maintain a level well below the concentration values reported for the upgradient, surficial well G166S. However, well G164S, only monitored from the fourth quarter of 1990 to the third quarter of 1991 contains a value so extreme, it was not included in the graph on Figure 43. Furthermore, with the sparse data reported for well G164S nothing further can be said for the sodium concentration levels.

FIGURE 41

UPGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL

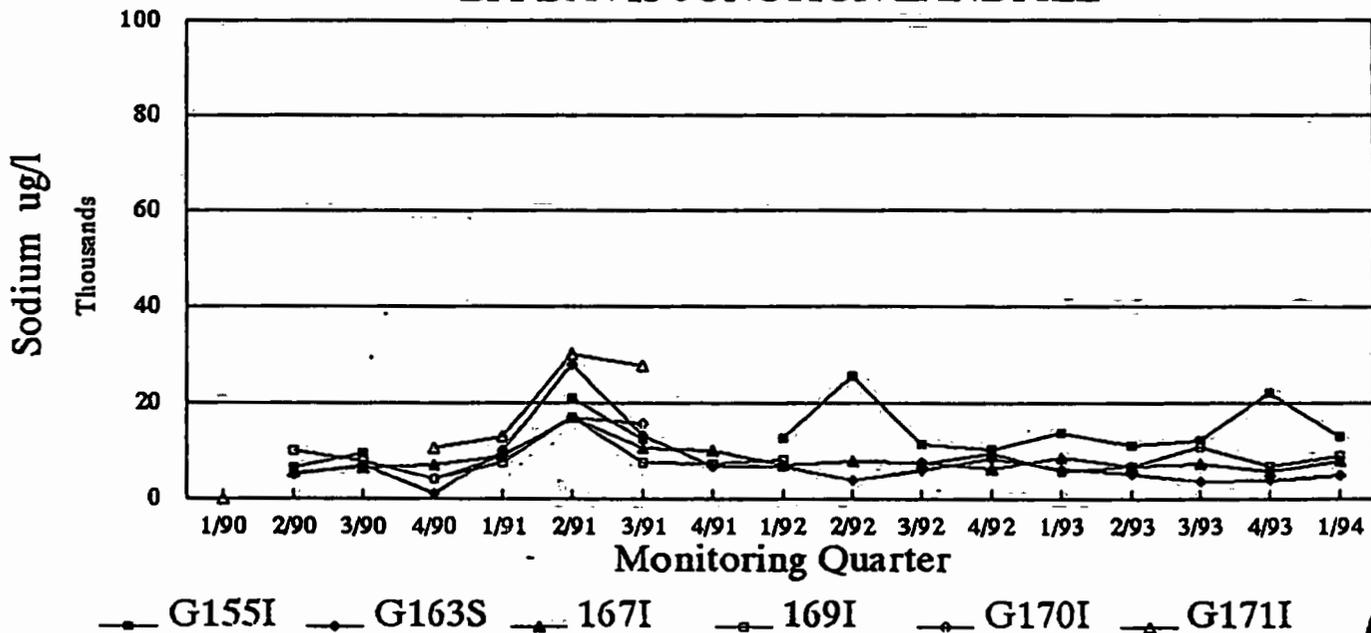
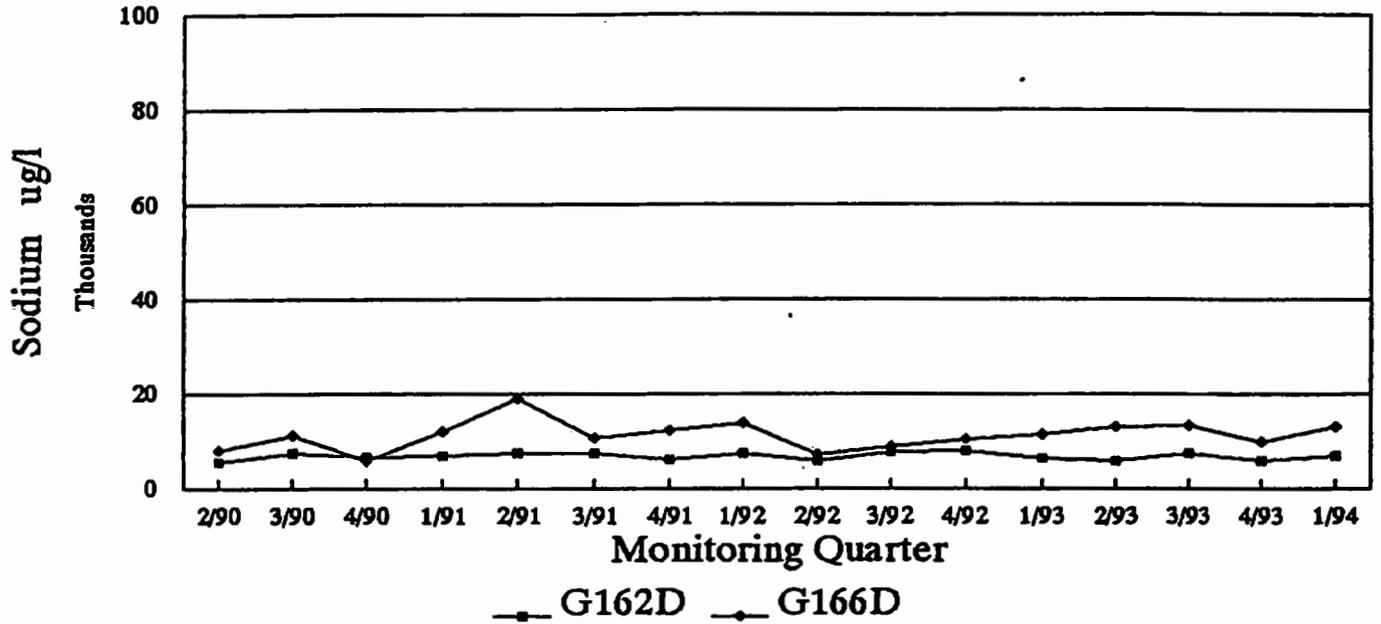


FIGURE 42

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

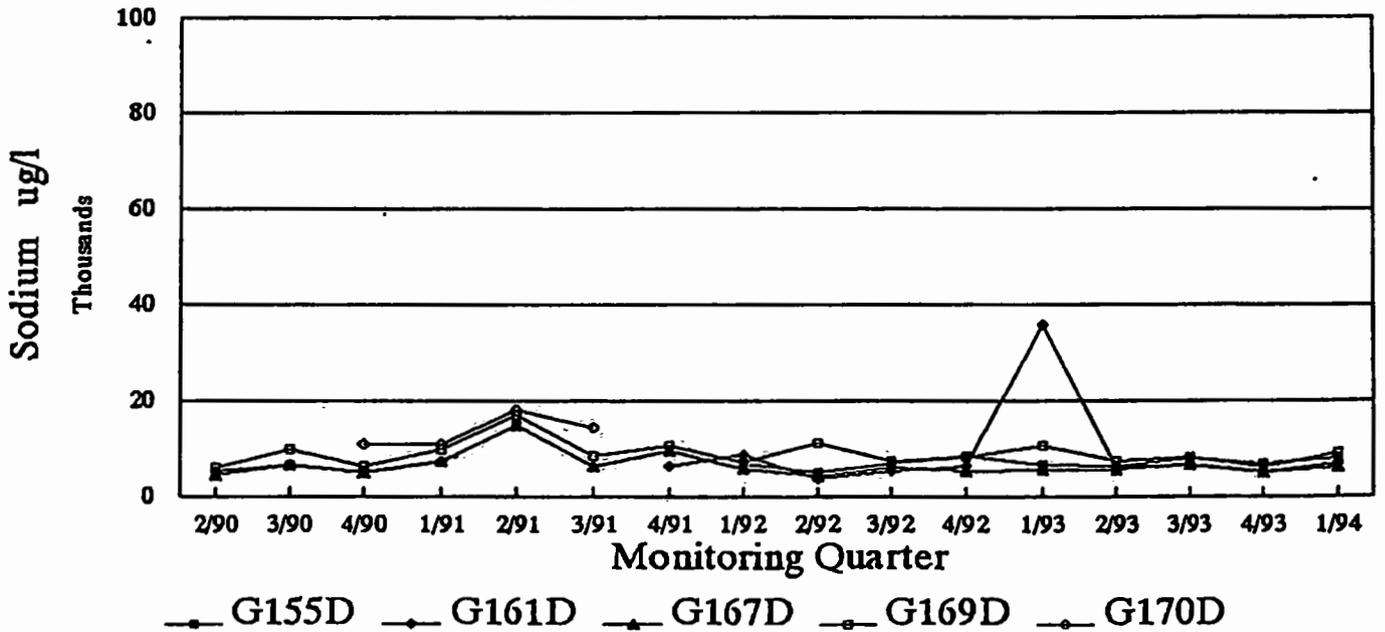
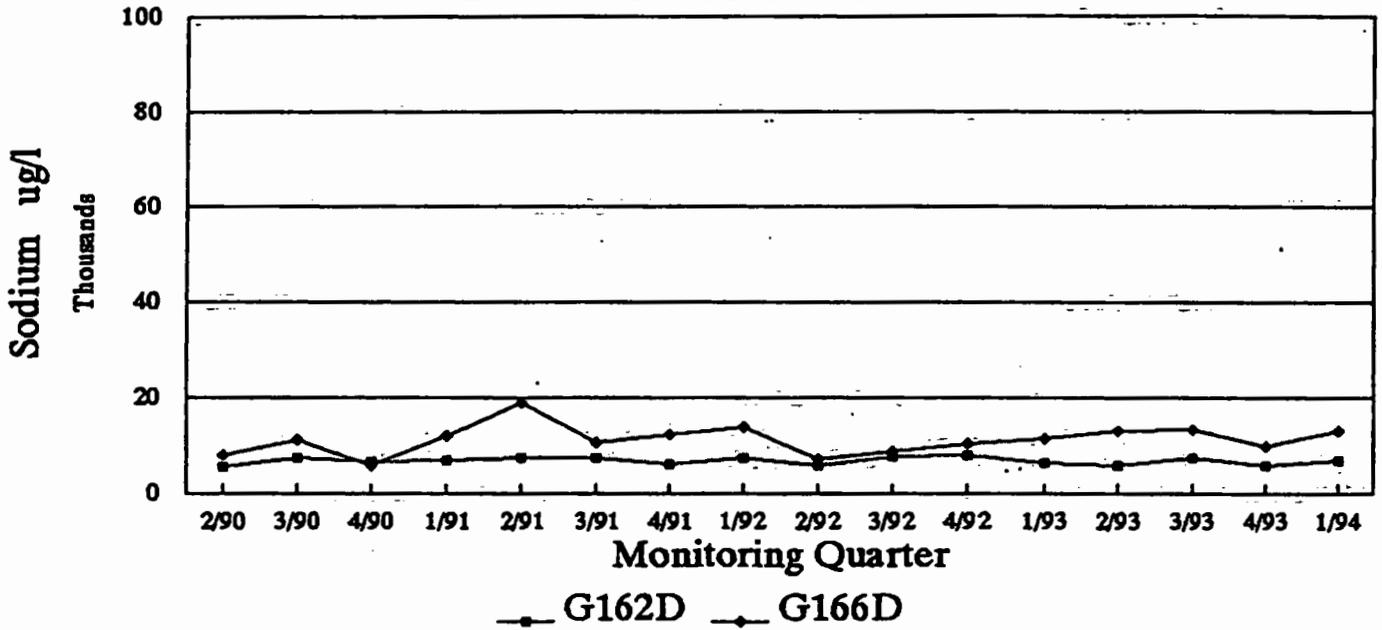


FIGURE 43

UPGRADIENT — MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRAIDENT — MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

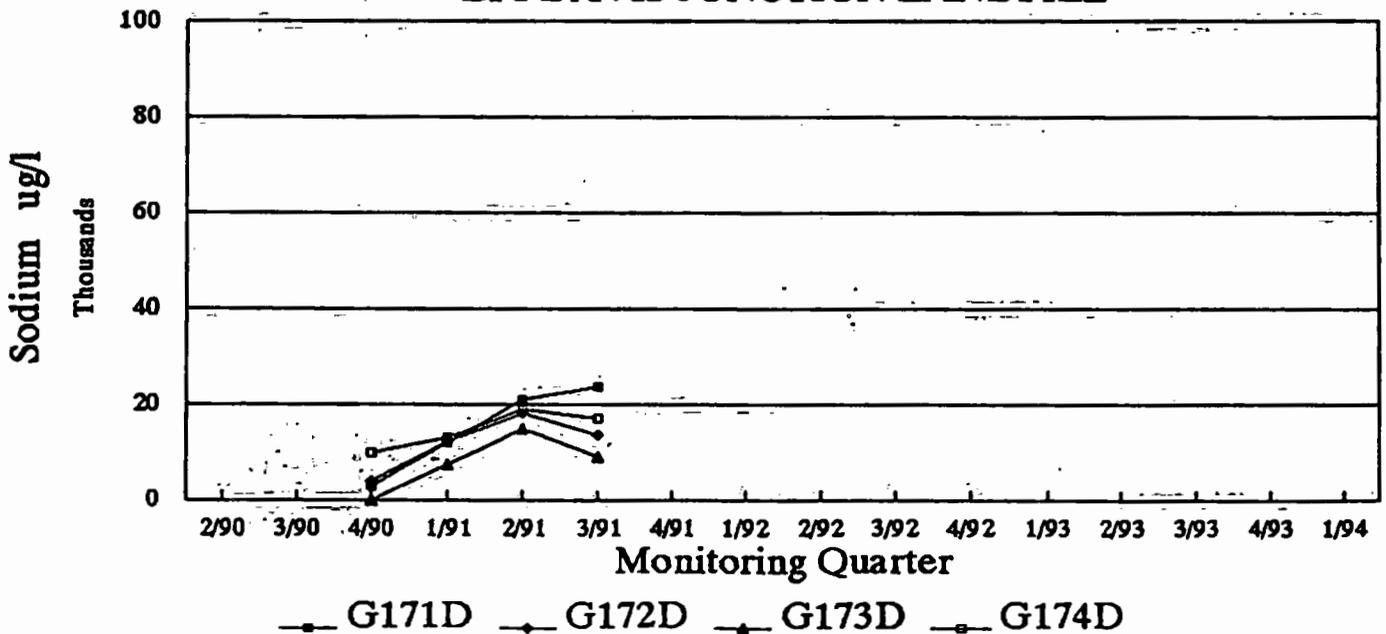
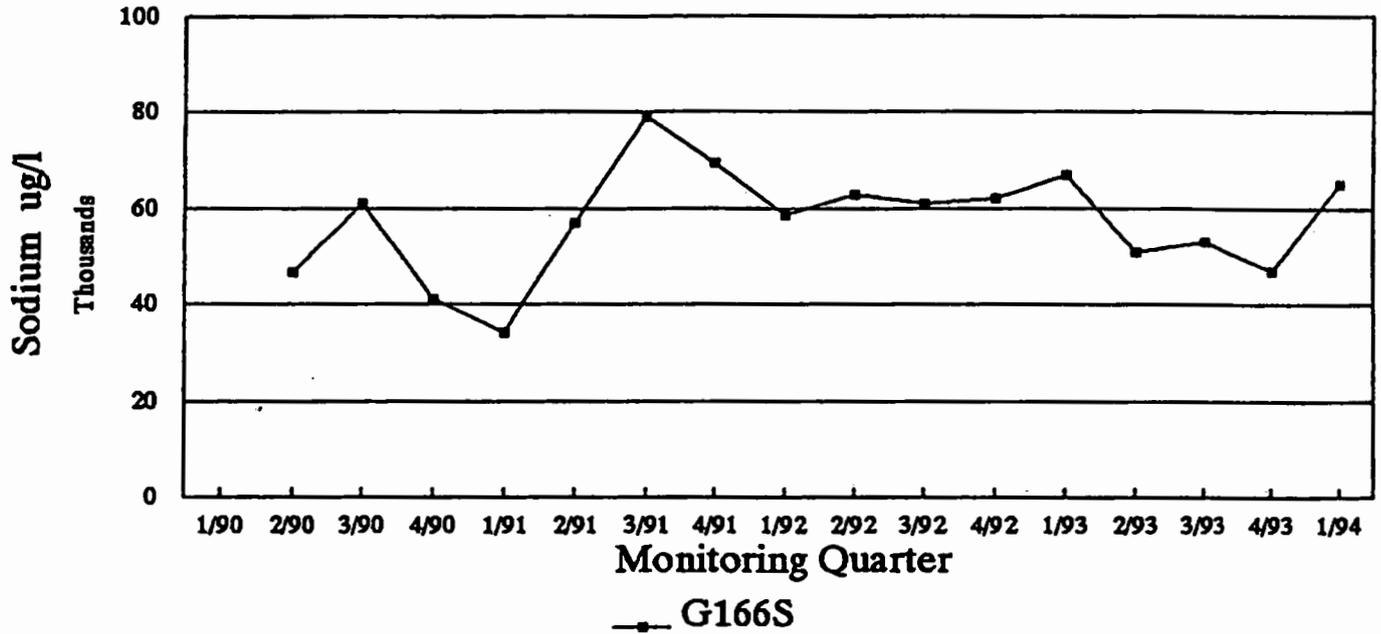


FIGURE 44

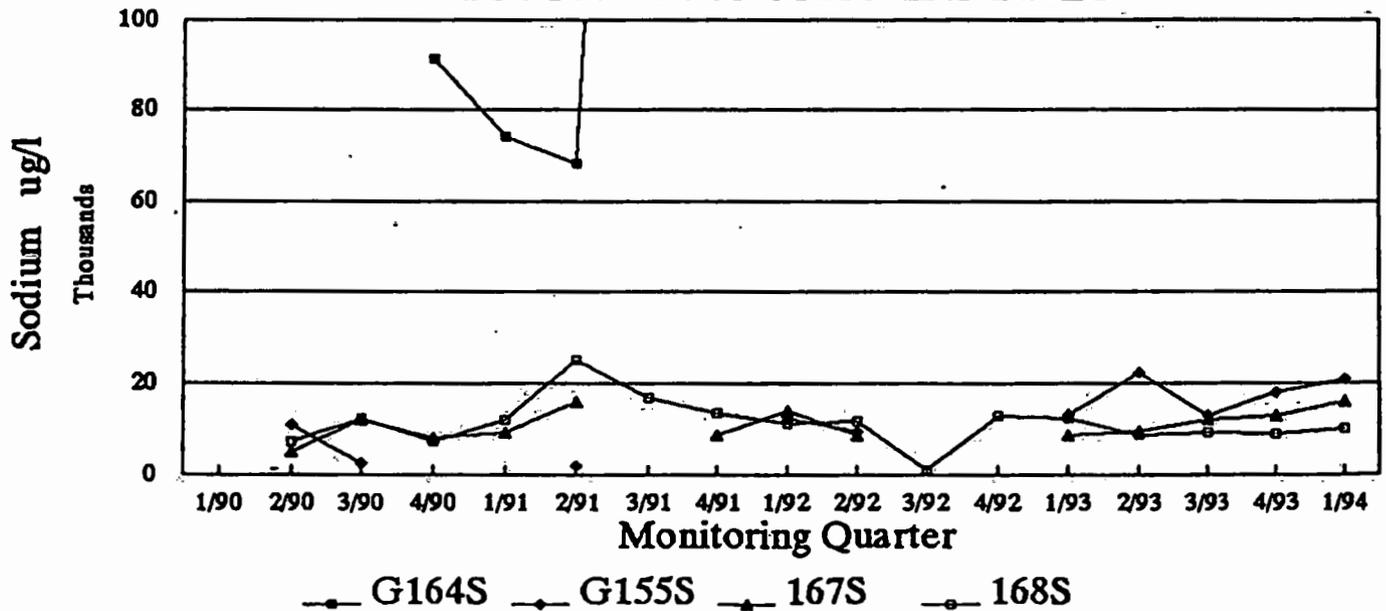
UPGRADIENT – SURFICIAL

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – SURFICIAL

BFI DAVIS JUNCTION LANDFILL



To maintain scale, value of 351,000 ug/l not shown on graph

**TABLE 22
SUMMARY OF SODIUM DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	57.0 mg/l	11.7
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	146.07 mg/l	136.97
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	12.48 mg/l	6.82
G 167 S	N/A	
G 168 S	11.26 mg/l	5.13

UPPER AQUIFER BACKGROUND MEDIAN 38.6 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION 1.17	UPPER 95% TOLERANCE INTERVAL 50.62 mg/l

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	7.9 mg/l	2.8
G 166 I	44.5 mg/l	10.8
G 166 S	57.0 mg/l	11.7
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	29.4 mg/l	21.7
G164 I	N/A	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	14.0 mg/l	5.5
G 163 S	7.6 mg/l	6.1
G 167 I	13.4 mg/l	20.7
G 169 I	8.3 mg/l	3.0
G 170 I	11.5 mg/l	6.0
G 171 I	20.3 mg/l	9.8

**TABLE 22 (continued)
SUMMARY OF SODIUM DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 8.07 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION 3.3	UPPER 95% TOLERANCE INTERVAL 13.7 mg/l
---	---	---

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	7.0 mg/l	0.76
G 166 D	11.4 mg/l	3.09
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	8.6 mg/l	8.65
G 164 D	N/A	
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	7.5 mg/l	2.55
G 163 I	7.52 mg/l	6.41
G 167 D	6.6 mg/l	2.66
G 169 D	9.02 mg/l	2.69
G 170 D	13.6 mg/l	3.39
G 171 D	15.0 mg/l	9.46
G 172 D	12.0 mg/l	5.81
G 173 D	8.2 mg/l	5.75
G 174 D	15.0 mg/l	4.11

BEDROCK VALLEY AQUIFER BACKGROUND MEAN 8.15 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION 2.04	UPPER 95% TOLERANCE INTERVAL 28.7 mg/l
---	--	---

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	12.27 mg/l	17.27

Sulfate:

The data from the wells in the upper aquifer, as depicted in Figure 45 are very consistent and do not exceed the 95% tolerance interval established by the background, groundwater study. Well G163S demonstrates a concentration value initially "set" at a higher mean since monitoring began at that well. Starting in the fourth quarter of 1992 through the second quarter of 1993, the concentration value for sulfate dropped and then apparently reset at a lower, consistent value. Ms. Jennings, the site Hydrogeologist, has indicated that this well is located too far downgradient at the site to have been impacted by the landfill. Additionally, there is no clay at this location and the well is adjacent to a roadway, rendering it susceptible to surface runoff.

The downgradient wells monitoring the main aquifer have reported data relatively constant in concentration value. Wells G174D and G173D mirrored a pattern observed in the upgradient aquifer well G166D. However, none of the wells exceed the 95% upper tolerance interval established by the background, groundwater study. Well G166D, an upgradient well likewise, did not exceed the 95% upper tolerance interval. Nonetheless, well G166D is remarkable in that it contains a large, downward, spike value for the fourth quarter 1991. The value returned to a slightly elevated but constant level, which had been established and maintained

before that monitoring quarter and the assumption is that the spike value could be attributed to a sampling or analytical error. Unfortunately, at this time there is no way to assess the most probable reason for such a dramatic concentration shift.

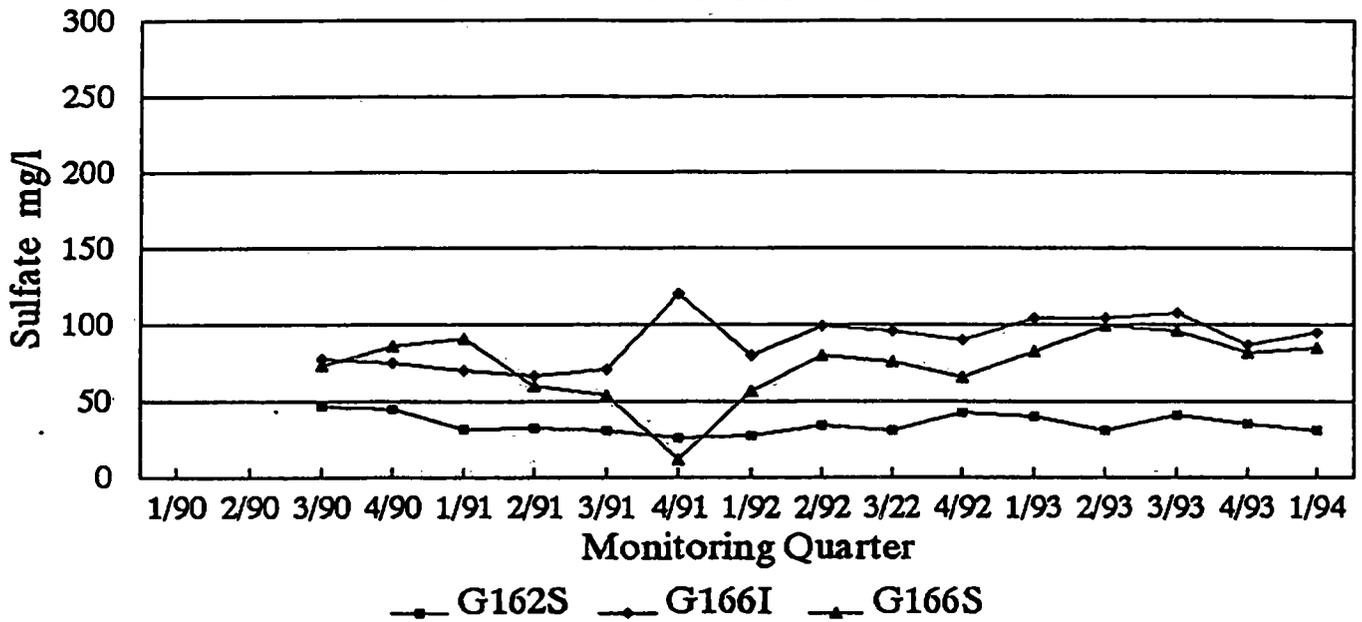
The bedrock valley aquifer well G163D reported sulfate concentration values which easily fit the population pool of concentration values established by the background, groundwater study.

In comparison to the upgradient, surficial well G166S, the downgradient, surficial wells have each established a variation unique to that well. Well G164S was consistent and unremarkable. Well G168S was constant in value but reported values set at a higher mean value than the surficial, upgradient well. Well G155S reported a similar mean value as well G168S, although it was not monitored on a quarterly basis. Well G167S appears to contain spike values in both directions from the mean. Since the well was infrequently monitored, it is difficult to draw conclusions from the disjointed, erratic data as reported.

FIGURE 45

UPGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL

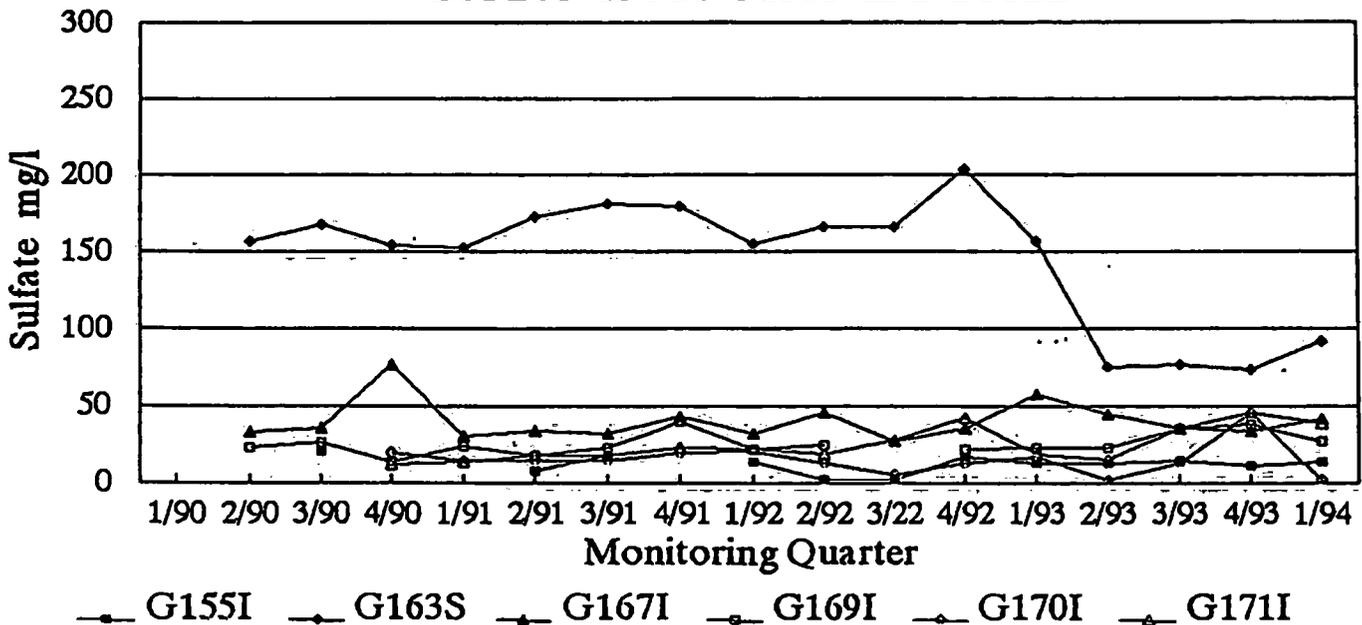


FIGURE 46

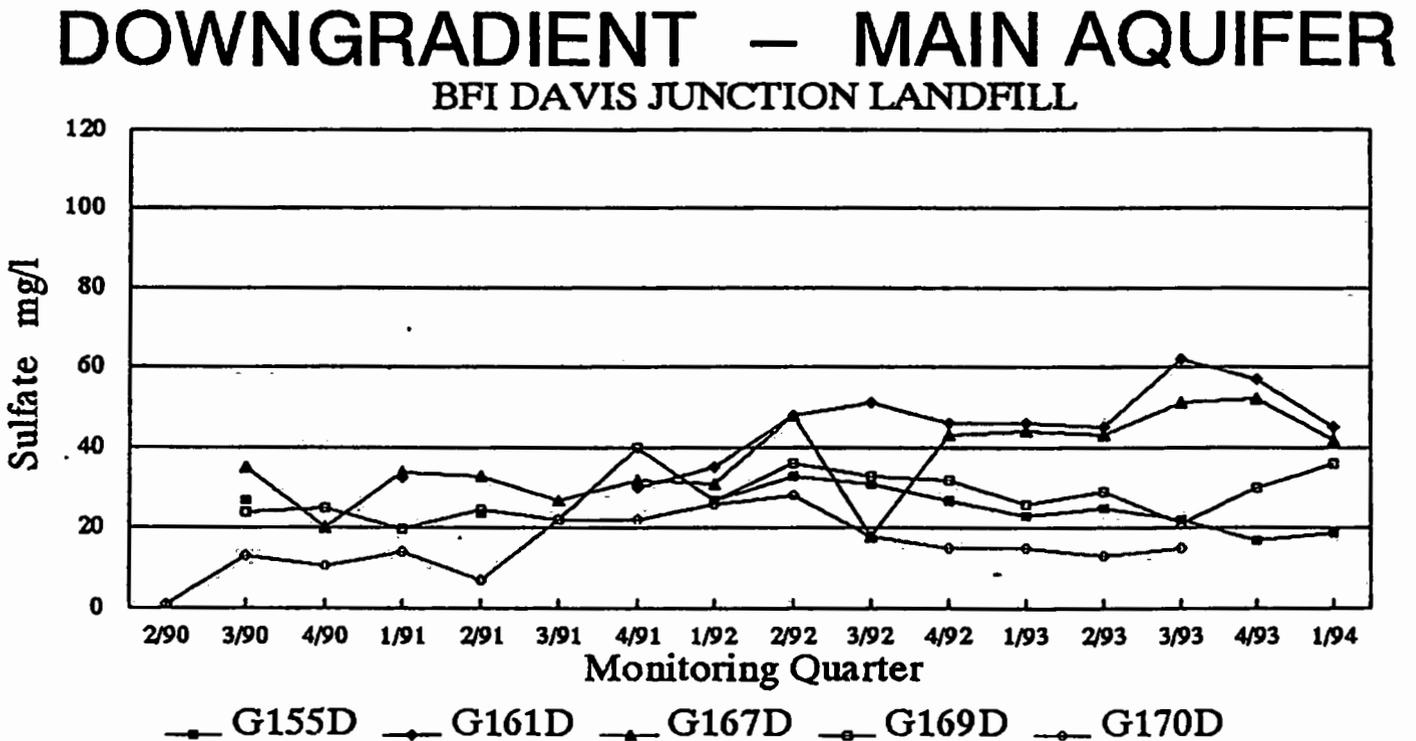
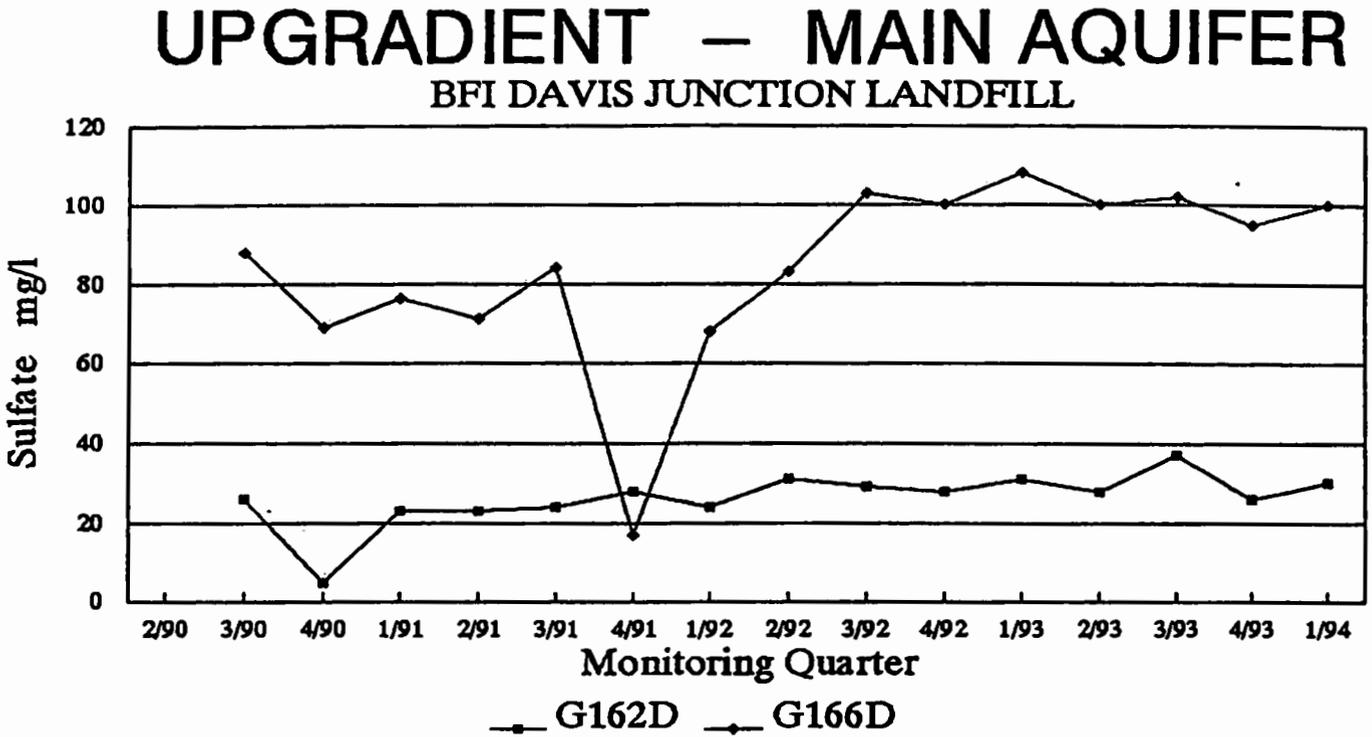
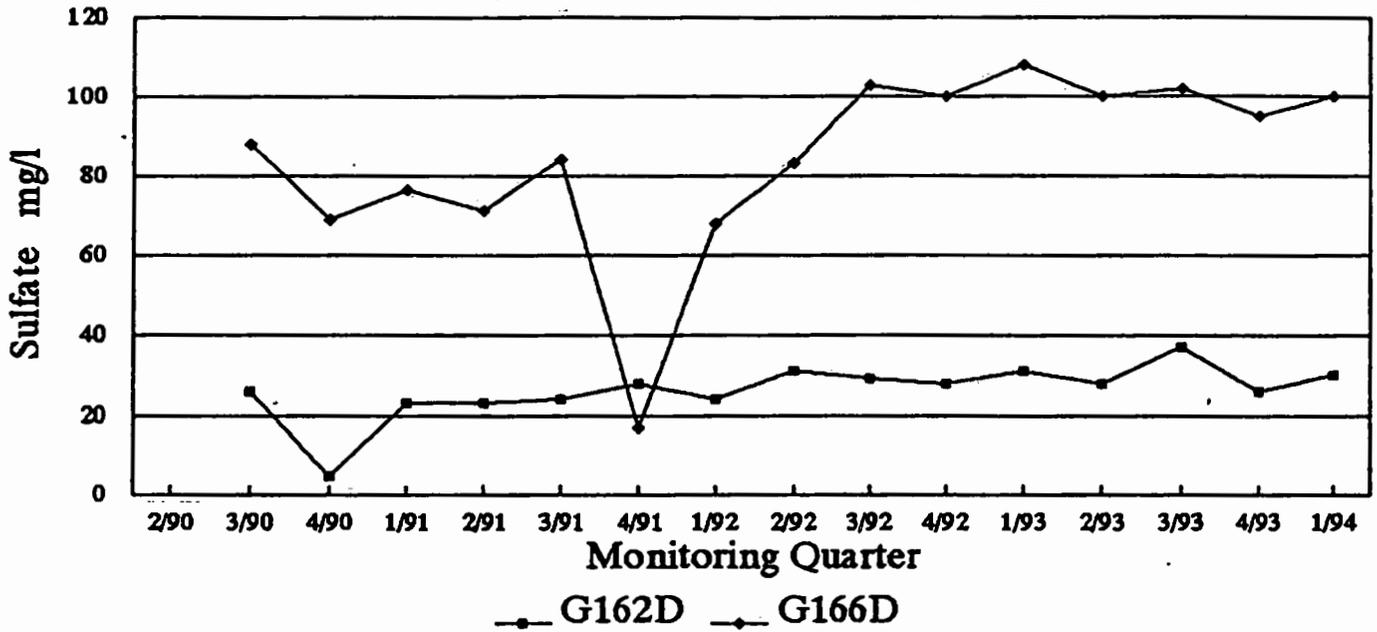


FIGURE 47

UPGRADIENT — MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIANT — MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

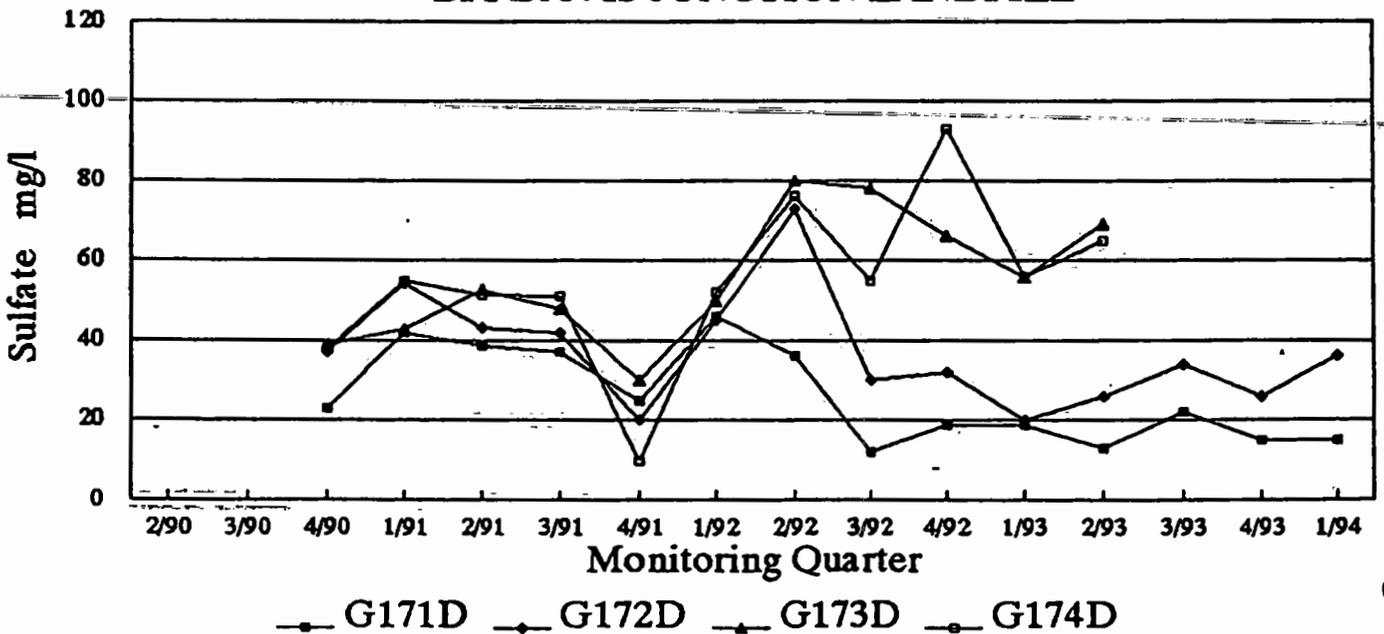
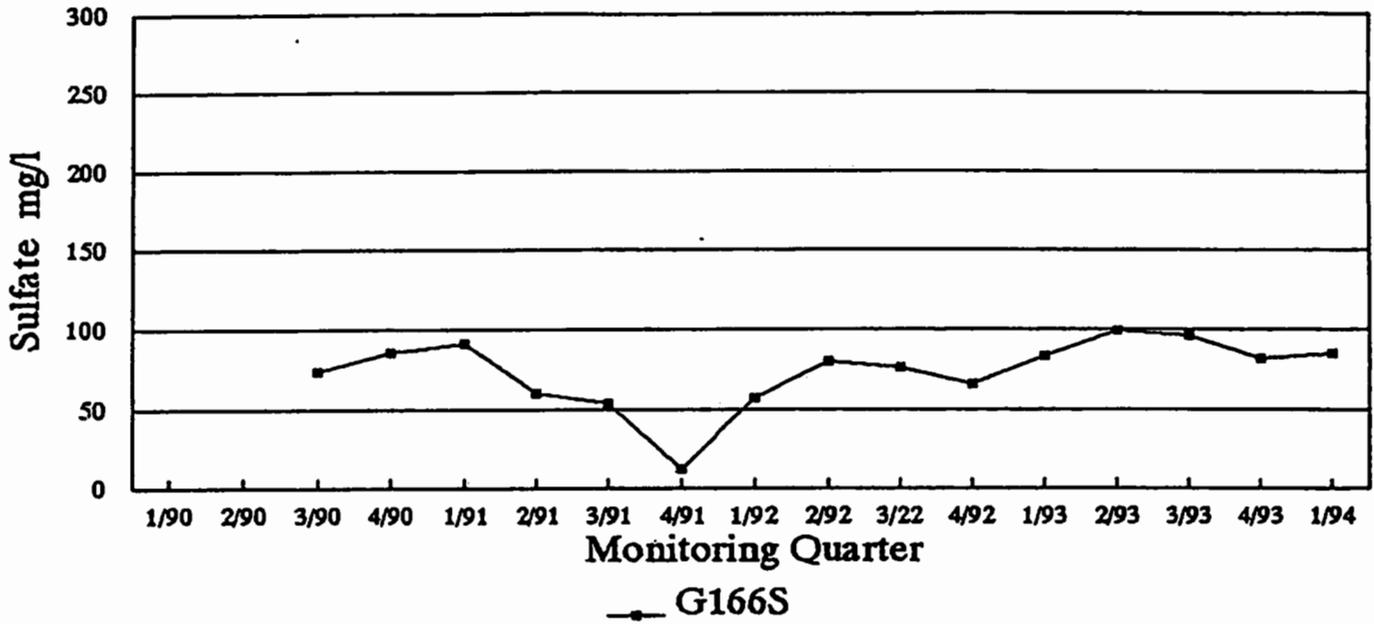


FIGURE 48

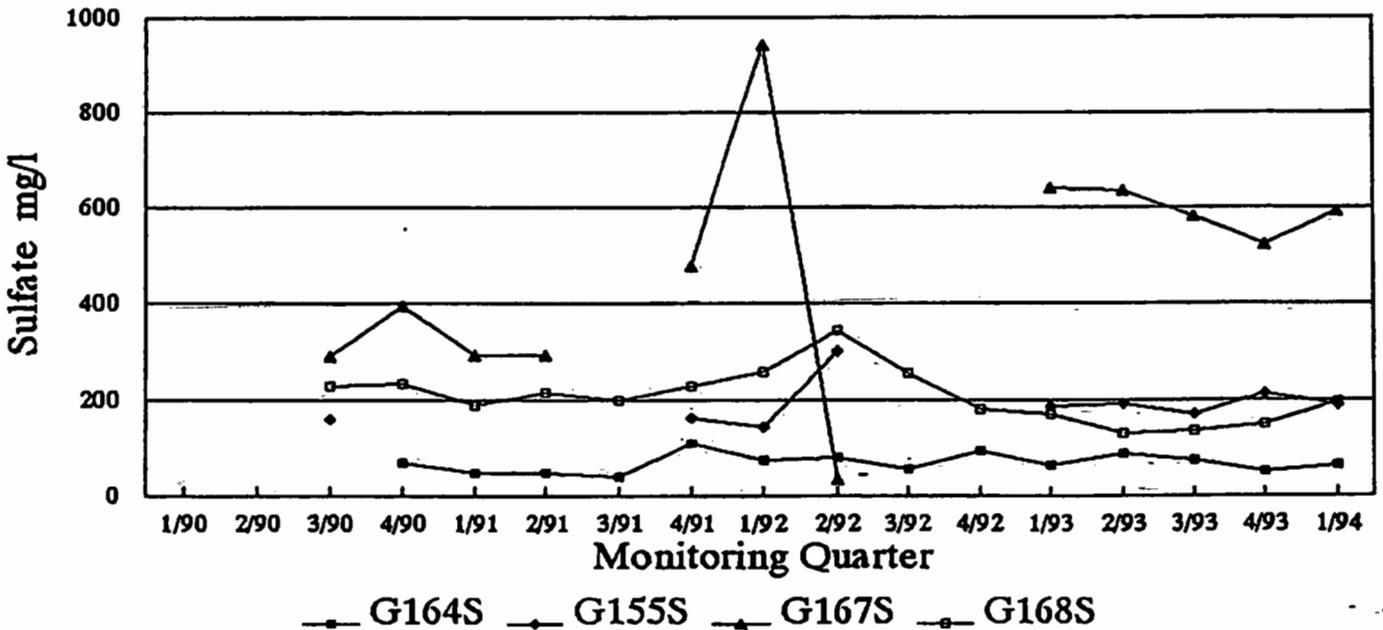
UPGRADIENT, SURFICIAL

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT, SURFICIAL

BFI DAVIS JUNCTION LANDFILL



**TABLE 23
SUMMARY OF SULFATE DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	73.4 mg/l	21.8
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	68.52 mg/l	19.88
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	190.88 mg/l	45.55
G 167 S	474.16 mg/l	232.75
G 168 S	208.13 mg/l	54.65

UPPER AQUIFER BACKGROUND MEDIAN 50.8 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION 28.7	UPPER 95% TOLERANCE INTERVAL 100.4 mg/l

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	35.2 mg/l	6.41
G 166 I	90.0 mg/l	15.8
G 166 S	73.4 mg/l	21.8
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	51.5 mg/l	23.52
G164 I	86.8 mg/l	17.27
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	12.4 mg/l	5.69
G 163 S	145.1 mg/l	41.7
G 167 I	40.0 mg/l	12.1
G 169 I	25.6 mg/l	7.16
G 170 I	16.0 mg/l	10.6
G 171 I	25.1 mg/l	11.12

**TABLE 23 (continued)
SUMMARY OF SULFATE DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 46.4 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION 28.6	UPPER 95% TOLERANCE INTERVAL 95.3 mg/l
---	--	---

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	26.2 mg/l	6.94
G 166 D	84.3 mg/l	22.9
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	45.2 mg/l	9.8
G 164 D	72.15 mg/l	27.64
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	25.0 mg/l	4.7
G 163 I	43.5 mg/l	2.21
G 167 D	36.9 mg/l	10.4
G 169 D	28.3 mg/l	6.04
G 170 D	15.7 mg/l	7.2
G 171 D	26.0 mg/l	11.6
G 172 D	37.0 mg/l	14.2
G 173 D	55.6 mg/l	16.1
G 174 D	55.0 mg/l	21.9

BEDROCK VALLEY AQUIFER BACKGROUND MEAN 53.8 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION 25.2	UPPER 95% TOLERANCE INTERVAL 98.2 mg/l
---	--	---

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	24.18 mg/l	9.72

Total Dissolved Solids:

Figure 49 graphically depicts the elevated total dissolved solids concentration value for well G166S. The dissolved solids content in this upgradient well tracks reasonably well with the higher mean concentration values shown by the sodium and chloride. If the sodium and chloride values are present in higher concentrations, it is logical that the total dissolved solids content will be present in a higher concentration. This indicates further that an increase in the upgradient, background concentrations are occurring and that these data should continue to be added to the background population in order to propose a tolerance interval which reflects that change.

The mean concentration value for total dissolved solids in well G163S exceeds the currently proposed background tolerance interval. However, the data collected during the monitoring quarters in 1990 were highly skewed and these values contained within the data pool tremendously affected the arithmetic mean calculated for the entire monitoring period. The early data obtained for total dissolved solids in these wells could be attributed to disturbances caused during well installation or the geology of the well location. Well G163S is located far from the landfill in an area adjacent to a roadway where no protective clay overlies the well screen. Since the second quarter of 1991, a slight, decreasing trend in total dissolved solids has been

observed and the concentration values since this quarter were below the tolerance interval.

The same observation, but to a smaller extent, is apparent in Well G166D, an upgradient well located in the main aquifer. Since this well is located upgradient to the waste facility, this exceedance is not significant and suggests that the basis for this variation pertains to the well location and geology. The downgradient wells in the main aquifer all demonstrated very constant concentration trends and did not exceed the upper 95% tolerance interval.

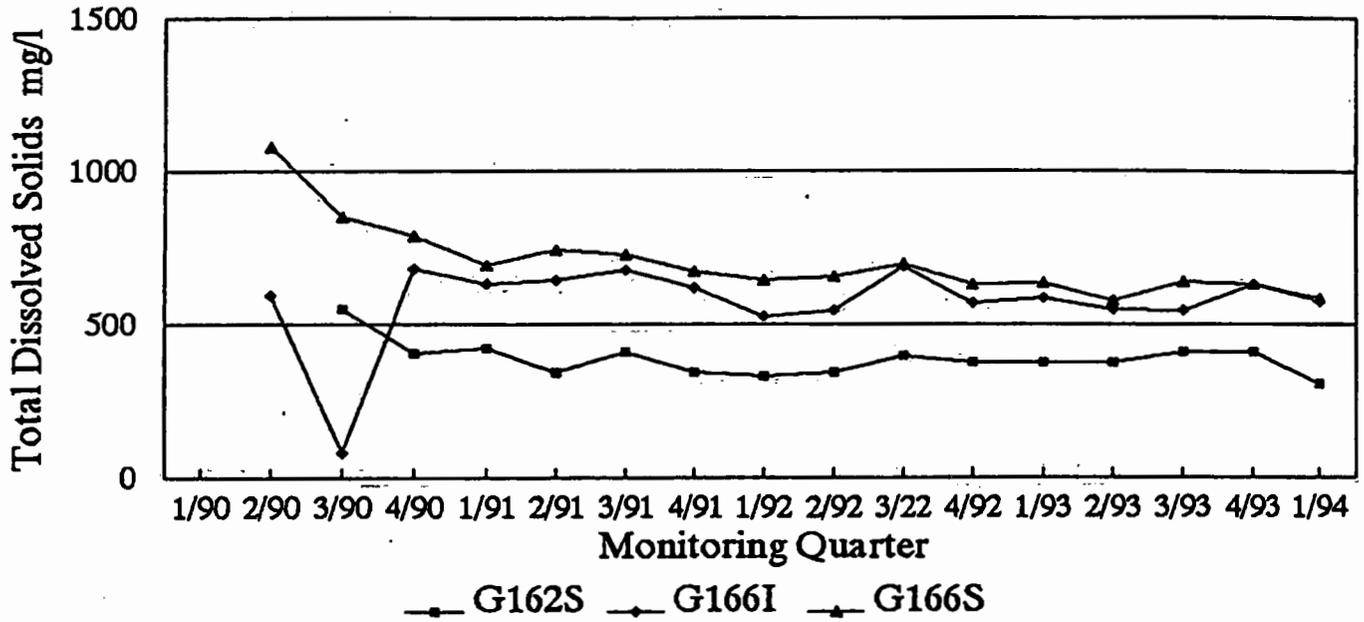
The total dissolved solids content in the downgradient, bedrock valley well G163D demonstrated no significance from the tolerance interval established by the background, groundwater study.

Surficial well G167S total dissolved solids content reflects the elevated trends for the parameters which are dissolved, such as, calcium, magnesium, sodium and chloride as reported in this study. The disjointed data from this well also is indicative of its screen position approximately three feet below ground surface and the fact it is often dry.

FIGURE 49

UPGRADIENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRAIDENT – UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL

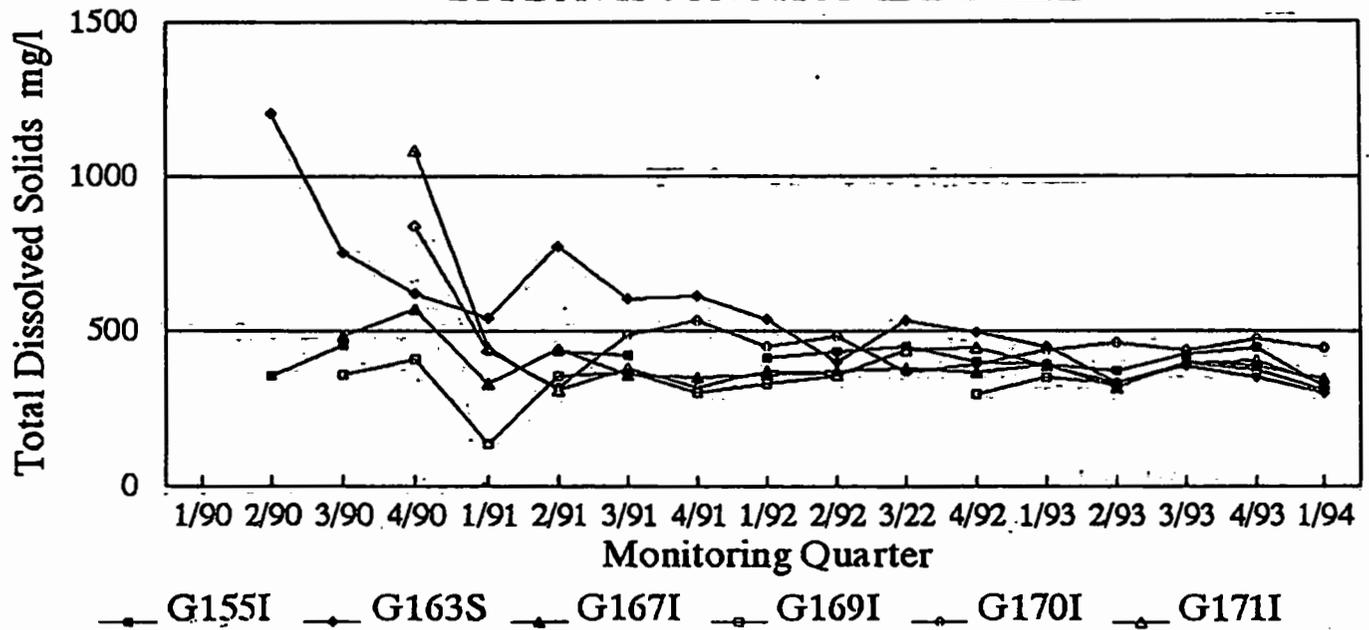
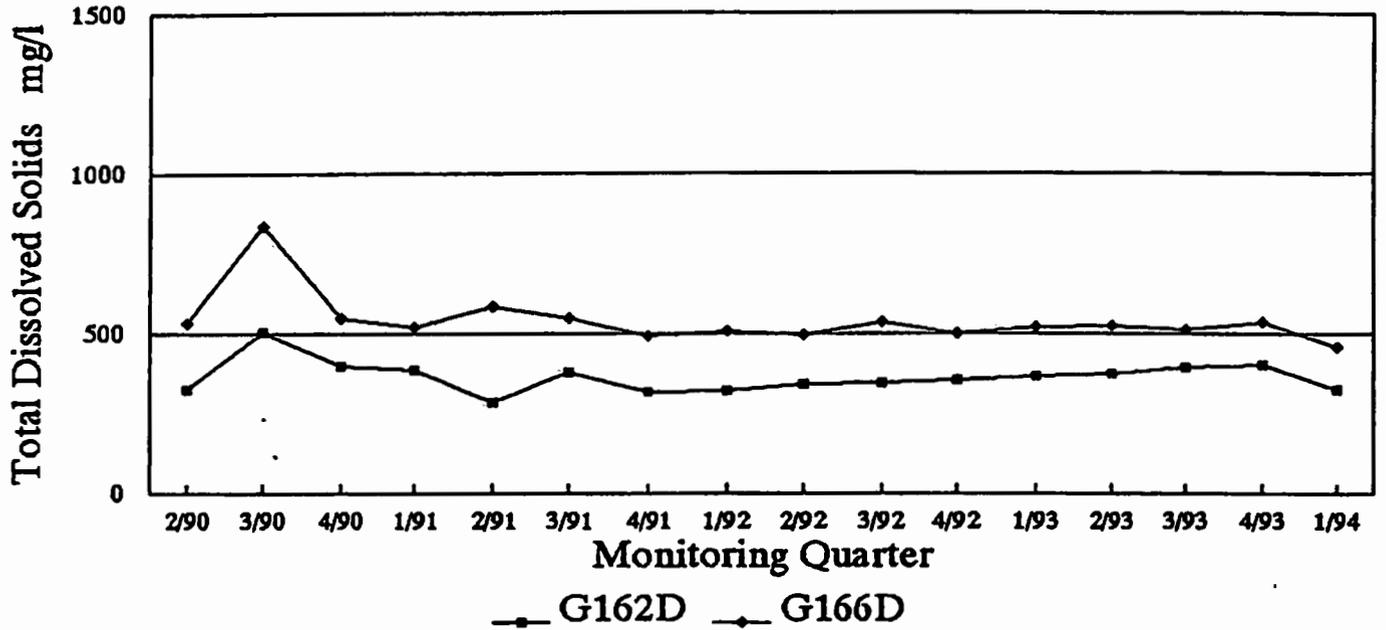


FIGURE 50

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRAIDENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

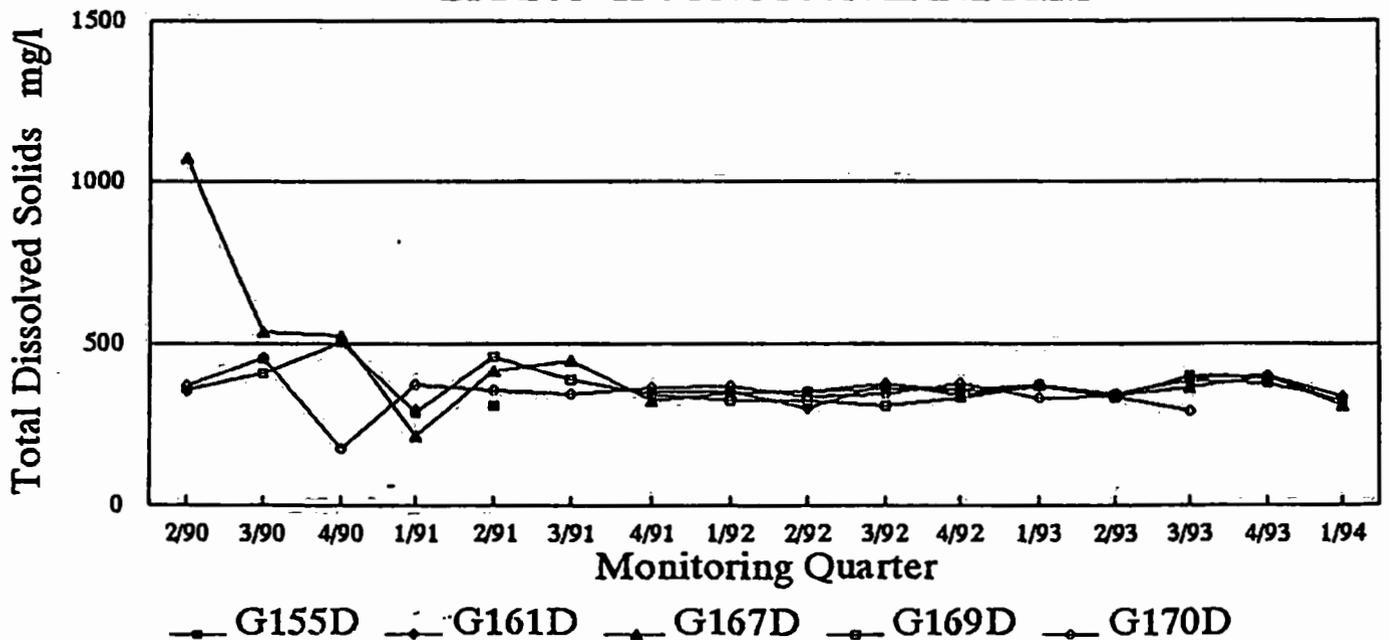
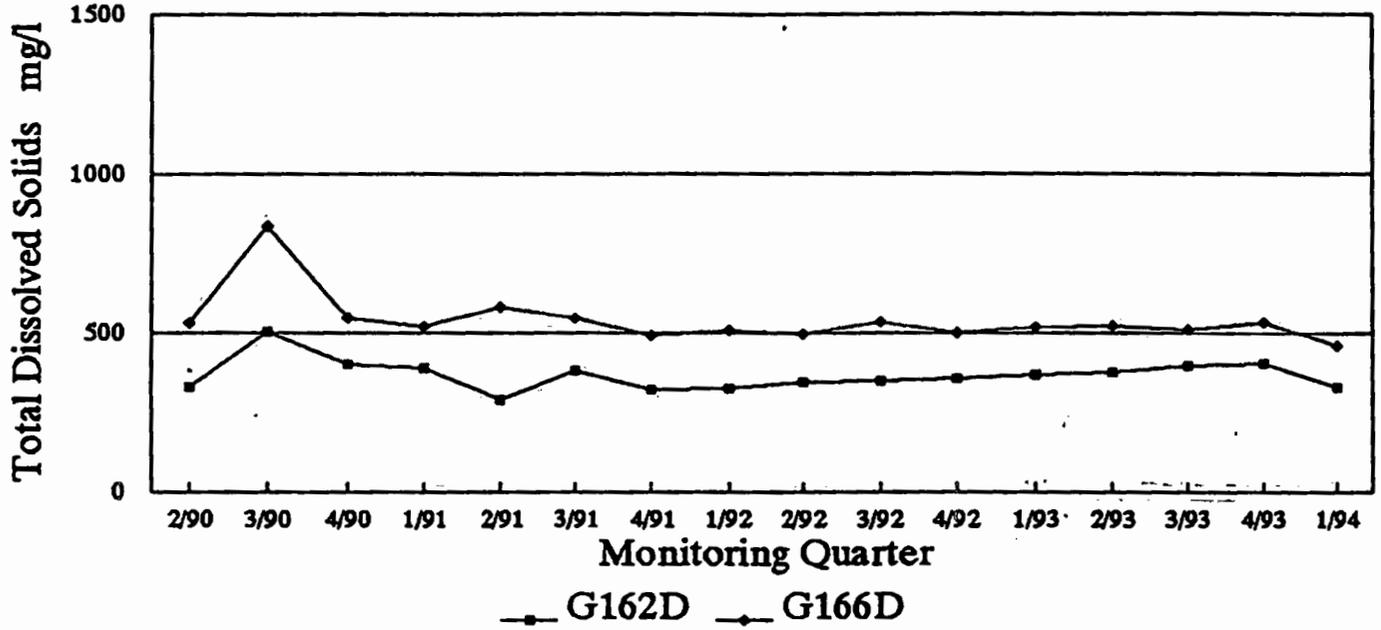


FIGURE 51

UPGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT – MAIN AQUIFER

BFI DAVIS JUNCTION LANDFILL

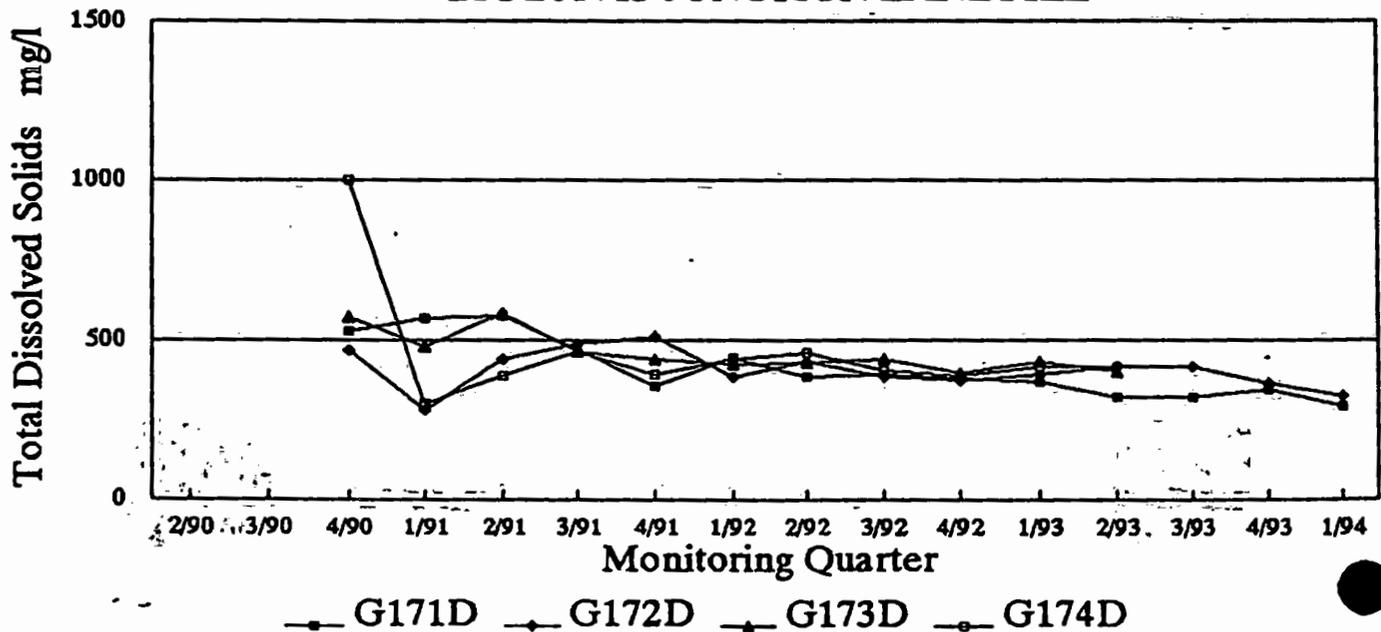
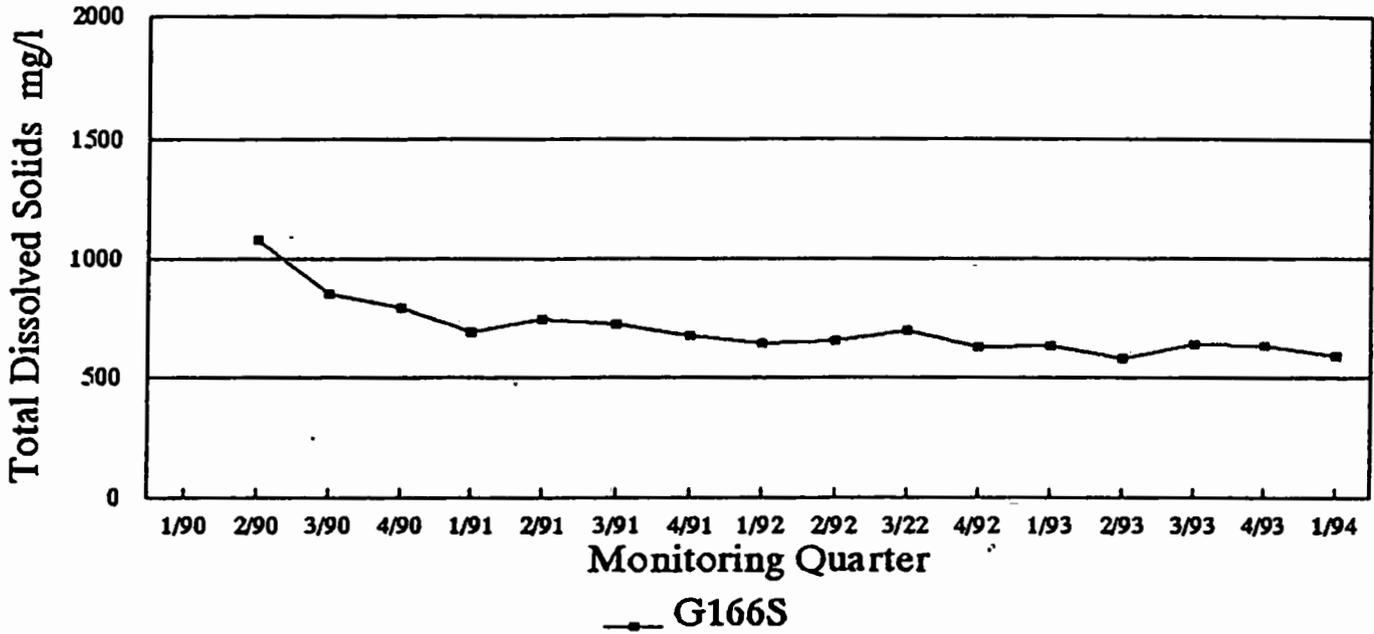


FIGURE 52

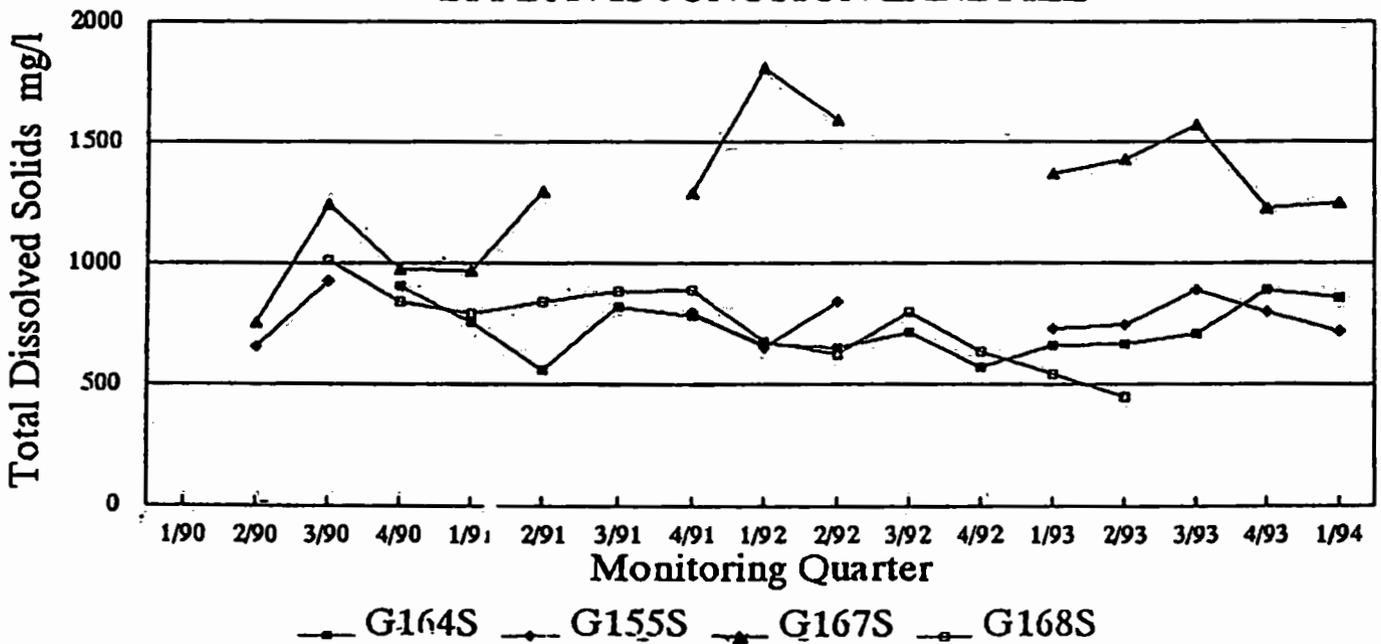
UPGRADIENT, SURFICIAL

BFI DAVIS JUNCTION LANDFILL



DOWNGRADIENT, SURFICIAL

BFI DAVIS JUNCTION LANDFILL



**TABLE 24
SUMMARY OF TOTAL DISSOLVED SOLIDS DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	705.5 mg/l	122.9
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	729.6 mg/l	282.1
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	776.4 mg/l	93.0
G 167 S	1289.2 mg/l	110.7
G 168 S	711.62 mg/l	160.31

UPPER AQUIFER BACKGROUND MEDIAN 378.9 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION 61.8	UPPER 95% TOLERANCE INTERVAL 491.7 mg/l
---	---	--

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	385.1 mg/l	55.7
G 166 I	573.3 mg/l	140.6
G 166 S	705.5 mg/l	122.9
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	395.16 mg/l	45.9
G164 I	700.9 mg/l	74.2
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	401.7 mg/l	44.7
G 163 S	561.0 mg/l	220.0
G 167 I	389.0 mg/l	64.7
G 169 I	332.0 mg/l	66.1
G 170 I	467.1 mg/l	119.0
G 171 I	426.3 mg/l	188.0

TABLE 24 (continued)
SUMMARY OF TOTAL DISSOLVED SOLIDS DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER

MAIN AQUIFER BACKGROUND MEDIAN 379.7 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION 48.3	UPPER 95% TOLERANCE INTERVAL 464.5 mg/l
---	---	---

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	368.0 mg/l	51.2
G 166 D	540.7 mg/l	83.8
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	351.0 mg/l	33.1
G 164 D	499.5 mg/l	102.6
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	362.0 mg/l	37.4
G 163 I	422.75 mg/l	100.76
G 167 D	420.6 mg/l	189.9
G 169 D	365.6 mg/l	57.5
G 170	343.9 mg/l	60.5
G 171 D	410.1 mg/l	93.0
G 172 D	405.2 mg/l	61.5
G 173 D	468.0 mg/l	59.4
G 174 D	446.0 mg/l	164.7

BEDROCK VALLEY AQUIFER BACKGROUND MEAN 398.7 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION 57.9	UPPER 95% TOLERANCE INTERVAL 500.8 mg/l
---	---	---

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	341.16 mg/l	56.62

RCRA METAL PARAMETERS

Tables 25 through 32 contain the summary data for all the concentration values reported during the monitoring period for the eight RCRA metals. The most outstanding observation with the data for all of these parameters is related to the detection limits reported during the monitoring period. In comparison to the detection limits reported during background, groundwater studies in both the upper and main aquifers, every metal data pool contained multiple detection limits. Additionally, the highest detection limit for each of the eight RCRA metals reported during this monitoring period was higher than the highest detection limit reported in the background, groundwater study, with the exception for the silver data pool reporting limits. This makes statistical data reduction very difficult. These varying detection limits can be due to many reasons not the least of which is instrument variability and sample matrix interferences.

Since multiple detection limits represent a true detection limit for each sample, it becomes necessary to set a detection limit when describing the entire population. Examination of data pools with multiple detection limits is an area of active statistical research and an ideal analytical solution has not yet been decided. At this time, therefore, it is most appropriate to

use the highest detection limit reported during a statistical analysis and assume that everything below the highest detection limit concentration was part of the non-detect data pool. This assumption more accurately reflects and introduces less bias into subsequent statistical examinations of the data. This technique was employed throughout this study as well as the previous background, groundwater study.

The RCRA metal data pools report a high percent of non-detect concentration values equal to or greater than the percent of non-detects reported in the background, groundwater study, however at a higher detection limit.

None of the reported detected values exceeded the 95% tolerance interval for each metal parameter.

In several summary statements for an individual well, a notation, N/A is listed instead of a mean value. Whenever, the monitoring data pool contained three or fewer reported values, the values were not summarized and the N/A was inserted. The reported values are included in the data pools for the wells and can be found in the respective aquifer appendix.

**TABLE 25
SUMMARY OF ARSENIC DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	100%ND, <0.005 mg/l	
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	100%ND, <0.005 mg/l	
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	N/A	
G 167 S	100%ND <0.001 mg/l	
G 168 S	100%ND <0.001 mg/l	

UPPER AQUIFER BACKGROUND MEDIAN 78%ND <0.001 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.023 mg/l
--	---	---

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	100%ND <0.005 mg/l	
G 166 I	93%ND <0.005 mg/l	
G 166 S	100%ND <0.005 mg/l	
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	80%ND <0.005 mg/l	
G164 I	100%ND <0.005 mg/l	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	100%ND <0.005 mg/l	
G 163 S	100%ND <0.002 mg/l	
G 167 I	100%ND <0.002 mg/l	
G 169 I	100%ND <0.005 mg/l	
G 170 I	100%ND <0.005 mg/l	
G 171 I	100%ND <0.005 mg/l	

**TABLE 25 (continued)
SUMMARY OF ARSENIC DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 87%ND <0.001 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.011 mg/l
--	---	--

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	100%ND <0.005 mg/l	
G 166 D	93%ND <0.005 mg/l	
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	100%ND <0.005 mg/l	
G 164 D	100%ND <0.005 mg/l	
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	100%ND <0.001 mg/l	
G 163 I	75%ND <0.001 mg/l	
G 167 D	100%ND <0.005 mg/l	
G 169 D	100%ND <0.002 mg/l	
G 170 D	100%ND <0.005 mg/l	
G 171 D	100%ND <0.005 mg/l	
G 172 D	100%ND <0.005 mg/l	
G 173 D	100%ND <0.005 mg/l	
G 174 D	100%ND <0.005 mg/l	

BEDROCK VALLEY AQIFER BACKGROUND MEAN <0.0004 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.005 mg/l
--	---	--

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	N/A	

**TABLE 26
SUMMARY OF BARIUM DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	100%ND, <0.2 mg/l	
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	100%ND, <0.2 mg/l	
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	N/A	
G 167 S	85.7%ND <0.2 mg/l	
G 168 S	100%ND <0.2 mg/l	

UPPER AQUIFER BACKGROUND MEDIAN 93%ND <0.1 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.48 mg/l
--	---	--

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	88%ND <0.2 mg/l	
G 166 I	100%ND <0.2 mg/l	
G 166 S	100%ND <0.2 mg/l	
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	100%ND <0.2 mg/l	
G164 I	93%ND <0.2 mg/l	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	100%ND <0.2 mg/l	
G 163 S	100%ND <0.2 mg/l	
G 167 I	100%ND <0.2 mg/l	
G 169 I	100%ND <0.2 mg/l	
G 170 I	100%ND <0.2 mg/l	
G 171 I	100%ND <0.2 mg/l	

**TABLE 26 (continued)
SUMMARY OF BARIUM DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 98%ND <0.1 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.11 mg/l
--	---	---

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	100%ND <0.2 mg/l	
G 166 D	100%ND <0.2 mg/l	
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	100%ND <0.2 mg/l	
G 164 D	93%ND <0.2 mg/l	
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	100%ND <0.2 mg/l	
G 163 I	100%ND <0.2 mg/l	
G 167 D	100%ND <0.2 mg/l	
G 169 D	100%ND <0.2 mg/l	
G 170 D	100%ND <0.2 mg/l	
G 171 D	100%ND <0.2 mg/l	
G 172 D	100%ND <0.2 mg/l	
G 173 D	100%ND <0.2 mg/l	
G 174 D	100%ND <0.2 mg/l	

BEDROCK VALLEY AQUIFER BACKGROUND MEAN <0.1 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.1 mg/l
--	---	--

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	N/A	

**TABLE 27
SUMMARY OF CADMIUM DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	100%ND, <0.01 mg/l	
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	100%ND, <0.01 mg/l	
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	N/A	
G 167 S	100%ND <0.01 mg/l	
G 168 S	100%ND <0.01 mg/l	

UPPER AQUIFER BACKGROUND MEDIAN 91%ND <0.005 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.008 mg/l
--	---	---

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	100%ND <0.01 mg/l	
G 166 I	100%ND <0.01 mg/l	
G 166 S	100%ND <0.01 mg/l	
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	100%ND <0.01 mg/l	
G164 I	100%ND <0.01 mg/l	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	100%ND <0.01 mg/l	
G 163 S	100%ND <0.01 mg/l	
G 167 I	100%ND <0.01 mg/l	
G 169 I	100%ND <0.01 mg/l	
G 170 I	100%ND <0.01 mg/l	
G 171 I	100%ND <0.01 mg/l	

**TABLE 27 (continued)
SUMMARY OF CADMIUM DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 100%ND <0.005 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.005 mg/l
---	---	--

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	100%ND <0.01 mg/l	
G 166 D	100%ND <0.01 mg/l	
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	100%ND <0.1 mg/l	
G 164 D	100%ND <0.01 mg/l	
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	100%ND <0.01 mg/l	
G 163 I	100%ND <0.01 mg/l	
G 167 D	100%ND <0.01 mg/l	
G 169 D	100%ND <0.01 mg/l	
G 170 D	100%ND <0.01 mg/l	
G 171 D	100%ND <0.01 mg/l	
G 172 D	100%ND <0.01 mg/l	
G 173 D	100%ND <0.01 mg/l	
G 174 D	100%ND <0.01 mg/l	

BEDROCK VALLEY AQUIFER BACKGROUND MEAN <0.005 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.005 mg/l
--	---	--

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	N/A	

**TABLE 28
SUMMARY OF CHROMIUM DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	100%ND, <0.02 mg/l	
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	100%ND, <0.02 mg/l	
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	N/A	
G 167 S	100%ND <0.02 mg/l	
G 168 S	100%ND <0.02 mg/l	

UPPER AQUIFER BACKGROUND MEDIAN 94%ND <0.01 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.014 mg/l
--	--	---

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	100%ND <0.02 mg/l	
G 166 I	100%ND <0.02 mg/l	
G 166 S	100%ND <0.02 mg/l	
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	100%ND <0.02 mg/l	
G164 I	100%ND <0.02 mg/l	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	100%ND <0.02 mg/l	
G 163 S	100%ND <0.02 mg/l	
G 167 I	100%ND <0.02 mg/l	
G 169 I	100%ND <0.02 mg/l	
G 170 I	100%ND <0.02 mg/l	
G 171 I	100%ND <0.02 mg/l	

**TABLE 28 (continued)
SUMMARY OF CHROMIUM DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 100%ND <0.01 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.01 mg/l
--	---	---

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	100%ND <0.02 mg/l	
G 166 D	100%ND <0.02 mg/l	
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	100%ND <0.02 mg/l	
G 164 D	100%ND <0.02 mg/l	
MAIN AQUIFER DOWNGRAIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	100%ND <0.02 mg/l	
G 163 I	100%ND <0.02 mg/l	
G 167 D	100%ND <0.02 mg/l	
G 169 D	100%ND <0.02 mg/l	
G 170 D	100%ND <0.02 mg/l	
G 171 D	100%ND <0.02 mg/l	
G 172 D	100%ND <0.02 mg/l	
G 173 D	100%ND <0.02 mg/l	
G 174 D	100%ND <0.02 mg/l	

BEDROCK VALLEY AQUIFER BACKGROUND MEAN <0.01 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.015 mg/l
---	---	--

BEDROCK VALLEY AQUIFER DOWNGRAIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	N/A	

**TABLE 29
SUMMARY OF LEAD DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	73%ND, <0.02 mg/l	
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	78.6%ND, <0.01 mg/l	
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	N/A	
G 167 S	17%ND <0.037 mg/l	
G 168 S	28%ND <0.039 mg/l	

UPPER AQUIFER BACKGROUND MEDIAN 79%ND <0.005 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.04 mg/l
--	---	---

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	87%ND <0.02 mg/l	
G 166 I	73%ND <0.02 mg/l	
G 166 S	73%ND <0.02 mg/l	
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	75%ND <0.02 mg/l	
G164 I	78%ND <0.02 mg/l	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	50%ND 0.035 mg/l	
G 163 S	63%ND <0.02 mg/l	
G 167 I	75%ND <0.02 mg/l	
G 169 I	75%ND <0.02 mg/l	
G 170 I	79%ND <0.02 mg/l	
G 171 I	86%ND <0.02 mg/l	

**TABLE 29 (continued)
SUMMARY OF LEAD DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 76%ND <0.01 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.06 mg/l
---	---	---

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	67%ND <0.02 mg/l	
G 166 D	73%ND <0.02 mg/l	
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	75%ND <0.02 mg/l	
G 164 D	78%ND <0.02 mg/l	
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	50%ND <0.02 mg/l	
G 163 I	50%ND <0.02 mg/l	
G 167 D	88%ND <0.02 mg/l	
G 169 D	88%ND <0.02 mg/l	
G 170 D	64%ND <0.02 mg/l	
G 171 D	79%ND <0.02 mg/l	
G 172 D	93%ND <0.02 mg/l	
G 173 D	86%ND <0.02 mg/l	
G 174 D	79%ND <0.02 mg/l	

BEDROCK VALLEY AQUIFER BACKGROUND MEAN <0.005 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.005 mg/l
--	---	--

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	N/A	

**TABLE 30
SUMMARY OF MERCURY DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	87%ND, <0.0004 mg/l	
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	100%ND, <0.0004 mg/l	
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	N/A	
G 167 S	83.3%ND <0.0002 mg/l	
G 168 S	85.7%ND <0.0002 mg/l	

UPPER AQUIFER BACKGROUND MEDIAN 80%ND <0.0004 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.0004 mg/l

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	80%ND <0.0004 mg/l	
G 166 I	80%ND <0.0004 mg/l	
G 166 S	87%ND <0.0004 mg/l	
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	100%ND <0.0004 mg/l	
G164 I	100%ND <0.0004 mg/l	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	75%ND <0.0002 mg/l	
G 163 S	86%ND <0.0002 mg/l	
G 167 I	100%ND <0.0002 mg/l	
G 169 I	71%ND <0.0002 mg/l	
G 170 I	93%ND <0.0004 mg/l	
G 171 I	93%ND <0.0002 mg/l	

**TABLE 30 (continued)
SUMMARY OF MERCURY DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 87%ND <0.0004 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL 0.0004 mg/l
---	---	--

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	100%ND <0.0004 mg/l	
G 166 D	100%ND <0.0004 mg/l	
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	100%ND <0.0004 mg/l	
G 164 D	100%ND <0.0004 mg/l	
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	100%ND <0.0004 mg/l	
G 163 I	100%ND <0.0004 mg/l	
G 167 D	71%ND <0.0004 mg/l	
G 169 D	71%ND <0.0004 mg/l	
G 170 D	86%ND <0.0004 mg/l	
G 171 D	93%ND <0.0004 mg/l	
G 172 D	93%ND <0.0004 mg/l	
G 173 D	100%ND <0.0004 mg/l	
G 174 D	93%ND <0.0004 mg/l	

BEDROCK VALLEY AQUIFER BACKGROUND MEAN <0.0004 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.0004 mg/l
---	---	---

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	N/A	

**TABLE 31
SUMMARY OF SELENIUM DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	100%ND, <0.005 mg/l	
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	100%ND, <0.005 mg/l	
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	INSUFFICIENT DATA	
G 167 S	100%ND, <0.005 mg/l	
G 168 S	100%ND, <0.002 mg/l	

UPPER AQUIFER BACKGROUND MEDIAN 100% ND <0.002 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.005 mg/l
--	---	--

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	100% ND <0.005 mg/l	
G 166 I	100% ND <0.005 mg/l	
G 166 S	100% ND <0.005 mg/l	
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	100%ND <0.005 mg/l	
G164 I	100%ND <0.005 mg/l	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	100% ND <0.002 mg/l	
G 163 S	100% ND <0.01 mg/l	
G 167 I	100% ND <0.005 mg/l	
G 169 I-	100% ND <0.005 mg/l	
G 170 I	100% ND <0.005 mg/l	
G 171 I	100% ND <0.005 mg/l	

**TABLE 31 (continued)
SUMMARY OF SELENIUM DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 100% ND <0.002 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.002 mg/l
--	---	--

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	100% ND <0.005 mg/l	
G 166 D	100% ND <0.005 mg/l	
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	100%ND <0.005 mg/l	
G 164 D	100%ND <0.005 mg/l	
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	100% ND <0.002 mg/l	
G 163 I	100%ND <0.002 mg/l	
G 167 D	100% ND <0.005 mg/l	
G 169 D	100% ND <0.005 mg/l	
G 170 D	100% ND <0.005 mg/l	
G 171 D	100% ND <0.005 mg/l	
G 172 D	100% ND <0.005 mg/l	
G 173 D	100% ND <0.005 mg/l	
G 174 D	100% ND <0.005 mg/l	

BEDROCK VALLEY AQUIFER BACKGROUND MEAN <0.002 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.002 mg/l
--	---	--

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	INSUFFICIENT DATA	

**TABLE 32
SUMMARY OF SILVER DATA
FOR SURFICIAL LAYER AND UPPER AQUIFER**

SURFICIAL UPGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 166 S	100%ND, <0.01 mg/l	
SURFICIAL MIDGRADIENT WELL	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 164 S	100%ND, <0.01 mg/l	
SURFICIAL DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 155 S	N/A	
G 167 S	100%ND <0.01 mg/l	
G 168 S	100%ND <0.01 mg/l	

UPPER AQUIFER BACKGROUND MEDIAN 100%ND <0.01 mg/l	UPPER AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.01 mg/l
---	--	---

UPPER AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 S	100%ND <0.01 mg/l	
G 166 I	100%ND <0.01 mg/l	
G 166 S	100%ND <0.01 mg/l	
UPPER AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 I	100%ND <0.01 mg/l	
G164 I	100%ND <0.01 mg/l	
UPPER AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL STANDARD DEVIATION
G 155 I	100%ND <0.01 mg/l	
G 163 S	100%ND <0.02 mg/l	
G 167 I	100%ND <0.01 mg/l	
G 169 I	100%ND <0.01 mg/l	
G 170 I	100%ND <0.01 mg/l	
G 171 I	100%ND <0.01 mg/l	

**TABLE 32 (continued)
SUMMARY OF SILVER DATA
FOR MAIN AND BEDROCK VALLEY AQUIFER**

MAIN AQUIFER BACKGROUND MEDIAN 1007%ND <0.01 mg/l	MAIN AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL < 0.01 mg/l
---	---	--

MAIN AQUIFER UPGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 162 D	100%ND <0.01 mg/l	
G 166 D	100%ND <0.01 mg/l	
MAIN AQUIFER MIDGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 161 D	100%ND <0.01 mg/l	
G 164 D	100%ND <0.01 mg/l	
MAIN AQUIFER DOWNGRADIENT WELLS	WELL DATA MEDIAN	WELL DATA STANDARD DEVIATION
G 155 D	100%ND <0.01 mg/l	
G 163 I	100%ND <0.01 mg/l	
G 167 D	100%ND <0.01 mg/l	
G 169 D	100%ND <0.01 mg/l	
G 170 D	100%ND <0.01 mg/l	
G 171 D	100%ND <0.01 mg/l	
G 172 D	100%ND <0.01 mg/l	
G 173 D	100%ND <0.01 mg/l	
G 174 D	100%ND <0.01 mg/l	

BEDROCK VALLEY AQUIFER BACKGROUND MEAN <0.01 mg/l	BEDROCK VALLEY AQUIFER BACKGROUND STANDARD DEVIATION	UPPER 95% TOLERANCE INTERVAL <0.01 mg/l
---	---	---

BEDROCK VALLEY AQUIFER DOWNGRADIENT WELLS	WELL DATA MEAN	WELL DATA STANDARD DEVIATION
G 163 D	N/A	

VOLATILE ORGANIC COMPOUNDS

Throughout the entire monitoring period, at the Browning-Ferris Industry Davis Junction site, for the 8240 volatile organic compounds monitored in the upper, main, and bedrock valley aquifer as well as the surficial layer, the preponderance of data generated was below the detection limits for the analyses for each of the volatile organic parameters. However, in a few random cases, some organic parameters were found in reportable quantities. The following summarizes those findings:

<u>Well</u>	<u>Date</u>	<u>Parameter</u>	<u>Detection Limit</u>
Upgradient, Upper Aquifer:			
G 166-I	2/92	Xylene 1.2 ug/l	<1.0 ug/l
Upgradient, Main Aquifer:			
G 166-D	2/92	Toluene 1.6 ug/l	<1.0 ug/l
		Xylene 2.1 ug/l	<1.0 ug/l
Midgradient, Upper Aquifer:			
R 161-I	3/92	Benzene 1.1 ug/l	<1.0 ug/l
		Toluene 1.5 ug/l	<1.0 ug/l
	2/93	Benzene 1.4 ug/l	<1.0 ug/l
		Toluene 2.0 ug/l	<1.0 ug/l
		Xylene 2.1 ug/l	<1.0 ug/l

Midgradient, Main Aquifer:

G 161-D	3/93	Toluene	1.4 ug/l	<1.0 ug/l
---------	------	---------	----------	-----------

Downgradient, Upper Aquifer:

G 167-I	3/92	Benzene	3.9 ug/l	<1.0 ug/l
		Toluene	6.0 ug/l	<1.0 ug/l
		Xylene	1.4 ug/l	<1.0 ug/l
	3/93	Toluene	2.5 ug/l	<1.0 ug/l
		Xylene	1.2 ug/l	<1.0 ug/l

G 166-I monitors the upgradient, upper aquifer and G 166-D monitors the upgradient, main aquifer at the southeast corner of the site. R 161-I monitors the midgradient, upper aquifer and G 161-D monitors the midgradient, main aquifer, midway along the west boundary of the site. G 167-I monitors the downgradient, upper aquifer near the northeast corner of the site.

Organic constituents were found in both the upgradient and downgradient locations. It is difficult to speculate why organics were found at any location. There are many factors that can influence volatile organic compound sampling and analysis. For example, the constituents detected can result from exhaust fumes of nearby vehicles during sample collection. At the present time, primarily because of the sporadic and randomness of the observations, it is thought that these are data aberrations and not due to the influence of the waste management site on the

groundwater quality. Subsequent analyses at the site after the quarters in which the volatile organic compounds were detected have not indicated any volatile organic constituents concentrations, for all of the above listed parameters, and reported concentration values to be below their respective detection limits. Future analysis at this site should include a timely resampling of any well which exhibits a detected organic constituent.

OTHER INORGANIC PARAMETERS

Browning-Ferris Industries also monitored Davis Junction Landfill wells for:

- aluminum
- ammonia
- beryllium
- cobalt
- copper
- total coliform
- fluoride
- nickel
- phosphate
- potassium
- silicon
- temperature
- silicon
- vanadium
- zinc

However, most of this data was collected on an inconsistent schedule and presented insufficient data to properly conduct a statistical analysis or draw valid conclusions as to their effect upon groundwater quality. Temperature is one parameter which does not require a statistical summary.

SUMMARY OF DATA

During the entire monitoring period reviewed in this study, extensive sampling has taken place at the Davis Junction Landfill and volumes of analytical results have been collected. The general conclusion after examination of the data is that the waste facility has had no apparent impact upon the underlying groundwater quality.

Several anomalies occurred within the data pools for individual parameters. These include obvious outlying values which occur as isolated peaks within the graphed data, which are not repeated through space and time; the elevated iron level in well G155I; elevated levels of iron at the downgradient well G163D; elevated levels of the surficial downgradient well G167S in comparison to the surficial upgradient well G166S; and the isolated detection of the organics benzene, toluene, and xylene at three widely separated wells.

Outlying values, faulty measurements or "outliers" are extreme values; measurements that most likely reflect additional errors other than those included within usual random fluctuations characterizing the population to which the data belongs. In the analysis of simple replicate measurements, statistical methods are available based upon the spread of the replicate measurements and can be used to substitute an adjusted value for the faulty measurement (Mandel, 1964). Similarly, in the field of quality control, control chart techniques not only provide the advantage of visual appraisal to identify outlying data but also provide clues about the outlying data causes, including trends, cycles or simply random errors. In these situations, a number of involved statistical tests are available and result in identifying faulty measurements with considerable assurance. However, statistical detection and identification of outlying data still does not confirm the causes resulting in the outlying recordings when physical reasons cannot be identified.

ASTM, E 178-80, Standard Practice for Dealing with Outlying Observations, also recommends that a cautious attitude be adopted and provides a screening procedure to follow with the outlying observations. An initial check includes looking for gross errors, personal errors, errors of measurement and errors in calibration. If physical reasons are found for the aberrant observation, then steps are taken to correct the observation. Outright rejection or correction of the value by retaking the observation is possible.

When detection of outlying observations are based solely on statistical judgment, it is preferable to continue the statistical analysis, which is a very complex procedure, while retaining the faulty measurement in the data pool. In some situations such as dealing with replicate measurements, it is possible to replace the value with an adjusted value, such as to "Winsorize" the outlier, which replaces the value with the next closest value in the sample.

It should be emphasized that most reported statistical criteria for outliers were developed for populations described by a normal or Gaussian distribution. This present study evaluates environmental data and not simply replicate measurements. The statistical analysis of environmental data is complicated with the presence of censored data, positively skewed populations and non-normal distributions. Until statistical criteria, not sensitive only to the normality or Gaussian distribution assumptions, are developed, caution is still the important factor in labeling environmental data as outlying. At this time, in particular, when physical causes are not identified, resampling or re-analysis is a reasonable technique to add information for the evaluation process of suspect outlying observations.

Examples of outlying data include the 1/92 alkalinity value in well G174D; the 1/91 phenol value in well G166I; the 1/91 and 1/93 phenol values for well G169D; the 4/91 manganese value in well G163D; the 2/91 sodium measurement for well G164S; the 4/91 sulfate value for well G166D; and several total organic halogen

measurements recorded 3/90 in well G169I, 4/92 in well G161D and 4/91 in well G174D; and isolated detection of the organics benzene, toluene, and xylene at three widely separated wells.

The organics detected include benzene, toluene, and xylene, which are common contaminants from vehicle exhaust. It should be noted that they were detected during colder months when, for instance, vehicles are left running. Beyond that observation, there are no trends through time or location which would suggest that these are real groundwater constituents.

The elevated iron level in well G155I and the apparent upward trend represented by two measurements since 2/91 presents a different situation than outlying observations. Previous discussion suggested that the initial measurements between 2/90 and 2/91 present an average but constant iron concentration greater than the upgradient wells and may be attributed to the presence of oxidized sediments at the screen location. The two observations in 4/92 and 4/93, resulted in values twice the earlier measured concentration. It is believed that this might be a natural result of measured decreasing water pH on the highly oxidized environment screened by this well. The rusted and flaking condition of the protector pipe cap also may have been a factor. Physical reasons are suspect in this well since there were no other increasing trends for parameters other than iron, and thus at this point, a landfill influence is not indicated.

As discussed previously, there is no background population against which G163D can be compared. Consequently, elevated levels with respect to the deep well population of the main aquifer is not significant. In 1993, very deep wells were installed upgradient of the Davis Junction Landfill, and background sampling is in progress, such that G163D results subsequently can be adequately compared to background. Iron is abundant in the geologic materials which form the aquifer, and concentrations for the very deep portions the bedrock valley aquifer may be naturally higher than those within the main aquifer.

The data from the surficial layer is distinguished not only by its discontinuity and lack of data due to periodic dryness, but also by the added complication of the apparently diverse geological settings surrounding the individual wells. Insufficient and discontinuous data results in compounding the difficulty of data analysis obtained from relatively normal geological conditions and this problem has simply been magnified in the analysis of data collected from the surficial layer. G167S, for example, consistently showed higher results than the upgradient well and the other downgradient wells.

The G167S well screen begins approximately three feet below ground surface and essentially monitors surface runoff. The other downgradient surficial wells are also screened fairly close to ground surface. Upgradient G166S and midgradient G164S, conversely, are screened in kettle deposits having limited areal extent. The

sediments screened vary considerably between silt, fine sand, coarse sand, clayey sand or silt and so forth. All are subject to surface runoff as there is no clay overlying the well screen and thus an effective seal does not exist. The data observed is reasonable given the natural conditions.

In summary, the individual and isolated deviations appear not to be indications of waste management impact upon groundwater, but rather individual anomalous sample results effected from outside influences or natural variations associated with spatial variations in geology and well screen locations.

CONCLUSIONS

The monitoring program at the Davis Junction Landfill site included the quarterly examination of the water samples for the indicator parameters, groundwater quality parameters, the eight RCRA metals and 8240 volatile constituents. However, during the past two years, several groundwater quality parameters, such as boron, iron and manganese were monitored only on an annual basis. Quarterly monitoring for these parameters will better sample the parameter population and provide a better statistical data pool for a statistical evaluation. A consistent monitoring program will allow for improved future trend analysis and quarterly examination

of analytical data will help focus upon physical grounds for faulty measurement data.

It is recommended that the data from quarterly monitoring be reviewed on a quarterly basis to better determine if anomalous measurements can be justifiably examined as outliers in a timely manner. In such cases, and in any case where a volatile organic is detected, the well should be resampled for verification of the observation.

The detection monitoring program proposed in BFI's February, 1994 submittal represents an improved program over past monitoring in that more constituents are monitored on a more frequent basis. A quarterly review of the data with respect to the information contained herein should provide an early indication should any significant increase begin to appear.

It is concluded based on the study contained herein, that the landfill has not impacted groundwater quality, and that the proposed detection monitoring program, combined with quarterly review and annual summary of the data, will enhance groundwater protection at the Davis Junction Landfill site.

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

BIBLIOGRAPHY

BIBLIOGRAPHY.

Aller Linda, Truman Bennett, Jay H. Lehr, Rebecca Petty, Glen Hackett. DRASTIC: A Standardized System for Evaluating Ground Water Pollution Potential Using Hydrogeological Settings. EPA/600/52-87/035. USEPA Robert S. Kerr Environmental Research Laboratory, Ada, OK. September 1987.

Barcelona, Michael J., Allen H. Wehrmann, Michael R. Schock, Mark E. Sievers, Joseph R. Kainy. Sampling Frequency for Ground-Water Quality Monitoring. EPA/600/4-89/032. USEPA Environmental Monitoring Systems Laboratory, Office of Research and Development, Las Vegas, NV. August 1989 (A study conducted in cooperation with the Water Survey Division, Illinois Department of Energy and Natural Resources, Champaign, IL.)

Barcelona, Michael J., James P. Gibb, John A. Helfrich, Edward E. Gaske. Practical Guide for Ground-Water Sampling. EPA/600/2-85/104. USEPA Robert S. Kerr Environmental Research Laboratory, office of Research and Development, Ada, OK. Illinois State Water Survey Department of Energy and Natural Resources, Champaign, IL. September 1983.

Brown, James, E. Jerold H. Zar, Carl N. Von Ende, Field and laboratory Methods for General Ecology, Wm. C. Brown Publisher, Dubuque, Ia. pp 3-20.

Campbell, R.C. Statistics For Biologists. Cambridge University Press, New York. 1989

Collins, A.G., A.I. Johnson. Ground-Water Contamination Field Methods. ASTM Special Technical Publication 963. PCN04-963000-38. Philadelphia, Pa. February 1986.

Delhomme, J.P. "Spatial Variability and Uncertainty in Groundwater Flow Parameters: A Geostatistical Approach." Water Resources Research. Vol 15. No. 2. April 1979.

Fisher, Sarah R., and Kenneth W. Potter. Methods for Determining Compliance with Groundwater Quality Regulations at Waste Disposal Facilities. Department of Civil and Environmental Engineering, Madison, WI. 1989, Report To: Wisconsin DNR, January, 1989.

Gilbert, Richard O. Statistical Methods for Environmental Pollution Monitoring. Van Nostrand Reinhold, New York. 1989.

Hahn, Gerald J., and William Q. Meeker. Statistical Intervals a Guide for Practitioners. John Wiley and Sons, Inc., New York. 1991.

Harris, Jane, Jim C. Loftis, Robert H. Montgomery. "Statistical Methods for Characterizing Ground-Water Quality." Ground Water. Vol.25 No. 2 March-April 1987 pp 185-200.

Koosis, Donald. Statistics-A Self Teaching Guide. John Wiley and Sons, Inc., New York. 1985.

Linderoff, David E., Jodifeld, Jack Connelly. Groundwater Sampling Procedures Guidlines. Wisconsin Department of Natural Resources. Febuary, 1987.

Mandel, John. The Statistical Analysis of Experimental Data. Dover Publications, Inc., New York. 1964.

Manugistics. Statgraphics Plus-Reference Manual. Manugistics, Rockville, MD., 1992.

Milewski, Emil, G., The Essentials of Statistics I. Research and Education Association, New Jersey. 1988.

Montgomery, Robert H., Jim C. Loftis, Jane Harris. "Statistical Characteristics of Ground-Water Quality Variables." Groundwater, Vol. 25, No.2, March-April 1987.

Panko, Andrew W., Barth, Peter, "Chemical Stability Prior to Groundwater Sampling: A Review of Current Well Purging Methods", ASTM, STP96.3, A.G. Collins, A.I. Johnson, Eds., ASTM. Philadelphia, Pa, 1988.

Routledge, Dr. Garry L. Environmental Statistics Macros for STATGRAPHICS-Plus. Alpine Analytics, Vancouver, WA. 1993.

Rusola, Mario F. Elementary Statistics. Addison-Wesley Publishing Company, New York. 1992.

Scalf, Marion R., Mc Nabb, James F., Dunlap, William J., Cosby, Roger L., Fryburger, John S., Manual of Groundwater Quality Sampling Procedures. National Water Well Association, Worthington, OH. 1987.

Stednick, John D. Wildland Water Quality Sampling and Analysis. Academic Press, Inc., New York. 1991.

Storer, Roberta A., et.al. 1991 Annual Book of ASTM Standards. American Society For Testing And Materials, Vol. 14.02. Philadelphia, Pa. 1991.

Taylor, J.K., and Stanley, T.W., Quality Assurance for Enviromental Measurements. ASTM Special Technical Publication 867. 1985.

United States Environmental Protection Agency. Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities-Interim Final Guidance. Office of Solid Waste-Waste Management Division-U.S. Environmental Protection Agency, Springfield, VA. February, 1989.

United States Environmental Protection Agency. Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities-Addendum to Interim Final Guidance. Office of Solid Waste Permits and Programs Division-U.S. Environmental Protection Agency, Washington, D.C. July 1992.

Urwin, J., and Mattley, V., "Investigations of Techniques for Purging Groundwater Monitoring Wells and Sampling Groundwater for Volital Organic Compounds, Groundwater Contaminations Field Methods", ASTM, ST963, A.G. Collins and A.I.Johnson, Eds., ASTM

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

APPENDIX A

VOLUMES 1-4

***ANALYTICAL REPORTS
1990 and 1991***

SEPARATE ATTACHMENT

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

APPENDIX B

POOLED DATA: UPPER AQUIFER

BFI DAVIS JUNCTION LANDFILL UPGRADIENT - UPPER AQUIFER WELL G 162S - DATA POOL						
Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/23/90	G-162 S			7.4	0.01
3/90	08/14/90	G-162 S	7.52	456	7	<0.01
			7.49	455	6	<0.01
			7.51	460	7	<0.01
			7.48	459	6	<0.01
4/90	11/13/90	G-162 S	7.19	431	26	<0.01
			7.17	439	38	<0.01
			7.21	437	24	<0.01
			7.18	438	43	<0.01
1/91	2/06/91	G-162 S	7.82	448	<1	<0.01
			7.81	450	<1	<0.01
			7.81	442	<1	<0.01
			7.79	447	1	<0.01
2/91	04/11/91	G-162 S	7.8	453	1	0.04
			7.81	451	<1	0.03
			7.73	450	<1	0.04
			7.86	452	<1	0.04
3/91	08/20/91	G-162 S	7.45	450	1	<0.01
			7.51	455	1	<0.01
			7.48	450	1	<0.01
			7.53	445	1	<0.01
4/91	11/08/91	G-162 S	7.27	380	2	<0.01
			7.28	390	2	<0.01
			7.31	390	1	<0.01
			7.33	380	1	<0.01
1/92	02/26/92	G-162 S	8.06	432	1	<0.01
			8	433	1	<0.01
			8.04	428	1	<0.01
			7.94	429	1	<0.01
2/92	05/07/92	G-162 S	7.32	263	<1	<0.01
			7.38	269	<1	<0.01
			7.32	263	<1	<0.01
			7.4	267	<1	<0.01
3/92	08/10/92	G-162 S	7.42	374	<1	<0.01
			7.09	367	<1	<0.01
			7.32	374	<1	<0.01
			6.86	378	<1	<0.01
4/92	10/29/92	G-162 S	6.39	461	<1	<0.01
			6.45	460	<1	<0.01
			6.95	458	<1	<0.01
			6.79	455	<1	<0.01
1/93	02/16/93	G-162 S	7.03	355	<1	<0.01
			7.04	354	<1	<0.01
			7	356	<1	<0.01
			7.02	351	<1	<0.01
2/93	05/19/93	G-162 S	7.36	380	<1	<0.01
			7.42	381	<1	<0.01
			7.4	383	<1	<0.01
			7.45	383	<1	<0.01
3/93	08/05/93	G-162 S	7.53	557	1.88	<0.01
			7.56	547	1.88	<0.01
			7.57	544	1.88	<0.01
			7.55	543	1.88	<0.01
4/93	10/06/93	G-162 S	8.30	581	1.06	<0.01
			8.19	578	1.06	<0.01
			8.12	578	1.06	<0.01
			8.06	580	1.06	<0.01
1/94	02/14/94	G-162 S	6.92	486	<1	<0.01
			6.92	493	<1	<0.01
			6.92	477	<1	<0.01
			6.98	479	<1	<0.01

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – UPPER AQUIFER
WELL G 162S – DATA POOL**

Quarter	Date	Well	Alkalinity CaCO ₃ mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-mg/l	Sulfate Dis-mg/l
2/90	05/23/90	G-162 S		41		0	359	
3/90	08/14/90	G-162 S	354	160	8	6	552	47
4/90	11/13/90	G-162 S	306	30	2	5	404	45
1/91	02/06/91	G-162 S	322	200	6	17	424	32.3
2/91	04/11/91	G-162 S	314	170	4	<2	345	32.7
3/91	08/20/91	G-162 S	318	<10	6		409	31
4/91	11/08/91	G-162 S	354		8		344	26
1/92	02/26/92	G-162 S	352	100	8	<2	333	28
2/92	05/07/92	G-162 S	318	<100	<5	<2	345	34
3/92	08/10/92	G-162 S	316	<100	10	<2	396	31
4/92	10/29/92	G-162 S	308	230	8	<2	376	43
1/93	02/16/93	G-162 S	310	<100	8	10	376	40
2/93	05/18/93	G-162 S	310		8	<2	375	31
3/93	08/05/93	G-162 S	310		6	3	410	41
4/93	10/06/93	G-162 S	318		<5	<5	410	35
1/94	02/14/94	G-162 S	314		8	<5	305	31

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - UPPER AQUIFER
WELL G 162S - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/23/90	G-162 S	515	570	972		662000
3/90	08/14/90	G-162 S	75200	<100	30900	47	10700
4/90	11/13/90	G-162 S	80900	820	35500	134	8500
1/91	02/06/91	G-162 S	61000	100	33000	44	11000
2/91	04/11/91	G-162 S	71000	<100	37000	50	5500
3/91	08/20/91	G-162 S	4800	900	37300	50	12900
4/91	11/08/91	G-162 S	76000	180	33000	57	6400
1/92	02/26/92	G-162 S	79800	460	38500	47	7450
2/92	05/07/92	G-162 S	83000	1080	35000	54	9800
3/92	08/10/92	G-162 S	93800	1050	30000	54	
4/92	10/29/92	G-162 S	86600	1020	36900	59	<1000
1/93	02/16/93	G-162 S	82600	1100	32400	48	7800
2/93	05/18/93	G-162 S	80300		37100		6800
3/93	08/05/93	G-162 S	69200		33800		7700
4/93	10/06/93	G-162 S	83000	1070	35000	52	7000
1/94	02/14/94	G-162 S	87000		34000		8000

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – UPPER AQ1UIFER
WELL G 162S – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/23/90	G-162 S		6.9		
3/90	08/14/90	G-162 S	<1	<10	3	<10
4/90	11/13/90	G-162 S	<1	240	4	10
1/91	02/06/91	G-162 S	<1	20	2	11
2/91	04/11/91	G-162 S	<1	420	1	3
3/91	08/20/91	G-162 S	<5	60	<1	6
4/91	11/08/91	G-162 S	<1	50	1	<10
1/92	02/26/92	G-162 S	<1	<100	6	<10
2/92	05/07/92	G-162 S	<1	<100	<5	<10
3/92	08/10/92	G-162 S	3	<100	<5	<10
4/92	10/29/92	G-162 S	3	<100	<5	<10
1/93	02/16/93	G-162 S	3	<100	<5	<10
2/93	05/18/93	G-162 S	3	<100	<5	<10
3/93	08/05/93	G-162 S	2	<200	<10	<20
4/93	10/06/93	G-162 S	<1	<200	<10	<20
1/94	02/14/94	G-162 S	<5	<200	<10	<20

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – UPPER AQUIFER
WELL G 162S – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/23/90	G-162 S				
3/90	08/14/90	G-162 S	20	<0.1	<1	3
4/90	11/13/90	G-162 S	20	0.4	<1	2
1/91	02/06/91	G-162 S	40	0.2	<1	2
2/91	04/11/91	G-162 S	20	<0.1	<1	<1
3/91	08/20/91	G-162 S	<10	0.2	<5	<1
4/91	11/08/91	G-162 S	10	<0.2	<1	<1
1/92	02/26/92	G-162 S	30	<0.2	<2	<10
2/92	05/07/92	G-162 S	<5	<0.2	<2	<10
3/92	08/10/92	G-162 S	<5	<0.4	<2	<10
4/92	10/29/92	G-162 S	<5	<0.2	<2	<10
1/93	02/16/93	G-162 S	<5	<0.2	<2	<10
2/93	05/18/93	G-162 S	<5	<0.2	<2	<10
3/93	08/05/93	G-162 S	<5	<0.2	<2	<10
4/93	10/06/93	G-162 S	<5	<0.2	<2	<10
1/94	02/14/94	G-162 S	<5	<0.2	<5	<10

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - UPPER AQUIFER
WELL G 166I - DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/18/90	G-166 I			1.1	0
3/90	08/13/90	G-166 I	7.34	720	3	<0.01
			7.35	710	3	<0.01
			7.42	720	3	<0.01
4/90	11/05/90	G-166 I	7.48	720	2	0.011
			7.52	790	6	<0.01
			7.35	790	7	<0.01
1/91	02/05/91	G-166 I	7.33	790	7	<0.01
			7.38	790	7	<0.01
			7.59	720	1	<0.01
2/91	04/23/91	G-166 I	7.58	700	1	<0.01
			7.58	710	1	<0.01
			7.58	720	1	<0.01
3/91	08/28/91	G-166 I	7.03	750	1	<0.01
			7.04	720	1	<0.01
			7.06	750	1	<0.01
4/91	11/18/91	G-166 I	7.05	800	1	<0.01
			7.47	800	<1	<0.01
			7.5	790	<1	<0.01
1/92	02/25/92	G-166 I	7.52	790	4	<0.01
			7.49	800	4	<0.01
			7.49	805	2	<0.01
2/92	05/05/92	G-166 I	7.42	810	2	<0.01
			7.4	815	2	<0.01
			7.39	820	2	<0.01
3/92	08/14/92	G-166 I	7.5	700	1	<0.01
			7.48	680	1	<0.01
			7.47	705	1	<0.01
4/92	10/27/92	G-166 I	7.49	695	1	<0.01
			7.62	565	1.3	<0.01
			7.63	563	1.4	<0.01
1/93	02/15/93	G-166 I	7.64	566	1.4	<0.01
			7.59	561	1.3	<0.01
			7.4	659	<1	<0.01
2/93	05/14/93	G-166 I	7.09	675	<1	<0.01
			7.88	666	<1	<0.01
			7.61	698	<1	<0.01
3/93	07/28/93	G-166 I	6.59	714	<1	<0.01
			6.71	712	<1	<0.01
			6.97	706	<1	<0.01
4/93	10/06/93	G-166 I	6.54	714	<1	<0.01
			7.09	519	<1	<0.01
			7.1	520	<1	<0.01
1/94	01/11/94	G-166 I	7.05	519	<1	<0.01
			7.08	515	<1	<0.01
			7.25	588	2.73	<0.01
2/94	02/11/94	G-166 I	7.21	581	2.73	<0.01
			7.26	585	2.73	<0.01
			7.24	587	2.73	<0.01
3/94	03/11/94	G-166 I	7.04	508	1.84	<0.01
			7.24	513	1.84	<0.01
			7.29	511	1.84	<0.01
4/94	04/11/94	G-166 I	7.32	510	1.84	<0.01
			8.15	862	<1.0	<0.01
			8.06	860	<1.0	<0.01
5/94	05/11/94	G-166 I	8.02	866	<1.0	<0.01
			8.00	876	<1.0	<0.01
			7.29	735	<1.0	<0.01
6/94	06/11/94	G-166 I	7.28	724	<1.0	<0.01
			7.28	702	<1.0	<0.01
			7.27	719	<1.0	<0.01

BFI DAVIS JUNCTION LANDFILL UPGRADIENT - UPPER AQUIFER WELL G 166I - DATA POOL								
Quarter	Date	Well	Alkalinity CaCO ₃ mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phend ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/18/90	G-166I		60		0	596	
3/90	08/13/90	G-166I	336	110	148	6	84	78
4/90	11/05/90	G-166I	254	<10	158	2	684	75
1/91	02/05/91	G-166I	334	160	94	49	634	70.4
2/91	04/23/91	G-166I	324	120	102	2	644	67.2
3/91	08/28/91	G-166I	304	150	130	<2	680	71
4/91	11/18/91	G-166I	300		190		620	120
1/92	02/25/92	G-166I	362	110	100	<2	526	80
2/92	05/05/92	G-166I	300	120	80	<2	546	99
3/92	08/14/92	G-166I	294	100	98	10	692	96
4/92	10/27/92	G-166I	288	100	88	<2	572	90
1/93	02/15/93	G-166I	276	<100	92	7	588	104
2/93	05/14/93	G-166I	280		96	4	552	104
3/93	07/28/93	G-166I	280		98	8	545	108
4/93	10/06/93	G-166I	282		102	<5	635	87
1/94	01/11/94	G-166I	288		94	<5	575	95

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - UPPER AQUIFER
WELL G 166I - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/18/90	G-166 I	80600	149	38800	132	24700
3/90	08/13/90	G-166 I	112000	210	46800	126	33600
4/90	11/05/90	G-166 I	91400	420	45600	126	27100
1/91	02/05/91	G-166 I	75000	250	39000	194	64000
2/91	04/23/91	G-166 I	105000	340	50000	182	65000
3/91	08/28/91	G-166 I	36000	210	45300	248	43000
4/91	11/18/91	G-166 I	126000	190	44000	231	45700
1/92	02/25/92	G-166 I	89700	250	45500	29	51200
2/92	05/05/92	G-166 I	84800	320	35600	70	50500
3/92	08/14/92	G-166 I	101000	220	37000	42	48000
4/92	10/27/92	G-166 I	95100	<50	43600	48	45700
1/93	02/15/93	G-166 I	101000	200	42800	37	42800
2/93	05/14/93	G-166 I	98500		42300		42600
3/93	07/28/93	G-166 I	91000		40400		44500
4/93	10/06/93	G-166 I	98000	220	44000	50	38000
1/94	01/11/94	G-166 I	103000		45000		46000

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – UPPER AQUIFER
WELL G 166I – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/18/90	G-166 I		69.5		
3/90	08/13/90	G-166 I	<1	10	1	<1
4/90	11/05/90	G-166 I	2	180	8	4
1/91	02/05/91	G-166 I	2	40	4	13
2/91	04/23/91	G-166 I	<1	80	3	4
3/91	08/28/91	G-166 I	<5	30	4	<1
4/91	11/18/91	G-166 I	23	80	7	<1
1/92	02/25/92	G-166 I	1	<100	<5	<10
2/92	05/05/92	G-166 I	<1	<100	<5	<10
3/92	08/14/92	G-166 I	1	<100	<5	<10
4/92	10/27/92	G-166 I	<1	<100	<5	<10
1/93	02/15/93	G-166 I	<1	<100	<5	<10
2/93	05/14/93	G-166 I	<1	<100	<5	<10
3/93	07/28/93	G-166 I	<1	<200	<10	<20
4/93	10/06/93	G-166 I	<1	<200	<10	<20
1/94	01/11/94	G-166 I	<5	<200	<10	<20

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – UPPER AQUIFER
WELL G 166I – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/18/90	G-166 I				
3/90	08/13/90	G-166 I	90	<0.1	<1	1
4/90	11/05/90	G-166 I	50	0.4	<1	5
1/91	02/05/91	G-166 I	30	0.3	<1	1
2/91	04/23/91	G-166 I	20	<0.1	<1	3
3/91	08/28/91	G-166 I	<10	<0.2	<5	6
4/91	11/18/91	G-166 I	10	<0.2	<1	2
1/92	02/25/92	G-166 I	<10	<0.2	<2	<10
2/92	05/05/92	G-166 I	<5	<0.2	<2	<10
3/92	08/14/92	G-166 I	49	<0.2	<2	<10
4/92	10/27/92	G-166 I	<5	<0.2	<2	<10
1/93	02/15/93	G-166 I	<5	<0.2	<2	<10
2/93	05/14/93	G-166 I	<5	<0.2	<2	<10
3/93	07/28/93	G-166 I	<5	<0.2	<2	<10
4/93	10/06/93	G-166 I	<5	<0.2	<2	<10
1/94	01/11/94	G-166 I	<5	<0.2	<5	<10

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – UPPER AQUIFER
WELL G 161I – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/23/90	G-161 I			13	
2/91	04/24/91	G-161 I	7.53	440	<1	<0.01
			7.59	425	<1	<0.01
			7.56	435	<1	<0.01
			7.52	430	<1	<0.01
4/91	11/26/91	G-161 I	7.21	425	3	<0.01
			7.22	426	3	<0.01
			7.24	427	3	<0.01
			7.23	429	3	<0.01
1/92	02/28/92	G-161 I	7.42	471	<1	0.02
			7.39	468	1	0.02
			7.44	472	1	0.02
			7.42	466	1	0.02
2/92	05/15/92	G-161 I	6.73	577	1.3	<0.01
			7.62	574	1.1	<0.01
			7.64	572	1.2	<0.01
			7.66	578	1.1	<0.01
3/92	08/14/92	G-161 I	8.19	481	<1	<0.01
			8.04	491	<1	<0.01
			8.22	485	<1	<0.01
			8.09	499	<1	<0.01
4/92	10/28/92	G-161 I	6.38	457	<1	<0.01
			6.4	461	<1	<0.01
			7.14	464	<1	<0.01
			6.46	463	<1	<0.01
1/93	02/12/93	G-161 I	7.36	390	<1	<0.01
			7.41	390	<1	<0.01
			7.35	388	<1	<0.01
			7.43	384	<1	<0.01
2/93	05/17/93	G-161 I	7.09	461	<1	<0.01
			7.15	462	<1	<0.01
			7.47	557	<1	<0.01
			7.51	554	<1	<0.01
3/93	08/06/93	G-161 I	6.78	6.27	1.13	<0.01
			6.87	6.28	1.13	<0.01
			6.82	630	1.13	<0.01
			6.91	630	1.13	<0.01
4/93	10/11/93	G-161 I	7.57	596	<1	<0.01
			7.53	597	<1	<0.01
			7.49	597	<1	<0.01
			7.47	599	<1	<0.01
1/94	01/11/94	G-161 I	7.69	621	<1	<0.01
			7.69	624	<1	<0.01
			7.69	608	<1	<0.01
			7.68	624	<1	<0.01

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – UPPER AQUIFER
WELL G 1611 – DATA POOL**

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/23/90	G-1611		44		30.3	388	
2/91	04/24/91	G-1611	318	60	4	2	394	27.4
4/91	11/26/91	G-1611	330		10		336	30
1/92	02/28/92	G-1611	382		10	<2	372	36
2/92	05/15/92	G-1611	336		8	<2	364	52
3/92	08/14/92	G-1611	358		<5	7	408	47
4/92	10/28/92	G-1611	320		<5	<2	364	36
1/93	02/12/93	G-1611	332		<5	14	440	66
2/93	05/17/93	G-1611	332		6	<2	396	62
3/93	08/06/93	G-1611	340		6	<2	505	112
4/93	10/11/93	G-1611	316		6	<5	425	49
1/94	01/11/94	G-1611	320		<5	<5	350	50

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – UPPER AQUIFER
WELL G 161I – DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/23/90	G-161 I	687	5.8	575		753,000
2/91	04/24/91	G-161 I	85,000	20	39,000	71	16,000
4/91	11/26/91	G-161 I	92,100	200	36,600	76	7,920
1/92	02/28/92	G-161 I	72,100		37,400		19,100
2/92	05/15/92	G-161 I	85,500		35,600		11,700
3/92	08/14/92	G-161 I	81,000		29,000		24,200
4/92	10/28/92	G-161 I	77,200	<50	34,900	65	16,900
1/93	02/12/93	G-161 I	68,700		28,600		48,000
2/93	05/17/93	G-161 I	62,600		32,100		47,100
3/93	08/06/93	G-161 I	49,400		29,300		82,000
4/93	10/11/93	G-161 I	79,000	80	36,000	44	24,000
1/94	01/11/94	G-161 I	82,000		35,000		27,000

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – UPPER AQUIFER
WELL G 161I – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/23/90	G-161 I				
2/91	04/24/91	G-161 I	20	<0.1	<1	<1
4/91	11/26/91	G-161 I	<10	<0.2	<1	<1
1/92	02/28/92	G-161 I				
2/92	05/15/92	G-161 I				
3/92	08/14/92	G-161 I				
4/92	10/28/92	G-161 I	<5	<0.2	<2	<10
1/93	02/12/93	G-161 I				
2/93	05/17/93	G-161 I				
3/93	08/06/93	G-161 I				
4/93	10/11/93	G-161 I	<5	<0.2	<2	<10
*1/94	01/11/94	R-161 I				
*REPLACEMENT WELL						

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – UPPER AQUIFER
WELL G 1611 – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/23/90	G-161 I	0	0		
2/91	04/24/91	G-161 I	1	50	<1	1
4/91	11/26/91	G-161 I	4	90	2	<1
1/92	02/28/92	G-161 I				
2/92	05/15/92	G-161 I				
3/92	08/14/92	G-161 I				
4/92	10/28/92	G-161 I	3	<100	<5	<10
1/93	02/12/93	G-161 I				
2/93	05/17/93	G-161 I				
3/93	08/06/93	G-161 I				
4/93	10/11/93	G-161 I	6	<200	<10	<20
*1/94	01/11/94	R-161 I				
*REPLACEMENT WELL						

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – UPPER AQUIFER
WELL G 1641 – DATA POOL**

Quarter	Date	Well	pH	Conduclance umhos/cm	TOC mg/l	TOX mg/l
4/90	11/20/90	G-1641	7.08	760	6	<0.01
			7.14	749	6	<0.01
			7.04	750	6	<0.01
1/91	02/01/91	G-1641	7.11	752	6	<0.01
			7.52	810	1	<0.01
			7.52	820	2	<0.01
			7.52	810	2	<0.01
2/91	04/09/91	G-1641	7.52	820	1	<0.01
			7.46	820	3	0.04
			7.46	830	3	0.04
			7.46	820	3	0.04
3/91	08/15/91	G-1641	7.46	840	3	0.04
			7.47	910	2	0.01
			7.54	900	2	0.01
			7.53	890	2	<0.01
4/91	11/06/91	G-1641	7.51	900	2	0.01
			7.02	800	2	
			7.01	800	2	
			7.02	800	2	
1/92	02/14/92	G-1641	7.02	800	3	
			7.84	855	2	
			7.88	840	1	
			7.91	850	2	
2/92	05/05/92	G-1641	7.82	855	2	
			7.43	668	1.3	
			7.48	672	1.4	
			7.39	673	1.5	
3/92	08/10/92	G-1641	7.44	671	1.4	
			7.21	523	1.29	
			6.98	552	1.29	
			7.09	545	1.29	
4/92	10/15/92	G-1641	6.89	568	1.29	
			6.73	724	<1	
			6.66	720	<1	
			6.99	717	<1	
1/93	02/01/93	G-1641	6.87	708	<1	
			6.87	735	<1	
			6.86	728	<1	
			6.9	724	<1	
2/93	05/12/93	G-1641	6.92	718	<1	
			7.28	739	1.47	
			7.23	741	1.47	
			7.28	732	1.47	
3/93	07/28/93	G-1641	7.35	752	1.47	
			7.23	652	2.76	
			7.16	649	2.76	
			7.21	643	2.76	
4/93	10/01/93	G-1641	7.24	661	2.76	
			7.34	1010	1.5	
			7.36	1004	1.5	
			7.36	1003	1.5	
1/94	01/03/94	G-1641	7.34	1003	1.5	
			6.85	1260	1	
			6.94	1250	1	
			6.99	1360	1	
			6.99	1391	1	

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – UPPER AQUIFER
WELL G 164I – DATA POOL**

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
4/90	11/20/90	G-164 I	326	50	146	3	664	94
1/91	02/01/91	G-164 I	314	270	140	<1	515	59
2/91	04/09/91	G-164 I	332	170	144	<2	718	74.6
3/91	08/15/91	G-164 I	324	180	130	2	680	61
4/91	11/06/91	G-164 I	392		162		680	65
1/92	02/14/92	G-164 I	356		170	<2	652	73
2/92	05/05/92	G-164 I	330		136	<2	776	83
3/92	08/10/92	G-164 I	326		162	<2	692	94
4/92	10/15/92	G-164 I	320		134	<2	700	106
1/93	02/01/93	G-164 I	306		148	<2	708	101
2/93	05/12/93	G-164 I	310		168	<2	708	97
3/93	07/28/93	G-164 I	308		180	9	855	99
4/93	10/01/93	G-164 I	312		192	10	750	110
1/94	01/03/94	G-164 I	306		184	<5	715	99

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT - UPPER AQUIFER
WELL G 164I - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
4/90	11/20/90	G-164 I	87,700	<10	46,500	53	88,800
1/91	02/01/91	G-164 I	88,000	720	50,100	52	60,000
2/91	04/09/91	G-164 I	74,000	660	53,000	51	58,000
3/91	08/15/91	G-164 I	101,000	250	51,700	48	73,000
4/91	11/06/91	G-164 I					
1/92	02/14/92	G-164 I					
2/92	05/05/92	G-164 I					
3/92	08/10/92	G-164 I					
4/92	10/15/92	G-164 I					
1/93	02/01/93	G-164 I					
2/93	05/14/93	G-164 I					
3/93	07/28/93	G-164 I					
4/93	10/01/93	G-164 I					
1/94	01/03/94	G-164 I					

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – UPPER AQUIFER
WELL G 164I – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
4/90	11/20/90	G-164 I	<1	320	1	<1
1/91	02/01/91	G-164 I	<1	90	2	4
2/91	04/09/91	G-164 I	<1	190	1	3
3/91	08/15/91	G-164 I	<5	60	<1	<1
4/91	11/06/91	G-164 I	<1	150	3	1
1/92	02/14/92	G-164 I	<1	<10	<5	<10
2/92	05/05/92	G-164 I	<1	<100	<5	<10
3/92	08/10/92	G-164 I	<1	<100	<5	<10
4/92	10/15/92	G-164 I	<1	<100	<5	<10
1/93	02/01/93	G-164 I	<1	<100	<5	<10
2/93	05/14/93	G-164 I	<1	<100	<5	<10
3/93	07/28/93	G-164 I	<1	<200	<10	<20
4/93	10/01/93	G-164 I	<1	<200	<10	<20
1/94	01/03/94	G-164 I	<5	<200	<10	<20

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – UPPER AQUIFER
WELL G 164I – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
4/90	11/20/90	G-164 I	10	<0.1	<1	<1
1/91	02/01/91	G-164 I	40	0.1	<1	1
2/91	04/09/91	G-164 I	20	<0.1	<1	3
3/91	08/15/91	G-164 I	<10	<0.2	<5	<1
4/91	11/06/91	G-164 I	10	<0.2	<1	<1
1/92	02/14/92	G-164 I	20	<0.2	<2	<10
2/92	05/05/92	G-164 I	<5	<0.2	<2	<10
3/92	08/10/92	G-164 I	6	<0.4	<2	<10
4/92	10/15/92	G-164 I	<5	<0.2	<2	<10
1/93	02/01/93	G-164 I	<5	<0.2	<2	<10
2/93	05/14/93	G-164 I	<5	<0.2	<2	<10
3/93	07/28/93	G-164 I	<5	<0.2	<2	<10
4/93	10/01/93	G-164 I	<5	<0.2	<2	<10
1/94	01/03/94	G-164 I	<5	<0.2	<5	<10

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - UPPER AQUIFER
WELL G 155I - DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/22/90	G-155 I			2.9	
3/90	08/16/90	G-155 I	7.46	495	4	<0.01
			7.48	495	3	<0.01
			7.51	500	3	<0.01
			7.55	490	3	<0.01
4/90	10/20/90	G-155 I				
1/91	02/10/91	G-155 I				
2/91	04/17/91	G-155 I	7.63	520	3	0.02
			7.71	515	3	0.02
			7.73	520	3	0.02
			7.67	510	3	0.02
3/91	08/26/91	G-155 I	7.6	505	2	<0.01
			7.61	500	2	<0.01
			7.66	510	2	<0.01
			7.64	500	2	<0.01
4/91	10/20/91	G-155 I				
1/92	02/20/92	G-155 I	7.83	585	2	<0.01
			7.89	591	2	<0.01
			7.9	594	1	<0.01
			7.81	579	2	<0.01
2/92	05/14/92	G-155 I	7.58	360	2	<0.01
			7.56	361	2	<0.01
			7.59	359	2.1	<0.01
			7.55	363	2.1	<0.01
3/92	08/13/92	G-155 I	7.33	394	1.67	<0.01
			7.1	393	1.67	<0.01
			7.44	387	1.67	<0.01
			7.18	386	1.67	<0.01
4/92	10/20/92	G-155 I	7.36	488	14.5	<0.01
			7.32	485	14.5	<0.01
			7.35	482	14.5	<0.01
			7.29	479	14.5	<0.01
1/93	02/10/93	G-155 I	7.08	406	1.76	<0.01
			7.13	406	1.76	<0.01
			7.1	404	1.76	<0.01
			7.15	400	1.76	<0.01
2/93	05/17/93	G-155 I	6.94	445	1.62	<0.01
			7.07	444	1.62	<0.01
			7.13	439	1.62	<0.01
			7.07	444	1.62	<0.01
3/93	08/06/93	G-155 I	7.54	668	1.74	<0.01
			7.51	642	1.74	<0.01
			7.54	635	1.74	<0.01
			7.51	634	1.74	<0.01
4/93	10/07/93	G-155 I	8.41	584	1.57	0.01
			8.28	576	1.57	0.01
			8.24	575	1.57	0.01
			8.20	572	1.57	0.01
*1/94	01/07/94	R-155 I	7.13	494	1.0	<0.01
			7.12	491	1.0	<0.01
			7.13	475	1.0	<0.01
			7.13	488	1.0	<0.01

*REPLACEMENT WELL

BFI DAVIS JUNCTION LANDFILL DOWNGRAIENT - UPPER AQUIFER WELL G 155I - DATA POOL									
Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l	
2/90	05/22/90	G-155 I		39		0	354		
3/90	08/16/90	G-155 I	406	120	6	<1	452	21	
2/91	04/17/91	G-155 I	406	120	14	11	432	7.65	
3/91	08/22/91	G-155 I	358		12		420	18	
1/92	02/20/92	G-155 I	504		18	<2	412	14	
2/92	05/14/92	G-155 I	406		18	<2	432	<5	
3/92	08/13/92	G-155 I	430		6	14	448	<5	
4/92	10/20/92	G-155 I	338		14	<2	400	17	
1/93	02/10/93	G-155 I	352		12	7	392	13	
2/93	05/17/93	G-155 I	358		8	<2	372	13	
3/93	08/06/93	G-155 I	358		12	3	425	15	
4/93	10/07/93	G-155 I	346		8	<5	445	11	
* 1/94	01/07/94	R-155 I	336		6	<5	320	14	
*REPLACEMENT WELL									

BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - UPPER AQUIFER
WELL G 155I - DATA POOL

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/22/90	G-155 I	58,400	1,480	28,100	36.9	6,720
3/90	08/16/90	G-155 I	83,500	2,100	36,100	42	9,700
2/91	04/17/91	G-155 I	117,000	2,200	57,000	30	21,000
3/91	08/26/91	G-155 I	70,500		32,100		12,600
1/92	02/20/92	G-155 I	94,700		43,900		12,700
2/92	05/14/92	G-155 I	103,000		47,900		25,700
3/92	08/13/92	G-155 I	99,900		42,000		11,400
4/92	10/20/92	G-155 I	79,100	4,170	40,400	20	10,400
1/93	02/10/93	G-155 I	84,800		40,500		13,800
2/93	05/17/93	G-155 I	78,400		43,600		11,100
3/93	08/06/93	G-155 I	72,400		40,100		12,200
4/93	10/07/93	G-155 I	84,000	5,000	43,000	31	22,000
*1/94	01/07/94	R-155 I	77,000		39,000		13,000

*REPLACEMENT WELL

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – UPPER AQUIFER
WELL G 155I – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/22/90	G-155 I		45		
3/90	08/16/90	G-155 I	<1	10	4	<1
2/91	04/17/91	G-155 I	<1	70	<1	<1
3/91	08/26/91	G-155 I				
1/92	02/20/92	G-155 I				
2/92	05/14/92	G-155 I				
3/92	08/13/92	G-155 I				
4/92	10/20/92	G-155 I	4	<100	<5	<10
1/93	02/10/93	G-155 I				
2/93	05/17/93	G-155 I				
3/93	08/06/93	G-155 I				
4/93	10/07/93	G-155 I	2	<200	<10	<20
*1/94	01/07/94	R-155 I				
*REPLACEMENT WELL						

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADENT – UPPER AQUIFER
WELL G 155I – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/22/90	G-155 I				
3/90	08/16/90	G-155 I	30	0.7	<1	<1
2/91	04/17/91	G-155 I	40	<0.1	<1	<1
3/91	08/26/91	G-155 I				
1/92	02/20/92	G-155 I				
2/92	05/14/92	G-155 I				
3/92	08/13/92	G-155 I				
4/92	10/20/92	G-155 I	<5	<0.2	<2	<10
1/93	02/10/93	G-155 I				
2/93	05/17/93	G-155 I				
3/93	08/06/93	G-155 I				
4/93	10/07/93	G-155 I	<5	<0.2	<2	<10
*1/94	01/07/94	R-155 I				
*REPLACEMENT WELL						

BFI DAVIS JUNCTION LANDFILL
DOWNGRADIENT - UPPER AQUIFER
WELL G 163S - DATA POOL

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
3/90	08/13/90	G-163 S	7.13	610	8	0.011
			7.14	610	8	0.015
			7.16	610	8	0.013
4/90	11/06/90	G-163 S	7.14	600	8	0.01
			7.12	610	10	0.03
			7.12	610	11	0.03
1/91	02/04/91	G-163 S	7.1	600	9	0.03
			7.04	600	11	0.02
			7.15	540	3	0.02
2/91	04/16/91	G-163 S	7.16	560	3	0.01
			7.17	550	3	0.01
			7.17	575	3	0.01
3/91	08/14/91	G-163 S	7.52	510	3	0.03
			7.53	535	3	0.02
			7.55	540	3	0.03
4/91	11/05/91	G-163 S	7.56	530	3	0.02
			7.21	700	3	<0.01
			7.24	705	3	<0.01
1/92	02/13/92	G-163 S	7.26	700	7	<0.01
			7.2	705	4	<0.01
			7.32	590	5	0.01
2/92	04/22/92	G-163 S	7.33	600	5	<0.01
			7.33	595	5	<0.01
			7.3	610	5	<0.01
3/92	08/03/92	G-163 S	7.48	580	4	<0.01
			7.5	588	5	<0.01
			7.46	570	4	<0.01
4/92	10/14/92	G-163 S	7.45	582	4	<0.01
			7.23	442	2.8	<0.01
			7.19	436	2.8	0.01
1/93	01/26/93	G-163 S	7.18	4.37	3	0.01
			7.21	434	3.1	<0.01
			6.93	334	2.57	<0.01
2/93	04/26/93	G-163 S	6.63	329	2.57	<0.01
			7.12	331	2.57	<0.01
			6.77	332	2.57	<0.01
3/93	08/05/93	G-163 S	7.28	558	2.78	<0.01
			7.1	559	2.78	<0.01
			7.3	559	2.78	<0.01
4/93	10/05/93	G-163 S	7.07	565	2.78	<0.01
			6.67	456	2.24	<0.01
			6.66	454	2.24	<0.01
1/94	01/06/94	G-163 S	6.75	453	2.24	<0.01
			6.77	453	2.24	<0.01
			6.93	412	2.04	<0.01
2/94	04/26/94	G-163 S	6.95	409	2.04	<0.01
			6.99	409	2.04	<0.01
			7.02	410	2.04	<0.01
3/94	08/05/94	G-163 S	7.27	519	2.78	<0.01
			7.25	512	2.78	<0.01
			7.30	511	2.78	<0.01
4/94	10/05/94	G-163 S	7.29	514	2.78	<0.01
			7.67	502	1.88	<0.01
			7.68	499	1.88	<0.01
1/95	01/06/95	G-163 S	7.64	500	1.88	<0.01
			7.61	501	1.88	<0.01
			7.32	522	3	<0.01
2/95	04/26/95	G-163 S	7.30	505	3	<0.01
			7.31	515	3	<0.01
			7.34	503	3	<0.01

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - UPPER AQUIFER
WELL G 163S - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/25/90	G-163 S		50		0	1200	
3/90	08/13/90	G-163 S	328	150	18	5	752	167
4/90	11/06/90	G-163 S	293	50	14	4	20	154
1/91	02/04/91	G-163 S	330	150	14	<1	542	152
2/91	04/16/91	G-163 S	286	120	12	<2	771	172
3/91	08/14/91	G-163 S	286		12	2	604	181
4/91	11/05/91	G-163 S	326		16		608	179
1/92	02/13/92	G-163 S	304		16	<2	536	
2/92	04/22/92	G-163 S	210		18	<2	400	
3/92	08/03/92	G-163 S	224		14	<2	532	
4/92	10/14/92	G-163 S	220		16	<2	496	
1/93	01/26/93	G-163 S	240		12	<2	448	
2/93	04/26/93	G-163 S	206		6	<2	332	
3/93	08/05/93	G-163 S	240		6	3	385	76
4/93	10/05/93	G-163 S	220		6	<5	350	73
1/94	01/06/94	G-163 S	232		8	<5	300	91

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - UPPER AQUIFER
WELL G 163S - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/25/90	G-163 S	68,400	18.9	32,700	160	5,190
3/90	08/13/90	G-163 S	105,000	250	43,400	173	7,100
4/90	11/08/90	G-163 S	90,800	240	44,500	216	1,000
1/91	02/04/91	G-163 S	86,000	80	50,200	173	10,000
2/91	04/16/91	G-163 S	146,000	200	66,000	236	28,000
3/91	08/14/91	G-163 S	57,500		519,000		13,300
4/91	11/05/91	G-163 S	101,000	200	44,000	229	7,000
1/92	02/13/92	G-163 S	111,000		55,000		7,020
2/92	04/22/92	G-163 S	82,200		34,400		4,000
3/92	08/03/92	G-163 S	105,000		37,000		6,260
4/92	10/14/92	G-163 S	107,000	<50	44,000	209	8,500
1/93	01/26/93	G-163 S	87,800		38,400		6,500
2/93	04/26/93	G-163 S	71,300		29,700		5,300
3/93	08/05/93	G-163 S	82,300		30,700		3,880
4/93	10/05/93	G-163 S	77,000	90	32,000	136	4,000
1/94	01/06/94	G-163 S	84,000		35,000		5,000

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT - UPPER AQUIFER
WELL G 163S - DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/25/90	G-163 S		51.4		
3/90	08/13/90	G-163 S	<1	30	<1	<1
4/90	11/06/90	G-163 S	<1	100	4	8
1/91	02/04/91	G-163 S	<1	80	1	5
2/91	04/16/91	G-163 S	<1	110	2	<1
3/91	08/14/91	G-163 S				
4/91	11/05/91	G-163 S	<2	80	4	5
1/92	02/13/92	G-163 S				
2/92	04/22/92	G-163 S				
3/92	08/03/92	G-163 S				
4/92	10/14/92	G-163 S	<1	<100	<5	<10
1/93	01/26/93	G-163 S				
2/93	04/26/93	G-163 S				
3/93	08/05/93	G-163 S				
4/93	10/05/93	G-163 S	1	<200	<10	<20
1/94	01/06/93	G-163 S				

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADIENT – UPPER AQUIFER
WELL G 163S – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/25/90	G-163 S	3.2			
3/90	08/13/90	G-163 S	13	<0.1	<1	2
4/90	11/06/90	G-163 S	20	<0.1	<1	3
1/91	02/04/91	G-163 S	50	0.3	<1	1
2/91	04/16/91	G-163 S	50	<0.1	<1	<1
3/91	08/14/91	G-163 S				
4/91	11/05/91	G-163 S	60	<0.2	<1	<1
1/92	02/13/92	G-163 S				
2/92	04/22/92	G-163 S				
3/92	08/03/92	G-163 S				
4/92	10/14/92	G-163 S	<5	<0.2	<2	<10
1/93	01/26/93	G-163 S				
2/93	04/26/93	G-163 S				
3/93	08/05/93	G-163 S				
4/93	10/05/93	G-163 S	<5	<0.2	<10	<20
1/94	01/06/93	G-163 S				

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – UPPER AQUIFER
WELL G 167I – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
3/90	08/15/90	G-167 I	7.18	464	2	0.01
			7.09	459	2	
			7.39	474	1	
			7.11	462	2	
4/90	11/12/90	G-167 I	7.38	441	4	<0.01
			7.4	447	4	<0.01
			7.21	442	4	<0.01
			7.34	448	5	<0.01
1/91	02/13/91	G-167 I	7.63	420	<1	<0.01
			7.63	410	1	<0.01
			7.83	430	<1	<0.01
			7.62	420	1	<0.01
2/91	04/25/91	G-167 I	7.38	445	<1	0.01
			7.35	430	<1	0.01
			7.44	441	<1	0.01
			7.39	430	<1	0.01
3/91	08/28/91	G-167 I	7.47	460	2	<0.01
			7.4	455	2	<0.01
			7.39	445	<1	<0.01
			7.44	450	<1	<0.01
4/91	11/12/91	G-167 I	7.8	421	2	<0.01
			7.67	420	1	0.01
			7.71	425	2	<0.01
			7.65	427	1	<0.01
1/92	02/21/92	G-167 I	7.69	440	2	<0.01
			7.62	439	2	<0.01
			7.6	441	2	<0.01
			7.65	439	2	<0.01
2/92	05/15/92	G-167 I	7.78	393	<1	<0.01
			7.83	386	<1	<0.01
			7.86	383	<1	<0.01
			7.82	384	<1	<0.01
3/92	08/14/92	G-167 I	6.35	408	<1	<0.01
			6.47	404	<1	<0.01
			7.57	409	<1	<0.01
			7.32	419	<1	<0.01
4/92	10/30/92	G-167 I	7.08	445	<1	<0.01
			6.91	443	<1	<0.01
			6.95	442	<1	<0.01
			6.91	439	<1	<0.01
1/93	02/12/93	G-167 I	6.82	358	<1	<0.01
			6.91	358	<1	<0.01
			6.8	357	<1	<0.01
			6.9	355	<1	<0.01
2/93	05/17/93	G-167 I	6.67	360	<1	<0.01
			6.61	362	<1	<0.01
			6.6	364	<1	<0.01
			6.64	363	<1	<0.01
3/93	08/06/93	G-167 I	6.79	495	<1	<0.01
			6.92	494	<1	<0.01
			6.97	488	<1	<0.01
			6.98	495	<1	<0.01
4/93	10/11/93	G-167 I	7.39	580	<1	<0.01
			7.36	577	<1	<0.01
			7.38	576	<1	<0.01
			7.38	575	<1	<0.01
1/94	01/11/94	G-167 I	7.42	459	<1	<0.01
			7.43	482	<1	<0.01
			7.41	480	<1	<0.01
			7.42	467	<1	<0.01

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – UPPER AQUIFER
WELL G 167I – DATA POOL**

Quarter	Date	Well	Alkalinity CaCO ₃ mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/25/90	G-167 I		38		0	724	
3/90	08/15/90	G-167 I	332	100	6	<1	480	36
4/90	11/12/90	G-167 I	296	30	4	7	568	76
1/91	02/13/91	G-167 I	308	160	6	4	328	31.1
2/91	04/25/91	G-167 I	306	100	4	<2	441	34.4
3/91	08/28/91	G-167 I	300		8	<2	356	32
4/91	11/12/91	G-167 I	280		5		348	43
1/92	02/21/92	G-167 I	392		10	<2	360	32
2/92	05/15/92	G-167 I	320		8	<2	372	46
3/92	08/14/92	G-167 I	312		<5	4	380	27
4/92	10/30/92	G-167 I	298		<5	<2	364	36
1/93	02/12/93	G-167 I	290		<5	16	392	57
2/93	05/17/93	G-167 I	304		8	<2	316	45
3/93	08/06/93	G-167 I	306		8	<2	400	36
4/93	10/11/93	G-167 I	304		8	<5	385	34
1/94	01/11/94	G-167 I	304		<5	<5	345	41

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - UPPER AQUIFER
WELL G 167I - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/25/90	G-167 I	56,600	133	26,800	47	5,680
3/90	08/15/90	G-167 I	84,900	480	34,200	69	6,600
4/90	11/12/90	G-167 I	65,200	60	32,500	57	7,200
1/91	02/13/91	G-167 I	68,700	310	33,800	51	90,500
2/91	04/25/91	G-167 I	81,000	1040	38,000	47	17,000
3/91	08/28/91	G-167 I	83,000	410	31,800		10,700
4/91	11/12/91	G-167 I	83,000		29,400	45	10,100
1/92	02/21/92	G-167 I	81,000		32,800		7,300
2/92	05/15/92	G-167 I	78,900		31,500		7,900
3/92	08/14/92	G-167 I	87,000		30,000		7,800
4/92	10/30/92	G-167 I	80,200	1980	34,000	49	6,300
1/93	02/12/93	G-167 I	84,700		31,700		8,900
2/93	05/17/93	G-167 I	77,200		35,400		7,000
3/93	08/06/93	G-167 I	69,600		34,800		7,400
4/93	10/11/93	G-167 I	85,000	1,480	36,000	54	6,000
1/94	01/11/94	G-167 I	87,000		34,000		8,000

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – UPPER AQUIFER
WELL G 167I – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/25/90	G-167 I		49.2		
3/90	8/15/90	G-167 I	<1	<10	3	<1
4/90	11/12/90	G-167 I	<1	200	<1	<1
1/91	02/13/91	G-167 I	<1	70	2	<1
2/91	04/25/91	G-167 I	<1	60	3	<1
3/91	08/28/91	G-167 I				
4/91	11/12/91	G-167 I	<2	80	9	<1
1/92	02/21/92	G-167 I				
2/92	05/15/92	G-167 I				
3/92	08/14/92	G-167 I				
4/92	10/30/92	G-167 I	1	<100	<5	<10
1/93	02/12/93	G-167 I				
2/93	05/17/93	G-167 I				
3/93	08/06/93	G-167 I				
4/93	10/11/93	G-167 I	2	<200	<10	<20
1/94	01/11/94	G-167 I				

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – UPPER AQUIFER
WELL G 167I – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/25/90	G-167 I	5.2			
3/90	8/15/90	G-167 I	50	<0.1	<1	<1
4/90	11/12/90	G-167 I	30	<0.1	<1	3
1/91	02/13/91	G-167 I	<10	<0.1	<5	3
2/91	04/25/91	G-167 I	<10	<0.1	<1	<1
3/91	08/28/91	G-167 I				
4/91	11/12/91	G-167 I	20	<0.2	<1	<1
1/92	02/21/92	G-167 I				
2/92	05/15/92	G-167 I				
3/92	08/14/92	G-167 I				
4/92	10/30/92	G-167 I	<5	<0.2	<2	<10
1/93	02/12/93	G-167 I				
2/93	05/17/93	G-167 I				
3/93	08/06/93	G-167 I				
4/93	10/11/93	G-167 I	<5	<0.2	<2	<10
1/94	01/11/94	G-167 I				

BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - UPPER AQUIFER
WELL G 169I - DATA POOL

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	06/01/90	G-169 I			1.3	0.01
3/90	08/16/90	G-169 I	7.33	495	3	<0.01
			7.29	470	3	<0.01
			7.29	470	3	<0.01
			7.29	465	3	<0.01
4/90	11/09/90	G-169 I	7.55	441	9	<0.01
			7.58	445	7	<0.01
			7.57	447	6	<0.01
			7.53	439	6	<0.01
1/91	02/13/91	G-169 I	7.59	445	<1	<0.01
			7.59	438	<1	<0.01
			7.58	441	<1	<0.01
			7.58	440	<1	<0.01
2/91	04/17/91	G-169 I	7.52	441	1	0.02
			7.5	440	<1	0.03
			7.56	443	<1	0.03
			7.51	440	<1	0.02
3/91	08/26/91	G-169 I	7.67	460	<1	<0.01
			7.68	470	<1	<0.01
			7.66	468	<1	<0.01
			7.64	465	<1	<0.01
4/91	11/13/91	G-169 I	7.7	420	1	<0.02
			7.61	425	1	<0.02
			7.66	433	1	<0.02
			7.73	442	1	<0.02
1/92	02/21/92	G-169 I	8.19	407	<1	<0.01
			8.17	405	<1	<0.01
			8.15	412	<1	<0.01
			8.11	403	<1	<0.01
*2/92	05/14/92	G-169 I				
3/92	08/13/92	G-169 I	7.37	397	<1	<0.01
			7.23	400	<1	<0.01
			7.37	397	<1	<0.01
			7.13	407	<1	<0.01
4/92	10/15/92	G-169 I	7.46	402	<1	0.02
			7.43	405	<1	0.02
			7.46	407	<1	0.02
			7.35	416	<1	0.02
1/93	02/16/93	G-169 I	7.14	348	<1	<0.01
			7.14	350	<1	<0.01
			7.03	350	<1	<0.01
			7.04	348	<1	<0.01
2/93	05/17/93	G-169 I	6.57	373	<1	0.02
			6.73	373	<1	0.02
			6.82	375	<1	0.02
			6.84	375	<1	0.02
3/93	08/06/93	G-169 I	6.57	509	<1	<0.01
			6.69	507	<1	<0.01
			6.98	512	<1	<0.01
			6.96	542	<1	<0.01
4/93	10/11/93	G-169 I	6.87	569	<1	<0.01
			6.93	571	<1	<0.01
			6.95	568	<1	<0.01
			6.99	566	<1	<0.01
1/94	01/07/93	G-169 I	7.36	418	<1	<0.01
			7.35	425	<1	<0.01
			7.35	417	<1	<0.01
			7.38	410	<1	<0.01

*NO REPORTED DATA

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADIENT - UPPER AQUIFER
WELL G 169I - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	08/01/90	G-169 I		36		0	342	
3/90	08/15/90	G-169 I	348	11	8	<1	356	26
4/90	11/12/90	G-169 I	314	30	4	2	408	14
1/91	02/13/91	G-169 I	332	220	4	<1	133	23.8
2/91	04/25/91	G-169 I	324	70	2	5	354	17.8
3/91	08/28/91	G-169 I	312		4	2	364	23
4/91	11/12/91	G-169 I	320		4		300	40
1/92	02/21/92	G-169 I	388		8	<2	328	22
*2/92	05/14/92	G-169 I						
3/92	08/13/92	G-169 I	340		<5	<2	352	25
4/92	10/15/92	G-169 I	310		<5	<2	296	22
1/93	02/18/93	G-169 I	308		<5	6	348	23
2/93	05/17/93	G-169 I	308		<5	<2	328	23
3/93	08/06/93	G-169 I	310		<5	<2	395	36
4/93	10/11/93	G-169 I	310		<5	<5	375	38
1/94	01/07/94	G-169 I	316		<5	<5	310	27

*NO REPORTED DATA

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – UPPER AQUIFER
WELL G 169I – DATA POOL**

Quarter	Date	Well	Calcium dis – ug/l	Iron dis – ug/l	Magnesium dis – ug/l	Manganese dis – ug/l	Sodium dis – ug/l
2/90	05/24/90	G – 169 I	58,300	745	27,100	38.3	10,100
3/90	08/16/90	G – 169 I	86,700	940	35,600	53	7,900
4/90	11/08/90	G – 169 I	68,600	120	32,900	48	4,300
1/91	02/04/91	G – 169 I	68,600	920	35,400	43	7,750
2/91	04/16/91	G – 169 I	79,000	510	41,000	42	17,000
3/91	08/20/91	G – 169 I	64,800		31,200		7,690
4/91	11/13/91	G – 169 I	85,000	1,410	30,000	45	7,520
1/92	02/24/92	G – 169 I	77,800		38,600		81,800
*2/92	05/14/92	G – 169 I					5,500
3/92	08/13/92	G – 169 I	83,000		28,000		7,400
4/92	10/15/92	G – 169 I	84,000	1,260	33,800	36	9,600
1/93	02/17/93	G – 169 I	72,000		30,200		5,900
2/93	05/17/93	G – 169 I	79,400		36,600		7,000
3/93	08/06/93	G – 169 I	69,800		33,900		11,000
4/93	10/11/93	G – 169 I	82,000	1,430	36,000	51	7,000
1/94	01/07/94	G – 169 I	81,000		38,000		9,000
*NO REPORTED DATA (EXCEPT SODIUM)							

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADE - UPPER AQUIFER
WELL G 169I - DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/24/90	G-169I		49		.
3/90	08/16/90	G-169I	<1	<10	2	6
4/90	11/08/90	G-169I	<1	190	<1	5
1/91	02/04/91	G-169I	<5	80	3	2
2/91	04/16/91	G-169I	<1	70	<1	3
3/91	08/20/91	G-169I				
4/91	11/05/91	G-169I	<1	90	<1	3
1/92	02/21/92	G-169I				
3/92	08/13/92	G-169I				
4/92	10/15/92	G-169I	1	<100	<5	<10
1/93	02/16/93	G-169I				
2/93	05/17/93	G-169I				
3/93	08/06/93	G-169I				
4/93	10/11/93	G-169I	1	<200	<10	<20
1/94	01/07/94	G-169I				

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - UPPER AQUIFER
WELL G 169I - DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/24/90	G-169 I	5.2			
3/90	08/16/90	G-169 I	10	0.7	<1	10
4/90	11/08/90	G-169 I	30	0.3	<1	3
1/91	02/04/91	G-169 I	<10	<0.1	<5	3
2/91	04/16/91	G-169 I	30	<0.1	<1	2
3/91	08/20/91	G-169 I				
4/91	11/05/91	G-169 I	<10	<0.2	<1	<1
1/92	02/21/92	G-169 I				
3/92	08/13/92	G-169 I				
4/92	10/15/92	G-169 I	<5	<0.2	<2	<10
1/93	02/16/93	G-169 I				
2/93	05/17/93	G-169 I				
3/93	08/06/93	G-169 I				
4/93	10/11/93	G-169 I	<5	<0.2	<2	<10
1/94	01/07/94	G-169 I				

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADEMENT - UPPER AQUIFER
WELL G 170I - DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	1.TOX mg/l
3/90	08/02/90	G-170 I				
4/90	11/08/90	G-170 I	7.39	478	20	<0.01
			7.44	472	13	<0.01
			7.46	480	16	<0.01
			7.44	487	19	<0.01
1/91	02/08/91	G-170 I	7.52	510	1	<0.01
			7.5	490	<1	<0.01
			7.51	500	<1	<0.01
			7.51	515	<1	<0.01
2/91	04/19/91	G-170 I	7.73	500	<1	0.01
			7.69	501	<1	0.01
			7.64	495	<1	<0.01
			7.71	500	1	0.01
3/91	08/20/91	G-170 I	7.43	610	1	<0.01
			7.44	590	2	<0.01
			7.51	590	1	<0.01
			7.46	600	2	<0.01
4/91	11/26/91	G-170 I	7.05	500	3	
			7.05	500	3	
			7.04	500	2	
			7.05	500	3	
1/92	02/10/92	G-170 I	8.38	603	1	
			8.33	310	1	
			8.29	600	1	
			8.36	608	1	
2/92	04/28/92	G-170 I	7.27	605	1.5	
			7.28	602	1.4	
			7.26	608	1.2	
			7.3	603	1.3	
3/92	08/06/92	G-170 I	7.61	532	1.14	
			7.18	520	1.14	
			7.61	522	1.14	
			7.29	536	1.14	
4/92	10/05/92	G-170 I	6.6	498	<1	
			6.73	498	<1	
			6.54	496	<1	
			6.69	512	<1	
1/93	02/08/93	G-170 I	6.87	439	<1	
			6.92	434	<1	
			6.86	434	<1	
			6.89	431	<1	
2/93	04/26/93	G-170 I	7.16	580	<1	
			7.23	577	<1	
			7.26	577	<1	
			7.27	580	<1	
3/93	07/27/93	G-170 I	6.89	475	<1	
			6.89	471	<1	
			6.89	468	<1	
			6.86	474	<1	
4/93	10/04/93	G-170 I	7.74	643	5.1	
			7.65	638	5.1	
			7.59	639	5.1	
			7.54	641	5.1	
1/94	01/06/94	G-170 I	7.27	593	1	
			7.29	571	1	
			7.28	579	1	
			7.26	579	1	

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADIANT - UPPER AQUIFER
WELL G 170I - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
4/93	11/08/90	G-170 I	346	60	4	<1	836	20
1/91	02/08/91	G-170 I	390	220	2	9	423	14.6
2/91	04/19/91	G-170 I	382	190	2	<2	317	14.6
3/91	08/20/91	G-170 I	426	160	2	3	488	15
4/91	11/26/91	G-170 I	488		18		532	20
1/92	02/10/92	G-170 I	448		2	<2	448	21
2/92	04/28/92	G-170 I	448		<5	<2	480	13
3/92	08/06/92	G-170 I	382		<5	<2	364	6
4/92	10/05/92	G-170 I	364		<5	<2	392	13
1/93	02/08/93	G-170 I	396		<5	<2	436	17
2/93	04/26/93	G-170 I	448		<5	<2	460	<5
3/93	07/27/93	G-170 I	430		<5	8	435	13
4/93	10/04/93	G-170 I	418		6	<5	475	46
1/94	01/06/94	G-170 I	372		<5	<5	445	<5

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT - UPPER AQUIFER
WELL G 170I - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
4/90	11/08/90	G-170 I	79,200	20	35,800	56	4,400
1/91	02/08/91	G-170 I	69,000	10	35,000	42	9,000
2/91	04/19/91	G-170 I	69,000	10	44,000	43	17,000
3/91	08/20/91	G-170 I	95,500	50	47,200	47	15,600
*4/91	11/26/91	G-170 I					
*1/92	2/10/92	G-170 I					
*2/92	04/28/92	G-170 I					
*3/92	08/06/92	G-170 I					
*4/92	10/05/92	G-170 I					
*1/93	2/08/93	G-170 I					
*2/93	04/28/93	G-170 I					
*3/93	07/27/93	G-170 I					
*4/93	10/04/93	G-170 I					
*1/94	01/06/94	G-170 I					
*NO REPORTED DATA							

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – UPPER AQUIFER
WELL G 170I – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
4/90	11/08/90	G-170 I	<1	80	<1	7
1/91	02/08/91	G-170 I	1	70	2	10
2/91	04/19/91	G-170 I	<1	80	1	8
3/91	08/20/91	G-170 I	<5	110	1	4
4/91	11/26/91	G-170 I	3	110	<1	5
1/92	02/10/92	G-170 I	2	<100	<5	
2/92	04/28/92	G-170 I	2	<100	<5	
3/92	08/06/92	G-170 I	1	<100	13	
4/92	10/05/92	G-170 I	1	<100	<5	
1/93	02/08/93	G-170 I	2	<100	<5	
2/93	04/26/93	G-170 I	2	<100	<5	
3/93	07/27/93	G-170 I	2	<200	<10	<10
4/93	10/04/93	G-170 I	3	<200	<10	<20
1/94	01/06/94	G-170 I	<5	<200	<10	<20

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT - UPPER AQUIFER
WELL G 170I - DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
4/90	11/08/90	G-170 I	20	0.3	<1	2
1/91	02/08/91	G-170 I	50	<0.1	<1	2
2/91	04/19/91	G-170 I	<10	<0.1	<1	2
3/91	08/20/91	G-170 I	30	1.3	<5	2
4/91	11/26/91	G-170 I	60	<0.2	<1	<1
1/92	02/10/92	G-170 I	<10	<0.2	<2	<10
2/92	04/28/92	G-170 I	<5	<0.2	<2	<10
3/92	08/06/92	G-170 I	<5	<0.4	<2	<10
4/92	10/05/92	G-170 I	<5	<0.2	<2	<10
1/93	02/08/93	G-170 I	<5	<0.2	<2	<10
2/93	04/26/93	G-170 I	<5	<0.2	<2	<10
3/93	07/27/93	G-170 I	<5	<0.2	<2	<10
4/93	10/04/93	G-170 I	<5	<0.2	<2	<10
1/94	01/06/94	G-170 I	<5	<0.2	<5	<10

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – UPPER AQUIFER
WELL G 171I – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
4/90	11/08/90	G-171 I	7.38	409	9	<0.01
			7.45	417	10	<0.01
			7.43	420	11	<0.01
1/91	02/04/91	G-171 I	7.49	418	12	<0.01
			7.76	438	<1	<0.01
			7.77	430	<1	<0.01
2/91	04/19/91	G-171 I	7.77	435	<1	<0.01
			7.77	440	<1	<0.01
			7.75	458	1	<0.01
3/91	08/21/91	G-171 I	7.68	455	1	<0.01
			7.69	459	1	<0.01
			7.72	465	1	<0.01
4/91	11/11/91	G-171 I	7.52	495	2	<0.01
			7.54	490	1	<0.01
			7.61	500	4	<0.01
1/92	02/11/92	G-171 I	7.59	500	4	<0.01
			7.98	440	1	
			7.98	435	1	
2/92	04/28/92	G-171 I	7.92	445	1	
			7.96	430	1	
			7.4	435	<1	
3/92	07/29/92	G-171 I	7.36	433	<1	
			7.33	436	<1	
			7.3	430	1	
4/92	10/05/92	G-171 I	7.61	501	1.8	
			7.56	494	1.8	
			7.64	488	1.8	
1/93	02/08/93	G-171 I	7.58	514	1.7	
			7.44	550	<1	
			7.3	540	<1	
2/93	04/27/93	G-171 I	7.25	540	<1	
			7.27	540	<1	
			6.34	547	<1	
3/93	07/27/93	G-171 I	6.48	543	<1	
			6.24	548	<1	
			6.35	540	<1	
4/93	10/04/93	G-171 I	6.97	396	<1	
			6.98	394	<1	
			6.81	393	<1	
1/94	01/05/94	G-171 I	6.94	392	<1	
			6.75	507	<1	
			6.87	506	<1	
2/94	02/11/94	G-171 I	6.92	506	<1	
			6.94	507	<1	
			7.77	470	<1	
3/94	03/18/94	G-171 I	7.60	468	<1	
			7.72	473	<1	
			7.63	476	<1	
4/94	04/22/94	G-171 I	7.56	727	1.3	
			7.64	719	1.3	
			7.58	720	1.3	
5/94	05/19/94	G-171 I	7.57	723	1.3	
			6.74	683	<1	
			6.84	689	<1	
6/94	06/16/94	G-171 I	6.85	687	<1	
			6.84	685	<1	
			6.84	685	<1	

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADIENT - UPPER AQUIFER
WELL G 1711 - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis.	Sulfate Dis-mg/l
4/90	11/08/90	G-171 I	312	70	10	<1	1080	12
1/91	02/04/91	G-171 I	322	180	4	9	443	14
2/91	04/19/91	G-171 I	330	140	2	<2	307	18.4
3/91	08/21/91	G-171 I	328	130	2	<2	380	18
4/91	11/11/91	G-171 I	330		<2		316	23
1/92	02/12/92	G-171 I	384		2	6	372	22
2/92	04/29/92	G-171 I	388		<5	<2	360	19
3/92	07/30/92	G-171 I	376		12	<2	436	28
4/92	10/05/92	G-171 I	378		6	<2	444	59
1/93	02/09/93	G-171 I	360		<5	<2	388	19
2/93	04/27/93	G-171 I	350		<5	4	332	16
3/93	07/27/93	G-171 I	400		8	<2	425	36
4/93	10/04/93	G-171 I	432		6	<5	475	46
1/94	01/05/94	G-171 I	398		<5	<5	385	39

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - UPPER AQUIFER
WELL G 1711 - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
4/90	11/08/90	G-1711	58,100	30	33,400	241	10,700
1/91	02/04/91	G-1711	56,000	<10	35,800	192	13,000
2/91	04/19/91	G-1711	77,000	<10	38,000	147	30,000
3/91	08/21/91	G-1711	64,900	20	34,600	43	27,600
*4/91	11/11/91	G-1711					
*1/92	02/11/92	G-1711					
*2/92	04/28/92	G-1711					
*3/92	07/29/92	G-1711					
*4/92	10/05/92	G-1711					
*1/93	02/08/93	G-1711					
*2/93	04/27/93	G-1711					
*3/93	07/27/93	G-1711					
*4/93	10/04/93	G-1711					
*1/94	01/05/94	G-1711					
*NO REPORTED DATA							

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADENT – UPPER AQUIFER
WELL G 171I – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
4/90	11/08/90	G-171 I	<1	60	<1	<1
1/91	02/04/91	G-171 I	<1	50	1	3
2/91	04/19/91	G-171 I	<1	60	2	3
3/91	08/21/91	G-171 I	<5	100	6	4
4/91	11/11/91	G-171 I	<1	70	<1	<1
1/92	02/11/92	G-171 I	1	100	<5	10
2/92	04/28/92	G-171 I	<1	<100	<5	<10
3/92	07/29/92	G-171 I	1	<100	<5	<10
4/92	10/05/92	G-171 I	<1	<100	<5	<10
1/93	02/08/93	G-171 I	<1	<100	<5	<10
2/93	04/27/93	G-171 I	<1	<100	<5	<10
3/93	07/27/93	G-171 I	<1	<200	<10	<10
4/93	10/04/93	G-171 I	<1	<200	<10	<20
1/94	01/05/94	G-171 I	<5	<200	<10	<20

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADENT – UPPER AQUIFER
WELL G 1711 – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
4/90	11/08/90	G-171 I	10	0.1	<1	2
1/91	02/04/91	G-171 I	60	0.1	<1	<1
2/91	04/19/91	G-171 I	40	<0.1	<1	2
3/91	08/21/91	G-171 I	<10	0.3	<5	<1
4/91	11/11/91	G-171 I	20	<0.2	<1	<1
1/92	02/11/92	G-171 I	<10	<0.2	<2	<10
2/92	04/28/92	G-171 I	<5	<0.2	<2	<10
3/92	07/29/92	G-171 I	<5	<0.2	<2	<10
4/92	10/05/92	G-171 I	<5	<0.2	<2	<10
1/93	02/08/93	G-171 I	<5	<0.2	<2	<10
2/93	04/27/93	G-171 I	<5	<0.2	<2	<10
3/93	07/27/93	G-171 I	<5	<0.2	<2	<10
4/93	10/04/93	G-171 I	<5	<0.2	<2	<10
1/94	01/05/94	G-171 I				

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – UPPER AQUIFER
WELL G 150 – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
1/88	02/09/88	G-150	9.12	380	4	10
			9.13	380	4	31
			9.13	380	4	18
2/88	05/11/88	G-150	9.13	380	4	10
			7.7	390	3	<5
			7.71	390	3	27
			7.7	390	3	<5
3/88	07/14/88	G-150	7.7	390	3	8
			7.45	504	2	12
			7.46	504	2	<5
			7.45	504	2	<5
4/88	11/08/88	G-150	7.45	504	1	5
			7.25	625	2	<5
			7.25	625	2	6
			7.25	625	2	8
1/89	02/13/89	G-150	7.25	625	2	5
			7.27	580	2	<5
			7.25	581	1	<5
			7.25	579	2	<5
2/89	05/19/89	G-150	7.26	580	1	<5
			7.15	527	1	<5
			7.17	527	1	<5
			7.17	526	1	<5
3/89	08/24/89	G-150	7.16	527	1	<5
			7.25	510	3	7
			7.25	510	3	6
			7.3	515	2	<5
4/89	11/07/89	G-150	7.3	510	3	7
			7.35	652	1	<5
			7.4	653	1	<5
			7.35	652	1	<5
1/90	02/22/90	G-150	7.35	653	1	8
			7.4	650	1	95
			7.4	650	1	137
			7.45	655	1	124
			7.4	650	1	130

BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - UPPER AQUIFER
WELL G 150 - DATA POOL

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot - Dis	Sulfate Dis-mg/l
1/88	02/09/88	G-150						
2/88	05/11/88	G-150						
3/88	07/14/88	G-150						
4/88	11/08/88	G-150			2.72	22		33.3
1/89	02/13/89	G-150						
2/89	05/19/89	G-150						
3/89	08/24/89	G-150						
4/89	11/07/89	G-150				19		
1/90	02/22/90	G-150						

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – UPPER AQUIFER
WELL G 150 – DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
1/88	02/26/88	G-150					
2/88	05/11/88	G-150					
3/88	07/14/88	G-150					
4/88	11/08/88	G-150		510		110	7630
1/89	02/13/89	G-150					
2/89	05/19/89	G-150					
3/89	08/24/89	G-150					
4/89	11/07/89	G-150					
1/90	02/22/90	G-150					

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – UPPER AQUIFER
WELL G 152 – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
1/88	02/09/88	G-152	8.4	530	<1	9
			8.4	530	<1	8
			8.4	530	<1	<5
2/88	05/11/88	G-152	8.4	530	<1	<5
			7.11	567	<1	<5
			7.12	567	<1	<5
			7.11	566	<1	<5
3/88	07/14/88	G-152	7.11	566	<1	<5
			6.85	643	<1	<5
			6.85	643	<1	<5
			6.85	643	<1	<5
4/88	11/28/88	G-152	6.85	643	<1	16
			7.4	410	1	<5
			7.35	410	1	<5
			7.35	405	1	<5
			7.35	410	1	<5
1/89	02/13/89	G-152	7.58	400	<1	<5
			7.57	410	<1	<5
			7.57	400	<1	<5
			7.58	400	1	<5
2/89	05/19/89	G-152	7.37	531	<1	<5
			7.38	530	<1	<5
			7.36	531	<1	<5
			7.36	531	<1	<5
3/89	08/24/89	G-152	7.25	530	<1	<5
			7.3	530	<1	7
			7.25	530	<1	<5
			7.25	530	<1	<5
4/89	11/07/89	G-152	7.29	514	1	<5
			7.29	515	<1	<5
			7.29	515	<1	<5
			7.3	515	<1	<5
1/90	2/22/90	G-152	7.25	520	<1	<5
			7.25	525	<1	<5
			7.2	525	<1	<5
			7.25	520	<1	<5

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – UPPER AQUIFER
WELL G 152 – DATA POOL**

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	ROE, 180C mg/l	Sulfate Dis-mg/l
1/88	02/09/88	G-152						
2/88	05/11/88	G-152						
3/88	07/14/88	G-152						
4/88	11/28/88	G-152			1.51	29		23.4
1/89	02/13/89	G-152						
2/89	05/19/89	G-152						
3/89	08/24/89	G-152						
4/89	11/07/89	G-152				35		
1/90	02/22/90	G-152						

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – UPPER AQUIFER
WELL G 152 – DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
1/88	02/26/88	G-152					
2/88	05/11/88	G-152					
3/88	07/14/88	G-152					
4/88	11/28/88	G-152		990		40	6,540,000
1/89	02/13/89	G-152					
2/89	05/19/89	G-152					
3/89	08/24/89	G-152					
4/89	11/07/89	G-152					
1/90	02/22/90	G-152					

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

APPENDIX C

POOLED DATA: MAIN AQUIFER

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - MAIN AQUIFER
WELL G 162D - DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/23/90	G-162 D			9.8	0.01
3/90	08/14/90	G-162 D	7.05	461	3	0.01
			7.11	459	3	<0.01
			7.04	450	2	<0.01
			6.87	450	2	0.02
4/90	11/14/90	G-162 D	7.17	438	7	<0.01
			7.16	442	7	<0.01
			7.12	441	6	<0.01
			7.15	444	6	<0.01
1/91	02/08/91	G-162 D	7.55	450	1	<0.01
			7.55	435	1	<0.01
			7.55	441	1	<0.01
			7.55	438	1	<0.01
2/91	04/11/91	G-162 D	7.74	428	2	0.03
			7.68	440	2	0.02
			7.73	430	2	0.02
			7.67	420	2	0.03
3/91	08/20/91	G-162 D	7.6	440	2	<0.01
			7.52	445	2	<0.01
			7.64	440	2	<0.01
			7.58	435	2	<0.01
4/91	11/07/91	G-162 D	7.27	380	1	<0.01
			7.33	380	1	<0.01
			7.36	400	1	<0.01
			7.37	400	1	<0.01
1/92	02/26/92	G-162 D	8.14	472	<1	<0.01
			8.07	424	<1	<0.01
			8.06	420	<1	<0.01
			8.03	422	<1	<0.01
2/92	05/07/92	G-162 D	7.24	347	<1	<0.01
			7.34	331	<1	<0.01
			7.28	327	<1	<0.01
			7.31	328	<1	<0.01
3/92	08/07/92	G-162 D	7.3	399	<1	<0.01
			7.1	403	<1	<0.01
			7.33	394	<1	<0.01
			6.94	401	<1	<0.01
4/92	10/29/92	G-162 D	6.34	441	<1	<0.01
			6.42	440	<1	<0.01
			6.92	438	<1	<0.01
			6.76	437	<1	<0.01
1/93	02/16/93	G-162 D	7.07	342	<1	<0.01
			7.06	345	<1	<0.01
			7.05	345	<1	<0.01
			7.07	345	<1	<0.01
2/93	05/18/93	G-162 D	7.08	399	<1	<0.01
			7.09	397	<1	<0.01
			7.1	398	<1	<0.01
			7.09	398	<1	<0.01
3/93	08/05/93	G-162 D	7.07	451	<1	<0.01
			7.08	447	<1	<0.01
			7.11	445	<1	<0.01
			7.12	448	<1	<0.01
4/93	10/06/93	G-162 D	8.12	526	2.06	0.01
			8.0	524	2.06	0.01
			7.95	525	2.06	0.01
			7.93	527	2.06	0.01
1/94	02/14/93	G-162 D	7.24	511	<1	<0.01
			7.35	495	<1	<0.01
			7.35	506	<1	<0.01
			7.33	491	<1	<0.01

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - MAIN AQUIFER
WELL G 162D - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/23/90	G-162 D		0		0	328	
3/90	08/14/90	G-162 D		130	6	4	504	26
4/90	11/14/90	G-162 D	360	20	4	6	400	5
1/91	02/06/91	G-162 D	320	180	4	2	390	23
2/91	04/11/91	G-162 D	328	90	2	2	288	23
3/91	08/20/91	G-162 D	320	20	4	2	380	24
4/91	11/07/91	G-162 D	312		6		320	28
1/92	02/26/92	G-162 D	350	100	6	<2	323	24
2/92	05/07/92	G-162 D	440	<100	6	<2	344	31
3/92	08/07/92	G-162 D	324	<100	14	<2	348	29
4/92	10/29/92	G-162 D	342	270	6	<2	356	28
1/93	02/16/93	G-162 D	302	<100	<5	6	368	31
2/93	05/18/93	G-162 D	306		6	<2	375	28
3/93	08/05/93	G-162 D	314		8	<5	395	37
4/93	10/08/93	G-162 D	306		6	<5	405	26
1/94	02/14/94	G-162 D	312		6	<5	330	30

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - MAIN AQUIFER
WELL G 162D - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/23/90	G-162 D	55,900	447	26,100	43.3	5,590
3/90	09/14/90	G-162 D	81,200	650	33,500	37	7,400
4/90	11/14/90	G-162 D	65,500	400	32,700	51	6,700
1/91	02/06/91	G-162 D	62,000	790	32,000	48	7,000
2/91	04/11/91	G-162 D	72,000	180	36,000	53	7,400
3/91	08/20/91	G-162 D	73,500	860	37,100	49	7,450
4/91	11/07/91	G-162 D	75,000	910	32,000	60	6,100
1/92	02/26/92	G-162 D	80,100	1,040	41,100	53	7,390
2/92	05/07/92	G-162 D	80,700	820	33,100	53	5,900
3/92	08/07/92	G-162 D	90,200	1,250	30,000	44	7,800
4/92	10/29/92	G-162 D	87,100	1,310	35,600	60	8,000
1/93	02/18/93	G-162 D	79,400	1,150	32,500	62	6,500
2/93	05/18/93	G-162 D	78,000		35,900		5,900
3/93	08/05/93	G-162 D	68,300		34,300		7,500
4/93	10/06/93	G-162 D	79,000	1,210	34,000	74	6,000
1/94	02/14/94	G-162 D	88,000		34,000		7,000

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – MAIN AQUIFER
WELL G 162D – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/23/90	G-162 D		51.7		
3/90	08/14/90	G-162 D	<1	<10	4	<1
4/90	11/14/90	G-162 D	<1	340	3	7
1/91	02/06/91	G-162 D	<1	60	2	2
2/91	04/11/91	G-162 D	<1	90	3	3
3/91	08/20/91	G-162 D	<5	80	3	2
4/91	11/07/91	G-162 D	<1	<10	3	8
1/92	02/26/92	G-162 D	<1	<100	10	<10
2/92	05/07/92	G-162 D	<1	<100	<5	<10
3/92	08/07/92	G-162 D	<1	<100	5	<10
4/92	10/29/92	G-162 D	<1	<100	<5	<10
1/93	02/16/93	G-162 D	<1	<100	<5	<10
2/93	05/18/93	G-162 D	<1	<100	<5	<10
3/93	08/05/93	G-162 D	<1	<200	<10	<20
4/93	10/06/93	G-162 D	<1	<200	<10	<20
1/94	02/14/93	G-162 D	<5	<200	<10	<20

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – MAIN AQUIFER
WELL G 162D – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/23/90	G-162 D				
3/90	08/14/90	G-162 D	40	<0.1	<1	3
4/90	11/14/90	G-162 D	20	<0.1	<1	2
1/91	02/06/91	G-162 D	30		0.3 <1	2
2/91	04/11/91	G-162 D	20	<0.1	<1	<1
3/91	08/20/91	G-162 D	40		0.3 <5	2
4/91	11/07/91	G-162 D	30	<0.2	<1	3
1/92	02/26/92	G-162 D	40	<0.2	<2	<10
2/92	05/07/92	G-162 D	<5	<0.2	<2	<10
3/92	08/07/92	G-162 D	<2	<0.4	<2	<10
4/92	10/29/92	G-162 D	<5	<0.2	<2	<10
1/93	02/16/93	G-162 D	<5	<0.2	<2	<10
2/93	05/18/93	G-162 D	<5	<0.2	<2	<10
3/93	08/05/93	G-162 D				
4/93	10/06/93	G-162 D				
1/94	02/14/93	G-162 D				

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - MAIN AQUIFER
WELL G 166D - DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/18/90	G-166 D			1.1	0
3/90	08/14/90	G-166 D	7.24	620	1	<0.01
			7.24	630	1	<0.01
			7.25	610	1	<0.01
4/90	11/05/90	G-166 D	7.53	630	1	0.011
			7.61	590	7	<0.01
			7.3	600	6	<0.01
			7.4	590	7	<0.01
1/91	02/05/91	G-166 D	7.4	590	7	<0.01
			7.45	590	1	<0.01
			7.45	610	1	<0.01
			7.43	600	1	<0.01
2/91	04/24/91	G-166 D	7.43	580	1	<0.01
			7.37	640	<1	<0.01
			7.33	630	<1	<0.01
3/91	08/28/91	G-166 D	7.32	640	<1	<0.01
			7.31	635	<1	<0.01
			7.58	600	<1	<0.01
			7.56	610	<1	<0.01
4/91	11/18/91	G-166 D	7.59	600	3	<0.01
			7.55	600	3	<0.01
			7.49	615	2	<0.01
			7.42	645	2	<0.01
1/92	02/25/92	G-166 D	7.4	650	2	<0.01
			7.39	655	2	<0.01
			7.48	600	<1	0.02
			7.45	605	<1	0.02
2/92	05/05/92	G-166 D	7.56	610	<1	0.02
			7.53	607	<1	0.01
			7.54	339	<1	<0.01
			7.47	326	<1	<0.01
3/92	08/14/92	G-166 D	7.48	328	<1	<0.01
			7.56	331	<1	<0.01
			7.83	627	<1	<0.01
			7.56	618	<1	<0.01
4/92	10/27/92	G-166 D	7.74	614	<1	<0.01
			7.85	631	<1	<0.01
			7.1	649	<1	0.03
			7.15	650	<1	0.03
1/93	02/15/93	G-166 D	7.16	647	<1	0.03
			7.2	657	<1	0.03
			6.83	474	<1	<0.01
			6.83	474	<1	<0.01
2/93	05/14/93	G-166 D	6.75	473	<1	<0.01
			6.8	470	<1	<0.01
			7.36	529	2.98	<0.01
			7.38	527	2.98	<0.01
3/93	07/28/93	G-166 D	7.38	528	2.98	<0.01
			7.37	532	2.98	<0.01
			8.0	462	1.49	0.03
			7.97	464	1.49	0.03
4/93	10/06/93	G-166 D	7.96	444	1.49	0.03
			7.95	465	1.49	0.03
			8.31	713	1.01	<0.01
			8.03	713	1.01	<0.01
1/94	01/11/94	G-166 D	8.08	714	1.01	<0.01
			8.05	718	1.01	<0.01
			7.48	656	<1	0.19
			7.49	648	<1	0.19
			7.49	662	<1	0.19
			7.46	643	<1	0.19

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - MAIN AQUIFER
WELL G 166D - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO ₃ mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/18/90	G-166 D		39		0	534	
3/90	08/14/90	G-166 D	378	160	70	2	836	68
4/90	11/05/90	G-166 D	318	20	52	2	548	69
1/91	02/05/91	G-166 D	340	160	48	<1	520	76.5
2/91	04/24/91	G-166 D	326	90	48	<2	586	71.2
3/91	08/28/91	G-166 D	318	80	38	<2	548	84
4/91	11/18/91	G-166 D	320		42		492	17
1/92	02/25/92	G-166 D	416	100	78	<2	507	68
2/92	05/05/92	G-166 D	326	<100	52	<2	495	83
3/92	08/14/92	G-166 D	328	<100	46	7	536	103
4/92	10/27/92	G-166 D	322	120	40	<2	500	100
1/93	02/15/93	G-166 D	312	<100	50	32	520	108
2/93	05/14/93	G-166 D	312		56	3	524	100
3/93	07/28/93	G-166 D	322		54	<5	510	102
4/93	10/08/93	G-166 D	312		44	<5	535	95
1/94	01/11/94	G-166 D	314		42	<2	460	100

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - MAIN AQUIFER
WELL G 166D - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/18/90	G-166 D	77,200	1,130	36,800	46.8	8,040
3/90	08/14/90	G-166 D	118,000	970	48,300	55	11,200
4/90	11/05/90	G-166 D	84,300	190	41,000	50	5,800
1/91	2/05/91	G-166 D	83,000	1,070	44,000	51	12,000
2/91	04/24/91	G-166 D	128,000	1,080	60,000	53	19,000
3/91	08/28/91	G-166 D	51,000	1,100	42,400	51	10,600
4/91	11/18/91	G-166 D	111,000	380	40,000	59	12,400
1/92	02/25/92	G-166 D	110,000	1,410	58,000	59	13,900
2/92	05/05/92	G-166 D	105,000	1,580	44,100	71	7,300
3/92	08/14/92	G-166 D	114,000	1,260	40,000	50	8,800
4/92	10/27/92	G-166 D	106,000	340	47,400	55	10,400
1/93	02/15/93	G-166 D	110,000	1,200	45,400	46	11,600
2/93	05/14/93	G-166 D	110,000		45,800		13,100
3/93	07/28/93	G-166 D	102,000		44,500		13,300
4/93	10/09/93	G-166 D	107,000	95	47,000	57	10,000
1/94	01/11/94	G-166 D	105,000		46,000		13,000

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – MAIN AQUIFER
WELL G 166D – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/18/90	G-166 D		49.7		
3/90	08/14/90	G-166 D	<1	<10	8	<1
4/90	11/05/90	G-166 D	<1	140	7	3
1/91	02/05/91	G-166 D	<1	40	3	11
2/91	04/24/91	G-166 D	<1	40	3	2
3/91	08/28/91	G-166 D	<5	70	1	4
4/91	11/18/91	G-166 D	<1	70	<1	2
1/92	02/25/92	G-166 D	<1	<100	<5	<10
2/92	05/05/92	G-166 D	<1	<100	<5	<10
3/92	08/14/92	G-166 D	<1	<100	<5	<10
4/92	10/27/92	G-166 D	<1	<100	<5	<10
1/93	02/15/93	G-166 D	<1	<100	<5	<10
2/93	05/14/93	G-166 D	<1	<100	<5	<10
3/93	07/28/93	G-166 D	<1	<200	<10	<10
4/93	10/06/93	G-166 D	<1	<200	<10	<10
1/94	01/11/94	G-166 D	<5	<200	<10	<10

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – MAIN AQUIFER
WELL G 166D – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/18/90	G-166 D				
3/90	08/14/90	G-166 D	20	<0.1	<1	<1
4/90	11/05/90	G-166 D	50	<0.1	<1	4
1/91	02/05/91	G-166 D	30	0.2	<1	1
2/91	04/24/91	G-166 D	40	<0.1	<1	1
3/91	08/28/91	G-166 D	<10	<0.2	<5	3
4/91	11/18/91	G-166 D	<10	<0.2	<1	3
1/92	02/25/92	G-166 D	10	<0.2	<2	<10
2/92	05/05/92	G-166 D	<10	<0.2	<2	<10
3/92	08/14/92	G-166 D	24	0.2	<2	<10
4/92	10/27/92	G-166 D	<5	0.3	<2	<10
1/93	02/15/93	G-166 D	<5	<0.2	<2	<10
2/93	05/14/93	G-166 D	<5	<0.2	<2	<10
3/93	07/28/93	G-166 D	<5	<0.2	<2	<10
4/93	10/06/93	G-166 D	<5	<0.2	<2	<10
1/94	01/11/94	G-166 D	<5	<0.2	<5	<10

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – MAIN AQUIFER
WELL G 161D – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/24/90	G-161 D			3.2	
1/91	02/14/91	G-161 D	7.52	419	<1	<0.01
			7.52	425	<1	<0.01
			7.52	430	<1	<0.01
			7.51	420	<1	<0.01
4/91	11/26/91	G-161 D	7.09	422	13	<0.01
			7.11	422	13	<0.01
			7.12	422	12	<0.01
			7.12	422	12	<0.01
1/92	02/28/92	G-161 D	7.32	410	2	<0.01
			7.33	411	2	<0.01
			7.32	410	2	<0.01
			7.32	407	2	<0.01
2/92	05/15/92	G-161 D	7.69	472	<1	<0.01
			7.66	480	<1	<0.01
			7.62	477	<1	<0.01
			7.64	481	<1	<0.01
3/92	08/17/92	G-161 D	7.4	432	<1	<0.01
			7.33	438	<1	<0.01
			7.41	428	<1	<0.01
			7.27	430	<1	<0.01
4/92	10/28/92	G-161 D	6.82	454	<1	<0.01
			6.12	448	<1	<0.01
			6.89	454	<1	<0.01
			6.22	449	<1	<0.01
1/93	02/12/93	G-161 D	7.1	353	<1	<0.01
			7.08	352	<1	<0.01
			7.06	350	<1	<0.01
			7.1	347	<1	<0.01
2/93	05/17/93	G-161 D	7.2	480	<1	<0.01
			7.18	481	<1	<0.01
			7.19	477	<1	<0.01
			7.22	478	<1	<0.01
3/93	08/06/93	G-161 D	6.34	543	<1	<0.01
			6.61	538	<1	<0.01
			6.66	539	<1	<0.01
			6.73	537	<1	<0.01
4/93	10/11/93	G-161 D	7.49	579	<1	<0.01
			7.49	578	<1	<0.01
			7.52	576	<1	<0.01
			7.52	575	<1	<0.01
*1/94	01/11/94	G-161 D	7.50	415	<1	<0.01
			7.55	430	<1	<0.01
			7.56	428	<1	<0.01
			7.53	410	<1	<0.01

*REPLACEMENT WELL

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT - MAIN AQUIFER
WELL G 161D - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/24/90	G-161 D		79			352	
1/91	02/14/91	G-161 D	306	230	6		294	32.6
4/91	11/26/91	G-161 D	338		4	<10	352	30
1/92	02/28/92	G-161 D	432		6	<2	352	35
2/92	05/15/92	G-161 D	320		6	<2	300	48
3/92	08/17/92	G-161 D	310		8	<2	376	51
4/92	10/28/92	G-161 D	284		8	<2	352	46
1/93	02/12/93	G-161 D	294		10	11	368	46
2/93	05/17/93	G-161 D	296		6	<2	344	45
3/93	08/06/93	G-161 D	296		8	3	390	62
4/93	10/11/93	G-161 D	302		8	<5	400	57
*1/94	01/11/94	R-161 D	306		8	<5	335	45
*REPLACEMENT WELL								

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT - MAIN AQUIFER
WELL G 161D - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/24/90	G-161 D	61,200	934	28,100	57.1	5,290
1/91	02/14/91	G-161 D	66,900	810	34,100	59	7,420
4/91	11/26/91	G-161 D	89,400	1,310	34,700	64	6,330
1/92	02/28/92	G-161 D	75,200		34,800		8,700
2/92	05/15/92	G-161 D	74,200		30,800		3,800
3/92	08/17/92	G-161 D	87,000		30,000		5,200
4/92	10/28/92	G-161 D	82,100	1,370	35,200	70	6,500
1/93	02/12/93	G-161 D	87,000		35,000		35,800
2/93	05/17/93	G-161 D	79,100		36,900		6,100
3/93	08/06/93	G-161 D	70,500		34,900		6,700
4/93	10/11/93	G-161 D	87,000	1,640	36,000	70	5,000
*1/94	01/11/94	R-161 D	89,000		36,000		7,000

*REPLACEMENT WELL

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – MAIN AQUIFER
WELL G 161D – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/24/90	G-161 D				
1/91	02/14/91	G-161 D	<10	<0.1	<5	3
4/91	11/26/91	G-161 D	20	<0.2	<1	1
1/92	02/28/92	G-161 D				
2/92	05/15/92	G-161 D				
3/92	08/17/92	G-161 D				
4/92	10/28/92	G-161 D	<5	<0.2	<2	<10
1/93	02/12/93	G-161 D				
2/93	05/17/93	G-161 D				
3/93	08/06/93	G-161 D				
4/93	10/11/93	G-161 D	<5	<0.2	<2	<10
*1/94	01/11/94	R-161 D				
*REPLACEMENT WELL						

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – MAIN AQUIFER
WELL G 161D – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/24/90	G-161 D		48.2		
1/91	02/14/91	G-161 D	1	80	1	<1
4/91	11/26/91	G-161 D	<2	<10	5	2
1/92	02/28/92	G-161 D				
2/92	05/15/92	G-161 D				
3/92	08/17/92	G-161 D				
4/92	10/28/92	G-161 D	<1	<100	<5	<10
1/93	02/12/93	G-161 D				
2/93	05/17/93	G-161 D				
3/93	08/06/93	G-161 D				
4/93	10/11/93	G-161 D	1	<200	<10	<20
*1/94	01/11/94	R-161 D				

*REPLACEMENT WELL

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – MAIN AQUIFER
WELL G 164D – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
4/90	11/20/90	G-164 D	7.28	560	6	<0.01
			7.31	540	5	<0.01
			7.27	561	5	<0.01
			7.24	553	5	<0.01
1/91	02/01/91	G-164 D	7.52	510	<1	<0.01
			7.53	505	<1	<0.01
			7.53	520	<1	<0.01
			7.53	530	<1	<0.01
2/91	04/09/91	G-164 D	7.45	515	2	0.08
			7.44	510	2	0.06
			7.44	500	2	0.05
			7.44	550	2	0.05
3/91	08/15/91	G-164 D	7.52	500	<1	<0.01
			7.54	510	<1	<0.01
			7.55	505	<1	<0.01
			7.49	500	<1	<0.01
4/91	11/06/91	G-164 D	7.11	460	2	
			7.1	460	1	
			7.12	460	1	
			7.12	460	<1	
1/92	02/14/92	G-164 D	7.88	500	1	
			7.92	502	1	
			7.94	500	1	
			7.91	500	1	
2/92	04/20/92	G-164 D	7.64	551	8	
			7.51	548	8	
			7.55	550	8	
			7.58	552	8	
3/92	08/10/92	G-164 D	7.24	351	<1	
			6.93	350	<1	
			7.37	344	<1	
			7.05	356	<1	
4/92	10/15/92	G-164 D	6.63	491	<1	
			6.61	487	<1	
			7.05	483	<1	
			6.94	478	<1	
1/93	02/01/93	G-164 D	6.82	503	<1	
			6.81	503	<1	
			6.88	500	<1	
			6.91	498	<1	
2/93	05/12/93	G-164 D	7.3	560	<1	
			7.29	554	<1	
			7.29	563	<1	
			7.33	557	<1	
3/93	07/28/93	G-164 D	6.96	523	2.05	
			6.93	535	2.05	
			6.92	535	2.05	
			6.94	536	2.05	
4/93	10/01/93	G-164 D	7.08	946	2.1	
			7.09	943	2.1	
			7.09	942	2.1	
			7.07	943	2.1	
1/94	01/03/94	G-164 D	6.78	1150	1.5	
			6.86	1187	1.5	
			6.84	1260	1.5	
			6.83	1260	1.5	

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – MAIN AQUIFER
WELL G 164D – DATA POOL**

Quarter	Date	Well	Alkalinity CaCO ₃ mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
4/90	11/20/90	G-164 D	346	40	38	<2	488	70
1/91	02/01/91	G-164 D	326	240	18	<1	393	37
2/91	04/09/91	G-164 D	316	120	18	6	517	51.2
3/91	08/15/91	G-164 D	308	100	18		456	33
4/91	11/06/91	G-164 D	368		20		456	47
1/92	08/10/92	G-164 D	316		<5	<2	388	61
2/92	02/14/92	G-164 D	378		22	<2	408	57
3/92	04/20/92	G-164 D	370		14	<2	396	69
4/92	10/15/92	G-164 D	306		20	<2	416	74
1/93	02/01/93	G-164 D	314		30	<2	484	80
2/93	05/12/93	G-164 D	324		42	3	540	87
3/93	07/28/93	G-164 D	344		80	<2	590	114
4/93	10/01/93	G-164 D	356		132	<5	715	118
1/94	01/03/94	G-164 D	358		124	<5	655	112

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT - MAIN AQUIFER
WELL G 164D - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
4/90	11/20/90	G-164 D	64,500	<10	40,800	92	22,200
1/91	02/01/91	G-164 D	68,000	510	42,000	167	11,000
2/91	04/09/91	G-164 D	82,000	10	55,000	109	8,700
3/91	08/15/91	G-164 D	83,500	80	43,600	95	12,900
4/91	11/06/91	G-164 D					
1/92	02/14/92	G-164 D					
2/92	04/20/92	G-164 D					
3/92	08/10/92	G-164 D					
4/92	10/15/92	G-164 D					
1/93	02/01/93	G-164 D					
2/93	05/12/93	G-164 D					
3/93	07/28/93	G-164 D					
4/93	10/01/93	G-164 D					
1/94	01/03/94	G-164 D					

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – MAIN AQUIFER
WELL G 164D – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
4/90	11/20/90	G-164 D	<1	320	<1	<1
1/91	02/01/91	G-164 D	<1	30	3	3
2/91	04/09/91	G-164 D	<1	50	2	2
3/91	08/15/91	G-164 D	<5	50	<1	<1
4/91	11/06/91	G-164 D	<1	50	3	2
1/92	02/14/92	G-164 D	<1	<100	<5	<10
2/92	04/20/92	G-164 D	<1	<100	5	<10
3/92	08/10/92	G-164 D	<1	<100	7	<10
4/92	10/15/92	G-164 D	<1	<100	<5	<10
1/93	02/01/93	G-164 D	<1	<100	<5	<10
2/93	05/12/93	G-164 D	<1	<100	<5	<10
3/93	07/28/93	G-164 D	<1	<200	<10	<20
4/93	10/01/93	G-164 D	<1	<200	<10	<20
1/94	01/03/94	G-164 D	<5	<200	<10	<20

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – MAIN AQUIFER
WELL G 164D – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
4/90	11/20/90	G-164 D	<10	<0.1	<1	<1
1/91	02/01/91	G-164 D	20	0.1	<1	<1
2/91	04/09/91	G-164 D	30	<0.1	<1	2
3/91	08/15/91	G-164 D	20	<0.2	<5	1
4/91	11/06/91	G-164 D	10	<0.2	<1	<1
1/92	02/14/92	G-164 D	<10	<0.2	<2	<10
2/92	04/20/92	G-164 D	<5	<0.4	<2	<10
3/92	08/10/92	G-164 D	<5	<0.4	<2	<10
4/92	10/15/92	G-164 D	<5	0.2	<2	<10
1/93	02/01/93	G-164 D	<5	<0.2	<2	<10
2/93	05/12/93	G-164 D	<5	<0.2	<2	<10
3/93	07/28/93	G-164 D	<5	<0.2	<2	<10
4/93	10/01/93	G-164 D	<5	<0.2	<2	<10
1/94	01/03/94	G-164 D	<5	<0.2	<5	<10

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – MAIN AQUIFER
WELL G 155D – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/22/90	G-155 D			0	
3/90	08/16/90	G-155 D	7.28	450	3	<0.01
			7.31	448	2	0.011
			7.29	451	2	<0.01
			7.27	445	2	<0.01
2/91	04/17/91	G-155 D	7.74	417	<1	<0.01
			7.83	410	<1	<0.01
			7.8	425	<1	<0.01
			7.78	418	<1	<0.01
1/92	02/26/92	G-155 D	8.01	430	<1	<0.01
			8.04	428	<1	<0.01
			7.99	425	<1	<0.01
			8	429	<1	<0.01
2/92	05/14/92	G-155 D	7.57	317	<1	<0.01
			7.6	321	<1	<0.01
			7.59	321	<1	<0.01
			7.56	335	<1	<0.01
3/92	08/13/92	G-155 D	7.26	401	<1	<0.01
			7.12	407	<1	<0.01
			7.27	403	<1	<0.01
			7.08	406	<1	<0.01
4/92	10/20/92	G-155 D	7.3	458	<1	<0.01
			7.23	456	<1	<0.01
			7.36	452	<1	<0.01
			7.25	454	<1	<0.01
1/93	02/09/93	G-155 D	7.13	368	<1	<0.01
			7.15	366	<1	<0.01
			7.11	366	<1	<0.01
			7.15	367	<1	<0.01
2/93	05/17/93	G-155 D	6.66	372	<1	<0.01
			6.8	369	<1	<0.01
			6.91	371	<1	<0.01
			6.89	371	<1	<0.01
3/93	08/06/93	G-155 D	7.35	534	<1	<0.01
			7.42	507	<1	<0.01
			7.4	496	<1	<0.01
			7.4	542	<1	<0.01
4/93	10/07/93	G-155 D	8.13	546	<1	0.04
			8.2	542	<1	0.04
			8.19	542	<1	0.04
			8.16	546	<1	0.04
*1/94	01/07/94	R-155 D	7.06	464	<1	<0.01
			7.06	492	<1	<0.01
			7.05	469	<1	<0.01
			7.05	460	<1	<0.01

*REPLACEMENT WELL

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - MAIN AQUIFER
WELL G 155D - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO ₃ mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Dis-mg/l	Sulfate Dis-mg/l
2/90	05/22/90	G-155 D				0		
3/90	08/16/90	G-155 D	370	70	4	1	452	27
2/91	04/17/91	G-155 D	310	80	4	<2	306	23.6
1/92	02/26/92	G-155 D	544		<5	<2	348	27
2/92	05/14/92	G-155 D	332		<5	2	352	33
3/92	08/13/92	G-155 D	358		<5	<2	360	31
4/92	10/20/92	G-155 D	310		6	<2	360	27
1/93	02/09/93	G-155 D	302		<5	14	372	23
2/93	05/17/93	G-155 D	308		<5	<2	344	25
3/93	08/06/93	G-155 D	300		<5	<2	385	22
4/93	10/07/93	G-155 D	312		<5	<5	375	17
*1/94	01/07/94	R-155 D	306		<5	<5	325	19

*REPLACEMENT WELL

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - MAIN AQUIFER
WELL G 155D - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/22/90	G-155 D	55,000	576	25,900	44.8	5,250
3/90	08/18/90	G-155 D	78,000	130	31,800	62	6,800
2/91	04/17/91	G-155 D	98,000	610	43,000	49	15,000
1/92	02/26/92	G-155 D	76,500		38,300		7,000
2/92	05/14/92	G-155 D	70,300		30,000		5,100
3/92	08/13/92	G-155 D	87,000		29,000		7,000
4/92	10/20/92	G-155 D	83,600	1,350	34,800	50	8,600
1/93	02/09/93	G-155 D	80,700		33,100		6,800
2/93	05/17/93	G-155 D	74,100		34,400		6,300
3/93	08/06/93	G-155 D	67,900		34,000		7,900
4/93	10/07/93	G-155 D	82,000	1,410	35,000	52	7,000
*1/94	01/07/94	R-155 D	85,000		33,000		8,000
*REPLACEMENT WELL							

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – MAIN AQUIFER
WELL G 155D – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/22/90	G-155 D				
3/90	08/16/90	G-155 D	<1	<10	<1	<1
2/91	04/17/91	G-155 D	<1	50	<1	2
1/92	02/26/92	G-155 D				
2/92	05/14/92	G-155 D				
3/92	08/13/92	G-155 D				
4/92	10/20/92	G-155 D	<1	<100	<5	<10
1/93	02/09/93	G-155 D				
2/93	05/17/93	G-155 D				
3/93	08/06/93	G-155 D				
4/93	10/07/93	G-155 D	<1	<200	<10	<20
*1/94	01/07/94	R-155 D				

*REPLACEMENT WELL

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADE - MAIN AQUIFER
WELL G 155D - DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/22/90	G-155 D				
3/90	08/16/90	G-155 D	80	<0.1	1	5
2/91	04/17/91	G-155 D	40	<0.1	<1	1
1/92	02/26/92	G-155 D				
2/92	05/14/92	G-155 D				
3/92	08/13/92	G-155 D				
4/92	10/20/92	G-155 D	<5	0.2	<2	<10
1/93	02/09/93	G-155 D				
2/93	05/17/93	G-155 D				
3/93	08/06/93	G-155 D				
4/93	10/07/93	G-155 D	<5	<0.2	<2	<10
*1/94	01/07/94	R-155 D				
*REPLACEMENT WELL						

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADIENT – MAIN AQUIFER
WELL G 163I – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
3/90	08/13/90	G-163 I	7.37	480	3	<0.01
			7.43	480	3	<0.01
			7.31	450	3	<0.01
			7.47	470	3	<0.01
4/90	11/05/90	G-163 I	7.58	423	7	0.01
			7.52	421	7	
			7.49	422	6	
			7.45	420	7	
1/91	02/05/91	G-163 I	7.64	450	<1	<0.01
			7.64	448	<1	<0.01
			7.63	445	<1	<0.01
			7.63	446	<1	<0.01
2/91	04/24/91	G-163 I	7.03	425	<1	<0.01
			7	445	<1	<0.01
			7	440	<1	<0.01
			7.01	440	<0.01	<0.01

BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - MAIN AQUIFER
WELL G 163I - DATA POOL

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
3/90	08/13/90	G-163 I	356	140	8	5	572	46
4/90	11/05/90	G-163 I	296	10	8	4	388	42
1/91	02/05/91	G-163 I	292	100	6	16	380	41.3
2/91	04/24/91	G-163 I	300	110	8	<2	351	44.7

**BFI DAVIS JUNCTION LANDFILL
 DOWNGRAIENT - MAIN AQUIFER
 WELL G 163I - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
3/90	08/13/90	G-163 I	90,900	600	36,500	67	6,700
4/90	11/05/90	G-163 I	62,800	470	30,800	57	400
1/91	02/05/91	G-163 I	67,000	550	33,000	65	7,000
2/91	04/24/91	G-163 I	92,000	800	40,000	78	16,000

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT -- MAIN AQUIFER
WELL G 163I -- DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
3/90	08/13/90	G-163 I	<1	<10	3	<1
4/90	11/05/90	G-163 I	<1	160	7	3
1/91	02/05/91	G-163 I	1	40	2	14
2/91	04/24/91	G-163 I	<1	60	4	3

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
3/90	08/13/90	G-163 I	110	<0.1	<1	3
4/90	11/05/90	G-163 I	20	0.3	<1	4
1/91	02/05/91	G-163 I	50	0.3	<1	<1
2/91	04/24/91	G-163 I	10	<0.1	<1	1

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADIENT – MAIN AQUIFER
WELL G 167D – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/25/90	G-167 D			2.2	0
3/90	08/15/90	G-167 D	7.27	470	4	<0.01
			7.29	440	2	<0.01
			7.07	450	2	<0.01
4/90	11/12/90	G-167 D	7.28	470	2	<0.01
			7.27	435	6	<0.01
			7.29	445	4	<0.01
			7.26	449	4	<0.01
1/91	02/13/91	G-167 D	7.25	448	4	<0.01
			7.52	438	1	<0.01
			7.53	430	<1	<0.01
2/91	04/25/91	G-167 D	7.52	30	<1	<0.01
			7.52	427	1	<0.01
			7.35	443	<1	<0.01
			7.32	441	<1	<0.01
3/91	08/23/91	G-167 D	7.4	445	<1	<0.01
			7.34	440	<1	<0.01
			7.57	460	<1	<0.01
			7.5	458	<1	<0.01
4/91	11/12/91	G-167 D	7.53	450	2	<0.01
			7.47	460	1	<0.01
			7.21	425	2	<0.01
			7.18	430	2	<0.01
1/92	02/21/92	G-167 D	7.23	435	3	<0.01
			7.14	430	2	<0.01
			7.68	456	<1	<0.01
			7.62	450	<1	<0.01
2/92	05/15/92	G-167 D	7.65	462	<1	<0.01
			7.64	458	<1	<0.01
			7.73	390	<1	<0.01
			7.69	386	<1	<0.01
3/92	08/13/92	G-167 D	7.71	413	<1	<0.01
			7.67	383	<1	<0.01
			7.41	452	<1	<0.01
			7.19	456	<1	<0.01
4/92	10/30/92	G-167 D	7.39	448	<1	<0.01
			7.13	454	<1	<0.01
			6.36	452	<1	<0.01
			6.42	452	<1	<0.01
1/93	02/12/93	G-167 D	6.96	451	<1	<0.01
			6.79	450	<1	<0.01
			7.01	354	<1	<0.01
			7.02	355	<1	<0.01
2/93	05/17/93	G-167 D	7.01	355	<1	<0.01
			7.04	353	<1	<0.01
			7.01	378	<1	<0.01
			6.92	378	<1	<0.01
3/93	08/06/93	G-167 D	6.98	374	<1	<0.01
			7.1	376	<1	<0.01
			6.44	501	<1	<0.01
			6.89	483	<1	<0.01
4/93	10/11/93	G-167 D	6.95	475	<1	<0.01
			7.0	524	<1	<0.01
			7.05	581	<1	<0.01
			7.04	581	<1	<0.01
1/94	01/07/94	G-167 D	7.01	570	<1	<0.01
			7.0	570	<1	<0.01
			7.14	445	<1	<0.01
			7.11	440	<1	<0.01
			7.1	448	<1	<0.01
			7.11	429	<1	<0.01

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADIENT - MAIN AQUIFER
WELL G 167D - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO ₃ mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/25/90	G-167 D		0		0	1070	
3/90	08/15/90	G-167 D	328	90	6	<1	536	35
4/90	11/12/90	G-167 D	294	20	6	<2	524	20
1/91	02/13/91	G-167 D	310	180	4	<1	216	34
2/91	04/25/91	G-167 D	310	50	6	<2	414	32.9
3/91	08/28/91	G-167 D	304		6	<2	448	27
4/91	11/12/91	G-167 D	290		5		324	32
1/92	02/21/92	G-167 D	396		10	<2	348	31
2/92	05/15/92	G-167 D	334		8	<2	352	48
3/92	08/13/92	G-167 D	308		12	26	376	18
4/92	10/30/92	G-167 D	292		6	<2	340	43
1/93	02/12/93	G-167 D	294		6	14	372	44
2/93	05/17/93	G-167 D	300		8	5	340	43
3/93	08/06/93	G-167 D	294		8	<2	365	51
4/93	10/11/93	G-167 D	298		6	<5	395	52
1/94	01/07/94	G-167 D	298		6	<5	310	42

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADIANT - MAIN AQUIFER
WELL G 167D - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/25/90	G-167 D	57,300	730	26,500	43.7	4,630
3/90	08/15/90	G-167 D	87,300	990	34,900	66	6,600
4/90	11/12/90	G-167 D	66,500	640	33,600	61	5,100
1/91	02/13/91	G-167 D	67,900	810	352,00	58	7,420
2/91	04/25/91	G-167 D	85,000	560	40,000	55	15,000
3/91	08/23/91	G-167 D	65,400		31,900		6,460
4/91	11/12/91	G-167 D	85,300	860	30,000	59	9,500
1/92	02/21/92	G-167 D	83,300		35,600		5,980
2/92	05/15/92	G-167 D	82,600		36,200		4,200
3/92	08/13/92	G-167 D	89,000		30,000		6,100
4/92	10/30/92	G-167 D	75,000	1,380	34,000	60	5,200
1/93	02/12/93	G-167 D	83,900		33,000		5,700
2/93	05/17/93	G-167 D	80,100		37,300		5,500
3/93	08/06/93	G-167 D	68,700		34,800		6,700
4/93	10/11/93	G-167 D	84,000	1,610	37,000	69	5,000
1/94	01/07/94	G-167 D	84,000		35,000		6,000

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – MAIN AQUIFER
WELL G 167D – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/25/90	G-167 D		41.6		
3/90	08/15/90	G-167 D	<1	<10	6	<1
4/90	11/12/90	G-167 D	<1	220	5	3
1/91	02/13/91	G-167 D	<5	70	3	<1
2/91	04/25/91	G-167 D	<1	70	1	5
3/91	08/23/91	G-167 D				
4/91	11/12/91	G-167 D	<1	40	10	<1
1/92	02/21/92	G-167 D				
2/92	05/15/92	G-167 D				
3/92	08/13/92	G-167 D				
4/92	10/30/92	G-167 D	1	<100	<5	<10
1/93	02/12/93	G-167 D				
2/93	05/17/93	G-167 D				
3/93	08/06/93	G-167 D				
4/93	10/11/93	G-167 D	1	<200	<10	<20
1/94	01/07/94	G-167 D				

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – MAIN AQUIFER
WELL G 167D – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/25/90	G-167 D	3.6			
3/90	08/15/90	G-167 D	60	<0.7	<1	<1
4/90	11/12/90	G-167 D	10	0.4	<1	2
1/91	02/13/91	G-167 D	10	<0.1	<5	3
2/91	04/25/91	G-167 D	10	<0.1	<1	<1
3/91	08/23/91	G-167 D				
4/91	11/12/91	G-167 D	<10	<0.2	<1	<1
1/92	02/21/92	G-167 D				
2/92	05/15/92	G-167 D				
3/92	08/13/92	G-167 D				
4/92	10/30/92	G-167 D	<5	0.4	<2	<10
1/93	02/12/93	G-167 D				
2/93	05/17/93	G-167 D				
3/93	08/06/93	G-167 D				
4/93	10/11/93	G-167 D	<5	<0.2	<2	<10
1/94	01/07/94	G-167 D				

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – MAIN AQUIFER
WELL G 169D – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	09/01/90	G-169 D			0	0
3/90	09/16/90	G-169 D	7.47	476	3	<0.01
			7.47	482	2	0.012
			7.47	471	3	<0.01
			7.46	481	2	<0.01
4/90	11/09/90	G-169 D	7.62	435	8	<0.01
			7.58	440	8	<0.01
			7.55	437	9	<0.01
			7.57	441	9	<0.01
1/91	02/13/91	G-169 D	7.52	425	<1	<0.01
			7.52	420	<1	<0.01
			7.52	430	1	<0.01
			7.5	425	<1	<0.01
2/91	04/25/91	G-169 D	7.34	461	<1	<0.01
			7.37	463	<1	<0.01
			7.35	465	<1	<0.01
			7.33	465	<1	<0.01
3/91	08/26/91	G-169 D	7.49	465	<1	<0.01
			7.51	470	<1	<0.01
			7.53	470	1	<0.01
			7.48	460	1	<0.01
4/91	11/13/91	G-169 D	7.69	437	1	<0.02
			7.58	440	1	<0.02
			7.62	442	1	<0.02
			7.67	445	1	<0.02
1/92	02/21/92	G-169 D	8.22	417	<1	<0.01
			8.27	420	<1	<0.01
			8.29	418	<1	<0.01
			8.33	420	<1	<0.01
2/92	05/14/92	G-169 D	7.66	332	<1	<0.01
			7.74	336	<1	<0.01
			7.73	338	<1	<0.01
			7.67	338	<1	<0.01
3/92	08/13/92	G-169 D	7.49	434	<1	<0.01
			7.19	428	<1	<0.01
			7.32	424	<1	<0.01
			7.1	425	<1	<0.01
4/92	10/15/92	G-169 D	6.69	409	<1	<0.01
			6.61	409	<1	<0.01
			6.98	411	<1	<0.01
			6.88	411	<1	<0.01
1/93	02/10/93	G-169 D	6.88	365	<1	<0.01
			6.83	364	<1	<0.01
			6.83	362	<1	<0.01
			6.93	360	<1	<0.01
2/93	05/17/93	G-169 D	6.84	382	<1	<0.01
			7.07	377	<1	<0.01
			7.08	378	<1	<0.01
			7.23	379	<1	<0.01
3/93	08/06/93	G-169 D	6.55	490	<1	<0.01
			6.58	495	<1	<0.01
			6.68	478	<1	<0.01
			6.71	481	<1	<0.01
4/93	10/07/93	G-169 D	8.12	527	1.14	<0.01
			8.25	523	1.14	<0.01
			8.06	535	1.14	<0.01
			8.09	512	1.14	<0.01
1/94	01/07/94	G-169 D	7.59	454	<0.01	<10
			7.55	480	<0.01	<10
			7.58	477	<0.01	<10
			7.56	447	<0.01	<10

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADE - MAIN AQUIFER
WELL G 169D - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO ₃ mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/01/90	G-169 D		92		0	355	
3/90	08/16/90	G-169 D	380	90	2	<1	408	24
4/90	11/09/90	G-169 D	322	50	2	<1	504	25
1/91	02/13/91	G-169 D	326	200	2	23	289	19.7
2/91	04/25/91	G-169 D	316	80	4	<2	458	24.5
3/91	08/26/91	G-169 D	314		2	4	388	22
4/91	11/13/91	G-169 D	310		<2		344	40
1/92	02/21/92	G-169 D	358		10	<2	324	27
2/92	05/14/92	G-169 D	326		6	<2	324	36
3/92	08/13/92	G-169 D	328		<5	<2	308	33
4/92	10/15/92	G-169 D	312		6	<2	332	32
1/93	02/10/93	G-169 D	308		<5	30	368	26
2/93	05/17/93	G-169 D	312		<5	3	332	29
3/93	08/08/93	G-169 D	312		<5	<2	400	21
4/93	10/07/93	G-169 D	300		6	<5	395	30
1/94	01/07/94	G-169 D	306		<5	<5	320	36

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - MAIN AQUIFER
WELL G 169D - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	06/01/90	G-169 D	64,900	972	30,100	42.3	6,250
3/90	08/16/90	G-169 D	77,800	900	32,500	52	9,900
4/90	11/09/90	G-169 D	68,100	950	33,000	50	6,300
1/91	02/13/91	G-169 D	65,800	770	34,200	41	9,960
2/91	04/25/91	G-169 D	84,000	700	35,000	45	17,000
3/91	08/26/91	G-169 D	62,700		31,700		8,520
4/91	11/13/91	G-169 D	85,000	1,300	30,000	42	10,600
1/92	02/21/92	G-169 D	76,200		38,700		7,270
2/92	05/14/92	G-169 D	71,100		29,100		11,300
3/92	08/13/92	G-169 D	86,000		30,000		7,400
4/92	10/15/92	G-169 D	83,500	1,410	33,400	39	8,300
1/93	02/10/93	G-169 D	81,500		32,300		10,700
2/93	05/17/93	G-169 D	73,500		35,500		7,600
3/93	08/06/93	G-169 D	69,300		34,200		8,200
4/93	10/07/93	G-169 D	83,000	1,430	35,000	54	6,000
1/94	01/07/94	G-169 D	87,000		35,000		9,000

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – MAIN AQUIFER
WELL G 169D – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	06/01/90	G-169 D		54.9		
3/90	08/16/90	G-169 D	<1	<10	5	8
4/90	11/09/90	G-169 D	1	110	<1	2
1/91	02/13/91	G-169 D	2	40	3	<1
2/91	04/25/91	G-169 D	<1	80	2	2
3/91	08/26/91	G-169 D				
4/91	11/13/91	G-169 D	<2	70	<1	<1
1/92	02/21/92	G-169 D				
2/92	05/14/92	G-169 D				
3/92	08/13/92	G-169 D				
4/92	10/15/92	G-169 D	<1	<100	<5	<10
1/93	02/10/93	G-169 D				
2/93	05/17/93	G-169 D				
3/93	08/06/93	G-169 D				
4/93	10/07/93	G-169 D	<1	<200	<10	<20
1/94	01/07/94	G-169 D				

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – MAIN AQUIFER
WELL G 169D – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	06/01/90	G-169 D	2.8			
3/90	08/16/90	G-169 D	80	0.7	<1	11
4/90	11/09/90	G-169 D	20	0.7	<1	2
1/91	02/13/91	G-169 D	<10	<0.1	<5	2
2/91	04/25/91	G-169 D	20	<0.1	<1	<1
3/91	08/26/91	G-169 D				
4/91	11/13/91	G-169 D	<10	<0.2	<1	1
1/92	02/21/92	G-169 D				
2/92	05/14/92	G-169 D				
3/92	08/13/92	G-169 D				
4/92	10/15/92	G-169 D	<5	<0.2	<2	<10
1/93	02/10/93	G-169 D				
2/93	05/17/93	G-169 D				
3/93	08/06/93	G-169 D				
4/93	10/07/93	G-169 D	<5	<0.2	<2	<10
1/94	01/07/94	G-169 D				

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – MAIN AQUIFER
WELL G 170D – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
4/90	11/08/90	G-170 D	7.37	421	8	<0.01
			7.36	420	9	<0.01
			7.34	425	9	<0.01
			7.39	427	10	<0.01
1/91	02/08/91	G-170 D	7.58	445	<1	<0.01
			7.58	438	<1	<0.01
			7.59	442	<1	<0.01
			7.58	440	<1	<0.01
2/91	04/19/91	G-170 D	7.42	447	1	<0.01
			7.54	442	1	<0.01
			7.58	450	<1	<0.01
			7.48	448	<1	<0.01
3/91	08/20/91	G-170 D	7.57	500	1	<0.01
			7.5	510	2	<0.01
			7.49	500	2	<0.01
			7.53	490	2	<0.01
4/91	11/21/91	G-170 D	7.3	441	1	
			7.35	450	1	
			7.38	447	1	
			7.34	443	1	
1/92	02/12/92	G-170 D	7.84	445	2	
			7.79	449	2	
			7.86	450	2	
			7.81	448	2	
2/92	04/28/92	G-170 D	7.42	461	1.7	
			7.38	462	1.5	
			7.44	468	1.4	
			7.37	465	1.4	
3/92	08/07/92	G-170 D	6.37	480	<1	
			6.63	476	<1	
			7.45	478	<1	
			7.14	475	<1	
4/92	10/05/92	G-170 D	6.39	446	<1	
			6.45	445	<1	
			6.19	442	<1	
			6.43	449	<1	
1/93	02/02/93	G-170 D	6.93	408	<1	
			6.94	408	<1	
			6.96	406	<1	
			6.99	404	<1	
2/93	04/27/93	G-170 D	7.13	486	<1	
			7.2	483	<1	
			7.23	482	<1	
			7.25	486	<1	
3/93	07/27/93	G-170 D	6.63	402	<1	
			6.65	392	<1	
			6.64	392	<1	
			6.62	395	<1	
4/93	10/01/93	G-170 D	8.01	548	1.2	
			7.94	542	1.2	
			7.91	542	1.2	
			7.89	542	1.2	
1/94	01/06/94	G-170 D	7.51	543	<1	
			7.51	545	<1	
			7.51	534	<1	
			7.53	534	<1	

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - MAIN AQUIFER
WELL G 170D - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
4/90	11/08/90	G-170 D	334	30	<1	<1	368	1
1/91	02/08/91	G-170 D	340	170	2	6	455	13.1
2/91	04/19/91	G-170 D	328	90	4	3	175	10.7
3/91	08/20/91	G-170 D	324	130	4	2	372	14
4/91	11/21/91	G-170 D	320		<2		357	7
1/92	02/12/92	G-170 D	356		2	<2	344	22
2/92	04/28/92	G-170 D	396		<5	<2	364	22
3/92	08/07/92	G-170 D	326		<5	<2	368	26
4/92	10/05/92	G-170 D	320		<5	3	336	28
1/93	02/02/93	G-170 D	310		<5	<2	344	18
2/93	04/27/93	G-170 D	312		<5	<2	376	15
3/93	07/27/93	G-170 D	320		<5	5	330	15
4/93	10/01/93	G-170 D	306		<5	<5	335	13
1/94	01/06/94	G-170 D	314		<5	<5	290	15

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - MAIN AQUIFER
WELL G 170D - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
4/90	11/08/90	G-170 D	64,600	670	31,500	60	10,800
1/91	02/08/91	G-170 D	58,000	610	30,000	50	11,000
2/91	04/19/91	G-170 D	82,000	790	39,000	49	18,000
3/91	08/20/91	G-170 D	71,900	520	37,200	11	14,400
4/91	11/21/91	G-170 D					
1/92	02/12/92	G-170 D					
2/92	04/28/92	G-170 D					
3/92	08/07/92	G-170 D					
4/92	10/05/92	G-170 D					
1/93	02/02/93	G-170 D					
2/93	04/27/93	G-170 D					
3/93	07/27/93	G-170 D					
4/93	10/01/93	G-170 D					
1/94	01/06/94	G-170 D					

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – MAIN AQUIFER
WELL G 170D – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
4/90	11/08/90	G-170 D	<1	90	<1	5
1/91	02/08/91	G-170 D	<1	60	3	8
2/91	04/19/91	G-170 D	<1	70	1	4
3/91	08/20/91	G-170 D	<5	100	2	<1
4/91	11/21/91	G-170 D	<1	130	1	<1
1/92	02/12/92	G-170 D	<1	<100	<5	<10
2/92	04/28/92	G-170 D	<1	<100	<5	<10
3/92	08/07/92	G-170 D	2	<100	<5	<10
4/92	10/05/92	G-170 D	<1	<100	<5	<10
1/93	02/02/93	G-170 D	<1	<100	<5	<10
2/93	04/27/93	G-170 D	<1	<100	<5	21
3/93	07/27/93	G-170 D	<1	<200	<10	<10
4/93	10/01/93	G-170 D	<1	<200	<10	<20
1/94	01/06/94	G-170 D	<5	<200	<10	<20

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – MAIN AQUIFER
WELL G 170D – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
4/90	11/08/90	G-170 D	20	0.4	<1	2
1/91	02/08/91	G-170 D	30	<0.1	<1	1
2/91	04/19/91	G-170 D	30	<0.1	<1	2
3/91	08/20/91	G-170 D	60	0.4	<5	4
4/91	11/21/91	G-170 D	50	<0.2	<1	2
1/92	02/12/92	G-170 D	<10	<0.2	<2	<10
2/92	04/28/92	G-170 D	<5	<0.2	<2	<10
3/92	08/07/92	G-170 D	<5	<0.4	<2	<10
4/92	10/05/92	G-170 D	<5	<0.2	<2	<10
1/93	02/02/93	G-170 D	<5	<0.2	<2	<10
2/93	04/27/93	G-170 D	52	<0.2	<2	<10
3/93	07/27/93	G-170 D	<5	<0.2	<2	<10
4/93	10/01/93	G-170 D	<5	<0.2	<2	<10
1/94	01/06/94	G-170 D	<5	<0.2	<5	<10

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

APPENDIX D

POOLED DATA: SURFICIAL

BFI DAVIS JUNCTION LANDFILL UPGRADIENT - SURFICIAL WELL G 166S - DATA POOL						
Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/17/90				1.4	0
3/90	08/14/90	G-166 S	7.41	710	2	0.036
			7.4	720	2	<0.01
			7.39	720	1	0.027
4/90	11/06/90	G-166 S	7.41	730	2	0.03
			6.93	620	5	<0.01
			6.89	625	5	<0.01
			6.94	621	6	<0.01
1/91	02/04/91	G-166 S	6.95	620	5	<0.01
			7.46	680	<1	0.01
			7.43	690	<1	0.01
			7.45	680	<1	0.02
2/91	04/16/91	G-166 S	7.45	700	<1	0.02
			7.41	810	<1	0.02
			7.39	800	1	0.01
3/91	08/19/91	G-166 S	7.34	795	<1	0.02
			7.29	810	1	0.03
			7.47	910	1	<0.01
			7.48	920	1	<0.01
4/91	11/14/91	G-166 S	7.43	900	3	<0.01
			7.5	900	3	<0.01
			7.17	900	1	<0.01
			7.27	905	1	<0.01
1/92	02/25/92	G-166 S	7.22	902	1	<0.01
			7.2	910	1	0.03
			7.53	800	1	<0.01
			7.52	799	1	<0.01
2/92	05/05/92	G-166 S	7.51	795	1	<0.01
			7.52	799	1	<0.01
			7.49	625	1.3	<0.01
			7.36	631	1.4	<0.01
3/92	08/07/92	G-166 S	7.42	639	1.4	<0.01
			7.46	644	1.4	<0.01
			6.55	638	<1	<0.01
			6.58	632	<1	<0.01
4/92	10/29/92	G-166 S	7.15	632	<1	<0.01
			6.89	849	<1	<0.01
			6.41	783	<1	<0.01
			6.46	782	<1	<0.01
1/93	02/02/93	G-166 S	6.8	781	<1	<0.01
			6.68	769	<1	<0.01
			7.03	626	1.24	<0.01
			7.04	625	1.24	<0.01
2/93	05/14/93	G-166 S	6.97	622	1.24	<0.01
			6.97	621	1.24	<0.01
			7.21	621	2.56	<0.01
			7.18	620	2.56	<0.01
3/93	07/27/93	G-166 S	7.15	622	2.56	<0.01
			6.96	605	1.46	<0.01
			6.92	604	1.46	<0.01
			6.93	604	1.46	<0.01
4/93	10/05/93	G-166 S	6.93	610	1.46	<0.01
			8.03	888	1.02	<0.01
			8.00	887	1.02	<0.01
			7.98	885	1.02	<0.01
1/94	02/14/94	G-166 S	7.97	887	1.02	<0.01
			6.66	766	1.0	<0.01
			6.68	769	1.0	<0.01
			6.66	785	1.0	<0.01
			6.65	790	1.0	<0.01

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - SURFICIAL
WELL G 166S - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO ₃ mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/17/90	G-166 S		35		0	1080	
3/90	08/14/90	G-166 S	340	140	124	<2	852	74
4/90	11/06/90	G-166 S		30	74	5	792	86
1/91	02/04/91	G-166 S	266	120	112	<1	696	91
2/91	04/16/91	G-166 S	298	100	152	3	746	60
3/91	08/19/91	G-166 S	314	<10	170		728	54
4/91	11/14/91	G-166 S	310		210		676	12
1/92	02/25/92	G-166 S	302	100	230	<2	647	57
2/92	05/05/92	G-166 S	296	110	142	<2	658	80
3/92	08/07/92	G-166 S	290	<100	134	<2	700	76
4/92	10/29/92	G-166 S	354	230	126	<2	632	66
1/93	02/02/93	G-166 S	344	<100	106	<2	636	83
2/93	05/14/93	G-166 S	368		94	<2	580	99
3/93	07/27/93	G-166 S	262		160	<2	640	96
4/93	10/05/93	G-166 S	262		160	<5	635	82
1/94	02/14/94	G-166 S	306		138	<5	590	85

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - SURFICIAL
WELL G 166S - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/17/90	G-166 S	74500	120	32700	25.9	46700
3/90	08/14/90	G-166 S	99200	<100	38100	48	61000
4/90	11/06/90	G-166 S	78000	500	35700	38	41200
1/91	02/04/91	G-166 S	90000	400	47000	31	34000
2/91	04/16/91	G-166 S	131000	900	57000	30	57000
3/91	08/19/91	G-166 S	111000	600	51300	40	79000
4/91	11/14/91	G-166 S	126000	100	41000	36	69400
1/92	02/25/92	G-166 S	119000	150	50200	32	58700
2/92	05/05/92	G-166 S	111000	160	43500	35	62800
3/92	08/07/92	G-166 S	118000	<50	38000	20	61000
4/92	10/29/92	G-166 S	106000	<50	44300	28	62100
1/93	02/02/93	G-166 S	102000	<50	41700	33	67000
2/93	05/14/93	G-166 S	104000		40000		51000
3/93	07/27/93	G-166 S	111000		42700		53000
4/93	10/05/93	G-166 S	117000	<50	54000	32	47000
1/94	02/14/94	G-166 S	111000		44000		65000

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – SURFICIAL
WELL G 166S – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/17/90	G-166 S		47.7		
3/90	08/14/90	G-166 S	<1	<10	6	<1
4/90	11/06/90	G-166 S	<1	120	8	7
1/91	02/04/91	G-166 S	<1	50	2	4
2/91	04/16/91	G-166 S	<1	20	<1	<1
3/91	08/19/91	G-166 S	<5	100	2	1
4/91	11/14/91	G-166 S	32	60	5	<1
1/92	02/25/92	G-166 S	<1	<100	<5	<10
2/92	05/05/92	G-166 S	<1	100	<5	<10
3/92	08/07/92	G-166 S	<1	<100	<5	<10
4/92	10/29/92	G-166 S	<1	<100	<5	<10
1/93	02/02/93	G-166 S	<1	<100	<5	<10
2/93	05/14/93	G-166 S	<1	<100	6	<10
3/93	07/27/93	G-166 S	<1	<200	<10	<10
4/93	10/05/93	G-166 S	<1	<200	<10	<20
1/94	02/14/94	G-166 S	<5	<200	<10	<20

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – SURFICIAL
WELL G 166S – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/17/90	G-166 S				
3/90	08/14/90	G-166 S	<10	0.7	<1	<1
4/90	11/06/90	G-166 S	40	<0.1	<1	4
1/91	02/04/91	G-166 S	50	0.2	<1	1
2/91	04/16/91	G-166 S	40	<0.1	<1	1
3/91	08/19/91	G-166 S	40	<0.2	<5	<1
4/91	11/14/91	G-166 S	<10	<0.2	<1	1
1/92	02/25/92	G-166 S	<10	<0.2	<2	<10
2/92	05/05/92	G-166 S	<5	<0.2	<2	<10
3/92	08/07/92	G-166 S	<5	<0.4	<2	<10
4/92	10/29/92	G-166 S	<5	<0.2	<2	<10
1/93	02/02/93	G-166 S	<5	<0.2	<2	<10
2/93	05/14/93	G-166 S	<5	<0.2	<2	<10
3/93	07/27/93	G-166 S	<5	<0.2	<2	<10
4/93	10/05/93	G-166 S	<5	<0.2	<2	<10
1/94	02/14/94	G-166 S	<5	<0.2	<5	<10

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – UPPER SURFICIAL
WELL G 164S – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
4/90	11/20/90	G-164 S	7.19	1190	10	<0.01
			7.17	1105	9	<0.01
			7.21	1120	9	<0.01
1/91	02/01/91	G-164 S	7.18	1103	9	<0.01
			6.95	890	2	<0.01
			6.89	900	2	<0.01
2/91	04/09/91	G-164 S	6.91	900	2	<0.01
			6.9	910	2	<0.01
			7.47	665	4	<0.01
3/91	08/15/91	G-164 S	7.48	640	4	<0.01
			7.46	650	5	<0.01
			7.47	660	5	<0.01
4/91	11/18/91	G-164 S	7.23	1110	2	<0.01
			7.27	1050	2	<0.01
			7.26	1050	2	<0.01
1/92	02/14/92	G-164 S	7.24	1115	2	<0.01
			7.32	1000	4	
			7.34	1050	5	
2/92	04/20/92	G-164 S	.3	1025	4	
			7.36	1075	4	
			7.65	800	3	
3/92	08/10/92	G-164 S	7.67	803	3	
			7.62	805	3	
			7.68	807	3	
4/92	10/06/92	G-164 S	7.39	861	11	
			7.33	870	11	
			7.32	872	9	
1/93	02/01/93	G-164 S	7.3	874	12	
			7.16	504	2.2	
			6.94	527	2.2	
2/93	05/12/93	G-164 S	7.17	520	2.2	
			6.89	553	2.2	
			6.32	705	3	
3/93	07/28/93	G-164 S	6.47	712	3	
			6.34	711	3	
			6.48	725	3	
4/93	10/01/93	G-164 S	6.83	664	1.6	
			6.86	657	1.6	
			6.84	656	1.6	
1/94	01/03/94	G-164 S	6.85	654	1.6	
			7.39	774	2.34	
			7.42	746	2.34	
2/94	04/09/94	G-164 S	7.43	753	2.34	
			7.45	775	2.34	
			7.32	587	2.74	
3/94	07/28/94	G-164 S	7.27	585	2.74	
			7.27	588	2.74	
			7.28	590	2.74	
4/94	10/01/94	G-164 S	7.42	1153	2.5	
			7.34	1150	2.5	
			7.29	1152	2.5	
1/95	01/03/95	G-164 S	7.31	1155	2.5	
			6.69	1592	1.8	
			6.70	1600	1.8	
2/95	04/09/95	G-164 S	6.74	1630	1.8	
			6.73	1633	1.8	

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT - UPPER SURFICIAL
WELL G 164S - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO ₃ mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
4/90	11/20/90	G-164 S	370	70	258	<2	904	69
1/91	02/01/91	G-164 S	288	240	184	8	756	47
2/91	04/09/91	G-164 S	278	140	120	<2	559	49.3
3/91	08/15/91	G-164 S	354	130	212	<2	820	39
4/91	11/18/91	G-164 S	330		220		784	110
1/92	02/14/92	G-164 S	352		156	3	668	75
2/92	04/20/92	G-164 S	400		150	<2	652	79
3/92	08/10/92	G-164 S	342		150	9	716	56
4/92	10/06/92	G-164 S	296		76	3	568	94
1/93	02/01/93	G-164 S	268		152	<2	660	63
2/93	05/12/93	G-164 S	260		210	6	668	87
3/93	07/28/93	G-164 S	330		178	<2	710	76
4/93	10/01/93	G-164 S	344		300	<5	890	51
1/94	01/03/94	G-164 S	372		248	<5	860	64

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – UPPER SURFICIAL
WELL G 164S – DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
4/90	11/20/90	G-164 S	95,400	10	49,800	24	91,300
1/91	02/01/91	G-164 S	84,000	<10	49,500	119	74,000
2/91	04/09/91	G-164 S	80,000	30	42,000	34	68,000
3/91	08/15/91	G-164 S	101,000	30	51,200	63	351,000
4/91	11/18/91	G-164 S					
1/92	02/14/92	G-164 S					
2/92	04/20/92	G-164 S					
3/92	08/10/92	G-164 S					
4/92	10/06/92	G-164 S					
1/93	02/01/93	G-164 S					
2/93	05/12/93	G-164 S					
3/93	07/28/93	G-164 S					
4/93	10/01/93	G-164 S					
1/94	01/03/94	G-164 S					

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – UPPER SURFICIAL
WELL G164S – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
4/90	11/20/90	G-164 S	<1	38	2	<1
1/91	02/01/91	G-164 S	<1	40	2	5
2/91	04/09/91	G-164 S	<1	80	2	4
3/91	08/15/91	G-164 S	<5	40	<1	<1
4/91	11/18/91	G-164 S	<2	80	9	<1
1/92	02/14/92	G-164 S	<1	<100	<5	<10
2/92	04/20/92	G-164 S	<1	<100	9	<10
3/92	08/10/92	G-164 S	<1	<100	5	<10
4/92	10/06/92	G-164 S	<1	<100	<5	<10
1/93	02/01/93	G-164 S	<1	<100	<5	<10
2/93	05/12/93	G-164 S	<1	<100	<5	<10
3/93	07/28/93	G-164 S	<1	<200	<10	<20
4/93	10/01/93	G-164 S	<1	<200	<10	<20
1/94	01/03/94	G-164 S	<5	<200	<10	<20

**BFI DAVIS JUNCTION LANDFILL
MIDGRADIENT – UPPER SURFICIAL
WELL G164S – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
4/90	11/20/90	G-164 S	<10	0.3	<1	<1
1/91	02/01/91	G-164 S	50	0.3	<1	2
2/91	04/09/91	G-164 S	20	<0.1	<1	2
3/91	08/15/91	G-164 S	<10	0.3	<5	<1
4/91	11/18/91	G-164 S	<10	<0.2	<1	1
1/92	02/14/92	G-164 S	10	<0.2	<2	<10
2/92	04/20/92	G-164 S	<5	<0.4	4	<10
3/92	08/10/92	G-164 S	<5	<0.2	<2	<10
4/92	10/06/92	G-164 S	<5	<0.2	<2	<10
1/93	02/01/93	G-164 S	<5	<0.2	<2	<10
2/93	05/12/93	G-164 S	<5	<0.2	<2	<10
3/93	07/28/93	G-164 S	<5	<0.2	<2	<10
4/93	10/01/93	G-164 S	<5	<0.2	<2	<10
1/94	01/03/94	G-164 S	<5	<0.2	<5	<10

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADENT – UPPER SURFICIAL
WELL G 155S – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/22/90	G-155 S			7	
3/90	08/17/90	G-155 S	7.07	890	6	<0.01
			7.1	900	5	<0.01
			6.96	900	5	<0.01
			7.03	890	5	<0.01
2/91	04/17/91	G-155 S	7.48	690	1	<0.01
			7.52	695	<1	<0.01
			7.5	690	<1	<0.01
			7.53	695	<1	<0.01
1/92	02/20/92	G-155 S	7.59	680	2	<0.01
			7.65	690	2	<0.01
			7.61	700	2	<0.01
			7.62	695	2	<0.01
2/92	05/07/92	G-155 S	7.78	295	<1	<0.01
			7.8	306	1.1	<0.01
			7.82	304	1.2	<0.01
			7.84	307	1.2	<0.01
1/93	02/16/93	G-155 S	6.98	520	<1	<0.01
			7.02	519	<1	<0.01
			7.09	512	<1	<0.01
			7.09	513	<1	<0.01
2/93	05/18/93	G-155 S	7.55	593	1.98	<0.01
			7.39	586	1.98	<0.01
			7.4	587	1.98	<0.01
			7.41	592	1.98	<0.01
3/93	08/05/93	G-155 S	6.93	931	2.06	<0.01
			6.89	932	2.06	<0.01
			6.93	934	2.06	<0.01
			6.99	937	2.06	<0.01
4/93	10/05/93	G-155 S	7.13	916	<1	<0.01
			7.20	934	<1	<0.01
			7.10	935	<1	<0.01
			7.15	926	<1	<0.01
*1/94	01/12/94	R-155 S	7.24	827	1	0.03
			7.27	925	1	0.03
			7.31	944	1	0.03
			7.34	957	1	0.03

*REPLACEMENT WELL

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - UPPER SURFICIAL
WELL G 155S - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/22/90	G-155 S		63				
3/90	08/17/90	G-155 S	476		24	6	655	161
4/91	04/17/91	G-155 S	416		20	2	798	162
1/92	02/20/92	G-155 S	502		26	<2	652	145
2/92	05/07/92	G-155 S	444		20	<2	844	300
1/93	02/16/93	G-155 S	446		20	38	732	186
2/93	05/18/93	G-155 S	466		22	8	745	191
3/93	08/05/93	G-155 S	464		30	<2	890	171
4/93	10/05/93	G-155 S	448		24	<5	800	212
*1/94	01/12/94	R-155 S	446		26	<5	720	190
*REPLACEMENT WELL								

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT - UPPER SURFICIAL
WELL G 155S - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/22/90	G-155 S	97,900	12.2	45,400	4.3	10,900
3/90	08/17/90	G-155 S	53,000	<10	21,500	15	2,600
2/91	04/17/91	G-155 S	159,000	<10	69,000	<1	2,000
1/92	02/20/92	G-155 S	149,000		55,000		12,300
2/92	05/07/92	G-155 S	145,000		66,400		9,700
1/93	02/16/93	G-155 S	150,000		60,000		13,100
2/93	05/18/93	G-155 S	154,000		60,000		22,400
3/93	08/05/93	G-155 S	141,000		70,000		12,800
4/93	10/05/93	G-155 S	165,000	<50	69,000	<20	18,000
*1/94	01/12/94	R-155 S	158,000		73,000		21,000
*REPLACEMENT WELL							

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – UPPER SURFICIAL
WELL G 155S – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/22/90	G-155 S		95		
3/90	08/17/90	G-155 S		100	3	<1
2/91	04/17/91	G-155 S		150	2	3
1/92	02/20/92	G-155 S				
2/92	05/07/92	G-155 S				
1/93	02/16/93	G-155 S				
2/93	05/18/93	G-155 S				
3/93	08/05/93	G-155 S				
4/93	10/05/93	G-155 S	<1	<200	<10	<20
*1/94	01/12/94	R-155 S				
*REPLACEMENT WELL						

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – UPPER SURFICIAL
WELL G 155S – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/22/90	G-155 S				
3/90	08/17/90	G-155 S	<10	<0.1	<1	2
2/91	04/17/91	G-155 S	50	<0.1	<1	3
1/92	02/20/92	G-155 S				
2/92	05/07/92	G-155 S				
1/93	02/16/93	G-155 S				
2/93	05/18/93	G-155 S				
3/93	08/05/93	G-155 S				
4/93	10/05/93	G-155 S	<5	<0.2	<2	<10
*1/94	01/12/94	R-155 S				
*REPLACEMENT WELL						

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADIENT – UPPER SURFICIAL
WELL G 167S – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/24/90	G-167 S			5.7	0.01
3/90	08/15/90	G-167 S	6.98	1070	5	<0.01
			7.02	1090	4	<0.01
			7	1100	4	<0.01
			6.94	1100	5	<0.01
4/90	11/12/90	G-167 S	7.17	920	17	<0.01
			7.1	913	13	<0.01
			7.05	910	15	<0.01
			7.14	907	14	<0.01
1/91	02/12/91	G-167 S	7.14	770	2	<0.01
			7.15	775	2	<0.01
			7.14	780	2	<0.01
			7.14	770	2	<0.01
2/91	04/30/91	G-167 S	6.85	910	<1	0.03
			6.84	900	<1	0.03
			6.92	900	<1	0.03
			6.89	910	1	0.03
4/91	11/26/91	G-167 S	6.78	1130	5	<0.01
			6.78	1130	5	<0.01
			6.82	1120	6	<0.01
			6.84	1120	5	<0.01
1/92	02/12/92	G-167 S	7.37	1200	2	0.02
			7.34	1205	2	0.01
			7.35	1210	2	0.01
			7.43	1200	2	0.02
2/92	05/07/92	G-167 S	8.12	407	2.3	<0.01
			8.07	408	2	<0.01
			8.16	411	1.9	<0.01
			8.09	404	1.9	<0.01
1/93	02/16/93	G-167 S	7.07	731	1.22	<0.01
			7.09	731	1.22	<0.01
			6.97	725	1.22	<0.01
			6.98	727	1.22	<0.01
2/93	05/18/93	G-167 S	7.6	724	1.71	<0.01
			7.47	719	1.71	<0.01
			7.44	719	1.71	<0.01
			7.43	718	1.71	<0.01
3/93	08/05/93	G-167 S	7.41	1095	1.68	<0.01
			7.24	1093	1.68	<0.01
			7.23	1093	1.68	<0.01
			7.27	1095	1.68	<0.01
4/93	10/05/93	G-167 S	6.94	1156	<1	<0.01
			6.97	1165	<1	<0.01
			6.99	1157	<1	<0.01
			7.0	1159	<1	<0.01
1/94	01/12/94	G-167 S	7.31	904	2	<0.01
			7.28	887	2	<0.01
			7.30	843	2	<0.01
			7.29	856	2	<0.01

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - UPPER SURFICIAL
WELL G 167S - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO ₃ mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/24/90	G-167 S		49			756	
3/90	08/15/90	G-167 S	432	130	14	2	1240	291
4/90	11/12/90	G-167 S	458	20	8	<2	976	394
1/91	02/12/91	G-167 S	422	250	12	13	969	293
2/91	04/30/91	G-167 S	432	90	12	<2	1296	294
4/91	11/26/91	G-167 S	486		24		1288	478
1/92	02/12/92	G-167 S	496		28	2	1804	940
2/92	05/07/92	G-167 S	320		6	<2	1592	34
1/93	02/16/93	G-167 S	432		14	14	1368	639
2/93	05/18/93	G-167 S	434		18	8	1430	633
3/93	08/05/93	G-167 S	438		16	4	1570	581
4/93	10/05/93	G-167 S	432		16	<5	1225	521
1/94	01/12/94	G-167 S	418		8	<5	1245	592

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – UPPER SURFICIAL
WELL G 167S – DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/24/90	G-167 S	113,000	12.4	50,500	4.4	4,940
3/90	08/15/90	G-167 S	188,000	10	70,000	27	12,100
4/90	11/12/90	G-167 S	180,000	110	73,000	84	8,000
1/91	02/12/91	G-167 S	180,000	10	91,000	16	9,220
2/91	04/30/91	G-167 S	190,000	<10	107,000	6	16,000
4/91	11/26/91	G-167 S	268,000	30	117,000	23	8,720
1/92	02/12/92	G-167 S	322,000		160,000		14,100
2/92	05/07/92	G-167 S	267,000		104,000		8,800
1/93	02/16/93	G-167 S	231,000		94,000		8,600
2/93	05/18/93	G-167 S	265,000		106,000		9,700
3/93	08/05/93	G-167 S	230,000		112,000		12,000
4/93	10/05/93	G-167 S	238,000	<50	117,000	35	13,000
1/94	01/12/94	G-167 S	238,000		102,000		16,000

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – UPPER SURFICIAL
WELL G 167S – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/24/90	G-167 S		89.3		
3/90	08/15/90	G-167 S	<1	<10	8	<1
4/90	11/12/90	G-167 S	<1	300	2	20
1/91	02/12/91	G-167 S	<1	60	4	6
2/91	04/30/91	G-167 S	<1	70	2	6
4/91	11/26/91	G-167 S	<1	20	3	9
1/92	02/12/92	G-167 S				
2/92	05/07/92	G-167 S				
1/93	02/16/93	G-167 S				
2/93	05/18/93	G-167 S				
3/93	08/05/93	G-167 S				
4/93	10/05/93	G-167 S	<1	<200	<10	<20
1/94	01/12/94	G-167 S				

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – UPPER SURFICIAL
WELL G 167S – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/24/90	G-167 S				
3/90	08/15/90	G-167 S	10	<0.1	<1	<1
4/90	11/12/90	G-167 S	70	0.3	<1	6
1/91	02/12/91	G-167 S	20	<0.1	<5	6
2/91	04/30/91	G-167 S	40	<0.1	<1	<1
4/91	11/26/91	G-167 S	80	<0.2	<1	2
1/92	02/12/92	G-167 S				
2/92	05/07/92	G-167 S				
1/93	02/16/93	G-167 S				
2/93	05/18/93	G-167 S				
3/93	08/05/93	G-167 S				
4/93	10/05/93	G-167 S	<5	<0.2	<2	<10
1/94	01/12/94	G-167 S				

BFI DAVIS JUNCTION LANDFILL DOWNGRADIENT - UPPER SURFICIAL WELL G 168S - DATA POOL						
Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/24/90	G-168 S			13	0.01
3/90	08/16/90	G-168 S	6.94	810	6	<0.01
			7.08	800	5	<0.01
			6.99	780	4	<0.01
4/90	11/08/90	G-168 S	7.03	820	5	<0.01
			7.13	740	30	0.03
			7.09	750	18	0.03
			7.07	790	20	0.03
1/91	02/04/91	G-168 S	7.12	725	22	0.03
			7.33	700	2	0.02
			7.32	690	2	0.02
			7.31	700	2	0.02
2/91	04/16/91	G-168 S	7.32	890	2	0.02
			7.1	700	1	0.02
			7.04	720	1	0.02
			6.89	715	1	0.03
3/91	08/20/91	G-168 S	7.09	710	1	0.02
			7.2	900	2	<0.01
			7.19	890	2	<0.01
			7.17	910	2	<0.01
4/91	11/05/91	G-168 S	7.18	900	2	<0.01
			7.76	700	2	<0.01
			7.83	690	2	<0.01
			7.59	730	2	<0.01
1/92	02/14/92	G-168 S	7.6	720	2	<0.01
			7.3	650	2	<0.01
			7.29	685	2	<0.01
			7.38	690	2	<0.01
2/92	04/22/92	G-168 S	7.33	695	2	<0.01
			7.19	633	1.5	0.01
			7.17	635	1.7	<0.01
			7.2	632	1.4	0.01
3/92	08/04/92	G-168 S	7.23	640	1.5	<0.01
			7.28	528	4.15	<0.01
			7.01	539	4.15	<0.01
			7.32	544	4.15	<0.01
4/92	10/06/92	G-168 S	7.17	569	4.15	<0.01
			5.78	672	1	<0.01
			6.25	674	1	<0.01
			6.08	674	1	<0.01
1/93	02/15/93	G-168 S	6.32	676	1	<0.01
			7.11	410	1.25	<0.01
			7.12	410	1.25	<0.01
			7.06	409	1.25	<0.01
2/93	05/14/93	G-168 S	7.14	407	1.25	<0.01
			6.42	495	2.63	<0.01
			6.61	486	2.63	<0.01
			6.76	488	2.63	<0.01
3/93	08/05/93	G-168 S	6.84	490	2.63	<0.01
			6.88	865	1.57	<0.01
			6.94	663	1.57	<0.01
			6.91	663	1.57	<0.01
4/93	10/05/93	G-168 S	6.93	666	1.57	<0.01
			6.92	710	<1	<0.01
			6.89	715	<1	<0.01
			6.95	714	<1	<0.01
1/94	01/06/94	G-168 S	6.87	711	<1	<0.01
			7.26	761	2	<0.01
			7.26	748	2	<0.01
			7.23	772	2	<0.01
			7.23	737	2	<0.01

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – UPPER SURFICIAL
WELL G 168S – DATA POOL**

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/24/90	G-168 S		60		0	730	
3/90	08/15/90	G-168 S	422	170	20	<1	1012	230
4/90	11/12/90	G-168 S	318	110	18	2	840	235
1/91	02/13/91	G-168 S	358	150	14	11	793	190
2/91	04/25/91	G-168 S	376	180	12	3	841	215
3/91	08/28/91	G-168 S	390		16	<2	884	200
4/91	11/12/91	G-168 S	268		16		892	229
1/92	02/14/92	G-168 S	310		24	<2	676	258
2/92	04/22/92	G-168 S	302		20	<2	624	344
3/92	08/04/92	G-168 S	304		20	6	800	255
4/92	10/06/92	G-168 S	304		8	<2	632	180
1/93	02/15/93	G-168 S	316		8	9	544	170
2/93	05/14/93	G-168 S	290		8	8	448	132
3/93	08/05/93	G-168 S	328		8	<2	565	137
4/93	10/05/93	G-168 S	340		8	<2	550	150
1/94	01/06/94	G-168 S	342		8	<5	555	197

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – UPPER SURFICIAL
WELL G 168S – DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/24/90	G-168 S	117,000	17.2	47,400	4.3	7,330
3/90	08/16/90	G-168 S	159,000	10	55,000	10	12,500
4/90	11/08/90	G-168 S	112,000	20	53,000	7	7,300
1/91	2/04/91	G-168 S	118,000	<10	60,000	1	12,000
2/91	04/16/91	G-168 S	168,000	10	70,000	3	25,000
3/91	08/20/91	G-168 S	104,000		63,000		16,900
4/91	11/05/91	G-168 S	141,000	50	49,000	11	13,400
1/92	02/14/92	G-168 S	140,000		54,000		11,300
2/92	04/22/92	G-168 S	138,000		48,100		11,800
3/92	08/04/92	G-168 S	176,000		51,000		<1000
4/92	10/06/92	G-168 S	138,000	<50	46,700	<10	12,800
1/93	02/15/93	G-168 S	119,000		39,900		12,500
2/93	05/14/93	G-168 S	111,000		38,800		8,600
3/93	08/05/93	G-168 S	101,000		41,800		9,300
4/93	10/05/93	G-168 S	128,000	<50	53,000	<20	9,000
1/94	01/06/94	G-168 S	140,000		52,000		10,000

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIDENT – UPPER SURFICIAL
WELL G 168S – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/24/90	G-168 S		71.2		
3/90	08/16/90	G-168 S	<1	<10	3	4
4/90	11/08/90	G-168 S	<1	130	1	3
1/91	02/04/91	G-168 S	<1	80	1	7
2/91	04/16/91	G-168 S	<1	130	3	<1
3/91	08/20/91	G-168 S				
4/91	11/05/91	G-168 S	<1	8	<1	1
1/92	02/14/92	G-168 S				
2/92	04/22/92	G-168 S				
3/92	08/04/92	G-168 S				
4/92	10/06/92	G-168 S	<1	<100	<5	<10
1/93	02/15/93	G-168 S				
2/93	05/14/93	G-168 S				
3/93	08/05/93	G-168 S				
4/93	10/05/93	G-168 S	<1	<200	<10	<20
1/94	01/06/94	G-168 S				

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT -- UPPER SURFICIAL
WELL G 168S -- DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/24/90	G-168 S				
3/90	08/16/90	G-168 S	50	<0.1	<1	8
4/90	11/08/90	G-168 S	30	0.3	<1	3
1/91	02/04/91	G-168 S	50	0.1	<1	2
2/91	04/16/91	G-168 S	80	<0.1	<1	1
3/91	08/20/91	G-168 S				
4/91	11/05/91	G-168 S	60	<0.2	<1	1
1/92	02/14/92	G-168 S				
2/92	04/22/92	G-168 S				
3/92	08/04/92	G-168 S				
4/92	10/06/92	G-168 S	<5	<0.2	<2	<10
1/93	02/15/93	G-168 S				
2/93	05/14/93	G-168 S				
3/93	08/05/93	G-168 S				
4/93	10/05/93	G-168 S	<5	<0.2	<2	<10
1/94	01/06/94	G-168 S				

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT – UPPER SURFICIAL
WELL G 151 – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
1/88	02/09/88	G-151	7.02	830	<1	8
			7.01	1020	<1	9
			7.04	850	<1	6
			7.08	890	<1	15
2/88	05/11/88	G-151	6.38	780	3	<5
			6.37	779	3	<5
			6.37	780	3	7
			6.37	780	3	<5
3/88	07/14/88	G-151	6.34	897	1	14
			6.34	898	1	11
			6.34	897	1	8
			6.34	897	1	<5
4/88	11/09/88	G-151	7.15	637	2	5
			7.15	637	2	9
			7.15	637	2	10
			7.15	637	2	<5
1/89	02/13/89	G-151	7.2	586	2	<5
			7.22	585	3	<5
			7.19	585	3	8
			7.21	580	2	<5
2/89	05/19/89	G-151	7.14	589	2	8
			7.15	590	2	<5
			7.15	590	2	<5
			7.13	588	2	<5
3/89	08/24/89	G-151	7.25	590	2	<5
			7.2	590	2	<5
			7.2	595	2	<5
			7.2	590	2	<5
4/89	11/07/89	G-151	7.68	841	2	<5
			7.68	841	1	<5
			7.69	842	1	<5
			7.68	841	1	7
1/90	02/22/90	G-151	7.65	840	2	<5
			7.65	840	2	<5
			7.6	840	1	<5
			7.65	840	1	<5

BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - UPPER SURFICIAL
WELL G 151 - DATA POOL

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot - Dis	Sulfate Dis-mg/l
1/88	02/26/88	G-151						
2/88	05/11/88	G-151						
3/88	07/14/88	G-151						
4/88	11/09/88	G-151			31.9	7		84.3
1/89	02/13/89	G-151						
2/89	05/19/89	G-151						
3/89	08/24/89	G-151						
4/89	11/07/89	G-151				31		
1/90	02/22/90	G-151						

**BFI DAVIS JUNCTION LANDFILL
UPGRADIENT - UPPER SURFICIAL
WELL G151 - DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
1/88	02/26/88	G-151					
2/88	05/11/88	G-151					
3/88	07/14/88	G-151					
4/88	11/09/88	G-151		410		80	7,460
1/89	02/13/89	G-151					
2/89	05/19/89	G-151					
3/89	08/24/89	G-151					
4/89	11/07/89	G-151					
1/90	02/22/90	G-151					

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

APPENDIX E

POOLED DATA: BEDROCK VALLEY

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – BEDROCK VALLEY
WELL G 163D – DATA POOL**

Quarter	Date	Well	pH	Conductance umhos/cm	TOC mg/l	TOX mg/l
2/90	05/18/90	G-163 D			0	0
3/91	08/28/91	G-163 D	7.47	470	<1	<0.01
			7.5	465	<1	<0.01
			7.49	460	3	<0.01
			7.52	465	3	<0.01
4/91	11/05/91	G-163 D	7.45	415	2	<0.01
			7.28	410	2	<0.01
			7.49	420	2	<0.01
			7.51	412	2	<0.01
1/92	02/13/92	G-163 D	7.92	385	1	<0.01
			7.86	382	1	<0.01
			7.89	380	1	<0.01
			7.92	381	1	<0.01
2/92	04/22/92	G-163 D	7.53	407	<1	<0.01
			7.46	403	<1	<0.01
			7.44	408	<1	<0.01
			7.45	410	<1	<0.01
3/92	08/03/92	G-163 D	7.45	305	<1	<0.01
			7.37	305	<1	<0.01
			7.62	308	<1	<0.01
			7.39	302	<1	<0.01
4/92	10/14/92	G-163 D	7.1	404	<1	<0.01
			7.11	402	<1	<0.01
			7.4	398	<1	<0.01
			7.19	403	<1	<0.01
1/93	01/26/93	G-163 D	7.22	357	<1	<0.01
			7.07	354	<1	<0.01
			7.19	353	<1	<0.01
			7.19	353	<1	<0.01
2/93	04/26/93	G-163 D	7.39	445	<1	<0.01
			7.39	442	<1	<0.01
			7.4	444	<1	<0.01
			7.43	443	<1	<0.01
3/93	07/06/93	G-163 D	7.61	324	2.13	<0.01
			7.46	322	2.13	<0.01
			7.48	313	2.13	<0.01
			7.47	312	2.13	<0.01
4/93	10/07/93	G-163 D	7.93	506	<1	<0.01
			7.83	502	<1	<0.01
			7.84	503	<1	<0.01
			7.5	507	<1	<0.01
1/94	01/12/94	G-163 D	7.52	586	<1	<0.01
			7.52	582	<1	<0.01
			7.48	584	<1	<0.01
			7.52	583	<1	<0.01

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT - BEDROCK VALLEY
WELL G 163D - DATA POOL**

Quarter	Date	Well	Alkalinity CaCO3 mg/l	Boron Dis-ug/l	Chloride Dis-mg/l	Phenol ug/l	Solids Tot-Dis	Sulfate Dis-mg/l
2/90	05/18/90	G-163 D		48		12,900	499	
3/90	08/13/90	G-163 D	356	140				
3/91	08/28/91	G-163 D	292		8	3	376	50
4/91	11/05/91	G-163 D	340		2		348	20
1/92	02/13/92	G-163 D	332		<1	<2	324	25
2/92	04/22/92	G-163 D	370		<5	<2	312	29
3/92	08/03/92	G-163 D	320		<5	<2	344	23
4/92	10/14/92	G-163 D	290		<5	<2	304	22
1/93	01/26/93	G-163 D	294		<5	<2	300	19
2/93	04/26/93	G-163 D	292		<5	<2	332	13
3/93	07/06/93	G-163 D	292		<5	<2	315	27
4/93	10/07/93	G-163 D	294		<5	<5	360	16
1/94	01/12/94	G-163 D	292		<5	<5	280	22

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – BEDROCK VALLEY
WELL G 163D – DATA POOL**

Quarter	Date	Well	Calcium dis-ug/l	Iron dis-ug/l	Magnesium dis-ug/l	Manganese dis-ug/l	Sodium dis-ug/l
2/90	05/18/90	G-163 D	59,800	705	27,500	60.6	6,720
3/91	08/28/91	G-163 D	83,000		31,800		7,000
4/91	11/05/91	G-163 D	69,000	710	30,000	148	7,000
1/92	02/13/92	G-163 D	7,200		36,100		67,000
2/92	04/22/92	G-163 D	65,100		28,200		5,300
3/92	08/03/92	G-163 D	85,300		31,000		7,450
4/92	10/14/92	G-163 D	79,000	1,070	30,700	67	8,700
1/93	01/26/93	G-163 D	68,200		28,800		7,500
2/93	04/26/93	G-163 D	79,500		32,400		9,700
3/93	07/06/93	G-163 D	66,900		31,800		6,900
4/93	10/07/93	G-163 D	75,000	1,210	33,000	71	6,000
1/94	01/12/94	G-163 D	84,000		36,000		8,000

**BFI DAVIS JUNCTION LANDFILL
DOWNGRAIENT – BEDROCK VALLEY
WELL G 163D – DATA POOL**

Quarter	Date	Well	Arsenic dis-ug/l	Barium dis-ug/l	Cadmium dis-ug/l	Chromium dis-ug/l
2/90	05/18/90	G-163 D		46.5		
3/91	08/28/91	G-163 D				
4/91	11/05/91	G-163 D	<1	90	<1	1
1/92	02/13/92	G-163 D				
2/92	04/22/92	G-163 D				
3/92	08/03/92	G-163 D				
4/92	10/14/92	G-163 D	<1	<100	<5	<10
1/93	01/26/93	G-163 D				
2/93	04/26/93	G-163 D				
3/93	07/06/93	G-163 D				
4/93	10/07/93	G-163 D	<1	<200	<10	<20
1/94	01/12/94	G-163 D				

**BFI DAVIS JUNCTION LANDFILL
DOWNGRADIANT – BEDROCK VALLEY
WELL G 163D – DATA POOL**

Quarter	Date	Well	Lead dis-ug/l	Mercury dis-ug/l	Selenium dis-ug/l	Silver dis-ug/l
2/90	05/18/90	G-163 D				
3/91	08/28/91	G-163 D				
4/91	11/05/91	G-163 D	30	<0.2	<1	<1
1/92	02/13/92	G-163 D				
2/92	04/22/92	G-163 D				
3/92	08/03/92	G-163 D				
4/92	10/14/92	G-163 D	<5	<0.2	<2	<10
1/93	01/26/93	G-163 D				
2/93	04/26/93	G-163 D				
3/93	07/06/93	G-163 D				
4/93	10/07/93	G-163 D	<5	<0.2	<2	<10
1/94	01/12/94	G-163 D				

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

APPENDIX F

DESCRIPTIVE STATISTICS: UPPER AQUIFER

Variable: G162S pH units

Sample size	15.
Mean	7.423333
Median	7.41
Mode	7.8
Geometric mean	7.412722
Variance	0.168552
Standard deviation	0.410551
Standard error	0.106004
Minimum	6.64
Maximum	8.17
Range	1.53
Lower quartile	7.17
Upper quartile	7.8
Interquartile range	0.63
Skewness	0.044748
Standardized skewness	0.070752
Kurtosis	-0.153658
Standardized kurtosis	-0.121477
Coeff. of variation	5.530552

Variable: G162S Specific Conductance umhos/cm

Sample size	15.
Average	431.733333
Median	447.
Mode	458.
Geometric mean	424.762843
Variance	6084.495238
Standard deviation	78.003175
Standard error	20.140333
Minimum	266.
Maximum	579.
Range	313.
Lower quartile	373.
Upper quartile	458.
Interquartile range	85.
Skewness	-0.136466
Standardized skewness	-0.215772
Kurtosis	0.68437
Standardized kurtosis	0.541042
Coeff. of variation	18.067443

Variable:	G162S Alkalinity mg/l
Sample size	15.
Average	321.6
Median	316.
Mode	310.
Geometric mean	321.197879
Variance	288.685714
Standard deviation	16.990754
Standard error	4.386994
Minimum	306.
Maximum	354.
Range	48.
Lower quartile	310.
Upper quartile	322.
Interquartile range	12.
Skewness	1.410275
Standardized skewness	2.22984
Kurtosis	0.46867
Standardized kurtosis	0.370516
Coeff. of variation	5.283195

Variable:	G162S Boron, dissolved ug/l
Sample size	11.
Average	102.818182
Median	50.
Mode	50.
Geometric mean	80.826844
Variance	5369.363636
Standard deviation	73.275942
Standard error	22.093528
Minimum	30.
Maximum	230.
Range	200.
Lower quartile	50.
Upper quartile	170.
Interquartile range	120.
Skewness	0.700016
Standardized skewness	0.947826
Kurtosis	-1.268532
Standardized kurtosis	-0.858801
Coeff. of variation	71.267494

Variable: G162S Calcium, dissolved ug/l

Sample size	16.
Average	69688.4375
Median	80200.
Mode	83000.
Geometric mean	48329.778303
Variance	745220139.062502
Standard deviation	27298.720466
Standard error	6824.680116
Minimum	515.
Maximum	93800.
Range	93285.
Lower quartile	70100.
Upper quartile	83000.
Interquartile range	12900.
Skewness	-2.133956
Standardized skewness	-3.484736
Kurtosis	3.695853
Standardized kurtosis	3.017652
Coeff. of variation	39.172525

Variable: G162S Chloride, dissolved mg/l

Sample size	15.
Average	6.333333
Median	8.
Mode	8.
Geometric mean	5.714833
Variance	6.202381
Standard deviation	2.490458
Standard error	0.643033
Minimum	2.
Maximum	10.
Range	8.
Lower quartile	4.
Upper quartile	8.
Interquartile range	4.
Skewness	-0.667689
Standardized skewness	-1.05571
Kurtosis	-0.772988
Standardized kurtosis	-0.611101
Coeff. of variation	39.323021

Variable: G162S Iron, dissolved ug/l

Sample size	13.
Average	650.
Median	820.
Mode	50.
Geometric mean	417.896331
Variance	186500.
Standard deviation	431.856458
Standard error	119.775431
Minimum	50.
Maximum	1100.
Range	1050.
Lower quartile	180.
Upper quartile	1050.
Interquartile range	870.
Skewness	-0.403102
Standardized skewness	-0.59335
Kurtosis	-1.7223
Standardized kurtosis	-1.267579
Coeff. of variation	66.439455

Variable: G162S Magnesium, dissolved ug/l

Sample size	16.
Average	32523.25
Median	34500.
Mode	33000.
Geometric mean	27633.007623
Variance	76571742.333335
Standard deviation	8750.528117
Standard error	2187.632029
Minimum	972.
Maximum	38500.
Range	37528.
Lower quartile	32700.
Upper quartile	36950.
Interquartile range	4250.
Skewness	-3.499399
Standardized skewness	-5.714495
Kurtosis	13.185547
Standardized kurtosis	10.765954
Coeff. of variation	26.905454

Variable:	G162S Manganese, dissolved ug/l
Sample size	12.
Average	58.833333
Median	53.
Mode	50.
Geometric mean	56.057868
Variance	582.151515
Standard deviation	24.127816
Standard error	6.965101
Minimum	44.
Maximum	134.
Range	90.
Lower quartile	48.5
Upper quartile	57.5
Interquartile range	9.
Skewness	3.232376
Standardized skewness	4.57127
Kurtosis	10.85749
Standardized kurtosis	7.677405
Coeff. of variation	41.010452

Variable:	G162S Sodium, dissolved ug/l
Sample size	15.
Average	7911.333333
Median	7800.
Mode	7800.
Geometric mean	6828.070186
Variance	7999212.380952
Standard deviation	2828.287889
Standard error	730.260793
Minimum	500.
Maximum	12900.
Range	12400.
Lower quartile	6800.
Upper quartile	9800.
Interquartile range	3000.
Skewness	-0.889594
Standardized skewness	-1.406572
Kurtosis	2.829412
Standardized kurtosis	2.236847
Coeff. of variation	35.749826

Variable: G162S Sulfate, dissolved mg/l

Sample size	15.
Average	35.2
Median	32.7
Mode	31.
Geometric mean	34.676336
Variance	41.141429
Standard deviation	6.414158
Standard error	1.656129
Minimum	26.
Maximum	47.
Range	21.
Lower quartile	31.
Upper quartile	41.
Interquartile range	10.
Skewness	0.585427
Standardized skewness	0.925642
Kurtosis	-0.835786
Standardized kurtosis	-0.660747
Coeff. of variation	18.222041

Variable: G162S TOC mg/l

Sample size	16.
Average	1.9775
Median	1.
Mode	1.
Geometric mean	1.469817
Variance	4.149327
Standard deviation	2.03699
Standard error	0.509247
Minimum	1.
Maximum	7.4
Range	6.4
Lower quartile	1.
Upper quartile	1.69
Interquartile range	0.69
Skewness	2.199772
Standardized skewness	3.592212
Kurtosis	3.7902
Standardized kurtosis	3.094685
Coeff. of variation	103.008324

Variable:	G162S Total Dissolved Solids mg/l
Sample size	16.
Mean	385.125
Median	376.
Mode	376.
Geometric mean	381.727297
Variance	3106.25
Standard deviation	55.733742
Standard error	13.933436
Minimum	305.
Maximum	552.
Range	247.
Lower quartile	345.
Upper quartile	409.
Interquartile range	64.
Skewness	1.708163
Standardized skewness	2.789418
Kurtosis	4.924476
Standardized kurtosis	4.020818
Coeff. of variation	14.471598

Variable: G166I pH units

Sample size	15.
Average	7.368
Median	7.4
Mode	7.4
Geometric mean	7.362002
Variance	0.094446
Standard deviation	0.30732
Standard error	0.07935
Minimum	6.7
Maximum	8.06
Range	1.36
Lower quartile	7.22
Upper quartile	7.5
Interquartile range	0.28
Skewness	-0.000447
Standardized skewness	-0.000707
Kurtosis	1.830186
Standardized kurtosis	1.446889
Coeff. of variation	4.171013

Variable: G166I Specific Conductance umhos/cm

Sample size	15.
Average	695.4
Median	712.
Mode	712.
Geometric mean	687.115059
Variance	11641.971429
Standard deviation	107.897968
Standard error	27.859135
Minimum	511.
Maximum	866.
Range	355.
Lower quartile	585.
Upper quartile	790.
Interquartile range	205.
Skewness	-0.440975
Standardized skewness	-0.697242
Kurtosis	-0.660605
Standardized kurtosis	-0.522254
Coeff. of variation	15.515957

Variable: G166I Alkalinity mg/l

Sample size	15.
Average	300.133333
Median	294.
Mode	288.
Geometric mean	298.946206
Variance	787.695238
Standard deviation	28.065909
Standard error	7.246586
Minimum	254.
Maximum	362.
Range	108.
Lower quartile	280.
Upper quartile	324.
Interquartile range	44.
Skewness	0.734803
Standardized skewness	1.161826
Kurtosis	0.356538
Standardized kurtosis	0.281868
Coeff. of variation	9.351147

Variable: G166I Boron, dissolved ug/l

Sample size	11.
Average	102.727273
Median	110.
Mode	100.
Geometric mean	95.848737
Variance	1361.818182
Standard deviation	36.902821
Standard error	11.126619
Minimum	50.
Maximum	160.
Range	110.
Lower quartile	60.
Upper quartile	120.
Interquartile range	60.
Skewness	-0.162083
Standardized skewness	-0.219461
Kurtosis	-0.733528
Standardized kurtosis	-0.496601
Coeff. of variation	35.9231

Variable: G166I Calcium, dissolved ug/l

Sample size	15.
Average	89053.333333
Median	98000.
Mode	101000.
Geometric mean	77810.576547
Variance	884176952.380954
Standard deviation	29735.113122
Standard error	7677.573195
Minimum	7500.
Maximum	126000.
Range	118500.
Lower quartile	89700.
Upper quartile	103000.
Interquartile range	13300.
Skewness	-1.936817
Standardized skewness	-3.062377
Kurtosis	3.886289
Standardized kurtosis	3.072381
Coeff. of variation	33.39023

Variable: G166I Chloride, dissolved mg/l

Sample size	15.
Average	111.333333
Median	98.
Mode	98.
Geometric mean	107.996673
Variance	960.952381
Standard deviation	30.999232
Standard error	8.003967
Minimum	80.
Maximum	190.
Range	110.
Lower quartile	94.
Upper quartile	130.
Interquartile range	36.
Skewness	1.581793
Standardized skewness	2.501035
Kurtosis	1.788077
Standardized kurtosis	1.413599
Coeff. of variation	27.843622

Variable:	G166I Iron, dissolved ug/l
Sample size	13.
Average	233.
Median	220.
Mode	220.
Geometric mean	211.797922
Variance	8287.
Standard deviation	91.032961
Standard error	25.248001
Minimum	50.
Maximum	420.
Range	370.
Lower quartile	200.
Upper quartile	250.
Interquartile range	50.
Skewness	0.204598
Standardized skewness	0.30116
Kurtosis	1.26848
Standardized kurtosis	0.933576
Coeff. of variation	39.06994

Variable:	G166I Magnesium, dissolved ug/l
Sample size	16.
Average	42856.25
Median	43800.
Mode	44000.
Geometric mean	42692.394431
Variance	14630625.
Standard deviation	3825.
Standard error	956.25
Minimum	35600.
Maximum	50000.
Range	14400.
Lower quartile	39700.
Upper quartile	45400..
Interquartile range	5700.
Skewness	-0.311903
Standardized skewness	-0.509335
Kurtosis	-0.222879
Standardized kurtosis	-0.18198
Coeff. of variation	8.925186

Variable: G166I Manganese, dissolved ug/l

Sample size	13.
Average	116.538462
Median	126.
Mode	126.
Geometric mean	91.628704
Variance	5993.602564
Standard deviation	77.418361
Standard error	21.47199
Minimum	29.
Maximum	248.
Range	219.
Lower quartile	48.
Upper quartile	182.
Interquartile range	134.
Skewness	0.470499
Standardized skewness	0.692555
Kurtosis	-1.23776
Standardized kurtosis	-0.910967
Coeff. of variation	66.431597

Variable: G166I Sodium, dissolved ug/l

Sample size	16.
Average	44525.
Median	45100.
Mode	45700.
Geometric mean	43213.786131
Variance	117558000.000002
Standard deviation	10842.416705
Standard error	2710.604176
Minimum	24700.
Maximum	65000.
Range	40300.
Lower quartile	40300.
Upper quartile	49250.
Interquartile range	8950.
Skewness	0.110525
Standardized skewness	0.180486
Kurtosis	0.514252
Standardized kurtosis	0.419885
Coeff. of variation	24.351301

Variable:	G166I Sulfate, dissolved mg/l
Sample size	15.
Average	89.64
Median	90.
Mode	104.
Geometric mean	88.342016
Variance	249.932571
Standard deviation	15.809256
Standard error	4.081932
Minimum	67.2
Maximum	120.
Range	52.8
Lower quartile	75.
Upper quartile	104.
Interquartile range	29.
Skewness	0.225248
Standardized skewness	0.356148
Kurtosis	-0.879418
Standardized kurtosis	-0.695241
Coeff. of variation	17.636385

Variable:	G166I TOC mg/l
Sample size	16.
Average	1.7825
Median	1.05
Mode	1.
Geometric mean	1.484098
Variance	2.14394
Standard deviation	1.46422
Standard error	0.366055
Minimum	1.
Maximum	6.75
Range	5.75
Lower quartile	1.
Upper quartile	2.
Interquartile range	1.
Skewness	2.915477
Standardized skewness	4.760955
Kurtosis	9.596986
Standardized kurtosis	7.835906
Coeff. of variation	82.144176

Variable:	G166I Total Dissolved Solids mg/l
Sample size	16.
Mean	573.3125
Median	592.
Mode	588.
Geometric mean	533.664449
Variance	19785.829167
Standard deviation	140.66211
Standard error	35.165527
Minimum	84.
Maximum	692.
Range	608.
Lower quartile	549.
Upper quartile	639.5
Interquartile range	90.5
Skewness	-3.070014
Standardized skewness	-5.013311
Kurtosis	11.018887
Standardized kurtosis	8.996883
Coeff. of variation	24.53498

Variable:	G161I	pH	units
Sample size	11.		
Average	7.372727		
Median	7.41		
Mode	7.41		
Geometric mean	7.3624		
Variance	0.165662		
Standard deviation	0.407016		
Standard error	0.12272		
Minimum	6.59		
Maximum	8.14		
Range	1.55		
Lower quartile	7.23		
Upper quartile	7.55		
Interquartile range	0.32		
Skewness	-0.241028		
Standardized skewness	-0.326354		
Kurtosis	1.235176		
Standardized kurtosis	0.836218		
Coeff. of variation	5.520559		

Variable:	G161I	Specific Conductance	mhos/cm
Sample size	11.		
Average	507.545455		
Median	489.		
Mode	489.		
Geometric mean	501.236103		
Variance	7117.672727		
Standard deviation	84.366301		
Standard error	25.437397		
Minimum	388.		
Maximum	629.		
Range	241.		
Lower quartile	432.		
Upper quartile	597.		
Interquartile range	165.		
Skewness	0.266203		
Standardized skewness	0.36044		
Kurtosis	-1.465669		
Standardized kurtosis	-0.992263		
Coeff. of variation	16.622413		

Variable: G161I Alkalinity mg/l

Sample size	11.
Average	334.909091
Mean	332.
Mode	320.
Geometric mean	334.402793
Variance	390.690909
Standard deviation	19.765903
Standard error	5.959644
Minimum	316.
Maximum	382.
Range	66.
Lower quartile	320.
Upper quartile	340.
Interquartile range	20.
Skewness	1.558657
Standardized skewness	2.110432
Kurtosis	2.453303
Standardized kurtosis	1.660894
Coeff. of variation	5.901871

Variable:	G161I Calcium, dissolved ug/l
Sample size	12.
Range	69607.25
Median	78100.
Mode	77200.
Geometric mean	50653.737592
Variance	603560085.295456
Standard deviation	24567.459887
Standard error	7092.01479
Minimum	687.
Maximum	92100.
Range	91413.
Lower quartile	65650.
Upper quartile	83500.
Interquartile range	17850.
Skewness	-2.297353
Standardized skewness	-3.248948
Kurtosis	5.984426
Standardized kurtosis	4.231628
Coeff. of variation	35.294398

Variable:	G161I Chloride, dissolved mg/l
Sample size	11.
Range	5.318182
Median	6.
Mode	2.5
Geometric mean	4.539648
Variance	9.213636
Standard deviation	3.035397
Standard error	0.915207
Minimum	2.5
Maximum	10.
Range	7.5
Lower quartile	2.5
Upper quartile	8.
Interquartile range	5.5
Skewness	0.496336
Standardized skewness	0.672043
Kurtosis	-1.297197
Standardized kurtosis	-0.878206
Coeff. of variation	57.075845

Variable:	G161I Magnesium, dissolved ug/l
Sample size	12.
Average	31172.916667
Median	34950.
Mode	34900.
Geometric mean	24052.246686
Variance	104806529.356062
Standard deviation	10237.506013
Standard error	2955.313426
Minimum	575.
Maximum	39000.
Range	38425.
Lower quartile	29150.
Upper quartile	36300.
Interquartile range	7150.
Skewness	-2.795191
Standardized skewness	-3.952996
Kurtosis	8.648996
Standardized kurtosis	6.115764
Coeff. of variation	32.841027

Variable:	G161I Manganese, dissolved ug/l
Sample size	4.
Range	64.
Median	68.
Mode	65.
Geometric mean	62.677187
Variance	198.
Standard deviation	14.071247
Standard error	7.035624
Minimum	44.
Maximum	76.
Range	32.
Lower quartile	54.5
Upper quartile	73.5
Interquartile range	19.
Skewness	-1.418467
Standardized skewness	-1.158173
Kurtosis	2.07137
Standardized kurtosis	0.845633
Coeff. of variation	21.986324

Variable:	G161I Sodium, dissolved ug/l
Sample size	11.
Range	29447.272727
Median	24000.
Mode	24000.
Geometric mean	23805.33597
Variance	470452581.818183
Standard deviation	21689.918898
Standard error	6539.756611
Minimum	7920.
Maximum	82000.
Range	74080.
Lower quartile	16000.
Upper quartile	47100.
Interquartile range	31100.
Skewness	1.624483
Standardized skewness	2.199561
Kurtosis	2.648641
Standardized kurtosis	1.793138
Coeff. of variation	73.6568

Variable:	G161I Sulfate, dissolved ug/l
Sample size	11.
Mean	51.581818
Median	49.
Mode	36.
Geometric mean	47.721928
Variance	553.323636
Standard deviation	23.522832
Standard error	7.092401
Minimum	27.4
Maximum	112.
Range	84.6
Lower quartile	36.
Upper quartile	62.
Interquartile range	26.
Skewness	1.810454
Standardized skewness	2.451366
Kurtosis	4.250915
Standardized kurtosis	2.877883
Coeff. of variation	45.602953

Variable:	G161I Total Dissolved Solids mg/l
Sample size	12.
Average	395.166667
Median	391.
Mode	364.
Geometric mean	392.868712
Variance	2109.242424
Standard deviation	45.926489
Standard error	13.257835
Minimum	336.
Maximum	505.
Range	169.
Lower quartile	364.
Upper quartile	416.5
Interquartile range	52.5
Skewness	1.206255
Standardized skewness	1.705902
Kurtosis	1.951718
Standardized kurtosis	1.380073
Coeff. of variation	11.622056

Variable: G164I pH units

Sample size	14.
Range	7.244286
Mean	7.245
Mode	7.21
Geometric mean	7.238676
Variance	0.088211
Standard deviation	0.297003
Standard error	0.079377
Minimum	6.81
Maximum	7.86
Range	1.05
Lower quartile	7.02
Upper quartile	7.46
Interquartile range	0.44
Skewness	0.389917
Standardized skewness	0.595609
Kurtosis	-0.333984
Standardized kurtosis	-0.255085
Coeff. of variation	4.099829

Variable: G164I Specific Conductance umhos/cm

Sample size	13.
Range	805.307692
Mean	753.
Mode	753.
Geometric mean	787.181308
Variance	36566.564103
Standard deviation	191.223859
Standard error	53.035956
Minimum	547.
Maximum	1315.
Range	768.
Lower quartile	717.
Upper quartile	828.
Interquartile range	111.
Skewness	1.638136
Standardized skewness	2.411271
Kurtosis	3.768226
Standardized kurtosis	2.773339
Coeff. of variation	23.74544

Variable:	G164I Alkalinity mg/l
Sample size	14.
Average	325.857143
Median	322.
Mode	306.
Geometric mean	325.138511
Variance	543.67033
Standard deviation	23.316739
Standard error	6.231661
Minimum	306.
Maximum	392.
Range	86.
Lower quartile	310.
Upper quartile	330.
Interquartile range	20.
Skewness	2.033086
Standardized skewness	3.10559
Kurtosis	4.646893
Standardized kurtosis	3.549123
Coeff. of variation	7.15551

Variable:	G164I Boron, dissolved ug/l
Sample size	4.
Range	167.5
Median	175.
Mode	170.
Geometric mean	142.565289
Variance	8158.333333
Standard deviation	90.323493
Standard error	45.161746
Minimum	50.
Maximum	270.
Range	220.
Lower quartile	110.
Upper quartile	225.
Interquartile range	115.
Skewness	-0.491594
Standardized skewness	-0.401384
Kurtosis	1.575396
Standardized kurtosis	0.643153
Coeff. of variation	53.924473

Variable:	G164I Chloride, dissolved mg/l
Sample size	14.
Mean	156.857143
Median	155.
Mode	162.
Geometric mean	155.695682
Variance	398.593407
Standard deviation	19.964804
Standard error	5.335818
Minimum	130.
Maximum	192.
Range	62.
Lower quartile	140.
Upper quartile	170.
Interquartile range	30.
Skewness	0.343315
Standardized skewness	0.524422
Kurtosis	-1.135599
Standardized kurtosis	-0.867328
Coeff. of variation	12.728017

Variable:	G164I Sulfate, dissolved mg/l
Sample size	14.
Average	86.828571
Median	94.
Mode	94.
Geometric mean	85.107543
Variance	298.565275
Standard deviation	17.279041
Standard error	4.618018
Minimum	59.
Maximum	110.
Range	51.
Lower quartile	73.
Upper quartile	99.
Interquartile range	26.
Skewness	-0.451985
Standardized skewness	-0.690419
Kurtosis	-1.294884
Standardized kurtosis	-0.988984
Coeff. of variation	19.900179

Variable:	G164I Total Organic Carbon, mg/l
Sample size	14.
Range	1.922857
Median	1.5
Mode	0.5
Geometric mean	1.576208
Variance	1.904945
Standard deviation	1.380197
Standard error	0.368873
Minimum	0.5
Maximum	6.
Range	5.5
Lower quartile	1.29
Upper quartile	2.25
Interquartile range	0.96
Skewness	2.131761
Standardized skewness	3.256318
Kurtosis	5.852699
Standardized kurtosis	4.470073
Coeff. of variation	71.778472

Variable:	G164I Total Dissolved Solids mg/l
Sample size	14.
Mean	700.928571
Median	704.
Mode	680.
Geometric mean	697.065583
Variance	5511.917582
Standard deviation	74.24229
Standard error	19.842087
Minimum	515.
Maximum	855.
Range	340.
Lower quartile	680.
Upper quartile	718.
Interquartile range	38.
Skewness	-0.527852
Standardized skewness	-0.806307
Kurtosis	3.426562
Standardized kurtosis	2.61708
Coeff. of variation	10.591991

Variable: G155I pH units

Sample size	12.
Average	7.4775
Median	7.51
Mode	7.5
Geometric mean	7.4715
Variance	0.09862
Standard deviation	0.314039
Standard error	0.090655
Minimum	7.05
Maximum	8.08
Range	1.03
Lower quartile	7.195
Upper quartile	7.655
Interquartile range	0.46
Skewness	0.380853
Standardized skewness	0.538608
Kurtosis	-0.428405
Standardized kurtosis	-0.302928
Coeff. of variation	4.199785

Variable: G155I Specific Conductance umhos/cm

Sample size	12.
Average	491.083333
Median	491.
Mode	487.
Geometric mean	484.431666
Variance	7106.992424
Standard deviation	84.30298
Standard error	24.336174
Minimum	361.
Maximum	645.
Range	284.
Lower quartile	423.5
Upper quartile	546.5
Interquartile range	123.
Skewness	0.213869
Standardized skewness	0.302456
Kurtosis	-0.431974
Standardized kurtosis	-0.305451
Coeff. of variation	17.166736

Variable: G155I -- ALKALINITY mg/l

Sample size	12.
Average	383.166667
Median	358.
Mode	358.
Geometric mean	380.481381
Variance	2443.242424
Standard deviation	49.429166
Standard error	14.268971
Minimum	336.
Maximum	504.
Range	168.
Lower quartile	349.
Upper quartile	406.
Interquartile range	57.
Skewness	1.423785
Standardized skewness	2.013537
Kurtosis	2.090074
Standardized kurtosis	1.477905
Coeff. of variation	12.900174

Variable: G155I Boron, dissolved ug/l

Sample size	3.
Average	96.666667
Median	120.
Mode	120.
Geometric mean	89.628095
Variance	1633.333333
Standard deviation	40.414519
Standard error	23.333333
Minimum	50.
Maximum	120.
Range	70.
Lower quartile	50.
Upper quartile	120.
Interquartile range	70.
Skewness	-1.732051
Standardized skewness	-1.224745
Kurtosis	-32768.
Standardized kurtosis	-32768.
Coeff. of variation	41.808123

Variable: G155I Calcium, dissolved ug/l

Sample size	13.
Average	84823.076923
Median	83500.
Mode	83500.
Geometric mean	83539.93855
Variance	240493589.743591
Standard deviation	15507.855743
Standard error	4301.105312
Minimum	58400.
Maximum	117000.
Range	58600.
Lower quartile	77000.
Upper quartile	94700.
Interquartile range	17700.
Skewness	0.51422
Standardized skewness	0.756912
Kurtosis	0.369003
Standardized kurtosis	0.271579
Coeff. of variation	18.28259

Variable: G155I -- CHLORIDE mg/l

Sample size	12.
Average	11.166667
Median	12.
Mode	6.
Geometric mean	10.353365
Variance	19.242424
Standard deviation	4.386619
Standard error	1.266308
Minimum	6.
Maximum	18.
Range	12.
Lower quartile	7.
Upper quartile	14.
Interquartile range	7.
Skewness	0.268964
Standardized skewness	0.380373
Kurtosis	-1.12671
Standardized kurtosis	-0.796704
Coeff. of variation	39.283153

Variable: G155I Iron, dissolved ug/l

Sample size	5.
Average	2990.
Median	2200.
Mode	2200.
Geometric mean	2696.509471
Variance	2282200.
Standard deviation	1510.695204
Standard error	675.603434
Minimum	1480.
Maximum	5000.
Range	3520.
Lower quartile	2100.
Upper quartile	4170.
Interquartile range	2070.
Skewness	0.619092
Standardized skewness	0.565151
Kurtosis	-2.125645
Standardized kurtosis	-0.97022
Coeff. of variation	50.524923

Variable: G155I Magnesium, dissolved ug/l

Sample size	13.
Average	37107.692308
Median	40400.
Mode	40400.
Geometric mean	33918.300267
Variance	115997435.897437
Standard deviation	10770.210578
Standard error	2987.118961
Minimum	5700.
Maximum	47900.
Range	42200.
Lower quartile	36100.
Upper quartile	43000.
Interquartile range	6900.
Skewness	-2.330667
Standardized skewness	-3.430648
Kurtosis	6.318549
Standardized kurtosis	4.650326
Coeff. of variation	29.024199

Variable: G155I Manganese, dissolved ug/l

Sample size	5.
Average	31.98
Median	31.
Mode	31.
Geometric mean	31.042574
Variance	68.252
Standard deviation	8.261477
Standard error	3.694645
Minimum	20.
Maximum	42.
Range	22.
Lower quartile	30.
Upper quartile	36.9
Interquartile range	6.9
Skewness	-0.445566
Standardized skewness	-0.406744
Kurtosis	0.393714
Standardized kurtosis	0.179705
Coeff. of variation	25.833261

Variable: G155I Sodium, dissolved ug/l

Sample size	13.
Average	13990.
Median	12600.
Mode	12600.
Geometric mean	13094.676546
Variance	30349300.
Standard deviation	5509.019877
Standard error	1527.927203
Minimum	6270.
Maximum	25700.
Range	19430.
Lower quartile	11100.
Upper quartile	13800.
Interquartile range	2700.
Skewness	1.075438
Standardized skewness	1.583002
Kurtosis	0.492183
Standardized kurtosis	0.362237
Coeff. of variation	39.378269

Variable:	G155I -- SULFATE mg/l
Sample size	12.
Average	12.416667
Median	13.5
Mode	13.
Geometric mean	10.480406
Variance	32.401515
Standard deviation	5.692233
Standard error	1.643206
Minimum	2.5
Maximum	21.
Range	18.5
Lower quartile	9.5
Upper quartile	16.
Interquartile range	6.5
Skewness	-0.657217
Standardized skewness	-0.929445
Kurtosis	-0.037214
Standardized kurtosis	-0.026314
Coeff. of variation	45.843486

Variable:	G155I TOC mg/l
Sample size	12.
Average	3.655
Median	2.525
Mode	2.05
Geometric mean	2.904195
Variance	6.758645
Standard deviation	2.599739
Standard error	0.75048
Minimum	1.
Maximum	7.74
Range	6.74
Lower quartile	1.71
Upper quartile	6.165
Interquartile range	4.455
Skewness	0.860968
Standardized skewness	1.217592
Kurtosis	-1.00317
Standardized kurtosis	-0.709348
Coeff. of variation	71.128304

Variable:	G155I -- TOTAL DISSOLVED SOLIDS mg/l
Sample size	14.
Mean	401.714286
Mode	416.
Geometric mean	320.
Variance	399.252801
Standard deviation	1997.912088
Standard error	44.69801
Minimum	11.946046
Maximum	320.
Range	452.
Lower quartile	132.
Upper quartile	372.
Interquartile range	432.
Skewness	60.
Standardized skewness	-0.848399
Kurtosis	-1.295951
Standardized kurtosis	-0.415255
Coeff. of variation	-0.317156
	11.126816

Variable: G163S pH units

Sample size	15.
Average	7.209333
Median	7.2
Mode	7.32
Geometric mean	7.205382
Variance	0.060692
Standard deviation	0.246358
Standard error	0.063609
Minimum	6.71
Maximum	7.65
Range	0.94
Lower quartile	7.1
Upper quartile	7.32
Interquartile range	0.22
Skewness	-0.221023
Standardized skewness	-0.349468
Kurtosis	0.2617
Standardized kurtosis	0.206892
Coeff. of variation	3.417212

Variable: G163S Specific Conductance umhos/cm

Sample size	15.
Average	526.533333
Median	529.
Mode	529.
Geometric mean	518.42192
Variance	8531.266667
Standard deviation	92.364856
Standard error	23.848503
Minimum	332.
Maximum	702.
Range	370.
Lower quartile	454.
Upper quartile	599.
Interquartile range	145.
Skewness	-0.318309
Standardized skewness	-0.503291
Kurtosis	0.42303
Standardized kurtosis	0.334435
Coeff. of variation	17.542072

Variable:	G163S -- ALKALINITY mg/l
Sample size	15.
Mean	261.666667
Median	240.
Mode	220.
Geometric mean	258.055018
Variance	2076.52381
Standard deviation	45.568891
Standard error	11.765837
Minimum	206.
Maximum	330.
Range	124.
Lower quartile	220.
Upper quartile	304.
Interquartile range	84.
Skewness	0.386148
Standardized skewness	0.610554
Kurtosis	-1.506023
Standardized kurtosis	-1.190615
Coeff. of variation	17.414863

Variable:	G163S Boron, dissolved ug/l
Sample size	5.
Mean	104.
Median	120.
Mode	50.
Geometric mean	92.440174
Variance	2580.
Standard deviation	50.7937
Standard error	22.715633
Minimum	50.
Maximum	150.
Range	100.
Lower quartile	50.
Upper quartile	150.
Interquartile range	100.
Skewness	-0.369331
Standardized skewness	-0.337152
Kurtosis	-3.112493
Standardized kurtosis	-1.420652
Coeff. of variation	48.840097

Variable: G163S Calcium, dissolved ug/l

Sample size	16.
Average	90143.75
Median	86900.
Mode	105000.
Geometric mean	87722.572584
Variance	490918625.000001
Standard deviation	22156.683529
Standard error	5539.170882
Minimum	57500.
Maximum	146000.
Range	88500.
Lower quartile	74150.
Upper quartile	105000.
Interquartile range	30850.
Skewness	0.837299
Standardized skewness	1.367303
Kurtosis	1.350156
Standardized kurtosis	1.102397
Coeff. of variation	24.579279

Variable: G163S -- CHLORIDE mg/l

Sample size	15.
Average	12.533333
Median	14.
Mode	12.
Geometric mean	11.724431
Variance	17.980952
Standard deviation	4.240395
Standard error	1.094865
Minimum	6.
Maximum	18.
Range	12.
Lower quartile	8.
Upper quartile	16.
Interquartile range	8.
Skewness	-0.507013
Standardized skewness	-0.801658
Kurtosis	-1.008745
Standardized kurtosis	-0.797483
Coeff. of variation	33.832941

Variable:	G163S Iron, dissolved ug/l
Sample size	8.
Average	141.1125
Median	145.
Mode	200.
Geometric mean	106.321708
Variance	8307.90125
Standard deviation	91.147689
Standard error	32.225575
Minimum	18.9
Maximum	250.
Range	231.1
Lower quartile	65.
Upper quartile	220.
Interquartile range	155.
Skewness	-0.069691
Standardized skewness	-0.080473
Kurtosis	-2.053574
Standardized kurtosis	-1.185631
Coeff. of variation	64.592215

Variable:	G163S Magnesium, dissolved ug/l
Sample size	15.
Average	42253.333333
Median	43400.
Mode	44000.
Geometric mean	41142.548778
Variance	106831238.09524
Standard deviation	10335.919799
Standard error	2668.723017
Minimum	29000.
Maximum	66000.
Range	37000.
Lower quartile	32700.
Upper quartile	50200.
Interquartile range	17500.
Skewness	0.782318
Standardized skewness	1.236954
Kurtosis	0.360296
Standardized kurtosis	0.284839
Coeff. of variation	24.461786

Variable: G163S Manganese, dissolved ug/l

Sample size	8.
Average	191.5
Median	191.
Mode	173.
Geometric mean	188.424481
Variance	1292.857143
Standard deviation	35.956323
Standard error	12.71248
Minimum	136.
Maximum	236.
Range	100.
Lower quartile	166.5
Upper quartile	222.5
Interquartile range	56.
Skewness	-0.221066
Standardized skewness	-0.255265
Kurtosis	-1.400663
Standardized kurtosis	-0.808673
Coeff. of variation	18.776148

Variable: G163S Sodium, dissolved ug/l

Sample size	16.
Average	7628.125
Median	6380.
Mode	4000.
Geometric mean	6116.435785
Variance	37355722.916668
Standard deviation	6111.93283
Standard error	1527.983207
Minimum	1000.
Maximum	28000.
Range	27000.
Lower quartile	4500.
Upper quartile	7800.
Interquartile range	3300.
Skewness	2.723658
Standardized skewness	4.447715
Kurtosis	8.849933
Standardized kurtosis	7.22594
Coeff. of variation	80.123659

Variable: G163S TOC mg/l

Sample size	15.
Average	3.864
Median	3.
Mode	3.
Geometric mean	3.413693
Variance	5.466554
Standard deviation	2.338066
Standard error	0.603686
Minimum	1.88
Maximum	10.25
Range	8.37
Lower quartile	2.57
Upper quartile	4.25
Interquartile range	1.68
Skewness	1.980353
Standardized skewness	3.131213
Kurtosis	3.581661
Standardized kurtosis	2.831552
Coeff. of variation	60.508964

Variable: G163S -- SULFATE mg/l

Sample size	16.
Average	145.125
Median	156.
Mode	156.
Geometric mean	138.051797
Variance	1742.916667
Standard deviation	41.748253
Standard error	10.437063
Minimum	73.
Maximum	203.
Range	130.
Lower quartile	121.5
Upper quartile	169.5
Interquartile range	48.
Skewness	-0.918685
Standardized skewness	-1.500206
Kurtosis	-0.493705
Standardized kurtosis	-0.403109
Coeff. of variation	28.7671

Variable: G163S -- TOTAL DISSOLVED SOLIDS mg/l

Sample size	16.
Average	561.
Median	539.
Mode	536.
Geometric mean	526.340955
Variance	49429.466667
Standard deviation	222.327386
Standard error	55.581847
Minimum	300.
Maximum	1200.
Range	900.
Lower quartile	392.5
Upper quartile	626.
Interquartile range	233.5
Skewness	1.576185
Standardized skewness	2.5739
Kurtosis	3.681673
Standardized kurtosis	3.006074
Coeff. of variation	39.63055

Variable: G167I pH units

Sample size	15.
Average	7.282
Median	7.38
Mode	7.42
Geometric mean	7.273896
Variance	0.125274
Standard deviation	0.353941
Standard error	0.091387
Minimum	6.63
Maximum	7.82
Range	1.19
Lower quartile	6.93
Upper quartile	7.63
Interquartile range	0.7
Skewness	-0.274761
Standardized skewness	-0.434435
Kurtosis	-0.932222
Standardized kurtosis	-0.736986
Coeff. of variation	4.860493

Variable: G167I Specific Conductance umhos/cm

Sample size	15.
Average	438.6
Median	440.
Mode	440.
Geometric mean	435.621402
Variance	2918.257143
Standard deviation	54.020895
Standard error	13.948135
Minimum	357.
Maximum	577.
Range	220.
Lower quartile	410.
Upper quartile	465.
Interquartile range	55.
Skewness	0.887857
Standardized skewness	1.403826
Kurtosis	2.226901
Standardized kurtosis	1.76052
Coeff. of variation	12.316666

Variable: G167I -- ALKALINITY mg/l

Sample size	15.
Average	310.133333
Median	304.
Mode	304.
Geometric mean	309.244431
Variance	656.838095
Standard deviation	25.628853
Standard error	6.617341
Minimum	280.
Maximum	392.
Range	112.
Lower quartile	298.
Upper quartile	312.
Interquartile range	14.
Skewness	2.536514
Standardized skewness	4.010581
Kurtosis	8.004048
Standardized kurtosis	6.327756
Coeff. of variation	8.263818

Variable: G167I Boron, dissolved ug/l

Sample size	5.
Average	92.
Median	100.
Mode	50.
Geometric mean	83.255321
Variance	2070.
Standard deviation	45.497253
Standard error	20.34699
Minimum	50.
Maximum	160.
Range	110.
Lower quartile	50.
Upper quartile	100.
Interquartile range	50.
Skewness	0.740078
Standardized skewness	0.675595
Kurtosis	0.055311
Standardized kurtosis	0.025246
Coeff. of variation	49.453536

Variable: G167I Calcium, dissolved ug/l

Sample size	15.
Average	78000.
Median	81000.
Mode	81000.
Geometric mean	77467.526457
Variance	80831428.57143
Standard deviation	8990.630043
Standard error	2321.370695
Minimum	56600.
Maximum	87000.
Range	30400.
Lower quartile	69600.
Upper quartile	84900.
Interquartile range	15300.
Skewness	-1.210581
Standardized skewness	-1.914096
Kurtosis	0.765931
Standardized kurtosis	0.605522
Coeff. of variation	11.526449

Variable: G167I -- CHLORIDE mg/l

Sample size	15.
Average	5.666667
Median	6.
Mode	8.
Geometric mean	5.063376
Variance	6.595238
Standard deviation	2.56812
Standard error	0.663086
Minimum	2.5
Maximum	10.
Range	7.5
Lower quartile	2.5
Upper quartile	8.
Interquartile range	5.5
Skewness	0.040821
Standardized skewness	0.064543
Kurtosis	-1.448265
Standardized kurtosis	-1.144954
Coeff. of variation	45.319757

Variable: G167I Iron, dissolved ug/l

Sample size	8.
Average	736.625
Median	445.
Mode	410.
Geometric mean	443.015316
Variance	481051.125
Standard deviation	693.578492
Standard error	245.217028
Minimum	60.
Maximum	1980.
Range	1920.
Lower quartile	221.5
Upper quartile	1260.
Interquartile range	1038.5
Skewness	0.971568
Standardized skewness	1.12187
Kurtosis	-0.314288
Standardized kurtosis	-0.181454
Coeff. of variation	94.156252

Variable: G167I Magnesium, dissolved ug/l

Sample size	16.
Average	32906.25
Median	33200.
Mode	34000.
Geometric mean	32795.700186
Variance	7541958.333333
Standard deviation	2746.262612
Standard error	686.565653
Minimum	26800.
Maximum	38000.
Range	11200.
Lower quartile	31600.
Upper quartile	34500.
Interquartile range	2900.
Skewness	-0.411062
Standardized skewness	-0.671261
Kurtosis	0.570331
Standardized kurtosis	0.465674
Coeff. of variation	8.345717

Variable: G167I Manganese, dissolved ug/l

Sample size	8.
Average	52.375
Median	50.
Mode	47.
Geometric mean	51.914243
Variance	60.839286
Standard deviation	7.799954
Standard error	2.7577
Minimum	45.
Maximum	69.
Range	24.
Lower quartile	47.
Upper quartile	55.5
Interquartile range	8.5
Skewness	1.583664
Standardized skewness	1.828658
Kurtosis	2.660095
Standardized kurtosis	1.535807
Coeff. of variation	14.892514

Variable: G167I Sodium, dissolved ug/l

Sample size	16.
Average	13398.75
Median	7600.
Mode	7400.
Geometric mean	9238.167779
Variance	430012558.333335
Standard deviation	20736.744159
Standard error	5184.18604
Minimum	5680.
Maximum	90500.
Range	84820.
Lower quartile	6800.
Upper quartile	9500.
Interquartile range	2700.
Skewness	3.889879
Standardized skewness	6.352146
Kurtosis	15.343277
Standardized kurtosis	12.527733
Coeff. of variation	154.766259

Variable:	G167I -- SULFATE mg/l
Sample size	16.
Average	39.9375
Median	36.
Mode	36.
Geometric mean	38.582888
Variance	146.8625
Standard deviation	12.118684
Standard error	3.029671
Minimum	27.
Maximum	76.
Range	49.
Lower quartile	32.5
Upper quartile	44.
Interquartile range	11.5
Skewness	2.030601
Standardized skewness	3.315957
Kurtosis	4.726312
Standardized kurtosis	3.859018
Coeff. of variation	30.344122

Variable:	G167I TOC mg/l
Sample size	15.
Average	1.366667
Median	1.
Mode	1.
Geometric mean	1.229995
Variance	0.739881
Standard deviation	0.860163
Standard error	0.222093
Minimum	1.
Maximum	4.25
Range	3.25
Lower quartile	1.
Upper quartile	1.5
Interquartile range	0.5
Skewness	3.074562
Standardized skewness	4.861309
Kurtosis	10.181781
Standardized kurtosis	8.049405
Coeff. of variation	62.93878

Variable:	G167I	TOTAL DISSOLVED SOLIDES	mg/l
Sample size	15.		
Average	389.		
Mean	372.		
Mode	372.		
Geometric mean	384.590285		
Variance	4197.428571		
Standard deviation	64.787565		
Standard error	16.728077		
Minimum	316.		
Maximum	568.		
Range	252.		
Lower quartile	348.		
Upper quartile	400.		
Interquartile range	52.		
Skewness	1.751485		
Standardized skewness	2.76934		
Kurtosis	3.426784		
Standardized kurtosis	2.709111		
Coeff. of variation	16.654901		

Variable: G169I pH units

Sample size	14.
Average	7.363571
Median	7.39
Mode	7.36
Geometric mean	7.354325
Variance	0.146702
Standard deviation	0.383017
Standard error	0.102365
Minimum	6.74
Maximum	8.16
Range	1.42
Lower quartile	7.09
Upper quartile	7.58
Interquartile range	0.49
Skewness	0.105175
Standardized skewness	0.160658
Kurtosis	0.220856
Standardized kurtosis	0.168682
Coeff. of variation	5.201505

Variable: G169I Specific Conductance umhos/cm

Sample size	14.
Average	438.428571
Median	435.5
Mode	441.
Geometric mean	435.203611
Variance	3175.340659
Standard deviation	56.350161
Standard error	15.060214
Minimum	349.
Maximum	568.
Range	219.
Lower quartile	407.
Upper quartile	466.
Interquartile range	59.
Skewness	0.823262
Standardized skewness	1.257553
Kurtosis	1.131764
Standardized kurtosis	0.864399
Coeff. of variation	12.852758

Variable:	G169I -- ALKALINITY mg/l
Sample size	14.
Average	324.285714
Median	315.
Mode	310.
Geometric mean	323.629892
Variance	493.450549
Standard deviation	22.213747
Standard error	5.936874
Minimum	308.
Maximum	388.
Range	80.
Lower quartile	310.
Upper quartile	332.
Interquartile range	22.
Skewness	2.090608
Standardized skewness	3.193456
Kurtosis	4.786097
Standardized kurtosis	3.655442
Coeff. of variation	6.850054

Variable:	G169I Boron, dissolved ug/l
Sample size	5.
Average	88.
Median	50.
Mode	50.
Geometric mean	71.926039
Variance	5520.
Standard deviation	74.296702
Standard error	33.226495
Minimum	50.
Maximum	220.
Range	170.
Lower quartile	50.
Upper quartile	70.
Interquartile range	20.
Skewness	2.163525
Standardized skewness	1.975019
Kurtosis	4.715462
Standardized kurtosis	2.152304
Coeff. of variation	84.428071

Variable: G169I Calcium, dissolved ug/l

Sample size	15.
Average	76000.
Median	79000.
Mode	68600.
Geometric mean	75539.379247
Variance	71141428.57143
Standard deviation	8434.53784
Standard error	2177.788306
Minimum	58300.
Maximum	86700.
Range	28400.
Lower quartile	68600.
Upper quartile	83000.
Interquartile range	14400.
Skewness	-0.664889
Standardized skewness	-1.051282
Kurtosis	-0.513873
Standardized kurtosis	-0.406253
Coeff. of variation	11.098076

Variable: G169I -- CHLORIDE mg/l

Sample size	14.
Average	3.714286
Median	2.5
Mode	2.5
Geometric mean	3.37617
Variance	3.758242
Standard deviation	1.938619
Standard error	0.518118
Minimum	2.5
Maximum	8.
Range	5.5
Lower quartile	2.5
Upper quartile	4.
Interquartile range	1.5
Skewness	1.763932
Standardized skewness	2.69445
Kurtosis	2.155974
Standardized kurtosis	1.646652
Coeff. of variation	52.193575

Variable: G169I Iron, dissolved ug/l

Sample size	8.
Average	916.875
Median	930.
Mode	920.
Geometric mean	750.055904
Variance	207835.267857
Standard deviation	455.889535
Standard error	161.181291
Minimum	120.
Maximum	1430.
Range	1310.
Lower quartile	627.5
Upper quartile	1335.
Interquartile range	707.5
Skewness	-0.568974
Standardized skewness	-0.656995
Kurtosis	-0.345272
Standardized kurtosis	-0.199343
Coeff. of variation	49.722103

Variable: G169I Magnesium, dissolved ug/l

Sample size	15.
Average	33286.666667
Median	33900.
Mode	33900.
Geometric mean	32952.451879
Variance	22696952.380953
Standard deviation	4764.13186
Standard error	1230.093557
Minimum	23900.
Maximum	41000.
Range	17100.
Lower quartile	30000.
Upper quartile	36600.
Interquartile range	6600.
Skewness	-0.376104
Standardized skewness	-0.594673
Kurtosis	-0.507716
Standardized kurtosis	-0.401385
Coeff. of variation	14.312433

Variable: G169I Manganese, dissolved ug/l

Sample size	8.
Average	44.5375
Median	44.
Mode	43.
Geometric mean	44.189069
Variance	35.168393
Standard deviation	5.930295
Standard error	2.096676
Minimum	36.
Maximum	53.
Range	17.
Lower quartile	40.15
Upper quartile	49.5
Interquartile range	9.35
Skewness	0.029775
Standardized skewness	0.034381
Kurtosis	-1.049531
Standardized kurtosis	-0.605947
Coeff. of variation	13.315284

Variable: G169I Sodium, dissolved ug/l

Sample size	16.
Average	8302.5
Median	7720.
Mode	7000.
Geometric mean	7918.872897
Variance	8243153.333333
Standard deviation	2871.089224
Standard error	717.772306
Minimum	4300.
Maximum	17000.
Range	12700.
Lower quartile	7000.
Upper quartile	9300.
Interquartile range	2300.
Skewness	1.86654
Standardized skewness	3.048047
Kurtosis	5.30529
Standardized kurtosis	4.331751
Coeff. of variation	34.58102

Variable:	G169I -- SULFATE mg/l
Sample size	15.
Range	25.6
Median	23.
Mode	23.
Geometric mean	24.720246
Variance	51.4
Standard deviation	7.169379
Standard error	1.851126
Minimum	14.
Maximum	40.
Range	26.
Lower quartile	22.
Upper quartile	27.
Interquartile range	5.
Skewness	0.86162
Standardized skewness	1.36234
Kurtosis	0.403111
Standardized kurtosis	0.318688
Coeff. of variation	28.005388

variable:	G169I TOC mg/l
Sample size	14.
Average	1.571429
Median	1.
Mode	1.
Geometric mean	1.242923
Variance	2.725275
Standard deviation	1.650841
Standard error	0.441206
Minimum	1.
Maximum	7.
Range	6.
Lower quartile	1.
Upper quartile	1.
Interquartile range	0.
Skewness	3.204623
Standardized skewness	4.895143
Kurtosis	10.558273
Standardized kurtosis	8.064014
Coeff. of variation	105.053493

Variable:	G169I -- TOTAL DISSOLVED SOLIDS	mg/l
Sample size	14.	
Mean	331.928571	
Median	350.	
Mode	328.	
Geometric mean	322.867417	
Variance	4366.994505	
Standard deviation	66.083239	
Standard error	17.661489	
Minimum	133.	
Maximum	408.	
Range	275.	
Lower quartile	310.	
Upper quartile	364.	
Interquartile range	54.	
Skewness	-2.214401	
Standardized skewness	-3.382554	
Kurtosis	6.577459	
Standardized kurtosis	5.023618	
Coeff. of variation	19.908873	

Variable: G170I pH units

Sample size	14.
Range	7.337857
Median	7.35
Mode	7.28
Geometric mean	7.326985
Variance	0.174757
Standard deviation	0.418039
Standard error	0.111726
Minimum	6.64
Maximum	8.34
Range	1.7
Lower quartile	7.05
Upper quartile	7.51
Interquartile range	0.46
Skewness	0.653698
Standardized skewness	0.99854
Kurtosis	1.612223
Standardized kurtosis	1.231356
Coeff. of variation	5.697017

Variable: G170I Specific Conductance umhos/cm

Sample size	14.
Average	530.5
Median	516.
Mode	504.
Geometric mean	527.47824
Variance	3494.423077
Standard deviation	59.113645
Standard error	15.798786
Minimum	434.
Maximum	640.
Range	206.
Lower quartile	488.
Upper quartile	581.
Interquartile range	93.
Skewness	0.327222
Standardized skewness	0.49984
Kurtosis	-0.757547
Standardized kurtosis	-0.578586
Coeff. of variation	11.143006

Variable:	G170I -- ALKALINITY mg/l
Sample size	14.
Average	409.857143
Median	407.
Mode	448.
Geometric mean	408.045154
Variance	1611.978022
Standard deviation	40.149446
Standard error	10.730391
Minimum	346.
Maximum	488.
Range	142.
Lower quartile	382.
Upper quartile	448.
Interquartile range	66.
Skewness	0.265899
Standardized skewness	0.406167
Kurtosis	-0.620739
Standardized kurtosis	-0.474097
Coeff. of variation	9.795961

Variable:	G170I Boron, dissolved ug/l
Sample size	4.
Average	157.5
Median	175.
Mode	160.
Geometric mean	141.534358
Variance	4825.
Standard deviation	69.46222
Standard error	34.73111
Minimum	60.
Maximum	220.
Range	160.
Lower quartile	110.
Upper quartile	205.
Interquartile range	95.
Skewness	-1.289701
Standardized skewness	-1.053036
Kurtosis	1.783565
Standardized kurtosis	0.728137
Coeff. of variation	44.102997

Variable: G170I Calcium, dissolved ug/l

Sample size	4.
Age	78175.
Mean	74100.
Mode	69000.
Geometric mean	77465.206633
Variance	156522500.000002
Standard deviation	12510.895252
Standard error	6255.447626
Minimum	69000.
Maximum	95500.
Range	26500.
Lower quartile	69000.
Upper quartile	87350.
Interquartile range	18350.
Skewness	1.244847
Standardized skewness	1.016414
Kurtosis	0.686431
Standardized kurtosis	0.280234
Coeff. of variation	16.003704

Variable: G170I Iron, dissolved ug/l

Sample size	4.
Range	22.5
Median	15.
Mode	10.
Geometric mean	17.782794
Variance	358.333333
Standard deviation	18.929694
Standard error	9.464847
Minimum	10.
Maximum	50.
Range	40.
Lower quartile	10.
Upper quartile	35.
Interquartile range	25.
Skewness	1.658524
Standardized skewness	1.354179
Kurtosis	2.615468
Standardized kurtosis	1.06776
Coeff. of variation	84.131975

Variable: G170I Magnesium, dissolved ug/l

Sample size	4.
Average	40500.
Median	39900.
Mode	35800.
Geometric mean	40163.951736
Variance	36493333.333335
Standard deviation	6040.971224
Standard error	3020.485612
Minimum	35000.
Maximum	47200.
Range	12200.
Lower quartile	35400.
Upper quartile	45600.
Interquartile range	10200.
Skewness	0.222086
Standardized skewness	0.181332
Kurtosis	-4.568971
Standardized kurtosis	-1.865275
Coeff. of variation	14.915978

Variable: G170I Manganese, dissolved ug/l

Sample size	4.
Average	47.
Median	45.
Mode	43.
Arithmetic mean	46.692906
Variance	40.666667
Standard deviation	6.377042
Standard error	3.188521
Minimum	42.
Maximum	56.
Range	14.
Lower quartile	42.5
Upper quartile	51.5
Interquartile range	9.
Skewness	1.388176
Standardized skewness	1.133441
Kurtosis	1.5
Standardized kurtosis	0.612372
Coeff. of variation	13.568175

Variable: G170I Sodium, dissolved ug/l

Sample size	4.
Average	11500.
Median	12300.
Mode	9000.
Arithmetic mean	10123.185066
Variance	34573333.333334
Standard deviation	5879.909296
Standard error	2939.954648
Minimum	4400.
Maximum	17000.
Range	12600.
Lower quartile	6700.
Upper quartile	16300.
Interquartile range	9600.
Skewness	-0.453347
Standardized skewness	-0.370156
Kurtosis	-2.964791
Standardized kurtosis	-1.210371
Coeff. of variation	51.129646

Variable: G170I -- SULFATE mg/l

Sample size	14.
Average	15.642857
Median	15.
Mode	13.
Geometric mean	12.305968
Variance	111.593407
Standard deviation	10.563778
Standard error	2.823288
Minimum	2.5
Maximum	46.
Range	43.5
Lower quartile	13.
Upper quartile	20.
Interquartile range	7.
Skewness	1.736045
Standardized skewness	2.651852
Kurtosis	5.192949
Standardized kurtosis	3.966181
Coeff. of variation	67.531001

Variable: G170I TOC mg/l

Sample size	14.
Average	2.631429
Median	1.
Mode	1.
Geometric mean	1.569506
Variance	18.384829
Standard deviation	4.287753
Standard error	1.14595
Minimum	1.
Maximum	17.
Range	16.
Lower quartile	1.
Upper quartile	1.5
Interquartile range	0.5
Skewness	3.346945
Standardized skewness	5.112543
Kurtosis	11.628948
Standardized kurtosis	8.881756
Coeff. of variation	162.943937

Variable:	G170I -- TOTAL DISSOLVED SOLIDS mg/l
Sample size	14.
Average	467.142857
Mean	446.5
Mode	445.
Geometric mean	456.020013
Variance	14145.978022
Standard deviation	118.936866
Standard error	31.787214
Minimum	317.
Maximum	836.
Range	519.
Lower quartile	432.
Upper quartile	480.
Interquartile range	48.
Skewness	2.423685
Standardized skewness	3.702239
Kurtosis	7.892515
Standardized kurtosis	6.028008
Coeff. of variation	25.460491

Variable: G171I pH units

Sample size	14.
Average	7.352143
Median	7.5
Mode	7.44
Geometric mean	7.338769
Variance	0.204387
Standard deviation	0.452092
Standard error	0.120827
Minimum	6.35
Maximum	7.96
Range	1.61
Lower quartile	6.92
Upper quartile	7.68
Interquartile range	0.76
Skewness	-0.906178
Standardized skewness	-1.384209
Kurtosis	0.206401
Standardized kurtosis	0.157641
Coeff. of variation	6.149122

Variable: G171I Specific Conductance umhos/cm

Sample size	14.
Average	503.071429
Median	484.
Mode	472.
Geometric mean	495.448966
Variance	9283.60989
Standard deviation	96.351491
Standard error	25.751019
Minimum	394.
Maximum	722.
Range	328.
Lower quartile	436.
Upper quartile	542.
Interquartile range	106.
Skewness	1.379233
Standardized skewness	2.106813
Kurtosis	1.395968
Standardized kurtosis	1.066188
Coeff. of variation	19.152646

Variable:	G171I -- ALKALINITY mg/l
Sample size	14.
Average	363.428571
Median	368.
Mode	330.
Geometric mean	361.79954
Variance	1282.725275
Standard deviation	35.815154
Standard error	9.572003
Minimum	312.
Maximum	432.
Range	120.
Lower quartile	330.
Upper quartile	388.
Interquartile range	58.
Skewness	0.219781
Standardized skewness	0.335721
Kurtosis	-0.866822
Standardized kurtosis	-0.662046
Coeff. of variation	9.854799

Variable:	G171I Boron, dissolved ug/l
Sample size	4.
Average	130.
Median	135.
Mode	130.
Geometric mean	123.058179
Variance	2066.666667
Standard deviation	45.460606
Standard error	22.730303
Minimum	70.
Maximum	180.
Range	110.
Lower quartile	100.
Upper quartile	160.
Interquartile range	60.
Skewness	-0.638625
Standardized skewness	-0.521435
Kurtosis	1.5
Standardized kurtosis	0.612372
Coeff. of variation	34.969697

Variable: G171I Calcium, dissolved ug/l

Sample size	4.
Mean	64000.
Median	61500.
Mode	58100.
Geometric mean	63500.171078
Variance	89540000.000002
Standard deviation	9462.557794
Standard error	4731.278897
Minimum	56000.
Maximum	77000.
Range	21000.
Lower quartile	57050.
Upper quartile	70950.
Interquartile range	13900.
Skewness	1.16479
Standardized skewness	0.951047
Kurtosis	0.581599
Standardized kurtosis	0.237437
Coeff. of variation	14.785247

Variable:

Electronic Filing Received, Clerk's Office 03/14/2024

B 000675

Sample size	4.
Average	15.
Median	12.5
Mode	5.
Geometric mean	11.066819
Variance	150.
Standard deviation	12.247449
Standard error	6.123724
Minimum	5.
Maximum	30.
Range	25.
Lower quartile	5.
Upper quartile	25.
Interquartile range	20.
Skewness	0.544331
Standardized skewness	0.444444
Kurtosis	-2.944444
Standardized kurtosis	-1.202064
Coeff. of variation	81.649658

Variable:

G171I Magnesium, dissolved ug/l

Sample size	4.
Average	35450.
Median	35200.
Mode	34600.
Geometric mean	35409.704068
Variance	3850000.
Standard deviation	1962.141687
Standard error	981.070844
Minimum	33400.
Maximum	38000.
Range	4600.
Lower quartile	34000.
Upper quartile	36900.
Interquartile range	2900.
Skewness	0.652613
Standardized skewness	0.532856
Kurtosis	0.101063
Standardized kurtosis	0.041259
Coeff. of variation	5.534955

Variable: G171I Manganese, dissolved ug/l

Sample size	4.
Average	155.75
Median	169.5
Mode	147.
Geometric mean	130.775387
Variance	7123.583333
Standard deviation	84.401323
Standard error	42.200662
Minimum	43.
Maximum	241.
Range	198.
Lower quartile	95.
Upper quartile	216.5
Interquartile range	121.5
Skewness	-0.850262
Standardized skewness	-0.694236
Kurtosis	0.698933
Standardized kurtosis	0.285338
Coeff. of variation	54.190256

Variable: G171I Sodium, dissolved ug/l

Sample size	4.
Average	20325.
Median	20300.
Mode	13000.
Geometric mean	18422.109809
Variance	97609166.666668
Standard deviation	9879.735152
Standard error	4939.867576
Minimum	10700.
Maximum	30000.
Range	19300.
Lower quartile	11850.
Upper quartile	28800.
Interquartile range	16950.
Skewness	0.00413
Standardized skewness	0.003373
Kurtosis	-5.444642
Standardized kurtosis	-2.222766
Coeff. of variation	48.608783

Variable:	G171I -- SULFATE mg/l
Sample size	14.
Average	25.142857
Median	20.5
Mode	18.
Geometric mean	23.068095
Variance	123.824176
Standard deviation	11.127631
Standard error	2.973985
Minimum	12.
Maximum	46.
Range	34.
Lower quartile	18.
Upper quartile	36.
Interquartile range	18.
Skewness	0.793054
Standardized skewness	1.21141
Kurtosis	-0.798003
Standardized kurtosis	-0.609485
Coeff. of variation	44.257624

Variable:	G171I TOC mg/l
Sample size	14.
Average	1.936429
Median	1.
Mode	1.
Geometric mean	1.406812
Variance	6.334055
Standard deviation	2.516755
Standard error	0.672631
Minimum	1.
Maximum	10.5
Range	9.5
Lower quartile	1.
Upper quartile	1.78
Interquartile range	0.78
Skewness	3.495388
Standardized skewness	5.339293
Kurtosis	12.586351
Standardized kurtosis	9.612985
Coeff. of variation	129.968902

Variable:	G171I -- TOTAL DISSOLVED SOLIDS	mg/l
Sample size	14.	
Range	426.285714	
Median	384.	
Mode	380.	
Geometric mean	403.683197	
Variance	35324.21978	
Standard deviation	187.947386	
Standard error	50.231052	
Minimum	307.	
Maximum	1060.	
Range	753.	
Lower quartile	332.	
Upper quartile	436.	
Interquartile range	104.	
Skewness	3.367067	
Standardized skewness	5.14328	
Kurtosis	12.03042	
Standardized kurtosis	9.188385	
Coeff. of variation	44.089534	

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

APPENDIX G

DESCRIPTIVE STATISTICS: MAIN AQUIFER

Variable: G162D -- pH units

Sample size	15.
Average	7.337333
Median	7.29
Mode	7.29
Geometric mean	7.327781
Variance	0.151678
Standard deviation	0.389459
Standard error	0.100558
Minimum	6.61
Maximum	8.08
Range	1.47
Lower quartile	7.09
Upper quartile	7.58
Interquartile range	0.49
Skewness	0.416263
Standardized skewness	0.65817
Kurtosis	0.179495
Standardized kurtosis	0.141903
Coeff. of variation	5.307906

Variable: G162D -- Specific Conductance umhos/cm

Sample size	15.
Average	407.933333
Median	439.
Mode	441.
Geometric mean	364.354295
Variance	12637.92381
Standard deviation	112.418521
Standard error	29.026337
Minimum	33.
Maximum	526.
Range	493.
Lower quartile	398.
Upper quartile	448.
Interquartile range	50.
Skewness	-2.911593
Standardized skewness	-4.603632
Kurtosis	10.032684
Standardized kurtosis	7.931533
Coeff. of variation	27.558062

Variable:	G162D Alkalinity mg/l
Sample size	12.
Average	334.5
Median	322.
Mode	320.
Geometric mean	332.775287
Variance	1420.454545
Standard deviation	37.688918
Standard error	10.879853
Minimum	302.
Maximum	440.
Range	138.
Lower quartile	311.
Upper quartile	346.
Interquartile range	35.
Skewness	2.249384
Standardized skewness	3.181109
Kurtosis	5.874102
Standardized kurtosis	4.153617
Coeff. of variation	11.26724

variable:	G162D Boron, dissolved ug/l
Sample size	8.
Average	107.5
Median	95.
Mode	20.
Geometric mean	76.204658
Variance	7307.142857
Standard deviation	85.481828
Standard error	30.22239
Minimum	20.
Maximum	270.
Range	250.
Lower quartile	35.
Upper quartile	155.
Interquartile range	120.
Skewness	0.959886
Standardized skewness	1.108381
Kurtosis	0.580126
Standardized kurtosis	0.334936
Coeff. of variation	79.517979

Variable: G162D Calcium, dissolved ug/l

Sample size	16.
Average	75868.75
Median	77500.
Mode	76000.
Geometric mean	75283.287698
Variance	89858291.666668
Standard deviation	9479.361353
Standard error	2369.840338
Minimum	55900.
Maximum	90200.
Range	34300.
Lower quartile	70150.
Upper quartile	80950.
Interquartile range	10800.
Skewness	-0.508955
Standardized skewness	-0.83112
Kurtosis	-0.096199
Standardized kurtosis	-0.078546
Coeff. of variation	12.494421

Variable: G162D Chloride, dissolved mg/l

Sample size	15.
Average	5.766667
Median	6.
Mode	6.
Geometric mean	5.231648
Variance	7.67381
Standard deviation	2.770164
Standard error	0.715253
Minimum	2.
Maximum	14.
Range	12.
Lower quartile	4.
Upper quartile	6.
Interquartile range	2.
Skewness	1.800971
Standardized skewness	2.847585
Kurtosis	5.49501
Standardized kurtosis	4.344187
Coeff. of variation	48.037529

Variable: G162D Iron, dissolved ug/l

Sample size	13.
Average	847.461538
Median	860.
Mode	860.
Geometric mean	753.253095
Variance	124102.102564
Standard deviation	352.281283
Standard error	97.705248
Minimum	180.
Maximum	1310.
Range	1130.
Lower quartile	650.
Upper quartile	1150.
Interquartile range	500.
Skewness	-0.477958
Standardized skewness	-0.703536
Kurtosis	-0.660698
Standardized kurtosis	-0.48626
Coeff. of variation	41.569

Variable: G162D Magnesium, dissolved ug/l

Sample size	16.
Average	33743.75
Median	33750.
Mode	32000.
Geometric mean	33591.547901
Variance	10709291.666667
Standard deviation	3272.505411
Standard error	818.126353
Minimum	26100.
Maximum	41100.
Range	15000.
Lower quartile	32250.
Upper quartile	35750.
Interquartile range	3500.
Skewness	-0.10657
Standardized skewness	-0.174028
Kurtosis	2.152664
Standardized kurtosis	1.757643
Coeff. of variation	9.698108

Variable: G162D Manganese, dissovod ug/l

Sample size	13.
Average	52.869231
Median	53.
Mode	53.
Geometric mean	52.090892
Variance	91.322308
Standard deviation	9.556271
Standard error	2.650433
Minimum	37.
Maximum	74.
Range	37.
Lower quartile	48.
Upper quartile	60.
Interquartile range	12.
Skewness	0.583582
Standardized skewness	0.859009
Kurtosis	0.871896
Standardized kurtosis	0.641698
Coeff. of variation	18.075297

Variable: G162D Sodium, dissolved ug/l

Sample size	16.
Average	6851.875
Median	7000.
Mode	7000.
Geometric mean	6810.918719
Variance	584776.25
Standard deviation	764.706643
Standard error	191.176661
Minimum	5590.
Maximum	8000.
Range	2410.
Lower quartile	6050.
Upper quartile	7425.
Interquartile range	1375.
Skewness	-0.25231
Standardized skewness	-0.412021
Kurtosis	-1.332765
Standardized kurtosis	-1.088198
Coeff. of variation	11.160546

Variable: G162D Sulfate, dissolved mg/l

Sample size	15.
Average	26.2
Median	28.
Mode	28.
Geometric mean	24.527176
Variance	48.171429
Standard deviation	6.940564
Standard error	1.792046
Minimum	5.
Maximum	37.
Range	32.
Lower quartile	24.
Upper quartile	30.
Interquartile range	6.
Skewness	-1.981886
Standardized skewness	-3.133637
Kurtosis	6.517591
Standardized kurtosis	5.152608
Coeff. of variation	26.490702

Variable: G162D -- TOC mg/l

Sample size	16.
Average	2.17875
Median	1.
Mode	1.
Geometric mean	1.566302
Variance	6.055492
Standard deviation	2.460791
Standard error	0.615198
Minimum	1.
Maximum	9.8
Range	8.8
Lower quartile	1.
Upper quartile	2.03
Interquartile range	1.03
Skewness	2.592306
Standardized skewness	4.233218
Kurtosis	6.457809
Standardized kurtosis	5.272779
Coeff. of variation	112.945077

Variable:	G162D Total Dissolved Solids mg/l
Sample size	15.
Mean	367.066667
Median	368.
Mode	368.
Geometric mean	363.938005
Variance	2626.780952
Standard deviation	51.252131
Standard error	13.233243
Minimum	288.
Maximum	504.
Range	216.
Lower quartile	328.
Upper quartile	395.
Interquartile range	67.
Skewness	1.154658
Standardized skewness	1.825675
Kurtosis	2.729111
Standardized kurtosis	2.157551
Coeff. of variation	13.962622

Variable: G166D -- pH units

Sample size	15.
Average	7.477333
Median	7.44
Mode	7.51
Geometric mean	7.471246
Variance	0.097592
Standard deviation	0.312398
Standard error	0.080661
Minimum	6.8
Maximum	8.12
Range	1.32
Lower quartile	7.33
Upper quartile	7.57
Interquartile range	0.24
Skewness	0.133832
Standardized skewness	0.211607
Kurtosis	1.509701
Standardized kurtosis	1.193524
Coeff. of variation	4.177931

variable: G166D -- Specific Conductance umhos/cm

Sample size	15.
Average	580.533333
Median	606.
Mode	606.
Geometric mean	571.625594
Variance	9206.266667
Standard deviation	95.949292
Standard error	24.774001
Minimum	331.
Maximum	714.
Range	383.
Lower quartile	529.
Upper quartile	629.
Interquartile range	100.
Skewness	-1.419158
Standardized skewness	-2.243885
Kurtosis	2.223786
Standardized kurtosis	1.758057
Coeff. of variation	16.527783

Variable: G166D Alkalinity mg/l

Variable	G166D Alkalinity mg/l
Sample size	12.
Average	334.666667
Median	324.
Mode	318.
Geometric mean	333.461115
Variance	970.424242
Standard deviation	31.151633
Standard error	8.992702
Minimum	312.
Maximum	416.
Range	104.
Lower quartile	318.
Upper quartile	334.
Interquartile range	16.
Skewness	2.0938
Standardized skewness	2.96108
Kurtosis	4.007414
Standardized kurtosis	2.83367
Coeff. of variation	9.308257

variable: G166D Boron, dissolved ug/l

variable	G166D Boron, dissolved ug/l
Sample size	8.
Average	96.125
Median	95.
Mode	160.
Geometric mean	80.279755
Variance	2585.839286
Standard deviation	50.851148
Standard error	17.978596
Minimum	20.
Maximum	160.
Range	140.
Lower quartile	59.5
Upper quartile	140.
Interquartile range	80.5
Skewness	-0.140645
Standardized skewness	-0.162403
Kurtosis	-0.904697
Standardized kurtosis	-0.522327
Coeff. of variation	52.901065

Variable:	G166D Calcium, dissolved ug/l
Sample size	16.
Average	101218.75
Median	106500.
Mode	110000.
Geometric mean	99194.984192
Variance	348570958.333335
Standard deviation	18670.055124
Standard error	4667.513781
Minimum	51000.
Maximum	128000.
Range	77000.
Lower quartile	93150.
Upper quartile	110500.
Interquartile range	17350.
Skewness	-1.44576
Standardized skewness	-2.360916
Kurtosis	2.443734
Standardized kurtosis	1.9953
Coeff. of variation	18.445254

Variable:	G166D Chloride, dissolved mg/l
Sample size	15.
Average	50.666667
Median	48.
Mode	48.
Geometric mean	49.70336
Variance	119.238095
Standard deviation	10.91962
Standard error	2.819434
Minimum	38.
Maximum	78.
Range	40.
Lower quartile	42.
Upper quartile	54.
Interquartile range	12.
Skewness	1.44682
Standardized skewness	2.287623
Kurtosis	2.037991
Standardized kurtosis	1.611173
Coeff. of variation	21.551881

Variable: G166D Iron, dissolved ug/l

Sample size	13.
Average	908.846154
Median	1090.
Mode	1090.
Geometric mean	707.096238
Variance	236667.307692
Standard deviation	486.484643
Standard error	134.926563
Minimum	95.
Maximum	1580.
Range	1485.
Lower quartile	380.
Upper quartile	1200.
Interquartile range	820.
Skewness	-0.614297
Standardized skewness	-0.904221
Kurtosis	-1.016371
Standardized kurtosis	-0.748028
Coeff. of variation	53.527722

Variable: G166D Magnesium, dissolved ug/l

Sample size	16.
Average	45668.75
Median	44950.
Mode	40000.
Geometric mean	45318.77458
Variance	36756958.333335
Standard deviation	6062.751713
Standard error	1515.687928
Minimum	36800.
Maximum	60000.
Range	23200.
Lower quartile	41700.
Upper quartile	47200.
Interquartile range	5500.
Skewness	1.242989
Standardized skewness	2.029793
Kurtosis	1.764636
Standardized kurtosis	1.440819
Coeff. of variation	13.275493

Variable:	G166D Manganese, dissolved ug/l
Sample size	13.
Average	54.138462
Median	53.
Mode	51.
Geometric mean	53.797646
Variance	43.049231
Standard deviation	6.561191
Standard error	1.819747
Minimum	46.
Maximum	71.
Range	25.
Lower quartile	50.
Upper quartile	57.
Interquartile range	7.
Skewness	1.363019
Standardized skewness	2.006309
Kurtosis	2.77517
Standardized kurtosis	2.04247
Coeff. of variation	12.119279

Variable:	G166D Sodium, dissolved ug/l
Sample size	16.
Average	11277.5
Median	11400.
Mode	11200.
Geometric mean	10873.551125
Variance	9605966.666667
Standard deviation	3099.349394
Standard error	774.837349
Minimum	5800.
Maximum	19000.
Range	13200.
Lower quartile	9400.
Upper quartile	13050.
Interquartile range	3650.
Skewness	0.563939
Standardized skewness	0.920909
Kurtosis	1.629269
Standardized kurtosis	1.330292
Coeff. of variation	27.482593

Variable: G166D Sulfate, dissolved mg/l

Sample size	15.
Average	84.313333
Median	88.
Mode	100.
Geometric mean	78.926869
Variance	525.401238
Standard deviation	22.921633
Standard error	5.91834
Minimum	17.
Maximum	108.
Range	91.
Lower quartile	71.2
Upper quartile	100.
Interquartile range	28.8
Skewness	-1.898893
Standardized skewness	-3.002413
Kurtosis	4.757483
Standardized kurtosis	3.76112
Coeff. of variation	27.186249

Variable: G166D -- TOC mg/l

Sample size	16.
Average	1.63
Median	1.
Mode	1.
Geometric mean	1.346342
Variance	2.163013
Standard deviation	1.470719
Standard error	0.36768
Minimum	1.
Maximum	6.75
Range	5.75
Lower quartile	1.
Upper quartile	1.62
Interquartile range	0.62
Skewness	3.211505
Standardized skewness	5.244366
Kurtosis	11.03153
Standardized kurtosis	9.007206
Coeff. of variation	90.228138

Variable:	G166D Total Dissolved Solids mg/l
Sample size	16.
Mean	540.6875
Median	522.
Mode	520.
Geometric mean	535.869073
Variance	7020.229167
Standard deviation	83.786808
Standard error	20.946702
Minimum	460.
Maximum	836.
Range	376.
Lower quartile	503.5
Upper quartile	542.
Interquartile range	38.5
Skewness	3.232362
Standardized skewness	5.278425
Kurtosis	11.792004
Standardized kurtosis	9.628131
Coeff. of variation	15.496346

Variable:	G161D	--	pH	units
Sample size	11.			
Average	7.215455			
Median	7.32			
Mode	7.32			
Geometric mean	7.206142			
Variance	0.143387			
Standard deviation	0.378665			
Standard error	0.114172			
Minimum	6.51			
Maximum	7.65			
Range	1.14			
Lower quartile	7.08			
Upper quartile	7.52			
Interquartile range	0.44			
Skewness	-0.985335			
Standardized skewness	-1.33415			
Kurtosis	0.064603			
Standardized kurtosis	0.043736			
Coeff. of variation	5.247973			

Variable:	G161D	--	Specific Conductance	uhmos/cm
Sample size	11.			
Average	443.936364			
Median	432.			
Mode	432.			
Geometric mean	440.868208			
Variance	3153.544545			
Standard deviation	56.156429			
Standard error	16.9318			
Minimum	351.			
Maximum	577.			
Range	226.			
Lower quartile	420.8			
Upper quartile	478.			
Interquartile range	57.2			
Skewness	1.079356			
Standardized skewness	1.461456			
Kurtosis	3.07831			
Standardized kurtosis	2.084026			
Coeff. of variation	12.649657			

Variable:	G161D	Alkalinity	mg/l
Sample size	11.		
Average	306.909091		
Median	306.		
Mode	306.		
Geometric mean	306.49231		
Variance	289.890909		
Standard deviation	17.026183		
Standard error	5.133587		
Minimum	284.		
Maximum	338.		
Range	54.		
Lower quartile	296.		
Upper quartile	310.		
Interquartile range	14.		
Skewness	1.070879		
Standardized skewness	1.449977		
Kurtosis	0.63504		
Standardized kurtosis	0.429924		
Coeff. of variation	5.547631		

Variable:	G161D	Calcium, dissolved	ug/l
Sample size	12.		
Average	79050.		
Median	80600.		
Mode	87000.		
Geometric mean	78505.384298		
Variance	89339090.909092		
Standard deviation	9451.935829		
Standard error	2728.538848		
Minimum	61200.		
Maximum	89400.		
Range	28200.		
Lower quartile	72350.		
Upper quartile	87000.		
Interquartile range	14650.		
Skewness	-0.600427		
Standardized skewness	-0.849132		
Kurtosis	-0.819685		
Standardized kurtosis	-0.579605		
Coeff. of variation	11.956908		

Variable: G161D Chloride, dissolved mg/l

Sample size	14.
Average	6.642857
Median	6.
Mode	6.
Geometric mean	6.42402
Variance	3.016484
Standard deviation	1.736803
Standard error	0.46418
Minimum	4.
Maximum	10.
Range	6.
Lower quartile	6.
Upper quartile	8.
Interquartile range	2.
Skewness	0.131095
Standardized skewness	0.200251
Kurtosis	-0.482693
Standardized kurtosis	-0.368663
Coeff. of variation	26.145417

Variable: G161D -- Iron, dissolved ug/l

Sample size	5.
Average	1212.8
Median	1310.
Mode	1310.
Geometric mean	1173.636267
Variance	114159.2
Standard deviation	337.874533
Standard error	151.102085
Minimum	810.
Maximum	1640.
Range	830.
Lower quartile	934.
Upper quartile	1370.
Interquartile range	436.
Skewness	-0.045991
Standardized skewness	-0.041984
Kurtosis	-1.633871
Standardized kurtosis	-0.745757
Coeff. of variation	27.859048

Variable:

G161D Magnesium, dissolved ug/l

Sample size	12.
Average	33875.
Median	34850.
Mode	36000.
Geometric mean	33768.290422
Variance	7423863.636364
Standard deviation	2724.676795
Standard error	786.54644
Minimum	28100.
Maximum	36900.
Range	8800.
Lower quartile	32450.
Upper quartile	35600.
Interquartile range	3150.
Skewness	-1.223159
Standardized skewness	-1.729809
Kurtosis	0.422985
Standardized kurtosis	0.299096
Coeff. of variation	8.043326

Variable:

G161D -- Manganese, dissolved ug/l

Sample size	5.
Average	64.02
Median	64.
Mode	70.
Geometric mean	63.792972
Variance	36.152
Standard deviation	6.012653
Standard error	2.68894
Minimum	57.1
Maximum	70.
Range	12.9
Lower quartile	59.
Upper quartile	70.
Interquartile range	11.
Skewness	-0.057861
Standardized skewness	-0.05282
Kurtosis	-2.75333
Standardized kurtosis	-1.256718
Coeff. of variation	9.391836

Variable: G161D -- Sodium, dissolved ug/l

Sample size	12.
Average	8653.333333
Median	6415.
Mode	6330.
Geometric mean	7015.68173
Variance	74700660.606062
Standard deviation	8642.954391
Standard error	2495.006022
Minimum	3800.
Maximum	35800.
Range	32000.
Lower quartile	5245.
Upper quartile	7210.
Interquartile range	1965.
Skewness	3.330369
Standardized skewness	4.709854
Kurtosis	11.334116
Standardized kurtosis	8.01443
Coeff. of variation	99.880058

Variable: G161D -- Sulfate, dissolved mg/l

Sample size	11.
Average	45.236364
Median	46.
Mode	45.
Geometric mean	44.234993
Variance	95.814545
Standard deviation	9.78849
Standard error	2.951341
Minimum	30.
Maximum	62.
Range	32.
Lower quartile	35.
Upper quartile	51.
Interquartile range	16.
Skewness	-0.009797
Standardized skewness	-0.013266
Kurtosis	-0.379292
Standardized kurtosis	-0.256782
Coeff. of variation	21.638544

Variable:	G161D Total Dissolved Solids	mg/l
Sample size	11.	
Average	351.	
Median	352.	
Mode	352.	
Geometric mean	349.542023	
Variance	1093.	
Standard deviation	33.060551	
Standard error	9.968131	
Minimum	294.	
Maximum	400.	
Range	106.	
Lower quartile	335.	
Upper quartile	376.	
Interquartile range	41.	
Skewness	-0.427233	
Standardized skewness	-0.578476	
Kurtosis	-0.190674	
Standardized kurtosis	-0.129087	
Coeff. of variation	9.41896	

Variable: G164D pH units

Sample size	14.
Mean	7.237857
Median	7.215
Mode	7.15
Geometric mean	7.230995
Variance	0.107957
Standard deviation	0.328567
Standard error	0.087813
Minimum	6.81
Maximum	7.91
Range	1.1
Lower quartile	6.94
Upper quartile	7.52
Interquartile range	0.58
Skewness	0.412452
Standardized skewness	0.630031
Kurtosis	-0.460138
Standardized kurtosis	-0.351436
Coeff. of variation	4.539569

Variable: G164D Specific Conductance umhos/cm

Sample size	13.
Mean	588.923077
Median	516.
Mode	501.
Geometric mean	558.587721
Variance	53156.410256
Standard deviation	230.55674
Standard error	63.944934
Minimum	350.
Maximum	1214.
Range	864.
Lower quartile	501.
Upper quartile	554.
Interquartile range	53.
Skewness	2.163771
Standardized skewness	3.184985
Kurtosis	4.487099
Standardized kurtosis	3.302416
Coeff. of variation	39.148872

Variable: G164D Alkalinity mg/l

Sample size	14.
Range	337.857143
Median	335.
Mode	316.
Geometric mean	337.0016
Variance	627.362637
Standard deviation	25.047208
Standard error	6.694148
Minimum	306.
Maximum	378.
Range	72.
Lower quartile	316.
Upper quartile	358.
Interquartile range	42.
Skewness	0.242516
Standardized skewness	0.370449
Kurtosis	-1.530618
Standardized kurtosis	-1.169029
Coeff. of variation	7.41355

Variable: G164D Boron, dissolved ug/l

Sample size	4.
Range	125.
Median	110.
Mode	100.
Geometric mean	103.600803
Variance	7033.333333
Standard deviation	83.864971
Standard error	41.932485
Minimum	40.
Maximum	240.
Range	200.
Lower quartile	70.
Upper quartile	180.
Interquartile range	110.
Skewness	1.007035
Standardized skewness	0.822241
Kurtosis	1.829339
Standardized kurtosis	0.746825
Coeff. of variation	67.091977

Variable:	G164D Chloride, dissolved mg/l
Sample size	14.
Average	41.321429
Median	21.
Mode	18.
Arithmetic mean	27.055634
Variance	1681.677198
Standard deviation	41.008258
Standard error	10.959918
Minimum	2.5
Maximum	132.
Range	129.5
Lower quartile	18.
Upper quartile	42.
Interquartile range	24.
Skewness	1.592324
Standardized skewness	2.432315
Kurtosis	1.389149
Standardized kurtosis	1.06098
Coeff. of variation	99.24211

Variable:	G164D Sulfate, dissolved mg/l
Sample size	14.
Mean	72.157143
Median	69.5
Mode	69.
Geometric mean	67.19902
Variance	764.253407
Standard deviation	27.645134
Standard error	7.388473
Minimum	33.
Maximum	118.
Range	85.
Lower quartile	51.2
Upper quartile	87.
Interquartile range	35.8
Skewness	0.43783
Standardized skewness	0.668797
Kurtosis	-0.782982
Standardized kurtosis	-0.598012
Coeff. of variation	38.3124

Variable:	G164D	Total Dissolved Solids	mg/l
Sample size	13.		
Range	499.538462		
Median	484.		
Mode	456.		
Geometric mean	490.516		
Variance	10531.102564		
Standard deviation	102.62116		
Standard error	28.461989		
Minimum	388.		
Maximum	715.		
Range	327.		
Lower quartile	416.		
Upper quartile	540.		
Interquartile range	124.		
Skewness	0.921447		
Standardized skewness	1.356334		
Kurtosis	0.129989		
Standardized kurtosis	0.09567		
Coeff. of variation	20.543195		

Variable: G155D -- pH units

Sample size	11.
Average	7.427273
Median	7.29
Mode	7.29
Geometric mean	7.416767
Variance	0.174282
Standard deviation	0.417471
Standard error	0.125872
Minimum	6.82
Maximum	8.17
Range	1.35
Lower quartile	7.14
Upper quartile	7.79
Interquartile range	0.65
Skewness	0.5654
Standardized skewness	0.765556
Kurtosis	-0.51433
Standardized kurtosis	-0.348203
Coeff. of variation	5.620781

Variable: G155D Specific Conductance umhos/cm

Sample size	11.
Average	431.818182
Median	428.
Mode	428.
Geometric mean	427.249658
Variance	4319.963636
Standard deviation	65.72643
Standard error	19.817264
Minimum	324.
Maximum	544.
Range	220.
Lower quartile	371.
Upper quartile	471.
Interquartile range	100.
Skewness	0.171954
Standardized skewness	0.232826
Kurtosis	-0.348524
Standardized kurtosis	-0.235952
Coeff. of variation	15.220858

variable:	G155D Alkalinity mg/l
Sample size	11.
Average	341.090909
Median	310.
Mode	310.
Geometric mean	335.814934
Variance	5069.890909
Standard deviation	71.203166
Standard error	21.468562
Minimum	300.
Maximum	544.
Range	244.
Lower quartile	306.
Upper quartile	358.
Interquartile range	52.
Skewness	2.738767
Standardized skewness	3.708309
Kurtosis	8.004407
Standardized kurtosis	5.419009
Coeff. of variation.	20.875129

variable:	G155D Boron, dissolved ug/l
Sample size	2.
Average	75.
Median	75.
Mode	70.
Geometric mean	74.833148
Variance	50.
Standard deviation	7.071068
Standard error	5.
Minimum	70.
Maximum	80.
Range	10.
Lower quartile	70.
Upper quartile	80.
Interquartile range	10.
Skewness	-32768.
Standardized skewness	-32768.
Kurtosis	-32768.
Standardized kurtosis	-32768.
Coeff. of variation	9.42809

Variable:	G155D Calcium, dissolved ug/l
Sample size	12.
Average	78175.
Median	79350.
Mode	78000.
Geometric mean	77443.504235
Variance	117458409.090911
Standard deviation	10837.823079
Standard error	3128.610036
Minimum	55000.
Maximum	98000.
Range	43000.
Lower quartile	72200.
Upper quartile	84300.
Interquartile range	12100.
Skewness	-0.433933
Standardized skewness	-0.613675
Kurtosis	1.306884
Standardized kurtosis	0.924107
Coeff. of variation	13.863541

variable:	G155D Chloride, dissolved mg/l
Sample size	11.
Average	3.090909
Median	2.5
Mode	2.5
Geometric mean	2.94861
Variance	1.290909
Standard deviation	1.136182
Standard error	0.342572
Minimum	2.5
Maximum	6.
Range	3.5
Lower quartile	2.5
Upper quartile	4.
Interquartile range	1.5
Skewness	2.0392
Standardized skewness	2.761089
Kurtosis	3.97007
Standardized kurtosis	2.68775
Coeff. of variation	36.758823

Variable: G155D Iron, dissolved ug/l

Sample size	5.
Average	815.2
Median	610.
Mode	610.
Geometric mean	613.549647
Variance	302155.2
Standard deviation	549.686456
Standard error	245.827256
Minimum	130.
Maximum	1410.
Range	1280.
Lower quartile	576.
Upper quartile	1350.
Interquartile range	774.
Skewness	0.048578
Standardized skewness	0.044345
Kurtosis	-2.079213
Standardized kurtosis	-0.949027
Coeff. of variation	67.429644

Variable: G155D Magnesium, dissolved ug/l

Sample size	12.
Average	33525.
Median	33550.
Mode	33100.
Geometric mean	33265.57201
Variance	19258409.090909
Standard deviation	4388.440394
Standard error	1266.833621
Minimum	25900.
Maximum	43000.
Range	17100.
Lower quartile	30900.
Upper quartile	34900.
Interquartile range	4000.
Skewness	0.491054
Standardized skewness	0.694455
Kurtosis	1.2989
Standardized kurtosis	0.918461
Coeff. of variation	13.090053

Variable:	G155D Manganese, dissolved ug/l
Sample size	5.
Average	51.56
Median	50.
Mode	50.
Geometric mean	51.258728
Variance	40.968
Standard deviation	6.400625
Standard error	2.862447
Minimum	44.8
Maximum	62.
Range	17.2
Lower quartile	49.
Upper quartile	52.
Interquartile range	3.
Skewness	1.284682
Standardized skewness	1.172749
Kurtosis	2.43924
Standardized kurtosis	1.113356
Coeff. of variation	12.413935

variable:	G155D Sodium, dissolved ug/l
Sample size	12.
Average	7562.5
Median	7000.
Mode	7000.
Geometric mean	7270.384792
Variance	6528693.181818
Standard deviation	2555.130756
Standard error	737.602715
Minimum	5100.
Maximum	15000.
Range	9900.
Lower quartile	6550.
Upper quartile	7950.
Interquartile range	1400.
Skewness	2.497612
Standardized skewness	3.532157
Kurtosis	7.537936
Standardized kurtosis	5.330126
Coeff. of variation	33.786853

Variable: G155D Sulfate, dissolved mg/l

Sample size	11.
Average	24.963636
Median	25.
Mode	27.
Geometric mean	24.537698
Variance	22.694545
Standard deviation	4.763879
Standard error	1.436364
Minimum	17.
Maximum	33.
Range	16.
Lower quartile	22.
Upper quartile	27.
Interquartile range	5.
Skewness	0.012451
Standardized skewness	0.016859
Kurtosis	-0.275108
Standardized kurtosis	-0.186249
Coeff. of variation	19.083274

Variable: G155D TOC mg/l

Sample size	11.
Average	1.113636
Median	1.
Mode	1.
Geometric mean	1.076506
Variance	0.142045
Standard deviation	0.376889
Standard error	0.113636
Minimum	1.
Maximum	2.25
Range	1.25
Lower quartile	1.
Upper quartile	1.
Interquartile range	0.
Skewness	3.316625
Standardized skewness	4.490731
Kurtosis	11.
Standardized kurtosis	7.447035
Coeff. of variation	33.84311

Variable:	G155D Total Dissolved Solids mg/l
Sample size	11.
Mean	361.727273
Median	360.
Mode	360.
Geometric mean	360.055467
Variance	1403.018182
Standard deviation	37.456884
Standard error	11.293676
Minimum	306.
Maximum	452.
Range	146.
Lower quartile	344.
Upper quartile	375.
Interquartile range	31.
Skewness	1.209327
Standardized skewness	1.637437
Kurtosis	3.13063
Standardized kurtosis	2.119447
Coeff. of variation	10.355007

variable:	G163I	pH	units
sample size	4.		
range	7.39		
median	7.455		
mode	7.4		
geometric mean	7.386195		
variance	0.0738		
standard deviation	0.271662		
standard error	0.135831		
minimum	7.01		
maximum	7.64		
range	0.63		
lower quartile	7.205		
upper quartile	7.575		
interquartile range	0.37		
skewness	-1.247567		
standardized skewness	-1.018634		
kurtosis	1.779081		
standardized kurtosis	0.726307		
coeff. of variation	3.67607		

variable:	G163I	Specific Conductance	umhos/cm
sample size	4.		
range	444.25		
median	442.5		
mode	438.		
geometric mean	443.913125		
variance	401.583333		
standard deviation	20.039544		
standard error	10.019772		
minimum	422.		
maximum	470.		
range	48.		
lower quartile	430.		
upper quartile	458.5		
interquartile range	28.5		
skewness	0.483408		
standardized skewness	0.394701		
kurtosis	0.685845		
standardized kurtosis	0.279995		
coeff. of variation	4.510871		

Sample size	4.
Range	311.
Median	298.
Mode	296.
Geometric mean	309.964141
Variance	910.666667
Standard deviation	30.177254
Standard error	15.088627
Minimum	292.
Maximum	356.
Range	64.
Lower quartile	294.
Upper quartile	328.
Interquartile range	34.
Skewness	1.930031
Standardized skewness	1.575864
Kurtosis	3.76814
Standardized kurtosis	1.538337
Coeff. of variation	9.703297

Variable: G1631 Boron, dissolved ug/l

Sample size	4.
Range	100.
Median	105.
Mode	100.
Geometric mean	93.67478
Variance	1400.
Standard deviation	37.416574
Standard error	18.708287
Minimum	50.
Maximum	140.
Range	90.
Lower quartile	75.
Upper quartile	125.
Interquartile range	50.
Skewness	-0.763604
Standardized skewness	-0.62348
Kurtosis	1.5
Standardized kurtosis	0.612372
Coeff. of variation	37.416574

Variable:

G163I Calcium, dissolved mg/l

Sample size	4.
Average	78175.
Median	78950.
Mode	67000.
Geometric mean	77018.763022
Variance	238109166.666668
Standard deviation	15430.786327
Standard error	7715.393163
Minimum	62800.
Maximum	92000.
Range	29200.
Lower quartile	64900.
Upper quartile	91450.
Interquartile range	26550.
Skewness	-0.059362
Standardized skewness	-0.048469
Kurtosis	-5.608404
Standardized kurtosis	-2.289621
Coeff. of variation	19.738774

Variable:

G163I Chloride, dissolved mg/l

Sample size	4.
Average	7.5
Median	8.
Mode	8.
Geometric mean	7.444839
Variance	1.
Standard deviation	1.
Standard error	0.5
Minimum	6.
Maximum	8.
Range	2.
Lower quartile	7.
Upper quartile	8.
Interquartile range	1.
Skewness	-2.
Standardized skewness	-1.632993
Kurtosis	4.
Standardized kurtosis	1.632993
Coeff. of variation	13.333333

Variable: G163I Iron, dissolved ug/l

Sample size	4.
Average	605.
Median	575.
Mode	550.
Geometric mean	593.506454
Variance	19766.666667
Standard deviation	140.593978
Standard error	70.296989
Minimum	470.
Maximum	800.
Range	330.
Lower quartile	510.
Upper quartile	700.
Interquartile range	190.
Skewness	1.148584
Standardized skewness	0.937815
Kurtosis	1.747043
Standardized kurtosis	0.713227
Coeff. of variation	23.238674

Variable: G163I Magnesium, dissolved ug/l

Sample size	4.
Average	35075.
Median	34750.
Mode	33000.
Geometric mean	34902.326593
Variance	16289166.666667
Standard deviation	4035.983978
Standard error	2017.991989
Minimum	30800.
Maximum	40000.
Range	9200.
Lower quartile	31900.
Upper quartile	38250.
Interquartile range	6350.
Skewness	0.35786
Standardized skewness	0.292192
Kurtosis	-1.628357
Standardized kurtosis	-0.664774
Coeff. of variation	11.506726

Variable: G163I Manganese, dissolved ug/l

Sample size	4.
Average	66.75
Median	66.
Mode	65.
Geometric mean	66.334492
Variance	74.916667
Standard deviation	8.655441
Standard error	4.327721
Minimum	57.
Maximum	78.
Range	21.
Lower quartile	61.
Upper quartile	72.5
Interquartile range	11.5
Skewness	0.505446
Standardized skewness	0.412695
Kurtosis	1.385997
Standardized kurtosis	0.565831
Coeff. of variation	12.966953

Variable: G163I Sodium, dissolved ug/l

Sample size	4.
Average	7525.
Median	6850.
Mode	6700.
Geometric mean	4162.346245
Variance	41182500.000002
Standard deviation	6417.35927
Standard error	3208.679635
Minimum	400.
Maximum	16000.
Range	15600.
Lower quartile	3550.
Upper quartile	11500.
Interquartile range	7950.
Skewness	0.621331
Standardized skewness	0.507315
Kurtosis	1.705613
Standardized kurtosis	0.696314
Coeff. of variation	85.280522

Variable:

Sample size	4.
range	43.5
mean	43.35
Mode	42.
Geometric mean	43.457644
Variance	4.926667
Standard deviation	2.21961
Standard error	1.109805
Minimum	41.3
Maximum	46.
Range	4.7
Lower quartile	41.65
Upper quartile	45.35
Interquartile range	3.7
Skewness	0.203013
Standardized skewness	0.165759
Kurtosis	-3.938355
Standardized kurtosis	-1.607827
Coeff. of variation	5.102551

Variable:

Electronics Filing, Total Dissolved Solids 09/14/2024

R 000718

Sample size	4.
Average	422.75
Median	384.
Mode	380.
Geometric mean	414.791279
Variance	10152.916667
Standard deviation	100.761683
Standard error	50.380841
Minimum	351.
Maximum	572.
Range	221.
Lower quartile	365.5
Upper quartile	480.
Interquartile range	114.5
Skewness	1.847569
Standardized skewness	1.508533
Kurtosis	3.55771
Standardized kurtosis	1.452429
Coeff. of variation	23.834816

Variable: G167D pH units

Sample size	15.
Average	7.221333
Median	7.23
Mode	7.02
Geometric mean	7.215458
Variance	0.090412
Standard deviation	0.300687
Standard error	0.077637
Minimum	6.63
Maximum	7.7
Range	1.07
Lower quartile	7.02
Upper quartile	7.52
Interquartile range	0.5
Skewness	-0.168193
Standardized skewness	-0.265936
Kurtosis	-0.321367
Standardized kurtosis	-0.254063
Coeff. of variation	4.163864

Variable: G167D Specific Conductance umhos/cm

Sample size	15.
Average	444.
Median	444.
Mode	444.
Geometric mean	441.338722
Variance	2610.
Standard deviation	51.088159
Standard error	13.190906
Minimum	354.
Maximum	576.
Range	222.
Lower quartile	430.
Upper quartile	458.
Interquartile range	28.
Skewness	0.784332
Standardized skewness	1.240139
Kurtosis	2.761847
Standardized kurtosis	2.183432
Coeff. of variation	11.506342

Variable: G167D Alkalinity mg/l

Sample size	12.
Average	283.333333
Median	302.
Mode	294.
Geometric mean	255.645963
Variance	6256.242424
Standard deviation	79.096412
Standard error	22.833167
Minimum	36.
Maximum	334.
Range	298.
Lower quartile	293.
Upper quartile	310.
Interquartile range	17.
Skewness	-3.27184
Standardized skewness	-4.627081
Kurtosis	11.081788
Standardized kurtosis	7.836007
Coeff. of variation	27.916381

Variable: G167D Boron, dissolved ug/l

Sample size	5.
Average	78.
Median	50.
Mode	50.
Geometric mean	60.491869
Variance	3870.
Standard deviation	62.209324
Standard error	27.820855
Minimum	20.
Maximum	180.
Range	160.
Lower quartile	50.
Upper quartile	90.
Interquartile range	40.
Skewness	1.42596
Standardized skewness	1.301717
Kurtosis	2.083008
Standardized kurtosis	0.950759
Coeff. of variation	79.755544

Variable:

G167D Calcium, dissolved ug/l

Sample size	16.
Average	76787.5
Median	81350.
Mode	84000.
Geometric mean	76138.062493
Variance	101173166.666668
Standard deviation	10058.487295
Standard error	2514.621824
Minimum	57300.
Maximum	89000.
Range	31700.
Lower quartile	67200.
Upper quartile	84500.
Interquartile range	17300.
Skewness	-0.516137
Standardized skewness	-0.842849
Kurtosis	-1.200551
Standardized kurtosis	-0.980246
Coeff. of variation	13.099121

Variable:

G167D Chloride, dissolved mg/l

Sample size	14.
Average	6.928571
Median	6.
Mode	6.
Geometric mean	6.66866
Variance	4.379121
Standard deviation	2.092635
Standard error	0.55928
Minimum	4.
Maximum	12.
Range	8.
Lower quartile	6.
Upper quartile	8.
Interquartile range	2.
Skewness	1.226144
Standardized skewness	1.872966
Kurtosis	1.564477
Standardized kurtosis	1.194889
Coeff. of variation	30.202978

Variable:

G167D Iron, dissolved ug/l

Sample size	8.
Average	947.5
Median	835.
Mode	810.
Geometric mean	892.024558
Variance	135192.857143
Standard deviation	367.685813
Standard error	129.996566
Minimum	560.
Maximum	1610.
Range	1050.
Lower quartile	685.
Upper quartile	1185.
Interquartile range	500.
Skewness	1.038181
Standardized skewness	1.198788
Kurtosis	0.010568
Standardized kurtosis	0.006102
Coeff. of variation	38.805891

Variable:

G167D Magnesium, dissolved ug/l

Sample size	16.
Average	34062.5
Median	34850.
Mode	30000.
Geometric mean	33907.61403
Variance	10729166.666667
Standard deviation	3275.540668
Standard error	818.885167
Minimum	26500.
Maximum	40000.
Range	13500.
Lower quartile	32450.
Upper quartile	35900.
Interquartile range	3450.
Skewness	-0.634627
Standardized skewness	-1.036341
Kurtosis	0.874676
Standardized kurtosis	0.71417
Coeff. of variation	9.616266

Variable:	G167D Manganese, dissolved ug/l
Sample size	8.
Average	58.9625
Median	59.5
Mode	59.
Geometric mean	58.495813
Variance	57.868393
Standard deviation	7.607128
Standard error	2.689526
Minimum	43.7
Maximum	69.
Range	25.3
Lower quartile	56.5
Upper quartile	63.5
Interquartile range	7.
Skewness	-0.973126
Standardized skewness	-1.123669
Kurtosis	1.973252
Standardized kurtosis	1.139258
Coeff. of variation	12.901637

Variable:	G167D Sodium, dissolved ug/l
Sample size	15.
Average	6612.666667
Median	6000.
Mode	6000.
Geometric mean	6265.950471
Variance	7084349.52381
Standard deviation	2661.644139
Standard error	687.233562
Minimum	4200.
Maximum	15000.
Range	10800.
Lower quartile	5100.
Upper quartile	6700.
Interquartile range	1600.
Skewness	2.543259
Standardized skewness	4.021246
Kurtosis	7.385442
Standardized kurtosis	5.838704
Coeff. of variation	40.250693

Variable: G167D Sulfate, dissolved mg/l

Sample size	15.
Average	36.86
Median	35.
Mode	43.
Geometric mean	35.293248
Variance	109.179714
Standard deviation	10.44891
Standard error	2.697897
Minimum	18.
Maximum	52.
Range	34.
Lower quartile	31.
Upper quartile	44.
Interquartile range	13.
Skewness	-0.305228
Standardized skewness	-0.482607
Kurtosis	-0.700319
Standardized kurtosis	-0.553651
Coeff. of variation	28.347558

Variable: G167D TOC mg/l

Sample size	16.
Average	1.465625
Median	1.
Mode	1.
Geometric mean	1.285612
Variance	0.935573
Standard deviation	0.96725
Standard error	0.241813
Minimum	1.
Maximum	4.5
Range	3.5
Lower quartile	1.
Upper quartile	1.6
Interquartile range	0.6
Skewness	2.417458
Standardized skewness	3.947692
Kurtosis	6.21193
Standardized kurtosis	5.072019
Coeff. of variation	65.995748

Variable:	G167D Total DIssolved Solids mg/l
Sample size	16.
Average	420.625
Mean	368.5
Mode	340.
Geometric mean	394.583297
Variance	36067.716667
Standard deviation	189.915025
Standard error	47.478756
Minimum	216.
Maximum	1070.
Range	854.
Lower quartile	340.
Upper quartile	431.
Interquartile range	91.
Skewness	2.931174
Standardized skewness	4.786587
Kurtosis	10.096982
Standardized kurtosis	8.244151
Coeff. of variation	45.150675

Variable: G169D pH units

Sample size	15.
Average	7.49
Median	7.52
Mode	7.52
Geometric mean	7.479973
Variance	0.161043
Standard deviation	0.401301
Standard error	0.103616
Minimum	6.79
Maximum	8.28
Range	1.49
Lower quartile	7.28
Upper quartile	7.64
Interquartile range	0.36
Skewness	0.12532
Standardized skewness	0.198148
Kurtosis	0.402179
Standardized kurtosis	0.31795
Coeff. of variation	5.35783

variable: G169D Specific Conductance umhos/cm

Sample size	15.
Average	434.066667
Median	438.
Mode	464.
Geometric mean	431.404077
Variance	2388.352381
Standard deviation	48.870772
Standard error	12.618379
Minimum	336.
Maximum	524.
Range	188.
Lower quartile	410.
Upper quartile	466.
Interquartile range	56.
Skewness	-0.348975
Standardized skewness	-0.551778
Kurtosis	0.16557
Standardized kurtosis	0.130894
Coeff. of variation	11.258817

Sample size	12.
Average	326.
Median	319.
Mode	312.
Geometric mean	325.378727
Variance	470.545455
Standard deviation	21.69206
Standard error	6.261958
Minimum	308.
Maximum	380.
Range	72.
Lower quartile	312.
Upper quartile	327.
Interquartile range	15.
Skewness	1.838635
Standardized skewness	2.600222
Kurtosis	2.962493
Standardized kurtosis	2.094799
Coeff. of variation	6.654006

Variable: G169D Boron, dissolved ug/l

Sample size	5.
Average	102.4
Median	90.
Mode	90.
Geometric mean	92.092458
Variance	3258.8
Standard deviation	57.0859
Standard error	25.529591
Minimum	50.
Maximum	200.
Range	150.
Lower quartile	80.
Upper quartile	92.
Interquartile range	12.
Skewness	1.728124
Standardized skewness	1.577554
Kurtosis	3.60175
Standardized kurtosis	1.643967
Coeff. of variation	55.747949

Variable:

Electronic Filing Received, Clerk's Office #103/14/2024

R 000728

Sample size	16.
Average	76212.5
Median	77000.
Mode	76200.
Geometric mean	75774.268912
Variance	69717166.666668
Standard deviation	8349.680633
Standard error	2087.420158
Minimum	62700.
Maximum	87000.
Range	24300.
Lower quartile	68700.
Upper quartile	83750.
Interquartile range	15050.
Skewness	-0.24427
Standardized skewness	-0.39889
Kurtosis	-1.517224
Standardized kurtosis	-1.238809
Coeff. of variation	10.955789

Variable:

G169D Chloride, dissolved mg/l

Sample size	15.
Average	3.666667
Median	2.5
Mode	2.5
Geometric mean	3.176032
Variance	5.416667
Standard deviation	2.327373
Standard error	0.600925
Minimum	2.
Maximum	10.
Range	8.
Lower quartile	2.
Upper quartile	6.
Interquartile range	4.
Skewness	1.726848
Standardized skewness	2.730386
Kurtosis	2.747032
Standardized kurtosis	2.171719
Coeff. of variation	63.473818

Variable: G169D Iron, dissolved ug/l

Sample size	8.
Average	1054.
Median	961.
Mode	950.
Geometric mean	1020.269622
Variance	82265.142857
Standard deviation	286.819007
Standard error	101.405832
Minimum	700.
Maximum	1430.
Range	730.
Lower quartile	835.
Upper quartile	1355.
Interquartile range	520.
Skewness	0.327473
Standardized skewness	0.378133
Kurtosis	-1.726259
Standardized kurtosis	-0.996656
Coeff. of variation	27.21243

Variable: G169D Magnesium, dissolved ug/l

Sample size	16.
Average	32543.75
Median	33200.
Mode	35000.
Geometric mean	32352.323899
Variance	12299958.333334
Standard deviation	3507.129643
Standard error	876.782411
Minimum	23500.
Maximum	38700.
Range	15200.
Lower quartile	30050.
Upper quartile	35000.
Interquartile range	4950.
Skewness	-0.910014
Standardized skewness	-1.486046
Kurtosis	1.946731
Standardized kurtosis	1.589499
Coeff. of variation	10.776661

Variable: G169D Manganese, dissolved ug/l

Sample size	8.
Average	45.6625
Median	43.65
Mode	42.3
Geometric mean	45.36827
Variance	31.396964
Standard deviation	5.603299
Standard error	1.981066
Minimum	39.
Maximum	54.
Range	15.
Lower quartile	41.5
Upper quartile	51.
Interquartile range	9.5
Skewness	0.46684
Standardized skewness	0.539061
Kurtosis	-1.578377
Standardized kurtosis	-0.911276
Coeff. of variation	12.271118

variable: G169D Sodium, dissolved ug/l

Sample size	16.
Average	9018.75
Median	8410.
Mode	8300.
Geometric mean	8702.916578
Variance	7279451.666667
Standard deviation	2698.045898
Standard error	674.511474
Minimum	6000.
Maximum	17000.
Range	11000.
Lower quartile	7335.
Upper quartile	10280.
Interquartile range	2945.
Skewness	1.738639
Standardized skewness	2.839186
Kurtosis	4.409895
Standardized kurtosis	3.600664
Coeff. of variation	29.915963

Variable:	G169D sulfate, dissolved mg/l
Sample size	15.
Average	28.346667
Median	27.
Mode	36.
Geometric mean	27.757098
Variance	36.595524
Standard deviation	6.049423
Standard error	1.561954
Minimum	19.7
Maximum	40.
Range	20.3
Lower quartile	24.
Upper quartile	33.
Interquartile range	9.
Skewness	0.42548
Standardized skewness	0.672743
Kurtosis	-0.748109
Standardized kurtosis	-0.591432
Coeff. of variation	21.340863

Variable:	G169D TOC mg/l
Sample size	15.
Average	1.609333
Median	1.
Mode	1.
Geometric mean	1.236757
Variance	3.782164
Standard deviation	1.944779
Standard error	0.50214
Minimum	1.
Maximum	8.5
Range	7.5
Lower quartile	1.
Upper quartile	1.
Interquartile range	0.
Skewness	3.642344
Standardized skewness	5.759052
Kurtosis	13.567688
Standardized kurtosis	10.726199
Coeff. of variation	120.843741

Variable:	G169D Total Dissolved Solids mg/l
Sample size	16.
Mean	365.5625
Median	349.5
Mode	324.
Geometric mean	361.620274
Variance	3307.195833
Standard deviation	57.508224
Standard error	14.377056
Minimum	289.
Maximum	504.
Range	215.
Lower quartile	324.
Upper quartile	397.5
Interquartile range	73.5
Skewness	1.054605
Standardized skewness	1.722163
Kurtosis	0.885452
Standardized kurtosis	0.722968
Coeff. of variation	15.731434

Sample size	14.
Average	7.36
Median	7.455
Mode	7.52
Geometric mean	7.346045
Variance	0.213554
Standard deviation	0.462119
Standard error	0.123506
Minimum	6.36
Maximum	7.96
Range	1.6
Lower quartile	7.2
Upper quartile	7.58
Interquartile range	0.38
Skewness	-0.867433
Standardized skewness	-1.325026
Kurtosis	0.447894
Standardized kurtosis	0.342085
Coeff. of variation	6.278789

Variable: G1700 Specific Conductance umhos/cm

Sample size	14.
Average	461.357143
Median	447.5
Mode	447.
Geometric mean	459.441408
Variance	1950.554945
Standard deviation	44.165087
Standard error	11.803616
Minimum	395.
Maximum	544.
Range	149.
Lower quartile	441.
Upper quartile	484.
Interquartile range	43.
Skewness	0.589242
Standardized skewness	0.900082
Kurtosis	-0.082138
Standardized kurtosis	-0.062734
Coeff. of variation	9.572863

Variable:

G170D Alkalinity mg/l

Sample size	11.
Average	333.272727
Median	326.
Mode	320.
Geometric mean	332.508013
Variance	601.018182
Standard deviation	24.515672
Standard error	7.391753
Minimum	310.
Maximum	396.
Range	86.
Lower quartile	320.
Upper quartile	340.
Interquartile range	20.
Skewness	1.913015
Standardized skewness	2.590234
Kurtosis	4.117306
Standardized kurtosis	2.78743
Coeff. of variation	7.356039

Variable:

G170D Boron, dissolved ug/l

Sample size	4.
Average	105.
Median	110.
Mode	90.
Geometric mean	87.889908
Variance	3566.666667
Standard deviation	59.721576
Standard error	29.860788
Minimum	30.
Maximum	170.
Range	140.
Lower quartile	60.
Upper quartile	150.
Interquartile range	90.
Skewness	-0.422521
Standardized skewness	-0.344987
Kurtosis	-0.416106
Standardized kurtosis	-0.169875
Coeff. of variation	56.877692

Variable: G170D Calcium, dissolved ug/l

Sample size	4.
Average	69125.
Median	68250.
Mode	64600.
Geometric mean	68556.843505
Variance	105902500.000002
Standard deviation	10290.894033
Standard error	5145.447017
Minimum	58000.
Maximum	82000.
Range	24000.
Lower quartile	61300.
Upper quartile	76950.
Interquartile range	15650.
Skewness	0.419672
Standardized skewness	0.34266
Kurtosis	-0.638234
Standardized kurtosis	-0.260558
Coeff. of variation	14.887369

Variable: G170D Chloride, dissolved mg/l

Sample size	14.
Average	2.642857
Median	2.5
Mode	2.5
Geometric mean	2.589737
Variance	0.362637
Standard deviation	0.602194
Standard error	0.160943
Minimum	2.
Maximum	4.
Range	2.
Lower quartile	2.5
Upper quartile	2.5
Interquartile range	0.
Skewness	1.824138
Standardized skewness	2.786418
Kurtosis	2.794609
Standardized kurtosis	2.134418
Coeff. of variation	22.785711

Variable: G170D Iron, dissolved ug/l

Sample size	4.
Average	647.5
Median	640.
Mode	610.
Geometric mean	640.116126
Variance	12825.
Standard deviation	113.247517
Standard error	56.623758
Minimum	520.
Maximum	790.
Range	270.
Lower quartile	565.
Upper quartile	730.
Interquartile range	165.
Skewness	0.357856
Standardized skewness	0.292188
Kurtosis	0.25731
Standardized kurtosis	0.105046
Coeff. of variation	17.489964

Variable: G170D Magnesium, dissolved ug/l

Sample size	4.
Average	34425.
Median	34350.
Mode	31500.
Geometric mean	34218.41104
Variance	18922500.
Standard deviation	4350.
Standard error	2175.
Minimum	30000.
Maximum	39000.
Range	9000.
Lower quartile	30750.
Upper quartile	38100.
Interquartile range	7350.
Skewness	0.0442
Standardized skewness	0.036089
Kurtosis	-4.618922
Standardized kurtosis	-1.885667
Coeff. of variation	12.636166

Variable:

G170D Manganese, dissolved ug/l

Sample size	4.
Range	42.5
Median	49.5
Mode	49.
Geometric mean	35.659685
Variance	465.666667
Standard deviation	21.579311
Standard error	10.789656
Minimum	11.
Maximum	60.
Range	49.
Lower quartile	30.
Upper quartile	55.
Interquartile range	25.
Skewness	-1.671847
Standardized skewness	-1.365057
Kurtosis	3.152387
Standardized kurtosis	1.286956
Coeff. of variation	50.77485

Variable:

G170D Sodium, dissolved ug/l

Sample size	4.
Average	13550.
Median	12700.
Mode	11000.
Geometric mean	13246.857346
Variance	11530000.
Standard deviation	3395.585369
Standard error	1697.792685
Minimum	10800.
Maximum	18000.
Range	7200.
Lower quartile	10900.
Upper quartile	16200.
Interquartile range	5300.
Skewness	0.874509
Standardized skewness	0.714034
Kurtosis	-1.160308
Standardized kurtosis	-0.473694
Coeff. of variation	25.059671

Variable:

G170D Sulfate, dissolved mg/l

Sample size	14.
Average	15.7
Median	15.
Mode	15.
Geometric mean	12.972534
Variance	52.095385
Standard deviation	7.217713
Standard error	1.929015
Minimum	1.
Maximum	28.
Range	27.
Lower quartile	13.
Upper quartile	22.
Interquartile range	9.
Skewness	-0.128257
Standardized skewness	-0.195915
Kurtosis	0.239013
Standardized kurtosis	0.182549
Coeff. of variation	45.972696

Variable:

G170D TOC mg/l

Sample size	14.
Average	1.960714
Median	1.
Mode	1.
Geometric mean	1.473195
Variance	4.763915
Standard deviation	2.182639
Standard error	0.583335
Minimum	1.
Maximum	9.
Range	8.
Lower quartile	1.
Upper quartile	1.75
Interquartile range	0.75
Skewness	3.01778
Standardized skewness	4.609735
Kurtosis	9.53117
Standardized kurtosis	7.279551
Coeff. of variation	111.318586

Variable:	G170D Total Dissolved Solids mg/l
Sample size	14.
Range	343.857143
Median	350.5
Mode	344.
Geometric mean	337.601346
Variance	3666.747253
Standard deviation	60.553672
Standard error	16.18365
Minimum	175.
Maximum	455.
Range	280.
Lower quartile	335.
Upper quartile	368.
Interquartile range	33.
Skewness	-1.417738
Standardized skewness	-2.165631
Kurtosis	5.048125
Standardized kurtosis	3.855569
Coeff. of variation	17.610125

Variable: G171D pH units

Sample size	14.
Average	7.211429
Median	7.275
Mode	6.89
Geometric mean	7.202281
Variance	0.138721
Standard deviation	0.372453
Standard error	0.099542
Minimum	6.36
Maximum	7.71
Range	1.35
Lower quartile	6.89
Upper quartile	7.44
Interquartile range	0.55
Skewness	-0.707876
Standardized skewness	-1.081299
Kurtosis	0.663767
Standardized kurtosis	0.50696
Coeff. of variation	5.164754

Variable: G171D Specific Conductance umhos/cm

Sample size	14.
Average	510.071429
Median	519.
Mode	502.
Geometric mean	506.263994
Variance	4060.225275
Standard deviation	63.719897
Standard error	17.029859
Minimum	406.
Maximum	595.
Range	189.
Lower quartile	461.
Upper quartile	574.
Interquartile range	113.
Skewness	-0.271754
Standardized skewness	-0.415111
Kurtosis	-1.08002
Standardized kurtosis	-0.824879
Coeff. of variation	12.492348

variable: G171D Alkalinity mg/l

Sample size	11.
Average	353.090909
Median	378.
Mode	324.
Geometric mean	347.206496
Variance	3817.090909
Standard deviation	61.78261
Standard error	18.628158
Minimum	206.
Maximum	422.
Range	216.
Lower quartile	324.
Upper quartile	402.
Interquartile range	78.
Skewness	-1.352965
Standardized skewness	-1.831924
Kurtosis	2.255926
Standardized kurtosis	1.527269
Coeff. of variation	17.49765

variable: G171D Boron, dissolved ug/l

Sample size	4.
Average	155.
Median	160.
Mode	130.
Geometric mean	132.556718
Variance	7300.
Standard deviation	85.440037
Standard error	42.720019
Minimum	50.
Maximum	250.
Range	200.
Lower quartile	90.
Upper quartile	220.
Interquartile range	130.
Skewness	-0.291801
Standardized skewness	-0.238255
Kurtosis	-0.683806
Standardized kurtosis	-0.279162
Coeff. of variation	55.122605

Variable: G171D Calcium, dissolved ug/l

Sample size	4.
Average	82325.
Median	77950.
Mode	76000.
Geometric mean	81365.12488
Variance	227582500.000002
Standard deviation	15085.837729
Standard error	7542.918865
Minimum	69400.
Maximum	104000.
Range	34600.
Lower quartile	72700.
Upper quartile	91950.
Interquartile range	19250.
Skewness	1.506152
Standardized skewness	1.229768
Kurtosis	2.606173
Standardized kurtosis	1.063966
Coeff. of variation	18.324735

Variable: G171D Chloride, dissolved mg/l

Sample size	14.
Average	4.464286
Median	2.75
Mode	2.5
Geometric mean	3.851751
Variance	7.517857
Standard deviation	2.741871
Standard error	0.732796
Minimum	2.5
Maximum	10.
Range	7.5
Lower quartile	2.5
Upper quartile	6.
Interquartile range	3.5
Skewness	1.279333
Standardized skewness	1.954213
Kurtosis	0.497591
Standardized kurtosis	0.380041
Coeff. of variation	61.417913

Variable:	G171D Iron, dissolved ug/l
Sample size	4.
Average	57.5
Median	55.
Mode	20.
Geometric mean	43.558772
Variance	1891.666667
Standard deviation	43.493295
Standard error	21.746647
Minimum	20.
Maximum	100.
Range	80.
Lower quartile	20.
Upper quartile	95.
Interquartile range	75.
Skewness	0.045579
Standardized skewness	0.037215
Kurtosis	-5.737429
Standardized kurtosis	-2.342296
Coeff. of variation	75.640512

Variable:	G171D Magnesium, dissolved ug/l
Sample size	4.
Average	40150.
Median	40100.
Mode	37100.
Geometric mean	39883.37147
Variance	28430000.
Standard deviation	5331.978995
Standard error	2665.989497
Minimum	34400.
Maximum	46000.
Range	11600.
Lower quartile	35750.
Upper quartile	44550.
Interquartile range	8800.
Skewness	0.032509
Standardized skewness	0.026544
Kurtosis	-3.492644
Standardized kurtosis	-1.425866
Coeff. of variation	13.280147

Variable: G171D Manganese, dissolved ug/l

Sample size	4.
Average	128.25
Median	132.5
Mode	121.
Geometric mean	126.617091
Variance	528.916667
Standard deviation	22.998188
Standard error	11.499094
Minimum	99.
Maximum	149.
Range	50.
Lower quartile	110.
Upper quartile	146.5
Interquartile range	36.5
Skewness	-0.688644
Standardized skewness	-0.562275
Kurtosis	-1.803138
Standardized kurtosis	-0.736128
Coeff. of variation	17.932311

variable: G171D Sodium, dissolved ug/l

Sample size	4.
Average	14925.
Median	16500.
Mode	12000.
Geometric mean	11484.018249
Variance	89609166.666668
Standard deviation	9466.211844
Standard error	4733.105922
Minimum	2900.
Maximum	23800.
Range	20900.
Lower quartile	7450.
Upper quartile	22400.
Interquartile range	14950.
Skewness	-0.660648
Standardized skewness	-0.539417
Kurtosis	-1.648904
Standardized kurtosis	-0.673162
Coeff. of variation	63.425205

Sample size	14.
Average	25.907143
Median	22.5
Mode	15.
Geometric mean	23.531626
Variance	136.089945
Standard deviation	11.66576
Standard error	3.117805
Minimum	12.
Maximum	46.
Range	34.
Lower quartile	15.
Upper quartile	37.
Interquartile range	22.
Skewness	0.48542
Standardized skewness	0.741491
Kurtosis	-1.325436
Standardized kurtosis	-1.012318
Coeff. of variation	45.029124

Variable:	G171D TOC mg/l
Sample size	14.
Average	1.4
Median	1.
Mode	1.
Geometric mean	1.205024
Variance	1.424615
Standard deviation	1.193573
Standard error	0.318996
Minimum	1.
Maximum	5.5
Range	4.5
Lower quartile	1.
Upper quartile	1.1
Interquartile range	0.1
Skewness	3.602449
Standardized skewness	5.502832
Kurtosis	13.213952
Standardized kurtosis	10.092323
Coeff. of variation	85.255181

Variable:

G171D Total Dissolved Solids mg/l

Sample size	14.
Page	410.142857
Mean	382.
Mode	320.
Geometric mean	400.943659
Variance	8657.978022
Standard deviation	93.048256
Standard error	24.868193
Minimum	290.
Maximum	577.
Range	287.
Lower quartile	345.
Upper quartile	472.
Interquartile range	127.
Skewness	0.733416
Standardized skewness	1.120311
Kurtosis	-0.664488
Standardized kurtosis	-0.507511
Coeff. of variation	22.686792

Variable: G172D pH units

Sample size	14.
Average	7.177143
Median	7.18
Mode	7.16
Geometric mean	7.168063
Variance	0.139622
Standard deviation	0.37366
Standard error	0.099865
Minimum	6.44
Maximum	7.9
Range	1.46
Lower quartile	7.04
Upper quartile	7.4
Interquartile range	0.36
Skewness	-0.076114
Standardized skewness	-0.116266
Kurtosis	0.41582
Standardized kurtosis	0.317588
Coeff. of variation	5.206253

Variable: G172D Specific Conductance umhos/cm

Sample size	14.
Average	493.785714
Median	492.
Mode	490.
Geometric mean	487.279759
Variance	7083.258242
Standard deviation	84.162095
Standard error	22.493266
Minimum	341.
Maximum	701.
Range	360.
Lower quartile	465.
Upper quartile	511.
Interquartile range	46.
Skewness	0.711755
Standardized skewness	1.087224
Kurtosis	2.550656
Standardized kurtosis	1.948096
Coeff. of variation	17.044255

Variable: G172D Alkalinity mg/l

Variable:	G172D Alkalinity mg/l
Sample size	11.
Average	328.909091
Median	324.
Mode	318.
Geometric mean	328.49717
Variance	300.290909
Standard deviation	17.328904
Standard error	5.224861
Minimum	304.
Maximum	356.
Range	52.
Lower quartile	318.
Upper quartile	350.
Interquartile range	32.
Skewness	0.314591
Standardized skewness	0.425959
Kurtosis	-1.147483
Standardized kurtosis	-0.77685
Coeff. of variation	5.2686

Variable: G172D Boron, dissolved ug/l

Variable:	G172D Boron, dissolved ug/l
Sample size	4.
Average	125.
Median	140.
Mode	130.
Geometric mean	108.853344
Variance	3633.333333
Standard deviation	60.277138
Standard error	30.138569
Minimum	40.
Maximum	180.
Range	140.
Lower quartile	85.
Upper quartile	165.
Interquartile range	80.
Skewness	-1.315027
Standardized skewness	-1.073715
Kurtosis	2.090228
Standardized kurtosis	0.853332
Coeff. of variation	48.22171

Variable: G172D Calcium, dissolved ug/l

Sample size	4.
Average	80850.
Median	76600.
Mode	74200.
Geometric mean	80385.280902
Variance	107130000.000002
Standard deviation	10350.362312
Standard error	5175.181156
Minimum	74200.
Maximum	96000.
Range	21800.
Lower quartile	74200.
Upper quartile	87500.
Interquartile range	13300.
Skewness	1.733217
Standardized skewness	1.415165
Kurtosis	2.939939
Standardized kurtosis	1.200225
Coeff. of variation	12.801932

Variable: G172D Chloride, dissolved mg/l

Sample size	14.
Average	11.071429
Median	12.
Mode	12.
Geometric mean	10.890754
Variance	4.379121
Standard deviation	2.092635
Standard error	0.55928
Minimum	8.
Maximum	16.
Range	8.
Lower quartile	10.
Upper quartile	12.
Interquartile range	2.
Skewness	0.536625
Standardized skewness	0.819709
Kurtosis	1.236281
Standardized kurtosis	0.944225
Coeff. of variation	18.901219

Variable: G172D Iron, dissolved ug/l

Sample size	4.
Average	27.5
Median	15.
Mode	10.
Geometric mean	19.343364
Variance	825.
Standard deviation	28.722813
Standard error	14.361407
Minimum	10.
Maximum	70.
Range	60.
Lower quartile	10.
Upper quartile	45.
Interquartile range	35.
Skewness	1.846278
Standardized skewness	1.50748
Kurtosis	3.412305
Standardized kurtosis	1.393068
Coeff. of variation	104.446594

Variable: G172D Magnesium, dissolved ug/l

Sample size	4.
Average	39675.
Median	37800.
Mode	37600.
Geometric mean	39458.822874
Variance	24515833.333334
Standard deviation	4951.346618
Standard error	2475.673309
Minimum	36100.
Maximum	47000.
Range	10900.
Lower quartile	36850.
Upper quartile	42500.
Interquartile range	5650.
Skewness	1.832732
Standardized skewness	1.49642
Kurtosis	3.519119
Standardized kurtosis	1.436674
Coeff. of variation	12.479765

Variable:

G172D Manganese, dissolved ug/l

Sample size	4.
Average	82.
Median	74.5
Mode	65.
Geometric mean	78.497682
Variance	839.333333
Standard deviation	28.97125
Standard error	14.485625
Minimum	57.
Maximum	122.
Range	65.
Lower quartile	61.
Upper quartile	103.
Interquartile range	42.
Skewness	1.191782
Standardized skewness	0.973086
Kurtosis	0.8565
Standardized kurtosis	0.349665
Coeff. of variation	35.330793

Variable:

G172D Sodium, dissolved ug/l

Sample size	4.
Average	12000.
Median	12950.
Mode	12200.
Geometric mean	10538.630795
Variance	33780000.
Standard deviation	5812.056435
Standard error	2906.028217
Minimum	4100.
Maximum	18000.
Range	13900.
Lower quartile	8150.
Upper quartile	15850.
Interquartile range	7700.
Skewness	-0.92401
Standardized skewness	-0.754451
Kurtosis	1.688311
Standardized kurtosis	0.68925
Coeff. of variation	48.433804

Variable: G172D Sulfate, dissolved mg/l

Sample size	14.
Average	37.021429
Median	35.
Mode	20.
Geometric mean	34.779475
Variance	201.695659
Standard deviation	14.20196
Standard error	3.795633
Minimum	20.
Maximum	73.
Range	53.
Lower quartile	26.
Upper quartile	43.1
Interquartile range	17.1
Skewness	1.236147
Standardized skewness	1.888246
Kurtosis	2.083126
Standardized kurtosis	1.591014
Coeff. of variation	38.361458

Variable: G172D TOC mg/l

Sample size	14.
Average	1.983571
Median	1.44
Mode	1.
Geometric mean	1.694799
Variance	2.229348
Standard deviation	1.4931
Standard error	0.399048
Minimum	1.
Maximum	6.75
Range	5.75
Lower quartile	1.32
Upper quartile	2.1
Interquartile range	0.78
Skewness	2.841814
Standardized skewness	4.340942
Kurtosis	8.983529
Standardized kurtosis	6.861283
Coeff. of variation	75.27332

Variable:

G172D Total Dissolved Solids mg/l

Sample size	14.
Range	405.214286
Median	404.
Mode	384.
Geometric mean	400.687925
Variance	3790.642857
Standard deviation	61.568197
Standard error	16.454793
Minimum	282.
Maximum	510.
Range	228.
Lower quartile	372.
Upper quartile	439.
Interquartile range	67.
Skewness	-0.18615
Standardized skewness	-0.284349
Kurtosis	0.085934
Standardized kurtosis	0.065633
Coeff. of variation	15.193985

Variable:

G173D pH units

Sample size	14.
Range	7.42
Mean	7.38
Mode	7.3
Geometric mean	7.415921
Variance	0.065492
Standard deviation	0.255915
Standard error	0.068396
Minimum	7.
Maximum	7.9
Range	0.9
Lower quartile	7.27
Upper quartile	7.57
Interquartile range	0.3
Skewness	0.290781
Standardized skewness	0.444175
Kurtosis	-0.365207
Standardized kurtosis	-0.278932
Coeff. of variation	3.448984

Variable:

G173D Specific Conductance umhos/cm

Sample size	14.
Average	472.214286
Median	479.
Mode	479.
Geometric mean	464.930866
Variance	7568.335165
Standard deviation	86.996179
Standard error	23.250707
Minimum	324.
Maximum	678.
Range	354.
Lower quartile	418.
Upper quartile	494.
Interquartile range	76.
Skewness	0.630801
Standardized skewness	0.963565
Kurtosis	1.690036
Standardized kurtosis	1.290787
Coeff. of variation	18.42303

Variable: G173D Alkalinity mg/l

Variable	G173D Alkalinity mg/l
Sample size	11.
Average	317.636364
Median	320.
Mode	320.
Geometric mean	316.133711
Variance	923.854545
Standard deviation	30.394976
Standard error	9.16443
Minimum	236.
Maximum	354.
Range	118.
Lower quartile	312.
Upper quartile	336.
Interquartile range	24.
Skewness	-2.071336
Standardized skewness	-2.804602
Kurtosis	5.855747
Standardized kurtosis	3.964359
Coeff. of variation	9.569111

Variable: G173D Boron, dissolved ug/l

Variable	G173D Boron, dissolved ug/l
Sample size	4.
Average	61.25
Median	50.
Mode	40.
Geometric mean	51.800401
Variance	1739.583333
Standard deviation	41.708313
Standard error	20.854156
Minimum	25.
Maximum	120.
Range	95.
Lower quartile	32.5
Upper quartile	90.
Interquartile range	57.5
Skewness	1.337346
Standardized skewness	1.091938
Kurtosis	1.749249
Standardized kurtosis	0.714128
Coeff. of variation	68.095204

Variable: G173D Calcium, dissolved ug/l

Sample size	4.
Average	80350.
Median	78400.
Mode	76700.
Geometric mean	80220.401348
Variance	28656666.666667
Standard deviation	5353.192194
Standard error	2676.596097
Minimum	76600.
Maximum	88000.
Range	11400.
Lower quartile	76650.
Upper quartile	84050.
Interquartile range	7400.
Skewness	1.505039
Standardized skewness	1.228859
Kurtosis	1.925024
Standardized kurtosis	0.785888
Coeff. of variation	6.662342

Variable: G173D Chloride, dissolved mg/l

Sample size	11.
Average	9.272727
Median	8.
Mode	6.
Geometric mean	8.83118
Variance	9.818182
Standard deviation	3.133398
Standard error	0.944755
Minimum	6.
Maximum	16.
Range	10.
Lower quartile	6.
Upper quartile	12.
Interquartile range	6.
Skewness	0.931423
Standardized skewness	1.261153
Kurtosis	0.609602
Standardized kurtosis	0.412703
Coeff. of variation	33.791545

Variable: G173D Iron, dissolved ug/l

Sample size	4.
range	15.
dian	10.
Mode	10.
Geometric mean	13.16074
Variance	100.
Standard deviation	10.
Standard error	5.
Minimum	10.
Maximum	30.
Range	20.
Lower quartile	10.
Upper quartile	20.
Interquartile range	10.
Skewness	2.
Standardized skewness	1.632993
Kurtosis	4.
Standardized kurtosis	1.632993
Coeff. of variation	66.666667 .

Variable: G173D Magnesium, dissolved ug/l

Sample size	4.
Average	37825.
Median	38450.
Mode	38300.
Geometric mean	37797.535789
Variance	2695833.333333
Standard deviation	1641.899307
Standard error	820.949653
Minimum	35400.
Maximum	39000.
Range	3600.
Lower quartile	36850.
Upper quartile	38800.
Interquartile range	1950.
Skewness	-1.817268
Standardized skewness	-1.483793
Kurtosis	3.42441
Standardized kurtosis	1.398009
Coeff. of variation	4.340778

Variable:	G173D Manganese, dissolved ug/l
Sample size	4.
Average	116.5
Median	118.
Mode	119.
Geometric mean	116.453003
Variance	14.333333
Standard deviation	3.785939
Standard error	1.892969
Minimum	111.
Maximum	119.
Range	8.
Lower quartile	114.
Upper quartile	119.
Interquartile range	5.
Skewness	-1.658524
Standardized skewness	-1.354179
Kurtosis	2.615468
Standardized kurtosis	1.06776
Coeff. of variation	3.249733

Variable:	G173D Sodium, dissolved ug/l
Sample size	4.
Average	8170.
Median	8340.
Mode	7550.
Geometric mean	5670.576935
Variance	33121266.666667
Standard deviation	5755.107876
Standard error	2877.553938
Minimum	1000.
Maximum	15000.
Range	14000.
Lower quartile	4275.
Upper quartile	12065.
Interquartile range	7790.
Skewness	-0.172575
Standardized skewness	-0.140907
Kurtosis	1.145735
Standardized kurtosis	0.467745
Coeff. of variation	70.441957

Variable:	G173D Sulfate, dissolved mg/l
Sample size	11.
Range	55.6
Median	52.8
Mode	52.8
Geometric mean	53.414384
Variance	257.672
Standard deviation	16.052165
Standard error	4.83991
Minimum	30.
Maximum	80.
Range	50.
Lower quartile	42.8
Upper quartile	69.
Interquartile range	26.2
Skewness	0.154013
Standardized skewness	0.208534
Kurtosis	-0.889573
Standardized kurtosis	-0.602244
Coeff. of variation	28.8708

Variable:	G173D TOC mg/l
Sample size	14.
Average	1.532857
Median	1.
Mode	1.
Geometric mean	1.235138
Variance	2.750268
Standard deviation	1.658393
Standard error	0.443224
Minimum	1.
Maximum	7.25
Range	6.25
Lower quartile	1.
Upper quartile	1.1
Interquartile range	0.1
Skewness	3.646352
Standardized skewness	5.569895
Kurtosis	13.45724
Standardized kurtosis	10.278137
Coeff. of variation	108.18968

Variable:	G173D Total Dissolved Solids mg/l
Sample size	11.
Average	467.909091
Median	440.
Mode	440.
Geometric mean	464.716352
Variance	3529.690909
Standard deviation	59.411202
Standard error	17.913151
Minimum	400.
Maximum	582.
Range	182.
Lower quartile	428.
Upper quartile	486.
Interquartile range	58.
Skewness	1.20586
Standardized skewness	1.632742
Kurtosis	0.503234
Standardized kurtosis	0.340691
Coeff. of variation	12.697168

Variable: G174D pH units

Sample size	14.
Average	7.370714
Median	7.285
Mode	7.19
Geometric mean	7.36281
Variance	0.127715
Standard deviation	0.357372
Standard error	0.095512
Minimum	6.75
Maximum	8.21
Range	1.46
Lower quartile	7.16
Upper quartile	7.54
Interquartile range	0.38
Skewness	0.745703
Standardized skewness	1.139081
Kurtosis	1.369103
Standardized kurtosis	1.04567
Coeff. of variation	4.848541

variable: G174D Specific Conductance umhos/cm

Sample size	14.
Average	489.928571
Median	504.
Mode	503.
Geometric mean	478.668667
Variance	11130.532967
Standard deviation	105.501341
Standard error	28.196419
Minimum	267.
Maximum	735.
Range	468.
Lower quartile	453.
Upper quartile	526.
Interquartile range	73.
Skewness	0.160802
Standardized skewness	0.245629
Kurtosis	2.502655
Standardized kurtosis	1.911434
Coeff. of variation	21.534025

Variable: G174D Alkalinity mg/l

Sample size	11.
Average	347.818182
Median	316.
Mode	306.
Geometric mean	336.491672
Variance	13395.563636
Standard deviation	115.739205
Standard error	34.896683
Minimum	300.
Maximum	696.
Range	396.
Lower quartile	306.
Upper quartile	320.
Interquartile range	14.
Skewness	3.289335
Standardized skewness	4.453781
Kurtosis	10.868531
Standardized kurtosis	7.35803
Coeff. of variation	33.275778

Variable: G174D Boron, dissolved ug/l

Sample size	4.
Average	88.75
Median	95.
Mode	80.
Geometric mean	74.49681
Variance	2406.25
Standard deviation	49.053542
Standard error	24.526771
Minimum	25.
Maximum	140.
Range	115.
Lower quartile	52.5
Upper quartile	125.
Interquartile range	72.5
Skewness	-0.652613
Standardized skewness	-0.532856
Kurtosis	0.101063
Standardized kurtosis	0.041259
Coeff. of variation	55.271597

Variable: G174D Calcium, dissolved ug/l

Sample size	4.
Range	82400.
Median	80300.
Mode	76800.
Geometric mean	81950.165119
Variance	102213333.333335
Standard deviation	10110.060996
Standard error	5055.030498
Minimum	73000.
Maximum	96000.
Range	23000.
Lower quartile	74900.
Upper quartile	89900.
Interquartile range	15000.
Skewness	0.975437
Standardized skewness	0.796441
Kurtosis	0.220894
Standardized kurtosis	0.09018
Coeff. of variation	12.269491

Variable: G174D Chloride, dissolved mg/l

Sample size	11.
Average	21.363636
Median	24.
Mode	24.
Geometric mean	19.569192
Variance	70.854545
Standard deviation	8.417514
Standard error	2.537976
Minimum	8.
Maximum	34.
Range	26.
Lower quartile	14.
Upper quartile	26.
Interquartile range	12.
Skewness	-0.21056
Standardized skewness	-0.285099
Kurtosis	-0.834546
Standardized kurtosis	-0.56499
Coeff. of variation	39.40113

Variable:	G174D Iron, dissolved ug/l
Sample size	4.
Average	8.75
Median	10.
Mode	10.
Geometric mean	8.408964
Variance	6.25
Standard deviation	2.5
Standard error	1.25
Minimum	5.
Maximum	10.
Range	5.
Lower quartile	7.5
Upper quartile	10.
Interquartile range	2.5
Skewness	-2.
Standardized skewness	-1.632993
Kurtosis	4.
Standardized kurtosis	1.632993
Coeff. of variation	28.571429

Variable:	G174D Magnesium, dissolved ug/l
Sample size	4.
Average	41625.
Median	42050.
Mode	42000.
Geometric mean	41590.348657
Variance	3769166.666667
Standard deviation	1941.434178
Standard error	970.717089
Minimum	38900.
Maximum	43500.
Range	4600.
Lower quartile	40450.
Upper quartile	42800.
Interquartile range	2350.
Skewness	-1.228376
Standardized skewness	-1.002965
Kurtosis	2.354163
Standardized kurtosis	0.961083
Coeff. of variation	4.664106

Sample size	4.
Range	64.5
Median	64.5
Mode	61.
Geometric mean	64.288201
Variance	36.333333
Standard deviation	6.027714
Standard error	3.013857
Minimum	58.
Maximum	71.
Range	13.
Lower quartile	59.5
Upper quartile	69.5
Interquartile range	10.
Skewness	0.
Standardized skewness	0.
Kurtosis	-3.727464
Standardized kurtosis	-1.521731
Coeff. of variation	9.345293

Variable: G174D Sodium, dissolved ug/l

Sample size	4.
Average	14700.
Median	15000.
Mode	13000.
Geometric mean	14242.721675
Variance	16893333.333334
Standard deviation	4110.150038
Standard error	2055.075019
Minimum	9800.
Maximum	19000.
Range	9200.
Lower quartile	11400.
Upper quartile	18000.
Interquartile range	6600.
Skewness	-0.296569
Standardized skewness	-0.242147
Kurtosis	-2.349013
Standardized kurtosis	-0.95898
Coeff. of variation	27.960204

Sample size	10.
7 range	55.15
Median	55.
Mode	55.
Geometric mean	48.96342
Variance	480.113889
Standard deviation	21.911501
Standard error	6.929025
Minimum	10.
Maximum	93.
Range	83.
Lower quartile	51.5
Upper quartile	65.
Interquartile range	13.5
Skewness	-0.4346
Standardized skewness	-0.561066
Kurtosis	1.808658
Standardized kurtosis	1.167484
Coeff. of variation	39.730737

Variable:	G174D TOC mg/l
Sample size	14.
Average	10.015714
Median	1.055
Mode	1.
Geometric mean	2.380212
Variance	445.354134
Standard deviation	21.103415
Standard error	5.640125
Minimum	1.
Maximum	76.75
Range	75.75
Lower quartile	1.
Upper quartile	2.
Interquartile range	1.
Skewness	2.833813
Standardized skewness	4.328722
Kurtosis	8.507203
Standardized kurtosis	6.497484
Coeff. of variation	210.703047

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

APPENDIX H

DESCRIPTIVE STATISTICS: SURFICIAL

Variable: G166S pH units

Sample size	15.
Average	7.196
Median	7.22
Mode	7.22
Geometric mean	7.186724
Variance	0.143511
Standard deviation	0.378829
Standard error	0.097813
Minimum	6.59
Maximum	8.
Range	1.41
Lower quartile	6.93
Upper quartile	7.45
Interquartile range	0.52
Skewness	0.19681
Standardized skewness	0.311185
Kurtosis	-0.037089
Standardized kurtosis	-0.029321
Coeff. of variation	5.264439

Variable: G166S Specific Conductance umhos/cm

Sample size	15.
Average	747.466667
Median	778.
Mode	778.
Geometric mean	739.881414
Variance	12110.552381
Standard deviation	110.047955
Standard error	28.41426
Minimum	606.
Maximum	908.
Range	302.
Lower quartile	624.
Upper quartile	838.
Interquartile range	214.
Skewness	0.088816
Standardized skewness	0.14043
Kurtosis	-1.492294
Standardized kurtosis	-1.179762
Coeff. of variation	14.722791

Variable: G166S Alkalinity mg/l

Sample size	14.
Average	308.
Median	304.
Mode	262.
Geometric mean	306.31211
Variance	1129.230769
Standard deviation	33.604029
Standard error	8.981055
Minimum	262.
Maximum	368.
Range	106.
Lower quartile	290.
Upper quartile	340.
Interquartile range	50.
Skewness	0.273014
Standardized skewness	0.417037
Kurtosis	-0.734295
Standardized kurtosis	-0.560827
Coeff. of variation	10.910399

Variable: G166S Boron, dissolved ug/l

Sample size	11.
Average	99.181818
Median	50.
Mode	50.
Geometric mean	69.825314
Variance	5937.363636
Standard deviation	77.05429
Standard error	23.232743
Minimum	10.
Maximum	230.
Range	220.
Lower quartile	41.
Upper quartile	170.
Interquartile range	129.
Skewness	0.600923
Standardized skewness	0.813654
Kurtosis	-1.305342
Standardized kurtosis	-0.883721
Coeff. of variation	77.689935

Variable: G166S Calcium, dissolved ug/l

Sample size	16.
Average	106793.75
Median	111000.
Mode	111000.
Geometric mean	105628.427324
Variance	243160625.000002
Standard deviation	15593.608466
Standard error	3898.402117
Minimum	74500.
Maximum	131000.
Range	56500.
Lower quartile	100600.
Upper quartile	117500.
Interquartile range	16900.
Skewness	-0.743523
Standardized skewness	-1.214168
Kurtosis	0.315028
Standardized kurtosis	0.25722
Coeff. of variation	14.601611

Variable: G166S Chloride, dissolved mg/l

Sample size	15.
Average	142.133333
Median	138.
Mode	160.
Geometric mean	136.655936
Variance	1691.695238
Standard deviation	41.130223
Standard error	10.619778
Minimum	74.
Maximum	230.
Range	156.
Lower quartile	112.
Upper quartile	160.
Interquartile range	48.
Skewness	0.606303
Standardized skewness	0.95865
Kurtosis	0.503151
Standardized kurtosis	0.397776
Coeff. of variation	28.937774

Variable: G166S Iron, dissolved ug/l

Sample size	13.
Average	244.615385
Median	120.
Mode	50.
Geometric mean	142.199282
Variance	73926.923077
Standard deviation	271.895059
Standard error	75.410121
Minimum	50.
Maximum	900.
Range	850.
Lower quartile	50.
Upper quartile	400.
Interquartile range	350.
Skewness	1.487199
Standardized skewness	2.189098
Kurtosis	1.453111
Standardized kurtosis	1.069461
Coeff. of variation	111.152068

Variable: G166S Magnesium, dissolved ug/l

Sample size	16.
Average	43825.
Median	43100.
Mode	42700.
Geometric mean	43356.488005
Variance	44596666.666668
Standard deviation	6678.073575
Standard error	1669.518394
Minimum	32700.
Maximum	57000.
Range	24300.
Lower quartile	39050.
Upper quartile	48600.
Interquartile range	9550.
Skewness	0.424956
Standardized skewness	0.69395
Kurtosis	-0.306007
Standardized kurtosis	-0.249854
Coeff. of variation	15.238046

Variable: G166S Manganese, dissolved ug/l

Sample size	13.
Average	32.838462
Median	32.
Mode	32.
Geometric mean	32.209299
Variance	42.922564
Standard deviation	6.551531
Standard error	1.817068
Minimum	20.
Maximum	46.
Range	26.
Lower quartile	30.
Upper quartile	36.
Interquartile range	6.
Skewness	0.081515
Standardized skewness	0.119988
Kurtosis	0.830964
Standardized kurtosis	0.611573
Coeff. of variation	19.950787

Variable: G166S Sodium, dissolved ug/l

Sample size	15.
Average	56993.333333
Median	58700.
Mode	58700.
Geometric mean	55791.372437
Variance	136930666.666668
Standard deviation	11701.737763
Standard error	3021.375698
Minimum	34000.
Maximum	79000.
Range	45000.
Lower quartile	47000.
Upper quartile	65000.
Interquartile range	18000.
Skewness	-0.204839
Standardized skewness	-0.32388
Kurtosis	-0.024598
Standardized kurtosis	-0.019447
Coeff. of variation	20.531766

Variable: G166S Sulfate, dissolved mg/l

Sample size	15.
Average	73.4
Median	80.
Mode	80.
Geometric mean	67.629446
Variance	473.971429
Standard deviation	21.770885
Standard error	5.621218
Minimum	12.
Maximum	99.
Range	87.
Lower quartile	60.
Upper quartile	86.
Interquartile range	26.
Skewness	-1.652059
Standardized skewness	-2.612134
Kurtosis	3.718579
Standardized kurtosis	2.939794
Coeff. of variation	29.660606

Variable: G166S TOC mg/l

Sample size	16.
Average	1.750625
Median	1.13
Mode	1.
Geometric mean	1.4652
Variance	1.779673
Standard deviation	1.334044
Standard error	0.333511
Minimum	1.
Maximum	5.2
Range	4.2
Lower quartile	1.
Upper quartile	1.73
Interquartile range	0.73
Skewness	2.08492
Standardized skewness	3.40466
Kurtosis	3.386434
Standardized kurtosis	2.765012
Coeff. of variation	76.20386

Variable:	G166S Total Dissolved Solids mg/l
Sample size	16.
Average	705.5
n	667.
Mean	658.
Arithmetic mean	696.992611
Variance	15106.266667
Standard deviation	122.907553
Standard error	30.726888
Minimum	580.
Maximum	1080.
Range	500.
Lower quartile	635.5
Upper quartile	737.
Interquartile range	101.5
Skewness	2.10011
Standardized skewness	3.429465
Kurtosis	5.341626
Standardized kurtosis	4.361419
Eff. of variation	17.42134

Variable: G164S pH units

Sample size	56.
Average	7.156429
Median	7.27
Mode	7.27
Geometric mean	7.148738
Variance	0.109187
Standard deviation	0.330435
Standard error	0.044156
Minimum	6.32
Maximum	7.68
Range	1.36
Lower quartile	6.895
Upper quartile	7.375
Interquartile range	0.48
Skewness	-0.798846
Standardized skewness	-2.440515
Kurtosis	0.071777
Standardized kurtosis	0.10964
Coeff. of variation	4.617311

Variable: G164S Specific Conductance uhmos/cm

Sample size	56.
Average	891.982143
Median	834.
Mode	1050.
Geometric mean	852.32389
Variance	80129.436039
Standard deviation	283.071433
Standard error	37.827011
Minimum	504.
Maximum	1633.
Range	1129.
Lower quartile	662.
Upper quartile	1089.
Interquartile range	427.
Skewness	1.019992
Standardized skewness	3.116126
Kurtosis	0.835779
Standardized kurtosis	1.276673
Coeff. of variation	31.735101

Variable: G164S Alkalinity mg/l

Sample size	14.
Average	327.428571
Median	336.
Mode	330.
Arithmetic mean	324.755977
Variance	1841.494505
Standard deviation	42.912638
Standard error	11.468885
Minimum	260.
Maximum	400.
Range	140.
Lower quartile	288.
Upper quartile	354.
Interquartile range	66.
Skewness	-0.159426
Standardized skewness	-0.243528
Kurtosis	-1.009507
Standardized kurtosis	-0.771024
Eff. of variation	13.105954

Variable: G164S Boron, dissolved ug/l

Sample size	4.
Average	145.
Median	135.
Mode	130.
Arithmetic mean	132.234619
Variance	4966.666667
Standard deviation	70.474582
Standard error	35.237291
Minimum	70.
Maximum	240.
Range	170.
Lower quartile	100.
Upper quartile	190.
Interquartile range	90.
Skewness	0.822801
Standardized skewness	0.671814
Kurtosis	1.788838
Standardized kurtosis	0.73029
Eff. of variation	48.60316

Variable: G164S Calcium, dissolved ug/l

Sample size	4.
Range	90100.
Mean	89700.
Mode	84000.
Geometric mean	89703.575795
Variance	95373333.333335
Standard deviation	9765.927162
Standard error	4882.963581
Minimum	80000.
Maximum	101000.
Range	21000.
Lower quartile	82000.
Upper quartile	98200.
Interquartile range	16200.
Skewness	0.133578
Standardized skewness	0.109066
Kurtosis	-3.717211
Standardized kurtosis	-1.517545
Coeff. of variation	10.838987

Variable: G164S Chloride, dissolved mg/l

Sample size	14.
Range	186.714286
Mean	181.
Mode	150.
Geometric mean	177.143522
Variance	3507.450549
Standard deviation	59.223733
Standard error	15.828208
Minimum	76.
Maximum	300.
Range	224.
Lower quartile	150.
Upper quartile	220.
Interquartile range	70.
Skewness	0.1242
Standardized skewness	0.189719
Kurtosis	-0.034905
Standardized kurtosis	-0.026659
Coeff. of variation	31.718908

Variable: G164S Iron, dissolved ug/l

Sample size	4.
Age	18.75
Median	20.
Mode	30.
Geometric mean	14.564753
Variance	172.916667
Standard deviation	13.149778
Standard error	6.574889
Minimum	5.
Maximum	30.
Range	25.
Lower quartile	7.5
Upper quartile	30.
Interquartile range	22.5
Skewness	-0.123691
Standardized skewness	-0.100993
Kurtosis	-5.290173
Standardized kurtosis	-2.159704
Eff. of variation	70.13215

Variable: G164S Magnesium, dissolved ug/l

Sample size	4.
Age	48125.
Median	49650.
Mode	49500.
Geometric mean	47983.116094
Variance	17222500.
Standard deviation	4150.
Standard error	2075.
Minimum	42000.
Maximum	51200.
Range	9200.
Lower quartile	45750.
Upper quartile	50500.
Interquartile range	4750.
Skewness	-1.804011
Standardized skewness	-1.472969
Kurtosis	3.449912
Standardized kurtosis	1.408421
Eff. of variation	8.623377

Variable: G164S Manganese, dissolved ug/l

Sample size	4.
Average	60.
Median	48.5
Mode	34.
Geometric mean	49.732972
Variance	1820.666667
Standard deviation	42.669271
Standard error	21.334635
Minimum	24.
Maximum	119.
Range	95.
Lower quartile	29.
Upper quartile	91.
Interquartile range	62.
Skewness	1.211484
Standardized skewness	0.989173
Kurtosis	0.833612
Standardized kurtosis	0.340321
Coeff. of variation	71.115451

Variable: G164S Sodium, dissolved ug/l

Sample size	4.
Average	146075.
Median	82650.
Mode	74000.
Geometric mean	112688.508715
Variance	1.876169E10
Standard deviation	136973.315528
Standard error	68486.657764
Minimum	68000.
Maximum	351000.
Range	283000.
Lower quartile	71000.
Upper quartile	221150.
Interquartile range	150150.
Skewness	1.969244
Standardized skewness	1.607881
Kurtosis	3.892593
Standardized kurtosis	1.589144
Coeff. of variation	93.76917

Variable:	G164S Sulfate, dissolved mg/l
Sample size	14.
Average	68.521429
Median	66.5
Mode	64.
Geometric mean	65.892231
Variance	395.221813
Standard deviation	19.880186
Standard error	5.313203
Minimum	39.
Maximum	110.
Range	71.
Lower quartile	51.
Upper quartile	79.
Interquartile range	28.
Skewness	0.521434
Standardized skewness	0.796503
Kurtosis	-0.122801
Standardized kurtosis	-0.093791
Coeff. of variation	29.013094

Variable:	G164S Total Organic Carbon mg/l
Sample size	56.
Average	3.709286
Median	2.62
Mode	2.
Geometric mean	3.077393
Variance	7.599999
Standard deviation	2.75681
Standard error	0.368394
Minimum	1.6
Maximum	12.
Range	10.4
Lower quartile	2.
Upper quartile	4.
Interquartile range	2.
Skewness	1.844792
Standardized skewness	5.635934
Kurtosis	2.212395
Standardized kurtosis	3.379489
Coeff. of variation	74.321847

Variable:	G164S Total Dissolved Solids mg/l
Sample size	14.
Range	729.642857
Median	713.
Mode	668.
Geometric mean	721.817603
Variance	12247.631868
Standard deviation	110.669019
Standard error	29.57754
Minimum	559.
Maximum	904.
Range	345.
Lower quartile	660.
Upper quartile	820.
Interquartile range	160.
Skewness	0.137649
Standardized skewness	0.210262
Kurtosis	-0.928748
Standardized kurtosis	-0.709343
Coeff. of variation	15.16756

Variable: G155S pH units

Sample size	36.
Mean	7.314167
Median	7.29
Mode	7.09
Arithmetic mean	7.308688
Variance	0.082934
Standard deviation	0.287982
Standard error	0.047997
Minimum	6.89
Maximum	7.84
Range	0.95
Lower quartile	7.08
Upper quartile	7.54
Interquartile range	0.46
Skewness	0.285598
Standardized skewness	0.699568
Kurtosis	-1.140546
Standardized kurtosis	-1.396877
Coeff. of variation	3.937317

Variable: G155S Specific Conductance $\mu\text{hos/cm}$

Sample size	36.
Mean	717.972222
Median	695.
Mode	690.
Arithmetic mean	680.205604
Variance	44982.484921
Standard deviation	212.090747
Standard error	35.348458
Minimum	295.
Maximum	957.
Range	662.
Lower quartile	586.5
Upper quartile	925.5
Interquartile range	339.
Skewness	-0.611497
Standardized skewness	-1.497855
Kurtosis	-0.681827
Standardized kurtosis	-0.835065
Coeff. of variation	29.540244

b

Variable:	G155S Alkalinity mg/l
Sample size	9.
Mean	456.444444
Median	448.
Mode	446.
Geometric mean	455.878104
Variance	585.777778
Standard deviation	24.202846
Standard error	8.067615
Minimum	416.
Maximum	502.
Range	86.
Lower quartile	446.
Upper quartile	466.
Interquartile range	20.
Skewness	0.366817
Standardized skewness	0.449257
Kurtosis	1.043779
Standardized kurtosis	0.639181
Coeff. of variation	5.302474

Variable: G155S Calcium, dissolved ug/l

Sample size	10.
Range	137190.
Median	149500.
Mode	149000.
Arithmetic mean	131219.448461
Variance	1.219494E9
Standard deviation	34921.259046
Standard error	11043.071735
Minimum	53000.
Maximum	165000.
Range	112000.
Lower quartile	141000.
Upper quartile	158000.
Interquartile range	17000.
Skewness	-1.981147
Standardized skewness	-2.557649
Kurtosis	3.551063
Standardized kurtosis	2.292201
Eff. of variation	25.454668

Variable: G155S Chloride, dissolved mg/l

Sample size	9.
Range	23.555556
Median	24.
Mode	20.
Arithmetic mean	23.34057
Variance	11.777778
Standard deviation	3.431877
Standard error	1.143959
Minimum	20.
Maximum	30.
Range	10.
Lower quartile	20.
Upper quartile	26.
Interquartile range	6.
Skewness	0.629896
Standardized skewness	0.771462
Kurtosis	-0.165692
Standardized kurtosis	-0.101465
Eff. of variation	14.569288

Variable:	G155S Iron, dissolved ug/l
Sample size	4.
Average	11.8
Median	8.6
Mode	5.
Geometric mean	9.344584
Variance	88.96
Standard deviation	9.431861
Standard error	4.71593
Minimum	5.
Maximum	25.
Range	20.
Lower quartile	5.
Upper quartile	18.6
Interquartile range	13.6
Skewness	1.327812
Standardized skewness	1.084154
Kurtosis	1.08866
Standardized kurtosis	0.444444
Coeff. of variation	79.931025

Variable:	G155S Magnesium, dissolved ug/l
Sample size	10.
Average	58930.
Median	63200.
Mode	60000.
Geometric mean	56162.271727
Variance	242324555.555557
Standard deviation	15566.777302
Standard error	4922.64721
Minimum	21500.
Maximum	73000.
Range	51500.
Lower quartile	55000.
Upper quartile	69000.
Interquartile range	14000.
Skewness	-1.781065
Standardized skewness	-2.299346
Kurtosis	3.371012
Standardized kurtosis	2.175979
Coeff. of variation	26.415709

Variable: G155S Sodium, dissolved ug/l

Sample size	10.
Range	12480.
Median	12550.
Mode	12300.
Arithmetic mean	9959.390867
Variance	46628444.444446
Standard deviation	6828.502357
Standard error	2159.362046
Minimum	2000.
Maximum	22400.
Range	20400.
Lower quartile	9700.
Upper quartile	18000.
Interquartile range	8300.
Skewness	-0.16478
Standardized skewness	-0.212731
Kurtosis	-0.571003
Standardized kurtosis	-0.368581
Eff. of variation	54.715564

Variable: G155S Sulfate, dissolved mg/l

Sample size	9.
Mean	190.888889
Median	186.
Mode	186.
Geometric mean	186.851153
Variance	2075.611111
Standard deviation	45.558875
Standard error	15.186292
Minimum	145.
Maximum	300.
Range	155.
Lower quartile	162.
Upper quartile	191.
Interquartile range	29.
Skewness	1.959544
Standardized skewness	2.399941
Kurtosis	4.63157
Standardized kurtosis	2.836246
Coeff. of variation	23.866698

Variable: G155S Total Organic Carbon. mg/l

Sample size	37.
Mean	1.801622
Median	1.2
Mode	0.5
Geometric mean	1.278968
Variance	2.795831
Standard deviation	1.672074
Standard error	0.274887
Minimum	0.5
Maximum	7.
Range	6.5
Lower quartile	0.5
Upper quartile	2.
Interquartile range	1.5
Skewness	1.777275
Standardized skewness	4.413467
Kurtosis	2.577004
Standardized kurtosis	3.199707
Coeff. of variation	92.809374

variable:	G155S	Total Dissolved Solids	mg/l
sample size	10.		
average	776.4		
median	771.5		
mode	745.		
geometric mean	771.411671		
variance	8648.044444		
standard deviation	92.994862		
standard error	29.407558		
minimum	652.		
maximum	928.		
range	276.		
lower quartile	720.		
upper quartile	844.		
interquartile range	124.		
skewness	0.219342		
standardized skewness	0.283169		
urtosis	-0.872906		
standardized kurtosis	-0.563458		
coeff. of variation	11.9777		

Variable: G167S pH units

Sample size	48.
Average	7.20625
Median	7.14
Mode	7.14
Geometric mean	7.198612
Variance	0.116969
Standard deviation	0.342007
Standard error	0.049364
Minimum	6.78
Maximum	8.16
Range	1.38
Lower quartile	6.975
Upper quartile	7.345
Interquartile range	0.37
Skewness	1.419749
Standardized skewness	4.015656
Kurtosis	1.955424
Standardized kurtosis	2.765386
Coeff. of variation	4.745974

Variable: G167S Specific Conductance uhmos/cm

Sample size	48.
Range	915.979167
Median	910.
Mode	910.
Geometric mean	882.438122
Variance	51309.97828
Standard deviation	226.51706
Standard error	32.694921
Minimum	404.
Maximum	1210.
Range	806.
Lower quartile	750.5
Upper quartile	1110.
Interquartile range	359.5
Skewness	-0.689644
Standardized skewness	-1.950607
Kurtosis	-0.107657
Standardized kurtosis	-0.15225
Coeff. of variation	24.729499

Variable: G167S Alkalinity mg/l

Sample size	12.
Range	433.333333
Minimum	432.
Maximum	432.
Arithmetic mean	431.148368
Variance	1867.878788
Standard deviation	43.218963
Standard error	12.47624
Minimum	320.
Maximum	496.
Range	176.
Lower quartile	427.
Upper quartile	448.
Interquartile range	21.
Skewness	-1.423611
Standardized skewness	-2.013291
Kurtosis	4.481802
Standardized kurtosis	3.169112
Coeff. of variation	9.973607

Variable: G167S Boron, dissolved ug/l

Sample size	5.
Range	107.8
Minimum	90.
Maximum	90.
Arithmetic mean	77.887971
Variance	8049.2
Standard deviation	89.717334
Standard error	40.122811
Minimum	20.
Maximum	250.
Range	230.
Lower quartile	49.
Upper quartile	130.
Interquartile range	81.
Skewness	1.154287
Standardized skewness	1.053715
Kurtosis	1.27243
Standardized kurtosis	0.580782
Coeff. of variation	83.225727

Variable: G167S Calcium, dissolved ug/l

Sample size	13.
Mean	223846.153846
Median	231000.
Mode	180000.
Geometric mean	217261.514535
Variance	2.849308E9
Standard deviation	53378.906811
Standard error	14804.645041
Minimum	113000.
Maximum	322000.
Range	209000.
Lower quartile	188000.
Upper quartile	265000.
Interquartile range	77000.
Skewness	-0.276707
Standardized skewness	-0.407302
Kurtosis	0.562421
Standardized kurtosis	0.413931
Coeff. of variation	23.846247

Variable: G167S Chloride, dissolved mg/l

Sample size	12.
Mean	14.666667
Median	14.
Mode	12.
Geometric mean	13.401476
Variance	41.69697
Standard deviation	6.457319
Standard error	1.864067
Minimum	6.
Maximum	28.
Range	22.
Lower quartile	10.
Upper quartile	17.
Interquartile range	7.
Skewness	0.78728
Standardized skewness	1.113383
Kurtosis	0.409154
Standardized kurtosis	0.289315
Coeff. of variation	44.027176

Table: G167S Magnesium, dissolved ug/l

Sample size	13.
Sample range	100269.230769
Minimum	104000.
Maximum	117000.
Arithmetic mean	96757.741728
Variance	718525641.025643
Standard deviation	26805.328594
Standard error	7434.460515
Minimum	50500.
Maximum	160000.
Range	109500.
Lower quartile	91000.
Upper quartile	112000.
Interquartile range	21000.
Skewness	0.267455
Standardized skewness	0.393683
Kurtosis	1.532738
Standardized kurtosis	1.128064
Coeff. of variation	26.733354

Variable: **G167S Manganese, dissolved ug/l**

Sample size	7.
Average	27.914286
Median	23.
Mode	23.
Geometric mean	18.603501
Variance	732.651429
Standard deviation	27.067535
Standard error	10.230566
Minimum	4.4
Maximum	84.
Range	79.6
Lower quartile	6.
Upper quartile	35.
Interquartile range	29.
Skewness	1.781887
Standardized skewness	1.924658
Kurtosis	3.688938
Standardized kurtosis	1.992254
Coeff. of variation	96.966603

Variable: **G167S Sodium, dissolved ug/l**

Sample size	13.
Average	10860.
Median	9700.
Mode	16000.
Geometric mean	10362.770141
Variance	10995466.666667
Standard deviation	3315.941294
Standard error	919.676643
Minimum	4940.
Maximum	16000.
Range	11060.
Lower quartile	8720.
Upper quartile	13000.
Interquartile range	4280.
Skewness	0.140105
Standardized skewness	0.206229
Kurtosis	-0.619461
Standardized kurtosis	-0.455911
Coeff. of variation	30.533529

Variable:	G167S Sulfate, dissolved mg/l
Sample size	12.
Average	474.166667
Median	499.5
Mode	478.
Geometric mean	385.987505
Variance	54173.606061
Standard deviation	232.752242
Standard error	67.189785
Minimum	34.
Maximum	940.
Range	906.
Lower quartile	293.5
Upper quartile	612.5
Interquartile range	319.
Skewness	0.076086
Standardized skewness	0.107602
Kurtosis	0.77899
Standardized kurtosis	0.550829
Coeff. of variation	49.086589

Variable:	G167S Total Organic Carbon mg/l
Sample size	49.
Average	3.239592
Median	2.
Mode	2.
Geometric mean	2.101475
Variance	14.300766
Standard deviation	3.781635
Standard error	0.540234
Minimum	0.5
Maximum	17.
Range	16.5
Lower quartile	1.68
Upper quartile	4.
Interquartile range	2.32
Skewness	2.499654
Standardized skewness	7.143356
Kurtosis	5.827566
Standardized kurtosis	8.326828
Coeff. of variation	116.731848

Variable:	G167S Total Dissolved Solids mg/l
Sample size	13.
Average	1289.153846
Median	1288.
Mode	1288.
Geometric mean	1258.712428
Variance	79588.141026
Standard deviation	282.113702
Standard error	78.244263
Minimum	756.
Maximum	1804.
Range	1048.
Lower quartile	1225.
Upper quartile	1430.
Interquartile range	205.
Skewness	-0.113446
Standardized skewness	-0.166988
Kurtosis	0.127386
Standardized kurtosis	0.093753
Coeff. of variation	21.883633

Variable:	G168S pH units
Sample size	60.
Range	7.063333
Median	7.12
Mode	7.23
Geometric mean	7.05444
Variance	0.121395
Standard deviation	0.348419
Standard error	0.044981
Minimum	5.78
Maximum	7.76
Range	1.98
Lower quartile	6.935
Upper quartile	7.26
Interquartile range	0.325
Skewness	-1.415298
Standardized skewness	-4.475566
Kurtosis	3.426166
Standardized kurtosis	5.417244
Coeff. of variation	4.932778

Variable:	G168S Specific Conductance uhmos/cm
Sample size	60.
Range	675.6
Median	692.5
Mode	690.
Geometric mean	664.120178
Variance	14168.888136
Standard deviation	119.033139
Standard error	15.367112
Minimum	407.
Maximum	910.
Range	503.
Lower quartile	637.5
Upper quartile	733.5
Interquartile range	96.
Skewness	-0.541336
Standardized skewness	-1.711853
Kurtosis	0.394111
Standardized kurtosis	0.623145
Coeff. of variation	17.618878

Variable: G168S Alkalinity mg/l

Sample size	15.
Average	331.2
Median	318.
Mode	304.
Geometric mean	328.931884
Variance	1679.314286
Standard deviation	40.979437
Standard error	10.580845
Minimum	268.
Maximum	422.
Range	154.
Lower quartile	304.
Upper quartile	358.
Interquartile range	54.
Skewness	0.790588
Standardized skewness	1.25003
Kurtosis	0.339212
Standardized kurtosis	0.268171
Coeff. of variation	12.373019

Variable: G168S Boron, dissolved ug/l

Sample size	5.
Average	134.
Median	150.
Mode	150.
Geometric mean	124.816306
Variance	2430.
Standard deviation	49.29503
Standard error	22.045408
Minimum	60.
Maximum	180.
Range	120.
Lower quartile	110.
Upper quartile	170.
Interquartile range	60.
Skewness	-0.942507
Standardized skewness	-0.860387
Kurtosis	-0.264695
Standardized kurtosis	-0.120816
Coeff. of variation	36.787336

Variable:	G168S Calcium, dissolved ug/l
Sample size	16.
Sample range	131875.
Median	133000.
Mode	138000.
Arithmetic mean	130169.971296
Variance	495583333.333335
Standard deviation	22261.701043
Standard error	5565.425261
Minimum	101000.
Maximum	176000.
Range	75000.
Lower quartile	114500.
Upper quartile	140500.
Interquartile range	26000.
Skewness	0.546344
Standardized skewness	0.892176
Kurtosis	-0.452935
Standardized kurtosis	-0.36982
Coeff. of variation	16.880911

Variable:	G168S Chloride, dissolved mg/l
Sample size	15.
Sample range	13.866667
Median	14.
Mode	8.
Arithmetic mean	12.765687
Variance	32.266667
Standard deviation	5.680376
Standard error	1.466667
Minimum	8.
Maximum	24.
Range	16.
Lower quartile	8.
Upper quartile	20.
Interquartile range	12.
Skewness	0.271925
Standardized skewness	0.429951
Kurtosis	-1.421595
Standardized kurtosis	-1.123869
Coeff. of variation	40.964247

Variable:	G168S Iron, dissolved ug/l
Sample size	8.
Range	20.275
Median	18.6
Mode	10.
Geometric mean	16.454978
Variance	197.462143
Standard deviation	14.052122
Standard error	4.968176
Minimum	5.
Maximum	50.
Range	45.
Lower quartile	10.
Upper quartile	25.
Interquartile range	15.
Skewness	1.421832
Standardized skewness	1.64179
Kurtosis	2.649161
Standardized kurtosis	1.529494
Coeff. of variation	69.307632

Variable:	G168S Magnesium, dissolved ug/l
Sample size	15.
Range	51380.
Median	51000.
Mode	53000.
Geometric mean	50737.106848
Variance	72670285.714287
Standard deviation	8524.68684
Standard error	2201.064677
Minimum	38800.
Maximum	70000.
Range	31200.
Lower quartile	46700.
Upper quartile	55000.
Interquartile range	8300.
Skewness	0.551007
Standardized skewness	0.871218
Kurtosis	0.307286
Standardized kurtosis	0.242931
Coeff. of variation	16.59145

Variable: G168S Manganese, dissolved ug/l

Sample size	8.
Average	6.4125
Median	6.
Mode	10.
Geometric mean	5.152361
Variance	13.504107
Standard deviation	3.674793
Standard error	1.299236
Minimum	1.
Maximum	11.
Range	10.
Lower quartile	3.65
Upper quartile	10.
Interquartile range	6.35
Skewness	-0.082347
Standardized skewness	-0.095086
Kurtosis	-1.530836
Standardized kurtosis	-0.883828
Coeff. of variation	57.306721

Variable: G168S Sodium, dissolved ug/l

Sample size	16.
Average	11264.375
Median	11550.
Mode	12500.
Geometric mean	9363.112618
Variance	26398706.25
Standard deviation	5137.967132
Standard error	1284.491783
Minimum	500.
Maximum	25000.
Range	24500.
Lower quartile	8800.
Upper quartile	12650.
Interquartile range	3850.
Skewness	0.773793
Standardized skewness	1.263599
Kurtosis	3.531502
Standardized kurtosis	2.88346
Coeff. of variation	45.612536

Variable: G168S Sulfate, dissolved mg/l

Sample size	15.
Mean	208.133333
Median	200.
Mode	200.
Geometric mean	201.77917
Variance	2987.552381
Standard deviation	54.658507
Standard error	14.112766
Minimum	132.
Maximum	344.
Range	212.
Lower quartile	170.
Upper quartile	235.
Interquartile range	65.
Skewness	0.853467
Standardized skewness	1.349449
Kurtosis	1.478153
Standardized kurtosis	1.168583
Coeff. of variation	26.261294

Variable: G168S Total Organic Carbon mg/l

Sample size	61.
Mean	3.565574
Median	2.
Mode	2.
Geometric mean	2.138481
Variance	30.241748
Standard deviation	5.49925
Standard error	0.704107
Minimum	0.5
Maximum	30.
Range	29.5
Lower quartile	1.25
Upper quartile	2.63
Interquartile range	1.38
Skewness	3.377536
Standardized skewness	10.769344
Kurtosis	11.530077
Standardized kurtosis	18.381946
Coeff. of variation	154.231834

variable:	G168S Total Dissolved Solids mg/l
sample size	16.
average	711.625
median	703.
mode	676.
geometric mean	694.443267
variance	25699.85
standard deviation	160.311728
standard error	40.077932
minimum	448.
maximum	1012.
range	564.
lower quartile	560.
upper quartile	840.5
interquartile range	280.5
skewness	0.150482
standardized skewness	0.245736
kurtosis	-0.962517
standardized kurtosis	-0.785892
coeff. of variation	22.527557

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

APPENDIX I

DESCRIPTIVE STATISTICS: BEDROCK VALLY AQUIFER

Variable: G163D pH units

Sample size	44.
Average	7.482955
Mean	7.47
Mode	7.52
Geometric mean	7.479836
Variance	0.048082
Standard deviation	0.219276
Standard error	0.033057
Minimum	7.07
Maximum	7.93
Range	0.86
Lower quartile	7.39
Upper quartile	7.52
Interquartile range	0.13
Skewness	0.424815
Standardized skewness	1.150405
Kurtosis	0.144159
Standardized kurtosis	0.195192
Coeff. of variation	2.930334

Variable: G163D Specific Conductance uhmos/cm

Sample size	44.
Average	416.25
Mean	407.5
Mode	403.
Geometric mean	409.249757
Variance	6180.843023
Standard deviation	78.618338
Standard error	11.85216
Minimum	302.
Maximum	586.
Range	284.
Lower quartile	355.5
Upper quartile	462.5
Interquartile range	107.
Skewness	0.581774
Standardized skewness	1.575452
Kurtosis	-0.084503
Standardized kurtosis	-0.114418
Coeff. of variation	18.887288

Variable: G163D Alkalinity mg/l

Sample size	12.
Average	313.666667
Mean	294.
Mode	292.
Geometric mean	312.490556
Variance	840.606061
Standard deviation	28.993207
Standard error	8.369618
Minimum	290.
Maximum	370.
Range	80.
Lower quartile	292.
Upper quartile	336.
Interquartile range	44.
Skewness	0.940693
Standardized skewness	1.330341
Kurtosis	-0.605317
Standardized kurtosis	-0.428024
Coeff. of variation	9.243318

Variable: G163D Calcium, dissolved ug/l

Sample size	12.
Mean	68583.333333
Median	72000.
Mode	69000.
Geometric mean	60698.062125
Variance	444417878.78788
Standard deviation	21081.220999
Standard error	6085.624309
Minimum	7200.
Maximum	86300.
Range	79100.
Lower quartile	66000.
Upper quartile	81250.
Interquartile range	15250.
Skewness	-2.527847
Standardized skewness	-3.574916
Kurtosis	7.478576
Standardized kurtosis	5.288152
Coeff. of variation	30.738111

Variable: G163D Iron, dissolved ug/l

Sample size	4.
Average	923.75
Median	890.
Mode	710.
Geometric mean	897.230758
Variance	65622.916667
Standard deviation	256.169703
Standard error	128.084851
Minimum	705.
Maximum	1210.
Range	505.
Lower quartile	707.5
Upper quartile	1140.
Interquartile range	432.5
Skewness	0.251811
Standardized skewness	0.205603
Kurtosis	-4.560706
Standardized kurtosis	-1.861901
Coeff. of variation	27.731497

Variable: G163D Magnesium, dissolved ug/l

Sample size	12.
Average	31441.666667
Median	31400.
Mode	31800.
Geometric mean	31334.772232
Variance	7448106.060606
Standard deviation	2729.121848
Standard error	787.829617
Minimum	27500.
Maximum	36100.
Range	8600.
Lower quartile	29400.
Upper quartile	32700.
Interquartile range	3300.
Skewness	0.447204
Standardized skewness	0.632442
Kurtosis	-0.299233
Standardized kurtosis	-0.21159
Coeff. of variation	8.679953

Variable: G163D Manganese, dissolved ug/l

Sample size	4.
Average	86.65
Median	69.
Mode	67.
Geometric mean	80.819633
Variance	1691.156667
Standard deviation	41.123675
Standard error	20.561838
Minimum	60.6
Maximum	148.
Range	87.4
Lower quartile	63.8
Upper quartile	109.5
Interquartile range	45.7
Skewness	1.934555
Standardized skewness	1.579558
Kurtosis	3.791238
Standardized kurtosis	1.547767
Coeff. of variation	47.459521

Variable: G163D Sodium, dissolved ug/l

Sample size	12.
Average	12272.5
Median	7225.
Mode	7000.
Geometric mean	8678.797856
Variance	298365438.636365
Standard deviation	17273.257905
Standard error	4986.36005
Minimum	5300.
Maximum	67000.
Range	61700.
Lower quartile	6810.
Upper quartile	8350.
Interquartile range	1540.
Skewness	3.436464
Standardized skewness	4.859895
Kurtosis	11.86101
Standardized kurtosis	8.387
Coeff. of variation	140.747671

Variable:	G163D Sulfate, dissolved mg/l
Sample size	11.
Average	24.181818
Median	22.
Mode	22.
Geometric mean	22.789544
Variance	94.563636
Standard deviation	9.724384
Standard error	2.932012
Minimum	13.
Maximum	50.
Range	37.
Lower quartile	19.
Upper quartile	27.
Interquartile range	8.
Skewness	2.015494
Standardized skewness	2.728992
Kurtosis	5.389615
Standardized kurtosis	3.648787
Coeff. of variation	40.213616

Variable: G163D Total Dissolved Solids mg/l

Sample size	12.
Mean	341.166667
Median	328.
Mode	324.
Geometric mean	337.483445
Variance	3205.969697
Standard deviation	56.621283
Standard error	16.345157
Minimum	280.
Maximum	499.
Range	219.
Lower quartile	308.
Upper quartile	354.
Interquartile range	46.
Skewness	2.153031
Standardized skewness	3.044846
Kurtosis	5.812858
Standardized kurtosis	4.110312
Coeff. of variation	16.59637

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

APPENDIX J

REPRINTS AND TABLES: STATISTICAL PROCEDURES

APPENDIX J

SUMMARY STATISTICS	
Reprinted from <u>STATGRAPHICS-Plus Reference Manual</u>	
by Manugistics	J-2
NORMAL PROBABILITY PLOT	
Reprinted from <u>STATGRAPHICS-Plus Reference Manual</u>	
by Manugistics	J-9
NONDETECT MACROS	
Reprinted from <u>Environmental Statistics Software</u>	
by Alpine Analytics	J-13
RECODE DATA	
Reprinted from <u>STATGRAPHICS-Plus Reference Manual</u>	
by Manugistics	J-19
COHEN'S METHOD	
Reprinted from <u>Statistical Analysis of Groundwater</u>	
<u>Monitoring Data at RCRA Facilities - Interim Final</u>	
<u>Guidance, 1989</u>	J-27
AITCHISON'S METHOD and POISSON MODEL	
Reprinted from <u>Statistical Analysis of Groundwater</u>	
<u>Monitoring Data at RCRA Facilities - Addendum to Interim</u>	
<u>Final Guidance, 1992</u>	J-31
t DISTRIBUTION TABLE	
Reprinted from <u>Elementary Statistics</u>	
by Paul G. Hoel	J-34
PERCENT POINTS TO THE NORMAL	
PROBABILITY PLOT CORRELATION COEFFICIENT	
Reprinted from Appendix A of the <u>Interim Final</u>	
<u>Guidance</u>	J-35
MAXIMUM COVERAGE OF 95% CONFIDENCE NON-PARAMETRIC	
UPPER TOLERANCE LIMITS	
Reprinted from Appendix A of the <u>Interim Final</u>	
<u>Guidance</u>	J-37



Summary Statistics

Pulldown Menu: Stats, Descriptive Methods

Full-screen Menu: Descriptive Methods

Command: STATS

When analyzing quantitative variables, you ordinarily use the Summary Statistics procedure first to find out about the center, spread, and shape of your data. This information helps you decide which of the more formal procedures will be most appropriate for the data or if you need to use a transformation. The Codebook procedure also lets you calculate these summary statistics. You use the Codebook procedure to calculate the statistics simultaneously for subsets of the data and to plot means and confidence intervals by subsets of the data.

The system performs the following calculations: average; median; mode; geometric mean; variance; standard deviation; standard error; minimum, maximum, and range; lower quartile, upper quartile, and interquartile range; coefficients of skewness and kurtosis, with standardized values of each; coefficient of variation; and the sum.

The average, median, mode, and geometric mean measure the central tendency of the data. The variance, standard deviation, range, and interquartile range measure spread or dispersion (the variance and standard deviation use a divisor of $n - 1$).

The skewness coefficient measures the symmetry, or shape, of the data. A skewness of 0 indicates that the data are symmetrically distributed. Positive values of skewness tell you that the upper tail of the curve is longer than the lower tail; negative values tell you that the lower tail is longer.

The kurtosis coefficient reveals how flat or steep the distribution of the data is with respect to a Gaussian or normal distribution. For a normal distribution, the kurtosis coefficient is 0. When the coefficient is less than 0, the curve is flat with short tails. When the coefficient is greater than 0, the curve is either very steep at the center or has relatively long tails.

The standardized coefficients test for significant deviations from the normal distribution. When you use large samples, the standardized coefficient is approximately unit normal. When the values for the standardized coefficient are outside the range -2.0 to +2.0, the data may depart significantly from a normal distribution.

The coefficient of variation lets you compare the amount of variance in two or more variables that are measured in different units (for example, age, weight, and IQ).

The sum is the simple sum of the observations in the variable.

Summary Statistics Data Entry Screen

Figure S-119 shows the Summary Statistics data entry screen.

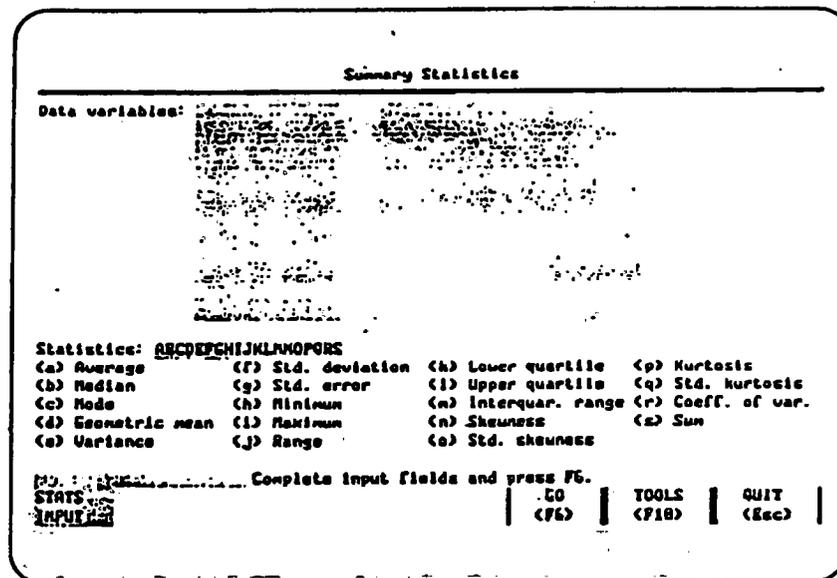


Figure S-119. Summary Statistics Data Entry Screen

Fields on the Summary Statistics Data Entry Screen**■ Data**

Field Type: Numeric
Required: Yes
Valid Entries: Observations, names of variables that contain observations, or STATGRAPHICS expressions
Default: No default

Use this field to enter the data that you want the system to analyze. You can enter a list of variables or the name of a file that contains the data. The system ignores any character variables in the file.

■ Statistics

Field Type: Character
Required: Yes
Valid Entries: Letters that correspond to statistics listed on the data entry screen
Default: ABCDEFGHJKLMNOPS

Use this field to enter the letters that represent the statistics you want the system to calculate. Use the editing keys (Space Bar, Arrow keys, Delete, Ctrl-Right Arrow keys) to erase unwanted items from the default list. The letters correspond to the list that is displayed in the lower middle section of the data entry screen. You can enter letters in either lowercase or uppercase. The system converts lowercase letters to uppercase before it processes the procedure. The system displays the results in the order of the items in the list. It drops duplicate letters from the list. The system always calculates the sample size and includes it in the results table.

After you complete the data entry screen, press F6 (Go). The system displays the table of statistics for the selected variables. After you view the statistics, press Esc. The system displays a pop-up menu with redisplay and save options (see Figure S-120).

Pop-Up Menu Options on the Summary Statistics Screen**■ Redisplay Results**

When you select this option, the system allows you to redisplay the table of statistics.

■ Save Statistics

When you select this option, the system saves the statistics (including the sample size). The system prompts you for a file

Variance:

$$s^2 = \frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2$$

Standard Deviation:

$$s = \sqrt{s^2}$$

Standard Error:

$$\frac{s}{\sqrt{n}}$$

Lower Quartile:

$$i = \text{floor} \left[\frac{(n+1)}{4} \right]$$

$$j = \text{ceiling} \left[\frac{n}{4} \right]$$

$$\text{Lower Quartile} = \frac{(X_{(i)} + X_{(j)})}{2}$$

Upper Quartile:

$$i = \text{floor} \left[\frac{3(n+1)}{4} \right]$$

$$j = \text{ceiling} \left[\frac{3n}{4} \right]$$

$$\text{Upper Quartile} = \frac{(X_{(i)} + X_{(j)})}{2}$$

Skewness:
(missing if $s=0$ or $n<3$)

$$\frac{n \sum_{i=1}^n (x_i - \bar{x})^3}{(n-1)(n-2)s^3}$$

Standardized Skewness:
 $-N(0,1)$ for $n>150$

$$\frac{\text{skewness}}{\sqrt{\frac{6}{n}}}$$

Kurtosis:
(missing if $s=0$ or $n<4$)

$$\frac{n(n+1) \sum_{i=1}^n (x_i - \bar{x})^4}{(n-1)(n-2)(n-3)s^4} - \frac{3(n-1)^2}{(n-2)(n-3)}$$

Standard Kurtosis:

$$\frac{\text{Kurtosis}}{\sqrt{\frac{24}{n}}}$$

Coefficient of Variations:

$$\frac{s}{\bar{x}} \times 100$$

Sum:

$$\sum_{i=1}^n x_i$$

Reference

Snedecor, G. W. and Cochran, W. G. 1967. *Statistical Methods*, sixth edition. Ames, Iowa: Iowa State University Press.



Normal Probability Plot

Pull-down Menu: Stats, Estimation and Testing

Full-screen Menu: Estimation and Testing

Command: PROBPLT

By constructing a normal probability plot, you can assess whether a set of observations could reasonably have come from a normal distribution. A normal probability plot consists of an arithmetic (interval) horizontal axis and a vertical axis scaled so the cumulative distribution function (cdf) of a normal distribution plots as a straight line. The plot includes a least squares regression line for comparison.

Use the Normal Probability Plot procedure to determine which effects are distinguishable from "noise," especially when the design is unreplicated. When an estimate of standard error is available, the standardized effects are plotted. Points that fall off the straight line can be strongly distinguished from noise. When the experiment is balanced, plotting the standardized effects is equivalent to plotting the nonstandardized effects. However, when the design is unbalanced, effects have a different standard error. Therefore, standardized effects should be plotted.

Normal Probability Plot Data Entry Screen

Figure N-11 shows the Normal Probability Plot data entry screen.

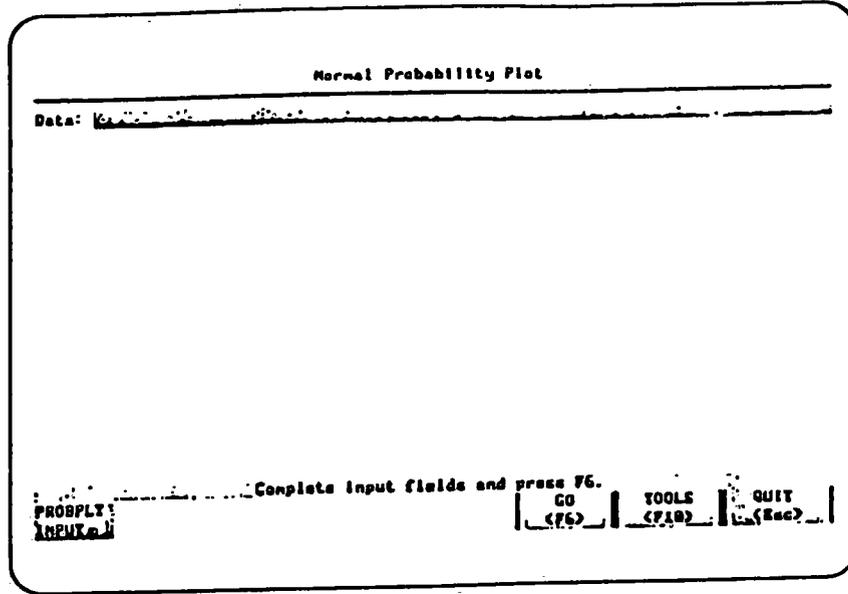


Figure N-11. Normal Probability Plot Data Entry Screen

Field on the Normal Probability Plot Data Entry Screen

- **Data**
- Field Type: Numeric
- Required: Yes
- Valid Entries: Observations, name of a variable that contains observations, or a STATGRAPHICS expression
- Default: No default

Use this field to enter the data you want the system to plot.

After you complete the data entry screen, press F6 (Go). The system displays a normal probability plot, such as the one shown in Figure N-12.

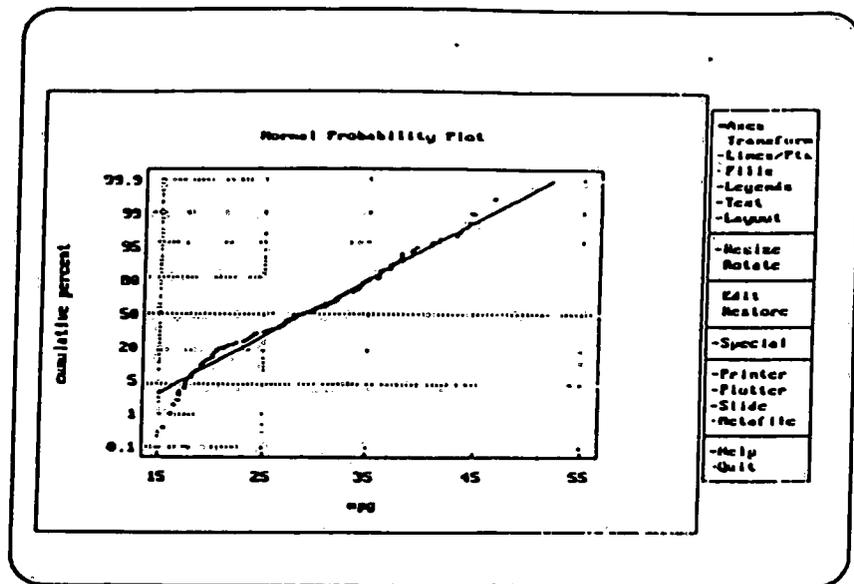


Figure N-12. Sample Normal Probability Plot

Calculations

The system first sorts the input data from the smallest value to the largest value to compute order statistics. It then generates a scatterplot where

$$\text{horizontal position} = X_{(i)}$$

$$\text{vertical position} = \varphi\left(\frac{i - 3/8}{n + 1/4}\right)$$

where

$\varphi(p)$ = the value of the inverse cumulative standard normal distribution at probability p .

The labels for the vertical axis are based on the probability scale using:

$$100\left(\frac{i - 3/8}{n + 1/4}\right)$$

Reference

Law, A. M. and Kelton, W. D. 1982. *Simulation Modeling and Analysis*. New York: McGraw-Hill.

Macros for Handling Values Below the Detection Limit

Nondetects Macros

In environmental statistics, one often encounters chemical analysis data which contains values that are recorded as "Below Limit of Detection." This is due to the intrinsic limits of the analytical equipment for various "analytes," or chemical constituents of interest. The implication is that any measurement below the Detection Limit (DL) represents a confounding of actual sample value with the "noise" component of variation intrinsic to the equipment used.

Statistical research indicates that best results are obtained by recording the actual readings even if they *are* below the DL and using these in the statistical analysis of the data. However, these "below detection limit" data situations are most often reported as "Nondetects" with their associated Detection Limit. For example, the DL for Zinc may be 7 ppb, thus any measurement below 7 gets recorded as "<7" and we are left to deal with the mix of these nondetect data points and actual values above 7.

There are various statistical procedures for handling such "censored" measurements. Statistical research has provided methods for dealing with nondetect data based on the proportion of nondetects and the distribution behavior of the data set containing nondetects.

For less than 50% nondetects, parametric methods based on adjustments to the sample mean and standard deviation are recommended, depending on the appropriateness of distribution assumptions. These can then be used in various statistical interval estimates or tests of hypotheses. If there are greater than 50% (but less than 90%) nondetects, standard nonparametric procedures are recommended. And for data sets with 90% or greater nondetects, the Poisson probability model is appropriate for analyzing the data. These macros address the below 50% and above 90% situations. STATGRAPHICS has standard nonparametric procedures that may be used directly.

We have developed four STATGRAPHICS macros for examining distribution assumptions and making appropriate adjustments to sample means and standard deviations. A fifth macro computes the upper tolerance limit for data in which the proportion of nondetects exceeds 90% of the data. Please refer to the technical references for statistical details.

Nondetect Data Management in STATGRAPHICS

Below are recommendations for managing such data in STATGRAPHICS as well as usage of the macros.

The first hurdle to overcome in data analysis is proper management of the data. The discussion below will help you organize your data in the most effective manner for analysis in STATGRAPHICS.

Data Entry

As noted above, when possible all nondetect data should be recorded and entered as the actual measured value (if available). Alternatively, nondetects should be entered as "<7," for example, if it is only available as a DL of 7. Since the "<" is a non-numeric character, all original data sets which contain any nondetects should be entered as character data, which preserves the original data exactly as it was recorded.

Specifically, you should annotate nondetects with their detection limit preceded immediately (no leading or intervening blanks) with a "<" symbol; e.g. <7.

Detected values should be entered as is (also with no leading blanks), for example: 10.2, the actual recorded value.

Once correctly entered, these "original data" character variables should *never* be modified themselves. You will recode new variables from this original in order to do your analysis.

Recoding

Obviously, to do any statistical analysis *on the numbers* we must deal with numeric variables — not character variables. We must recode any character data variables which contain nondetect data.

For analysis you need to recode at least two data variables for each original data character variable. They are: 1. the Detect Code Vector, and 2. the Numeric Data Variable.

1. Detect Code Vector: This is a STATGRAPHICS variable of the same length as the original data character variable. It contains 1's and 0's corresponding to "Detects" and "Nondetects," respectively. This variable can then be used in the macros and other statistical procedures to identify each datum as either an actual "Detect" value (1) or some numeric value representing a "Nondetect" data point (0).

2. Numeric Data Variable: This is the variable that will actually be used in the computations. It contains the actual values for detects and replacement values for nondetects. Depending on your specific application you may recode nondetects, for example, as 0, at the half detect level, or at the detect level. That is, you might recode <7 as 0, 3.5 or 7. See the technical references for guidance on this recoding decision.

Example: Copper Measurements

Consider the following Copper concentration measurements from ground-water well data (in ppb). Note that there are missing values in the data which should be entered in the original data character variable as a blank field and carried forward in your recoding (STATGRAPHICS will numerically recode them as -32768). These missing values represent the fact that no measurement was available

— they do not represent the nondetects, which are recorded at their detect level.

STATGRAPHICS Variable Name and Type	Original Data as Entered	Detect Code Vector	Numeric Data Variable for Computation (with nondetects replaced by half detect levels)
	Cu (Character)	Cu_DET (Numeric)	Cu_HDL (Numeric)
Jan	<5	0	2.5
Feb	5.4	1	5.4
Mar	6.7	1	6.7
Apr	<5	0	2.5
May	<5	0	2.5
Jun	<5	0	2.5
Jul (missing value)		-32768	-32768
Aug (missing value)		-32768	-32768
Sep	6.2	1	6.2
Oct	<5	0	2.5
Nov	10.4	1	10.4
Dec	7.8	1	7.8

STATGRAPHICS Recoding Procedure

Start the RECODE data procedure under the Categorical Data Analysis submenu. (If you are unfamiliar with the RECODE procedure in STATGRAPHICS refer to the STATGRAPHICS reference manual for help.)

Detect Code Variable

In the Procedure Input Screen type/select the following (referring to the above example):

Data variable: Cu
 Lower limit condition: Equal or greater
 Upper limit condition: Equal or less
 Unspecified values: User defined

Press F6 to bring up the Recoding Specifications screen and enter the following single row of values in the table:

<u>Lower Limit</u>	<u>Upper Limit</u>	<u>New Value</u>
<5	<5	0

Press F6 to bring up a window which requests the replacement value and enter 1:

Enter number to replace unspecified values (-32768): 1

Press F6 and save the recoded data as:

File: Copper Variable: Cu_DET (for example).

You should store the recoded variable in the same file as your original data variable.

Numeric Data Variable

In the Procedure Input Screen type (or select) the following (referring to the above example):

Data variable: Cu

Lower limit condition: Equal or greater

Upper limit condition: Equal or less

Unspecified values: Same (only change from above)

Press F6 to bring up the Recoding Specifications screen and enter the following single row of values in the table:

<u>Lower Limit</u>	<u>Upper Limit</u>	<u>New Value</u>
<5	<5	2.5

Press F6 and save the recoded data as:

File: Copper Variable: Cu_HDL (for example).

You should store the recoded variable in the same file as your original data variable.

Checking Distribution Assumptions

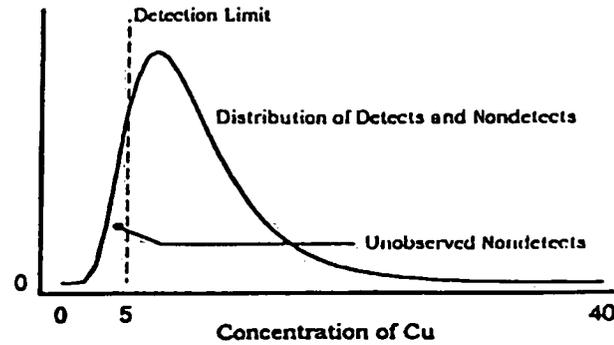
For the below 50% nondetect data sets one of two methods is recommended for adjusting the sample mean and standard deviation: *Cohen's Adjustment* or *Aitchison's Adjustment*. The proper adjustment factor depends upon which underlying distribution assumption is more appropriate. There are two macros for checking distribution assumptions using specially constructed normal probability plots for censored data sets: COHENPLT and AITCHPLT.

COHENPLT: Censored Probability Plot

This macro takes as input the two recoded variables: the *data variable* with the half-detect-limits, say (e.g. Cu_HDL); and, the *detect codes vector* with 1's and 0's identifying which data points are detects and nondetects (e.g. Cu_DET). The macro computes and graphs a "Censored Probability Plot" to check Cohen's distribution assumptions for data censored below a detection limit.

Cohen's Distribution Assumption: Cohen's adjustment assumes all the data, detects and nondetects, come from *the same* distribution except that the nondetects are just unobservable. This distribution may be NORMAL or LOG NORMAL, in which case you simply enter LOG Cu_HDL instead of Cu_HDL. (Most ground-water quality data tends to be log-normally distributed more often than normally distributed.) The figure below illustrates Cohen's assumption for log-normally distributed data.

Cohen's Distribution Assumption



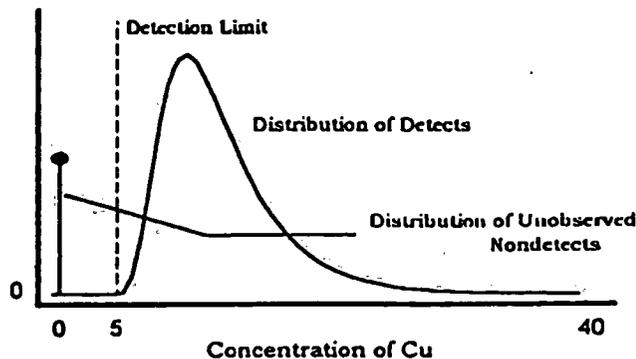
If the assumption is reasonable, the probability plot of normal quantiles (of the log-transformed data) *computed with nondetects* versus the ordered data values, *plotted without the nondetects*, should fall on a straight line. The macro COHENPLT produces the plot and gives the probability plot correlation coefficient which may be compared to Aitchison's plot if both assumptions are reasonably close.

AITCHPLT: Detects-Only Probability Plot

Like COHENPLT, this macro takes as input the two recoded variables: the *data variable* with the half-detect-limits, say (e.g. Cu_HDL); and, the *detect codes vector* with 1's and 0's identifying which data points are detects and nondetects (e.g. Cu_DET). The macro computes and graphs a "Detects-Only Probability Plot" to check Aitchison's distribution assumptions for data censored below a detection limit.

Aitchison's Distribution Assumption: Aitchison's adjustment assumes the detects and nondetects come from *different* distributions and that the observed data is actually a mixture of these two distributions. That is, the detects are either normally or log-normally distributed (see above) by themselves; and, the nondetects are all concentrated at 0 with some probability. The figure below illustrates Aitchison's distribution assumption for log-normally distributed data.

Aitchison's Distribution Assumption



If the assumption is reasonable, the probability plot of normal quantiles (of the log-transformed data) *computed without nondetects*

Adjustments to Sample Mean and Standard Deviation

versus the ordered data values, *plotted without the nondetects*, should fall on a straight line. The macro produces the plot and gives the probability plot correlation coefficient which may be compared to Cohen's plot if both assumptions are reasonably close.

COHENADJ: Cohen's Adjusted Mean and Standard Deviation

This macro takes as input the two recoded variables: the data variable with the half-detect-limits, say (e.g. Cu_HDL); and, the detect codes vector with 1's and 0's identifying which data points are detects and nondetects (e.g. Cu_DET). A third field requires a value for the Detection Limit, e.g. 7 (or LOG 7, if using LOG Cu_HDL to examine LOG NORMAL assumptions). The macro computes Cohen's adjustment factor (λ) and the adjusted mean and standard deviation for data censored below a detection limit.

The macro stops in the EXEC window allowing you to record the results and/or save them in the file with your data. (Knowledge of the EXEC window of STATGRAPHICS is assumed. Please refer to the STATGRAPHICS User Manual if you are unfamiliar with the EXEC window.)

AITCHADJ: Aitchison's Adjusted Mean and Standard Deviation

As with COHENADJ, this macro also takes as input the two recoded variables: the data variable with the half-detect-limits, say (e.g. Cu_HDL); and, the detect codes vector with 1's and 0's identifying which data points are detects and nondetects (e.g. Cu_DET). A third field requires a value for the Detection Limit, e.g. 7 (or LOG 7, if using LOG Cu_HDL to examine LOG NORMAL assumptions). The macro computes Aitchison's adjusted mean and standard deviation for data censored below a detection limit.

The macro stops in the EXEC window allowing you to record the results and/or save them in the file with your data. (Knowledge of the EXEC window of STATGRAPHICS is assumed. Please refer to the STATGRAPHICS User Manual if you are unfamiliar with the EXEC window.)

Poisson Upper Tolerance Limit

PUTL: Poisson Upper Tolerance Limit

This macro takes as input the single recoded data variable: the data variable with the half-detect-limits, say (e.g. Cu_HDL). A second and third field require a value for the desired percent coverage and the desired confidence level for the statistical tolerance limit. The macro computes a Poisson Upper Tolerance Limit for data censored below a detection limit and having more than 90% nondetects. It does not check what your actual proportion of nondetects is; it is up to you to properly use the software for the appropriate conditions.

The macro stops in the EXEC window allowing you to record the results and/or save them in the file with your data. (Knowledge of the EXEC window of STATGRAPHICS is assumed. Please refer to the STATGRAPHICS User Manual if you are unfamiliar with the EXEC window.)



Recode Data

Pulldown Menu: Edit, Recoding Data
Full-screen Menu: Categorical Data Analysis
Command: RECODE

Recoding data allows you to recode a character or numeric variable and place the resulting values into a new character or numeric variable.

The Recode Data procedure takes the values in the input variable and, for each interval, changes any value in the interval into the new value that you specify.

Recode Data Entry Screens

You use two data entry screens to enter data for this procedure. You use the Recode Data data entry screen first to specify the variable to be recoded and the conditions to be used. You use the Recoding Specifications data entry screen second, to enter the intervals and new values for the intervals.

Figure R-5 shows the Recode Data entry screen.

Fields on the Recode Data Entry Screen

■ Data Variable

Field Type: Numeric or character
Required: Yes
Valid Entries: Observations, name of a variable that contains observations, or a STATGRAPHICS expression
Default: No default,

Use this field to enter the variable you want the system to recode.

Recode Data	
Data variable:	RECODE
Lower limit condition:	Greater
Upper limit condition:	Equal or Less
Unspecified values:	RECODE
Limit specification variable:	RECODE
Complete input fields and press F6.	
RECODE	GO
INPUT	(F6)
	TOOLS
	(F10)
	QUIT
	(Esc)

Figure R-5. Recode Data Entry Screen

■ **Lower Limit Condition**

Field Type: Toggle
 Required: Yes
 Valid Entries: Greater, Equal or Greater
 Default: Greater

Use this field to choose how you want the system to treat the lower limit of each interval. Select Equal or Greater if you want the system to include values greater than or equal to the lower limit. Select Greater if you want the system to include only values greater than the lower limit.

■ **Upper Limit Condition**

Field Type: Toggle
 Required: Yes
 Valid Entries: Equal or Less, Less
 Default: Equal or Less

Use this field to choose how you want the system to treat the upper limit of each interval. Select Equal or Less if you want the system to include values less than or equal to the upper limit. Select Less if you want the system to include only values less than the upper limit.

■ Unspecified Values

Field Type: Toggle
Required: Yes
Valid Entries: Same, Missing, User Defined
Default: Same

Use this field to choose how you want the system to treat unspecified values (that is, values that do not fall into any of the specified recoding intervals). In some cases, you may want to recode some but not all of the values in your variable. Select Missing if you want the system to recode unspecified values to the STATGRAPHICS missing value code, -32768. Select Same if you want the system to leave unspecified values as they are. If you select User Defined, the system changes all unspecified values to a single user-specified value (which you specify later in response to a prompt).

■ Limit Specifications Variable

Field Type: Numeric or character
Required: No
Valid Entries: A variable generated by the Save Limit Specifications option (described below)
Default: No default

If you frequently use the same specifications to recode variables, you can save the specifications in a variable so that you do not need to rekey them each time.

If you enter a limit specifications variable in this field, the Recoding Specifications data entry screen (described below) shows the values in this variable. If you do not have a specifications variable, leave this field blank.

After you complete the data entry screen, press F6 (Go). The system displays a Recoding Specifications data entry screen (see Figure R-6).

If you enter a limit specifications variable on the Recode Data data entry screen, the system uses the fields to display the values from that variable. Otherwise, the fields are blank.

In Figure R-6, the first set of three columns and the remaining set of three columns each have the same headings. This is because the second set is a continuation of the first set. Each row in a set of three columns defines the lower and upper limits of the data interval and the value for the new variable that you create.

Recoding Specifications

Lower limit	Upper limit	New value	Lower limit	Upper limit	New value

... Complete input fields and press F6.

RECODE: [] OPTS [] CO [] TOOLS [] QUIT []
 INPUT: [] (F5) [] (F6) [] (F10) [] (Esc)

Figure R-6. Recoding Specifications Data Entry Screen

Fields on the Recoding Specifications Data Entry Screen

■ **Lower Limit**

Field Type: Numeric or character
 Required: Yes
 Valid Entries: A single value per interval
 Default: No default

Use this field to enter the lower limit for each interval.

■ **Upper Limit**

Field Type: Numeric or character
 Required: Yes
 Valid Entries: A single value per interval
 Default: No default

Use this field to enter the upper limit for each interval.

for all of the unspecified values, the system prompts you for the value at this time (see Figure R-9). At the prompt, enter a value, and press F6 (Go). The system recodes the data and displays a pop up menu with a save option (see Figure R-10).

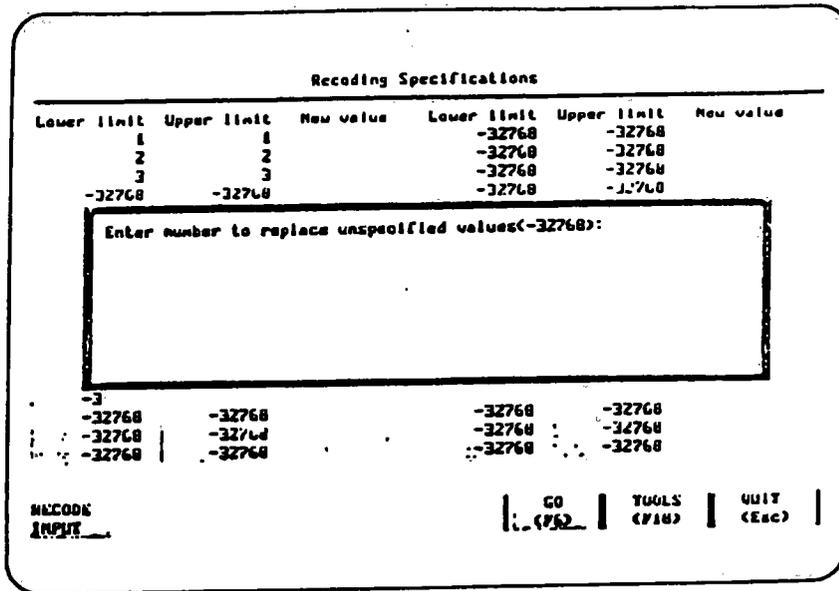


Figure R-9. Prompt for the User-Defined Number to Replace Unspecified Values

Pop-Up Menu Save Option on the Recoding Specification Screen

■ Save Recoded Data

When you select this option, the system saves the recoded data. The system prompts you for a file name and variable name in which to save the recoded data. Enter these names and press F6 (Go). The system tells you how many values it saved and then returns you to the Recoding Specifications screen.

To fall within an interval, an input value must be greater than (or greater than or equal to) the lower limit and less than (or less than or equal to) the upper limit. If the coding scheme includes a value in more than one interval, the system includes that value in the last interval specified. The system processes intervals according to the rows (see the Recoding Specifications data entry screen later in

PURPOSE

Cohen's method provides estimates of the sample mean and standard deviation when some ($\leq 50\%$) observations are below detection. These estimates can then be used to construct tolerance, confidence, or prediction intervals.

PROCEDURE

Let n be the total number of observations, m represent the number of data points above the detection limit (DL), and X_i represent the value of the i th constituent value above the detection limit.

Step 1. Compute the sample mean \bar{x}_d from the data above the detection limit as follows:

$$\bar{x}_d = \frac{1}{m} \sum_{i=1}^m x_i$$

Step 2. Compute the sample variance S_d^2 from the data above the detection limit as follows:

$$S_d^2 = \frac{\sum_{i=1}^m (x_i - \bar{x}_d)^2}{m-1} = \frac{\sum_{i=1}^m x_i^2 - \frac{1}{m} (\sum_{i=1}^m x_i)^2}{m-1}$$

Step 3. Compute the two parameters, h and γ (lowercase gamma), as follows:

$$h = \frac{(n-m)}{n}$$

and

$$\gamma = \frac{S_d^2}{(\bar{x}_d - DL)^2}$$

where n is the total number of observations (i.e., above and below the detection limit), and where DL is equal to the detection limit.

These values are then used to determine the value of the parameter $\hat{\lambda}$ from Table 7 in Appendix B.

Step 4. Estimate the corrected sample mean, which accounts for the data below detection limit, as follows:

$$\bar{X} = \bar{x}_d - \hat{\lambda}(\bar{x}_d - DL)$$

Step 5. Estimate the corrected sample standard deviation, which accounts for the data below detection limit, as follows:

$$S = (S_d^2 + \lambda(\bar{x}_d - DL)^2)^{1/2}$$

Step 6. Use the corrected values of \bar{X} and S in the procedure for constructing a tolerance interval (Section 5.3) or a confidence interval (Section 6.2.1).

REFERENCE

Cohen, A. C., Jr. 1959. "Simplified Estimators for the Normal Distribution When Samples are Singly Censored or Truncated." *Technometrics*. 1:217-237.

EXAMPLE

Table 8-3 contains data on sulfate concentrations. Three observations of the 24 were below the detection limit of 1,450 mg/L and are denoted by "< 1,450" in the table.

TABLE 8-3. EXAMPLE DATA FOR COHEN'S TEST

Sulfate concentration (mg/L)
1,850
1,760
< 1,450
1,710
1,575
1,475
1,780
1,790
1,780
< 1,450
1,790
1,800
< 1,450
1,800
1,840
1,820
1,860
1,780
1,760
1,800
1,900
1,770
1,790
1,780

DL = 1,450 mg/L

Note: A symbol "<" before a number indicates that the value is not detected. The number following is then the limit of detection.

Step 1. Calculate the mean from the $m = 21$ values above detection

$$\bar{x}_d = 1,771.9$$

Step 2. Calculate the sample variance from the 21 quantified values

$$S_d^2 = 8,593.69$$

Step 3. Determine

$$h = (24-21)/24 = 0.125$$

and

$$\gamma = 8593.69/(1771.9-1450)^2 = 0.083$$

Enter Table 7 of Appendix B at $h = 0.125$ and $\gamma = 0.083$ to determine the value of λ . Since the table does not contain these entries exactly, double linear interpolation was used to estimate $\lambda = 0.14986$.

REMARK

For the interested reader, the details of the double linear interpolation are provided.

The values from Table 7 between which the user needs to interpolate are:

γ	<u>$h = 0.10$</u>	<u>$h = 0.15$</u>
0.05	0.11431	0.17935
0.10	0.11804	0.18479

There are 0.025 units between 0.10 and 0.125 on the h -scale. There are 0.05 units between 0.10 and 0.15. Therefore, the value of interest (0.125) lies $(0.025/0.05 * 100) = 50\%$ of the distance along the interval between 0.10 and 0.15. To linearly interpolate between the tabulated values on the h axis, the range between the values must be calculated, the value that is 50% of the distance along the range must be computed and then that value must be added to the lower point on the tabulated values. The result is the interpolated value. The interpolated points on the h -scale for the current example are:

$$\begin{aligned} 0.17935 - 0.11431 &= 0.06504 & 0.06504 * 0.50 &= 0.03252 \\ 0.11431 + 0.03252 &= \underline{0.14683} \\ \\ 0.18479 - 0.11804 &= 0.06675 & 0.06675 * 0.50 &= 0.033375 \\ 0.11804 + 0.033375 &= \underline{0.151415} \end{aligned}$$

On the γ -axis there are 0.033 units between 0.05 and 0.083. There are 0.05 units between 0.05 and 0.10. The value of interest (0.083) lies

$(0.0330.05 * 100) = 66\%$ of the distance along the interval between 0.05 and 0.10. The interpolated point on the γ -axis is:

$$\begin{aligned} 0.141415 - 0.14683 &= 0.004585 & 0.004585 * 0.66 &= 0.0030261 \\ 0.14683 + 0.0030261 &= \underline{0.14986} \end{aligned}$$

Thus, $\hat{\lambda} = 0.14986$.

Step 5. The corrected sample mean and standard deviation are then estimated as follows:

$$\begin{aligned} \bar{X} &= 1,771.9 - 0.14986 (1,771.9 - 1,450) = 1,723.66 \\ S &= [8,593.69 + 0.14986(1,771.9 - 1,450)^2]^{1/2} = 155.31 \end{aligned}$$

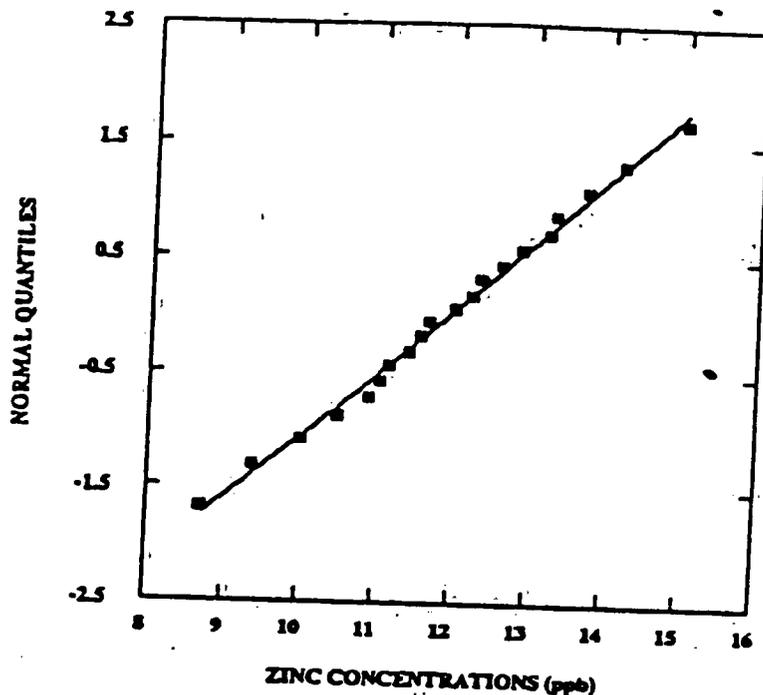
Step 6. These modified estimates of the mean, $\bar{X} = 1723.66$, and of the standard deviation, $S = 155.31$, would be used in the tolerance or confidence interval procedure. For example, if the sulfate concentrations represent background at a facility, the upper 95% tolerance limit becomes

$$1723.7 + (155.3)(2.309) = 2082.3 \text{ mg/L}$$

Observations from compliance wells in excess of 2,082 mg/L would give statistically significant evidence of contamination.

INTERPRETATION

Cohen's method provides maximum likelihood estimates of the mean and variance of a censored normal distribution. That is, of observations that follow a normal distribution except for those below a limit of detection, which are reported as "not detected." The modified estimates reflect the fact that the not detected observations are below the limit of detection, but not necessarily zero. The large sample properties of the modified estimates allow for them to be used with the normal theory procedures as a means of adjusting for not detected values in the data. Use of Cohen's method in more complicated calculations such as those required for analysis of variance procedures, requires special consideration from a professional statistician.



2.2.2 Aitchison's Adjustment

To actually compute Aitchison's adjustment (Aitchison, 1955), it is assumed that the detected samples follow an underlying Normal distribution. If the detects are Lognormal, compute Aitchison's adjustment on the logarithms of the data instead. Let d = # nondetects and let n = total # of samples (detects and nondetects combined). Then if \bar{x}^* and s^* denote respectively the sample mean and standard deviation of the detected values, the adjusted overall mean can be estimated as

$$\hat{\mu} = \left(1 - \frac{d}{n}\right) \bar{x}^*$$

and the adjusted overall standard deviation may be estimated as the square root of the quantity

$$\hat{\sigma}^2 = \frac{n - (d + 1)}{n - 1} (s^*)^2 + \frac{d}{n} \left(\frac{n - d}{n - 1}\right) (\bar{x}^*)^2$$

The general formula for a parametric statistical interval adjusted for nondetects by Aitchison's method is given by $\hat{\mu} \pm \kappa \cdot \hat{\sigma}$, with κ depending on the type of interval being constructed.

In Example 8, it was determined that Aitchison's adjustment might lead to more appropriate estimates of the true mean and standard deviation than Cohen's adjustment. Use the data in Example 8 to compute Aitchison's adjustment.

SOLUTION

Step 1. The zinc data consists of 20 nondetects and 20 detected values; therefore $d=20$ and $n=40$ in the above formulas.

Step 2. Compute the average $\bar{x} = 11.891$ and the standard deviation $s = 1.595$ of the set of detected values.

Step 3. Use the formulas for Aitchison's adjustment to compute estimates of the true mean and standard deviation:

$$\hat{\mu} = \left(1 - \frac{20}{40}\right) \times 11.891 = 5.95$$

$$\hat{\sigma}^2 = \left(\frac{40-21}{39}\right)(1.595)^2 + \left(\frac{20}{40}\right)\left(\frac{20}{39}\right)(11.891)^2 = 37.495 \Rightarrow \hat{\sigma} = 6.12$$

If Cohen's adjustment is mistakenly computed on these data instead, with a detection limit of 7 ppb, the estimates become $\hat{\mu} = 7.63$ and $\hat{\sigma} = 4.83$. Thus, the choice of adjustment can have a significant impact on the upper limits computed for statistical intervals.

2.2.3 More Than 50% Nondetects

If more than 50% but less than 90% of the samples are nondetect or the assumptions of Cohen's and Aitchison's methods cannot be justified, parametric statistical intervals should be abandoned in favor of non-parametric alternatives (see Section 3 below). Nonparametric statistical intervals are easy to construct and apply to ground water data measurements, and no special steps need be taken to handle nondetects.

When 90% or more of the data values are nondetect (as often occurs when measuring volatile organic compounds [VOCs] in ground water, for instance), the detected samples can often be modeled as "rare events" by using the Poisson distribution. The Poisson model describes the behavior of a series of independent events over a large number of trials, where the probability of occurrence is low but stays constant from trial to trial. The Poisson model is similar to the Binomial model in that both models represent "counting processes." In the Binomial case, nondetects are counted as 'misses' or zeroes and detects are counted (regardless of contamination

Electronic Filing: Received: Clark's Office 03/14/2024 R-000844
counted separately but cumulatively, so that the counts for detected samples with high concentrations are larger than counts for samples with smaller concentrations. As Gibbons (1987, p. 574) has noted, it can be postulated

...that the number of molecules of a particular compound out of a much larger number of molecules of water is the result of a Poisson process. For example, we might consider 12 ppb of benzene to represent a count of 12 units of benzene for every billion units examined. In this context, Poisson's approach is justified in that the number of units (i.e., molecules) is large, and the probability of the occurrence (i.e., a molecule being classified as benzene) is small.

For a detect with concentration of 50 ppb, the Poisson count would be 50. Counts for nondetects can be taken as zero or perhaps equal to half the detection limit (e.g., if the detection limit were 10 ppb, the Poisson count for that sample would be 5). Unlike the Binomial (Test of Proportions) model, the Poisson model has the ability to utilize the magnitudes of detected concentrations in statistical tests.

The Poisson distribution is governed by the average rate of occurrence, λ , which can be estimated by summing the Poisson counts of all samples in the background pool of data and dividing by the number of samples in the pool. Once the average rate of occurrence has been estimated, the formula for the Poisson distribution is given by

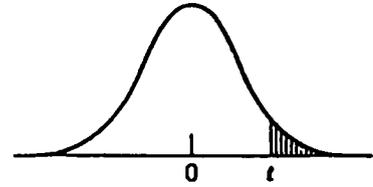
$$\Pr\{X = x\} = \frac{e^{-\lambda} \lambda^x}{x!}$$

where x represents the Poisson count and λ represents the average rate of occurrence. To use the Poisson distribution to predict concentration values at downgradient wells, formulas for constructing Poisson Prediction and Tolerance limits are given below.

TABLE NO. 2

t DISTRIBUTION

The first column lists the number of degrees of freedom (ν). The headings of the other columns give probabilities (P) for t to exceed the entry value. Use symmetry for negative t values.



P df	.10	.05	.025	.01	.005
1	3.078	6.314	12.706	31.821	63.657
2	1.886	2.920	4.303	6.965	9.925
3	1.638	2.353	3.182	4.541	5.841
4	1.533	2.132	2.776	3.747	4.604
5	1.476	2.015	2.571	3.365	4.032
6	1.440	1.943	2.447	3.143	3.707
7	1.415	1.895	2.365	2.998	3.499
8	1.397	1.860	2.306	2.896	3.355
9	1.383	1.833	2.262	2.821	3.250
10	1.372	1.812	2.228	2.764	3.169
11	1.363	1.796	2.201	2.718	3.106
12	1.356	1.782	2.179	2.681	3.055
13	1.350	1.771	2.160	2.650	3.012
14	1.345	1.761	2.145	2.624	2.977
15	1.341	1.753	2.131	2.602	2.947
16	1.337	1.746	2.120	2.583	2.921
17	1.333	1.740	2.110	2.567	2.898
18	1.330	1.734	2.101	2.552	2.878
19	1.328	1.729	2.093	2.539	2.861
20	1.325	1.725	2.086	2.528	2.845
21	1.323	1.721	2.080	2.518	2.831
22	1.321	1.717	2.074	2.508	2.819
23	1.319	1.714	2.069	2.500	2.807
24	1.318	1.711	2.064	2.492	2.797
25	1.316	1.708	2.060	2.485	2.787
26	1.315	1.706	2.056	2.479	2.779
27	1.314	1.703	2.052	2.473	2.771
28	1.313	1.701	2.048	2.467	2.763
29	1.311	1.699	2.045	2.462	2.756
30	1.310	1.697	2.042	2.457	2.750
40	1.303	1.684	2.021	2.423	2.704
60	1.296	1.671	2.000	2.390	2.660
120	1.289	1.658	1.980	2.358	2.617
∞	1.282	1.645	1.960	2.326	2.576

From Paul G. Hoel, *Elementary Statistics*, 3rd ed., © 1971, John Wiley and Sons, Inc., New York, p. 288.

TABLE A-4.**PERCENT POINTS OF THE NORMAL PROBABILITY PLOT
CORRELEATION COEFFICIENT FOR N=3(1)50(5)100**

n	.01	.025	.05
3	.869	.872	.879
4	.822	.845	.868
5	.822	.855	.879
6	.835	.868	.890
7	.847	.876	.899
8	.859	.886	.905
9	.868	.893	.912
10	.876	.900	.917
11	.883	.906	.922
12	.889	.912	.926
13	.895	.917	.931
14	.901	.921	.934
15	.907	.925	.937
16	.912	.928	.940
17	.912	.931	.942
18	.919	.934	.945
19	.923	.937	.947
20	.925	.939	.950
21	.928	.942	.952
22	.930	.944	.954
23	.933	.947	.955
24	.936	.949	.957
25	.937	.950	.958
26	.939	.952	.959
27	.941	.953	.960
28	.943	.955	.962
29	.945	.956	.962
30	.947	.957	.964
31	.948	.958	.965
32	.949	.959	.966
33	.950	.960	.967
34	.951	.960	.967
35	.952	.961	.968
36	.953	.962	.968
37	.955	.962	.969
38	.956	.964	.970
39	.957	.965	.971
40	.958	.966	.972

TABLE A-4. (CONTINUED)**PERCENT POINTS OF THE NORMAL PROBABILITY PLOT
CORRELATION COEFFICIENT FOR N=3(1)50(5)100**

n	.01	.025	.05
41	.958	.967	.973
42	.959	.967	.973
43	.959	.967	.973
44	.960	.968	.974
45	.961	.969	.974
46	.962	.969	.974
47	.963	.970	.975
48	.963	.970	.975
49	.964	.971	.977
50	.965	.972	.978
55	.967	.974	.980
60	.970	.976	.981
65	.972	.977	.982
70	.974	.978	.983
75	.975	.979	.984
80	.976	.980	.985
85	.977	.981	.985
90	.978	.982	.985
95	.979	.983	.986
100	.981	.984	.987

TABLE A-6.**MINIMUM COVERAGE (BETA) OF 95% CONFIDENCE
NON-PARAMETRIC UPPER TOLERANCE LIMITS**

N	β(maximum)	β(2nd largest)
1	5.0	----
2	22.4	2.6
3	36.8	13.6
4	47.3	24.8
5	54.9	34.2
6	60.7	41.8
7	65.2	48.0
8	68.8	53.0
9	71.7	57.0
10	74.1	60.6
11	76.2	63.6
12	77.9	66.2
13	79.4	68.4
14	80.7	70.4
15	81.9	72.0
16	82.9	73.6
17	83.8	75.0
18	84.7	76.2
19	85.4	77.4
20	86.1	78.4
21	86.7	79.4
22	87.3	80.2
23	87.8	81.0
24	88.3	81.8
25	88.7	82.4
26	89.1	83.0
27	89.5	83.6
28	89.9	84.2
29	90.2	84.6
30	90.5	85.2
31	90.8	85.6
32	91.1	86.0
33	91.3	86.4
34	91.6	86.8
35	91.8	87.2
36	92.0	87.4
37	92.2	87.8
38	92.4	88.2
39	92.6	88.4
40	92.8	88.6

TABLE A-6. (CONTINUED)**MINIMUM COVERAGE (BETA) OF 95% CONFIDENCE
NON-PARAMETRIC UPPER TOLERANCE LIMITS**

N	β(maximum)	β(2nd largest)
41	93.0	89.0
42	93.1	89.2
43	93.3	89.4
44	93.4	89.6
45	93.6	89.8
46	93.7	90.0
47	93.8	90.2
48	93.9	90.4
49	94.1	90.6
50	94.2	90.8
55	94.7	91.6
60	95.1	92.4
65	95.5	93.0
70	95.8	93.4
75	96.1	93.8
80	96.3	94.2
85	96.5	94.6
90	96.7	94.8
95	96.9	95.0
100	97.0	95.4

***ANALYTICAL CHEMISTRY &
ENVIRONMENTAL SERVICES***

APPENDIX K

***BROWNING-FERRIS INDUSTRIES:
STATISTICAL PROCEDURES***

3.0 THE FLOW CHART DECISION PROCESS

3.1 Poisson Distributional Analysis

After the preliminary screening is completed, we must examine the data for the proportion of non-detections within the data set. Should the percentage of non-detects be greater than 90, then some form of Poisson Distributional Analysis (Prediction or Tolerance Intervals) or a Test of Proportions (Chi-Square) can be utilized. Volatile organics will typically fall within this category. The advantage of the Prediction or Tolerance Intervals is that they incorporate the relative concentrations of the sparsely detected compounds. The Chi-Square will test only the significance of the relative proportions of detections and non-detections within the data set.

3.2 Parametric Analysis

Should the proportion of non-detects be less than 90 per cent, a decision is made regarding replacing the non-detected values with 1/2 the method detection limit. This decision is based upon whether the proportion of non-detects is approximately 15 per cent or less and that the detection limits are consistent over time. If these conditions hold true the 1/2 detection criteria is applied and the data can be analyzed by either Two-Way ANOVA (Analysis of Variance) or by the intra-well approach. The intra-well approach should use Tolerance Intervals as a primary choice. The Two-Way ANOVA will also require that some form of grouped wells is achievable; such as up and downgradient. The Two-Way ANOVA is especially useful to us because it utilizes temporal and spatial variations in its calculations. Both approaches however, are parametric analyses. Data sets which approximate normal or can be transformed to normal distribution, usually by taking the natural logs, is imperative. The Shapiro-Wilk statistic is the method of choice for normality determinations. The Two-Way ANOVA produces residual plots and descriptive statistics for post-analysis normality assurance. Residuals are defined as the actual values minus the predicted values of the statistical model.

3.3 Non-Parametric Analysis

If the proportion of non-detects is greater than approximately 15 per cent or non-normally distributed, we can look at different (non-parametric) statistical approaches for analyzing the data set. These statistics include the Kruskal-Wallis, Wilcoxin Rank-Sum, Chi-Square or Kendall Tau trend analysis each of which are summarized below.

A. Kruskal-Wallis Test

When ground water data are not normal, the usual case with ground water, the Kruskal-Wallis test tends to be more powerful for detecting differences than the usual parametric approach. Implicit to the method, the Kruskal-Wallis test is reasonably powerful for detecting concentration differences despite the fact that the original data have been replaced by their ranks, (i.e., the assignment of a sequential number to the actual values from lowest to highest). This test can also be used even when the data are normally distributed. At least three well groups with at least four observations per group can be used as a rule of thumb for applying this test.

B. Wilcoxin-Rank-Sum Test

When a single compliance well group is being compared to background data and a non-parametric test is needed, the Kruskal-Wallis test should be replaced by the Wilcoxin-Rank-Sum test, also known as the Mann-Whitney U test. The rationale of the Wilcoxin test is that if the ranks of the compliance data are quite large relative to the background ranks, then the hypothesis that the compliance and background values came from the same population should be rejected. Large values of the statistic W give evidence that contamination has occurred at the compliance well.

C. Continuity Adjusted Chi-Square Test

The Chi-Square test can be useful to compare relative proportions of up vs. downgradient and detections vs. non-detections. It accomplishes this through the use of a 2 X 2 table, calculating expected proportions in each box and comparing them to the actual results. The continuity adjustment compensates for the lack of precision in small contingency tables.

D. Kendall-Tau Trend Analysis

The Kendall-Tau trend analysis calculates a coefficient, (tau) which is a relative measure of the discrepancy between the actual observed order and the two orders that would result from perfect association. It is calculated by pairing the parameter concentrations with the sampling dates in chronological order and assigning ranks. The test is extremely useful for determining positive and negative trends. The test basically evaluates

whether the ranks of the data increase with time. The tau coefficient is compared to tabulated values to determine if significant trend exists.

4.0 CONCLUSIONS

This paper is a brief overview of the decision process proposed by BFI for conducting statistical analysis on ground water to comply with Subtitle D. The enclosed EPA Guidance Manual, its Addendum and the Wisconsin Study all give examples on the proper application of these tests.

Of the tests included on the flow chart all, with the exception of the Two-Way ANOVA, are available on most statistical softwares. The Two-Way ANOVA is a somewhat complex calculation and may only be found on more sophisticated softwares such as SAS (Statistical Analysis Software). The less complex One-Way ANOVA may in some instances be substituted providing certain conditions are met. The key is not in the availability or simplicity of the tests but in their proper application.

PROPOSED GEOSTATISTICAL ANALYSIS OF GROUND WATER
SUBTITLE D, PART 258
BROWNING FERRIS INDUSTRIES

1.0 INTRODUCTION

The Geoscience Department staff at Browning-Ferris Industries (BFI), in conjunction with Dr. Carl Silver of Drexel University, has developed a geostatistical approach for analyzing ground water constituents required under Subtitle D, Part 258. BFI has also constructed a flow chart that shows the decision process for conducting the geostatistical analyses. This flow chart is attached and can be used as a visual aid in understanding the decision process carried out by hydrogeologists at BFI. The statistics used in the flow chart are technically defensible and allow for the flexibility necessary to accurately model our diverse site specific requirements. With the exception of the Kendall-Tau trend analysis, each of these tests are described in the EPA's Final Guidance of Statistical Analysis at RCRA Facilities, April, 1989 or the Addendum, April 1992. The Kendall-Tau trend analysis for ground water is described in the report Methods for Determining Compliance with Ground Water Quality Regulations at Waste Disposal Facilities by the University of Wisconsin at Madison. Copies of each of these documents are included in the notebook for your reference.

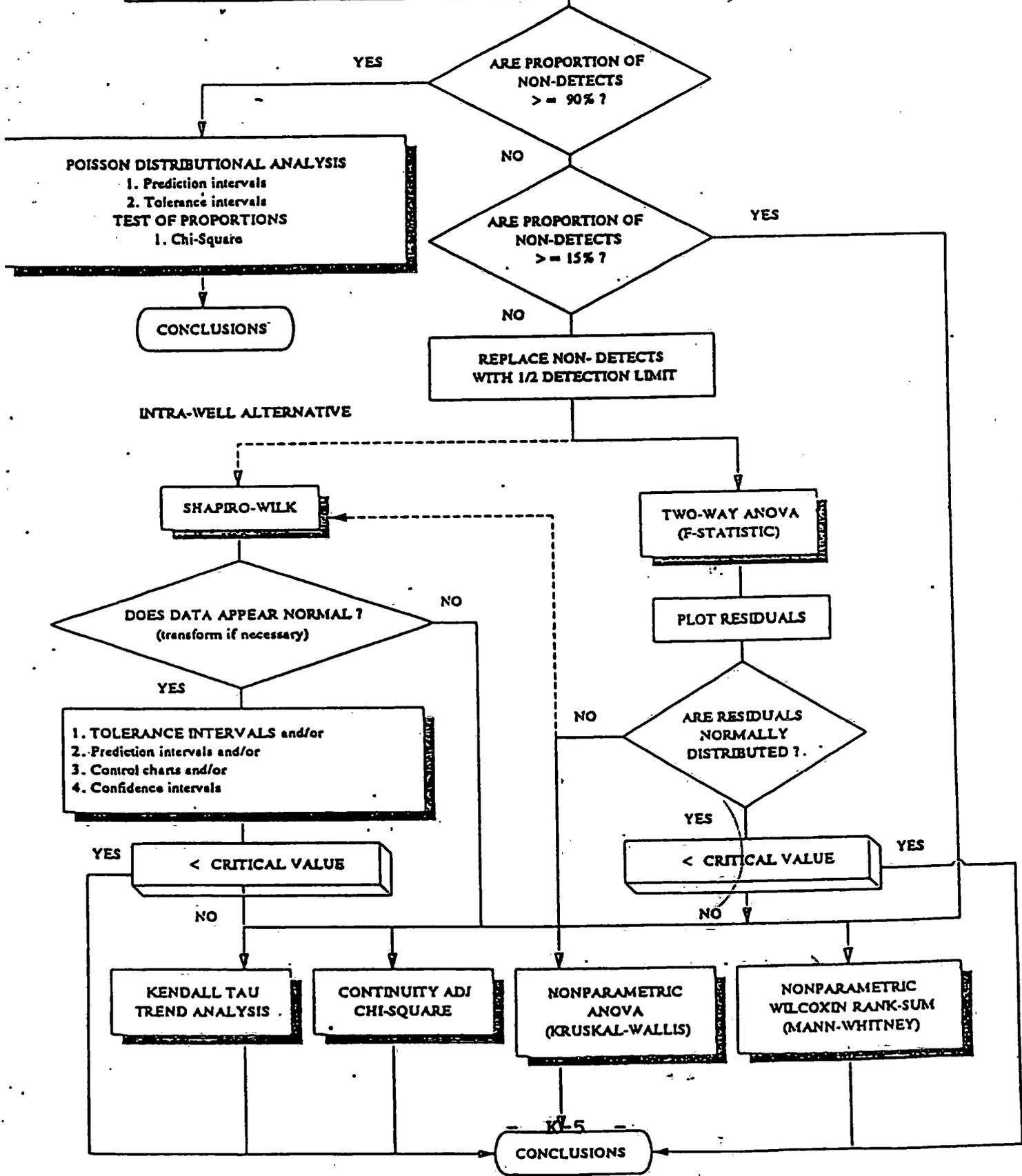
2.0 PRELIMINARY SCREENING

A key to the elimination of false positive and false negative conditions, a problem common to analysis of ground water, lies in the first box of the attached flow chart. Preliminary screening of the data is critical to early identification of spurious data, anomalies, outliers, and data non-uniformity. Plotting of the data can take the form of box plots or time plots to help identify problematic data. Descriptive statistics can also be a useful tool in this preliminary screening.

From this preliminary screening, strategies can be developed with regards to site specific considerations that will determine appropriate statistical methods. For example, are upgradient and downgradient wells easily distinguished; are cross-gradient wells present; which wells are background versus compliance wells; what date range will be used to conduct the analysis; will the analysis comply with the appropriate regulations and terms of the permit? Each of these considerations will play an important role in the subsequent decision of applying a particular statistical method.

STATISTICAL APPROACH TO GROUND WATER DATA SETS

PRELIMINARY SCREENING OF DATA SET - PLOT DATA / DESCRIPTIVE STATISTICS.
POSSIBLE STATISTICAL CONFIGURATION(S) - BACKGROUND VS. COMPLIANCE WELLS /
UP VS. DOWNGRADIENT / INTRA-WELL / INTRA-GEOLOGIC, ETC.



Subject Submittal
Class 1* Permit Modification
B142R2 M-2

B142R2 M-2

*cc: KWT
Hitzeroth*

B-142R-m-2



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

August 27, 2019

Mr. Kenneth Smith P.E.
Manager of Permits
Illinois Environmental Protection Agency
Permit Section, Division of Land Pollution Control
Bureau of Land -- #33
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

RECEIVED

SEP 04 2019

IEPA-BOL
PERMIT SECTION

Re: BFI Davis Junction Landfill – Phase I
ILD 980700751
Permit No. B-142R2
IEPA Site No.: 1418210001
Class 1* Permit Modification

Dear Mr. Smith,

Enclosed, please find one original and two copies of the above referenced permit modification that is being submitted on behalf of permittee, BFI Waste Systems of North America, LLC.

If you have any questions concerning this submittal, feel free to contact me at (630) 894-5001 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

James Hitzeroth

Enclosure: Class 1* Permit Modification

RECEIVED

SEP 04 2019

IEPA/BOL





August 27, 2019

Mr. Kenneth Smith, P.E., Manager
Permit Section, Division of Land Pollution Control
Illinois Environmental Protection Agency
Bureau of Land #33
1021 N. Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Class 1* Permit Modification
1418210001 – Ogle Co.
ILD 980700751
BFI Davis Junction Landfill – Phase I RCRA Unit
Log No. B-142R2
Project No. 0120-049-01-20

RECEIVED

SEP 04 2019

EPA-BOL
PERMIT SECTION

Dear Mr. Smith:

On behalf of our client, permittee BFI Waste Systems of North America, LLC., (BFI), Weaver Consultants Group North Central, LLC is providing the following updated Cost Estimate for Post-Closure Care for the above referenced facility. Consistent with historical submittals, this information is being submitted as a Class 1* Permit Modification. The RCRA Permit Application Form (LPC-PA23), as well as the 39(i) Certification Form are enclosed.

The most recent Post-Closure Care Cost Estimate approved by the Illinois Environmental Protection Agency (EPA) was included with the Permit Renewal issued by Illinois EPA on September 26, 2018 (Log No. B-142R2). The costs in the above September 2018 Permit were presented in 2018 dollars.

The portions of the Post-Closure Care Cost Estimate which are proposed to be modified herein are highlighted in yellow on the attached table, which includes the following:

- Annual inflation increase in the costs approved within Permit B-142R2. The inflation factor to adjust from 2018 to 2019 costs was obtained from communications with Illinois EPA in April 2019. According to Illinois EPA, this inflation adjustment is 2.3% (i.e., an increase by a factor of 1.023); and
- Removal of one year from the post-closure care period to account for post-closure activities conducted since the last approved update.

Illinois EPA

August 27, 2019

As shown on the enclosed table, the total post-closure care costs are proposed to be modified from \$484,460 to \$408,021.

The specific portions of the Permit being modified are as follows:

1. Permit Condition I.G: Replace the \$484,460 quantity referenced in this permit condition with the updated post-closure care costs, \$408,021; and
2. Attachment C: Replace the page entitled, "Post-Closure Cost Estimate" included in the Sept 2018 Permit with the enclosed page containing the updated Post-Closure Care Cost Estimate. An August 2019 revision date is shown on the enclosed page.

In closing, as required by the provisions for Class 1* modifications [35 IAC 703.281(a)(2)], the permittee will provide notification of this modification to all persons on the facility mailing list maintained by the Illinois EPA and the appropriate units of State and local government within 90 calendar days after the Illinois EPA approves this request in writing.

We trust that the enclosed will meet with your expectations. If you have any questions, please feel free to contact the undersigned at (312) 496-3718 or permittee representative, Mr. Jim Hitzerth of BFI at (630) 894-5001.

Sincerely,

Weaver Consultants Group North Central, LLC



Michael B. Maxwell, LPG
EPG Chicago Operations Manager

Cc: Mr. Jim Hitzerth, BFI (w/ encl.)

Enclosures: PA-23 Form
39(i) Certification Form
Table 1 - Updated Post-Closure Care Cost Estimate
Updated Attachment C to Permit

RECEIVED
SEP 04 2019
IEPA/BOL
PERMITTING DIVISION

RECEIVED
SEP 04 2019
IEPA/BOL

III. Permit Application Identification

Application Type

- New Part B Permit
- Part B Permit Renewal
- Class 1 Modification
- Class 1* (prior approval required) Modification
- Class 2 Modification
- Class 3 Modification
- Additional information to supplement UIC Class I application Log Number
- Remedial Action Plan Permit (RAPP)
- Sig RAPP Modification
- Non Sig RAPP Modification
- Major UIC Modification
- Minor UIC Modification

This Application Involves

- Storage
- Groundwater
- Treatment
- Corrective Action
- Disposal
- UIC Class I
- Incineration
- UIC Class V

Description of This Permit Request: (Include a brief narrative description here.)

Annual update to post-closure care cost estimate required by Permit Condition IV.34.

IV. SIGNATURES

Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable. All applications shall be signed by the person in accordance with 35 IAC 702.126(a).

Please check the box of the appropriate certification.

Owner

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Alternative owner certification. For remedial action plans (RAPs) permit under Subpart H of 35 IAC 703, the owner may choose to make the following certification instead of the certification above.

Based on my knowledge of the conditions of the property described in the RAP and my inquiry of the person or persons that manage the system referenced in the operator's certification, or those persons directly responsible for gathering the information, the information submitted is, upon information and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Name (Printed or Typed): Matthew Healy

Owner Signature: _____



Date: _____

8/16/2019

Title: Vice President

RECEIVED
SEP 04 2019
PERMIT SECTION



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

RCRA Permit Application Form (LPC-PA23)

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. One original and three (3) copies, of all permit applications must be submitted. Attach the original and appropriate number of copies of a cover letter, any necessary plans, specifications, reports, forms, (e.g., corrective action certification form), and any other certifications etc. to fully support and describe the activities or modifications being proposed. Attach sufficient information to demonstrate compliance with all applicable regulatory requirements. Applications without this form will be deemed incomplete. Please refer to the RCRA checklist and decision guide documents for further guidance. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

Note: Permit applications which are hand-delivered to the Bureau of Land, Permit Section must be delivered to 1021 North Grand Avenue East between the hours of 8:30 a.m. to 5:00 p.m., Monday through Friday (excluding State holidays).

Please type or print all information legibly.

I. Site Identification

Site # (Illinois EPA): 1418210001

USEPA ID Number: ILD 980700751

Site Name: BFI Davis Junction Landfill - Phase I

Physical Site Location (street, road, etc.): 8902 North Illinois Route 251

City: Davis Junction

Zip Code: 61020

County: Ogle

Existing RCRA Permit (if applicable): B-142R2

II. Owner/Operator Identification

Owner Information

Name: BFI Waste Systems of North America, LLC

Mailing Address:

26 West 580 Schick Rd.
Hanover Park, IL 60133

Contact Name: James Hitzeroth

Phone #: 630-894-5001

Email: JHitzeroth@republicservices.com

Operator Information

Name: BFI Waste Systems of North America, LLC

Mailing Address:

26 West 580 Schick Rd.
Hanover Park, IL 60133

Contact Name: James Hitzeroth

Phone #: 630-894-5001

Email: JHitzeroth@republicservices.com

A 39(i) certification must be submitted with information concerning the following persons or entities:

- the owner of the business entity applying for the permit;
- the operator of the business entity applying for the permit;
- each employee or officer of the owner or operator who signed the permit application or has managerial authority at the site; and
- any additional owner, operator, or officer or employee of the owner or operator from whom a certification is requested by the Illinois EPA, including any officer or employee who will be responsible for overseeing or implementing regulated activities governed by the permit.

RECEIVED

SEP 04 2019

IEPA/BOL

Operator

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Operator Name (Printed or Typed): Matthew Healy

Operator Signature: *Matthew Healy* Date: 8/16/2019

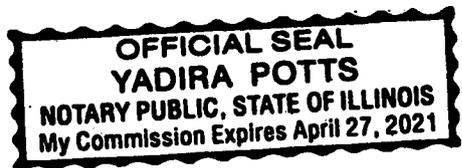
Title: Area Vice President

Notary (Required for both owner and operator signatures)

Subscribed and Sworn before me this 16 day of August 2019.

Notary Signature: *Yadira Potts*

My commission expires on: April 27, 2021



Notary Seal

Engineer

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Engineer Name (Print or Type): John Bossert

Engineer Signature: *John Bossert*

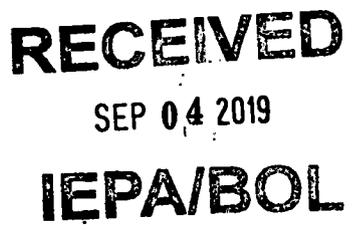
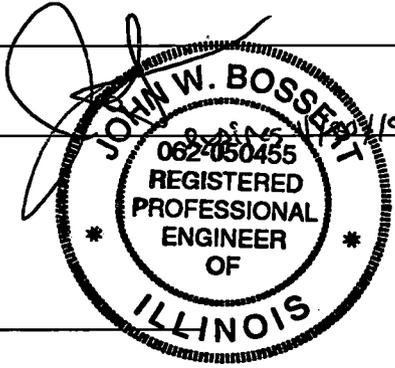
Illinois License No.: 062-050455

Expiration Date of License: Nov 30, 2019

Engineer Phone No. 217-787-0290

Email: jbossert@wcgrp.com

Engineer Address:
3516 Ogden Road
Springfield, IL 62711



Engineer Seal

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Instructions for
RCRA Permit Application Form LPC-PA23

The following instructions are designed to aid in the completion of the RCRA Permit Application Form LPCPA23. If you have additional questions regarding the form, or the informational requirements, please contact the Illinois EPA Bureau of Land (BOL) Permit Section at 217-524-3300.

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. If an application has already been submitted to the Agency, a completed RCRA Permit Application Form must accompany all additional information that is submitted to the agency for that application. An example of "additional information" would be a response to verbal or written comments from the Agency. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

I. Site Identification

Enter all of the required information in the space provided. If you do not have an Illinois or USEPA identification number, call the Illinois-EPA-BOL Waste Reduction and Compliance Section at 217-785-8604 to obtain these numbers prior to completing the form.

II. Owner/Operator Identification

The terms "owner" and "operator" are defined at 35 IAC 720.110 and 702.110. If the facility has the same owner and operator, you may type in "same" under operator information. Also, if the contact person for an application is different from the owner or operator (i.e. the consultant), please indicate this in the cover letter for the application.

III. Permit Application Identification

Indicate both the type of application and the kind of waste management involved. For instance, if the application involves more than one type of waste management, check all applicable options.

IV. Signatures

The signatory requirements for permit applicants are identified at 35 IAC 702.126 and 702.151. If the facility has the same owner and operator, you may type in "same" under operator information.

Notary Public: A notary public's signature and stamp are required for both the owner and operator signatures on the form.

Engineer Certification: A professional engineer that is licensed in the State of Illinois must certify all technical information provided in a permit application. 35 IAC 703.182 describes the types of information that must be certified by a professional engineer.

RECEIVED
SEP 04 2019
IEPA-BOL
PERMIT SECTION



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

39(i) Certification for Operating a Waste Management Facility

Pursuant to 415 ILCS 5/39(i), prior to issuing any RCRA permit, or any permit for a waste storage site, sanitary landfill, waste disposal site, waste transfer station, waste treatment facility, waste incinerator, clean construction or demolition debris fill operation, or used tire storage site, the Illinois EPA must conduct an evaluation of the prospective owner's or operator's prior experience in waste management operations, clean construction or demolition debris fill operations, and tire storage site management. As part of that evaluation please complete and submit this form with your permit application.

This form may be completed online and saved locally before printing, signing and submitting it to the Illinois EPA at the address below. If the form is completed manually, please type or print clearly.

Illinois Environmental Protection Agency
Division of Land Pollution Control - #33
39(i) Certification
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

I. Applicant Information

Site Name: BFI Davis Junction Landfill - Phase I

IEPA BOL No.: 1418210001

Site Address: 8902 North Illinois Route 251

City: Davis Junction

State: IL

Zip Code: 61020

Permit Numbers (if applicable): B-142R2

Owner

Owner Name: BFI Waste Systems of North America

Street Address: 26 West 580 Schick Rd.

City: Hanover Pk State: IL Zip: 60133

Operator

Operator Name: BFI Waste Systems of North America

Street Address: 26 West 580 Schick Rd.

City: Hanover Pk State: IL Zip: 60133

II. Officers and Employees with Site Responsibility

A. Officers: List the name and title of all officers of the owner or operator that will have personal involvement or active participation in the operation or management of the site or facility for which the application is submitted.

Name	Title
Matthew Healy	Vice President

B. Employees: List the name and title of each employee of the owner or operator that will have personal involvement or active participation in the overall operation or management of the site or facility for which the application is submitted (e.g. site managers, site engineers, and other persons who direct or control the overall day-to-day management of the operation, but not persons whose duties are exclusively limited to equipment operation, labor, or similar non-managerial functions).

Name	Title
James Hitzeroth	Environmental Manager

RECEIVED

SEP 04 2019

IEPA-BOL
PERMIT SECTION

III. Owner, Operator, Officer, and Employee Information

A. Prior Conduct Identification

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified under Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and include a copy of each final administrative or judicial determination that required an affirmative response. If the information for each owner, operator, officer, and employee has not changed since the applicant's last submission of a 39(i) certification, the applicant can skip to Section III(C), below.

- 1) Has there been a finding that any person named in Section II violated federal, State, or local laws, regulations, standards, or ordinances in the operation of one or more waste management facilities or sites, clean construction or demolition debris fill operation facilities or sites, or tire storage sites? Yes
 No
- 2) Has any person named in Section II ever been convicted in this or another State of any crime which is a felony under the laws of this State, or convicted of a felony in a federal court; or convicted in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition? Yes
 No
- 3) Has there been a finding against any person named in Section II of gross carelessness or incompetence in handling, storing, processing, transporting or disposing of waste, clean construction or demolition debris, or used or waste tires, or a finding of gross carelessness or incompetence in using clean construction or demolition debris as fill? Yes
 No

B. Pending Proceedings

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified in Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and provide information identified in Attachment A regarding the pending proceeding.

- 1. Is there any proceeding currently pending against any person named in Section II that could result in a conviction or finding described in subsection A, above? Yes
 No
- 2. Is there any proceeding currently pending against any person named in Section II that could result in the reversal of a conviction or finding described in subsection A, above? Yes
 No

C. Prior Application Information

If (i) the applicant has previously submitted the Attachments required pursuant to subsections A and B above and (ii) the Attachments previously submitted are still complete, true, and correct, then the applicant does not need to include Attachments with this submission if the following box is checked:

By checking this box, I affirm that the Attachments previously submitted are still complete, true, and correct and wish to incorporate them into this Certification.

If the above box is checked, identify the application that contains the previously submitted Attachments that are complete, true, and correct.

RECEIVED
 SEP 04 2019
 IEPA-BOL
 SECTION

Authorization for Release of Information

This Certification must be signed by an officer of the applicant.

The undersigned authorizes any representative of the Illinois Environmental Protection Agency bearing this release to obtain any information from the Illinois State Police pertaining to the criminal records of the applicant and hereby directs the Illinois State Police to release such information upon request of the bearer. The undersigned authorizes a review of and full disclosure of all records, or any part thereof, concerning the applicant's criminal records by and to a duly authorized agent of the Illinois Environmental Protection Agency, whether the records are of public, private, or confidential nature. The intent of this authorization is to give consent for full and complete disclosure of the applicant's criminal records.

The undersigned fully understands that any information which is developed directly or indirectly, in whole or in part, as a result of this authorization will be considered in determining whether a permit shall be issued by the Illinois Environmental Protection Agency under the Environmental Protection Act [415 ILCS 5]. The undersigned further agrees to release the Illinois State Police and the Illinois Environmental Protection Agency, its agents and designees under this release, from any and all liability which may be incurred as a result of compliance with this authorization for release of information.

Certification Statements

I certify under penalty of law that the information submitted, including information on any Attachments submitted as part of or incorporated into this Certification, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))



Signature of Applicant Officer

8/16/2019

Date

Matthew Healy

Printed Name

Vice President

Title

RECEIVED
SEP 04 2019
IEPA-BOL
PERMIT SECTION

Attachment A (1 of 1)

This Attachment must be completed for each owner or operator, and for each officer or employee identified in Section II, for whom one or more affirmative responses were included in Section III.

Name: _____ Title: _____

Status: Owner Operator Officer Employee (check all that apply)

A. Prior Findings or Convictions

- 1. Has there been a finding that the person named above violated federal, State, or local laws, regulations, standards, or ordinances in the operation of one or more waste management facilities or sites, clean construction or demolition debris fill operation facilities or sites, or tire storage sites? Yes No
- 2. Has the person named above ever been convicted in this or another State of any crime which is a felony under the laws of this State, or convicted of a felony in a federal court; or convicted in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition? Yes No
- 3. Has there been a finding against the person named above of gross carelessness or incompetence in handling, storing, processing, transporting or disposing of waste, clean construction or demolition debris, or used or waste tires, or a finding of gross carelessness or incompetence in using clean construction or demolition debris as fill? Yes No

If the answer to any of the above questions is Yes, attach a copy of each final administrative or judicial determination that required an affirmative response.

B. Pending Proceedings

Is there any proceeding currently pending that could result in one of the following:

- 1. A conviction or finding described in subsection A, above? Yes No
- 2. The reversal of a conviction or finding described in subsection A, above? Yes No

If the answer to any of the above questions is Yes, please provide information about the pending proceeding, including the parties involved, the adjudicating body, the docket number, the nature of the proceeding, and the status. The box below will expand as needed. Attach additional sheets if necessary.

Table 1: Cost Estimate for Post-Closure Care - August 2019 Update
BFI - Davis Junction Landfill
Phase I (RCRA) Unit

POST-CLOSURE COSTS									Notes
Item	Units	Quantity Incl. in 9/2018 Permit Renewal (Per Year)	Unit Cost Incl. in 9/2018 Permit Renewal	Total Cost Incl. in 9/2018 Permit Renewal	Proposed Units (per year)	Proposed Revised Unit Cost (2019 update)	Proposed Estimate (2019 Update)		
1	Site Inspection	Insp./yr	4	\$739.30	\$2,957	4	\$756.30	\$3,025	Post-Closure Care Period ends no earlier than December 5, 2024. On September 26, 2018, an updated post-closure care cost estimate was approved by Illinois EPA in the Permit Renewal Log No. B-142R2 (\$484,460). This August 2019 update includes the inflation factor for 2019 (1.023); and a reduction of one year in post-closure care period from 6 to 5 years.
2	Resurveying Cover Elevation Reference Points	Annual	0.2	\$329.51	\$66	0.2	\$337.09	\$67	Resurveying conducted in conjunction with site inspection. Unit cost included in Sept 2018 Permit Renewal updated for inflation based on above factor.
3	Mowing	Acres	25	\$57.03	\$1,426	25	\$58.34	\$1,459	Cost included in Sept 2018 Permit Renewal updated for inflation based on above factor.
4	Vegetation Repair (1/2 foot cover) (Fertilizer, Mulch & Seed)	Acres	0.25	\$7,487	\$1,872	0.25	\$7,659	\$1,915	No more than 0.25 acre of vegetative cover expected to require replacement per year. Cost included in Sept 2018 Permit Renewal updated for inflation based on above factor
5	Fence Repair and Maintenance	Annual	1	\$659	\$659	1	\$674	\$674	Cost included in Sept 2018 Permit Renewal updated for inflation based on above factor.
6	Certification of Post-Closure Care	Year	1	\$441	\$441	1	\$451	\$451	Cost included in Sept 2018 Permit Renewal updated for inflation based on above factor.
Subtotal for Post-Closure Inspection				\$7,421				\$7,591	
7	Groundwater Sample Collections (14 wells annually)	lump sum	lump sum	\$938	\$938	lump sum	\$960	\$960	Cost included in Sept 2018 Permit Renewal updated for inflation based on above factor.
8	Laboratory Analysis (Revised List) - 14 wells annual	Wells	14	\$529	\$7,404	14	\$541	\$7,576	Analysis of future groundwater samples based on new parameter list approved with 2014 Class 2 Permit Mod. Cost included in Sept 2018 Permit Renewal updated for inflation based on above factor.
9	Groundwater Reporting - Annual basis	Events	lump sum	\$1,340	\$1,340	lump sum	\$1,371	\$1,371	Cost included in Sept 2018 Permit Renewal updated for inflation based on above factor.
Subtotal for Groundwater Monitoring				\$9,682				\$9,907	
10	Leachate Removal, Transportation & Disposal	gallons/year	102,525	\$0.1082	\$11,094	90,525	\$0.1107	\$10,020	The quantity of leachate is based on the average quantity of Phase I leachate manifested and hauled from the site during 2015 (119,000 gal.), 2016 (50,100 gal.), 2017 (93,000 gal.), and 2018 (100,000). The leachate has been delisted as a hazardous waste. The proposed revised unit cost has been adjusted for inflation based on the factor listed above.
11	Leachate Analysis (in accordance with Illinois Pollution Control Board Order approving Adjusted Standard Waste Delisting)	Year	2	\$1,235	\$2,469	2	\$1,263	\$2,527	Sampling of the Phase I leachate is to be conducted on a semi-annual basis for the TCLP Parameters in 35 IAC 721.24(b) and delisting constituents. Cost included in Sept 2018 Permit Renewal for leachate analysis updated for inflation based on the above factor.
12	Maintenance of Leachate Collection/Extraction System (includes pump maintenance/replacement, line cleaning, and quarterly leachate head level measurements)	lump sum	1	\$40,680	\$40,680	1	\$41,616	\$41,616	Lump sum estimate is based on costs listed in operation and maintenance agreement. Cost included in Sept 2018 Permit Renewal updated for inflation based on the above factor.
Subtotal for Leachate Monitoring				\$ 54,243				\$54,163	
Total Annual Cost				\$ 71,346				\$71,661	
10% Contingency (on annual costs)				\$ 7,135				\$7,166	Included pursuant to comment from Illinois EPA received 8/14/2012. Costs included in Sept 2018 Permit Renewal updated for inflation based on above inflation factor.
Total Annual Cost (w/ Contingency)				\$ 78,481				\$78,827	
Remaining Post-Closure Care Period				6.0				5.0	The post-closure period ends no earlier than December 5, 2024. As of 12/5/2019, 5.0 years will remain.
Monitoring Well Decommissioning/ Abandonment (one time cost only)				\$ 12,340				\$12,624	Cost included in Sept 2018 Permit Renewal updated for inflation based on above factor.
10% Contingency (on one time costs)				\$ 1,234				\$1,262	Included pursuant to comment from Illinois EPA received 9/20/2013. Costs included in Sept 2018 Permit Renewal updated for inflation based on above inflation factor.
TOTAL POST-CLOSURE CARE COSTS				\$ 484,460				\$408,021	

R 000868

Revised August 2019

Post-Closure Cost Estimate

The approved Post-Closure Cost Estimate is \$408,021, (in 2019 dollars). This estimate must be used when establishing financial assurance in accordance with 35 Ill. Adm. Code 724, Subpart G. The break down of this estimate is as follows:

1. Estimate of post-closure care costs on an annual basis:

Post-closure inspections	\$7,591
Groundwater monitoring	\$9,907
<u>Leachate Management</u>	<u>\$54,163</u>
Total	\$71,661
<u>10% Contingency:</u>	<u>\$7,166</u>
Total Annual Cost (w/ Contingency):	\$78,827

One-Time Costs:

Well Abandonment:	\$12,624
<u>10% Contingency, One-Time Costs:</u>	<u>\$1,262</u>
Total One-Time Costs:	\$13,886

2. Facility has 5.0 years of remaining post-closure care.
3. Total post-closure care cost estimate =
 $(\$78,827 \text{ per year}) \times (5.0 \text{ years}) + \$13,886 = \$408,021$

Subject Submittal
Class 1* Permit Modification
B142R2 M-4

B142R2 M-4



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

Sustainability in Action

May 10, 2023

Mr. Jacob Nutt
Illinois Environmental Protection Agency
Permit Section, Bureau of Land -- #33
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Davis Junction Landfill – Phase I
Class 1* Permit Modification
Permit No. B-142R2
IEPA Site No.: 1418210001
Log No. B-142R2-M-4

RECEIVED
MAY 12 2023
IEPA-BOL
PERMIT SECTION

Dear Mr. Nutt,

As requested, enclosed, please find one original and three copies of the permit application forms associated with the above referenced permit modification. The owner and operator signed/notarized one set of the LPC-PA23 Forms and the P.E. signed/stamped a different set. Both the originals and copies are enclosed.

If you have any questions, feel free to contact me at (224) 970-1129 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

A handwritten signature in black ink, appearing to read "James Hitzeroth", written over a horizontal line.

James Hitzeroth

Enclosures: Original LPC-PA23 Forms and 39(i) Certification Form and 3 copies

III. Permit Application Identification

Application Type

- New Part B Permit
- Part B Permit Renewal
- Class 1 Modification
- Class 1* (prior approval required) Modification
- Class 2 Modification
- Class 3 Modification
- Additional information to supplement UIC Class I application Log Number
- Remedial Action Plan Permit (RAPP)
- Sig RAPP Modification
- Non Sig RAPP Modification
- Major UIC Modification
- Minor UIC Modification

This Application Involves

- Storage
- Treatment
- Disposal
- Incineration
- Groundwater
- Corrective Action
- UIC Class I
- UIC Class V

Description of This Permit Request: (Include a brief narrative description here.)

Annual update to post-closure care cost estimate required by Permit Condition IV.34.

IV. SIGNATURES

Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable. All applications shall be signed by the person in accordance with 35 IAC 702.126(a).

Please check the box of the appropriate certification.

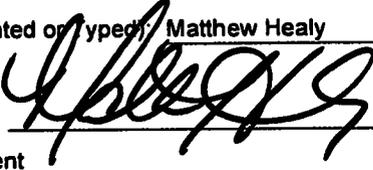
Owner

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Alternative owner certification. For remedial action plans (RAPs) permit under Subpart H of 35 IAC 703, the owner may choose to make the following certification instead of the certification above.

Based on my knowledge of the conditions of the property described in the RAP and my inquiry of the person or persons that manage the system referenced in the operator's certification, or those persons directly responsible for gathering the information, the information submitted is, upon information and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Name (Printed or typed): Matthew Healy

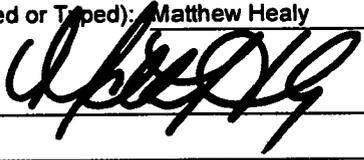
Owner Signature:  Date: 5-4-2023

Title: Vice President

Operator

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Operator Name (Printed or Typed): Matthew Healy

Operator Signature: 

Date: 5-4-2023

Title: Vice President

Notary (Required for both owner and operator signatures)

Subscribed and Sworn before me this 4th day of May 2023.

Notary Signature: 



My commission expires on: 24 October 2023

Notary Seal

Engineer

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Engineer Name (Print or Type): John Bossert

Engineer Signature: _____

Illinois License No.: 062-050455

Expiration Date of License: Nov 30, 2023

Engineer Phone No. 217-787-0290

Email: jbossert@wcgrp.com

Engineer Address:

3516 Ogden Road
Springfield, IL 62711

Engineer Seal

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Instructions for RCRA Permit Application Form LPC-PA23

The following instructions are designed to aid in the completion of the RCRA Permit Application Form LPCPA23. If you have additional questions regarding the form, or the informational requirements, please contact the Illinois EPA Bureau of Land (BOL) Permit Section at 217-524-3300.

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. If an application has already been submitted to the Agency, a completed RCRA Permit Application Form must accompany all additional information that is submitted to the agency for that application. An example of "additional information" would be a response to verbal or written comments from the Agency. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

I. Site Identification

Enter all of the required information in the space provided. If you do not have an Illinois or USEPA identification number, call the Illinois EPA BOL Waste Reduction and Compliance Section at 217-785-8604 to obtain these numbers prior to completing the form.

II. Owner/Operator Identification

The terms "owner" and "operator" are defined at 35 IAC 720.110 and 702.110. If the facility has the same owner and operator, you may type in "same" under operator information. Also, if the contact person for an application is different from the owner or operator (i.e. the consultant), please indicate this in the cover letter for the application.

III. Permit Application Identification

Indicate both the type of application and the kind of waste management involved. For instance, if the application involves more than one type of waste management, check all applicable options.

IV. Signatures

The signatory requirements for permit applicants are identified at 35 IAC 702.126 and 702.151. If the facility has the same owner and operator, you may type in "same" under operator information.

Notary Public: A notary public's signature and stamp are required for both the owner and operator signatures on the form.

Engineer Certification: A professional engineer that is licensed in the State of Illinois must certify all technical information provided in a permit application. 35 IAC 703.182 describes the types of information that must be certified by a professional engineer.



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

RCRA Permit Application Form (LPC-PA23)

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. One original and three (3) copies, of all permit applications must be submitted. Attach the original and appropriate number of copies of a cover letter, any necessary plans, specifications, reports, forms, (e.g., corrective action certification form), and any other certifications etc. to fully support and describe the activities or modifications being proposed. Attach sufficient information to demonstrate compliance with all applicable regulatory requirements. Applications without this form will be deemed incomplete. Please refer to the RCRA checklist and decision guide documents for further guidance. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

Note: Permit applications which are hand-delivered to the Bureau of Land, Permit Section must be delivered to 1021 North Grand Avenue East between the hours of 8:30 a.m. to 5:00 p.m., Monday through Friday (excluding State holidays).

Please type or print all information legibly.

I. Site Identification

Site # (Illinois EPA): 1418210001 USEPA ID Number: ILD 980700751
 Site Name: BFI Davis Junction Landfill - Phase I
 Physical Site Location (street, road, etc.): 8902 North Illinois Route 251
 City: Davis Junction Zip Code: 61020 County: Ogle
 Existing RCRA Permit (if applicable): B-142R2

II. Owner/Operator Identification

Owner Information

Name: BFI Waste Systems of North America, LLC
 Mailing Address:

26 West 580 Schick Rd.
 Hanover Park, IL 60133

 Contact Name: James Hitzeroth
 Phone #: 224-970-1129
 Email: JHitzeroth@republicservices.com

Operator Information

Name: BFI Waste Systems of North America, LLC
 Mailing Address:

26 West 580 Schick Rd.
 Hanover Park, IL 60133

 Contact Name: James Hitzeroth
 Phone #: 224-970-1129
 Email: JHitzeroth@republicservices.com

A 39(i) certification must be submitted with information concerning the following persons or entities:

- the owner of the business entity applying for the permit;
- the operator of the business entity applying for the permit;
- each employee or officer of the owner or operator who signed the permit application or has managerial authority at the site; and
- any additional owner, operator, or officer or employee of the owner or operator from whom a certification is requested by the Illinois EPA, including any officer or employee who will be responsible for overseeing or implementing regulated activities governed by the permit.

III. Permit Application Identification

Application Type

- | | | |
|--|--|---|
| <input type="checkbox"/> New Part B Permit | <input type="checkbox"/> Class 1 Modification | <input type="checkbox"/> Remedial Action Plan Permit (RAPP) |
| <input type="checkbox"/> Part B Permit Renewal | <input checked="" type="checkbox"/> Class 1* (prior approval required) Modification | <input type="checkbox"/> Sig RAPP Modification |
| | <input type="checkbox"/> Class 2 Modification | <input type="checkbox"/> Non Sig RAPP Modification |
| | <input type="checkbox"/> Class 3 Modification | <input type="checkbox"/> Major UIC Modification |
| | <input type="checkbox"/> Additional information to supplement UIC Class I application Log Number | <input type="checkbox"/> Minor UIC Modification |

This Application Involves

- | | | | |
|--------------------------------------|--|--|---------------------------------------|
| <input type="checkbox"/> Storage | <input type="checkbox"/> Treatment | <input checked="" type="checkbox"/> Disposal | <input type="checkbox"/> Incineration |
| <input type="checkbox"/> Groundwater | <input type="checkbox"/> Corrective Action | <input type="checkbox"/> UIC Class I | <input type="checkbox"/> UIC Class V |

Description of This Permit Request: (Include a brief narrative description here.)

Annual update to post-closure care cost estimate required by Permit Condition IV.34.

IV. SIGNATURES

Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable. All applications shall be signed by the person in accordance with 35 IAC 702.126(a).

Please check the box of the appropriate certification.

Owner

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Alternative owner certification. For remedial action plans (RAPs) permit under Subpart H of 35 IAC 703, the owner may choose to make the following certification instead of the certification above.

Based on my knowledge of the conditions of the property described in the RAP and my inquiry of the person or persons that manage the system referenced in the operator's certification, or those persons directly responsible for gathering the information, the information submitted is, upon information and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Name (Printed or Typed): Matthew Healy

Owner Signature: _____ Date: _____

Title: Vice President

Operator

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

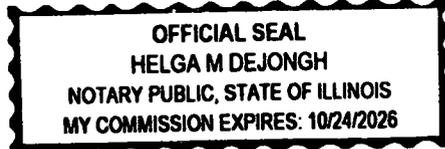
Operator Name (Printed or Typed): Matthew Healy

Operator Signature: *[Handwritten Signature]* Date: 5-4-2023
Title: Vice President

Notary (Required for both owner and operator signatures)

Subscribed and Sworn before me this 4th day of May 2023.

Notary Signature: *[Handwritten Signature]*



My commission expires on: 24 October 2023

Notary Seal

Engineer

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Engineer Name (Print or Type): John Bossert

Engineer Signature: *[Handwritten Signature]*
Illinois License No.: 062-050455
Expiration Date of License: Nov 30, 2023
Engineer Phone No. 217-787-0290
Email: jbossert@wcgrp.com



Engineer Address:
3516 Ogden Road
Springfield, IL 62711

Engineer Seal

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Instructions for RCRA Permit Application Form LPC-PA23

The following instructions are designed to aid in the completion of the RCRA Permit Application Form LPCPA23. If you have additional questions regarding the form, or the informational requirements, please contact the Illinois EPA Bureau of Land (BOL) Permit Section at 217-524-3300.

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. If an application has already been submitted to the Agency, a completed RCRA Permit Application Form must accompany all additional information that is submitted to the agency for that application. An example of "additional information" would be a response to verbal or written comments from the Agency. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

I. Site Identification

Enter all of the required information in the space provided. If you do not have an Illinois or USEPA identification number, call the Illinois EPA BOL Waste Reduction and Compliance Section at 217-785-8604 to obtain these numbers prior to completing the form.

II. Owner/Operator Identification

The terms "owner" and "operator" are defined at 35 IAC 720.110 and 702.110. If the facility has the same owner and operator, you may type in "same" under operator information. Also, if the contact person for an application is different from the owner or operator (i.e. the consultant), please indicate this in the cover letter for the application.

III. Permit Application Identification

Indicate both the type of application and the kind of waste management involved. For instance, if the application involves more than one type of waste management, check all applicable options.

IV. Signatures

The signatory requirements for permit applicants are identified at 35 IAC 702.126 and 702.151. If the facility has the same owner and operator, you may type in "same" under operator information.

Notary Public: A notary public's signature and stamp are required for both the owner and operator signatures on the form.

Engineer Certification: A professional engineer that is licensed in the State of Illinois must certify all technical information provided in a permit application. 35 IAC 703.182 describes the types of information that must be certified by a professional engineer.



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

39(i) Certification for Operating a Waste Management Facility

Pursuant to 415 ILCS 5/39(i), prior to issuing any RCRA permit, or any permit for a waste storage site, sanitary landfill, waste disposal site, waste transfer station, waste treatment facility, waste incinerator, clean construction or demolition debris fill operation, or used tire storage site, the Illinois EPA must conduct an evaluation of the prospective owner's or operator's prior experience in waste management operations, clean construction or demolition debris fill operations, and tire storage site management. As part of that evaluation please complete and submit this form with your permit application.

This form may be completed online and saved locally before printing, signing and submitting it to the Illinois EPA at the address below. If the form is completed manually, please type or print clearly.

Illinois Environmental Protection Agency
Division of Land Pollution Control - #33
39(i) Certification
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

I. Applicant Information

Site Name: BFI Davis Junction Landfill - Phase I

IEPA BOL No.: 1418210001

Site Address: 8902 North Illinois Route 251

City: Davis Junction

State: IL

Zip Code: 61020

Permit Numbers (if applicable): B-142R2

Owner

Owner Name: BFI Waste Systems of North America

Street Address: 26 West 580 Schick Rd.

City: Hanover Pk State: IL Zip: 60133

Operator

Operator Name: BFI Waste Systems of North America

Street Address: 26 West 580 Schick Rd.

City: Hanover Pk State: IL Zip: 60133

II. Officers and Employees with Site Responsibility

A. Officers: List the name and title of all officers of the owner or operator that will have personal involvement or active participation in the operation or management of the site or facility for which the application is submitted.

Name	Title
Matthew Healy	Vice President

B. Employees: List the name and title of each employee of the owner or operator that will have personal involvement or active participation in the overall operation or management of the site or facility for which the application is submitted (e.g. site managers, site engineers, and other persons who direct or control the overall day-to-day management of the operation, but not persons whose duties are exclusively limited to equipment operation, labor, or similar non-managerial functions).

Name	Title
James Hitzeroth	Environmental Manager

III. Owner, Operator, Officer, and Employee Information

A. Prior Conduct Identification

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified under Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and include a copy of each final administrative or judicial determination that required an affirmative response. If the information for each owner, operator, officer, and employee has not changed since the applicant's last submission of a 39(i) certification, the applicant can skip to Section III(C), below.

- 1) Has there been a finding that any person named in Section II violated federal, State, or local laws, regulations, standards, or ordinances in the operation of one or more waste management facilities or sites, clean construction or demolition debris fill operation facilities or sites, or tire storage sites? Yes
 No
- 2) Has any person named in Section II ever been convicted in this or another State of any crime which is a felony under the laws of this State, or convicted of a felony in a federal court; or convicted in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition? Yes
 No
- 3) Has there been a finding against any person named in Section II of gross carelessness or incompetence in handling, storing, processing, transporting or disposing of waste, clean construction or demolition debris, or used or waste tires, or a finding of gross carelessness or incompetence in using clean construction or demolition debris as fill? Yes
 No

B. Pending Proceedings

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified in Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and provide information identified in Attachment A regarding the pending proceeding.

- 1. Is there any proceeding currently pending against any person named in Section II that could result in a conviction or finding described in subsection A, above? Yes
 No
- 2. Is there any proceeding currently pending against any person named in Section II that could result in the reversal of a conviction or finding described in subsection A, above? Yes
 No

C. Prior Application Information

If (i) the applicant has previously submitted the Attachments required pursuant to subsections A and B above and (ii) the Attachments previously submitted are still complete, true, and correct, then the applicant does not need to include Attachments with this submission if the following box is checked:

By checking this box, I affirm that the Attachments previously submitted are still complete, true, and correct and wish to incorporate them into this Certification.

If the above box is checked, identify the application that contains the previously submitted Attachments that are complete, true, and correct.

Authorization for Release of Information

This Certification must be signed by an officer of the applicant.

The undersigned authorizes any representative of the Illinois Environmental Protection Agency bearing this release to obtain any information from the Illinois State Police pertaining to the criminal records of the applicant and hereby directs the Illinois State Police to release such information upon request of the bearer. The undersigned authorizes a review of and full disclosure of all records, or any part thereof, concerning the applicant's criminal records by and to a duly authorized agent of the Illinois Environmental Protection Agency, whether the records are of public, private, or confidential nature. The intent of this authorization is to give consent for full and complete disclosure of the applicant's criminal records.

The undersigned fully understands that any information which is developed directly or indirectly, in whole or in part, as a result of this authorization will be considered in determining whether a permit shall be issued by the Illinois Environmental Protection Agency under the Environmental Protection Act [415 ILCS 5]. The undersigned further agrees to release the Illinois State Police and the Illinois Environmental Protection Agency, its agents and designees under this release, from any and all liability which may be incurred as a result of compliance with this authorization for release of information.

Certification Statements

I certify under penalty of law that the information submitted, including information on any Attachments submitted as part of or incorporated into this Certification, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))



Signature of Applicant Officer

5-4-2023

Date

Matthew Healy

Printed Name

Vice President

Title

Attachment A (1 of 1)

This Attachment must be completed for each owner or operator, and for each officer or employee identified in Section II, for whom one or more affirmative responses were included in Section III.

Name: _____ Title: _____

Status: Owner Operator Officer Employee (check all that apply)

A. Prior Findings or Convictions

- 1. Has there been a finding that the person named above violated federal, State, or local laws, regulations, standards, or ordinances in the operation of one or more waste management facilities or sites, clean construction or demolition debris fill operation facilities or sites, or tire storage sites? Yes
 No
- 2. Has the person named above ever been convicted in this or another State of any crime which is a felony under the laws of this State, or convicted of a felony in a federal court; or convicted in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition? Yes
 No
- 3. Has there been a finding against the person named above of gross carelessness or incompetence in handling, storing, processing, transporting or disposing of waste, clean construction or demolition debris, or used or waste tires, or a finding of gross carelessness or incompetence in using clean construction or demolition debris as fill? Yes
 No

If the answer to any of the above questions is Yes, attach a copy of each final administrative or judicial determination that required an affirmative response.

B. Pending Proceedings

Is there any proceeding currently pending that could result in one of the following:

- 1. A conviction or finding described in subsection A, above? Yes
 No
- 2. The reversal of a conviction or finding described in subsection A, above? Yes
 No

If the answer to any of the above questions is Yes, please provide information about the pending proceeding, including the parties involved, the adjudicating body, the docket number, the nature of the proceeding, and the status. The box below will expand as needed. Attach additional sheets if necessary.



August 18, 2020

Mr. Kenneth Smith, P.E., Manager
Permit Section, Division of Land Pollution Control
Illinois Environmental Protection Agency
Bureau of Land #33
1021 N. Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Class 1* Permit Modification
1418210001 – Ogle Co.
ILD 980700751
BFI Davis Junction Landfill – Phase I RCRA Unit
Log No. B-142R2
Project No. 0120-049-01-24

Dear Mr. Smith:

On behalf of our client, permittee BFI Waste Systems of North America, LLC., (BFI), Weaver Consultants Group North Central, LLC is providing the following updated Cost Estimate for Post-Closure Care for the above referenced facility. Consistent with historical submittals, this information is being submitted as a Class 1* Permit Modification. The RCRA Permit Application Form (LPC-PA23), as well as the 39(i) Certification Form are enclosed.

The most recent Post-Closure Care Cost Estimate approved by the Illinois Environmental Protection Agency (EPA) was included with the Permit Renewal issued by Illinois EPA on September 26, 2018 (Log No. B-142R2). The costs in the above September 2018 Permit were presented in 2018 dollars.

An updated Post-Closure Care Cost Estimate was submitted to the Illinois EPA in a separate Class 1* Permit Modification dated August 27, 2019 and received by the Illinois EPA on September 4, 2019. To date, BFI has not received a response from Illinois EPA to the above 2019 Class 1* Permit Modification. The 2019 updated Post-Closure Care Cost Estimate was presented in 2019 dollars. The enclosed updated Post-Closure Care Cost Estimate updates the 2019 cost estimate.

The portions of the Post-Closure Care Cost Estimate which are proposed to be modified herein are highlighted in yellow on the attached table, which includes the following:

Illinois EPA

August 18, 2020

- Annual inflation increase to the costs presented within the 2019 Class 1* Permit Modification. The inflation factor to adjust from 2019 to 2020 costs was obtained from communications with Illinois EPA in April 2020. According to Illinois EPA, this inflation adjustment is 1.8% (i.e., an increase by a factor of 1.018); and
- Removal of one year from the post-closure care period to account for post-closure activities conducted since the last approved update.

As shown on the enclosed table, the total post-closure care costs are proposed to be modified from \$408,021 to \$333,624.

The specific portions of the Permit being modified are as follows:

1. Permit Condition I.G: Replace the \$484,460 quantity referenced in this permit condition with the 2020 updated post-closure care costs, \$333,624; and
2. Attachment C: Replace the page entitled, "Post-Closure Cost Estimate" included in the Sept 2018 Permit with the enclosed page containing the updated Post-Closure Care Cost Estimate. An August 2020 revision date is shown on the enclosed page.

In closing, as required by the provisions for Class 1* modifications [35 IAC 703.281(a)(2)], the permittee will provide notification of this modification to all persons on the facility mailing list maintained by the Illinois EPA and the appropriate units of State and local government within 90 calendar days after the Illinois EPA approves this request in writing.

We trust that the enclosed will meet with your expectations. If you have any questions, please feel free to contact the undersigned at (312) 496-3718 or permittee representative, Mr. Jim Hitzeroth of BFI at (630) 894-5001.

Sincerely,

Weaver Consultants Group North Central, LLC



Michael D. Maxwell, LPG
EPG Chicago Operations Manager

Cc: Mr. Jim Hitzeroth, BFI (w/ encl.)

Illinois EPA

August 18, 2020

Enclosures: PA-23 Form
39(i) Certification Form
Table 1 - Updated Post-Closure Care Cost Estimate
Updated Attachment C to Permit



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

RCRA Permit Application Form (LPC-PA23)

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. One original and three (3) copies, of all permit applications must be submitted. Attach the original and appropriate number of copies of a cover letter, any necessary plans, specifications, reports, forms, (e.g., corrective action certification form), and any other certifications etc. to fully support and describe the activities or modifications being proposed. Attach sufficient information to demonstrate compliance with all applicable regulatory requirements. Applications without this form will be deemed incomplete. Please refer to the RCRA checklist and decision guide documents for further guidance. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

Note: Permit applications which are hand-delivered to the Bureau of Land, Permit Section must be delivered to 1021 North Grand Avenue East between the hours of 8:30 a.m. to 5:00 p.m., Monday through Friday (excluding State holidays).

Please type or print all information legibly.

I. Site Identification

Site # (Illinois EPA): 1418210001 USEPA ID Number: ILD 980700751
 Site Name: BFI Davis Junction Landfill - Phase I
 Physical Site Location (street, road, etc.): 8902 North Illinois Route 251
 City: Davis Junction Zip Code: 61020 County: Ogle
 Existing RCRA Permit (if applicable): B-142R2

II. Owner/Operator Identification

Owner Information

Name: BFI Waste Systems of North America, LLC
 Mailing Address:

26 West 580 Schick Rd.
 Hanover Park, IL 60133

 Contact Name: James Hitzeroth
 Phone #: 224-970-1129
 Email: JHitzeroth@republicservices.com

Operator Information

Name: BFI Waste Systems of North America, LLC
 Mailing Address:

26 West 580 Schick Rd.
 Hanover Park, IL 60133

 Contact Name: James Hitzeroth
 Phone #: 224-970-1129
 Email: JHitzeroth@republicservices.com

A 39(i) certification must be submitted with information concerning the following persons or entities:

- the owner of the business entity applying for the permit;
- the operator of the business entity applying for the permit;
- each employee or officer of the owner or operator who signed the permit application or has managerial authority at the site; and
- any additional owner, operator, or officer or employee of the owner or operator from whom a certification is requested by the Illinois EPA, including any officer or employee who will be responsible for overseeing or implementing regulated activities governed by the permit.

RECEIVED
 AUG 28 2020
 IEPA-BOL
 PERMIT SECTION

III. Permit Application Identification

Application Type

- | | | |
|--|--|---|
| <input type="checkbox"/> New Part B Permit | <input type="checkbox"/> Class 1 Modification | <input type="checkbox"/> Remedial Action Plan Permit (RAPP) |
| <input type="checkbox"/> Part B Permit Renewal | <input checked="" type="checkbox"/> Class 1* (prior approval required) Modification | <input type="checkbox"/> Sig RAPP Modification |
| | <input type="checkbox"/> Class 2 Modification | <input type="checkbox"/> Non Sig RAPP Modification |
| | <input type="checkbox"/> Class 3 Modification | <input type="checkbox"/> Major UIC Modification |
| | <input type="checkbox"/> Additional information to supplement UIC Class I application Log Number | <input type="checkbox"/> Minor UIC Modification |

This Application Involves

- | | | | |
|--------------------------------------|--|--|---------------------------------------|
| <input type="checkbox"/> Storage | <input type="checkbox"/> Treatment | <input checked="" type="checkbox"/> Disposal | <input type="checkbox"/> Incineration |
| <input type="checkbox"/> Groundwater | <input type="checkbox"/> Corrective Action | <input type="checkbox"/> UIC Class I | <input type="checkbox"/> UIC Class V |

Description of This Permit Request: (Include a brief narrative description here.)

Annual update to post-closure care cost estimate required by Permit Condition IV.34.

IV. SIGNATURES

Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable. All applications shall be signed by the person in accordance with 35 IAC 702.126(a).

Please check the box of the appropriate certification.

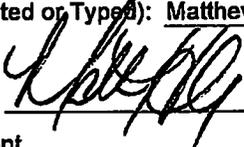
Owner

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Alternative owner certification. For remedial action plans (RAPs) permit under Subpart H of 35 IAC 703, the owner may choose to make the following certification instead of the certification above.

Based on my knowledge of the conditions of the property described in the RAP and my inquiry of the person or persons that manage the system referenced in the operator's certification, or those persons directly responsible for gathering the information, the information submitted is, upon information and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Name (Printed or Typed): Matthew Healy

Owner Signature: 

Date: 8-17-2020

Title: Vice President

Operator

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Operator Name (Printed or Typed): Matthew Healy

Operator Signature: *[Signature]* Date: 8-17-2020
Title: Vice President

Notary (Required for both owner and operator signatures)

Subscribed and Sworn before me this 17th day of August 2020.

Notary Signature: *[Signature]*



My commission expires on: 24 October 2022

Notary Seal

Engineer

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Engineer Name (Print or Type): John Bossert

Engineer Signature: *[Signature]*

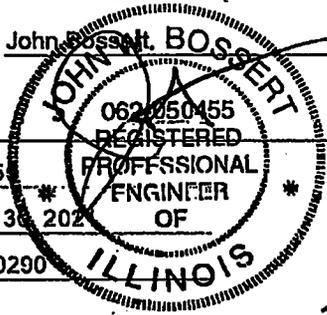
Illinois License No.: 062 06045

Expiration Date of License: Nov 30 2022

Engineer Phone No. 217-787-0290

Email: jbossert@wcgrp.com

Engineer Address:
3516 Ogden Road
Springfield, IL 62711



Engineer Seal

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

39(i) Certification for Operating a Waste Management Facility

Pursuant to 415 ILCS 5/39(i), prior to issuing any RCRA permit, or any permit for a waste storage site, sanitary landfill, waste disposal site, waste transfer station, waste treatment facility, waste incinerator, clean construction or demolition debris fill operation, or used tire storage site, the Illinois EPA must conduct an evaluation of the prospective owner's or operator's prior experience in waste management operations, clean construction or demolition debris fill operations, and tire storage site management. As part of that evaluation please complete and submit this form with your permit application.

This form may be completed online and saved locally before printing, signing and submitting it to the Illinois EPA at the address below. If the form is completed manually, please type or print clearly.

Illinois Environmental Protection Agency
Division of Land Pollution Control - #33
39(i) Certification
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

I. Applicant Information

Site Name: BFI Davis Junction Landfill - Phase I

IEPA BOL No.: 1418210001

Site Address: 8902 North Illinois Route 251

City: Davis Junction

State: IL

Zip Code: 61020

Permit Numbers (if applicable): B-142R2

Owner

Owner Name: BFI Waste Systems of North America

Street Address: 26 West 580 Schick Rd.

City: Hanover Pk State: IL Zip: 60133

Operator

Operator Name: BFI Waste Systems of North America

Street Address: 26 West 580 Schick Rd.

City: Hanover Pk State: IL Zip: 60133

II. Officers and Employees with Site Responsibility

A. Officers. List the name and title of all officers of the owner or operator that will have personal involvement or active participation in the operation or management of the site or facility for which the application is submitted

Name	Title
Matthew Healy	Vice President

B. Employees: List the name and title of each employee of the owner or operator that will have personal involvement or active participation in the overall operation or management of the site or facility for which the application is submitted (e.g. site managers, site engineers, and other persons who direct or control the overall day-to-day management of the operation, but not persons whose duties are exclusively limited to equipment operation, labor, or similar non-managerial functions).

Name	Title
James Hitzeroth	Environmental Manager

RECEIVED
AUG 28 2020
IEPA-BOL
PERMIT SECTION

III. Owner, Operator, Officer, and Employee Information

A. Prior Conduct Identification

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified under Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and include a copy of each final administrative or judicial determination that required an affirmative response. If the information for each owner, operator, officer, and employee has not changed since the applicant's last submission of a 39(i) certification, the applicant can skip to Section III(C), below.

- 1) Has there been a finding that any person named in Section II violated federal, State, or local laws, regulations, standards, or ordinances in the operation of one or more waste management facilities or sites, clean construction or demolition debris fill operation facilities or sites, or tire storage sites? Yes
 No
- 2) Has any person named in Section II ever been convicted in this or another State of any crime which is a felony under the laws of this State, or convicted of a felony in a federal court; or convicted in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition? Yes
 No
- 3) Has there been a finding against any person named in Section II of gross carelessness or incompetence in handling, storing, processing, transporting or disposing of waste, clean construction or demolition debris, or used or waste tires, or a finding of gross carelessness or incompetence in using clean construction or demolition debris as fill? Yes
 No

B. Pending Proceedings

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified in Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and provide information identified in Attachment A regarding the pending proceeding.

- 1. Is there any proceeding currently pending against any person named in Section II that could result in a conviction or finding described in subsection A, above? Yes
 No
- 2. Is there any proceeding currently pending against any person named in Section II that could result in the reversal of a conviction or finding described in subsection A, above? Yes
 No

C. Prior Application Information

If (i) the applicant has previously submitted the Attachments required pursuant to subsections A and B above and (ii) the Attachments previously submitted are still complete, true, and correct, then the applicant does not need to include Attachments with this submission if the following box is checked:

By checking this box, I affirm that the Attachments previously submitted are still complete, true, and correct and wish to incorporate them into this Certification.

If the above box is checked, identify the application that contains the previously submitted Attachments that are complete, true, and correct.

Authorization for Release of Information

This Certification must be signed by an officer of the applicant.

The undersigned authorizes any representative of the Illinois Environmental Protection Agency bearing this release to obtain any information from the Illinois State Police pertaining to the criminal records of the applicant and hereby directs the Illinois State Police to release such information upon request of the bearer. The undersigned authorizes a review of and full disclosure of all records, or any part thereof, concerning the applicant's criminal records by and to a duly authorized agent of the Illinois Environmental Protection Agency, whether the records are of public, private, or confidential nature. The intent of this authorization is to give consent for full and complete disclosure of the applicant's criminal records.

The undersigned fully understands that any information which is developed directly or indirectly, in whole or in part, as a result of this authorization will be considered in determining whether a permit shall be issued by the Illinois Environmental Protection Agency under the Environmental Protection Act [415 ILCS 5]. The undersigned further agrees to release the Illinois State Police and the Illinois Environmental Protection Agency, its agents and designees under this release, from any and all liability which may be incurred as a result of compliance with this authorization for release of information.

Certification Statements

I certify under penalty of law that the information submitted, including information on any Attachments submitted as part of or incorporated into this Certification, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))



Signature of Applicant Officer

8-17-2020

Date

Matthew Healy

Printed Name

Vice President

Title

Table 1: Cost Estimate for Post-Closure Care - August 2020 Update
BFI - Davis Junction Landfill
Phase I (RCRA) Unit

POST-CLOSURE COSTS									Notes
Item	Units	Quantity Incl. in 2019 Class 1* Mod (Per Year)	Unit Cost Incl. in 2019 Class ** Mod	Total Cost Incl. in 2019 Class 1* Mod	Proposed Units (per year)	Proposed Revised Unit Cost (2019 update)	Proposed Estimate (2019 Update)		Post-Closure Care Period ends no earlier than December 5, 2024. On September 26, 2018, an updated post-closure care cost estimate was approved by Illinois EPA in the Permit Renewal Log No. B-142R2 (\$484,460) and an annual updated was submitted to Illinois EPA in August 2019 (\$408,021). This August 2020 update includes the inflation factor for 2020 (1.018); and a reduction of one year in post-closure care period from 5 to 4 years.
1	Site Inspection	Insp./Yr	4	\$756.25	\$3,025	4	\$769.91	\$3,080	Unit cost included in 2019 Class 1* Permit Mod. updated for inflation based on above factor.
2	Resurveying Cover Elevation Reference Points	Annual	0.2	\$337.05	\$67	0.2	\$343.16	\$69	Resurveying conducted in conjunction with site inspection. Unit cost included in 2019 Class 1* Permit Mod. updated for inflation based on above factor.
3	Mowing	Acres	25	\$58.34	\$1,459	25	\$59.38	\$1,485	Cost included in 2019 Class 1* Permit Mod. updated for inflation based on above factor.
4	Vegetation Repair (1/2" soil cover) (Fertilizer, Mulch & Seed)	Acres	0.25	\$7,659	\$1,915	0.25	\$7,797	\$1,949	No more than 0.25 acre of vegetative cover expected to require replacement per year. Cost included in 2019 Class 1* Permit Mod. updated for inflation based on above factor.
5	Fence Repair and Maintenance	Annual	1	\$974	\$974	1	\$986	\$986	Cost included in 2019 Class 1* Permit Mod. updated for inflation based on above factor.
6	Certification of Post-Closure Care	Year	1	\$459	\$459	1	\$459	\$459	Cost included in 2019 Class 1* Permit Mod. updated for inflation based on above factor.
Subtotal for Post-Closure Inspection				\$7,691			\$7,728		
7	Groundwater Sample Collections (14 wells annually)	lump sum	lump sum	\$960	\$960	lump sum	\$977	\$977	Cost included in 2019 Class 1* Permit Mod. updated for inflation based on above factor.
8	Laboratory Analysis (Revised List) - 4 wells annual	Wells	14	\$511	\$7,156	14	\$551	\$7,710	Analysis of future groundwater samples based on new parameter list approved with 2014 Class 2 Permit Mod. Cost included in 2019 Class 1* Permit Mod. updated for inflation based on above factor.
9	Groundwater Reporting - Annual basis	Events	lump sum	\$1,371	\$1,371	lump sum	\$1,396	\$1,396	Cost included in 2019 Class 1* Permit Mod. updated for inflation based on above factor.
Subtotal for Groundwater Monitoring				\$9,907			\$10,083		
10	Leachate Removal, Transportation & Disposal	gallons/year	87,525	\$0.1167	\$10,200	87,525	\$0.1127	\$9,863	The quantity of leachate is based on the average quantity of Phase I leachate manifested and hauled from the site during 2016 (50,100 gal), 2017 (93,000 gal), 2018 (100,000), and 2019 (107,000). The leachate has been delisted as a hazardous waste. The proposed revised unit cost has been adjusted for inflation based on the factor listed above.
11	Leachate Analysis (in accordance with Illinois Pollution Control Board Order approving Adjusted Standard Waste Delisting)	Year	2	\$1,286	\$2,572	2	\$1,286	\$2,571	Sampling of the Phase I leachate is to be conducted on a semi-annual basis for the TCLP Parameters in 35 IAC 72.1.24(b) and delisting constituents. Cost included in 2019 Class 1* Permit Mod. for leachate analysis updated for inflation based on the above factor.
12	Maintenance of Leachate Collection/Extraction System (includes pump maintenance/replacement, line cleaning, and quarterly leachate head level measurements)	lump sum	1	\$42,365	\$42,365	1	\$42,365	\$42,365	Lump sum estimate is based on costs listed in operation and maintenance agreement. Cost included in 2019 Class 1* Permit Mod. updated for inflation based on the above factor.
Subtotal for Leachate Monitoring				\$54,163			\$54,800		
Total Annual Cost				\$ 71,661			\$72,611		
10% Contingency (on annual costs)				\$ 7,166			\$7,261		Included pursuant to comment from Illinois EPA received 8/14/2012. Costs included in 2019 Class 1* Permit Mod. updated for inflation based on above inflation factor.
Total Annual Cost w/ Contingency				\$ 78,827			\$79,872		
Remaining Post-Closure Care Period				5.0			4.0		The post-closure period ends no earlier than December 5, 2024. As of 12/5/2020, 4.0 years will remain.
Monitoring Well Decommissioning/ Abandonment (one time cost only)				\$ 12,624			\$12,851		Cost included in 2019 Class 1* Permit Mod. updated for inflation based on above factor.
10% Contingency (on one time costs)				\$ 1,281			\$1,285		Included pursuant to comment from Illinois EPA received 9/20/2013. Costs included in 2019 Class 1* Permit Mod. updated for inflation based on above inflation factor.
TOTAL POST-CLOSURE CARE COSTS				\$ 408,021			\$333,624		

R 000893

Revised August 2020

Post-Closure Cost Estimate

The approved Post-Closure Cost Estimate is \$333,624, (in 2020 dollars). This estimate must be used when establishing financial assurance in accordance with 35 Ill. Adm. Code 724, Subpart G. The break down of this estimate is as follows:

1. Estimate of post-closure care costs on an annual basis:

Post-closure inspections	\$7,728
Groundwater monitoring	\$10,083
<u>Leachate Management</u>	<u>\$54,800</u>
Total	\$72,611
<u>10% Contingency:</u>	<u>\$7,261</u>
Total Annual Cost (w/ Contingency):	\$79,872

One-Time Costs:

Well Abandonment:	\$12,851
<u>10% Contingency. One-Time Costs:</u>	<u>\$1,285</u>
Total One-Time Costs:	\$14,136

2. Facility has 4.0 years of remaining post-closure care.
3. Total post-closure care cost estimate =
 $(\$79,872 \text{ per year}) \times (4.0 \text{ years}) + \$14,136 = \$333,624$

Subject Submittal
Class 1* Permit Modification
B142R2 M-6

B142R2 M-6



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

January 27, 2022

Mr. Kenneth Smith P.E.
Manager of Permits
Illinois Environmental Protection Agency
Permit Section, Division of Land Pollution Control
Bureau of Land -- #33
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: BFI Davis Junction Landfill – Phase I
ILD 980700751
Permit No. B-142R2
IEPA Site No.: 1418210001
Class 1* Permit Modification

RECEIVED

FEB 01 2022

**IEPA-BOL
PERMIT SECTION**

Dear Mr. Smith,

Enclosed, please find one original and three copies of the above referenced permit modification that is being submitted on behalf of permittee, BFI Waste Systems of North America, LLC.

If you have any questions concerning this submittal, feel free to contact me at (224) 970-1129 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

James Hitzeroth

Enclosure: Class 1* Permit Modification



January 27, 2022

Mr. Kenneth Smith, P.E., Manager
Permit Section, Division of Land Pollution Control
Illinois Environmental Protection Agency
Bureau of Land #33
1021 N. Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Class 1* Permit Modification
1418210001 – Ogle Co.
ILD 980700751
BFI Davis Junction Landfill – Phase I RCRA Unit
Log No. B-142R2
Project No. 0120-049-01-24

Dear Mr. Smith:

On behalf of our client, permittee BFI Waste Systems of North America, LLC., (BFI), Weaver Consultants Group North Central, LLC is providing the following updated Cost Estimate for Post-Closure Care for the above referenced facility. Consistent with historical submittals, this information is being submitted as a Class 1* Permit Modification. The RCRA Permit Application Form (LPC-PA23), as well as the 39(i) Certification Form are enclosed.

The most recent Post-Closure Care Cost Estimate approved by the Illinois Environmental Protection Agency (EPA) was included with the Permit Renewal issued by Illinois EPA on September 26, 2018 (Log No. B-142R2). The costs in the above September 2018 Permit were presented in 2018 dollars.

An updated Post-Closure Care Cost Estimate was submitted to the Illinois EPA in a separate Class 1* Permit Modification dated August 27, 2019 and received by the Illinois EPA on September 4, 2019 (Log No. B-142R2-M-2). The 2019 updated Post-Closure Care Cost Estimate was presented in 2019 dollars. An additional updated cost estimate was submitted to Illinois EPA dated August 18, 2020 and received by the Illinois EPA on August 28, 2020 (Log No. B-142R2-M-4), which was presented in 2020 dollars. To date, BFI has not received a response from Illinois EPA to either of the above pending Class 1* Permit Modifications. The enclosed updated Post-Closure Care Cost Estimate updates the most recently submitted Post-Closure Care Cost Estimate to 2021 dollars.

J:\PROJECTS\0100-0199\0120\49\01\UPDATED PC COST EST PH I 2021.DOCX

Illinois EPA

January 27, 2022

The portions of the Post-Closure Care Cost Estimate which are proposed to be modified herein are highlighted in yellow on the attached **Table 1**, which includes the following:

- Annual inflation increase to the costs presented within the 2020 Class 1* Permit Modification. The inflation factor to adjust from 2020 to 2021 costs was obtained from communications with Illinois EPA in April 2021. According to Illinois EPA, this inflation adjustment is 1.2% (i.e., an increase by a factor of 1.012); and
- Removal of one year from the post-closure care period to account for post-closure activities conducted since submittal of the prior 2020 update.

As shown on the enclosed **Table 1**, the total post-closure care costs are proposed to be modified from \$333,624 to \$262,652.

The specific portions of the Permit being modified are as follows:

1. Permit Condition I.G: Replace the quantity for financial assurance referenced in this permit condition with the 2021 updated post-closure care costs, \$262,652; and
2. Attachment C: Replace the page entitled, "Post-Closure Cost Estimate" included in the Sept 2018 Permit with the enclosed page containing the updated Post-Closure Care Cost Estimate. A January 2022 revision date is shown on the enclosed page.

In closing, as required by the provisions for Class 1* modifications [35 IAC 703.281(a)(2)], the permittee will provide notification of this permit modification to all persons on the facility mailing list maintained by the Illinois EPA and the appropriate units of State and local government within 90 calendar days after the Illinois EPA approves this request in writing.

We trust that the enclosed will meet with your expectations. If you have any questions, please feel free to contact the undersigned at (312) 496-3718 or mmaxwell@wcgrp.com or permittee representative, Mr. Jim Hitzerth of BFI at (224) 970-1129 or jhitzerth@republicservices.com.

Sincerely,

Weaver Consultants Group North Central, LLC



Michael B. Maxwell, LPG
EPG Chicago Operations Manager

Illinois EPA

January 27, 2022

Cc: Mr. Jim Hitzerth, BFI (w/ encl.)

Enclosures: PA-23 Form
39(i) Certification Form
Table 1 - Updated Post-Closure Care Cost Estimate
Updated Attachment C to Permit



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

RCRA Permit Application Form (LPC-PA23)

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. One original and three (3) copies, of all permit applications must be submitted. Attach the original and appropriate number of copies of a cover letter, any necessary plans, specifications, reports, forms, (e.g., corrective action certification form), and any other certifications etc. to fully support and describe the activities or modifications being proposed. Attach sufficient information to demonstrate compliance with all applicable regulatory requirements. Applications without this form will be deemed incomplete. Please refer to the RCRA checklist and decision guide documents for further guidance. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

Note: Permit applications which are hand-delivered to the Bureau of Land, Permit Section must be delivered to 1021 North Grand Avenue East between the hours of 8:30 a.m. to 5:00 p.m., Monday through Friday (excluding State holidays).

Please type or print all information legibly.

I. Site Identification

Site # (Illinois EPA): 1418210001 USEPA ID Number: ILD 980700751
 Site Name: BFI Davis Junction Landfill - Phase I
 Physical Site Location (street, road, etc.): 8902 North Illinois Route 251
 City: Davis Junction Zip Code: 61020
 Existing RCRA Permit (if applicable): B-142R2

RECEIVED

FEB 01 2022

IEPA-BOL

PERMIT SECTION
County: Ogle

II. Owner/Operator Identification

Owner Information

Name: BFI Waste Systems of North America, LLC
 Mailing Address:
 26 West 580 Schick Rd.
 Hanover Park, IL 60133
 Contact Name: James Hitzeroth
 Phone #: 224-970-1129
 Email: JHitzeroth@republicservices.com

Operator Information

Name: BFI Waste Systems of North America, LLC
 Mailing Address:
 26 West 580 Schick Rd.
 Hanover Park, IL 60133
 Contact Name: James Hitzeroth
 Phone #: 224-970-1129
 Email: JHitzeroth@republicservices.com

A 39(i) certification must be submitted with information concerning the following persons or entities:

- the owner of the business entity applying for the permit;
- the operator of the business entity applying for the permit;
- each employee or officer of the owner or operator who signed the permit application or has managerial authority at the site; and
- any additional owner, operator, or officer or employee of the owner or operator from whom a certification is requested by the Illinois EPA, including any officer or employee who will be responsible for overseeing or implementing regulated activities governed by the permit.

III. Permit Application Identification

Application Type

- New Part B Permit
- Part B Permit Renewal
- Class 1 Modification
- Class 1* (prior approval required) Modification
- Class 2 Modification
- Class 3 Modification
- Additional information to supplement UIC Class I application Log Number
- Remedial Action Plan Permit (RAPP)
- Sig RAPP Modification
- Non Sig RAPP Modification
- Major UIC Modification
- Minor UIC Modification

This Application Involves

- Storage
- Groundwater
- Treatment
- Corrective Action
- Disposal
- UIC Class I
- Incineration
- UIC Class V

Description of This Permit Request: (Include a brief narrative description here.)

Annual update to post-closure care cost estimate required by Permit Condition IV.34.

IV. SIGNATURES

Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable. All applications shall be signed by the person in accordance with 35 IAC 702.126(a).

Please check the box of the appropriate certification.

Owner

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Alternative owner certification. For remedial action plans (RAPs) permit under Subpart H of 35 IAC 703, the owner may choose to make the following certification instead of the certification above.

Based on my knowledge of the conditions of the property described in the RAP and my inquiry of the person or persons that manage the system referenced in the operator's certification, or those persons directly responsible for gathering the information, the information submitted is, upon information and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Name (Printed or Typed): Matthew Healy

Owner Signature:  Date: 1-21-2022

Title: Vice President

RECEIVED

FEB 01 2022

IEPA-BOL
PERMIT SECTION

Operator

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Operator Name (Printed or Typed): Matthew Healy

Operator Signature: *[Signature]* Date: 1-21-2022

Title: Vice President

Notary (Required for both owner and operator signatures)

Subscribed and Sworn before me this 21st day of January 2022.

Notary Signature: *[Signature]*



My commission expires on: 24 October 2022

Notary Seal

Engineer

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Engineer Name (Print or Type): John Bossert

Engineer Signature: *[Signature]*

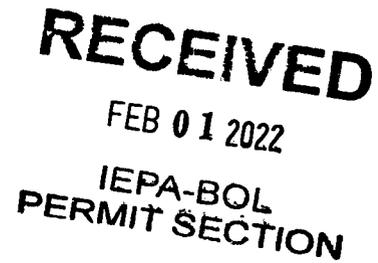
Illinois License No.: 062-050455

Expiration Date of License: Nov 30, 2023 2/28/22

Engineer Phone No. 217-787-0290

Email: jbossert@wcgrp.com

Engineer Address:
3516 Ogden Road
Springfield, IL 62711



Engineer Seal

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

**Instructions for
RCRA Permit Application Form LPC-PA23**

The following instructions are designed to aid in the completion of the RCRA Permit Application Form LPCPA23. If you have additional questions regarding the form, or the informational requirements, please contact the Illinois EPA Bureau of Land (BOL) Permit Section at 217-524-3300.

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. If an application has already been submitted to the Agency, a completed RCRA Permit Application Form must accompany all additional information that is submitted to the agency for that application. An example of "additional information" would be a response to verbal or written comments from the Agency. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

I. Site Identification

Enter all of the required information in the space provided. If you do not have an Illinois or USEPA identification number, call the Illinois EPA BOL Waste Reduction and Compliance Section at 217-785-8604 to obtain these numbers prior to completing the form.

II. Owner/Operator Identification

The terms "owner" and "operator" are defined at 35 IAC 720.110 and 702.110. If the facility has the same owner and operator, you may type in "same" under operator information. Also, if the contact person for an application is different from the owner or operator (i.e. the consultant), please indicate this in the cover letter for the application.

III. Permit Application Identification

Indicate both the type of application and the kind of waste management involved. For instance, if the application involves more than one type of waste management, check all applicable options.

IV. Signatures

The signatory requirements for permit applicants are identified at 35 IAC 702.126 and 702.151. If the facility has the same owner and operator, you may type in "same" under operator information.

Notary Public: A notary public's signature and stamp are required for both the owner and operator signatures on the form.

Engineer Certification: A professional engineer that is licensed in the State of Illinois must certify all technical information provided in a permit application. 35 IAC 703.182 describes the types of information that must be certified by a professional engineer.

RECEIVED
FEB 01 2022
IEPA-BOL
PERMIT SECTION



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

39(i) Certification for Operating a Waste Management Facility

Pursuant to 415 ILCS 5/39(i), prior to issuing any RCRA permit, or any permit for a waste storage site, sanitary landfill, waste disposal site, waste transfer station, waste treatment facility, waste incinerator, clean construction or demolition debris fill operation, or used tire storage site, the Illinois EPA must conduct an evaluation of the prospective owner's or operator's prior experience in waste management operations, clean construction or demolition debris fill operations, and tire storage site management. As part of that evaluation please complete and submit this form with your permit application.

This form may be completed online and saved locally before printing, signing and submitting it to the Illinois EPA at the address below. If the form is completed manually, please type or print clearly.

Illinois Environmental Protection Agency
Division of Land Pollution Control - #33
39(i) Certification
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

I. Applicant Information

Site Name: BFI Davis Junction Landfill - Phase I IEPA BOL No.: 1418210001

Site Address: 8902 North Illinois Route 251

City: Davis Junction State: IL Zip Code: 61020

Permit Numbers (if applicable): B-142R2

Owner

Owner Name: BFI Waste Systems of North America

Street Address: 26 West 580 Schick Rd.

City: Hanover Pk State: IL Zip: 60133

Operator

Operator Name: BFI Waste Systems of North America

Street Address: 26 West 580 Schick Rd.

City: Hanover Pk State: IL Zip: 60133

II. Officers and Employees with Site Responsibility

A. Officers: List the name and title of all officers of the owner or operator that will have personal involvement or active participation in the operation or management of the site or facility for which the application is submitted.

Name	Title
Matthew Healy	Vice President

B. Employees: List the name and title of each employee of the owner or operator that will have personal involvement or active participation in the overall operation or management of the site or facility for which the application is submitted (e.g. site managers, site engineers, and other persons who direct or control the overall day-to-day management of the operation, but not persons whose duties are exclusively limited to equipment operation, labor, or similar non-managerial functions).

Name	Title
James Hitzerth	Environmental Manager

RECEIVED

FEB 01 2022

IEPA-BOL
PERMIT SECTION

III. Owner, Operator, Officer, and Employee Information

A. Prior Conduct Identification

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified under Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and include a copy of each final administrative or judicial determination that required an affirmative response. If the information for each owner, operator, officer, and employee has not changed since the applicant's last submission of a 39(i) certification, the applicant can skip to Section III(C), below.

- 1) Has there been a finding that any person named in Section II violated federal, State, or local laws, regulations, standards, or ordinances in the operation of one or more waste management facilities or sites, clean construction or demolition debris fill operation facilities or sites, or tire storage sites? Yes
 No
- 2) Has any person named in Section II ever been convicted in this or another State of any crime which is a felony under the laws of this State, or convicted of a felony in a federal court; or convicted in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition? Yes
 No
- 3) Has there been a finding against any person named in Section II of gross carelessness or incompetence in handling, storing, processing, transporting or disposing of waste, clean construction or demolition debris, or used or waste tires, or a finding of gross carelessness or incompetence in using clean construction or demolition debris as fill? Yes
 No

B. Pending Proceedings

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified in Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and provide information identified in Attachment A regarding the pending proceeding.

- 1. Is there any proceeding currently pending against any person named in Section II that could result in a conviction or finding described in subsection A, above? Yes
 No
- 2. Is there any proceeding currently pending against any person named in Section II that could result in the reversal of a conviction or finding described in subsection A, above? Yes
 No

C. Prior Application Information

If (i) the applicant has previously submitted the Attachments required pursuant to subsections A and B above and (ii) the Attachments previously submitted are still complete, true, and correct, then the applicant does not need to include Attachments with this submission if the following box is checked:

By checking this box, I affirm that the Attachments previously submitted are still complete, true, and correct and wish to incorporate them into this Certification.

If the above box is checked, identify the application that contains the previously submitted Attachments that are complete, true, and correct.

RECEIVED
FEB 01 2022
IEPA-BOL
PERMIT SECTION

Authorization for Release of Information

This Certification must be signed by an officer of the applicant.

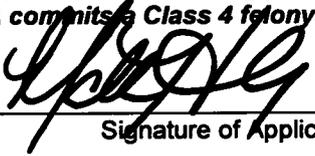
The undersigned authorizes any representative of the Illinois Environmental Protection Agency bearing this release to obtain any information from the Illinois State Police pertaining to the criminal records of the applicant and hereby directs the Illinois State Police to release such information upon request of the bearer. The undersigned authorizes a review of and full disclosure of all records, or any part thereof, concerning the applicant's criminal records by and to a duly authorized agent of the Illinois Environmental Protection Agency, whether the records are of public, private, or confidential nature. The intent of this authorization is to give consent for full and complete disclosure of the applicant's criminal records.

The undersigned fully understands that any information which is developed directly or indirectly, in whole or in part, as a result of this authorization will be considered in determining whether a permit shall be issued by the Illinois Environmental Protection Agency under the Environmental Protection Act [415 ILCS 5]. The undersigned further agrees to release the Illinois State Police and the Illinois Environmental Protection Agency, its agents and designees under this release, from any and all liability which may be incurred as a result of compliance with this authorization for release of information.

Certification Statements

I certify under penalty of law that the information submitted, including information on any Attachments submitted as part of or incorporated into this Certification, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))



Signature of Applicant Officer

1-21-2022

Date

Matthew Healy

Printed Name

Vice President

Title

RECEIVED
FEB 01 2022
IEPA-BOL
PERMIT SECTION

Attachment A (1 of 1)

This Attachment must be completed for each owner or operator, and for each officer or employee identified in Section II, for whom one or more affirmative responses were included in Section III.

Name: _____ Title: _____

Status: Owner Operator Officer Employee (check all that apply)

A. Prior Findings or Convictions

- 1. Has there been a finding that the person named above violated federal, State, or local laws, regulations, standards, or ordinances in the operation of one or more waste management facilities or sites, clean construction or demolition debris fill operation facilities or sites, or tire storage sites? Yes
 No
- 2. Has the person named above ever been convicted in this or another State of any crime which is a felony under the laws of this State, or convicted of a felony in a federal court; or convicted in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition? Yes
 No
- 3. Has there been a finding against the person named above of gross carelessness or incompetence in handling, storing, processing, transporting or disposing of waste, clean construction or demolition debris, or used or waste tires, or a finding of gross carelessness or incompetence in using clean construction or demolition debris as fill? Yes
 No

If the answer to any of the above questions is Yes, attach a copy of each final administrative or judicial determination that required an affirmative response.

B. Pending Proceedings

Is there any proceeding currently pending that could result in one of the following:

- 1. A conviction or finding described in subsection A, above? Yes
 No
- 2. The reversal of a conviction or finding described in subsection A, above? Yes
 No

If the answer to any of the above questions is Yes, please provide information about the pending proceeding, including the parties involved, the adjudicating body, the docket number, the nature of the proceeding, and the status. The box below will expand as needed. Attach additional sheets if necessary.

RECEIVED
FEB 01 2022
IEPA-BOL
PERMIT SECTION

Table 1: Cost Estimate for Post-Closure Care - 2021 Update
BFI - Davis Junction Landfill
Phase I (RCRA) Unit

POST-CLOSURE COSTS									Notes
Item	Units	Quantity Incl. in 2020 Class 1* Mod (Per Year)	Unit Cost Incl. in 2020 Class 1* Mod	Total Cost Incl. in 2020 Class 1* Mod	Proposed Units (per year)	Proposed Revised Unit Cost (2021 update)	Proposed Estimate (2021 Update)		Post-Closure Care Period ends no earlier than December 5, 2024. On September 26, 2018, an updated post-closure care cost estimate was approved by Illinois EPA in the Permit Renewal Log No. B-142R2 (\$484,460) and an annual updated was submitted to Illinois EPA in August 2019 (\$408,021) and August 2020 (\$333,624). No formal reply has been received from Illinois EPA to either of the above submittals. This 2021 update includes the inflation factor for 2021 (1.012); and a reduction of one year in post-closure care period from 4 to 3 years.
1	Site Inspection	Insp./Yr	4	\$769.91	\$3,080	4	\$779.15	\$3,117	Unit cost included in 2020 Class 1* Permit Mod. updated for inflation based on above factor.
2	Resurveying Cover Elevation Reference Points	Annual	0.2	\$343.16	\$69	0.2	\$347.28	\$69	Resurveying conducted in conjunction with site inspection. Unit cost included in 2020 Class 1* Permit Mod. updated for inflation based on above factor.
3	Mowing	Acres	25	\$59.39	\$1,485	25	\$60.10	\$1,503	Cost included in 2020 Class 1* Permit Mod. updated for inflation based on above factor.
4	Vegetation Repair (1/2 foot cover) (Fertilizer, Mulch & Seed)	Acres	0.25	\$7,797	\$1,949	0.25	\$7,891	\$1,973	No more than 0.25 acre of vegetative cover expected to require replacement per year. Cost included in 2020 Class 1* Permit Mod. updated for inflation based on above factor.
5	Fence Repair and Maintenance	Annual	1	\$696	\$696	1	\$694	\$694	Cost included in 2020 Class 1* Permit Mod. updated for inflation based on above factor.
6	Certification of Post-Closure Care	Year	1	\$459	\$459	1	\$465	\$465	Cost included in 2020 Class 1* Permit Mod. updated for inflation based on above factor.
Subtotal for Post-Closure Inspection				\$7,728				\$7,820	
7	Groundwater Sample Collections (14 wells annually)	lump sum	lump sum	\$977	\$977	lump sum	\$989	\$989	Cost included in 2020 Class 1* Permit Mod. updated for inflation based on above factor.
8	Laboratory Analysis (Revised List) - 14 wells annual	Wells	14	\$551	\$7,710	14	\$558	\$7,807	Analysis of future groundwater samples based on new parameter list approved with 2014 Class 2 Permit Mod. Cost included in 2020 Class 1* Permit Mod. updated for inflation based on above factor.
9	Groundwater Reporting - Annual basis	Events	lump sum	\$1,396	\$1,396	lump sum	\$1,413	\$1,413	Cost included in 2020 Class 1* Permit Mod. updated for inflation based on above factor.
Subtotal for Groundwater Monitoring				\$10,083				\$10,208	
10	Leachate Removal, Transportation & Disposal	gallons/year	87,525	\$0.1127	\$9,863	103,037	\$0.1141	\$11,752	The quantity of leachate is based on the average quantity of Phase I leachate manifested and hauled from the site during 2017 (93,000 gal.), 2018 (100,000), 2019 (107,000), and 2020 (112,146). The leachate has been delisted as a hazardous waste. The proposed revised unit cost has been adjusted for inflation based on the factor listed above.
11	Leachate Analysis (in accordance with Illinois Pollution Control Board Order approving Adjusted Standard Waste Delisting)	Year	2	\$1,286	\$2,571	2	\$1,301	\$2,603	Sampling of the Phase I leachate is to be conducted on a semi-annual basis for the TCLP Parameters in 35 IAC 721.24(b) and delisting constituents. Cost included in 2020 Class 1* Permit Mod. for leachate analysis updated for inflation based on the above factor.
12	Maintenance of Leachate Collection/Extraction System (includes pump maintenance/replacement, line cleaning, and quarterly leachate head level measurements)	lump sum	1	\$42,365	\$42,365	1	\$42,873	\$42,873	Lump sum estimate is based on costs listed in operation and maintenance agreement. Cost included in 2020 Class 1* Permit Mod. updated for inflation based on the above factor.
Subtotal for Leachate Monitoring				\$54,800				\$57,228	
Total Annual Cost				\$72,611				\$75,256	
10% Contingency (on annual costs)				\$7,261				\$7,526	Included pursuant to comment from Illinois EPA received 8/14/2012. Costs included in 2020 Class 1* Permit Mod. updated for inflation based on above inflation factor.
Total Annual Cost (w/ Contingency)				\$79,872				\$82,782	
Remaining Post-Closure Care Period				4.0				3.0	The post-closure period ends no earlier than December 5, 2024. As of 12/5/2021, 3.0 years remain.
Monitoring Well Decommissioning/ Abandonment (one time cost only)				\$12,851				\$13,005	Cost included in 2020 Class 1* Permit Mod. updated for inflation based on above factor.
10% Contingency (on one time costs)				\$1,285				\$1,301	Included pursuant to comment from Illinois EPA received 9/20/2013. Costs included in 2020 Class 1* Permit Mod. updated for inflation based on above inflation factor.
TOTAL POST-CLOSURE CARE COSTS				\$333,624				\$262,652	

R 000908

Revised January 2022

Post-Closure Cost Estimate

The approved Post-Closure Cost Estimate is \$262,649, (in 2021 dollars). This estimate must be used when establishing financial assurance in accordance with 35 Ill. Adm. Code 724, Subpart G. The break down of this estimate is as follows:

1. Estimate of post-closure care costs on an annual basis:

Post-closure inspections	\$7,820
Groundwater monitoring	\$10,208
<u>Leachate Management</u>	<u>\$57,228</u>
Total	\$75,256
<u>10% Contingency:</u>	<u>\$7,526</u>
Total Annual Cost (w/ Contingency):	\$82,782

One-Time Costs:

Well Abandonment:	\$13,005
<u>10% Contingency, One-Time Costs:</u>	<u>\$1,301</u>
Total One-Time Costs:	\$14,306

- Facility has 3.0 years of remaining post-closure care.
- Total post-closure care cost estimate =
 $(\$82,782 \text{ per year}) \times (3.0 \text{ years}) + \$14,306 = \$262,652$

Subject Submittal
Class 1* Permit Modification
B142R2 M-7

B142R2 M-7

B-142R2-M-7
18210001



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

Sustainability in Action

December 1, 2022

Manager of Permits
Illinois Environmental Protection Agency
Permit Section, Bureau of Land -- #33
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Davis Junction Landfill – Phase I
ILD 980700751
Permit No. B-142R2
IEPA Site No.: 1418210001

To Whom It May Concern,

Enclosed, please find one original and three copies of the above referenced permit modification that being submitted by permittee, BFI Waste Systems of North America, LLC.

If you have any questions, feel free to contact me at (224) 970-1129 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

A handwritten signature in black ink, appearing to read "James Hitzeroth", written over a horizontal line.

James Hitzeroth

RECEIVED
DEC 05 2022
IEPA-BOL
PERMIT SECTION



November 14, 2022

Permit Manager
Permit Section, Division of Land Pollution Control
Illinois Environmental Protection Agency
Bureau of Land #33
1021 N. Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Class 1* Permit Modification
1418210001 – Ogle Co.
ILD 980700751
BFI Davis Junction Landfill – Phase I RCRA Unit
Log No. B-142R2
Project No. 0120-049-01-27

RECEIVED
DEC 05 2022
IEPA-BOL
PERMIT SECTION

Dear Permit Manager:

On behalf of our client, permittee BFI Waste Systems of North America, LLC., (BFI), Weaver Consultants Group North Central, LLC is providing the following updated Cost Estimate for Post-Closure Care for the above referenced facility. Consistent with historical submittals, this information is being submitted as a Class 1* Permit Modification. The RCRA Permit Application Form (LPC-PA23), as well as the 39(i) Certification Form are enclosed.

The most recent Post-Closure Care Cost Estimate approved by the Illinois Environmental Protection Agency (EPA) was included with the Permit Renewal issued by Illinois EPA on September 26, 2018 (Log No. B-142R2). The costs in the above September 2018 Permit were presented in 2018 dollars.

Pursuant to Permit Condition IV.34, the post-closure care cost estimate is to be updated on an annual basis. An updated Post-Closure Care Cost Estimate was submitted to the Illinois EPA in a Class 1* Permit Modification dated August 27, 2019 and received by the Illinois EPA on September 4, 2019 (Log No. B-142R2-M-2). The 2019 updated Post-Closure Care Cost Estimate was presented in 2019 dollars. An additional updated cost estimate was submitted to Illinois EPA dated August 18, 2020 and received by the Illinois EPA on August 28, 2020 (Log No. B-142R2-M-4), which was presented in 2020 dollars. Another updated post-closure care cost estimate was submitted to Illinois EPA dated January 27, 2022 and received by the Illinois EPA on February 1, 2022 (log No. B142R2-M-6), which presented the post-closure

Illinois EPA

November 14, 2022

care cost estimate in 2021 dollars. To date, BFI has not received a response from Illinois EPA to any of the above pending Class 1* Permit Modifications. The enclosed updated Post-Closure Care Cost Estimate updates the most recently submitted Post-Closure Care Cost Estimate to 2022 dollars.

The portions of the Post-Closure Care Cost Estimate which are proposed to be modified herein are highlighted in yellow on the attached **Table 1**, which includes the following:

- Annual inflation increase to the costs presented within the 2021 Updated Class 1* Permit Modification. The inflation factor to adjust from 2021 to 2022 dollars was obtained from communications with Illinois EPA in April 2022. According to Illinois EPA, this inflation adjustment is 4.13% (i.e., an increase by a factor of 1.0413); and
- Removal of one year from the post-closure care period to account for post-closure activities conducted since submittal of the prior 2021 update.

As shown on the enclosed **Table 1**, the total post-closure care costs are proposed to be modified from \$262,652 to \$186,556.

The specific portions of the Permit being modified are as follows:

1. Permit Condition I.G: Replace the quantity for financial assurance referenced in this permit condition with the 2022 updated post-closure care costs, \$186,556; and
2. Attachment C: Replace the page entitled, "Post-Closure Cost Estimate" included in the Sept 2018 Permit with the enclosed page containing the updated Post-Closure Care Cost Estimate. A November 2022 revision date is shown on the enclosed page.

In closing, as required by the provisions for Class 1* modifications [35 IAC 703.281(a)(2)], the permittee will provide notification of this permit modification to all persons on the facility mailing list maintained by the Illinois EPA and the appropriate units of State and local government within 90 calendar days after the Illinois EPA approves this permit modification request in writing.

Illinois EPA

November 14, 2022

We trust that the enclosed will meet with your expectations. If you have any questions, please feel free to contact the undersigned at (312) 496-3718 or mmaxwell@wcgrp.com or permittee representative, Mr. Jim Hitzeroth of BFI at (224) 970-1129 or jhitzeroth@republicservices.com.

Sincerely,

Weaver Consultants Group North Central, LLC



Michael B. Maxwell, LPG
EPG Chicago Operations Manager

Cc: Mr. Jim Hitzeroth, BFI (w/ encl.)

Enclosures: PA-23 Form
39(i) Certification Form
Table 1 - Updated Post-Closure Care Cost Estimate
Updated Attachment C to Permit



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

RCRA Permit Application Form (LPC-PA23)

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. One original and three (3) copies, of all permit applications must be submitted. Attach the original and appropriate number of copies of a cover letter, any necessary plans, specifications, reports, forms, (e.g., corrective action certification form), and any other certifications etc. to fully support and describe the activities or modifications being proposed. Attach sufficient information to demonstrate compliance with all applicable regulatory requirements. Applications without this form will be deemed incomplete. Please refer to the RCRA checklist and decision guide documents for further guidance. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

Note: Permit applications which are hand-delivered to the Bureau of Land, Permit Section must be delivered to 1021 North Grand Avenue East between the hours of 8:30 a.m. to 5:00 p.m., Monday through Friday (excluding State holidays).

Please type or print all information legibly.

I. Site Identification

Site # (Illinois EPA): 1418210001 USEPA ID Number: ILD 980700751

Site Name: BFI Davis Junction Landfill - Phase I

Physical Site Location (street, road, etc.): 8902 North Illinois Route 251

City: Davis Junction Zip Code: 61020 County: Ogle

Existing RCRA Permit (if applicable): B-142R2

II. Owner/Operator Identification

Owner Information

Name: BFI Waste Systems of North America, LLC

Mailing Address:

26 West 580 Schick Rd.
Hanover Park, IL 60133

Contact Name: James Hitzeroth

Phone #: 224-970-1129

Email: JHitzeroth@republicservices.com

Operator Information

Name: BFI Waste Systems of North America, LLC

Mailing Address:

26 West 580 Schick Rd.
Hanover Park, IL 60133

RECEIVED

DEC 05 2022

Contact Name: James Hitzeroth

Phone #: 224-970-1129

Email: JHitzeroth@republicservices.com

A 39(i) certification must be submitted with information concerning the following persons or entities:

- the owner of the business entity applying for the permit;
- the operator of the business entity applying for the permit;
- each employee or officer of the owner or operator who signed the permit application or has managerial authority at the site; and
- any additional owner, operator, or officer or employee of the owner or operator from whom a certification is requested by the Illinois EPA, including any officer or employee who will be responsible for overseeing or implementing regulated activities governed by the permit.

III. Permit Application Identification

Application Type

- New Part B Permit
- Part B Permit Renewal
- Class 1 Modification
- Class 1* (prior approval required) Modification
- Class 2 Modification
- Class 3 Modification
- Additional information to supplement UIC Class I application Log Number
- Remedial Action Plan Permit (RAPP)
- Sig RAPP Modification
- Non Sig RAPP Modification
- Major UIC Modification
- Minor UIC Modification

This Application Involves

- Storage
- Groundwater
- Treatment
- Corrective Action
- Disposal
- UIC Class I
- Incineration
- UIC Class V

Description of This Permit Request: (Include a brief narrative description here.)

Annual update to post-closure care cost estimate required by Permit Condition IV.34.

IV. SIGNATURES

Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable. All applications shall be signed by the person in accordance with 35 IAC 702.126(a).

Please check the box of the appropriate certification.

Owner

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Alternative owner certification. For remedial action plans (RAPs) permit under Subpart H of 35 IAC 703, the owner may choose to make the following certification instead of the certification above.

Based on my knowledge of the conditions of the property described in the RAP and my inquiry of the person or persons that manage the system referenced in the operator's certification, or those persons directly responsible for gathering the information, the information submitted is, upon information and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Name (Printed or Typed): Matthew Healy

Owner Signature:  Date: 11-28-2022
Title: Vice President

RECEIVED
DEC 05 2022
IEPA-BOL
PERMIT SECTION

Operator

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Operator Name (Printed or Typed): Matthew Healy

Operator Signature: [Signature] Date: 11/14/2022
Title: Vice President

Notary (Required for both owner and operator signatures)

Subscribed and Sworn before me this 14th day of November 2022

Notary Signature: [Signature]



My commission expires on: 24 October 2026

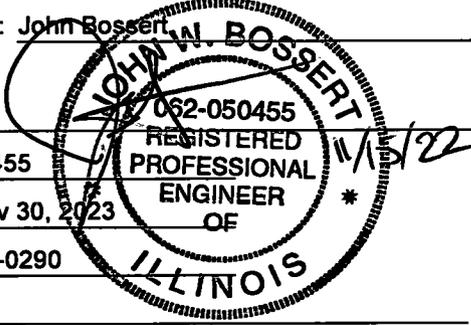
Notary Seal

Engineer

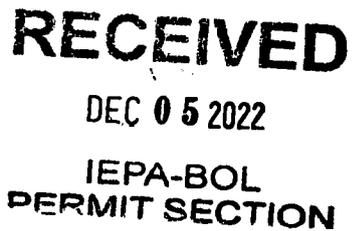
I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Engineer Name (Print or Type): John Bossert

Engineer Signature: [Signature]
Illinois License No.: 062-050455
Expiration Date of License: Nov 30, 2023
Engineer Phone No. 217-787-0290
Email: jbossert@wcgrp.com



Engineer Address:
3516 Ogden Road
Springfield, IL 62711



Engineer Seal

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

**Instructions for
RCRA Permit Application Form LPC-PA23**

The following instructions are designed to aid in the completion of the RCRA Permit Application Form LPCPA23. If you have additional questions regarding the form, or the informational requirements, please contact the Illinois EPA Bureau of Land (BOL) Permit Section at 217-524-3300.

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. If an application has already been submitted to the Agency, a completed RCRA Permit Application Form must accompany all additional information that is submitted to the agency for that application. An example of "additional information" would be a response to verbal or written comments from the Agency. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

I. Site Identification

Enter all of the required information in the space provided. If you do not have an Illinois or USEPA identification number, call the Illinois EPA BOL Waste Reduction and Compliance Section at 217-785-8604 to obtain these numbers prior to completing the form.

II. Owner/Operator Identification

The terms "owner" and "operator" are defined at 35 IAC 720.110 and 702.110. If the facility has the same owner and operator, you may type in "same" under operator information. Also, if the contact person for an application is different from the owner or operator (i.e. the consultant), please indicate this in the cover letter for the application.

III. Permit Application Identification

Indicate both the type of application and the kind of waste management involved. For instance, if the application involves more than one type of waste management, check all applicable options.

IV. Signatures

The signatory requirements for permit applicants are identified at 35 IAC 702.126 and 702.151. If the facility has the same owner and operator, you may type in "same" under operator information.

Notary Public: A notary public's signature and stamp are required for both the owner and operator signatures on the form.

Engineer Certification: A professional engineer that is licensed in the State of Illinois must certify all technical information provided in a permit application. 35 IAC 703.182 describes the types of information that must be certified by a professional engineer.

RECEIVED

DEC 05 2022

IEPA-BOL
PERMIT SECTION



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

39(i) Certification for Operating a Waste Management Facility

Pursuant to 415 ILCS 5/39(i), prior to issuing any RCRA permit, or any permit for a waste storage site, sanitary landfill, waste disposal site, waste transfer station, waste treatment facility, waste incinerator, clean construction or demolition debris fill operation, or used tire storage site, the Illinois EPA must conduct an evaluation of the prospective owner's or operator's prior experience in waste management operations, clean construction or demolition debris fill operations, and tire storage site management. As part of that evaluation please complete and submit this form with your permit application.

This form may be completed online and saved locally before printing, signing and submitting it to the Illinois EPA at the address below. If the form is completed manually, please type or print clearly.

Illinois Environmental Protection Agency
Division of Land Pollution Control - #33
39(i) Certification
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

I. Applicant Information

Site Name: BFI Davis Junction Landfill - Phase I IEPA BOL No.: 1418210001

Site Address: 8902 North Illinois Route 251

City: Davis Junction State: IL Zip Code: 61020

Permit Numbers (if applicable): B-142R2

Owner

Owner Name: BFI Waste Systems of North America

Street Address: 26 West 580 Schick Rd.

City: Hanover Pk State: IL Zip: 60133

Operator

Operator Name: BFI Waste Systems of North America

Street Address: 26 West 580 Schick Rd.

City: Hanover Pk State: IL Zip: 60133

II. Officers and Employees with Site Responsibility

A. Officers: List the name and title of all officers of the owner or operator that will have personal involvement or active participation in the operation or management of the site or facility for which the application is submitted.

Name	Title
Matthew Healy	Vice President

B. Employees: List the name and title of each employee of the owner or operator that will have personal involvement or active participation in the overall operation or management of the site or facility for which the application is submitted (e.g. site managers, site engineers, and other persons who direct or control the overall day-to-day management of the operation, but not persons whose duties are exclusively limited to equipment operation, labor, or similar non-managerial functions).

Name	Title
James Hitzeroth	Environmental Manager

RECEIVED

DEC 05 2022

IEPA-BOL
PERMIT SECTION

III. Owner, Operator, Officer, and Employee Information

A. Prior Conduct Identification

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified under Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and include a copy of each final administrative or judicial determination that required an affirmative response. If the information for each owner, operator, officer, and employee has not changed since the applicant's last submission of a 39(i) certification, the applicant can skip to Section III(C), below.

- 1) Has there been a finding that any person named in Section II violated federal, State, or local laws, regulations, standards, or ordinances in the operation of one or more waste management facilities or sites, clean construction or demolition debris fill operation facilities or sites, or tire storage sites? Yes
 No
- 2) Has any person named in Section II ever been convicted in this or another State of any crime which is a felony under the laws of this State, or convicted of a felony in a federal court; or convicted in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition? Yes
 No
- 3) Has there been a finding against any person named in Section II of gross carelessness or incompetence in handling, storing, processing, transporting or disposing of waste, clean construction or demolition debris, or used or waste tires, or a finding of gross carelessness or incompetence in using clean construction or demolition debris as fill? Yes
 No

B. Pending Proceedings

The applicant must answer each of the following questions for every owner or operator, and for any officer or employee identified in Section II. If the answer to any of the following questions is affirmative, the applicant must complete an Attachment A for each person for whom the answer is affirmative and provide information identified in Attachment A regarding the pending proceeding.

- 1. Is there any proceeding currently pending against any person named in Section II that could result in a conviction or finding described in subsection A, above? Yes
 No
- 2. Is there any proceeding currently pending against any person named in Section II that could result in the reversal of a conviction or finding described in subsection A, above? Yes
 No

C. Prior Application Information

If (i) the applicant has previously submitted the Attachments required pursuant to subsections A and B above and (ii) the Attachments previously submitted are still complete, true, and correct, then the applicant does not need to include Attachments with this submission if the following box is checked:

By checking this box, I affirm that the Attachments previously submitted are still complete, true, and correct and wish to incorporate them into this Certification.

If the above box is checked, identify the application that contains the previously submitted Attachments that are complete, true, and correct.

RECEIVED
DEC 05 2022
IEPA-BOL
PERMIT SECTION

Authorization for Release of Information

This Certification must be signed by an officer of the applicant.

The undersigned authorizes any representative of the Illinois Environmental Protection Agency bearing this release to obtain any information from the Illinois State Police pertaining to the criminal records of the applicant and hereby directs the Illinois State Police to release such information upon request of the bearer. The undersigned authorizes a review of and full disclosure of all records, or any part thereof, concerning the applicant's criminal records by and to a duly authorized agent of the Illinois Environmental Protection Agency, whether the records are of public, private, or confidential nature. The intent of this authorization is to give consent for full and complete disclosure of the applicant's criminal records.

The undersigned fully understands that any information which is developed directly or indirectly, in whole or in part, as a result of this authorization will be considered in determining whether a permit shall be issued by the Illinois Environmental Protection Agency under the Environmental Protection Act [415 ILCS 5]. The undersigned further agrees to release the Illinois State Police and the Illinois Environmental Protection Agency, its agents and designees under this release, from any and all liability which may be incurred as a result of compliance with this authorization for release of information.

Certification Statements

I certify under penalty of law that the information submitted, including information on any Attachments submitted as part of or incorporated into this Certification, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))



Signature of Applicant Officer

11/14/2022

Date

Matthew Healy

Printed Name

Vice President

Title

RECEIVED
DEC 05 2022
IEPA-BOL
PERMIT SECTION

Attachment A (1 of 1)

This Attachment must be completed for each owner or operator, and for each officer or employee identified in Section II, for whom one or more affirmative responses were included in Section III.

Name: _____ Title: _____

Status: Owner Operator Officer Employee (check all that apply)

A. Prior Findings or Convictions

- 1. Has there been a finding that the person named above violated federal, State, or local laws, regulations, standards, or ordinances in the operation of one or more waste management facilities or sites, clean construction or demolition debris fill operation facilities or sites, or tire storage sites? Yes
 No
- 2. Has the person named above ever been convicted in this or another State of any crime which is a felony under the laws of this State, or convicted of a felony in a federal court; or convicted in this or another state or federal court of any of the following crimes: forgery, official misconduct, bribery, perjury, or knowingly submitting false information under any environmental law, regulation, or permit term or condition? Yes
 No
- 3. Has there been a finding against the person named above of gross carelessness or incompetence in handling, storing, processing, transporting or disposing of waste, clean construction or demolition debris, or used or waste tires, or a finding of gross carelessness or incompetence in using clean construction or demolition debris as fill? Yes
 No

If the answer to any of the above questions is Yes, attach a copy of each final administrative or judicial determination that required an affirmative response.

B. Pending Proceedings

Is there any proceeding currently pending that could result in one of the following:

- 1. A conviction or finding described in subsection A, above? Yes
 No
- 2. The reversal of a conviction or finding described in subsection A, above? Yes
 No

If the answer to any of the above questions is Yes, please provide information about the pending proceeding, including the parties involved, the adjudicating body, the docket number, the nature of the proceeding, and the status. The box below will expand as needed. Attach additional sheets if necessary.

RECEIVED

DEC 05 2022

IEPA-BOL
PERMIT SECTION

Table 1: Cost Estimate for Post-Closure Care - 2022 Update
BFI - Davis Junction Landfill
Phase I (RCRA) Unit

POST-CLOSURE COSTS									Notes
Item	Units	Quantity Incl. in 2021 Updated Class 1* Mod (Per Year)	Unit Cost Incl. in 2021 Updated Class 1* Mod	Total Cost Incl. in 2021 Updated Class 1* Mod	Proposed Units (per year)	Proposed Revised Unit Cost (2022 update)	Proposed Estimate (2022 Update)		
1	Site Inspection	Insp.Yr	4	\$779.15	\$3,117	4	\$811.33	\$3,245	Post-Closure Care Period ends no earlier than December 5, 2024. On September 26, 2018, an updated post-closure care cost estimate was approved by Illinois EPA in the Permit Renewal Log No. B-142R2 (\$484,460) and an annual updated was submitted to Illinois EPA in August 2019 (\$408,021), August 2020 (\$333,624), and January 2022 (\$262,652) (considered 2021 update). No formal reply has been received from Illinois EPA to any of the above submittals. This 2022 update includes the inflation factor for 2022 (1.0413); and a reduction of one year in post-closure care period from 3 to 2 years.
2	Resurveying Cover Elevation Reference Points	Annual	0.2	\$347.28	\$69	0.2	\$361.62	\$72	Resurveying conducted in conjunction with site inspection. Unit cost included in 2021 Updated Class 1* Permit Mod. updated for inflation based on above factor.
3	Mowing	Acres	25	\$60.10	\$1,503	25	\$62.58	\$1,565	Cost included in 2021 Updated Class 1* Permit Mod. updated for inflation based on above factor.
4	Vegetation Repair (1/2 foot cover) (Fertilizer, Mulch & Seed)	Acres	0.25	\$7,891	\$1,973	0.25	\$8,217	\$2,054	No more than 0.25 acre of vegetative cover expected to require replacement per year. Cost included in 2021 Updated Class 1* Permit Mod. updated for inflation based on above factor
5	Fence Repair and Maintenance	Annual	1	\$694	\$694	1	\$723	\$723	Cost included in 2021 Updated Class 1* Permit Mod. updated for inflation based on above factor.
6	Certification of Post-Closure Care	Year	1	\$465	\$465	1	\$484	\$484	Cost included in 2021 Updated Class 1* Permit Mod. updated for inflation based on above factor.
Subtotal for Post-Closure Inspection				\$7,820				\$8,143	
7	Groundwater Sample Collections (14 wells annually)	lump sum	lump sum	\$989	\$989	lump sum	\$1,030	\$1,030	Cost included in 2021 Updated Class 1* Permit Mod. updated for inflation based on above factor.
8	Laboratory Analysis (Revised List) - 14 wells annual	Wells	14	\$558	\$7,807	14	\$581	\$8,135	Analysis of future groundwater samples based on parameter list approved with 2014 Class 2 Permit Mod. Cost included in 2021 Updated Class 1* Permit Mod. updated for inflation based on above factor.
9	Groundwater Reporting - Annual basis	Events	lump sum	\$1,413	\$1,413	lump sum	\$1,471	\$1,471	Cost included in 2021 Updated Class 1* Permit Mod. updated for inflation based on above factor.
Subtotal for Groundwater Monitoring				\$10,208				\$10,636	
10	Leachate Removal, Transportation & Disposal	gallons/year	87,525	\$0.1141	\$11,752	100,112	\$0.1188	\$11,895	The quantity of leachate is based on the average quantity of Phase I leachate manifested and hauled from the site during 2018 (100,000 gal.), 2019 (107,000 gal.), 2020 (112,146 gal.), and 2021 (81,300 gal.). The leachate has been delisted as a hazardous waste. The proposed revised unit cost has been adjusted for inflation based on the factor listed above.
11	Leachate Analysis (in accordance with Illinois Pollution Control Board Order approving Adjusted Standard Waste Delisting)	Year	2	\$1,301	\$2,603	2	\$1,355	\$2,709	Sampling of the Phase I leachate is to be conducted on a semi-annual basis for the TCLP Parameters in 35 IAC 721.24(b) and delisting constituents. Cost included in 2021 Updated Class 1* Permit Mod. for leachate analysis updated for inflation based on the above factor.
12	Maintenance of Leachate Collection/Extraction System (includes pump maintenance/replacement, line cleaning, and quarterly leachate head level measurements)	lump sum	1	\$42,873	\$42,873	1	\$44,644	\$44,644	Lump sum estimate is based on costs listed in operation and maintenance agreement. Cost included in 2021 Updated Class 1* Permit Mod. updated for inflation based on the above factor.
Subtotal for Leachate Monitoring				\$ 67,228				\$59,248	
Total Annual Cost				\$ 75,256				\$78,027	
10% Contingency (on annual costs)				\$ 7,526				\$7,803	Line Item included pursuant to comment from Illinois EPA received 8/14/2012. Costs included in 2021 Updated Class 1* Permit Mod. updated for inflation based on above inflation factor.
Total Annual Cost (w/ Contingency)				\$ 82,782				\$85,830	
Remaining Post-Closure Care Period				3.0				2.0	The post-closure period ends no earlier than December 5, 2024. As of 12/5/2022, 2.0 years will remain.
Monitoring Well Decommissioning/ Abandonment (one-time cost only)				\$ 13,005				\$13,542	Cost included in 2021 Updated Class 1* Permit Mod. updated for inflation based on above factor.
10% Contingency (on one-time costs)				\$ 1,301				\$1,354	Included pursuant to comment from Illinois EPA received 9/20/2013. Costs included in 2021 Updated Class 1* Permit Mod. updated for inflation based on above inflation factor.
TOTAL POST-CLOSURE CARE COSTS				\$ 262,652				\$186,656	

R 000923

Revised November 2022

Post-Closure Cost Estimate

The approved Post-Closure Cost Estimate is \$186,556, (in 2022 dollars). This estimate must be used when establishing financial assurance in accordance with 35 Ill. Adm. Code 724, Subpart G. The break down of this estimate is as follows:

1. Estimate of post-closure care costs on an annual basis:

Post-closure inspections	\$8,143
Groundwater monitoring	\$10,636
<u>Leachate Management</u>	<u>\$59,248</u>
Total	\$78,027
<u>10% Contingency:</u>	<u>\$7,803</u>
Total Annual Cost (w/ Contingency):	\$85,830

One-Time Costs:

Well Abandonment:	\$13,542
<u>10% Contingency, One-Time Costs:</u>	<u>\$1,354</u>
Total One-Time Costs:	\$14,896

2. Facility has 2.0 years of remaining post-closure care.
3. Total post-closure care cost estimate =
 $(\$85,830 \text{ per year}) \times (2.0 \text{ years}) + \$14,896 = \$186,556$

SITE: 1418210001
PROG: LPARM035
LIST: LPARP035

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF LAND
2002 ANNUAL REPORT
COMPREHENSIVE REPORT

PAGE: 1
TIME: 07:45:24
DATE: 11/01/05

<-----SECTION 1 HAZARDOUS WASTE ACTIVITIES----->

USEPA-ID	PAGE NBR	FORM CODE	IEPA-ID	GENERATOR STATUS	NOT LQG NEXT YR	IMPORTER HAZARD	MIXED WASTE	HAULER HAZARD	TSD HAZ	RECYCLER HAZARD	BURNER EXEMPT	FURNACE EXEMPT	INJECTION CONTROL
ILD980700751	00001	IC	1418210001		1								

<-----SECTION 2 UNIVERSAL WASTE ACTIVITIES-----> <-----SECTION 3 USED OIL ACTIVITIES----->

BATTERIES GEN	PESTICIDES GEN	THERMOSTATS GEN	FLUOR-BULBS GEN	DESTINATION ACCUM	FACILITY	HAULER	TRANSFER FACILITY	PROCESSOR	RE-REFINER	OFF-SPEC BURNER	MARKETER OFF-SPEC	MARKETER MET-SPEC

<-----SECTION 4-----> <-----SECTION 5 TYPES-----> SECTION 6

<-----NAICS CODES----->				SITE	<---OWNER--->		<---OPERATOR--->		COMMENT	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE
1ST	2ND	3RD	4TH	TYPE	TYPE	DATE	TYPE	DATE				
562211				1	1	/ /	1	/ /	Y		030520	

<-----SECTION 1 WASTE DESCRIPTION----->

USEPA-ID	PAGE NBR	FORM CODE	IEPA-ID	<-EPA HAZ WASTE CODES-->					SOURCE CODE	MGMT METHOD	WASTE FORM	RAD-ACT MIXED	COMMENT	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE	
ILD980700751	00002	GM	1418210001	F039						G26	H141	W119	2	Y		030520	

-----SECTION 2-----><-----SECTION 3-----><-----SECTION 4 OFF-SITE SHIPMENT----->

--QUANTITY GENERATED--><---MANAGED ON-SITE---				MGMT THIS YEAR				MGMT THIS YEAR			
THIS YEAR		MGMT	THIS YEAR	USEPA-ID		METHOD	QUANTITY	USEPA-ID		METHOD	QUANTITY
UOM	DENSITY	QUANTITY	TDR METHOD	QUANTITY	SHIP	<-----SITES 1&3&5----->		<-----SITES 2&4----->			
1	8.34	468,300.0	N	0.0	Y	SITE 1: ILD010284248 H081		468,300.0			

GENERATOR USEPA-ID	PAGE NBR	FORM CODE	GENERATOR IEPA-ID	<---TRANSPORTER USEPA-ID(S) AND PERMIT NUMBER(S)--->				COMMENT	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE
ILD980700751	00003	TI	1418210001	1ST & 5TH	2ND & 6TH	3RD & 7TH	4TH & 8TH	WI0000815381 UPW0508337MN	N	030520	

Instructions for this form found on pages 12-15 This form must be completed for the location shown on the above label. If you need additional forms for other locations, call IEPA.

Section 1. HAZARDOUS WASTE ACTIVITIES

31 1 RCRA Generator Status as of 3-1-2004
32 Although site is no longer a LQG, it was an LQG during the calendar year of 2003.
1= LQG: Greater than 1,000 kg/mo (2200 lbs/mo) of non-acute hazardous waste
2= SQG: 100 to 1,000 kg/mo (220-2220 lbs/mo) of non-acute hazardous waste
3= CESGG: Less than 100 kg/mo of non-acute hazardous waste
4= Nongenerator
Other Generator Activities: Enter Y (yes) or N (no)
33 United States Importer of Hazardous Waste
34 Mixed Waste (hazardous & radioactive) Generator

For Agency Use Only
See enclosed No Fee Enclosed

All other hazardous waste activities: Enter Y or N

35 N Transporter of Hazardous Waste
36 Y Treater, Storer, or Disposer of Hazardous Waste (at your site).
Note: A hazardous waste permit is required for this activity.
37 N Recycler of Hazardous Waste (at your site)
Note: A hazardous waste permit may be required for this activity.
Exempt Boiler and/or Industrial Furnace:
38 X Small Quantity On-Site Burner Exemption
39 X Smelting, Melting, Refining Furnace Exemption
40 N Underground Injection Control

Section 2. UNIVERSAL WASTE ACTIVITIES:

N (Y or N) Large Quantity Handler (5000 kg) of Universal Waste.
Check types of universal waste generated and/or accumulated at your site.
Generated Accumulated
Batteries 41 [] 42 []
Pesticides 43 [] 44 []
Thermostats 45 [] 46 []
Fluorescent Bulbs 47 [] 48 []
49 N (Y or N) Destination Facility for Universal Waste.
Note: A hazardous waste permit may be required for this activity.

Section 3. USED OIL ACTIVITIES:

50 N Used Oil Transporter
51 N Used Oil Transfer Facility
52 N Used Oil Processor
53 N Used Oil Re-refiner
54 N Off-Specification Used Oil Burner
55 N Marketer who Directs Shipment of Off-spec Used oil to Off-spec Used Oil Burner
56 N Marketer Who First Claims the Used Oil Meets the Specifications

RECEIVED
MAR 01 2004
IEPA/BOL

Section 4. ENTER THE NAICS CODE(S) FOR THIS LOCATION

57 5 6 2 2 1 1 63 69 75

RECEIVED

Section 5. TYPES:

Site Land Type (Enter code from list in instructions): 81 1
Owner Type: (Enter code from list in instructions): 82 1
Date current owner Became Owner (mm/dd/yyyy): 83 ___/___/___
Operator Type: (Enter code from list in instructions): 91 1
Date current owner Became Operator (mm/dd/yyyy): 92 ___/___/___

MAR 01 2004

IEPA/BOL

Section 6. Comments: 100 Y Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

COST ESTIMATES FOR TSD FACILITIES, Interim status and permitted

A. Closure cost estimate: \$
B. Estimate for post closure monitoring and maintenance costs (disposal facilities only): \$ 2, 938, 525. 25

Section 7. The Environmental Protection Agency is authorized to require this information under the Illinois Compiled Statutes (>ILCS), 1994 as amended, Chapter 415 ILCS 5/4 and 21. Disclosure of this information is required. Failure to disclose this information may result in civil and criminal penalties pursuant to 415 ILCS 5/42 and 44. This form has been approved by the Forms Management Center.

Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Please print: Last Name Finn First Name Kevin B. Title Regional Vice-President

C. Signature [Signature] D. Date of Signature 2/27/04

Name, Telephone number, and FAX number of person to contact if there are questions about this report.
James W. Hitzeroth, 630/894-9000

FORM IC – IDENTIFICATION AND CERTIFICATION**Section 1, Line 36**

Phase I of the Davis Junction Landfill received a RCRA Part B Permit on July 21, 1995. A Class I permit modification was obtained on August 30, 1999 which allowed modification to the permeability of the clay component of the final cover system to reduce water infiltration and leachate generation. Post-closure care of the Phase I unit began on December 5, 1984 and continues until December 5, 2014.

Section 6, Comments

Quarterly groundwater monitoring is conducted at the site in accordance with the requirements of the modified RCRA Post-Closure Permit issued on January 28, 2004.

Section 6, Line A

Phase I has been closed so no closure estimate have been provided.

Section 6, Line B

Cost estimates for post-closure care were approved by the Illinois Environmental Protection Agency in the January 28, 2004 permit (Log No. B-142-M-9).

BFI, Davis Junction Landfill
8902 No. Illinois Route 251
Davis Junction, IL 61020

ILLINOIS Environmental Protection Agency
2003 Hazardous Waste Report
Form GM - Generation and Management

Instructions for this form found on pages 16-21.

SECTION 1. WASTE DESCRIPTION

A. Waste Description: Leachate from closed RCRA Hazardous Waste Landfill Unit

B. EPA Hazardous Waste Code: F 0 3 9

C. Source Code: G 2 6 Management Method: H 1 4 1

D. Form code: W 1 1 9

SECTION 2. QUANTITY GENERATED

A. UOM: 1 Density 0 8 3 4 lb/gal (Same unit and density must be used for all quantities on this page).

B. Quantity Generated in Current reporting year: 2 9 0 0 0 0 . 0

SECTION 3. QUANTITY MANAGED ON-SITE:

Did this location manage some or all of this waste in RCRA or UIC regulated treatment, recycling, or disposal units at this location? DO NOT include RCRA exempt processes.

N Y = Yes (continue to system 1) N = No (skip to section 4.)

On-Site System 1: Management Method H Quantity managed on-site this year: 83

On-Site System 2: Management Method H Quantity managed on-site this year: 97

SECTION 4. OFF-SITE SHIPMENT

A. Was any of this waste shipped off site this reporting year? Y = Yes (Continue to Site 1) N = No

SITE 1. Name and address of off-site facility: CID BIOLOGICAL LIQUID TREATMENT CENTER
138th & Interstate 94, Calumet City, IL 60409

B. U.S. EPA ID No. of facility waste was shipped to: ILD 0 1 0 2 8 4 2 4 8

C. Management method shipped to: H 0 8 1

D. Total quantity shipped in this reporting year: 2 9 0 0 0 0 . 0

SITE 2. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 134

C. Management method shipped to: H

D. Total quantity shipped in this reporting year: 150

SITE 3. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 160

C. Management method shipped to: H

D. Total quantity shipped in this reporting year: 178

SITE 4. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 185

C. Management method shipped to: H

D. Total quantity shipped in this reporting year: 202

SITE 5. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: 212

C. Management method shipped to: H

D. Total quantity shipped in this reporting year: 223

COMMENTS: Y Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

FORM GM – GENERATION AND MANAGEMENT**Section 1, Line D**

Waste generated from the Phase I unit is leachate. Of the approximately 1,900,000 cubic yards of waste placed in Phase I, less than 2% of the waste can be defined as hazardous under current federal criteria. Approximately 96% of the hazardous waste received was heavy metal sludges typically produced by Rockford area industry. The other 4% included spent solvent still bottoms/sludges, petroleum refining and minor amounts of other chemicals.

ILD 980 700 751
BFI, Davis Junction Landfill
8902 No. Illinois Route 251
Davis Junction, IL 61020

Electronic Filing Received; Clerk's Office 03/14/2024

R 000930

ILLINOIS Environmental Protection Agency
2003 Hazardous Waste Report
Form TI - Transporter Identification

Instructions for this form found on page 21. **PLEASE NOTE** that the four-digit hauling permit number is no longer valid for hazardous waste transporters, the transporter must have a Uniform Program Permit Number.

- 1. U.S. EPA ID No. W 1 0 0 0 0 8 1 5 3 8 1 Hauling Permit No. U P W 5 0 8 3 3 7 M N
31 127
Transporter Name, Address, and Telephone Number: Advanced Waste Carriers, Inc.
1126 So. 70th Street, Suite N508B
West Allis, WI 53214
Phone: (800) 842-9792
- 2. U.S. EPA ID No. _____ Hauling Permit No. _____
43 139
Transporter Name, Address, and Telephone Number: _____
- 3. U.S. EPA ID No. _____ Hauling Permit No. _____
55 151
Transporter Name, Address, and Telephone Number: _____
- 4. U.S. EPA ID No. _____ Hauling Permit No. _____
67 163
Transporter Name, Address, and Telephone Number: _____
- 5. U.S. EPA ID No. _____ Hauling Permit No. _____
79 175
Transporter Name, Address, and Telephone Number: _____
- 6. U.S. EPA ID No. _____ Hauling Permit No. _____
91 187
Transporter Name, Address, and Telephone Number: _____
- 7. U.S. EPA ID No. _____ Hauling Permit No. _____
103 199
Transporter Name, Address, and Telephone Number: _____
- 8. U.S. EPA ID No. _____ Hauling Permit No. _____
115 211
Transporter Name, Address, and Telephone Number: _____

WEAVER
BOOS
CONSULTANTS
INC
GEO-ENVIRONMENTAL ENGINEERS
AND SCIENTISTS

February 23, 2004
Project No. 0120-49-30-03-16

Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Re: Annual Hazardous Waste Report
Davis Junction Landfill
Davis Junction, Illinois
USEPA No. ILD980700451
IEPA No. 1418210001

RECEIVED
MAR 01 2004
IEPA/BOL

Dear Correspondent:

On behalf of Davis Junction Landfill, **Weaver Boos Consultants, Inc.** submits an original and copy of the facility's 2003 Annual Hazardous Waste Report. As stated in the Report, Phase I of the facility is the hazardous waste unit that is subject to permitting under RCRA. The facility has been certified closed, and the only hazardous waste generated from the closed landfill activities is leachate.

Please review the enclosed package and call with any questions, comments, or concerns.

Sincerely,
Weaver Boos Consultants, Inc.



Diane K. Parks
Staff Environmental Specialist

RECEIVED

MAR 01 2004

IEPA/BOL

Enclosures

cc: Jim Hitzeroth, BFI Waste Systems of North America Inc., Hanover Park, Illinois



March 30, 2004

Mrs. Hope Wright
Illinois Environmental Protection Agency
Bureau Of Land
1021 North Grand East
P.O. Box 19276
Springfield, IL 62794-9276

**RE: Annual Hazardous Waste Report Fee
Davis Junction Landfill
IEPA No. 141820001**

Attached is a check for the Davis Junction Landfill Annual Hazardous Waste Report fee.

There was an oversight when the Hazardous Waste Report was submitted and the fee was not included. We regret this oversight and sincerely apologize for any inconvenience this may have caused.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "James Hitzeroth".

James Hitzeroth
Environmental Manager
Allied Waste Industries Inc.
North Central Region

Cc: Beth Steinhour- Weaver Boos Consultants

RECEIVED

MAR 31 2004

IEPA/BOI

US EPA Number: 1 L D 9 8 0 7 0 0 7 5 1

IEPA Number: 1 4 1 8 2 1 0 0 0 1

Company name: Davis Junction Landfill

Address: 8902 No. Illinois Route 251, Davis Junction, IL 61020

Instructions for this form found on pages 12-15 This form must be completed for the location shown above.

All information on this page is required.

**ILLINOIS Environmental Protection Agency
2004 Hazardous Waste Report
Form IC - Identification and Certification**

Section 1. HAZARDOUS WASTE ACTIVITIES

- 31 1 RCRA Generator Status as of 3-1-2005
- 1= LQG: Greater than 1,000 kg/mo (2200 lbs/mo) of non-acute hazardous waste
- 2= SQG: 100 to 1,000 kg/mo (220-2220 lbs/mo) of non-acute hazardous waste
- 3= CESGG: Less than 100 kg/mo of non-acute hazardous waste
- 4= Nongenerator

32 ___ Although site is no longer a LQG, it was a LQG during the calendar year of 2004.

Other Generator Activities: Enter Y (yes) or N (no)

- 33 ___ United States Importer of Hazardous Waste
- 34 ___ Mixed Waste (hazardous & radioactive) Generator

For Agency Use Only

Fee enclosed No Fee Enclosed

All other hazardous waste activities: Enter Y or N

- 35 N Transporter of Hazardous Waste
- 36 N Treater, Storer, or Disposer of Hazardous Waste (at your site).
Note: A hazardous waste permit is required for this activity.
- 37 N Recycler of Hazardous Waste (at your site)
Note: A hazardous waste permit may be required for this activity.
- Exempt Boiler and/or Industrial Furnace:
- 38 N Small Quantity On-Site Burner Exemption
- 39 N Smelting, Melting, Refining Furnace Exemption
- 40 N Underground Injection Control

Section 2. UNIVERSAL WASTE ACTIVITIES: Y or N

___ Large Quantity Handler (5000 kg) of Universal Waste. Universal waste generated and/or accumulated at your site.

	Generated	Accumulated
Batteries	41 ___	42 ___
Pesticides	43 ___	44 ___
Thermostats	45 ___	46 ___
Fluorescent Bulbs	47 ___	48 ___

49 ___ Destination Facility for Universal Waste. Note: A hazardous waste permit may be required for this activity.

Section 3. USED OIL ACTIVITIES: Enter Y or N

- 50 N Used Oil Transporter
- 51 N Used Oil Transfer Facility
- 52 N Used Oil Processor
- 53 N Used Oil Re-refiner
- 54 N Off-Specification Used Oil Burner
- 55 N Marketer who Directs Shipment of Off-Spec Used oil to Off-spec Used Oil Burner
- 56 N Marketer Who First Claims the Used Oil Meets the Specifications

Section 4. ENTER THE 5 or 6 digit NAICS CODE(S) FOR THIS LOCATION

57 5 6 2 2 1 1 63 _____ 69 _____ 75 _____

RECEIVED

Section 5. TYPES:

- Site Land Type (Enter code from list in instructions): 81 ___
- Owner Type: (Enter code from list in instructions): 82 ___
- Date current owner Became Owner (mm/dd/yyyy): 83 ___/___/___
- Operator Type: (Enter code from list in instructions): 91 ___
- Date current operator Became Operator (mm/dd/yyyy): 92 ___/___/___

MAR 01 2005
IEPA / BOL

Section 6. Comments: 100 Y Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

COST ESTIMATES FOR TSD FACILITIES, interim status and permitted

- A. Closure cost estimate: \$ _____
- B. Estimate for post closure monitoring and maintenance costs (disposal facilities only): \$ 2,938,525.00 *

Section 7. The Environmental Protection Agency is authorized to require this information under the Illinois Compiled Statutes (>ILCS), 1994 as amended, Chapter 415 ILCS 5/4 and 21. Disclosure of this information is required. Failure to disclose this information may result in civil and criminal penalties pursuant to 415 ILCS 5/42 and 44. This form has been approved by the Forms Management Center.

Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Please print: Last Name Gorske First Name Dan B. Title Regional Vice-President

C. Signature [Signature] D. Date of Signature 2/25/05

Name, Telephone number, and FAX number of person to contact if there are questions about this report.
James W. Hitzerth - 630/894-9000 (Phone)
- 630/894-9089 (Fax)

FORM IC – IDENTIFICATION AND CERTIFICATION

Davis Junction Landfill – Phase I
USEPA Number ILD980700751
IEPA Number 1418210001

Section 1, Line 36

Phase I of Davis Junction Landfill received a RCRA Part B Permit on July 21, 1995. A Class I permit modification was obtained on August 30, 1999 which allowed modification to the permeability of the clay component of the final cover system to reduce water infiltration and leachate generation. Post-closure care of the Phase I unit began on December 5, 1984 and continues until December 5, 2014.

Section 6, Line A

Phase I has been closed so no closure estimate has been provided.

Section 6 Line B

Cost estimates for post-closure care were approved by the Illinois Environmental Protection Agency (IEPA) on January 28, 2004 (Permit Log No. B-142-M-9). On July 20, 2004 and October 7, 2004, an application and supplement for a permit modification to the post-closure cost estimate was submitted to the IEPA. The application requested a reduction in the remaining post-closure period and an increase in estimated costs based on the IEPA inflation factor. The permit application request is pending before the IEPA.

US EPA Number: I L D 9 8 0 7 0 0 4 5 1
IEPA Number: 1 4 1 8 2 1 0 0 0 1
Company name: Davis Junction Landfill
Address: 8902 No. Illinois 251, Davis Junction, IL 61020

ILLINOIS Environmental Protection Agency
2004 Hazardous Waste Report
Form GM - Generation and Management

Instructions for this form found on pages 17-22. (Same UOM and density must be used for all quantities on this page).

SECTION 1. WASTE DESCRIPTION

A. Waste Description: Leachate from closed RCRA Hazardous Waste Landfill Unit
B. EPA Hazardous Waste Code: F 0 3 9
C. Source Code: G 2 6 When Source Code is G25, enter Management Method producing residuals: H 1 4 1
D. Form code: W 1 1 9

SECTION 2. QUANTITY GENERATED [DENSITY MUST BE ENTERED FOR ALL WASTE STREAMS!]

A. UOM: 1 Density 0 8 3 4 lb/gal {Density of water is 08.34, most wastes are between 6 and 15}
B. Quantity Generated in Current reporting year: 2 2 1, 1 0 0

SECTION 3. QUANTITY MANAGED ON-SITE: Did this location manage some or all of this waste in RCRA or UIC regulated treatment, recycling, or disposal units at this location? DO NOT include RCRA exempt processes.
Y = Yes (continue to system 1) N = No (skip to section 4.)

On-Site System 1: Management Method H Quantity managed on-site this year:
On-Site System 2: Management Method H Quantity managed on-site this year:

SECTION 4. OFF- SITE SHIPMENT - Refer to page 29 for common errors on facilities & management methods.

A. Was any of this waste shipped off site this reporting year? Y = Yes (Continue to Site 1) N = No
SITE 1. Name and address of off-site facility: CID Recycling/Disposal Facility
138th St. & Interstate 94, Calumet City, IL 60409
B. U.S. EPA ID No. of facility waste was shipped to: I L D 0 1 0 2 8 4 2 4 8
C. Management method shipped to: H 0 8 1
D. Total quantity shipped in this reporting year: 2 2 1, 1 0 0 . 0
SITE 2. Name and address of off-site facility:
B. U.S. EPA ID No. of facility waste was shipped to:
C. Management method shipped to: H
D. Total quantity shipped in this reporting year:
SITE 3. Name and address of off-site facility:
B. U.S. EPA ID No. of facility waste was shipped to:
C. Management method shipped to: H
D. Total quantity shipped in this reporting year:
SITE 4. Name and address of off-site facility:
B. U.S. EPA ID No. of facility waste was shipped to:
C. Management method shipped to: H
D. Total quantity shipped in this reporting year:
SITE 5. Name and address of off-site facility:
B. U.S. EPA ID No. of facility waste was shipped to:
C. Management method shipped to: H
D. Total quantity shipped in this reporting year:

COMMENTS: Enter Y (Yes) if you have comments regarding this page and attach extra sheet.
238

US EPA Number: I L D 9 8 0 7 0 0 7 5 1

IEPA Number: 1 4 1 8 2 1 0 0 0 1

Company name: Davis Junction Landfill

Address: 8902 No. Illinois Route 251, Davis Junction, IL 61020

ILLINOIS Environmental Protection Agency

2004 Hazardous Waste Report

Form TI - Transporter Identification

Instructions for this form found on page 23. **PLEASE NOTE** that the four-digit hauling permit number is no longer valid for hazardous waste transporters, the transporter **must** have a Uniform Program Permit Number.

1. U.S. EPA ID No. W 1 0 0 0 0 8 1 5 3 8 1
₃₁
Transporter Name, Address, and Telephone Number:

Hauling Permit No. U P W 5 0 8 3 3 7 M N
₁₂₇
Advanced Waste Carriers, Inc.
1126 So. 70th Street, Suite N508B
West Allis, WI 53214
Phone: (800) 842-9792

2. U.S. EPA ID No. _____
₄₃
Transporter Name, Address, and Telephone Number:

Hauling Permit No. _____
₁₃₉

3. U.S. EPA ID No. _____
₅₅
Transporter Name, Address, and Telephone Number:

Hauling Permit No. _____
₁₅₁

4. U.S. EPA ID No. _____
₆₇
Transporter Name, Address, and Telephone Number:

Hauling Permit No. _____
₁₆₃

5. U.S. EPA ID No. _____
₇₉
Transporter Name, Address, and Telephone Number:

Hauling Permit No. _____
₁₇₅

6. U.S. EPA ID No. _____
₉₁
Transporter Name, Address, and Telephone Number:

Hauling Permit No. _____
₁₈₇

7. U.S. EPA ID No. _____
₁₀₃
Transporter Name, Address, and Telephone Number:

Hauling Permit No. _____
₁₉₉

8. U.S. EPA ID No. _____
₁₁₅
Transporter Name, Address, and Telephone Number:

Hauling Permit No. _____
₂₁₁

COMMENTS: _____ Enter Y(Yes) if you have comments regarding this page; attach extra sheet. Page 0 0 0 3
₂₂₃ ₁₃

WEAVER**BOOS****CONSULTANTS****INC****GEO-ENVIRONMENTAL ENGINEERS
AND SCIENTISTS**February 28, 2005
Project No. 0120-49-30-03-16Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276RECEIVED
MAR 01 2005
IEPA / BOL**Re: Annual Hazardous Waste Report - 2004
Davis Junction Landfill
Davis Junction, Illinois
USEPA No. ILD 980 700 451
IEPA No. 141 82100 01**

Dear Correspondent:

On behalf of Davis Junction Landfill, **Weaver Boos Consultants, Inc.** submits an original and copy of the facility's 2004 Annual Hazardous Waste Report. As stated in the Report, Phase I of the facility is the hazardous waste unit that is subject to permitting under RCRA. The facility has been certified closed, and the only hazardous waste generated from the closed landfill activities is leachate.

Please review the enclosed package and call with any questions, comments, or concerns.

Sincerely,
Weaver Boos Consultants, Inc.Diane K. Parks
Staff Environmental Specialist

Enclosures

cc: Jim Hitzeroth, BFI Waste Systems of North America Inc., Hanover Park, Illinois
Elizabeth A. Steinhour, Weaver Boos

SITE: 1418210001
PROG: LPARM035
LIST: LPARP035

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF LAND
2005 ANNUAL REPORT
COMPREHENSIVE REPORT

PAGE: 1
TIME: 04:26:41
DATE: 12/07/06

<-----SECTION 1 HAZARDOUS WASTE ACTIVITIES----->

USEPA-ID	PAGE NBR	FORM CODE	IEPA-ID	GENERATOR STATUS	NOT LQG NEXT YR	IMPORTER HAZARD	MIXED WASTE	HAULER HAZARD	TSD HAZ	RECYCLER HAZARD	BURNER EXEMPT	FURNACE EXEMPT	INJECTION CONTROL
ILD980700751	00001	IC	1418210001	1		N	N	N	Y	N	N	N	N

<-----SECTION 2 UNIVERSAL WASTE ACTIVITIES-----> <-----SECTION 3 USED OIL ACTIVITIES----->

BATTERIES GEN	PESTICIDES GEN	THERMOSTATS GEN	FLUOR-BULBS GEN	DESTINATION FACILITY	TRANSFER HAULER	RE-OFF-SPEC BURNER	MARKETER OFF-SPEC	MARKETER MET-SPEC
N	N	N	N	N	N	N	N	N

<-----SECTION 4-----> <-----SECTION 5 TYPES-----> SECTION 6

NAICS CODES	SITE	OWNER	OPERATOR	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE
562211	1	1	02/27/1975	1	02/27/1975	N

<-----SECTION 1 WASTE DESCRIPTION----->

USEPA-ID	PAGE NBR	FORM CODE	IEPA-ID	1ST 2ND 3RD 4TH 5TH	SOURCE CODE	MGMT METHOD	WASTE FORM	DENSITY OVERRIDE	COMMENT	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE
ILD980700751	00002	GM	1418210001	F039	G25	H141	W113		N		060315	

-----SECTION 2-----><-----SECTION 3-----><-----SECTION 4 OFF-SITE SHIPMENT----->

QUANTITY GENERATED	MANAGED ON-SITE	MGMT THIS YEAR	USEPA-ID	METHOD	QUANTITY	MGMT THIS YEAR		
1	8.36	294,000.0	N	0.0	Y	SITE 1: ILD010284248 H081	294,000.0	0.0

-----TRANSPORTER USEPA-ID(S) AND PERMIT NUMBER(S)----->

GENERATOR USEPA-ID	PAGE NBR	FORM CODE	GENERATOR IEPA-ID	1ST & 5TH	2ND & 6TH	3RD & 7TH	4TH & 8TH	COMMENT	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE
ILD980700751	00002	TI	1418210001	WI0000815381				UPW0508337MN	N	060315	

US EPA Number: 1 L D 9 8 0 7 0 0 7 5 1
IEPA Number: 1 4 1 8 2 1 0 0 0 1
Company name: BFI WASTE SYSTEMS OF NORTH AMERICA
Address: 8902 N RTE 251, DAVIS JUNCTION, IL 61020

ILLINOIS Environmental Protection Agency
2006 Hazardous Waste Report
Form IC - Identification and Certification

Instructions for this form found on pages 12-15 **All information on this page is required.**

Section 1. HAZARDOUS WASTE ACTIVITIES

31 1 RCRA Generator Status as of 3-1-2006
1= LQG: Greater than 1,000 kg/mo (2200 lbs/mo) of non-acute hazardous waste
2= SQG: 100 to 1,000 kg/mo (220-2220 lbs/mo) of non-acute hazardous waste
3= CESGG: Less than 100 kg/mo of non-acute hazardous waste
4= Nongenerator
32 NA Although site is no longer a LQG, it was a LQG during the calendar year of 2005-Form GM&TI attached.
Other Generator Activities: Enter Y (yes) or N (no)
33 N United States Importer of Hazardous Waste
34 N Mixed Waste (hazardous & radioactive) Generator

For Agency Use Only:
Yes Fee enclosed No Fee Enclosed

All other hazardous waste activities: Enter Y or N

35 N Transporter of Hazardous Waste
36 Y Treater, Storer, or Disposer of Hazardous Waste (at your site).
Note: A hazardous waste permit is required for this activity.
37 N Recycler of Hazardous Waste (at your site).
Note: A hazardous waste permit may be required for this activity.
Exempt Boiler and/or Industrial Furnace:
38 N Small Quantity On-Site Burner Exemption
39 N Smelting, Melting, Refining Furnace Exemption
40 N Underground Injection Control

Section 2. UNIVERSAL WASTE ACTIVITIES: Y or N

N Large Quantity Handler (5000 kg) of Universal Waste.
Universal waste generated and/or accumulated at your site.
Generated Accumulated

Batteries	41	<u> </u>	42	<u> </u>
Pesticides	43	<u> </u>	44	<u> </u>
Thermostats	45	<u> </u>	46	<u> </u>
Fluorescent Bulbs	47	<u> </u>	48	<u> </u>

49 N Destination Facility for Universal Waste. Note: A hazardous waste permit may be required for this activity.

Section 3. USED OIL ACTIVITIES: Enter Y or N

50 N Used Oil Transporter
51 N Used Oil Transfer Facility
52 N Used Oil Processor
53 N Used Oil Re-refiner
54 N Off-Specification Used Oil Burner
55 N Marketer who Directs Shipment of Off-Spec Used oil to Off-spec Used Oil Burner
56 N Marketer Who First Claims the Used Oil Meets the Specifications

Section 4. ENTER THE 5 or 6 digit NAICS CODE(S) FOR THIS LOCATION

57 5 56 2 57 2 58 1 59 1 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75

RECEIVED

MAR 01 2007

Section 5. TYPES:

Site Land Type (Enter code from list in instructions): 81 1
Owner Type: (Enter code from list in instructions): 82 1
Date current owner Became Owner (mm/dd/yyyy): 83 02 / 27 / 1975
Operator Type: (Enter code from list in instructions): 91 1
Date current operator Became Operator (mm/dd/yyyy): 92 02 / 27 / 1975

IEPA/BOL/WRCS

Section 6. Comments: 100 Y Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

COST ESTIMATES FOR TSD FACILITIES, interim status and permitted

A. Closure cost estimate: \$
B. Estimate for post closure monitoring and maintenance costs (disposal facilities only): \$ 1 655 128 21

Section 7. The Environmental Protection Agency is authorized to require this information under the Illinois Compiled Statutes (>ILCS), 1994 as amended, Chapter 415 ILCS 5/4 and 21. Disclosure of this information is required. Failure to disclose this information may result in civil and criminal penalties pursuant to 415 ILCS 5/42 and 44. This form has been approved by the Forms Management Center.

Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Please print: Last Name First Name B. Title
C. Signature D. Date of Signature FEB 11 2008

Name, Telephone number, and FAX number of person to contact if there are questions about this report.

REVIEWER MD

FORM IC – IDENTIFICATION AND CERTIFICATION**Davis Junction Landfill – Phase I****USEPA Number ILD980700751****IEPA Number 1418210001****Section 1, Line 36**

Phase I of Davis Junction Landfill received a RCRA Part B Permit on July 21, 1995. A Class I permit modification was obtained on August 30, 1999 which allowed modification to the permeability of the clay component of the final cover system to reduce water infiltration and leachate generation. Post-closure care of the Phase I unit began on December 5, 1984 and continues until December 5, 2014.

Section 6, Line A

Phase I has been closed so no closure estimate has been provided.

Section 6 Line B

Cost estimates for post-closure care were approved by the Illinois Environmental Protection Agency (IEPA) on January 28, 2004 (Permit Log No. B-142-M-9). On April, 2006 updated estimates of Post-Closure Care costs were provided to the Financial Assurance Section of the IEPA. The revised cost estimate pending approval is \$1,655,128.21.

IEPA Number: 1 4 1 8 2 1 0 0 0 1
Company name: BFI WASTE SYSTEMS OF NORTH AMERICA
Address: 8902 N RTE 251, DAVIS JUNCTION, IL 61020

2006 Hazardous Waste Report
Form GM - Generation and Management

Instructions for this form found on pages 16-21. (Same UOM and density must be used for all quantities on this page).

SECTION 1. WASTE DESCRIPTION

A. Waste Description: LEACHATE FROM CLOSED RCRA HAZARDOUS WASTE LANDFILL
B. EPA Hazardous Waste Code: F 0 3 9
C. Source Code: G 25 When Source Code is G25, enter Management Method producing residuals: H 1 4 1
D. Form code: W 1 1 3

SECTION 2. QUANTITY GENERATED [DENSITY MUST BE ENTERED FOR ALL WASTE STREAMS!]

A. UOM: 1 Density 8.34 lb/gal {Density of water is 08.34, most wastes are between 6 and 15}
B. Quantity Generated in Current reporting year: 3 3 5, 6 5 0

SECTION 3. QUANTITY MANAGED ON-SITE: Did this location manage some or all of this waste in RCRA or UIC regulated treatment, recycling, or disposal units at this location? DO NOT include RCRA exempt processes.

N Y = Yes (continue to system 1) N = No (skip to section 4.)

On-Site System 1: Management Method H Quantity managed on-site this year:
On-Site System 2: Management Method H Quantity managed on-site this year:

SECTION 4. OFF- SITE SHIPMENT - Refer to page 29 for common errors on facilities & management methods.

A. Was any of this waste shipped off site this reporting year? Y Y = Yes (Continue to Site 1) N = No

SITE 1. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: I L D 0 1 0 2 8 4 2 4 8
C. Management method shipped to: H 0 8 1
D. Total quantity shipped in this reporting year: 3 3 5, 6 5 0

SITE 2. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to:
C. Management method shipped to: H
D. Total quantity shipped in this reporting year:

SITE 3. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to:
C. Management method shipped to: H
D. Total quantity shipped in this reporting year:

SITE 4. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to:
C. Management method shipped to: H
D. Total quantity shipped in this reporting year:

SITE 5. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to:
C. Management method shipped to: H
D. Total quantity shipped in this reporting year:

COMMENTS: Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

US EPA Number: I L D 9 8 0 7 0 0 7 5 1
IEPA Number: 1 4 1 8 2 1 0 0 0 1
Company name: BFI WASTE SYSTEMS OF NORTH AMERICA
Address: 8902 N RTE 251, DAVIS JUNCTION, IL 61020

ILLINOIS Environmental Protection Agency
2006 Hazardous Waste Report
Form TI - Transporter Identification

Instructions for this form found on page 21. **PLEASE NOTE** that the four-digit hauling permit number is no longer valid for hazardous waste transporters, the transporter **must** have a Uniform Program Permit Number, with the last two fields the postal code of the state that issued the permit.

1. U.S. EPA ID No. W I 0 0 0 0 8 1 5 3 8 1 Hauling Permit No. U P W - 5 0 8 3 3 7 - M N
₃₁ ₁₂₇
Transporter Name, Address, and Telephone Number:

2. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₄₃ ₁₃₉
Transporter Name, Address, and Telephone Number:

3. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₅₅ ₁₅₁
Transporter Name, Address, and Telephone Number:

4. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₆₇ ₁₆₃
Transporter Name, Address, and Telephone Number:

5. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₇₉ ₁₇₅
Transporter Name, Address, and Telephone Number:

6. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₉₁ ₁₈₇
Transporter Name, Address, and Telephone Number:

7. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₁₀₃ ₁₉₉
Transporter Name, Address, and Telephone Number:

8. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₁₁₅ ₂₁₁
Transporter Name, Address, and Telephone Number:

COMMENTS: N Enter Y(Yes) if you have comments regarding this page; attach extra sheet. Page _____
₂₂₃ ₁₃

WEAVER
BOOS
CONSULTANTS
NORTH CENTRAL, LLC
GEO-ENVIRONMENTAL ENGINEERS
AND SCIENTISTS

February 28, 2006
Project No. 0120-49-30-07

Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Re: Annual Hazardous Waste Report - 2006
Davis Junction Landfill
Davis Junction, Illinois
USEPA No. ILD980700751
IEPA No. 1418210001

RECEIVED
MAR 01 2007
IEPA/BOL/WRCS

Dear Correspondent:

On behalf of Davis Junction Landfill, **Weaver Boos Consultants, Inc.** submits an original and copy of the facility's 2006 Annual Hazardous Waste Report. The facility has been certified closed, and the only hazardous waste generated from the closed landfill activities is leachate.

Please note that Form IC has not been signed. This page will be hand delivered upon its receipt. Please review the enclosed package and call with any questions, comments, or concerns.

Sincerely,
Weaver Boos Consultants, Inc.

Bridget M. Conlon

Bridget M. Conlon
Staff Environmental Specialist

RELEASABLE

FEB 11 2008

REVIEWER MD

Enclosures

cc: Jim Hitzeroth, BFI Waste Systems of North America Inc., Hanover Park, Illinois
Elizabeth A. Steinhour, Weaver Boos

WEAVER
BOOS
CONSULTANTS
NORTH CENTRAL, LLC
GEO-ENVIRONMENTAL ENGINEERS
AND SCIENTISTS

March 6, 2007
Project No. 0120-49-30-07

Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

ORIGINAL

**Re: Annual Hazardous Waste Report - 2006
Davis Junction Landfill
Davis Junction, Illinois
USEPA No. ILD980700751
IEPA No. 1418210001**

RECEIVED

MAR 07 2007

IEPA/BOL/WRCS

Dear Correspondent:

On behalf of Davis Junction Landfill, **Weaver Boos Consultants, Inc.** submits an original and copy of the facility's 2006 Annual Hazardous Waste Report complete with signature. On March 1, 2007, the 2006 report and fee for Davis Landfill were submitted without signature.

Please review the enclosed package and call with any questions, comments, or concerns.

Sincerely,
Weaver Boos Consultants, Inc.

Bridget M. Conlon

Bridget M. Conlon
Staff Environmental Specialist

RELEASABLE

FEB 11 2008

REVIEWER MD

Enclosures

cc: Jim Hitzeroth, BFI Waste Systems of North America Inc., Hanover Park, Illinois
Elizabeth A. Steinhour, Weaver Boos

US EPA Number: ILL D 9 8 0 7 0 0 7 5 1
IEPA Number: 1 4 1 8 2 1 0 0 0 1
Company name: BFI WASTE SYSTEMS OF NORTH AMERICA
Address: 8902 N RTE 251, DAVIS JUNCTION, IL 61020

ILLINOIS Environmental Protection Agency
2006 Hazardous Waste Report
Form IC - Identification and Certification

Instructions for this form found on pages 12-15 All information on this page is required.

Section 1. HAZARDOUS WASTE ACTIVITIES

31 1 **RCRA Generator Status** as of 3-1-2006
 1= LQG: Greater than 1,000 kg/mo (2200 lbs/mo) of non-acute hazardous waste
 2= SQG: 100 to 1,000 kg/mo (220-2220 lbs/mo) of non-acute hazardous waste
 3= CESSG: Less than 100 kg/mo of non-acute hazardous waste
 4= Nongenerator

32 NA Although site is no longer a LQG, it was a LQG during the calendar year of 2005-Form GM&TI attached.

Other Generator Activities: Enter Y (yes) or N (no)

33 N United States Importer of Hazardous Waste
 34 N Mixed Waste (hazardous & radioactive) Generator

For Agency Use Only:
 ___ Fee enclosed ___ No Fee Enclosed

All other hazardous waste activities: Enter Y or N

35 N Transporter of Hazardous Waste
 36 Y Treater, Storer, or Disposer of Hazardous Waste (at your site).
 Note: A hazardous waste permit is required for this activity.
 37 N Recycler of Hazardous Waste (at your site).
 Note: A hazardous waste permit may be required for this activity.
 Exempt Boiler and/or Industrial Furnace:
 38 N Small Quantity On-Site Burner Exemption
 39 N Smelting, Melting, Refining Furnace Exemption
 40 N Underground Injection Control

Section 2. UNIVERSAL WASTE ACTIVITIES: Y or N

N Large Quantity Handler (5000 kg) of Universal Waste. Universal waste generated and/or accumulated at your site.

	Generated	Accumulated
Batteries	41 ___	42 ___
Pesticides	43 ___	44 ___
Thermostats	45 ___	46 ___
Fluorescent Bulbs	47 ___	48 ___

49 N Destination Facility for Universal Waste. Note: A hazardous waste permit may be required for this activity.

Section 3. USED OIL ACTIVITIES: Enter Y or N

50 N Used Oil Transporter
 51 N Used Oil Transfer Facility
 52 N Used Oil Processor
 53 N Used Oil Re-refiner
 54 N Off-Specification Used Oil Burner
 55 N Marketer who Directs Shipment of Off-Spec Used oil to Off-spec Used Oil Burner
 56 N Marketer Who First Claims the Used Oil Meets the Specifications

Section 4. ENTER THE 5 or 6 digit NAICS CODE(S) FOR THIS LOCATION

57 5 6 2 2 1 1 63 _____ 69 _____ 75 _____

Section 5. TYPES:

Site Land Type (Enter code from list in instructions): 81 1
 Owner Type: (Enter code from list in instructions): 82 1
 Date current owner Became Owner (mm/dd/yyyy): 83 02 / 27 / 1975
 Operator Type: (Enter code from list in instructions): 91 1
 Date current operator Became Operator (mm/dd/yyyy): 92 02 / 27 / 1975

RECEIVED
MAR 07 2007
IEPA/BOL/WRCS

Section 6. Comments: 100 Y Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

COST ESTIMATES FOR TSD FACILITIES, Interim status and permitted

A. Closure cost estimate: \$ _____
 B. Estimate for post closure monitoring and maintenance costs (disposal facilities only): \$ 1, 655, 128, 21

Section 7. The Environmental Protection Agency is authorized to require this information under the Illinois Compiled Statutes (>ILCS<), 1994 as amended, Chapter 415 ILCS 5/4 and 21. Disclosure of this information is required. Failure to disclose this information may result in civil and criminal penalties pursuant to 415 ILCS 5/42 and 44. This form has been approved by the Forms Management Center.

Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Please print: Last Name Groen First Name Roger B. Title Vice President
 C. Signature [Signature] D. Date of Signature 3-5-07
 Name, Telephone number, and FAX number of person to contact if there are questions about this report. _____

FEB 11 2008

REVIEWER MD

FORM IC – IDENTIFICATION AND CERTIFICATION

Davis Junction Landfill – Phase I
USEPA Number ILD980700751
IEPA Number 1418210001

Section 1, Line 36

Phase I of Davis Junction Landfill received a RCRA Part B Permit on July 21, 1995. A Class I permit modification was obtained on August 30, 1999 which allowed modification to the permeability of the clay component of the final cover system to reduce water infiltration and leachate generation. Post-closure care of the Phase I unit began on December 5, 1984 and continues until December 5, 2014.

Section 6, Line A

Phase I has been closed so no closure estimate has been provided.

Section 6 Line B

Cost estimates for post-closure care were approved by the Illinois Environmental Protection Agency (IEPA) on January 28, 2004 (Permit Log No. B-142-M-9). On April, 2006 updated estimates of Post-Closure Care costs were provided to the Financial Assurance Section of the IEPA. The revised cost estimate pending approval is \$1,655,128.21.

EPA Number: 1 4 1 8 2 1 0 0 0 1
Company name: BFI WASTE SYSTEMS OF NORTH AMERICA
Address: 8902 N ROUTE 251, DAVIS JUNCTION, IL 61020

**2006 Hazardous Waste Report
Form GM – Generation and Management**

Instructions for this form found on pages 16-21. (Same UOM and density must be used for all quantities on this page).

SECTION 1. WASTE DESCRIPTION

A. Waste Description: LEACHATE FROM CLOSED RCRA HAZARDOUS WASTE LANDFILL
B. EPA Hazardous Waste Code: F 0 3 9
C. Source Code: G 2 5 When Source Code is G25, enter Management Method producing residuals: H 1 4 1
D. Form code: W 1 1 3

SECTION 2. QUANTITY GENERATED [DENSITY MUST BE ENTERED FOR ALL WASTE STREAMS!]

A. UOM: 1 Density 8.34 lb/gal {Density of water is 08.34, most wastes are between 6 and 15}
B. Quantity Generated in Current reporting year: 3 3 5, 6 5 0

SECTION 3. QUANTITY MANAGED ON-SITE: Did this location manage some or all of this waste in RCRA or UIC regulated treatment, recycling, or disposal units at this location? DO NOT include RCRA exempt processes.

N Y = Yes (continue to system 1) N = No (skip to section 4.)

On-Site System 1: Management Method H Quantity managed on-site this year: _____
On-Site System 2: Management Method H Quantity managed on-site this year: _____

SECTION 4. OFF- SITE SHIPMENT – Refer to page 29 for common errors on facilities & management methods.

A. Was any of this waste shipped off site this reporting year? Y Y = Yes (Continue to Site 1) N = No

SITE 1. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: I L D 0 1 0 2 8 4 2 4 8
C. Management method shipped to: H 0 8 1
D. Total quantity shipped in this reporting year: 3 3 5, 6 5 0

SITE 2. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: _____
C. Management method shipped to: H
D. Total quantity shipped in this reporting year: _____

SITE 3. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: _____
C. Management method shipped to: H
D. Total quantity shipped in this reporting year: _____

SITE 4. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: _____
C. Management method shipped to: H
D. Total quantity shipped in this reporting year: _____

SITE 5. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: _____
C. Management method shipped to: H
D. Total quantity shipped in this reporting year: _____

COMMENTS: N Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

S EPA Number: 1 L D 9 8 0 7 0 0 7 5 1
EPA Number: 1 4 1 8 2 1 0 0 0 1
Company name: BFI WASTE SYSTEMS OF NORTH AMERICA
Address: 8902 N ROUTE 251, DAVIS JUNCTION, IL 61020

ILLINOIS Environmental Protection Agency
2006 Hazardous Waste Report
Form TI - Transporter Identification

Instructions for this form found on page 21. **PLEASE NOTE** that the four-digit hauling permit number is no longer valid for hazardous waste transporters, the transporter **must** have a Uniform Program Permit Number, with the last two fields the postal code of the state that issued the permit.

1. U.S. EPA ID No. W I 0 0 0 0 8 1 5 3 8 1 Hauling Permit No. U P W - 5 0 8 3 3 7 - M N
₃₁ ₁₂₇
Transporter Name, Address, and Telephone Number:

2. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₄₃ ₁₃₉
Transporter Name, Address, and Telephone Number:

3. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₅₅ ₁₅₁
Transporter Name, Address, and Telephone Number:

4. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₆₇ ₁₆₃
Transporter Name, Address, and Telephone Number:

5. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₇₉ ₁₇₅
Transporter Name, Address, and Telephone Number:

6. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₉₁ ₁₈₇
Transporter Name, Address, and Telephone Number:

7. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₁₀₃ ₁₉₉
Transporter Name, Address, and Telephone Number:

8. U.S. EPA ID No. _____ Hauling Permit No. U P - _____ - _____
₁₁₅ ₂₁₁
Transporter Name, Address, and Telephone Number:

COMMENTS: N Enter Y(Yes) if you have comments regarding this page; attach extra sheet. Page _____
₂₂₃ ₁₃

DAVIS P-000949

INVOICE NUMBER	INVOICE DATE	GROSS AMOUNT	DISCOUNT	NET AMOUNT
80700728 Message : RTD L81 JAMES HITZEROTH 701 AW North America, Inc.	1/25/2006	500.00		500.00
				HAZ WASTE REPORT FEE

COPY

CHECK # 2585160 CHECK TOTALS: 500.00 500.00
 VENDOR: 21823, ILLINOIS ENVIRONMENTAL PROTECT

DETACH THIS PORTION FOR YOUR RECORDS

ORIGINAL DOCUMENT IS PRINTED ON CHEMICAL REACTIVE PAPER WITH MICROPRINTED BORDER - DO NOT CASH IF THE WORD VOID IS VISIBLE

AWIN MANAGEMENT, INC.

BANK OF AMERICA

CHECK NO.
2585160

52-153 ME
112

C/O Allied Waste North America, Inc.
 C/O Browning Ferris Industries, Inc.
 18500 N. Allied Way
 Phoenix, AZ 85054

PAY ***EXACTLY *****500 *** DOLLARS and 00 CENTS

DATE
2/02/2007

AMOUNT
*****500.00

AWIN MANAGEMENT, INC.
VOID IF OVER 180 DAYS OLD

TO THE ORDER OF
ILLINOIS ENVIRONMENTAL PROTECT
 1021 NORTH GRAND AVE EAST
 PO BOX 19276
 SPRINGFIELD IL 62794-9276

PER Patricia Hol

PER

DOCUMENT CONTAINS A TRUE WATERMARK. DO NOT CASH IF THE WATERMARK IS NOT VISIBLE. SEE REVERSE SIDE FOR COMPLETE SECURITY FEATURES.

0002585160 011201539 0000802 31000

SITE: 1418210001
PROG: LPARM035
LIST: LPARP035

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF LAND
2007 ANNUAL REPORT
COMPREHENSIVE REPORT

PAGE: 1
TIME: 04:22:53
DATE: 01/13/09

<-----SECTION 1 HAZARDOUS WASTE ACTIVITIES----->

USEPA-ID	PAGE NBR	FORM CODE	IEPA-ID	GENERATOR STATUS	NOT LQG NEXT YR	IMPORTER HAZARD	MIXED WASTE	HAULER HAZARD	TSD HAZ	RECYCLER HAZARD	BURNER EXEMPT	FURNACE EXEMPT	INJECTION CONTROL
ILD980700751	00001	IC	1418210001	1		N	N	N	Y	N	N	N	N

<-----SECTION 2 UNIVERSAL WASTE ACTIVITIES-----> <-----SECTION 3 USED OIL ACTIVITIES----->

BATTERIES GEN	PESTICIDES GEN	THERMOSTATS GEN	FLUOR-BULBS GEN	DESTINATION ACCUM	FACILITY	HAULER	TRANSFER FACILITY	PROCESSOR	RE-REFINER	OFF-SPEC BURNER	MARKETER OFF-SPEC	MARKETER MET-SPEC
N	N	N	N	N	N	N	N	N	N	N	N	N

<-----SECTION 4-----> <-----SECTION 5 TYPES-----> SECTION 6

NAICS CODES	SITE	OWNER	OPERATOR	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE
1ST 2ND 3RD 4TH	TYPE	TYPE	DATE	TYPE	DATE	COMMENT
562211	1	1	02/27/1975	1	02/27/1975	Y

<-----SECTION 1 WASTE DESCRIPTION----->

USEPA-ID	PAGE NBR	FORM CODE	IEPA-ID	<-EPA HAZ WASTE CODES-->					SOURCE CODE	MGMT METHOD	WASTE FORM	DENSITY OVERRIDE	COMMENT	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE
ILD980700751	00002	GM	1418210001	F039						G61	W113		N		080314	080603

-----SECTION 2-----><-----SECTION 3-----><-----SECTION 4 OFF-SITE SHIPMENT----->

--QUANTITY GENERATED--><-----MANAGED ON-SITE----->				MGMT THIS YEAR				MGMT THIS YEAR			
UOM	DENSITY	QUANTITY	TDR METHOD	QUANTITY	SHIP	USEPA-ID	METHOD	QUANTITY	USEPA-ID	METHOD	QUANTITY
1	8.36	246,800.0	N	0.0	Y	SITE 1: ILD010284248	H081	246,800.0			0.0

GENERATOR USEPA-ID	PAGE NBR	FORM CODE	GENERATOR IEPA-ID	<-----TRANSPORTER USEPA-ID(S) AND PERMIT NUMBER(S)----->				COMMENT	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE
ILD980700751	00002	TI	1418210001	1ST & 5TH	2ND & 6TH	3RD & 7TH	4TH & 8TH	WI0000815381 UPW0508337MN	N	080314	

SITE: 1418210001
PROG: LPARM035
LIST: LPARP035

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF LAND
2008 ANNUAL REPORT
COMPREHENSIVE REPORT

PAGE: 1
TIME: 01:54:48
DATE: 02/19/10

<-----SECTION 1 HAZARDOUS WASTE ACTIVITIES----->

USEPA-ID	PAGE NBR	FORM CODE	IEPA-ID	GENERATOR STATUS	NOT LQG NEXT YR	IMPORTER HAZARD	MIXED WASTE	HAULER HAZARD	TSD HAZ	RECYCLER HAZARD	BURNER EXEMPT	FURNACE EXEMPT	INJECTION CONTROL
ILD980700751	00001	IC	1418210001	1		N	N	N	Y	N	N	N	N

<-----SECTION 2 UNIVERSAL WASTE ACTIVITIES-----> <-----SECTION 3 USED OIL ACTIVITIES----->

BATTERIES GEN	ACCUM GEN	PESTICIDES GEN	ACCUM GEN	THERMOSTATS GEN	ACCUM GEN	FLUOR-BULBS GEN	ACCUM GEN	DESTINATION FACILITY	HAULER	TRANSFER FACILITY	PROCESSOR	RE-REFINER	OFF-SPEC BURNER	MARKETER OFF-SPEC	MARKETER MET-SPEC
N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

<-----SECTION 4-----> <-----SECTION 5 TYPES-----> SECTION 6

NAICS CODES	SITE	OWNER	OPERATOR	TYPE	DATE	TYPE	DATE	COMMENT	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE
562211	1	1	02/27/1975	1	02/27/1975	N				090313	

<-----SECTION 1 WASTE DESCRIPTION----->

USEPA-ID	PAGE NBR	FORM CODE	IEPA-ID	1ST	2ND	3RD	4TH	5TH	CODE	METHOD	FORM	DENSITY	COMMENT	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE
ILD980700751	00002	GM	1418210001	F039					G25	H141	W113		N		090313	

-----SECTION 2-----<-----SECTION 3-----><-----SECTION 4 OFF-SITE SHIPMENT----->

QUANTITY GENERATED	THIS YEAR	MGMT	MANAGED ON-SITE	THIS YEAR	SHIP	USEPA-ID	METHOD	QUANTITY	USEPA-ID	METHOD	QUANTITY
1	8.36	213,000.0	N	0.0	Y	SITE 1: ILD010284248	H081	213,000.0			0.0

GENERATOR PAGE FORM GENERATOR <-----TRANSPORTER USEPA-ID(S) AND PERMIT NUMBER(S)-----> ERROR ENTER PREVIOUS

USEPA-ID	PAGE NBR	FORM CODE	IEPA-ID	1ST & 5TH	2ND & 6TH	3RD & 7TH	4TH & 8TH	COMMENT	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE
ILD980700751	00002	TI	1418210001	WI0000815381				UPW0508337MN	N	090313	

SITE: 1418210001
PROG: LPARMO35
LIST: LPARPO35

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF LAND
2009 ANNUAL REPORT
COMPREHENSIVE REPORT

PAGE: 1
TIME: 02:40:10
DATE: 12/29/10

<-----SECTION 1 HAZARDOUS WASTE ACTIVITIES----->

USEPA-ID	PAGE NBR	FORM CODE	IEPA-ID	GENERATOR STATUS	NOT LQG NEXT YR	IMPORTER HAZARD	MIXED WASTE	HAULER HAZARD	TSD HAZ	RECYCLER HAZARD	BURNER EXEMPT	FURNACE EXEMPT	INJECTION CONTROL
ILD980700751	00001	IC	1418210001	1		N	N	N	Y	N	N	N	N

<-----SECTION 2 UNIVERSAL WASTE ACTIVITIES-----> <-----SECTION 3 USED OIL ACTIVITIES----->

GEN ACCUM	PESTICIDES GEN	THERMOSTATS GEN	FLUOR-BULBS GEN	DESTINATION FACILITY	TRANSFER HAULER	RE-OFF-SPEC	MARKETER OFF-SPEC	MARKETER MET-SPEC
N	N	N	N	N	N	N	N	N

<-----SECTION 4-----> <-----SECTION 5 TYPES-----> SECTION 6

1ST	2ND	3RD	4TH	SITE TYPE	OWNER TYPE	DATE	OPERATOR TYPE	DATE	COMMENT	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE
562211				1	1	02/27/1975	1	02/27/1975	N		100419	

<-----SECTION 1 WASTE DESCRIPTION----->

USEPA-ID	PAGE NBR	FORM CODE	IEPA-ID	<-EPA HAZ WASTE CODES-->					SCR CODE	MGMT METH	WASTE FORM	WASTE MIN	DENSITY OVERRIDE	COM-MENT	ERROR FLAG	ENTER DATE	PREVIOUS CHG DATE
ILD980700751	00002	GM	1418210001	FO39						G25	H141	W113	X		N	100419	100716

-----SECTION 2-----><-----SECTION 3-----><-----SECTION 4 OFF-SITE SHIPMENT----->

--QUANTITY GENERATED--><-----MANAGED ON-SITE----->				MGMT THIS YEAR				MGMT THIS YEAR				
UOM	DENSITY	QUANTITY	TDR	MGMT METHOD	THIS YEAR QUANTITY	SHIP	USEPA-ID	METHOD	QUANTITY	USEPA-ID	METHOD	QUANTITY
1	8.36	155,900.0	N		0.0	Y	SITE 1: ILD010284248	H081	151,000.0	SITE 2: OHDO20273819	H134	4,900.0

GENERATOR PAGE FORM GENERATOR <-----TRANSPORTER USEPA-ID(S) AND PERMIT NUMBER(S)-----> ERROR ENTER PREVIOUS

USEPA-ID	PAGE NBR	FORM CODE	IEPA-ID	1ST & 5TH	2ND & 6TH	3RD & 7TH	4TH & 8TH	COMMENT	ERROR FLAG	ENTER DATE	PREVIOUS CHANGE DATE
ILD980700751	00002	TI	1418210001	WI0000815381				UPW0508337MN	N	100419	

Certification to be submitted with electronic data submissions

Please remember to submit the \$500 fee along with this certification and the electronic files.
Please do not submit printed reports.

For Agency Use Only:
Fee Enclosed No Fee

Company USEPA ID number: ILD980700751

Company IEPA ID number: 1418210001

Annual Hazardous Waste Report
Electronic data submission for year: 2009

Form types on the electronic data submission and number of pages for each type:

Form IC:	<u>1</u>	Pages	
Form GM:	<u>1</u>	Pages	
Form TI:	<u>1</u>	Pages	
Form WR:	<u>NA</u>	Pages	(Receiving facilities only)

- The enclosed data file has passed the edits contained in the software.
- The enclosed data file did not pass the edits contained in the software, explanations are included in enclosed comments pages.

COST ESTIMATES FOR FACILITIES, interim status and permitted

- A. Closure cost estimate: , ,
- B. Estimate for post closure monitoring and maintenance costs (disposal facilities only):
\$, 650, 386, 00

Certification:

I certify under penalty of law that I have personally examined and am familiar with the information attached electronic data submission. I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Please print/type:

A. Last name Zimmerman First name Bryan

B. Title Area President

C. Telephone (952) 940-5304

D. Signature *Bryan Zimmerman*

E. Date of signature 2-17-10

Copy to FA

RECEIVED
MAR 1 2010
IEPA/BOL/WRCS

US EPA ID: **ILD980700751** IL. EPA ID: **1418210001**

HAZARDOUS WASTE

RCRA Generator Status: 1

Generator Activities
 United States Importer of Hazardous Waste
 Mixed Waste (hazardous & radioactive) Generator

Transporter of Hazardous Waste
 Treater, Storer, or Disposer of Hazardous Waste
 Recycler of Hazardous Waste (at your site)
 Exempt Boiler and/or Industrial Furnace:
 Small Quantity On-Site Burner Exemption
 Smelting, Melting Refining Furnace exemption
 Underground Injection Control

Universal Waste Activities

Large Quantity Handler (5000 kg)

		<u>Managed</u>
Batteries	-	-
Pesticides	-	-
Mercury Containing Equipmen	-	-
Lamps	-	-

Destination Facility for Universal Waste

Used Oil Activities

Used Oil Transporter
 Used Oil Transfer Facility
 Used Oil Processor
 Used Oil Re-refiner
 Off-Specification Used Oil Burner
 Marketer Who Directs Off-Spec Oil to Burner
 Marketer Who Claims Oil Meets Specifications

NAICS Code(s) for this Location

 562211 _____

Site Land Type: 1
 Owner Type: 1 Owner Start Date: 02/27/1975
 Operator Type: 1 Operator Start Date: 02/27/1975

Comments: Company Contact : **JIM, HITZEROTH**
 Title: **Environmental Coordinator/Manager**
 Phone: **(630) 894-5001**

2009 Hazardous Waste Report
Form GM -- Generation and Management

US EPA ID: ILD980700751 IL. EPA ID: 1418210001

SECTION 1. WASTE DESCRIPTION

- A. Waste Description LEACHATE FROM CLOSED RCRA HAZARDOUS WASTE LANDFILL
- B. EPA Hazardous Waste Code(s): F039
- C. Source Code: G25 Management Method: H141
- D. Form Code: W113 Waste Minimization Code X

SECTION 2. QUANTITY GENERATED

- A. UOM: 1. Gallons Density: 8.36 lb/gal.
- B. Quantity Generated in Current reporting year: 155,900.0

SECTION 3. QUANTITY MANAGED ON-SITE:

Did this location manage some or all of this waste in RCRA or UIC regulated treatment, recycling, or disposal units at this location? (DO NOT include RCRA exempt processes.) N

- On-Site System 1: Management Method: _____ Quantity managed on-site this year: 0.0
- On-Site System 2: Management Method: _____ Quantity managed on-site this year: 0.0

SECTION 4. OFF-SITE SHIPMENT

- A. Was any of this waste shipped off site this reporting year? Y

SITE 1.

- B. U.S. EPA ID No. of facility waste was shipped to: ILD010284248
- C. Management method shipped to: H081
- D. Total quantity shipped in this reporting year: 151,000.00

SITE 2.

- B. U.S. EPA ID No. of facility waste was shipped to: OHD020273819
- C. Management method shipped to: H134
- D. Total quantity shipped in this reporting year: 4,900.00

SITE 3.

- B. U.S. EPA ID No. of facility waste was shipped to: _____
- C. Management method shipped to: _____
- D. Total quantity shipped in this reporting year: 0.00

SITE 4.

- B. U.S. EPA ID No. of facility waste was shipped to: _____
- C. Management method shipped to: _____
- D. Total quantity shipped in this reporting year: 0.00

SITE 5.

- B. U.S. EPA ID No. of facility waste was shipped to: _____
- C. Management method shipped to: _____
- D. Total quantity shipped in this reporting year: 0.00

COMMENTS: N

**ILLINOIS Environmental Protection Agency
2009 Hazardous Waste Report
Form TI -- Transporter Identification**

US EPA ID: ILD980700751 IL. EPA ID: 1418210001

1. U.S. EPA ID No WI0000815381 Hauling Permit No. UPW508337MN

2. U.S. EPA ID No _____ Hauling Permit No. _____

3. U.S. EPA ID No _____ Hauling Permit No. _____

4. U.S. EPA ID No _____ Hauling Permit No. _____

5. U.S. EPA ID No _____ Hauling Permit No. _____

6. U.S. EPA ID No. _____ Hauling Permit No. _____

7. U.S. EPA ID No _____ Hauling Permit No. _____

8. U.S. EPA ID No _____ Hauling Permit No. _____

Comments: N

IC Page No.: 00001 Successfully Exported.

IC Records Successfully Exported: 1
IC Records Exported With Errors: 0

GM Page No.: 00002 Successfully Exported.

GM Records Successfully Exported: 1
GM Records Exported With Errors: 0

TI Page No.: 00002 Successfully Exported.

TI Records Successfully Exported: 1
TI Records Exported With Errors: 0

WR Records Successfully Exported: 0
WR Records Exported With Errors: 0

WEAVER
BOOS
CONSULTANTS

ORIGINAL

February 26, 2010
Project No. 0120-49-30

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

**Re: Annual Hazardous Waste Report - 2009
Davis Junction Landfill
Davis Junction, Illinois
USEPA No. ILD980700751
IEPA No. 1418210001**

Dear Ms. Wright:

On behalf of Davis Junction Landfill, **Weaver Boos Consultants** submits an electronic and paper copy of the facility's 2009 Annual Hazardous Waste Report. Please review the enclosed package and call with any questions, comments, or concerns.

Sincerely,
Weaver Boos Consultants, Inc.

Bridget M. Conlon

Bridget M. Conlon
Staff Environmental Specialist

Enclosures

cc: Jim Hitzeroth, BFI Waste Systems of North America, LLC

WEAVER

BOOS

CONSULTANTS

Project No.0120-49

August 6, 2010

Illinois Environmental Protection Agency
Permit Section
Bureau of Land - #33
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

**Re: Addendum to 2009 Annual Report
Davis Junction Landfill
RCRA Part B (Phase I) Unit
Site No. 1418210001 – Ogle County
Permit No. B-142
Davis Junction, Illinois**

RECEIVED
AUG 06 2010
IEPA-BOL
PERMIT SECTION

Dear Correspondent:

On February 26, 2010, Weaver Boos Consultants (*Weaver Boos*) submitted the 2009 Annual Report for Davis Junction Landfill per Permit No. B-142. Clarification has been requested regarding activities that took place regarding the onsite gas-to-energy facility during 2009. As such, Weaver Boos is submitting an addendum to the original annual report.

Previously a gas-to-energy facility had been co-located at Davis Junction Landfill. Gas Recovery Services (GRS)/Fortistar Methane Group (Fortistar) had operated the facility. Landfill gas was routed to the facility and the landfill flare was used as backup control. However, as of June 2009, GRS/Fortistar removed their equipment from site and ceased operations at Davis Junction Landfill. Since that time, all landfill gas produced has been routed to the onsite flare.

Despite the removal of the gas-to-energy facility, Fortistar personnel continued to conduct monthly operation and maintenance inspections at Davis Junction throughout 2009. Monthly site evaluations, including cover inspections, well gas readings, and flare maintenance, were recorded and reported by Fortistar for each month of 2009. Fortistar also completed the Annual Ambient Air Monitoring as included in the original annual report

Illinois Environmental Protection Agency
August 6, 2010
Davis Junction Landfill
Page 2 of 2

Thank you for your consideration of this matter, and please do not hesitate to call if you have any questions.

Very truly yours,
Weaver Boos Consultants North Central LLC



Elizabeth A. Steinhour
Senior Project Manager



Bridget M. Conlon
Project Environmental Specialist

Cc: Joy Bliton, Ogle County Solid Waste Department
James Hitzeroth, B.F.I. Davis Junction Landfill

RECEIVED

AUG 06 2010

**IEPA-BOL
PERMIT SECTION**

**WEAVER
BOOS
CONSULTANTS**

Certification to be submitted with electronic data submissions

Please remember to submit the \$500 fee along with this certification and the electronic files. Please do not submit printed reports.

For Agency Use Only:	
<input type="checkbox"/> Fee Enclosed	<input checked="" type="checkbox"/> No Fee Enclosed

Company USEPA ID number: ILD980700751
 Company IEPA ID number: 1418210001
 Annual Hazardous Waste Report
 Electronic data submission for year: 2011

Form types on the electronic data submission and number of pages for each type:

Form IC: 1 Pages
 Form GM: 0 Pages
 Form TI: 0 Pages
 Form WR: 0 Pages (Receiving facilities only)

- The enclosed data files has passed the edits contained in the software.
 The enclosed data file did not pass the edits contained in the software, explanations are included in enclosed comments pages.

COST ESTIMATES FOR FACILITIES, interim status and permitted

A. Closure cost estimate: \$ _____ , _____ , _____ . _____

B. Estimate for post closure monitoring and maintenance costs (disposal facilities only):

\$ _____ , 310 , 764 . 00

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Certification:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached electronic data submission. I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Please print/type:

A. Last name Zimmerman First Name Bryan
 B. Title Area President
 C. Telephone 952-940-5304 Email address BZimmerman@republicservices.com
 D. Signature *Bryan Zimmerman*
 E. Date of signature 2-27-12

The Environmental Protection Agency is authorized to require this information under the Illinois Compiled Statutes (>ILCS@), 1994 as amended, Chapter 415 ILCS 5/4 and 21. Disclosure of this information is required. Failure to disclose this information may result in civil and criminal penalties pursuant to 415 ILCS 5/42 and 44. This form has been approved by the Forms Management Center.

EPA - DIVISION OF RECORDS MANAGEMENT

RELEASABLE

JAN 14 2013

REVIEWER MED

MAR 02 2024

Validated

ILLINOIS Environmental Protection Agency
2011 Hazardous Waste Report
Form IC -- Identification and Certification

IEPA/BOL/WRCS

US. EPA ID: **ILD980700751** IL. EPA ID: **1418210001**

HAZARDOUS WASTE

RCRA Generator Status: <u> 4 </u>	<input type="checkbox"/> Transporter of Hazardous Waste <input type="checkbox"/> Transfer Facility (at your site) <input type="checkbox"/> Treater, Storer, or Disposer of Hazardous Waste <input type="checkbox"/> Recycler of Hazardous Waste (at your site) Exempt Boiler and/or Industrial Furnace: <input type="checkbox"/> Small Quantity On-Site Burner exemption <input type="checkbox"/> Smelting, Melting Refining Furnace exemption <input type="checkbox"/> Underground Injection Control												
Generator Activities <input type="checkbox"/> United States Importer of Hazardous Waste <input type="checkbox"/> Mixed Waste(hazardous&radioactive) Generator	Used Oil Activities <input type="checkbox"/> Used Oil Transporter <input type="checkbox"/> Used Oil Transfer Facility <input type="checkbox"/> Used Oil Processor <input type="checkbox"/> Used Oil Re-refiner <input type="checkbox"/> Off-Specification Used Oil Burner <input type="checkbox"/> Marketer Who Directs Off-Spec Oil to Burner <input type="checkbox"/> Marketer Who Claims Oil Meets Spec.												
Universal Waste Activities <input type="checkbox"/> Large Quantity Handler (500 kg) Managed <table style="width:100%; border: none;"> <tr> <td style="width:60%;">Batteries</td> <td style="width:10%; text-align: center;"><u> X </u></td> <td style="width:30%; text-align: center;"><u> — </u></td> </tr> <tr> <td>Pesticides</td> <td style="text-align: center;"><u> X </u></td> <td style="text-align: center;"><u> — </u></td> </tr> <tr> <td>Mercury Containing Equipment</td> <td style="text-align: center;"><u> X </u></td> <td style="text-align: center;"><u> — </u></td> </tr> <tr> <td>Lamps</td> <td style="text-align: center;"><u> X </u></td> <td style="text-align: center;"><u> — </u></td> </tr> </table> <input type="checkbox"/> Destination Facility for Universal Waste	Batteries	<u> X </u>	<u> — </u>	Pesticides	<u> X </u>	<u> — </u>	Mercury Containing Equipment	<u> X </u>	<u> — </u>	Lamps	<u> X </u>	<u> — </u>	NAICS Code(s) for this Location <u> 562211 </u> <u> 0 </u> <u> 0 </u> <u> 0 </u>
Batteries	<u> X </u>	<u> — </u>											
Pesticides	<u> X </u>	<u> — </u>											
Mercury Containing Equipment	<u> X </u>	<u> — </u>											
Lamps	<u> X </u>	<u> — </u>											
Comments: <u> N </u>	Company Contact: JIM, HITZEROTH Title: D Phone: 6308945001												

WEAVER
BOOS
CONSULTANTS

February 29, 2012
Project No. 0120-49-30

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

ORIGINAL

Re: Annual Hazardous Waste Report - 2011
BFI, Davis Junction Landfill – Phase I
Davis Junction, Illinois
USEPA No. ILD980700751
IEPA No. 1418210001

Dear Ms. Wright:

On behalf of BFI Waste Systems of North America, LLC., **Weaver Boos Consultants North Central, LLC** submits an electronic and paper copy of the facility's 2011 Annual Hazardous Waste Report. A petition to delist the only waste regularly generated from the hazardous waste unit at Davis Junction (i.e., landfill leachate) was approved by the Illinois Pollution Control Board on December 4, 2008 (Petition of BFI Waste Systems of North America, Inc. for Waste Delisting AS 08-5). The first load of leachate was transported under the delisting approval in February of 2010. Once the waste is loaded into a tanker truck for transport offsite, and as long as the leachate is transported safely to the approved treatment facility, it is considered a nonhazardous waste.

Each load of leachate removed and hauled from the site in 2011 was classified as non-hazardous pursuant to the above delisting petition. 2011 is the first complete calendar year in which no hazardous waste was generated at the site. Therefore, only an Identification and Certification Form and Signature Form have been included with this report. Additionally, no fee has been included due to this change in RCRA generator status pursuant my discussion with you on February 15, 2012.

Please review the enclosed package and call with any questions, comments, or concerns.

Sincerely,
Weaver Boos Consultants North Central, LLC



Bridget M. Conlon
Project Environmental Specialist

Enclosures

cc: Jim Hitzeroth, BFI Waste Systems of North America, LLC (w/ encl)

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE

JAN 14 2013

REVIEWER MED

RECEIVED
R 000964
FEB 08 2013

IEPA/BOL/WRCS

Certification to be submitted with electronic data submissions

Please remember to submit the \$500 fee along with this certification and the electronic files. Please do not submit printed reports.

For Agency Use Only:
_ Fee Enclosed No Fee Enclosed

Company USEPA ID number: ILD980700751

Company IEPA ID number: 1418210001

Annual Hazardous Waste Report
Electronic data submission for year: 2012

Form types on the electronic data submission and number of pages for each type:

- Form IC: 1 Pages
- Form GM: 0 Pages
- Form TI: 0 Pages
- Form WR: 0 Pages (Receiving facilities only)

- The enclosed data files has passed the edits contained in the software.
- The enclosed data file did not pass the edits contained in the software, explanations are included in enclosed comments pages.

COST ESTIMATES FOR FACILITIES, interim status and permitted

A. Closure cost estimate: \$ _____ , _____ , _____ . _____

B. Estimate for post closure monitoring and maintenance costs (disposal facilities only):

\$ _____ , 243,970 . _____

EPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE

JAN 27 2014

REVIEWER JKS

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Certification:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached electronic data submission. I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Please print/type:

- A. Last name Zimmerman First Name Bryan
- B. Title Area President
- C. Telephone (952) 946-5304 Email address bzimmerman@republicservices.com
- D. Signature *Bryan Zimmerman*
- E. Date of signature 2-5-13

The Environmental Protection Agency is authorized to require this information under the Illinois Compiled Statutes (>ILCS@), 1994 as amended, Chapter 415 ILCS 5/4 and 21. Disclosure of this information is required. Failure to disclose this information may result in civil and criminal penalties pursuant to 415 ILCS 5/42 and 44. This form has been approved by the Forms Management Center.

Copy to PA

WEAVER
BOOS
CONSULTANTS

February 8, 2013
Project No. 0120-49-10

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Re: Annual Hazardous Waste Report - 2012
BFI, Davis Junction Landfill – Phase I
Davis Junction, Illinois
USEPA No. ILD980700751
IEPA No. 1418210001

Dear Ms. Wright:

On behalf of BFI Waste Systems of North America, LLC., **Weaver Boos Consultants North Central, LLC** submits an electronic and paper copy of the facility's 2012 Annual Hazardous Waste Report. A petition to delist the only waste regularly generated from the hazardous waste unit at Davis Junction (i.e., landfill leachate) was approved by the Illinois Pollution Control Board on December 4, 2008 (Petition of BFI Waste Systems of North America, Inc. for Waste Delisting AS 08-5). The first load of leachate was transported under the delisting approval in February of 2010. Once the waste is loaded into a tanker truck for transport offsite, and as long as the leachate is transported safely to the approved treatment facility, it is considered a nonhazardous waste.

Each load of leachate removed and hauled from the site in 2012 was classified as non-hazardous pursuant to the above delisting petition. Therefore, only an Identification and Certification Form and Signature Form have been included with this report. Additionally, no fee has been included due to this change in RCRA generator status pursuant my discussion with you on January 24, 2013.

Please review the enclosed package and call with any questions, comments, or concerns.

Sincerely,
Weaver Boos Consultants North Central, LLC



Bridget M. Conlon
Project Environmental Specialist

Enclosures

cc: Jim Hitzerth, BFI Waste Systems of North America, LLC (w/ encl)

FEB 13

Certification to be submitted with electronic data submissions

IEPA/BOL/WRCS

Please remember to submit the \$500 fee along with this certification and the electronic files. Please do not submit printed reports.

For Agency Use Only:
 Fee Enclosed No Fee Enclosed

Company USEPA ID number: ILD980700751

Company IEPA ID number: 1418210001

Annual Hazardous Waste Report 2013
Electronic data submission for year:

Form types on the electronic data submission and number of pages for each type:

- Form IC: 1 Pages
- Form GM: 0 Pages
- Form TI: 0 Pages
- Form WR: 0 Pages (Receiving facilities only)

- The enclosed data files has passed the edits contained in the software.
- The enclosed data file did not pass the edits contained in the software. explanations are included in enclosed comments pages.

COST ESTIMATES FOR FACILITIES, interim status and permitted

A. Closure cost estimate: \$, , .

B. Estimate for post closure monitoring and maintenance costs (disposal facilities only):
\$, 146 , 008 . 00

Copy of File

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Certification:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in the attached electronic data submission. I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Please print/type:

A. Last name Doyen First Name John
 B. Title Area President
 C. Telephone 952-946-5236 Email address jdoyen@republicservices.com
 D. Signature 
 E. Date of signature 2/7/14

The Environmental Protection Agency is authorized to require this information under the Illinois Compiled Statutes (>ILCS@), 1994 as amended, Chapter 415 ILCS 5/4 and 21. Disclosure of this information is required. Failure to disclose this information may result in civil and criminal penalties pursuant to 415 ILCS 5/42 and 44. This form has been approved by the Forms Management Center.

IEPA-DIVISION OF RECORDS MANAGEMENT
RELEASABLE

DEC 23 2014

REVIEWER: EMI

Validated

**ILLINOIS Environmental Protection Agency
2013 Hazardous Waste Report
Form IC -- Identification and Certification**

US. EPA ID: **ILD980700751** IL. EPA ID: **1418210001**

HAZARDOUS WASTE

RCRA Generator Status: <u>4</u>	<input type="checkbox"/> Transporter of Hazardous Waste <input type="checkbox"/> Transfer Facility (at your site) <input type="checkbox"/> Treater, Storer, or Disposer of Hazardous Waste <input type="checkbox"/> Recycler of Hazardous Waste (at your site) Exempt Boiler and/or Industrial Furnace: <input type="checkbox"/> Small Quantity On-Site Burner exemption <input type="checkbox"/> Smelting, Melting Refining Furnace exemption <input type="checkbox"/> Underground Injection Control
Generator Activities <input type="checkbox"/> United States Importer of Hazardous Waste <input type="checkbox"/> Mixed Waste(hazardous&radioactive) Generator	Used Oil Activities <input type="checkbox"/> Used Oil Transporter <input type="checkbox"/> Used Oil Transfer Facility <input type="checkbox"/> Used Oil Processor <input type="checkbox"/> Used Oil Re-refiner <input type="checkbox"/> Off-Specification Used Oil Burner <input type="checkbox"/> Marketer Who Directs Off-Spec Oil to Burner <input type="checkbox"/> Marketer Who Claims Oil Meets Spec.
Universal Waste Activities <input type="checkbox"/> Large Quantity Handler (5000 kg) <div style="text-align: right;">Managed</div> Batteries _____ Pesticides _____ Mercury Containing Equipment _____ Lamps _____ <input type="checkbox"/> Destination Facility for Universal Waste	NAICS Code(s) for this Location <u>562211</u> <u>0</u> <u>0</u>
NAICS Code(s) for this Location <u>562211</u> <u>0</u> <u>0</u>	Site Land Type: <u>1</u> Owner Type: <u>1</u> Owner Start Date: <u>02/27/1975</u> Operator Type: <u>1</u> Operator Start Date: <u>02/27/1975</u>

Comments: N

Company Contact: JIM, HITZEROTH

Title: D

Phone: 6308945001

WEAVER
BOOS
CONSULTANTS

February 12, 2014
Project No. 0120-49-10

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Re: Annual Hazardous Waste Report - 2013
BFI, Davis Junction Landfill - Phase I
Davis Junction, Illinois
USEPA No. ILD980700751
IEPA No. 1418210001

Dear Ms. Wright:

On behalf of BFI Waste Systems of North America, LLC., Weaver Boos Consultants submits an electronic and paper copy of the facility's 2013 Annual Hazardous Waste Report. A petition to delist the only waste regularly generated from the hazardous waste unit at Davis Junction (i.e., landfill leachate) was approved by the Illinois Pollution Control Board on December 4, 2008 (Petition of BFI Waste Systems of North America, Inc. for Waste Delisting AS 08-5). The first load of leachate was transported under the delisting approval in February of 2010. Once the waste is loaded into a tanker truck for transport offsite, and as long as the leachate is transported safely to the approved treatment facility, it is considered a nonhazardous waste.

Each load of leachate removed and hauled from the site in 2013 was classified as non-hazardous pursuant to the above delisting petition. Therefore, only an Identification and Certification Form and Signature Form have been included with this report. Additionally, no fee has been included due to this change in RCRA generator status.

Please review the enclosed package and call with any questions, comments, or concerns.

Sincerely,
Weaver Boos Consultants North Central, LLC



Bridget M. Conlon
Project Environmental Specialist

Enclosures

cc: Jim Hitzeroth, BFI Waste Systems of North America, LLC (w/ encl)

US EPA Number: IL D980700751

IEPA Number: 1418210001

Company Name: BFI WASTE SYSTEMS OF NORTH AMERICA, LLC

Address : 8902 N ROUTE 251, DAVIS JUNCTION, IL 61020

ILLINOIS Environmental Protection Agency
2014 Hazardous Waste Report
Form IC - Identification and Certification

For IEPA (Agency) Use Only

Fee Enclosed

No Fee Enclosed

IEPA BOLLING
FEB 26 2015

RECEIVED

All information on this page is required.

Section 1. HAZARDOUS WASTE ACTIVITIES

4 RCRA Generator Status as of 3-1-2015

1 = LQG: Greater than 1,000 kg/mo (2200 lbs/mo) of non-acute hazardous waste (Forms GM and T1 must also be completed using the complete electronic package)

2 = SQG: 100 to 1,000 kg/mo of non-acute hazardous waste

3 = CESGG: Less than 100 kg/mo of non-acute hazardous waste

4 = Nongenerator

IF your site is no longer a LQG, but was a LQG during calendar year 2014, YOU MUST COMPLETE THE REPORT USING THE COMPLETE ELECTRONIC PACKAGE

Other Generator Activities: Enter Y (yes) or N (no)

N United States Importer of Hazardous Waste

N Mixed Waste (hazardous & radioactive) Generator

All other hazardous waste activities: Enter Y or N

N Transporter of Hazardous Waste

N Transfer Facility (at your site) 40 CFR 268.12

N Treater, Storer, or Disposer of Hazardous Waste (at your site)
Note: A hazardous waste permit is required for this activity.

N Recycler of Hazardous Waste (at your site)
Note: A hazardous waste permit may be required for this activity.

Exempt Boiler and/or Industrial Furnace:

N Small Quantity On-Site Burner Exemption

N Smelting, Melting, Refining Furnace Exemption

N Underground Injection Control

Section 2. UNIVERSAL WASTE ACTIVITIES: Y OR N

Large Quantity Handler (5,000 kg) of Universal Waste. Mark the

N following types only if Yes.

Batteries

Pesticides

Mercury Containing Equipment

Lamps

N Destination Facility for Universal Waste.

Note: A hazardous waste permit may be required for this activity.

Section 3. Used Oil ACTIVITIES: Enter Y OR N

N Used Oil Transporter

N Used Oil Transfer Facility

N Used Oil Processor

N Used Oil Re-refiner

N Off-Specification Used Oil Burner

N Marketer who Directs Shipment of Off-Spec Used oil to Off-spec Used Oil Burner

N Marketer who First Claims the Used Oil Meets the Specifications

Section 4. ENTER THE 6 digit 2013 NAICS CODE(S) FOR THIS LOCATION

562211

Section 5. TYPES:

Site Land Type (Enter code from list in instructions): 1

Owner Type (Enter code from list in instructions): 1

Date current owner Became Owner (mm/dd/yyyy): 02 / 27 / 1975

Operator Type (Enter code from list in instructions): 1

Date current operator Became Operator (mm/dd/yyyy): 02 / 27 / 1975

Section 6. Comments: N Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

COST ESTIMATES FOR TSD FACILITIES, interim status and permitted

A. Closure cost estimate: \$

B. Estimate for post closure monitoring and maintenance costs (disposal facilities only): \$ 818,212.00

Section 7. Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Please print: Last Name Schuck First Name Erik

B. Title Area President

C. Signature

D. Date of Signature 2/23/15

Name, Telephone number, and email of person to contact if there are questions about this report:
James Hitzeroth, 630.894.5001, JHitzeroth@republicservices.com

This Agency is authorized to require this information under 415 ILCS 5/4 and 21. Disclosure of this information is required. Failure to disclose this information may result in a civil penalty of not to exceed \$50,000 for the violation and an additional civil penalty of not to exceed \$10,000 for each day during which the violation continues (415 ILCS 5/42 and 44).

Copy of PFA



February 25, 2015

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Re: Annual Hazardous Waste Report - 2014
BFI, Davis Junction Landfill – Phase I
Davis Junction, Illinois
USEPA No. ILD980700751
IEPA No. 1418210001

Dear Ms. Wright:

On behalf of BFI Waste Systems of North America, LLC, Weaver Consultants Group submits the facility's 2014 Annual Hazardous Waste Report. A petition to delist the only waste regularly generated from the hazardous waste unit at Davis Junction (i.e., landfill leachate) was approved by the Illinois Pollution Control Board on December 4, 2008 (Petition of BFI Waste Systems of North America, Inc. for Waste Delisting AS 08-5). The first load of leachate was transported under the delisting approval in February of 2010. Once the waste is loaded into a tanker truck for transport offsite, and as long as the leachate is transported safely to the approved treatment facility, it is considered a nonhazardous waste.

Each load of leachate removed and hauled from the site in 2014 was classified as non-hazardous pursuant to the above delisting petition. Therefore, only an Identification and Certification Form has been included with this report. Additionally, no fee has been included due to this change in RCRA generator status.

Please review the enclosed package and call with any questions, comments, or concerns.

Sincerely,
Weaver Consultants Group, North Central, LLC

A handwritten signature in cursive script that reads 'Bridget M. Conlon'.

Bridget M. Conlon
Project Environmental Specialist

Enclosures: IC Form

cc: Jim Hitzeroth, BFI Waste Systems of North America, LLC

US EPA Number: ILD980700751

IEPA Number: 1418210001

Company Name: BFI WASTE SYSTEMS OF NORTH AMERICA LLC

Address : 8902 N ROUTE 251, DAVIS JUNCTION, IL 61020

ILLINOIS Environmental Protection Agency
2015 Hazardous Waste Report
Form IC - Identification and Certification

For IEPA (Agency) Use Only:
 Fee Enclosed No Fee Enclosed

All information on this page is required.

Section 1. HAZARDOUS WASTE ACTIVITIES
4 RCRA Generator Status as of 3-1-2016
1 = LQG: Greater than 1,000 kg/mo (2200 lbs/mo) of non-acute hazardous waste (Forms GM and T1 must also be completed using the complete electronic package)
2 = SQG: 100 to 1,000 kg/mo of non-acute hazardous waste
3 = CESGG: Less than 100 kg/mo of non-acute hazardous waste
4 = Nongenerator
IF your site is no longer a LQG, but was a LQG during calendar year 2015, YOU MUST COMPLETE THE REPORT USING THE COMPLETE ELECTRONIC PACKAGE
Other Generator Activities: Enter Y (yes) or N (no)
N United States Importer of Hazardous Waste
N Mixed Waste (hazardous & radioactive) Generator

All other hazardous waste activities: Enter Y or N
N Transporter of Hazardous Waste
N Transfer Facility (at your site) 40 CFR263.12
N Treater, Storer, or Disposer of Hazardous Waste (at your site)
Note: A hazardous waste permit is required for this activity.
N Recycler of Hazardous Waste (at your site)
Note: A hazardous waste permit may be required for this activity.
Exempt Boiler and/or Industrial Furnace:
N Small Quantity On-Site Burner Exemption
N Smelting, Melting, Refining Furnace Exemption
N Underground Injection Control

Section 2. UNIVERSAL WASTE ACTIVITIES: Y OR N
Large Quantity Handler (5,000 kg) of Universal Waste. Mark the N following types only if Yes.
 Batteries
 Pesticides
 Mercury Containing Equipment
 Lamps
N Destination Facility for Universal Waste.
Note: A hazardous waste permit may be required for this activity.

Section 3. Used Oil ACTIVITIES: Enter Y OR N
N Used Oil Transporter
N Used Oil Transfer Facility
N Used Oil Processor
N Used Oil Re-refiner
N Off-Specification Used Oil Burner
N Marketer who Directs Shipment of Off-Spec Used oil to Off-spec Used Oil Burner
N Marketer who First Claims the Used Oil Meets the Specifications

Section 4. ENTER THE 6 digit 2013 NAICS CODE(S) FOR THIS LOCATION
562211

Section 5. TYPES:
Site Land Type (Enter code from list in instructions): 1
Owner Type (Enter code from list in instructions): 1
Date current owner Became Owner (mm/dd/yyyy): 02 / 27 / 1975
Operator Type (Enter code from list in instructions): 1
Date current operator Became Operator (mm/dd/yyyy): 02 / 27 / 1975

Section 6. Comments: N Enter Y (Yes) if you have comments regarding this page and attach extra sheet.
COST ESTIMATES FOR TSD FACILITIES, interim status and permitted
A. Closure cost estimate: \$ _____
B. Estimate for post closure monitoring and maintenance costs (disposal facilities only): \$ 729,514.00

Section 7. Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))
Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.
A. Please print: Last Name Merman First Name Jevon B. Title Area President
C. Signature [Signature] D. Date of Signature 3/2/16

Name, Telephone number, and email of person to contact if there are questions about this report:
JAMES HITZEROTH, 630.894.5001, jhitzeroth@republicservices.com

Copy to FAX



March 1, 2016

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Re: Annual Hazardous Waste Report - 2015
BFI, Davis Junction Landfill – Phase I
Davis Junction, Illinois
USEPA No. ILD980700751
IEPA No. 1418210001

Dear Ms. Wright:

On behalf of BFI Waste Systems of North America, LLC, Weaver Consultants Group submits the facility's 2015 Annual Hazardous Waste Report. A petition to delist the only waste regularly generated from the hazardous waste unit at Davis Junction (i.e., landfill leachate) was approved by the Illinois Pollution Control Board on December 4, 2008 (Petition of BFI Waste Systems of North America, Inc. for Waste Delisting AS 08-5). The first load of leachate was transported under the delisting approval in February of 2010. Once the waste is loaded into a tanker truck for transport offsite, and as long as the leachate is transported safely to the approved treatment facility, it is considered a nonhazardous waste.

Each load of leachate removed and hauled from the site in 2015 was classified as non-hazardous pursuant to the above delisting petition. Therefore, only an Identification and Certification Form has been included with this report. Additionally, no fee has been included due to this change in RCRA generator status.

Please review the enclosed package and call with any questions, comments, or concerns.

Sincerely,
Weaver Consultants Group, North Central, LLC

A handwritten signature in cursive script that reads 'Bridget M. Conlon'.

Bridget M. Conlon
Project Environmental Specialist

Enclosures: IC Form

cc: Jim Hitzeroth, BFI Waste Systems of North America, LLC

RECEIVED

MAR 02 2016

IEPA-BOL

PERMIT SECTION

J:\USERS\0120 - ALLIED\0120-049 - DAVIS JUNCTION\0120-49-30 - O & M\HAZ WASTE REPORT\2015 HAZ WASTE REPORT\DRAFTS\CRIG\4433\VERLETTER\03.02.16.DOC

US EPA Number: IL D980700751

IEPA Number: 1418210001

Company Name: BFI WASTE SYSTEMS OF NORTH AMERICA, LLC

Address: 8902 N ROUTE 251, DAVIS JUNCTION, IL 61020

ILLINOIS Environmental Protection Agency
2016 Hazardous Waste Report
Form IC - Identification and Certification

For EPA (Agency) Use Only
 Fee Enclosed No Fee Enclosed

All information on this page is required.

Section 1. HAZARDOUS WASTE ACTIVITIES

4 RCRA Generator Status as of 3-1-2017

1 = LQG: Greater than 1,000 kg/mo (2200 lbs/mo) of non-acute hazardous waste (Forms GM and T1 must also be completed using the complete electronic package)

2 = SQG: 100 to 1,000 kg/mo of non-acute hazardous waste

3 = CESGG: Less than 100 kg/mo of non-acute hazardous waste

4 = Nongenerator

IF your site is no longer a LQG, but was a LQG during calendar year 2016, YOU MUST COMPLETE THE REPORT USING THE COMPLETE ELECTRONIC PACKAGE

Other Generator Activities: Enter Y (yes) or N (no)

N United States Importer of Hazardous Waste

N Mixed Waste (hazardous & radioactive) Generator

All other hazardous waste activities: Enter Y or N

N Transporter of Hazardous Waste

N Transfer Facility (at your site) 40 CFR263.12

N Treater, Storer, or Disposer of Hazardous Waste (at your site)

Note: A hazardous waste permit is required for this activity.

N Recycler of Hazardous Waste (at your site)

Note: A hazardous waste permit may be required for this activity.

Exempt Boiler and/or Industrial Furnace:

N Small Quantity On-Site Burner Exemption

N Smelting, Melting, Refining Furnace Exemption

N Underground Injection Control

Section 2. UNIVERSAL WASTE ACTIVITIES: Y OR N

Large Quantity Handler (5,000 kg) of Universal Waste. Mark the following types only if Yes.

N Batteries

 Pesticides

 Mercury Containing Equipment

 Lamps

N Destination Facility for Universal Waste.

Note: A hazardous waste permit may be required for this activity.

Section 3. Used Oil ACTIVITIES: Enter Y OR N

N Used Oil Transporter

N Used Oil Transfer Facility

N Used Oil Processor

N Used Oil Re-refiner

N Off-Specification Used Oil Burner

N Marketer who Directs Shipment of Off-Spec Used oil to Off-spec Used Oil Burner

N Marketer who First Claims the Used Oil Meets the Specifications

Section 4. ENTER THE 6 digit 2013 NAICS CODE(S) FOR THIS LOCATION

582211

Section 5. TYPES:

Site Land Type (Enter code from list in instructions): 1

Owner Type (Enter code from list in instructions): 1

Date current owner Became Owner (mm/dd/yyyy): 02 / 27 / 1975

Operator Type (Enter code from list in instructions): 1

Date current operator Became Operator (mm/dd/yyyy): 02 / 27 / 1975

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE

JAN 23 2018

Section 6. Comments: N Enter Y (Yes) if you have comments regarding this page and attach extra sheet

COST ESTIMATES FOR TSD FACILITIES, Interim status and permitted

A. Closure cost estimate: \$

B. Estimate for post closure monitoring and maintenance costs (disposal facilities only): \$ 640,315.00

REVIEWER JR00

Section 7. Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Please print: Last Name Herman First Name Jevon B. Title Area President

C. Signature [Signature] D. Date of Signature 2/17/17

Name, Telephone number, and email of person to contact if there are questions about this report:

James Hitzeroth, 630-894-5004, jhitzeroth@publicservices.com

This Agency is authorized to require this information under 415 ILCS 5/4 and 21. Disclosure of this information is required. Failure to disclose this information may result in a civil penalty of not to exceed \$50,000 for the violation and an additional civil penalty of not to exceed \$10,000 for each day during which the violation continues (415 ILCS 5/42 and 44).

US EPA Number: 1 L D 9 8 0 7 0 0 7 5 1

ILLINOIS Environmental Protection Agency
2016 Hazardous Waste Report

IEPA Number: 1 4 1 8 2 1 0 0 0 1

Form GM - Generation and Management

Company name: RFT Waste Systems of North America, LLC
Address: 8902 N. Route 251 Davis Junction, IL 61020

Instructions for this form found on pages 16-21. (Same UOM and density must be used for all quantities on this page).

SECTION 1. WASTE DESCRIPTION

A. Waste Description: Landfill leachate
B. EPA Hazardous Waste Code F 0 3 9
C. Source Code: G 2 6 When Source Code is G25, enter Management Method producing residuals: H _____
D. Form code: W 1 0 1 E. Waste Minimization Code X

SECTION 2. QUANTITY GENERATED [DENSITY MUST BE ENTERED FOR ALL WASTE STREAMS!]

All generation that counts towards your generation totals must be included on a Form GM, regardless of where or how managed.

A. UOM: l Density 0 8 . 3 4 lb/gal {Density of water is 08.34, most wastes are between 6 and 15}
B. Quantity generated in current reporting year: 0 0 0 0 1 6 9 0 0 . 0

SECTION 3. QUANTITY MANAGED ON-SITE: Did this location manage some or all of this waste in RCRA or UIC regulated treatment, recycling, or disposal units at this location? DO NOT include RCRA exempt processes.

N Y = Yes (continue to system 1) N = No (skip to section 4.)

On-Site System 1: Management Method H _____ Quantity managed on-site this year: _____
On-Site System 2: Management Method H _____ Quantity managed on-site this year: _____

SECTION 4. OFF-SITE SHIPMENT - Refer to page 29 for common errors on facilities & management methods.

A. Was any of this waste shipped off site this reporting year? Y Y = Yes (Continue to Site 1) N = No

SITE 1. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: IL 0 0 1 0 2 8 4 2 4 8
C. Management method shipped to: H 1 3 5
D. Total quantity shipped in this reporting year: 0 0 0 0 1 6 9 0 0 . 0

SITE 2. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: _____
C. Management method shipped to: H _____
D. Total quantity shipped in this reporting year: _____

SITE 3. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: _____
C. Management method shipped to: H _____
D. Total quantity shipped in this reporting year: _____

SITE 4. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: _____
C. Management method shipped to: H _____
D. Total quantity shipped in this reporting year: _____

SITE 5. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: _____
C. Management method shipped to: H _____
D. Total quantity shipped in this reporting year: _____

COMMENTS: Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

WJL

US EPA Number: IL 0980700751
IEPA Number: 1418210001
Company name: BFI Waste Systems of North America, LLC
Address: 8902 N. Route 251 Davis Junction, IL 61020

ILLINOIS Environmental Protection Agency
2016 Hazardous Waste Report
Form TI - Transporter Identification

Instructions for this form found on page 21. PLEASE NOTE that only the four-digit hauling permit number is valid for hazardous waste transporters picking up or delivering to an Illinois location!

1. U.S. EPA ID No. WI0000815381 Hauling Permit No. 3426
₃₁ Transporter Name, Address, and Telephone Number: Advanced Waste Carriers, Inc.
1126 S. 70th Street, Suite N408B
West Allis, WI 53214

2. U.S. EPA ID No. _____ Hauling Permit No. _____
₄₃ Transporter Name, Address, and Telephone Number:

3. U.S. EPA ID No. _____ Hauling Permit No. _____
₅₅ Transporter Name, Address, and Telephone Number:

4. U.S. EPA ID No. _____ Hauling Permit No. _____
₆₇ Transporter Name, Address, and Telephone Number:

5. U.S. EPA ID No. _____ Hauling Permit No. _____
₇₉ Transporter Name, Address, and Telephone Number:

6. U.S. EPA ID No. _____ Hauling Permit No. _____
₉₁ Transporter Name, Address, and Telephone Number:

7. U.S. EPA ID No. _____ Hauling Permit No. _____
₁₀₃ Transporter Name, Address, and Telephone Number:

8. U.S. EPA ID No. _____ Hauling Permit No. _____
₁₁₅ Transporter Name, Address, and Telephone Number:

COMMENTS: 223 Enter Y(Yes) if you have comments regarding this page; attach extra sheet. Page _____
₂₂₃ ₁₃



May 22, 2017

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276

Re: Addendum to Annual Hazardous Waste Report - 2016
BFI Davis Junction Landfill – Phase I
Davis Junction, IL
USEPA ID No.: ILD980700751
IEPA Number: 1418210001
Project No.: 0120-049-01-17

RECEIVED

MAY 26 2017

IEPA/BOL/WRCS

Dear Ms. Wright:

On behalf of BFI Waste Systems of North America, LLC, (BFI) Weaver Consultants Group North Central, LLC (WCG) is herein submitting amended information pertaining to the above referenced report. This information is being submitted in response to your email to Mr. Jim Hitzeroth dated May 11, 2017.

A petition to delist the only waste regularly generated from the hazardous waste unit at the Davis Junction Landfill (i.e., landfill leachate) was approved by the Illinois Pollution Control Board on December 4, 2008 (Petition of BFI Waste Systems of North America, Inc. for Waste Delisting AS 08-5). Once the landfill leachate is loaded into tanker trucks for transport offsite, and as long as the leachate is transported safely to an approved treatment facility, it is considered nonhazardous waste.

The above referenced report (a copy of which is attached) indicated that this facility is a nongenerator because we originally believed that all of the leachate shipped offsite for disposal in 2016 was shipped as delisted hazardous waste. Therefore, our original submittal only included Form IC and no payment was included.

In response to your email to Mr. Jim Hitzeroth dated May 11, 2017 concerning the above referenced report, we have confirmed with CID Processing that a quantity of hazardous waste leachate was shipped and received from the Davis Junction facility in March-April 2016. Upon receipt of your email, we discovered that two waste profiles were established for leachate from the Davis Junction Phase I facility. One was for delisted hazardous waste, and the other was for hazardous waste. We originally thought

Ms. Hope Wright

May 22, 2017

that all of the Phase I leachate shipped in 2016 was under the profile for the delisted hazardous waste, but were recently informed by CID that the profile for the delisted hazardous waste expired 2/28/2016, so the leachate shipped in March and April 2016 was shipped and disposed under the hazardous waste leachate profile.

Because wastes shipped since April 2016 to date have been shipped under a nonhazardous waste profile, as of 3-1-2017, the Davis Junction facility is considered a nongenerator. Therefore, we do not believe there is a need to modify the originally submitted Form IC. However, because some quantity of hazardous waste was shipped from the Davis Junction Phase I facility in 2016, additional documentation is required to be submitted with the Form IC. Consequently, we have enclosed the following:

ILLINOIS Environmental Protection Agency
2016 Hazardous Waste Report
Form GM – Generation and Management; and

ILLINOIS Environmental Protection Agency
2016 Hazardous Waste Report
Form TI – Transporter Identification

Additionally, as this facility was considered a large quantity generator (LQG) for a portion of 2016, we are enclosing a check for \$500 to cover the Annual Hazardous Waste Fee for 2016.

We trust that the enclosed is sufficient for your current needs. Feel free to contact the undersigned or Mr. Jim Hitzeroth of BFI at 630-894-5001 or jhitzeroth@republicservices.com if you have any questions concerning this amended Hazardous Waste Report for 2016.

Sincerely,

Weaver Consultants Group North Central, LLC



Michael B. Maxwell, LPG
Project Director

Cc: Mr. Jim Hitzeroth (w/ encl.)

Attachments: Annual Hazardous Waste Report – 2016, dated February 14, 2017
Check #114279 for \$500
Form GM and Form TI



February 14, 2017

Ms. Hope Wright
 Illinois Environmental Protection Agency
 Bureau of Land #24
 1021 North Grand Avenue East
 P.O. Box 19276
 Springfield, IL 62794-9276

Re: Annual Hazardous Waste Report - 2016
 BFI, Davis Junction Landfill – Phase I
 Davis Junction, Illinois
 USEPA No. ILD980700751
 IEPA No. 1418210001

EPA REGION 05 RECORDS MANAGEMENT
 RELEASABLE

JAN 23 2018

REVIEWER JRM

Dear Ms. Wright:

On behalf of BFI Waste Systems of North America, LLC, Weaver Consultants Group submits the facility's 2016 Annual Hazardous Waste Report. A petition to delist the only waste regularly generated from the hazardous waste unit at Davis Junction (i.e., landfill leachate) was approved by the Illinois Pollution Control Board on December 4, 2008 (Petition of BFI Waste Systems of North America, Inc. for Waste Delisting AS 08-5). The first load of leachate was transported under the delisting approval in February of 2010. Once the waste is loaded into a tanker truck for transport offsite, and as long as the leachate is transported safely to the approved treatment facility, it is considered a nonhazardous waste.

Each load of leachate removed and hauled from the site in 2016 was classified as non-hazardous pursuant to the above delisting petition. Therefore, only an Identification and Certification Form has been included with this report. Additionally, no fee has been included due to this change in RCRA generator status.

Please review the enclosed package and call with any questions, comments, or concerns.

Sincerely,
 Weaver Consultants Group, North Central, LLC

A handwritten signature in black ink that reads 'Bridget M. Conlon'. The signature is written in a cursive, flowing style.

Bridget M. Conlon
 Project Environmental Specialist

RECEIVED

MAY 26 2017

IEPA/ROL/WRCS

Enclosures: IC Form

cc: Jim Hitzeroth, BFI Waste Systems of North America, LLC

US EPA Number: ILD980700751

IEPA Number: 1418210001

Company Name: BFI WASTE SYSTEMS OF NORTH AMERICA, LLC

Address: 8902 N ROUTE 251, DAVIS JUNCTION, IL 61020

ILLINOIS Environmental Protection Agency
2016 Hazardous Waste Report
Form IC - Identification and Certification

For IEPA (Agency) Use Only:
Fee Enclosed No Fee Enclosed

All information on this page is required.

Section 1. HAZARDOUS WASTE ACTIVITIES
4 RCRA Generator Status as of 3-1-2017
1 = LQG: Greater than 1,000 kg/mo (2200 lbs/mo) of non-acute hazardous waste
2 = SQG: 100 to 1,000 kg/mo of non-acute hazardous waste
3 = CESGG: Less than 100 kg/mo of non-acute hazardous waste
4 = Nongenerator
Other Generator Activities: Enter Y (yes) or N (no)
N United States Importer of Hazardous Waste
N Mixed Waste (hazardous & radioactive) Generator

All other hazardous waste activities: Enter Y or N
N Transporter of Hazardous Waste
N Transfer Facility (at your site) 40 CFR263.12
N Treater, Storer, or Disposer of Hazardous Waste (at your site)
N Recycler of Hazardous Waste (at your site)
Exempt Boiler and/or Industrial Furnace:
N Small Quantity On-Site Burner Exemption
N Smelting, Melting, Refining Furnace Exemption
N Underground Injection Control

Section 2. UNIVERSAL WASTE ACTIVITIES: Y OR N
Large Quantity Handler (5,000 kg) of Universal Waste. Mark the following types only if Yes.
Batteries
Pesticides
Mercury Containing Equipment
Lamps
N Destination Facility for Universal Waste.
Note: A hazardous waste permit may be required for this activity.

Section 3. Used Oil ACTIVITIES: Enter Y OR N
N Used Oil Transporter
N Used Oil Transfer Facility
N Used Oil Processor
N Used Oil Re-refiner
N Off-Specification Used Oil Burner
N Marketer who Directs Shipment of Off-Spec Used oil to Off-spec Used Oil Burner
N Marketer who First Claims the Used Oil Meets the Specifications

Section 4. ENTER THE 6 digit 2013 NAICS CODES(S) FOR THIS LOCATION
562211

Section 5. TYPES:
Site Land Type (Enter code from list in instructions): 1
Owner Type (Enter code from list in instructions): 1
Date current owner Became Owner (mm/dd/yyyy): 02 / 27 / 1975
Operator Type (Enter code from list in instructions): 1
Date current operator Became Operator (mm/dd/yyyy): 02 / 27 / 1975

Section 6. Comments: N Enter Y (Yes) if you have comments regarding this page and attach extra sheet.
COST ESTIMATES FOR TSD FACILITIES, interim status and permitted
A. Closure cost estimate: \$
B. Estimate for post closure monitoring and maintenance costs (disposal facilities only): \$ 640,315.00

Section 7. Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))
Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Please print: Last Name Herman First Name Jevon B. Title Area President
C. Signature [Signature] D. Date of Signature 2/17/17
Name, Telephone number, and email of person to contact if there are questions about this report:
James Hitzeroth, 630-894-5004, jhitzeroth@republicservices.com

Copy to PA



February 14, 2017

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Re: Annual Hazardous Waste Report - 2016
BFI, Davis Junction Landfill – Phase I
Davis Junction, Illinois
USEPA No. ILD980700751
IEPA No. 1418210001

Dear Ms. Wright:

On behalf of BFI Waste Systems of North America, LLC, Weaver Consultants Group submits the facility's 2016 Annual Hazardous Waste Report. A petition to delist the only waste regularly generated from the hazardous waste unit at Davis Junction (i.e., landfill leachate) was approved by the Illinois Pollution Control Board on December 4, 2008 (Petition of BFI Waste Systems of North America, Inc. for Waste Delisting AS 08-5). The first load of leachate was transported under the delisting approval in February of 2010. Once the waste is loaded into a tanker truck for transport offsite, and as long as the leachate is transported safely to the approved treatment facility, it is considered a nonhazardous waste.

Each load of leachate removed and hauled from the site in 2016 was classified as non-hazardous pursuant to the above delisting petition. Therefore, only an Identification and Certification Form has been included with this report. Additionally, no fee has been included due to this change in RCRA generator status.

Please review the enclosed package and call with any questions, comments, or concerns.

Sincerely,
Weaver Consultants Group, North Central, LLC

A handwritten signature in cursive script that reads 'Bridget M. Conlon'.

Bridget M. Conlon
Project Environmental Specialist

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE

JAN 23 2018

Enclosures: IC Form

cc: Jim Hitzeroth, BFI Waste Systems of North America, LLC

REVIEWER JRM

OMB# 2050-0024; Expires 05/31/2020

United States Environmental Protection Agency RCRA SUBTITLE C SITE IDENTIFICATION FORM	
---	---

1. Reason for Submittal (Select only one.)

<input type="checkbox"/>	Obtaining or updating an EPA ID number for an on-going regulated activity that will continue for a period of time. (Includes HSM activity)
<input checked="" type="checkbox"/>	Submitting as a component of the Hazardous Waste Report for <u>2017</u> (Reporting Year)
<input checked="" type="checkbox"/>	Site was a TSD facility and/or generator of $\geq 1,000$ kg of non-acute hazardous waste, > 1 kg of acute hazardous waste, or > 100 kg of acute hazardous waste spill cleanup in one or more months of the reporting year (or State equivalent LQG regulations)
<input type="checkbox"/>	Notifying that regulated activity is no longer occurring at this Site
<input type="checkbox"/>	Obtaining or updating an EPA ID number for conducting Electronic Manifest Broker activities
<input type="checkbox"/>	Submitting a new or revised Part A Form

2. Site EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

3. Site Name

BFI Davis Junction Landfill Phase I

4. Site Location Address

Street Address	8902 N. Rte. 251		
City, Town, or Village	Davis Junction	County	Ogle
State	IL	Country	USA
		Zip Code	61020

5. Site Mailing Address

Same as Location Address

Street Address	26 W580 Shcick Rd.		
City, Town, or Village	Hanover Park		
State	IL	Country	USA
		Zip Code	60133

6. Site Land Type

<input checked="" type="checkbox"/> Private	<input type="checkbox"/> County	<input type="checkbox"/> District	<input type="checkbox"/> Federal	<input type="checkbox"/> Tribal	<input type="checkbox"/> Municipal	<input type="checkbox"/> State	<input type="checkbox"/> Other
---	---------------------------------	-----------------------------------	----------------------------------	---------------------------------	------------------------------------	--------------------------------	--------------------------------

7. North American Industry Classification System (NAICS) Code(s) for the Site (at least 5-digit codes)

A. (Primary)	C.
562212	
B.	D.

EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 05/31/2020

8. Site Contact Information

Same as Location Address

First Name	James	MI	Last Name	Hitzeroth
Title	Environmental Manager			
Street Address	26 W580 Schick Rd.			
City, Town, or Village	Hanover Park			
State	IL	Country	USA	Zip Code
				224-970-1129
Email	JHitzeroth@republicservices.com			
Phone	224-970-1129	Ext		Fax

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner

Same as Location Address

Full Name	BFI Waste Systems of North America			Date Became Owner (mm/dd/yyyy)	2/27/1975
Owner Type	<input checked="" type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other				
Street Address	8902 N. Rte. 251				
City, Town, or Village	Davis Junction				
State	IL	Country	USA	Zip Code	61020
Email	JHitzeroth@republicservices.com				
Phone	224-970-1129	Ext		Fax	
Comments					

B. Name of Site's Legal Operator

Same as Location Address

Full Name	BFI Waste Systems of North America			Date Became Operator (mm/dd/yyyy)	2/27/1975
Operator Type	<input checked="" type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other				
Street Address	8902 N. Rte. 251				
City, Town, or Village	Davis Junction				
State	IL	Country	USA	Zip Code	61020
Email	JHitzeroth@republicservices.com				
Phone	224-970-1129	Ext		Fax	
Comments					

EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 05/31/2020

10. Type of Regulated Waste Activity (at your site)

Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities

<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	1. Generator of Hazardous Waste—If "Yes", mark only one of the following—a, b, c	
<input checked="" type="checkbox"/>	a. LQG	-Generates, in any calendar month (includes quantities imported by importer site) 1,000 kg/mo (2,200 lb/mo) or more of non-acute hazardous waste; or - Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lb/mo) of acute hazardous waste; or - Generates, in any calendar month or accumulates at any time, more than 100 kg/mo (220 lb/mo) of acute hazardous spill cleanup material.
<input type="checkbox"/>	b. SQG	100 to 1,000 kg/mo (220-2,200 lb/mo) of non-acute hazardous waste and no more than 1 kg (2.2 lb) of acute hazardous waste and no more than 100 kg (220 lb) of any acute hazardous spill cleanup material.
<input type="checkbox"/>	c. VSQG	Less than or equal to 100 kg/mo (220 lb/mo) of non-acute hazardous waste.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Short-Term Generator (generates from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section. <i>Note: If "Yes", you MUST indicate that you are a Generator of Hazardous Waste in Item 10.A.1 above.</i>	
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	3. Treater, Storer or Disposer of Hazardous Waste—Note: Part B of a hazardous waste permit is required for these activities.	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Receives Hazardous Waste from Off-site	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	5 Recycler of Hazardous Waste	
<input type="checkbox"/>	a. Recycler who stores prior to recycling	
<input type="checkbox"/>	b. Recycler who does not store prior to recycling	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	6. Exempt Boiler and/or Industrial Furnace—If "Yes", mark all that apply.	
<input type="checkbox"/>	a. Small Quantity On-site Burner Exemption	
<input type="checkbox"/>	b. Smelting, Melting, and Refining Furnace Exemption	

B. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g. D001, D003, F007, U112). Use an additional page if more spaces are needed.

F039						

C. Waste Codes for State Regulated (non-Federal) Hazardous Wastes. Please list the waste codes of the State hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

EPA ID Number

I L D 9 8 0 7 0 0 7 5 1

OMB# 2050-0024; Expires 05/31/2020

11. Additional Regulated Waste Activities (NOTE: Refer to your State regulations to determine if a separate permit is required.)

A. Other Waste Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Transporter of Hazardous Waste—If “Yes”, mark all that apply.
<input type="checkbox"/>	a. Transporter
<input type="checkbox"/>	b. Transfer Facility (at your site)
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Underground Injection Control
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	3. United States Importer of Hazardous Waste
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Recognized Trader—If “Yes”, mark all that apply.
<input type="checkbox"/>	a. Importer
<input type="checkbox"/>	b. Exporter
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	5. Importer/Exporter of Spent Lead-Acid Batteries (SLABs) under 40 CFR 266 Subpart G—If “Yes”, mark all that apply.
<input type="checkbox"/>	a. Importer
<input type="checkbox"/>	b. Exporter

B. Universal Waste Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) - If “Yes” mark all that apply. Note: Refer to your State regulations to determine what is regulated.
<input type="checkbox"/>	a. Batteries
<input type="checkbox"/>	b. Pesticides
<input type="checkbox"/>	c. Mercury containing equipment
<input type="checkbox"/>	d. Lamps
<input type="checkbox"/>	e. Other (specify) _____
<input type="checkbox"/>	f. Other (specify) _____
<input type="checkbox"/>	g. Other (specify) _____
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Destination Facility for Universal Waste Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Used Oil Transporter—If “Yes”, mark all that apply.
<input type="checkbox"/>	a. Transporter
<input type="checkbox"/>	b. Transfer Facility (at your site)
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Used Oil Processor and/or Re-refiner—If “Yes”, mark all that apply.
<input type="checkbox"/>	a. Processor
<input type="checkbox"/>	b. Re-refiner
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	3. Off-Specification Used Oil Burner
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Used Oil Fuel Marketer—If “Yes”, mark all that apply.
<input type="checkbox"/>	a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
<input type="checkbox"/>	b. Marketer Who First Claims the Used Oil Meets the Specifications

EPA ID Number

I L D 9 8 0 7 0 0 7 5 1

OMB# 2050-0024; Expires 05/31/2020

D. Pharmaceutical Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Operating under 40 CFR 266 Subpart P for the management of hazardous waste pharmaceuticals—if “Yes”, mark only one. Note: See the item-by-item instructions for definitions of healthcare facility and reverse distributor.
<input type="checkbox"/>	a. Healthcare Facility
<input type="checkbox"/>	b. Reverse Distributor
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Withdrawing from operating under 40 CFR 266 Subpart P for the management of hazardous waste pharmaceuticals. Note: You may only withdraw if you are a healthcare facility that is no longer an LQG or SQG.

12. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR 262 Subpart K.

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	A. Opting into or currently operating under 40 CFR 262 Subpart K for the management of hazardous wastes in laboratories— If “Yes”, mark all that apply. Note: See the item-by-item instructions for definitions of types of eligible academic entities.
<input type="checkbox"/>	1. College or University
<input type="checkbox"/>	2. Teaching Hospital that is owned by or has a formal written affiliation with a college or university
<input type="checkbox"/>	3. Non-profit Institute that is owned by or has a formal written affiliation with a college or university
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	B. Withdrawing from 40 CFR 262 Subpart K for the management of hazardous wastes in laboratories.

13. Episodic Generation

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you an SQG or VSQG generating hazardous waste from a planned or unplanned episodic event, lasting no more than 60 days, that moves you to a higher generator category. If “Yes”, you must fill out the Addendum for Episodic Generator?
--	---

14. LQG Consolidation of VSQG Hazardous Waste

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you an LQG notifying of consolidating VSQG Hazardous Waste Under the Control of the Same Person pursuant to 40 CFR 262.17(f)? If “Yes”, you must fill out the Addendum for LQG Consolidation of VSQGs hazardous waste.
--	--

15. Notification of LQG Site Closure for a Central Accumulation Area (CAA) (optional) OR Entire Facility (required)

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	LQG Site Closure of a Central Accumulation Area (CAA) or Entire Facility.
A. <input type="checkbox"/> Central Accumulation Area (CAA) or <input type="checkbox"/> Entire Facility	
B. Expected closure date: _____ mm/dd/yyyy	
C. Requesting new closure date: _____ mm/dd/yyyy	
D. Date closed : _____ mm/dd/yyyy	
<input type="checkbox"/>	1. In compliance with the closure performance standards 40 CFR 262.17(a)(8)
<input type="checkbox"/>	2. Not in compliance with the closure performance standards 40 CFR 262.17(a)(8)

EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 05/31/2020

16. Notification of Hazardous Secondary Material (HSM) Activity

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 260.30, 40 CFR 261.4(a)(23), (24), (25), or (27)? If "Yes", you must fill out the Addendum to the Site Identification Form for Managing Hazardous Secondary Material.
--	---

17. Electronic Manifest Broker

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you notifying as a person, as defined in 40 CFR 260.10, electing to use the EPA electronic manifest system to obtain, complete, and transmit an electronic manifest under a contractual relationship with a hazardous waste generator?
--	--

18. Comments (include item number for each comment)

The only hazardous waste regularly produced by the closed landfill facility is landfill leachate. According to Adjusted Standard AS 08-5, as long as the leachate reaches a properly permitted (off-site) treatment facility without incident, it is considered non-hazardous for disposal purposes. Each load transported in 2017 was received without incident and is therefore considered non-hazardous, meaning none of the leachate was transported off-site as hazardous in 2017. Pursuant to recent communications with Illinois EPA, the leachate is temporarily considered hazardous while it accumulates in an on-site tank and therefore, the permittee has declared as a large quantity generator.

19. Certification I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. **Note: For the RCRA Hazardous Waste Part A permit Application, all owners and operators must sign (see 40 CFR 270.10(b) and 270.11).**

	Date (mm/dd/yyyy) 03/05/2020
Printed Name (First, Middle Initial Last) Matthew Healy	Title Vice President
Email MHealy@republicservices.com	
	Date (mm/dd/yyyy) 03/05/2020
Printed Name (First, Middle Initial Last) Matthew Healy	Title Vice President
Email MHealy@republicservices.com	

EPA ID Number **I L D 9 8 0 7 0 0 7 5 1**

OMB# 2050-0024; Expires 05/31/2020

United States Environmental Protection Agency HAZARDOUS WASTE REPORT 2017- (reporting cycle) WASTE GENERATION AND MANAGEMENT (GM) FORM	
--	---

1. Waste Characteristics

A. Waste Description Landfill leachate			
B. EPA Hazardous Waste Code(s)	F039		
C. State Hazardous Waste Code(s)			
D. Source Code G26	Management Method (G25)	Country Code (G62)	
E. Form Code W101	F. Waste Minimization Code X	G. Radioactive Mixed <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	
H. Quantity 100,000	UOM G	Density 8.34	<input checked="" type="checkbox"/> lbs/gal <input type="checkbox"/> sg

2. On-site Generation and Management of Hazardous Waste

<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Was any of this waste that was generated at this facility treated, disposed, and/or recycled on-site? If yes, continue to On-site Process System 1.		
Process System 1	Management Method Code H135	Quantity	100,000 gal
Process System 2	Management Method Code	Quantity	

3. Off-site Shipment of Hazardous Waste

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	A. Was any of this waste that was generated at this facility shipped off-site for treatment, disposal, or recycling?		
Site 1			
B. EPA ID of facility to which waste was shipped	C. Management Method Code	D. Total Quantity Shipped	
See Comments			
Site 2			
B. EPA ID of facility to which waste was shipped	C. Management Method Code	D. Total Quantity Shipped	
Site 3			
B. EPA ID of facility to which waste was shipped	C. Management Method Code	D. Total Quantity Shipped	

4. Comments

Per AS 08-5, when the leachate safely reaches a properly permitted treatment facility, its not considered haz waste. All loads safely reached the treatment facility in 2017. Pursuant to recent communications with Illinois EPA, the permittee has declared as a LQG because the leacahte is temporarily considered a haz waste as it accumulates in the tank (<90 days). The 100,000 gal managed "on-site" as indicated in this report intended to apply to the above AS taking effect upon the safe receipt of the leachate at a properly permitted (offsite) POTW. The leacahte was not treated, disposed, or recycled on-site.



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

March 16, 2020

Weaver Consultants Group
North Central, LLC - Remitter.
\$500.00
ILO 980700751
fee for 2017 year

Mr. James Jennings
Manager, Waste Reduction and Compliance Section
Illinois EPA
1021 North Grand Ave. East
Springfield, IL 62794

Re: Compliance Commitment Agreement
Violation Notice: L-2019-00253
LPC #1418210001 - Ogle Co.
Davis Junction/BFI, Davis Junction

RECEIVED

APR 02 2020

IEPA/BOL

Dear Mr. Jennings,

The following information is being submitted in compliance with Item III.5.c contained in the above referenced Compliance Commitment Agreement (CCA) executed by the Illinois EPA on January 30, 2020.

As required by Item III.c in the above CCA, enclosed, please find three copies of the revised Hazardous Waste Annual Report for Calendar Year 2017. Specifically, the EPA Form 8700-12, 8700-13A/B (OMB# 2020-0024; Expires 05/31/2020) is enclosed (original signature). This form declares the facility as a large quantity generator (LQG).

As explained in the Comments contained in the attached forms, the only waste regularly produced at the closed landfill facility is landfill leachate. The Delisting Petition approved in 2008 by Adjusted Standard AS 08-5 stipulates that the landfill leachate is considered a non-hazardous waste once it reaches a properly permitted (off-site) wastewater treatment facility. Each load transported in 2017 was received at the treatment facility without incident and was therefore considered non-hazardous for disposal purposes. Pursuant to recent communications with Illinois EPA, the leachate is temporarily considered hazardous while it accumulates (for 90 days or less) in an on-site storage tank and therefore, the permittee has declared as a LQG for 2017.

The enclosed (Standard) RCRA Forms do not necessarily fit well within the (Non-Standard) context of this facility, due to the prior approval of the above Delisting Petition and the conditions for Delisting imposed by the Illinois Pollution Control Board.

As explained in the Comments on the enclosed Waste Generation and Management (GM) Form, the delisting conditions indicate that the leachate is deemed non-hazardous upon the safe arrival at the off-site treatment facility. Although no on-site physical treatment actually

occurs, Section 2 of the GM Form indicates that 100,000 gallons of leachate was treated, disposed, and/or recycled on-site by "Discharge to Sewer/POTW or NPDES" (Management Method Code H135). The on-site management scenario marked on the GM Form is intended to represent the delisting taking effect upon the safe arrival at the off-site treatment facility.

Because each load of leachate was safely received at the treatment facility, none of the leachate was considered hazardous for disposal purposes during the 2017 reporting year and therefore, no off-site shipments of hazardous waste were made in 2017. Consequently, the GM Form indicates that no hazardous waste was shipped off-site (Section 3 to the GM Form). The on-site management scenario (as further explained in the Comments Section at the bottom of the GM Form) was selected as the best representation of how the landfill leachate is managed at this facility, for purposes of completing the GM Form.

A check made out to the Illinois Environmental Protection Agency in the amount of \$500 intended to cover the LQG fees for calendar year 2017 is also enclosed, pursuant to Item III.5.c.ii of the CCA.

If you have any questions concerning this submittal, feel free to contact me at (224) 970-1129 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC



James Hitzeroth

Enclosures: RCRA Subtitle C Site Identification Form - 2017
Waste Generation and Management (GM) Form - 2017
Check 118116 in amount of \$500

A

US EPA Number: 1 1 0 0 7 0 0 7 5 1

IEPA Number: 1 4 1 8 2 1 0 0 0 1

Company Name: BFI Waste Systems of North America, LLC

Address: 8902 N. Route 251, Davis Junction, IL 61020

All information on this page is required.

ILLINOIS Environmental Protection Agency
2018 Hazardous Waste Report
Form IC - Identification and Certification

For IEPA (Agency) Use Only:

Fee Enclosed No Fee Enclosed

Section 1. HAZARDOUS WASTE ACTIVITIES

1 RCRA Generator Status as of 3-1-2019
1 = LQG: Greater than 1,000 kg/mo (2200 lbs/mo) of non-acute hazardous waste
2 = SQG: 100 to 1,000 kg/mo of non-acute hazardous waste
3 = CESGG: Less than 100 kg/mo of non-acute hazardous waste
4 = Nongenerator
Other Generator Activities: Enter Y (yes) or N (no)
N United States Importer of Hazardous Waste
N Mixed Waste (hazardous & radioactive) Generator

Section 2. UNIVERSAL WASTE ACTIVITIES: Y OR N

Large Quantity Handler (5,000 kg) of Universal Waste. Mark the following types only if Yes.
N Batteries
N Pesticides
N Mercury Containing Equipment
N Lamps
N Destination Facility for Universal Waste.
Note: A hazardous waste permit may be required for this activity.

All other hazardous waste activities: Enter Y or N

N Transporter of Hazardous Waste
N Transfer Facility (at your site) 40 CFR263.12
Y Treater, Storer, or Disposer of Hazardous Waste (at your site)
N Recycler of Hazardous Waste (at your site)
Exempt Boiler and/or Industrial Furnace:
N Small Quantity On-Site Burner Exemption
N Smelting, Melting, Refining Furnace Exemption
N Underground Injection Control

Section 3. Used Oil ACTIVITIES: Enter Y OR N

N Used Oil Transporter
N Used Oil Transfer Facility
N Used Oil Processor
N Used Oil Re-refiner
N Off-Specification Used Oil Burner
N Marketer who Directs Shipment of Off-Spec Used oil to Off-spec Used Oil Burner
N Marketer who First Claims the Used Oil Meets the Specifications

Section 4. ENTER THE 6 digit 2017 NAICS CODE(S) FOR THIS LOCATION

5 3 2 2 1 1

Section 5. TYPES:

Site Land Type (Enter code from list in instructions): 1
Owner Type (Enter code from list in instructions): 1
Date current owner Became Owner (mm/dd/yyyy): 02/27/1975
Operator Type (Enter code from list in instructions): 1
Date current operator Became Operator (mm/dd/yyyy): 02/27/1975

RECEIVED
JUN 17 2019
IEPA/BOL

Section 6. Comments: N Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

COST ESTIMATES FOR TSD FACILITIES, interim status and permitted

A. Closure cost estimate: \$.00
B. Estimate for post closure monitoring and maintenance costs (disposal facilities only): \$ 484,460.00

Section 7. Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Please print: Last Name, Healy First Name Matthew B. Title Area Vice President
C: Signature D. Date of Signature 6-12-19

Name, Telephone number, and email of person to contact if there are questions about this report:

James Hitzeroth, 630-894-5001, JHitzeroth@republicservices.com

This Agency is authorized to require this information under 415 ILCS 5/4 and 21. Disclosure of this information is required. Failure to disclose this information may result in a civil penalty of not to exceed \$50,000 for the violation and an additional civil penalty of not to exceed \$10,000 for each day during which the violation continues (415 ILCS 5/42 and 44).

US EPA Number: 1LD980700751
IEPA Number: 1418210001
Company name: BFI Waste Systems of North America, LLC
Address: 8902 N. Rte. 251 Davis Junction, IL 61020

ILLINOIS Environmental Protection Agency
2018 Hazardous Waste Report
Form GM - Generation and Management

Instructions for this form found on pages 16-21. (Same UOM and density must be used for all quantities on this page).

SECTION 1. WASTE DESCRIPTION

A. Waste Description: Landfill leachate (shipped as non-hazardous)
B. EPA Hazardous Waste Code F039
C. Source Code: G 26 When Source Code is G25, enter Management Method producing residuals: H _____
D. Form code: W 101 E. Waste Minimization Code X

SECTION 2. QUANTITY GENERATED [DENSITY MUST BE ENTERED FOR ALL WASTE STREAMS!]

All generation that counts towards your generation totals must be included on a Form GM, regardless of where or how managed.

A. UOM: l Density 08.34 lb/gal {Density of water is 08.34, most wastes are between 6 and 15}
B. Quantity generated in current reporting year: 100000.

SECTION 3. QUANTITY MANAGED ON-SITE: Did this location manage some or all of this waste in RCRA or UIC regulated treatment, recycling, or disposal units at this location? DO NOT include RCRA exempt processes.

N Y = Yes (continue to system 1) N = No (skip to section 4.)

On-Site System 1: Management Method H _____ Quantity managed on-site this year: _____
On-Site System 2: Management Method H _____ Quantity managed on-site this year: _____

SECTION 4. OFF-SITE SHIPMENT - Refer to page 29 for common errors on facilities & management methods.

A. Was any of this waste shipped off site this reporting year? Y Y = Yes (Continue to Site 1) N = No

SITE 1. Name and address of off-site facility: Rock River Water Reclamation District 3501 Kishwaukee St. Rockford, IL 61126-7480

B. U.S. EPA ID No. of facility waste was shipped to: 1LD000182451
C. Management method shipped to: H 135
D. Total quantity shipped in this reporting year: 100000.

SITE 2. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: _____
C. Management method shipped to: H _____
D. Total quantity shipped in this reporting year: _____

SITE 3. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: _____
C. Management method shipped to: H _____
D. Total quantity shipped in this reporting year: _____

SITE 4. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: _____
C. Management method shipped to: H _____
D. Total quantity shipped in this reporting year: _____

SITE 5. Name and address of off-site facility:

B. U.S. EPA ID No. of facility waste was shipped to: _____
C. Management method shipped to: H _____
D. Total quantity shipped in this reporting year: _____

COMMENTS: Y Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

Comments

ILLINOIS Environmental Protection Agency
2018 Hazardous Waste Report
Form GM – Generation and Management

No landfill leachate was shipped off-site as a hazardous waste in 2018. In accordance with the Delisting Petition (AS 08-5), each load of landfill leachate safely reached the treatment facility and therefore is considered a non-hazardous waste.

US EPA Number: ILL0980700751
IEPA Number: 1418210001
Company name: BFI Waste Systems of North America, LLC
Address: 8902 N. Route 251 Davis Junction, IL 61020

ILLINOIS Environmental Protection Agency
2018 Hazardous Waste Report
Form TI - Transporter Identification

Instructions for this form found on page 21. PLEASE NOTE that only the four-digit hauling permit number is valid for hazardous waste transporters picking up or delivering to an Illinois location.

1. U.S. EPA ID No. WIR000140988 Hauling Permit No. 5363
₃₁ Transporter Name, Address, and Telephone Number: Elite Environmental Corp. (855) 438-3548
360C South Curtis Rd.
West Allis, WI 53214

2. U.S. EPA ID No. _____ Hauling Permit No. _____
₄₃ Transporter Name, Address, and Telephone Number:

3. U.S. EPA ID No. _____ Hauling Permit No. _____
₅₅ Transporter Name, Address, and Telephone Number:

4. U.S. EPA ID No. _____ Hauling Permit No. _____
₆₇ Transporter Name, Address, and Telephone Number:

5. U.S. EPA ID No. _____ Hauling Permit No. _____
₇₉ Transporter Name, Address, and Telephone Number:

6. U.S. EPA ID No. _____ Hauling Permit No. _____
₉₁ Transporter Name, Address, and Telephone Number:

7. U.S. EPA ID No. _____ Hauling Permit No. _____
₁₀₃ Transporter Name, Address, and Telephone Number:

8. U.S. EPA ID No. _____ Hauling Permit No. _____
₁₁₅ Transporter Name, Address, and Telephone Number:

COMMENTS: Enter Y(Yes) if you have comments regarding this page; attach extra sheet. Page _____
₂₂₃ ₁₃



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

June 14, 2019

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Amended Annual Hazardous Waste Report - 2018
BFI – Davis Junction Landfill – Phase I
Davis Junction, IL
USEPA ID No. ILD 980700751
IEPA Site No.: 1418210001

Dear Ms. Wright,

Enclosed, please find three copies of the above referenced report that is being submitted on behalf of BFI Waste Systems of North America, LLC.

If you have any questions concerning this submittal, feel free to contact me at (630) 894-5001 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

A handwritten signature in black ink, appearing to read "James Hitzeroth", written over a horizontal line.

James Hitzeroth

Enclosures

RECEIVED

JUN 17 2019

IEPA/BOL



June 14, 2019

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Amended Annual Hazardous Waste Report - 2018
BFI, Davis Junction Landfill – Phase I
Davis Junction, IL
USEPA ID No. ILD 980700751
IEPA No.: 1418210001
Project No.: 0120-049-01-20

RECEIVED
JUN 17 2019
IEPA/BOL

Dear Ms. Wright:

On behalf of permittee, BFI Waste Systems of North America, LLC (BFI), Weaver Consultants Group herein submits the enclosed Amended Annual Hazardous Waste Report for the above referenced facility for 2018. This amended information is intended to supersede the prior submittal of this information dated February 26, 2019.

A Petition to Delist the only waste regularly generated from the hazardous waste unit at the facility (i.e., landfill leachate) was approved by the Illinois Pollution Control Board on December 4, 2008 (Petition of BFI Waste Systems of North America, Inc. for Waste Delisting AS 08-5). The first load of leachate was transported under the approved Delisting in February of 2010. Once the landfill leachate is loaded into a tanker truck for transport offsite, and as long as it is transported safely to an approved treatment facility, it is considered a non-hazardous waste.

Given that each load was safely transported to the treatment facility in 2018, none of the leachate loads hauled from the facility in 2018 were considered hazardous waste for paperwork disposal purposes. Based on our prior communications with Illinois EPA, we were under the belief that the fact that no hazardous waste left the facility was the appropriate threshold for declaring as a Nongenerator on the Hazardous Waste Report Form IC. Accordingly, since the disposal of the leachate under the Delisting Petition was initiated in 2010, each full calendar year that the facility has not hauled any leachate loads

Ms. Hope Wright

June 14, 2019

considered hazardous waste for disposal purposes, the facility identified itself as a Nongenerator on this form. Consistent with this historical approach, the original 2018 paperwork filed with a letter dated February 26, 2019 indicated that the facility was a Nongenerator.

However, pursuant to recent communications with Illinois EPA, the permittee is submitting this Amended Annual Hazardous Waste Report to account for leachate while it is temporarily stored in the on-site storage tank. During this brief period, it may be considered a hazardous waste, pursuant to the above Delisting Petition. If the leachate temporarily stored in the tank is considered a hazardous waste for the brief time it is in the tank, then from a strict paperwork standpoint, the facility could be classified as a large quantity generator.

Lastly, please note that the original submission of this information inadvertently indicated that the facility was not a Treater, Storer, or Disposer of Hazardous Waste. Because the facility has maintained a RCRA Landfill Permit for the closed landfill for many years, we acknowledge that this box should have been marked "Y" for yes, rather than "N" for no. The revised Form IC is enclosed, along with Form GM, Form TI, and a check for \$500 made payable to the Illinois Environmental Protection Agency.

Feel free to contact myself or Mr. Jim Hitzeroth of BFI with any questions concerning this information.

Sincerely,

Weaver Consultants Group North Central, LLC



Michael B. Maxwell, CHMM, LPG
Chicago EPG Operations Manager

Cc: Mr. Jim Hitzeroth, BFI (w/ encl.)
Ms. Rebecca DeMay, Illinois EPA (w/ encl.)

Enclosure: ILLINOIS Environmental Protection Agency 2018 Hazardous Waste Report Form IC
ILLINOIS Environmental Protection Agency 2018 Hazardous Waste Report Form GM
ILLINOIS Environmental Protection Agency 2018 Hazardous Waste Report Form TI
Check Payable to Illinois Environmental Protection Agency

US EPA Number:

IEPA Number:

Company Name: BFI Waste Systems of North America, LLC

Address: 8902 N. Route 251, Davis Junction, IL 61020

All information on this page is required.

**ILLINOIS Environmental Protection Agency
2018 Hazardous Waste Report
Form IC - Identification and Certification**

For IEPA (Agency) Use Only: NOML
 Fee Enclosed No Fee Enclosed

Section 1. HAZARDOUS WASTE ACTIVITIES

4 RCRA Generator Status as of 3-1-2019

1 = LQG: Greater than 1,000 kg/mo (2200 lbs/mo) of non-acute hazardous waste (Forms GM and T1 must also be completed using the complete electronic package)
 2 = SQG: 100 to 1,000 kg/mo of non-acute hazardous waste
 3 = CESGG: Less than 100 kg/mo of non-acute hazardous waste
 4 = Nongenerator
 IF your site is no longer a LQG, but was a LQG during calendar year 2018, YOU MUST COMPLETE THE REPORT USING THE COMPLETE ELECTRONIC PACKAGE

Other Generator Activities: Enter Y (yes) or N (no)

United States Importer of Hazardous Waste
 Mixed Waste (hazardous & radioactive) Generator

All other hazardous waste activities: Enter Y or N

Transporter of Hazardous Waste
 Transfer Facility (at your site) 40 CFR263.12
 Treater, Storer, or Disposer of Hazardous Waste (at your site)
 Note: A hazardous waste permit is required for this activity.
 Recycler of Hazardous Waste (at your site)
 Note: A hazardous waste permit may be required for this activity.

Exempt Boiler and/or Industrial Furnace:

Small Quantity On-Site Burner Exemption
 Smelting, Melting, Refining Furnace Exemption
 Underground Injection Control

Section 2. UNIVERSAL WASTE ACTIVITIES: Y OR N

Large Quantity Handler (5,000 kg) of Universal Waste. Mark the following types only if Yes.

Batteries
 Pesticides
 Mercury Containing Equipment
 Lamps

Destination Facility for Universal Waste.

Note: A hazardous waste permit may be required for this activity.

Section 3. Used Oil ACTIVITIES: Enter Y OR N

Used Oil Transporter
 Used Oil Transfer Facility
 Used Oil Processor
 Used Oil Re-refiner
 Off-Specification Used Oil Burner
 Marketer who Directs Shipment of Off-Spec Used oil to Off-spec Used Oil Burner
 Marketer who First Claims the Used Oil Meets the Specifications

Section 4. ENTER THE 6 digit 2017 NAICS CODE(S) FOR THIS LOCATION

Section 5. TYPES:

Site Land Type (Enter code from list in instructions):

Owner Type (Enter code from list in instructions):

Date current owner Became Owner (mm/dd/yyyy):

Operator Type (Enter code from list in instructions):

Date current operator Became Operator (mm/dd/yyyy):

RECEIVED
 FEB 28 2019
IEPA/BOL

Section 6. Comments: Enter Y (Yes) if you have comments regarding this page and attach extra sheet.

COST ESTIMATES FOR TSD FACILITIES, interim status and permitted

A. Closure cost estimate: \$.00

B. Estimate for post closure monitoring and maintenance costs (disposal facilities only): \$ 484,460.00

Section 7. Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Please print: Last Name Healy First Name Matthew B. Title Area Vice President

C. Signature [Signature] D. Date of Signature 2/19/19

Name, Telephone number, and email of person to contact if there are questions about this report:

James Hitzeroth, 630-894-5001, JHitzeroth@republicservices.com

This Agency is authorized to require this information under 415 ILCS 5/4 and 21. Disclosure of this information is required. Failure to disclose this information may result in a civil penalty of not to exceed \$50,000 for the violation and an additional civil penalty of not to exceed \$10,000 for each day during which the violation continues (415 ILCS 5/42 and 44).



February 26, 2019

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land #24
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Annual Hazardous Waste Report - 2018
BFI, Davis Junction Landfill – Phase I
Davis Junction, IL
USEPA ID No. ILD 980700751
IEPA No.: 1418210001
Project No.: 0120-049-01-19

Dear Ms. Wright:

On behalf of permittee, BFI Waste Systems of North America, LLC, Weaver Consultants Group herein submits the Annual Hazardous Waste Report for the above referenced facility for 2018. A Petition to Delist the only waste regularly generated from the hazardous waste unit at Davis Junction (i.e., landfill leachate) was approved by the Illinois Pollution Control Board on December 4, 2008 (Petition of BFI Waste Systems of North America, Inc. for Waste Delisting AS 08-5). The first load of leachate was transported under the approved delisting in February of 2010. Once the waste is loaded into a tanker truck for transport offsite, and as long as the leachate is transported safely to an approved treatment facility, it is considered a non-hazardous waste.

Each load of leachate removed and hauled from the Phase I facility in 2018 was classified as non-hazardous pursuant to the above Delisting Petition. Therefore, only a Form IC - Identification and Certification Form has been included in this report. Accordingly, as stated in Section 1 of the attached Form IC – Identification and Certification, the RCRA Generator Status for this facility is Nongenerator. Given this RCRA Generator Status, no fee has been included with this submittal.

RECEIVED

FEB 28 2019

IEPA/BOL

\\WBC-CHG-FS1\WBCDATA\PROJECTS\0100-0199\0120\49\01\ANNUAL REPORTS\2018\PHASE I\IEPA COV LTR ANNUAL HAZ WASTE RPT 2018.DOCX

Ms. Hope Wright

February 26, 2019

Feel free to contact myself or Mr. Jim Hitzeroth of BFI with any questions concerning this information.

Sincerely,

Weaver Consultants Group North Central, LLC



Michael B. Maxwell, CHMM, LPG
Chicago EPG Operations Manager

Cc: Mr. Jim Hitzeroth (w/ encl.)

Enclosure: ILLINOIS Environmental Protection Agency 2018 Hazardous Waste Report Form IC



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

February 26, 2019

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Annual Hazardous Waste Report - 2018
BFI – Davis Junction Landfill – Phase I
Davis Junction, IL
USEPA ID No. ILD 980700751
IEPA Site No.: 1418210001

Dear Ms. Wright,

Enclosed, please find three copies of the above referenced report that is being submitted on behalf of BFI Waste Systems of North America, LLC.

If you have any questions concerning this submittal, feel free to contact me at (630) 894-5001 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

A handwritten signature in black ink, appearing to read "James Hitzeroth", written over a horizontal line.

James Hitzeroth

Enclosures

RECEIVED

FEB 28 2019

IEPA/BOL

1418210001

OMB# 2050-0024; Expires 05/31/2020

United States Environmental Protection Agency RCRA SUBTITLE C SITE IDENTIFICATION FORM	
---	---

1. Reason for Submittal (Select only one.)

<input type="checkbox"/>	Obtaining or updating an EPA ID number for an on-going regulated activity that will continue for a period of time. (Includes HSM activity)
<input checked="" type="checkbox"/>	Submitting as a component of the Hazardous Waste Report for <u>2019</u> (Reporting Year)
<input checked="" type="checkbox"/>	Site was a TSD facility and/or generator of $\geq 1,000$ kg of non-acute hazardous waste, > 1 kg of acute hazardous waste, or > 100 kg of acute hazardous waste spill cleanup in one or more months of the reporting year (or State equivalent LQG regulations)
<input type="checkbox"/>	Notifying that regulated activity is no longer occurring at this Site
<input type="checkbox"/>	Obtaining or updating an EPA ID number for conducting Electronic Manifest Broker activities
<input type="checkbox"/>	Submitting a new or revised Part A Form

RECEIVED

2. Site EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

FEB 28 2020

3. Site Name

IEPA/BOL

BFI Davis Junction Landfill Phase I

4. Site Location Address

Street Address	8902 N. Rte. 251		
City, Town, or Village	Davis Junction	County	Ogle
State	IL	Country	USA
		Zip Code	61020

5. Site Mailing Address

Same as Location Address

Street Address	26 W580 Shcick Rd.		
City, Town, or Village	Hanover Park		
State	IL	Country	USA
		Zip Code	60133

6. Site Land Type

<input checked="" type="checkbox"/> Private	<input type="checkbox"/> County	<input type="checkbox"/> District	<input type="checkbox"/> Federal	<input type="checkbox"/> Tribal	<input type="checkbox"/> Municipal	<input type="checkbox"/> State	<input type="checkbox"/> Other
---	---------------------------------	-----------------------------------	----------------------------------	---------------------------------	------------------------------------	--------------------------------	--------------------------------

7. North American Industry Classification System (NAICS) Code(s) for the Site (at least 5-digit codes)

A. (Primary)	C.
562212	
B.	D.

EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 05/31/2020

8. Site Contact Information

Same as Location Address

First Name James	MI	Last Name Hitzeroth
Title Environmental Manager		
Street Address 26 W580 Schick Rd.		
City, Town, or Village Hanover Park		
State IL	Country USA	Zip Code 224-970-1129
Email JHitzeroth@republicservices.com		
Phone 224-970-1129	Ext	Fax

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner

Same as Location Address

Full Name BFI Waste Systems of North America	Date Became Owner (mm/dd/yyyy) 2/27/1975
Owner Type <input checked="" type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other	
Street Address 8902 N. Rte. 251	
City, Town, or Village Davis Junction	
State IL	Country USA Zip Code 61020
Email JHitzeroth@republicservices.com	
Phone 224-970-1129	Ext Fax
Comments	

B. Name of Site's Legal Operator

Same as Location Address

Full Name BFI Waste Systems of North America	Date Became Operator (mm/dd/yyyy) 2/27/1975
Operator Type <input checked="" type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other	
Street Address 8902 N. Rte. 251	
City, Town, or Village Davis Junction	
State IL	Country USA Zip Code 61020
Email JHitzeroth@republicservices.com	
Phone 224-970-1129	Ext Fax
Comments	

EPA ID Number

I L D 9 8 0 7 0 0 7 5 1

OMB# 2050-0024; Expires 05/31/2020

10. Type of Regulated Waste Activity (at your site)

Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities

<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	1. Generator of Hazardous Waste—If "Yes", mark only one of the following—a, b, c	
<input checked="" type="checkbox"/>	a. LQG	-Generates, in any calendar month (includes quantities imported by importer site) 1,000 kg/mo (2,200 lb/mo) or more of non-acute hazardous waste; or - Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lb/mo) of acute hazardous waste; or - Generates, in any calendar month or accumulates at any time, more than 100 kg/mo (220 lb/mo) of acute hazardous spill cleanup material.
<input type="checkbox"/>	b. SQG	100 to 1,000 kg/mo (220-2,200 lb/mo) of non-acute hazardous waste and no more than 1 kg (2.2 lb) of acute hazardous waste and no more than 100 kg (220 lb) of any acute hazardous spill cleanup material.
<input type="checkbox"/>	c. VSQG	Less than or equal to 100 kg/mo (220 lb/mo) of non-acute hazardous waste.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Short-Term Generator (generates from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section. <i>Note: If "Yes", you MUST indicate that you are a Generator of Hazardous Waste in Item 10.A.1 above.</i>	
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	3. Treater, Storer or Disposer of Hazardous Waste—Note: Part B of a hazardous waste permit is required for these activities.	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Receives Hazardous Waste from Off-site	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	5. Recycler of Hazardous Waste	
<input type="checkbox"/>	a. Recycler who stores prior to recycling	
<input type="checkbox"/>	b. Recycler who does not store prior to recycling	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	6. Exempt Boiler and/or Industrial Furnace—If "Yes", mark all that apply.	
<input type="checkbox"/>	a. Small Quantity On-site Burner Exemption	
<input type="checkbox"/>	b. Smelting, Melting, and Refining Furnace Exemption	

B. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g. D001, D003, F007, U112). Use an additional page if more spaces are needed.

F039						

C. Waste Codes for State Regulated (non-Federal) Hazardous Wastes. Please list the waste codes of the State hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

EPA ID Number

I	L	D	9	8	0	7	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 05/31/2020

11. Additional Regulated Waste Activities (NOTE: Refer to your State regulations to determine if a separate permit is required.)

A. Other Waste Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Transporter of Hazardous Waste—If “Yes”, mark all that apply.	
	<input type="checkbox"/>	a. Transporter
	<input type="checkbox"/>	b. Transfer Facility (at your site)
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Underground Injection Control	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	3. United States Importer of Hazardous Waste	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Recognized Trader—If “Yes”, mark all that apply.	
	<input type="checkbox"/>	a. Importer
	<input type="checkbox"/>	b. Exporter
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	5. Importer/Exporter of Spent Lead-Acid Batteries (SLABs) under 40 CFR 266 Subpart G—If “Yes”, mark all that apply.	
	<input type="checkbox"/>	a. Importer
	<input type="checkbox"/>	b. Exporter

B. Universal Waste Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) - If “Yes” mark all that apply. Note: Refer to your State regulations to determine what is regulated.	
	<input type="checkbox"/>	a. Batteries
	<input type="checkbox"/>	b. Pesticides
	<input type="checkbox"/>	c. Mercury containing equipment
	<input type="checkbox"/>	d. Lamps
	<input type="checkbox"/>	e. Other (specify) _____
	<input type="checkbox"/>	f. Other (specify) _____
	<input type="checkbox"/>	g. Other (specify) _____
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Destination Facility for Universal Waste Note: A hazardous waste permit may be required for this activity.	

C. Used Oil Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Used Oil Transporter—If “Yes”, mark all that apply.	
	<input type="checkbox"/>	a. Transporter
	<input type="checkbox"/>	b. Transfer Facility (at your site)
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Used Oil Processor and/or Re-refiner—If “Yes”, mark all that apply.	
	<input type="checkbox"/>	a. Processor
	<input type="checkbox"/>	b. Re-refiner
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	3. Off-Specification Used Oil Burner	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Used Oil Fuel Marketer—If “Yes”, mark all that apply.	
	<input type="checkbox"/>	a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
	<input type="checkbox"/>	b. Marketer Who First Claims the Used Oil Meets the Specifications

EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 05/31/2020

D. Pharmaceutical Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Operating under 40 CFR 266 Subpart P for the management of hazardous waste pharmaceuticals—if “Yes”, mark only one. Note: See the item-by-item instructions for definitions of healthcare facility and reverse distributor.
<input type="checkbox"/>	a. Healthcare Facility
<input type="checkbox"/>	b. Reverse Distributor
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Withdrawing from operating under 40 CFR 266 Subpart P for the management of hazardous waste pharmaceuticals. Note: You may only withdraw if you are a healthcare facility that is no longer an LQG or SQG.

12. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR 262 Subpart K.

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	A. Opting into or currently operating under 40 CFR 262 Subpart K for the management of hazardous wastes in laboratories— If “Yes”, mark all that apply. Note: See the item-by-item instructions for definitions of types of eligible academic entities.
<input type="checkbox"/>	1. College or University
<input type="checkbox"/>	2. Teaching Hospital that is owned by or has a formal written affiliation with a college or university
<input type="checkbox"/>	3. Non-profit Institute that is owned by or has a formal written affiliation with a college or university
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	B. Withdrawing from 40 CFR 262 Subpart K for the management of hazardous wastes in laboratories.

13. Episodic Generation

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you an SQG or VSQG generating hazardous waste from a planned or unplanned episodic event, lasting no more than 60 days, that moves you to a higher generator category. If “Yes”, you must fill out the Addendum for Episodic Generator?
--	---

14. LQG Consolidation of VSQG Hazardous Waste

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you an LQG notifying of consolidating VSQG Hazardous Waste Under the Control of the Same Person pursuant to 40 CFR 262.17(f)? If “Yes”, you must fill out the Addendum for LQG Consolidation of VSQGs hazardous waste.
--	--

15. Notification of LQG Site Closure for a Central Accumulation Area (CAA) (optional) OR Entire Facility (required)

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	LQG Site Closure of a Central Accumulation Area (CAA) or Entire Facility.
A. <input type="checkbox"/> Central Accumulation Area (CAA) or <input type="checkbox"/> Entire Facility	
B. Expected closure date: _____ mm/dd/yyyy	
C. Requesting new closure date: _____ mm/dd/yyyy	
D. Date closed : _____ mm/dd/yyyy	
<input type="checkbox"/>	1. In compliance with the closure performance standards 40 CFR 262.17(a)(8)
<input type="checkbox"/>	2. Not in compliance with the closure performance standards 40 CFR 262.17(a)(8)

EPA ID Number **I L D 9 8 0 7 0 0 7 5 1**

OMB# 2050-0024; Expires 05/31/2020

16. Notification of Hazardous Secondary Material (HSM) Activity

<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N	Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 260.30, 40 CFR 261.4(a)(23), (24), (25), or (27)? If "Yes", you must fill out the Addendum to the Site Identification Form for Managing Hazardous Secondary Material.
----------------------------	---------------------------------------	---

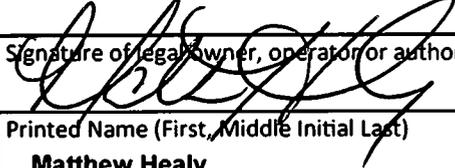
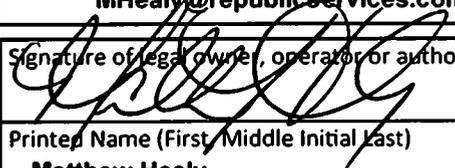
17. Electronic Manifest Broker

<input type="checkbox"/> Y	<input checked="" type="checkbox"/> N	Are you notifying as a person, as defined in 40 CFR 260.10, electing to use the EPA electronic manifest system to obtain, complete, and transmit an electronic manifest under a contractual relationship with a hazardous waste generator?
----------------------------	---------------------------------------	--

18. Comments (include item number for each comment)

The only waste regularly produced by the closed landfill facility is landfill leachate. According to Adjusted Standard AS 08-5, as long as the leachate reaches a properly permitted (off-site) treatment facility without incident, it is considered non-hazardous for disposal purposes. Each load transported in 2019 was received without incident and is therefore considered non-hazardous, meaning none of the leachate was transported off-site as hazardous in 2019. Pursuant to recent communications with Illinois EPA, the leachate is temporarily considered hazardous while it accumulates in an on-site tank and therefore, the permittee has declared as a large quantity generator.

19. Certification I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. **Note: For the RCRA Hazardous Waste Part A permit Application, all owners and operators must sign (see 40 CFR 270.10(b) and 270.11).**

	Date (mm/dd/yyyy) 02/18/2020
Printed Name (First, Middle Initial Last) Matthew Healy	Title Vice President
Email MHealy@republicservices.com	
	Date (mm/dd/yyyy) 02/18/2020
Printed Name (First, Middle Initial Last) Matthew Healy	Title Vice President
Email MHealy@republicservices.com	

EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 05/31/2020

United States Environmental Protection Agency HAZARDOUS WASTE REPORT 2019 (reporting cycle) WASTE GENERATION AND MANAGEMENT (GM) FORM	
---	---

1. Waste Characteristics

A. Waste Description Landfill leachate			
B. EPA Hazardous Waste Code(s)	F039		
C. State Hazardous Waste Code(s)			
D. Source Code G26	Management Method (G25)	Country Code (G62)	
E. Form Code W101	F. Waste Minimization Code X	G. Radioactive Mixed <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	
H. Quantity 107,000	UOM G	Density 8.34	<input checked="" type="checkbox"/> lbs/gal <input type="checkbox"/> sg

2. On-site Generation and Management of Hazardous Waste

<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Was any of this waste that was generated at this facility treated, disposed, and/or recycled on-site? If yes, continue to On-site Process System 1.		
Process System 1	Management Method Code H135	Quantity	107,000 gal
Process System 2	Management Method Code	Quantity	

3. Off-site Shipment of Hazardous Waste

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	A. Was any of this waste that was generated at this facility shipped off-site for treatment, disposal, or recycling?		
Site 1			
B. EPA ID of facility to which waste was shipped	C. Management Method Code	D. Total Quantity Shipped	
See Comments			
Site 2			
B. EPA ID of facility to which waste was shipped	C. Management Method Code	D. Total Quantity Shipped	
Site 3			
B. EPA ID of facility to which waste was shipped	C. Management Method Code	D. Total Quantity Shipped	

4. Comments

Per AS 08-5, when the leachate safely reaches a properly permitted treatment facility, its not considered haz waste. All loads safely reached the treatment facility in 2019. Pursuant to recent communications with Illinois EPA, the permittee has declared as a LQG because the leacachte is temporarily considered a haz waste as it accumulates in the tank (<90 days). The 107,000 gal managed "on-site" as indicated in this report intended to apply to the above AS taking effect upon the safe receipt of the leachate at a properly permitted (offsite) POTW. The leacachte was not treated, disposed, or recycled on-site.



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

February 25, 2020

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

*Cant enter as they
had it started.*

Re: Annual Hazardous Waste Report - 2019
BFI – Davis Junction Landfill – Phase I
Davis Junction, IL
USEPA ID No. ILD 980700751
IEPA Site No.: 1418210001

Dear Ms. Wright,

Enclosed, please find three copies of the above referenced report that is being submitted on behalf of BFI Waste Systems of North America, LLC. The Annual Hazardous Waste Report includes: the Site Identification (SI) Form and Waste Generation and Management (GM) Form.

Please be advised that a check in the amount of \$500 (Generator Fee) was sent under separate cover to: Illinois EPA, Attn: Fiscal #2 HAR, PO Box 19276, Springfield, IL 62794.

If you have any questions concerning this submittal, feel free to contact me at (224) 970-1129 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

A handwritten signature in black ink, appearing to read "James Hitzeroth", with a long horizontal flourish extending to the right.

James Hitzeroth

Enclosures

RECEIVED

FEB 28 2020

IEPA/BOL

OMB# 2050-0024; Expires 05/31/2020

United States Environmental Protection Agency RCRA SUBTITLE C SITE IDENTIFICATION FORM	
---	---

1. Reason for Submittal (Select only one.)

<input type="checkbox"/>	Obtaining or updating an EPA ID number for an on-going regulated activity that will continue for a period of time. (Includes HSM activity)
<input checked="" type="checkbox"/>	Submitting as a component of the Hazardous Waste Report for <u>2020</u> (Reporting Year)
<input checked="" type="checkbox"/>	Site was a TSD facility and/or generator of $\geq 1,000$ kg of non-acute hazardous waste, > 1 kg of acute hazardous waste, or > 100 kg of acute hazardous waste spill cleanup in one or more months of the reporting year (or State equivalent LQG regulations)
<input type="checkbox"/>	Notifying that regulated activity is no longer occurring at this Site
<input type="checkbox"/>	Obtaining or updating an EPA ID number for conducting Electronic Manifest Broker activities
<input type="checkbox"/>	Submitting a new or revised Part A Form

2. Site EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

3. Site Name

BFI Davis Junction Landfill Phase I
--

4. Site Location Address

Street Address	8902 N. Rte. 251		
City, Town, or Village	Davis Junction	County	Ogle
State	IL	Country	USA
		Zip Code	61020

5. Site Mailing Address

Same as Location Address

Street Address	26 W580 Schick Rd.		
City, Town, or Village	Hanover Park		
State	IL	Country	USA
		Zip Code	60133

6. Site Land Type

<input checked="" type="checkbox"/> Private	<input type="checkbox"/> County	<input type="checkbox"/> District	<input type="checkbox"/> Federal	<input type="checkbox"/> Tribal	<input type="checkbox"/> Municipal	<input type="checkbox"/> State	<input type="checkbox"/> Other
---	---------------------------------	-----------------------------------	----------------------------------	---------------------------------	------------------------------------	--------------------------------	--------------------------------

7. North American Industry Classification System (NAICS) Code(s) for the Site (at least 5-digit codes)

A. (Primary)	562212	C.	
B.		D.	

EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 05/31/2020

8. Site Contact Information

Same as Location Address

First Name	James	MI	Last Name	Hitzeroth
Title	Environmental Manager			
Street Address	26 W580 Schick Rd.			
City, Town, or Village	Hanover Park			
State	IL	Country	USA	Zip Code
				224-970-1129
Email	JHitzeroth@republicservices.com			
Phone	224-970-1129	Ext		Fax

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner

Same as Location Address

Full Name	BFI Waste Systems of North America, LLC		Date Became Owner (mm/dd/yyyy)	2/27/1975
Owner Type	<input checked="" type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other			
Street Address	8902 N. Rte. 251			
City, Town, or Village	Davis Junction			
State	IL	Country	USA	Zip Code
				61020
Email	JHitzeroth@republicservices.com			
Phone	224-970-1129	Ext		Fax
Comments				

B. Name of Site's Legal Operator

Same as Location Address

Full Name	BFI Waste Systems of North America, LLC		Date Became Operator (mm/dd/yyyy)	2/27/1975
Operator Type	<input checked="" type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other			
Street Address	8902 N. Rte. 251			
City, Town, or Village	Davis Junction			
State	IL	Country	USA	Zip Code
				61020
Email	JHitzeroth@republicservices.com			
Phone	224-970-1129	Ext		Fax
Comments				

EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 05/31/2020

10. Type of Regulated Waste Activity (at your site)

Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities

<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	1. Generator of Hazardous Waste—if "Yes", mark only one of the following—a, b, c	
<input checked="" type="checkbox"/>	a. LQG	-Generates, in any calendar month (includes quantities imported by importer site) 1,000 kg/mo (2,200 lb/mo) or more of non-acute hazardous waste; or - Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lb/mo) of acute hazardous waste; or - Generates, in any calendar month or accumulates at any time, more than 100 kg/mo (220 lb/mo) of acute hazardous spill cleanup material.
<input type="checkbox"/>	b. SQG	100 to 1,000 kg/mo (220-2,200 lb/mo) of non-acute hazardous waste and no more than 1 kg (2.2 lb) of acute hazardous waste and no more than 100 kg (220 lb) of any acute hazardous spill cleanup material.
<input type="checkbox"/>	c. VSQG	Less than or equal to 100 kg/mo (220 lb/mo) of non-acute hazardous waste.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Short-Term Generator (generates from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section. <i>Note: If "Yes", you MUST indicate that you are a Generator of Hazardous Waste in Item 10.A.1 above.</i>	
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	3. Treater, Storer or Disposer of Hazardous Waste—Note: Part B of a hazardous waste permit is required for these activities.	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Receives Hazardous Waste from Off-site	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	5. Recycler of Hazardous Waste	
<input type="checkbox"/>	a. Recycler who stores prior to recycling	
<input type="checkbox"/>	b. Recycler who does not store prior to recycling	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	6. Exempt Boiler and/or Industrial Furnace—if "Yes", mark all that apply.	
<input type="checkbox"/>	a. Small Quantity On-site Burner Exemption	
<input type="checkbox"/>	b. Smelting, Melting, and Refining Furnace Exemption	

B. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g. D001, D003, F007, U112). Use an additional page if more spaces are needed.

F039						
See	note	on	page	6		

C. Waste Codes for State Regulated (non-Federal) Hazardous Wastes. Please list the waste codes of the State hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

EPA ID Number

I L D 9 8 0 7 0 0 7 5 1

OMB# 2050-0024; Expires 05/31/2020

11. Additional Regulated Waste Activities (NOTE: Refer to your State regulations to determine if a separate permit is required.)

A. Other Waste Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Transporter of Hazardous Waste—If "Yes", mark all that apply.
<input type="checkbox"/>	a. Transporter
<input type="checkbox"/>	b. Transfer Facility (at your site)
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Underground Injection Control
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	3. United States Importer of Hazardous Waste
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Recognized Trader—If "Yes", mark all that apply.
<input type="checkbox"/>	a. Importer
<input type="checkbox"/>	b. Exporter
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	5. Importer/Exporter of Spent Lead-Acid Batteries (SLABs) under 40 CFR 266 Subpart G—If "Yes", mark all that apply.
<input type="checkbox"/>	a. Importer
<input type="checkbox"/>	b. Exporter

B. Universal Waste Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) - If "Yes" mark all that apply. Note: Refer to your State regulations to determine what is regulated.
<input type="checkbox"/>	a. Batteries
<input type="checkbox"/>	b. Pesticides
<input type="checkbox"/>	c. Mercury containing equipment
<input type="checkbox"/>	d. Lamps
<input type="checkbox"/>	e. Other (specify) _____
<input type="checkbox"/>	f. Other (specify) _____
<input type="checkbox"/>	g. Other (specify) _____
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Destination Facility for Universal Waste Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Used Oil Transporter—If "Yes", mark all that apply.
<input type="checkbox"/>	a. Transporter
<input type="checkbox"/>	b. Transfer Facility (at your site)
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Used Oil Processor and/or Re-refiner—If "Yes", mark all that apply.
<input type="checkbox"/>	a. Processor
<input type="checkbox"/>	b. Re-refiner
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	3. Off-Specification Used Oil Burner
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Used Oil Fuel Marketer—If "Yes", mark all that apply.
<input type="checkbox"/>	a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
<input type="checkbox"/>	b. Marketer Who First Claims the Used Oil Meets the Specifications

EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 05/31/2020

D. Pharmaceutical Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Operating under 40 CFR 266 Subpart P for the management of hazardous waste pharmaceuticals—if “Yes”, mark only one. Note: See the item-by-item instructions for definitions of healthcare facility and reverse distributor.
<input type="checkbox"/>	a. Healthcare Facility
<input type="checkbox"/>	b. Reverse Distributor
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Withdrawing from operating under 40 CFR 266 Subpart P for the management of hazardous waste pharmaceuticals. Note: You may only withdraw if you are a healthcare facility that is no longer an LQG or SQG.

12. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR 262 Subpart K.

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	A. Opting into or currently operating under 40 CFR 262 Subpart K for the management of hazardous wastes in laboratories— If “Yes”, mark all that apply. Note: See the item-by-item instructions for definitions of types of eligible academic entities.
<input type="checkbox"/>	1. College or University
<input type="checkbox"/>	2. Teaching Hospital that is owned by or has a formal written affiliation with a college or university
<input type="checkbox"/>	3. Non-profit Institute that is owned by or has a formal written affiliation with a college or university
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	B. Withdrawing from 40 CFR 262 Subpart K for the management of hazardous wastes in laboratories.

13. Episodic Generation

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you an SQG or VSQG generating hazardous waste from a planned or unplanned episodic event, lasting no more than 60 days, that moves you to a higher generator category. If “Yes”, you must fill out the Addendum for Episodic Generator?
--	---

14. LQG Consolidation of VSQG Hazardous Waste

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you an LQG notifying of consolidating VSQG Hazardous Waste Under the Control of the Same Person pursuant to 40 CFR 262.17(f)? If “Yes”, you must fill out the Addendum for LQG Consolidation of VSQGs hazardous waste.
--	--

15. Notification of LQG Site Closure for a Central Accumulation Area (CAA) (optional) OR Entire Facility (required)

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	LQG Site Closure of a Central Accumulation Area (CAA) or Entire Facility.
A. <input type="checkbox"/> Central Accumulation Area (CAA) or <input type="checkbox"/> Entire Facility	
B. Expected closure date: _____ mm/dd/yyyy	
C. Requesting new closure date: _____ mm/dd/yyyy	
D. Date closed : _____ mm/dd/yyyy	
<input type="checkbox"/>	1. In compliance with the closure performance standards 40 CFR 262.17(a)(8)
<input type="checkbox"/>	2. Not in compliance with the closure performance standards 40 CFR 262.17(a)(8)

EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 05/31/2020

16. Notification of Hazardous Secondary Material (HSM) Activity

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 260.30, 40 CFR 261.4(a)(23), (24), (25), or (27)? If "Yes", you must fill out the Addendum to the Site Identification Form for Managing Hazardous Secondary Material.
--	---

17. Electronic Manifest Broker

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you notifying as a person, as defined in 40 CFR 260.10, electing to use the EPA electronic manifest system to obtain, complete, and transmit an electronic manifest under a contractual relationship with a hazardous waste generator?
--	--

18. Comments (include item number for each comment)

The only waste regularly produced by the closed landfill facility is landfill leachate. According to Adjusted Standard AS 08-5, as long as the leachate reaches a properly permitted (off-site) treatment facility without incident, it is considered non-hazardous for disposal purposes. Each load transported in 2020 was received without incident and is therefore considered non-hazardous, meaning none of the leachate was transported off-site as hazardous in 2020. Pursuant to prior communications with Illinois EPA, the leachate is temporarily considered hazardous while it accumulates in an on-site tank and therefore, the permittee has declared as a large quantity generator.

19. Certification I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. **Note: For the RCRA Hazardous Waste Part A permit Application, all owners and operators must sign (see 40 CFR 270.10(b) and 270.11).**

Signature of legal owner, operator or authorized representative 	Date (mm/dd/yyyy) 02/03/2021
Printed Name (First, Middle Initial Last) Matthew Healy	Title Vice President
Email MHealy@republicservices.com	
Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy)
Printed Name (First, Middle Initial Last)	Title
Email	

EPA ID Number **I L D 9 8 0 7 0 0 7 5 1**

OMB# 2050-0024; Expires 05/31/2020

United States Environmental Protection Agency HAZARDOUS WASTE REPORT 2020 (reporting cycle) WASTE GENERATION AND MANAGEMENT (GM) FORM	
---	---

1. Waste Characteristics

A. Waste Description Landfill leachate			
B. EPA Hazardous Waste Code(s)	F039		
C. State Hazardous Waste Code(s)			
D. Source Code G26	Management Method (G25)		Country Code (G62)
E. Form Code W101	F. Waste Minimization Code X	G. Radioactive Mixed <input type="checkbox"/> Y <input checked="" type="checkbox"/> N	
H. Quantity 112,146	UOM G	Density 8.34	<input checked="" type="checkbox"/> lbs/gal <input type="checkbox"/> sg

2. On-site Generation and Management of Hazardous Waste

<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Was any of this waste that was generated at this facility treated, disposed, and/or recycled on-site? If yes, continue to On-site Process System 1.		
Process System 1	Management Method Code H135	Quantity 112,146 gal	
Process System 2	Management Method Code	Quantity	

3. Off-site Shipment of Hazardous Waste

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	A. Was any of this waste that was generated at this facility shipped off-site for treatment, disposal, or recycling?		
Site 1			
B. EPA ID of facility to which waste was shipped	C. Management Method Code	D. Total Quantity Shipped	
See Comments			
Site 2			
B. EPA ID of facility to which waste was shipped	C. Management Method Code	D. Total Quantity Shipped	
Site 3			
B. EPA ID of facility to which waste was shipped	C. Management Method Code	D. Total Quantity Shipped	

4. Comments

Per AS 08-5, when the leachate safely reaches a properly permitted treatment facility, its not considered haz waste. All loads safely reached the treatment facility in 2020. Pursuant to prior communications with Illinois EPA, the permittee has declared as a LQG because the leacachte is temporarily considered a haz waste as it accumulates in the tank (<90 days). The 112,146 gal managed "on-site" as indicated in this report intended to apply to the above AS taking effect upon the safe receipt of the leachate at a properly permitted (offsite) POTW. The leacachte was not treated, disposed, or recycled on-site at Davis.



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

February 17, 2021

Illinois Environmental Protection Agency
Attn: BOL #24 HAR
PO Box 19276
Springfield, IL 62794

Re: LARGE QUANTITY GENERATOR FEE - 2020
BFI – Davis Junction Landfill – Phase I
Davis Junction, IL
USEPA ID No. ILD 980700751
IEPA Site No.: 1418210001

To Whom It May Concern,

Enclosed, please find a check made out to the Illinois Environmental Protection Agency in the amount of \$500 intended to cover the large quantity generator fees for the above referenced facility for calendar year 2020.

If you have any questions concerning this payment, feel free to contact me at (224) 970-1129 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

A handwritten signature in black ink, appearing to read "James Hitzeroth", written over a horizontal line.

James Hitzeroth

Enclosure

RECEIVED
FEB 26 2021
IEPA/BOL



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

February 17, 2021

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

Re: Annual Hazardous Waste Report - 2020
BFI – Davis Junction Landfill – Phase I
Davis Junction, IL
USEPA ID No. ILD 980700751
IEPA Site No.: 1418210001

Dear Ms. Wright,

Enclosed, please find an original signed version, plus two copies of the above referenced report that is being submitted by permittee, BFI Waste Systems of North America, LLC. The Annual Hazardous Waste Report includes: the Site Identification (SI) Form and Waste Generation and Management (GM) Form.

Please note that the enclosed forms were utilized pursuant to your email correspondence received on January 27, 2021 indicating that the attached forms are still valid, in spite of the expiration date of 05/31/2020 indicated on the forms.

Please be advised that a check in the amount of \$500 (Generator Fee) was sent under separate cover to: Illinois Environmental Protection Agency, Attn: BOL #24 HAR, PO Box 19276, Springfield, IL 62794.

If you have any questions concerning this submittal, feel free to contact me at (224) 970-1129 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

A handwritten signature in black ink, appearing to read "James Hitzeroth", written over a horizontal line.

James Hitzeroth

Enclosures



BFI Waste Systems of North America, LLC.
26W580 Schick Road
Hanover Park, IL 60133

February 17, 2022

Ms. Hope Wright
Illinois Environmental Protection Agency
Bureau of Land
MC #24
1021 North Grand Ave. East
PO Box 19276
Springfield, IL 62794-9276

RECEIVED

FEB 22 2022

IEPA/BOL/WRCS

IEPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE

Re: Annual Hazardous Waste Report - 2021
BFI - Davis Junction Landfill - Phase I
Davis Junction, IL
USEPA ID No. ILD 980700751
IEPA Site No.: 1418210001

APR 12 2022

REVIEWER: RDH

Dear Ms. Wright,

Enclosed, please find an original signed version, plus two copies of the above referenced report that is being submitted by permittee, BFI Waste Systems of North America, LLC. The Annual Hazardous Waste Report includes: the Site Identification (SI) Form and Waste Generation and Management (GM) Form.

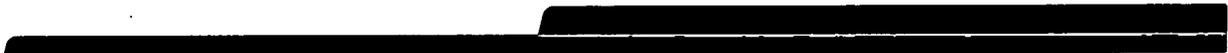
Please be advised that a check in the amount of \$500 (LQG Annual Fee) was sent under separate cover to: Illinois Environmental Protection Agency, Attn: BOL #2 Fiscal, 1021 N. Grand Ave. East, Springfield, IL 62702.

If you have any questions concerning this submittal, feel free to contact me at (224) 970-1129 or JHitzeroth@republicservices.com.

Sincerely,
BFI Waste Systems of North America, LLC

James Hitzeroth
Environmental Manager

Enclosures



United States Environmental Protection Agency RCRA SUBTITLE C SITE IDENTIFICATION FORM	
--	---

1. Reason for Submittal (Select only one.)

<input type="checkbox"/>	Obtaining or updating an EPA ID number for on-going regulated activities (Items 10-17 below) that will continue for a period of time.
<input checked="" type="checkbox"/>	Submitting as a component of the Hazardous Waste Report for <u>2021</u> (Reporting Year)
<input checked="" type="checkbox"/>	Site was a TSD facility, a reverse distributor, and/or generator of $\geq 1,000$ kg of non-acute hazardous waste, > 1 kg of acute hazardous waste, or > 100 kg of acute hazardous waste spill cleanup in one or more months of the reporting year (or State equivalent LQG regulations)
<input type="checkbox"/>	Notifying that regulated activity is no longer occurring at this Site
<input type="checkbox"/>	Obtaining or updating an EPA ID number for conducting Electronic Manifest Broker activities
<input type="checkbox"/>	Submitting a new or revised Part A (permit) Form

2. Site EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

3. Site Name

BFI Davis Junction Landfill Phase I
--

4. Site Location Address

Street Address 8902 N. Rte. 251			
City, Town, or Village Davis Junction		County Ogle	
State IL	Country USA	Zip Code 61020	
Latitude 42 deg 08'53.4" N	Longitude 89 deg 04' 57.8" W25	<input type="checkbox"/> Use Lat/Long as Primary Address	

5. Site Mailing Address

Same as Location Street Address

Street Address 26 W580 Schick Rd.			
City, Town, or Village Hanover Park			
State IL	Country USA	Zip Code 60133	

6. Site Land Type

<input checked="" type="checkbox"/> Private	<input type="checkbox"/> County	<input type="checkbox"/> District	<input type="checkbox"/> Federal	<input type="checkbox"/> Tribal	<input type="checkbox"/> Municipal	<input type="checkbox"/> State	<input type="checkbox"/> Other
---	---------------------------------	-----------------------------------	----------------------------------	---------------------------------	------------------------------------	--------------------------------	--------------------------------

7. North American Industry Classification System (NAICS) Code(s) for the Site (at least 5-digit codes)

A. (Primary) 562212	C.
B.	D.

EPA ID Number **I L D 9 8 0 7 0 0 7 5 1**

OMB# 2050-0024; Expires 04/30/2024

8. Site Contact Information

Same as Location Address

First Name James	MI	Last Name Hitzeroth
Title Environmental Manager		
Street Address 26 W580 Schick Rd.		
City, Town, or Village Hanover Park		
State IL	Country USA	Zip Code 60133
Email JHitzeroth@republicservices.com		
Phone 224-970-1129	Ext	Fax

9. Legal Owner and Operator of the Site

A. Name of Site's Legal Owner

Same as Location Address

Full Name BFI Waste Systems of North America, LLC	Date Became Owner (mm/dd/yyyy) 2/27/1975
Owner Type <input checked="" type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other	
Street Address 8902 N. Rte. 251	
City, Town, or Village Davis Junction	
State IL	Country USA Zip Code 61020
Email JHitzeroth@republicservices.com	
Phone 224-970-1129	Ext Fax
Comments	

B. Name of Site's Legal Operator

Same as Location Address

Full Name BFI Waste Systems of North America, LLC	Date Became Operator (mm/dd/yyyy) 2/27/1975
Operator Type <input checked="" type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other	
Street Address 8902 N. Rte. 251	
City, Town, or Village Davis Junction	
State IL	Country USA Zip Code 61020
Email JHitzeroth@republicservices.com	
Phone 224-970-1129	Ext Fax
Comments	

EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 04/30/2024

10. Type of Regulated Waste Activity (at your site)

Mark "Yes" or "No" for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities

<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	1. Generator of Hazardous Waste—If "Yes", mark only one of the following—a, b, c	
<input checked="" type="checkbox"/>	a. LQG	-Generates, in any calendar month, 1,000 kg/mo (2,200 lb/mo) or more of non-acute hazardous waste (includes quantities imported by importer site); or - Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lb/mo) of acute hazardous waste; or - Generates, in any calendar month or accumulates at any time, more than 100 kg/mo (220 lb/mo) of acute hazardous spill cleanup material.
<input type="checkbox"/>	b. SQG	100 to 1,000 kg/mo (220-2,200 lb/mo) of non-acute hazardous waste and no more than 1 kg (2.2 lb) of acute hazardous waste and no more than 100 kg (220 lb) of any acute hazardous spill cleanup material.
<input type="checkbox"/>	c. VSQG	Less than or equal to 100 kg/mo (220 lb/mo) of non-acute hazardous waste.
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Short-Term Generator (generates from a short-term or one-time event and not from on-going processes). If "Yes", provide an explanation in the Comments section. <i>Note: If "Yes", you MUST indicate that you are a Generator of Hazardous Waste in Item 10.A.1 above.</i>	
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	3. Treater, Storer or Disposer of Hazardous Waste—Note: Part B of a hazardous waste permit is required for these activities.	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Receives Hazardous Waste from Off-site	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	5. Recycler of Hazardous Waste	
<input type="checkbox"/>	a. Recycler who stores prior to recycling	
<input type="checkbox"/>	b. Recycler who does not store prior to recycling	
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	6. Exempt Boiler and/or Industrial Furnace—If "Yes", mark all that apply.	
<input type="checkbox"/>	a. Small Quantity On-site Burner Exemption	
<input type="checkbox"/>	b. Smelting, Melting, and Refining Furnace Exemption	

B. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g. D001, D003, F007, U112). Use an additional page if more spaces are needed.

F039						
See	note	on	page	6		

C. Waste Codes for State Regulated (non-Federal) Hazardous Wastes. Please list the waste codes of the State hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

EPA ID Number

I L D 9 8 0 7 0 0 7 5 1

OMB# 2050-0024; Expires 04/30/2024

11. Additional Regulated Waste Activities (NOTE: Refer to your State regulations to determine if a separate permit is required.)

A. Other Waste Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Transporter of Hazardous Waste—If "Yes", mark all that apply.
<input type="checkbox"/>	a. Transporter
<input type="checkbox"/>	b. Transfer Facility (at your site)
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Underground Injection Control
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	3. United States Importer of Hazardous Waste
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Recognized Trader—If "Yes", mark all that apply.
<input type="checkbox"/>	a. Importer
<input type="checkbox"/>	b. Exporter
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	5. Importer/Exporter of Spent Lead-Acid Batteries (SLABs) under 40 CFR 266 Subpart G—If "Yes", mark all that apply.
<input type="checkbox"/>	a. Importer
<input type="checkbox"/>	b. Exporter

B. Universal Waste Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) - If "Yes" mark all that apply. Note: Refer to your State regulations to determine what is regulated.
<input type="checkbox"/>	a. Batteries
<input type="checkbox"/>	b. Pesticides
<input type="checkbox"/>	c. Mercury containing equipment
<input type="checkbox"/>	d. Lamps
<input type="checkbox"/>	e. Aerosol Cans
<input type="checkbox"/>	f. Other (specify) _____
<input type="checkbox"/>	g. Other (specify) _____
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Destination Facility for Universal Waste Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Used Oil Transporter—If "Yes", mark all that apply.
<input type="checkbox"/>	a. Transporter
<input type="checkbox"/>	b. Transfer Facility (at your site)
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Used Oil Processor and/or Re-refiner—If "Yes", mark all that apply.
<input type="checkbox"/>	a. Processor
<input type="checkbox"/>	b. Re-refiner
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	3. Off-Specification Used Oil Burner
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	4. Used Oil Fuel Marketer—If "Yes", mark all that apply.
<input type="checkbox"/>	a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner
<input type="checkbox"/>	b. Marketer Who First Claims the Used Oil Meets the Specifications

EPA ID Number

I	L	D	9	8	0	7	0	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 04/30/2024

D. Pharmaceutical Activities

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	1. Operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals—if "Yes", mark only one. Note: See the item-by-item instructions for definitions of healthcare facility and reverse distributor.
<input type="checkbox"/>	a. Healthcare Facility
<input type="checkbox"/>	b. Reverse Distributor
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	2. Withdrawing from operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals. Note: You may only withdraw if you are a healthcare facility that is a VSQG for all of your hazardous waste, including hazardous waste pharmaceuticals.

12. Eligible Academic Entities with Laboratories—Notification for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262, Subpart K.

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	A. Opting into or currently operating under 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories— If "Yes", mark all that apply. Note: See the item-by-item instructions for definitions of types of eligible academic entities.
<input type="checkbox"/>	1. College or University
<input type="checkbox"/>	2. Teaching Hospital that is owned by or has a formal written affiliation with a college or university
<input type="checkbox"/>	3. Non-profit Institute that is owned by or has a formal written affiliation with a college or university
<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	B. Withdrawing from 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories.

13. Episodic Generation

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you an SQG or VSQG generating hazardous waste from a planned or unplanned episodic event, lasting no more than 60 days, that moves you to a higher generator category. If "Yes", you must fill out the Addendum for Episodic Generator.
--	---

14. LQG Consolidation of VSQG Hazardous Waste

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you an LQG notifying of consolidating VSQG Hazardous Waste Under the Control of the Same Person pursuant to 40 CFR 262.17(f)? If "Yes", you must fill out the Addendum for LQG Consolidation of VSQG hazardous waste.
--	---

15. Notification of LQG Site Closure for a Central Accumulation Area (CAA) (optional) OR Entire Facility (required)

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	LQG Site Closure of a Central Accumulation Area (CAA) or Entire Facility.
A. <input type="checkbox"/> Central Accumulation Area (CAA) or <input type="checkbox"/> Entire Facility	
B. Expected closure date: _____ mm/dd/yyyy	
C. Requesting new closure date: _____ mm/dd/yyyy	
D. Date closed : _____ mm/dd/yyyy	
<input type="checkbox"/>	1. In compliance with the closure performance standards 40 CFR 262.17(a)(8)
<input type="checkbox"/>	2. Not in compliance with the closure performance standards 40 CFR 262.17(a)(8)

EPA ID Number

I	L	D	9	8	0	7	0	7	5	1
---	---	---	---	---	---	---	---	---	---	---

OMB# 2050-0024; Expires 04/30/2024

16. Notification of Hazardous Secondary Material (HSM) Activity

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 260.30, 40 CFR 261.4(a)(23), (24), (25), or (27)? If "Yes", you must fill out the Addendum to the Site Identification Form for Managing Hazardous Secondary Material.
--	---

17. Electronic Manifest Broker

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you notifying as a person, as defined in 40 CFR 260.10, electing to use the EPA electronic manifest system to obtain, complete, and transmit an electronic manifest under a contractual relationship with a hazardous waste generator?
--	--

18. Comments (include item number for each comment)

The only waste regularly produced by the closed landfill facility is landfill leachate. According to Adjusted Standard AS 08-5 previously granted by the Illinois Pollution Control Board on December 4, 2008, as long as the leachate reaches a properly permitted (off-site) wastewater treatment facility without incident, it is considered non-hazardous for disposal purposes. Each load transported in 2021 was received without incident and is therefore considered non-hazardous, meaning none of the leachate was transported off-site as hazardous in 2021. Pursuant to prior communications with Illinois EPA, the leachate is temporarily considered hazardous while it accumulates in an on-site permitted tank and therefore, the permittee has declared as a large quantity generator for 2021.

19. Certification I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. **Note: For the RCRA Hazardous Waste Part A permit Application, all owners and operators must sign (see 40 CFR 270.10(b) and 270.11).**

Signature of legal owner, operator or authorized representative 	Date (mm/dd/yyyy) 02/08/2022
Printed Name (First, Middle Initial Last) Matthew Healy	Title Vice President
Email MHealy@republicservices.com	

Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy)
Printed Name (First, Middle Initial Last)	Title
Email	

EPA ID Number **I L D 9 8 0 7 0 0 7 5 1**

OMB# 2050-0024; Expires 04/30/2024

United States Environmental Protection Agency HAZARDOUS WASTE REPORT <u>2021</u> (reporting cycle) WASTE GENERATION AND MANAGEMENT (GM) FORM	
--	---

1. Waste Characteristics

A. Waste Description Landfill leachate						
B. EPA Hazardous Waste Code(s)	F039	see	note	on	pg.	6
C. State Hazardous Waste Code(s)						
D. Source Code G26	Management Method (G25)			Country Code (G62)		
E. Form Code W101	F. Waste Minimization Code X			G. Radioactive Mixed <input type="checkbox"/> Y <input checked="" type="checkbox"/> N		
H. Quantity 86,300	UOM G	Density		8.34	<input checked="" type="checkbox"/> lbs/gal <input type="checkbox"/> sg	

2. On-site Generation and Management of Hazardous Waste

<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Was any of this waste that was generated at this facility treated, disposed, and/or recycled on-site? If yes, continue to On-site Process System 1.		
Process System 1	Management Method Code H135	Quantity	86,300 gal
Process System 2	Management Method Code	Quantity	

3. Off-site Shipment of Hazardous Waste

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	A. Was any of this waste that was generated at this facility shipped off-site for treatment, disposal, or recycling? If yes, continue to Site 1.		
Site 1			
B. EPA ID of facility to which waste was shipped	C. Management Method Code	D. Total Quantity Shipped	
Site 2			
B. EPA ID of facility to which waste was shipped	C. Management Method Code	D. Total Quantity Shipped	
Site 3			
B. EPA ID of facility to which waste was shipped	C. Management Method Code	D. Total Quantity Shipped	

4. Comments

Per AS 08-5, when the landfill leachate safely reaches the properly permitted treatment facility, its not considered haz waste. All loads safely reached the treatment facility in 2021. Per prior communications with Illinois EPA, the permittee has declared as a LQG because the leachate is temporarily considered a haz waste as it accumulates in the tank (<90 days). The 86,300 gal managed "on-site" as indicated in this report intended to apply to the above AS taking effect upon the safe receipt of the leachate at a properly permitted (offsite) POTW. The leacahete was not treated, disposed or recycled on-site at Davis.



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

217/524-3300

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

R 001028

James P. Hrusovsky
Alton Steel, Inc.
5 Cut Street
Alton, IL. 62002

RE: 1190100004 – Madison County
Alton Steel, Inc.
ILD006280606
Log No. B-160R2
RCRA Administrative Record
Permit Draft

Dear Mr. Hrusovsky,

Attached is a Draft Resource Conservation and Recovery Act (RCRA) Post-Closure Renewal Permit and fact sheet for the above-referenced facility. The draft permit is based on the administrative record contained in the Illinois EPA's files. The contents of the administrative record are described in Title 35 Illinois Administrative Code (35 Ill. Adm. Code) 705.144.

Under the provisions of 35 Ill. Adm. Code 705.141(d), the draft permit and administrative record must be publicly noticed and made available for public review and comment. The Illinois EPA must also provide an opportunity for a public hearing. Copies of the draft decision, fact sheet, and renewal permit application are available for review at the Hayner Public Library at Alton Square Mall, 132 Alton Square, Alton, Illinois. The Illinois EPA has not scheduled a public hearing at the current time. The public comment period will close on July 31, 2023.

During the comment period, the applicant or any interested party may submit comments to the Illinois EPA on the Draft RCRA Post-Closure Renewal Permit. At the close of the comment period, the Illinois EPA will prepare a response to significant comments. Comments on the Draft RCRA Post-Closure Renewal Permit may be submitted to:

Brad Frost, Office of Community Relations (#5)
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

Illinois EPA will issue a Final RCRA Post-Closure Renewal Permit after the close of the public comment period unless the Illinois EPA decides to reverse the tentative decision. The appeal process and limitations are addressed in 35 Ill. Admin. Code 705.212.

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

B-160R2

Page 2

If you have questions concerning this Draft RCRA Post-Closure Renewal Permit, please contact Kelly Huser at 217/524-3867.

Sincerely,

Jaqueline M. Cooperider, P.E.
Permit Section Manager
Bureau of Land

JMC: KDH:1190100004-RCRA-B160R2-Draft.docx

Attachment: Fact Sheet
Draft RCRA Post-Closure Renewal Permit

cc: Norberto Gonzalez, U.S. EPA – Region V
Emily Keener, U.S. EPA – Region V
Matt Gill, P.E., Alton Steel, Inc.

FACT SHEET
for
DRAFT RCRA POST-CLOSURE RENEWAL PERMIT
Alton Steel, Inc.
Alton, Illinois
STATE ID NO. 1190100004
FEDERAL ID NO. ILD006280606
RCRA POST-CLOSURE PERMIT LOG NO. B-160R2

This fact sheet has been prepared pursuant to the requirements of Title 35 Illinois Administrative Code (Ill. Adm. Code) Section 705.143. The fact sheet is intended to be a brief summary of the principal facts and significant factual, legal, methodological, and policy questions considered in preparing a draft Resource Conservation and Recovery Act (RCRA) Post-Closure renewal permit.

This permit requires Alton Steel, Inc. (ASI) to provide at least thirty (30) years post-closure care, including groundwater monitoring, for a closed hazardous waste landfill unit (known as the consolidated waste pile corrective action management unit (CWP CAMU)) and provide corrective action for several solid waste management units. The post-closure care period began on December 22, 1997, the date the CWP CAMU was certified closed. Procedures for the reduction or extension of the post-closure care period are set forth in 35 Ill. Adm. Codes 724.217(a) (2) (A) and 724.217(a) (2) (B) respectively.

Pursuant to 35 Ill. Adm. Code 705.143(a), this fact sheet is sent to the applicant and to any other person who requests it.

I. INTRODUCTION

The draft permit for ASI contains all of the standard conditions required by 35 Ill. Adm. Code Parts 702, 703, and 724; and the applicable conditions of 35 Ill. Adm. Code Part 724 for post-closure care of a closed hazardous waste landfill. This includes, among other things, monitoring the groundwater. The ASI facility is an existing facility that has been operating under a RCRA Post-Closure permit first issued on June 28, 1996 (B-160 to Laclede Steel Co.) and the renewal permit issued December 4, 2009 (B-160R) that was most recently revised on September 17, 2020 (B-160R-M-16).

II. DESCRIPTION OF FACILITY

A. General

The ASI facility was formerly operated by Laclede Steel Company (“Laclede”) from 1911 until its closure as a bankrupt facility in July of 2001. The property remained vacant for nearly two years prior to ASI’s purchase of the assets from Laclede’s bankrupt estate in May 2003. ASI, Laclede, the United States Environmental Protection Agency, and the State of Illinois entered into a Settlement Agreement, filed in the United States Bankruptcy Court for the Eastern

District of Missouri, Eastern Division, Cas No. 01-48321, to bring the facility back into compliance with the RCRA Permit (hereinafter Settlement Agreement). The Illinois EPA transferred Laclede's RCRA Post-Closure Permit to ASI on August 30, 2005, incorporating the terms of the Settlement Agreement.

ASI operates a mini-mill and as part of its steel manufacturing process, ASI uses an electric arc furnace to process scrap steel and other raw materials into slabs and blooms. All the manufactured slabs and some of the blooms are sold to other companies. The blooms that are not sold to others are sent to ASI's hot rolling finishing mill for further processing.

As part of its steel manufacturing process, ASI generates electric arc furnace dust which is a listed hazardous waste (K061). ASI is a generator of K061 and recycles this waste at an off-site recycling facility in which several of the metals in the dust are recovered, primarily zinc.

There were three hazardous waste management units at the Laclede facility that managed the K061 dust. These units were identified as the CWP CAMU, Rod Patenting Building, and Pelletizer Area. Under conditions of the RCRA Post-Closure permit, hazardous waste, including contaminated soil, has been removed from the Pelletizer Area and Rod Patenting Building and placed in the CWP CAMU. The CWP CAMU was capped and closed in accordance with Laclede's RCRA Post-Closure permit on December 22, 1997.

B. Site Descriptions

The ASI facility is an approximate 400-acre site located at 5 Cut Street in Alton, Illinois. The land use in the area surrounding ASI is primarily industrial/commercial.

III. HAZARDOUS WASTE MANAGEMENT ACTIVITIES

A. Post-Closure

The following hazardous waste management unit shall be provided with post-closure care:

Type of Waste Unit	Capacity	Wastes Contained
Landfill (D80) – Consolidated Waste Pile CAMU	90,000 Cubic Yard 360 ft. x 390 ft. x 34 ft. (approximate)	K061 – Electric Arc Furnace Dust

Post-Closure permit conditions deal with monitoring, maintaining, and recordkeeping of the hazardous waste management unit described above in

accordance with the provisions of the post-closure care plan. Section II of the permit contains conditions specific to post-closure and implement the regulatory requirements of 35 Ill. Adm. Code 724, Subpart G. The purpose of this RCRA Post-Closure permit is to require that the above-referenced closed hazardous waste management unit receives post-closure care for at least thirty (30) years. Groundwater monitoring must continue through the post-closure care period for established monitoring wells, at a minimum. Inspections during this post-closure period must identify any maintenance needed, including, but not limited to, the final cover system and vegetation of the closed landfill (D80). A written record of the post-closure inspections and maintenance activities performed must be kept at the facility.

B. Groundwater Program

Groundwater parameters are monitored in the Uppermost Aquifer, the Upper Silty Clay Unit, below the ASI facility. CWP CAMU monitoring results indicate that, at the present time, no groundwater impacts have occurred. Therefore, a Groundwater Detection Monitoring Program meeting the requirements of 35 Ill. Adm. Code 724.198 shall be implemented at the facility. The groundwater shall be monitored by a series of six (6) groundwater monitoring wells and three (3) piezometers (for water level measurements only) screened at appropriate intervals to determine groundwater quality in the Uppermost Aquifer beneath the CWP CAMU. ASI will be required to report groundwater quality to the Illinois EPA on a routine basis.

In addition to the Groundwater Detection Monitoring Program utilized to monitor the Uppermost Aquifer at the CWP CAMU, ASI has eleven (11) existing wells to monitor groundwater in the Uppermost Aquifer (Upper Silty Clay Unit) and four (4) piezometers to monitor groundwater elevations in the deep groundwater zone (Lower Sand and Gravel Unit) at the perimeter of the ASI facility. These groundwater monitoring wells are intended to detect and prevent any groundwater contamination from extending beyond the perimeter of the facility as required by the Settlement Agreement.

1. Detection Monitoring

Section III of the Permit implements the regulatory requirements of 35 Ill. Adm. Code Part 724, Subpart F and outlines the groundwater monitoring requirements necessary to determine if groundwater impacts have occurred as a result of the regulated unit. The Detection Monitoring Program has six groundwater monitoring wells, two upgradient wells which are unaffected by the regulated unit and four downgradient wells, which monitor groundwater that passes beneath the regulated unit. In addition, the Detection Monitoring Program includes three piezometers that monitor groundwater movement in the Lower

Sand and Gravel Unit. This unit is located vertically beneath the Uppermost Aquifer, the Upper Silty Clay Unit.

ASI monitors groundwater in the Upper Silty Clay Unit (Uppermost Aquifer) at an approximate depth of 33 feet below ground surface (ft-bgs) and three piezometers to monitor groundwater elevation in the Lower Sand and Gravel Unit at depths of 45, 61 and 100 ft-bgs.

a. Parameters

ASI shall determine groundwater quality at all six groundwater monitoring wells mentioned above at both upgradient and Point of Compliance locations semi-annually. Samples collected during the semi-annual sampling events of each year shall be analyzed for the field parameters and indicator parameters listed below. Total (unfiltered) values shall be used for comparison with Background Groundwater Quality (BGQ) values. Dissolved (filtered) shall be used for statistical analysis.

Field/Indicator Parameters	BGQ/Reporting Units
pH	6.30-13.71 s.u.
Specific Conductance	3200 umhos/cm
Cadmium (Total)	2.5 ug/L
Cadmium (Dissolved)	1.4 ug/L
Chloride (Total)	480 mg/L
Chloride (Dissolved)	450 mg/L
Chromium (Total)	33 ug/L
Chromium (Dissolved)	20 ug/L
Fluoride (Total)	8.9 mg/L
Fluoride (Dissolved)	9 mg/L
Iron (Total)	32000 ug/L
Iron (Dissolved)	27000 ug/L
Lead (Total)	100 ug/L
Lead (Dissolved)	96 ug/L
Manganese (Total)	2800 ug/L
Manganese (Dissolved)	2400 ug/L
Nickel (Total)	52 ug/L
Nickel (Dissolved)	110 ug/L
Nitrate - Nitrogen	3.1 mg/L
Sulfate (Dissolved)	240 mg/L
Total Dissolved Solids	1700 mg/L
Zinc (Total)	130 ug/L
Zinc (Dissolved)	85ug/L

2. Perimeter Groundwater Observation Monitoring

Section III-A of the Permit implements the regulatory requirements of 35 Ill. Adm. Code Part 724, Subpart F and outlines the groundwater monitoring requirements necessary to determine if groundwater impacts have extended at or beyond the perimeter of the ASI facility. The Perimeter Groundwater Observation Monitoring Program has eleven (11) existing wells to monitor groundwater in the Uppermost Aquifer (Upper Silty Clay Unit) at the perimeter of the Alton Steel Inc. facility. In addition, the Perimeter Groundwater Observation Monitoring Program includes four (4) piezometers that monitor groundwater movement in the Lower Sand and Gravel Unit. This unit is located vertically beneath the Uppermost Aquifer, the Upper Silty Clay Unit.

ASI monitors groundwater at the perimeter of the ASI facility in the Upper Silty Clay Unit (Uppermost Aquifer) at an average depth of 23 ft-bgs and four piezometers to monitor groundwater elevation in the Lower Sand and Gravel Unit at an average depth of 30.2 ft-bgs.

a. Parameters

ASI shall determine groundwater quality at all eleven groundwater monitoring wells mentioned above at the perimeter of the facility on a semi-annual basis. Samples collected during the semi-annual sampling events of each year shall be analyzed for the field parameters and indicator parameters listed below. Total (unfiltered) values shall be used for comparison with BGQ values. Dissolved (filtered) shall be used for statistical analysis.

Field/Indicator Parameters	BGQ/Reporting Units
pH	6.39-7.71 s.u.
Specific Conductance	1599 umhos/cm
Cadmium (Total)	3 ug/L
Cadmium (Dissolved)	1 ug/L
Chromium (Total)	71 ug/L
Chromium (Dissolved)	15 ug/L
Lead (Total)	43 ug/L
Lead (Dissolved)	1 ug/L
Zinc (Total)	154 ug/L
Zinc (Dissolved)	21 ug/L
4-Methylphenol	10 ug/L
Polychlorinated Biphenyls (PCBs)	2.5 ug/L
Total Petroleum Hydrocarbons (TPH)	400 ug/L

C. Closure and Corrective Action Activities

The original RCRA Post-Closure permit listed two Hazardous Waste Management Units, not including the CWP CAMU, that required closure, and seven Solid Waste Management Units that required corrective action. Below is a discussion of each unit summarizing the remedial activities completed at each unit and its current status.

1. Hazardous Waste Management Units (HWMUs)

a. Rod Patenting Building (RPB)

This building once contained a container storage area and an indoor waste pile of electric arc furnace (EAF) dust. It is the subject of an RCRA closure plan (Log No. C-547) approved by Illinois EPA prior to the initial Part B Permit application and issuance. In 1996 Laclede removed all the stored EAF dust from this unit and placed it in the Consolidated Waste Pile (CWP) CAMU in accordance with the RCRA Permit.

Laclede and ASI have conducted several soil investigations at this unit. In a letter dated July 3, 2007, the Illinois EPA required: (1) an approved engineered barrier be placed over the entire floor of the RPB; (2) an approved Closure Report and closure certification; and (3) an Environmental Land Use Control (ELUC) restricting exposure must be approved and recorded for the RPB and an area around the RPB to complete closure of the RPB. ASI completed the engineered barrier in October 2008. A Closure Certification Report and draft ELUC were submitted to Illinois EPA on December 15, 2008. On March 31, 2009 Illinois EPA determined no further corrective action was required for this unit provided the ELUC was recorded with Madison County and conditions of the ELUC are met. The ELUC was recorded with the Madison County Recorder's Office on April 7, 2009. No further closure efforts are required for this unit other than continued compliance with the subject ELUC.

b. Pelletizer Area

The Pelletizer Area included a treatment unit and a waste pile. It was an area where treatment of EAF dust occurred between 1985 and December 1991. The unit formed the EAF dust into pellets to ease management of the EAF dust onsite.

All waste and some contaminated soil were removed and disposed of in the CWP CAMU. An engineered barrier (three feet of clean fill to backfill the excavated contaminated soil) was completed in August 1998.

This unit has been dismantled, investigated, remediated, and closed with an

approved, recorded ELUC per Illinois EPA letter dated October 19, 2005. The ELUC and associated documentation was filed with the Madison County Recorder's Office on May 2, 2005. No further closure efforts are required for this unit other than continued compliance with the subject ELUC.

2. Solid Waste Management Units (SWMUs)

a. Solid Waste Landfill

This unit is a solid waste landfill which was originally permitted on May 19, 1972 (Solid Waste Permit 1972-37). The permit was modified on June 23, 1972 to allow for the disposal of "concrete rubble, steel and melt shop dust (metal oxides)".

The landfill ceased accepting waste on September 18, 1992 and implemented closure in accordance with the closure plan in July 1993. Illinois EPA issued closure certification on October 6, 1994, establishing the post-closure care of this unit that began on June 21, 1994, and would continue for a minimum of fifteen (15) years. The subject renewal permit requires that post-closure care of this unit continue to be carried out in accordance with the October 1994 Illinois EPA letter.

b. Existing Wastewater Treatment Plant Area Including Sewer System and Crown House Area

This unit, the Wastewater Treatment Plant Area, includes the current Wastewater Treatment Plant (WWTP), the sewer system, the historical WWTP, the Crown House, the Serpentine Lagoon, two historical USTs, and three emergency sludge holding lagoons. The current WWTP was started on July 1, 1977. The unit now also includes the wastewater drainage system (i.e., surface impoundments and interconnecting channels) located directly south of the 14" Mill westward to the former Wire Mill.

Parts of this unit are still active. A Phase II RCRA Facility Investigation (RFI) Work Plan for this unit was submitted on April 10, 2007, and the plan was subsequently approved by the Illinois EPA in a letter dated May 28, 2009. A Phase II RFI Investigation Report dated September 27, 2010, was approved by the Illinois EPA with conditions and modifications in a letter dated May 4, 2017. ASI submitted a supplemental Phase II RFI Report dated December 22, 2021 and plans to do additional investigation at this SWMU.

c. HTMR (High Temperature Metals Recovery)

High Temperature Metal Recovery Unit was an approved treatment method for EAF dust that lowered zinc and lead concentrations to acceptable levels. The HTMR operated from 1991 to 1997. In late 1997, there was a steam

explosion that caused extensive damage to the furnace. The unit was not repaired, and the building is locked.

This unit is not active, and at this time ASI does not intend to reinstate it. There is no activity within this unit that would require continuance of the corrective action requirements contained in Section II.B.2 of the current RCRA Post-Closure permit. The draft renewal permit does not require any additional corrective action for this shuttered unit. A return to operation would include corrective action conditions (such corrective action would include monthly inspections, removing wastes in a timely manner, and repairing any cracks or deterioration, etc. observed in the secondary containment system).

d. Baghouse Dust Accumulation Area

This unit, constructed in 1973-74, consists of two baghouse dust accumulation areas, which are areas where the EAF dust is captured after being released during the steel making process.

The corrective action efforts required at this unit included: (1) an investigation for any contamination at this unit; and (2) remediation of any detected contamination. Illinois EPA approved an investigation work plan in a letter dated August 19, 2008. ASI submitted an investigation report and additional Work Plan to Illinois EPA on February 13, 2009. Illinois EPA approved the report and Work Plan in a letter dated June 2, 2009. An investigation report and a proposal to implement an engineered barrier and ELUC were submitted to Illinois EPA on January 11, 2010. Illinois EPA approved the engineered barrier design and proposed ELUC in a letter dated March 15, 2010. An asphalt barrier was constructed in 2011. An additional concrete engineered barrier was constructed in August 2012. A Corrective Action Completion Report was submitted on September 13, 2012. Illinois EPA approved the report, subject to the proper filing of the ELUC, in a letter dated November 28, 2012. On December 13, 2012, ASI submitted proof of filing the required ELUC. Illinois EPA approved completion of corrective actions, subject to ASI's continued compliance with the ELUC, in a letter dated February 21, 2013. The only corrective action for this unit required by this draft renewal permit is continued compliance with the subject ELUC.

e. Former Waste Oil Tank (WOT)

This unit was a 2.8-million-gallon steel tank which was used to store waste oil from maintenance of machinery, including trucks. The WOT was emptied, cleaned, and dismantled in 2004. Soil and groundwater investigations were completed in the vicinity of the WOT. An asphalt barrier was constructed over the footprint of the WOT and some surrounding area.

An ELUC was approved and recorded. Illinois EPA approved the barrier on August 1, 2008. No further action is necessary at the WOT other than compliance with the ELUC and conditions that were filed in Madison County Recorder's Office. As such, the only corrective action for this unit required by this renewal permit is continued compliance with the subject ELUC.

f. Dowel Assembly Building

This unit is a warehouse which acted as a staging area (less than 90-day storage) for 3-ton bags of EAF dust prior to placement in the Rod Patenting Building between August 1991 and July 1993. The 3-ton bags of EAF dust were placed on top of polyethylene on top of the concrete floor.

The Dowel Assembly Building was cleaned and swept in 2003 as required by the original RCRA Permit. The building was inspected by Illinois EPA and no further corrective action was required at this unit per a letter dated June 18, 2004. The dismantling of this building was completed in May 2013. The subject renewal permit requires no additional corrective action for this unit.

g. Pre-RCRA Waste Pile

This unit consisted of a former waste pile used for disposal of EAF dust from the mid-1960's until 1972. EAF dust and EAF dust contaminated soil were removed and disposed in the permitted CWP CAMU in 1996. An engineered barrier (ten feet of clean fill to backfill the excavated contaminated soil) was completed in August 1998.

This unit has been investigated, remediated, and closed with an approved, recorded ELUC per an Illinois EPA letter dated October 19, 2005. The ELUC and associated documentation was filed with the Madison County Recorder's Office on May 2, 2005. The only corrective action for this unit required by this renewal permit is continued compliance with the subject ELUC.

D. Standard Conditions

Standard Permit Conditions are regulatory requirements of 35 Ill. Adm. Code, Parts 702, 703 and 724. These conditions are of a general nature and are applicable to all hazardous waste management facilities regulated pursuant to an Illinois EPA RCRA Post-Closure permit. These conditions include the effectiveness of the permit, permit actions, severability, permit expiration, monitoring and retention of records, transfer of permits, and compliance schedules.

IV. CONSIDERED PERMIT ACTIONS OTHER THAN RCRA

A. Air

Air emissions from a hazardous waste management facility are regulated under RCRA, the Clean Air Act (CAA), the Illinois Environmental Protection Act, and State regulations at Title 35: Environmental Protection, Subtitle B: Air Pollution. Under these statutes and regulations, a facility is required to obtain a permit to install or operate any process that is, or may be, a source of air pollutants. ASI has a permit for sources for air emissions (Title V Air Permit No. 96020056) for the Steel Mill. There are no air emissions from the regulated unit (closed CWP CAMU).

B. Clean Water Act

Discharge of any waste waters from a hazardous waste management facility into the waters of the State is required to have a National Pollutant Discharge Elimination System (NPDES) permit, issued by the Illinois EPA under Section 39(b) of the Environmental Protection Act. ASI has an NPDES General Stormwater Permit (NPDES Permit # ILD000612). There are no discharges from the regulated unit (closed CWP CAMU) to a NPDES permitted outfall.

V. PROCEDURES FOR REACHING A FINAL DECISION

Pursuant to 35 Ill. Adm. Code 705.162 (a) (2), the public is given at least forty-five (45) days to review the application and comment on the draft permit conditions prior to Illinois EPA taking any final permitting action on the application for this RCRA Post-Closure Renewal Permit. The comment period will begin on, June 14, 2023, the date of the first publication of the public notice in the newspaper of general circulation in the area. The comment period will end on July 31, 2023.

Copies of the permit application, draft permit and fact sheet are available for review on the Illinois EPA website at <https://www2.illinois.gov/epa/public-notices/Pages/general-notices.aspx>, and at:

Hayner Public Library at Alton Square Mall
132 Alton Square
Alton, Illinois 62002

The administrative record contains the permit application, draft permit, fact sheet, and other supporting documents and correspondence submitted to the Illinois EPA. The administrative record can be made available for public inspection by appointment only at the Illinois EPA's Springfield headquarters from 9:00 a.m. to 5:00 p.m., Monday through Friday. Inspection of the administrative record must be scheduled in advance by contacting Brad Frost at the address listed below.

In response to requests received during the comment period or at the discretion of the Illinois EPA, a public hearing may be held to clarify one or more issues concerning the permit application. A request for a public hearing must be submitted in writing and shall state the nature of the issues proposed to be raised at the hearing. Public notice of a public hearing will be issued at least forty-five (45) days before the hearing date.

For further information regarding the permit process, to submit written comments on the draft permit, or to request a public hearing, please contact:

Brad Frost, Office of Community Relations, #5
Illinois Environmental Protection Agency
1021 N. Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
(217) 782-7027

When the Illinois EPA makes its final permit decision, notice will be given to the applicant and each person who has submitted written comments or requested notice of the final permit decision. The permit will become effective thirty-five days (35) after service of notice of the decision or at a later date if stated in the permit unless the decision is appealed.



HAZARDOUS WASTE MANAGEMENT RCRA POST-CLOSURE PERMIT

1190100004 -- Madison County
Alton Steel, Inc.
ILD006280606
Permit Log # B-160R2
RCRA Administrative Record

Issue Date:
Effective Date:
Expiration Date:

PERMITTEE

Alton Steel, Inc.
5 Cut Street
Alton, Illinois 62002

A renewed RCRA Post-Closure permit is hereby granted pursuant to Alton Steel, Inc. (ASI) as Owner, Operator and Permittee pursuant to Section 39(d) of the Illinois Environmental Protection Act, and Title 35 Illinois Administrative Code Subtitle G (35 Ill. Adm. Code).

PERMITTED HAZARDOUS WASTE ACTIVITY

This permit requires ASI to conduct the following hazardous waste activities in accordance with the approved permit application and conditions of this permit.

Post-Closure Care of a closed landfill (CWP CAMU) (D80)
Groundwater Monitoring Detection Monitoring and Perimeter Observation Monitoring
Corrective Action for several Solid Waste Management Units (SWMUs)

This permit consists of the conditions contained herein and those in the sections and attachments in this permit. The Permittee must comply with all terms and conditions of this permit and the applicable regulations contained in 35 Ill. Adm. Code Parts 702, 703, 705 and 720 through 729 in effect on the effective date of this permit.

This permit is issued based on the information submitted in the approved permit application identified in Attachment D of this permit and any subsequent amendments. Any inaccuracies found in this information provided in the permit application may be grounds for the termination or modification of this permit (see 35 Ill. Adm. Code 702.187 and 702.186) and potential enforcement action (415 ILCS 5/44(h)).

DRAFT

Jaqueline M. Cooperider, P.E.
Permit Section Manager
Bureau of Land

JMC: KDH:1190100004-RCRA-B160R2-Draft.docx

2125 S. First Street, Champaign, IL 61820 (217) 278-5800	2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120	412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000	4302 N. Main Street, Rockford, IL 61103 (815) 987-7760
595 S. State Street, Elgin, IL 60123 (847) 608-3131	

RCRA POST-CLOSURE PERMIT

ISSUED TO

ALTON STEEL, INC.

ALTON, ILLINOIS

STATE ID # 1190100004

ILD006280606

LOG # B-160R2

**RCRA POST-CLOSURE PERMIT
B-160R2**

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGES</u>
I. General Facility Description	I-1
II. Post Closure Care	II-1 to II-9
III. Groundwater Detection Monitoring Program	III-1 to III-12
III-A Perimeter Groundwater Observation Monitoring Program	III-A-1 to III-A-11
IV. Corrective Action for Solid Waste Management Units	IV-1 to IV-15
V. Special Conditions	V-1
VI. Standard Conditions	VI-1 to VI-8
VII. Reporting and Notification Requirements	VII-1 to VII-4

LIST OF ATTACHMENTS

Attachment A -- Inspection Schedule & Inspection Form	A-1 to A-2
Attachment B -- Construction Certification Form	B-1 to B-2
Attachment C -- Groundwater Monitoring Program Attachments	C-1 to C-9
Attachment D -- Approved Permit Application Identification	D-1
Attachment E -- Corrective Action and Post-Closure Cost Estimate Summary	E-1
Attachment F -- Chronological Summary of RCRA Corrective Action Activities	F-1 to F-7
Attachment G -- Legal Description and Facility Map	G-1 to G-3
Attachment H -- Certification of Completion of Post-Closure Care	H-1

1190100004

B-160R2

Page I-1

SECTION I: GENERAL FACILITY DESCRIPTION**1. OWNER AND OPERATOR**

The facility is owned and operated by Alton Steel, Inc., herein referred to as the "Permittee." (35 Ill. Adm. Code 702.121, 702.123 & 703.181)

Alton Steel, Inc.
5 Cut Street
Alton, Illinois 62002

2. LOCATION**1. Location of Facility**

The Alton Steel, Inc. facility is in Alton, Illinois. Alton Steel owns approximately 400 acres at this location with approximately 238 acres devoted to the management of hazardous waste. The Alton Steel, Inc. facility is located at:

Alton Steel, Inc.
5 Cut Street
Alton, Illinois 62002

The facility contact is the Director of Environmental Compliance. They may be reached at 618-374-3570.

2. Facility Map

The location of the closed Consolidated Waste Pile (CWP CAMU) (D80) within the ASI facility is shown on the facility drawing in Attachment G of this permit.

3. DESCRIPTION OF HAZARDOUS WASTE MANAGEMENT ACTIVITIES

As part of its steel manufacturing process, ASI generates electric arc furnace dust which is a listed hazardous waste (K061). ASI is a generator of K061 and recycles this waste at an off-site recycling facility in which several of the metals in the dust are recovered, primarily zinc.

There were three hazardous waste management units at the Laclede facility that managed the K061 dust. These units were identified as the CWP CAMU, Rod Patenting Building, and Pelletizer Area. Under conditions of the RCRA Post-Closure permit, hazardous waste, including contaminated soil, has been removed from the Pelletizer Area and Rod Patenting Building and placed in the CWP CAMU. The CWP CAMU was capped and closed in accordance with Laclede's RCRA Post-Closure permit on December 22, 1997.

1190100004

B-160R2

Page II-1 of II-9

SECTION II: POST-CLOSURE CARE**A. SUMMARY**

For this RCRA Post-Closure permit, the ASI facility is comprised of approximately 238 acres of property owned by ASI, with its principal gate at 5 Cut Street in Alton, Illinois. Attachment G of this permit defines the boundaries of the ASI facility covered by this permit. The boundaries of the permitted facility include the contiguous land and structures, other appurtenances, and improvements on the land used for treating, storing, or disposing of hazardous waste. Adjacent properties that are owned by ASI and located outside the facility boundaries covered by this permit do not have any structures, appurtenances, or improvements used for treating, storing, or disposing of hazardous waste, and do not contain any Solid Waste Management Units (SWMUs) required to be addressed by the corrective action provisions of this permit.

For the purpose of implementing remedies under 35 Ill. Adm. Code (Ill. Adm. Code) 724.201, the Illinois EPA is designating the Consolidated Waste Pile as a Corrective Action Management Unit (CWP CAMU), as defined in 35 Ill. Adm. Code 720.110. The operation of the CWP CAMU must be conducted in accordance with the requirements contained in this section and the regulations contained in 35 Ill. Adm. Code 724, Subpart S.

Hazardous waste management units where waste is left in place must receive post-closure care for at least 30 years after the date the certification of closure is approved in writing by the Illinois EPA's Division of Land Pollution Control (DLPC). The CWP CAMU was certified closed on December 22, 1997. Activities required during post-closure care include but are not limited to (1) maintenance of final cover, (2) monitoring of the groundwater, (3) providing financial assurance for post-closure activities pursuant to 35 Ill. Adm. Code Part 724.

B. UNIT IDENTIFICATION

1. The Permittee shall provide post-closure care for the following hazardous waste management unit, as described in the approved permit application, subject to the terms and conditions of this permit:

Unit Designation	Capacity	Surface Area Dimensions of Unit (Acres)	Description of Waste and Hazardous Waste No.
Consolidated Waste Pile (CWP CAMU) (D80) Closed	90,000 Cubic Yards	6 acres (approximate)	Emission control dust/sludge from the primary production of steel in electric furnaces (K061)

1190100004

B-160R2

Page II-2 of II-9

2. Additional waste from the Rod Patenting Building, the Pelletizer Area, and certain on-site SWMUs that contained waste similar in composition to the electric arc furnace dust were deposited in the CWP CAMU.
3. The location and horizontal extent of the closed CWP CAMU is identified in Attachment G of this permit. The lowest elevations of the CWP CAMU ranges from 424.1 ft msl (mean sea level) and 431.5 ft msl. The highest elevation of the final cover system for the closed CWP CAMU is at or below 466 ft msl. The slope of the final cover on the CWP CAMU was constructed at a 4:1 slope.
4. The closed CWP CAMU is located on top of a portion of the Solid Waste Landfill (SWMU #4) and does not have an engineered liner or leachate collection system. The CWP CAMU is underlain by approximately 10-20 feet of "Fill/Slag" overlaying 15-20 feet of silty clay.
5. The cover system on top of the closed CWP CAMU is constructed of the following layers, described from the top to bottom:
 - 6 inches of topsoil
 - 30 inches of borrow soil
 - HDPE geonet between two layers of non-woven geotextile filter fabric
 - 3 feet of compacted clay soil
6. A survey plat indicating the location and dimensions of the closed CWP CAMU with respect to permanently surveyed benchmarks was prepared and certified by a professional land surveyor. The notes on the Plat of Survey state the owner's and operator's obligation to restrict disturbance of the closed CWP CAMU in accordance with the applicable 35 Ill. Adm. Code 724, Subpart G regulations. These notes state:
 - a. The waste materials contained in the CWP CAMU are considered RCRA hazardous wastes. They include, slag, scrap steel, electric arc furnace (EAF) baghouse dust, and materials or debris impacted by EAF dust that were generated during closure activities. The EAF dust is a listed hazardous waste (K061).
 - b. Any material removed from the CWP CAMU during future activities must be managed as a hazardous waste in accordance with 35 Ill. Adm. Code 724 Subtitle G: Waste Disposal.
 - c. The use of this area is restricted.

1190100004

B-160R2

Page II-3 of II-9

7. The Plat of Survey (PIN 23-1-08-20-00-000-003) and Drawing A1-439F were filed with the Madison County Recorder's Office in Edwardsville, IL on March 18, 1998. The record data is Document No. 2363-8, Book 4215, Pages 0013-0018.

The Plat of Survey was attached to the deed to the property and serves as an instrument which is normally examined during a title search that will in perpetuity notify any potential purchaser of the property that:

- a) The waste material in the CWP CAMU is considered a RCRA hazardous waste;
 - b) Use of the area is restricted; and
 - c) A survey plat and record of the type, location and quantity of waste material in the CWP CAMU was filed with the Illinois EPA and the County Recorder.
8. The Permittee shall develop a scaled topographic drawing of each unit identified in Condition II.B.1 to determine the vertical and horizontal dimensions of each unit at least every 10 years. If a topographic drawing of a unit has not been developed in the 10 years prior to the date of this permit, it must be developed and submitted within 60 days of the effective date of the permit and every 10 years thereafter. The topographic drawings shall be maintained as part of the operating record.

Each scaled topographic drawing shall be compared to the permitted dimensions for that unit. If a difference in elevation of more than 2 feet exists at any location on the unit, the Permittee shall notify the Illinois EPA Bureau of Land Permit Section of this finding within 30 days of the most recent survey. The notification must include the most recent survey and scale drawings of the permitted dimension for the unit, a discussion of why the difference exists, and a plan that includes a schedule for repairing the cover system to its permitted dimensions. Repairs to the cover system, and/or its components, may be considered a permit modification.

C. POST-CLOSURE CARE PERIOD

1. The post-closure care period for the CWP CAMU began on December 22, 1997, the date of completion of closure of the unit listed in Condition II.B.1 of this permit. December 22, 2027 marks the minimum requirement of thirty (30) years after the date post-closure care began.

Hazardous waste remains in the CWP CAMU, and corrective action activities are ongoing at the site. Due to these conditions and pursuant to 35 Ill. Adm. Code 703.241, 724.131, 724.410 as well as Section 12(a), 21(n), and 39(g) of the Environmental Protection Act, the Permittee must continue to provide post-closure care for the CWP CAMU beyond the initial 30 years of post-closure care (i.e. December 22, 2027). Post-closure care shall be extended for an additional 30 years

1190100004

B-160R2

Page II-4 of II-9

- or until such time as no unacceptable risks to human health and the environment are present at the CWP CAMU, as determined by the Illinois EPA.
2. On or prior to December 22, 2026 (1-year before December 22, 2027), the Permittee must submit a Class 2 Permit Modification request to Illinois EPA in accordance with 35 Ill. Adm. Code 703.241(a)(2) and 35 Ill. Adm. Code 703 Appendix A.E.2 to extend the post-closure care of the CWP CAMU for an additional thirty (30) years or until such time as no unacceptable risks to human health and the environment are present at the CWP CAMU, as determined by Illinois EPA, as required in Condition II.C.1 above.
 3. The Illinois EPA may include restrictions upon the future use of the site if necessary, to protect public health and the environment, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment. After administrative and judicial challenges to such restrictions have been exhausted, the Illinois EPA shall file such restrictions of record in the Office of the Recorder of the county in which the hazardous waste, remaining in place, is located.
 4. The Permittee shall not allow the property where the unit identified in Condition II.B.1 is located to be used in a way that could disturb the integrity of the final cover, liners, any components of the containment system, or function of the facility's monitoring systems unless the Illinois EPA finds, by way of a permit modification, that such use is necessary for either of the following reasons:
 - a) It is necessary to the proposed use of the property, and will not increase the potential hazard to the public health or the environment, or
 - b) It is necessary to reduce a threat to human health or the environment.
 5. The Illinois EPA may require the continuation of any of the security requirements during part or all of the post-closure period.

D. INSPECTIONS

1. The Permittee shall inspect the components, structures, and equipment at the site in accordance with the inspection schedule in Attachment A and the conditions in this permit. The form in Attachment A shall be used to document inspections and any repairs done at the facility.
2. The Permittee shall inspect the CWP CAMU at least semi-annually and within 72 hours of any rainfall event of 3 or more inches in a 24-hour period for evidence of any of the following:

1190100004

B-160R2

Page II-5 of II-9

- a. Deterioration, malfunctions, or improper operation of run-on and run-off systems.
 - b. The deterioration of the cover systems.
3. Appropriate corrective action shall be taken if problems, including erosion, blockage of the channels, slope failure, etc. are observed at any time. If corrective action is taken, the area involved shall be reinspected one month following completion of the work to ensure the corrective actions have adequately corrected the problem(s) noted.
 4. The Permittee shall inspect the benchmarks used to identify the location of the CWP CAMU within 60 days of the effective date of this permit and thereafter in accordance with the Inspection Schedule in the approved permit application. Benchmarks shall be repaired and resurveyed whenever an inspection of the benchmarks indicates they have been damaged. The inspection results, repairs, and surveys of the benchmarks shall be maintained as part of the operating record.
 5. Results of all inspections and a description of any remedial actions taken shall be documented in the Repair Log in the Operating Record and maintained for the entire post-closure period.

E. MONITORING, MAINTENANCE, AND RECORDKEEPING

1. The Permittee shall keep and maintain a written operating record that includes all the records, reports, notification, monitoring data, testing or analytical data, and corrective action data required by 35 Ill. Adm. Code 724.173 and the conditions in this permit, for the entirety of the post-closure care period. The operating record shall be kept onsite at the facility and available for Illinois EPA review.
2. The Permittee shall maintain and monitor the groundwater monitoring system and comply with the other applicable regulations of 35 Ill. Adm. Code 724 Subpart F (Groundwater Protection) during the post-closure period.
3. The Permittee shall maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, and other events.
4. The Permittee shall prevent run-on from eroding or otherwise damaging the final cover. At a minimum the run-on control system shall be capable of preventing flow onto the CWP CAMU during peak discharge from a 25-year storm event.
5. The Permittee shall prevent run-off from eroding or otherwise damaging the final cover. At a minimum, the run-off management system shall be capable of collecting and controlling the volume of water resulting from a 24-hour, 25-year storm event.

1190100004

B-160R2

Page II-6 of II-9

6. The Permittee shall comply with the requirements for landfills described in the approved permit application and the conditions of this permit. Corrective action shall be taken if ponding has been observed, if cracks or erosion channels greater than one inch wide have formed and if gas, odor, vegetative or vector problems arise, if leachate popouts or seeps are present, or if vegetation with tap roots is found to be growing in areas which are not designed to accommodate such vegetation.

F. NOTICES AND CERTIFICATION

1. A request to change the Post-Closure Plan must be submitted in the form of a permit modification request. This request must be in accordance with applicable requirements of 35 Ill. Adm. Code Parts 702, 703 and 724 and must include a copy of the amended Post-Closure Plan for approval by the Illinois EPA.
2. If the Permittee or any subsequent owner or operator of the land upon which the CWP CAMU listed in Condition II.B.1 above is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, or contaminated soils, they must request a modification to this RCRA Post-Closure permit in accordance with the applicable requirements in 35 Ill. Adm. Code, Parts 703, 705 and 724. The owner or operator must at a minimum demonstrate that the removal of hazardous wastes will satisfy the criteria of 35 Ill. Adm. Code 724.217(c).
3. If the Permittee seeks to demonstrate that they should be allowed to end the post-closure care period (e.g., all waste has been removed, and leachate and groundwater monitoring results do not indicate a potential for migration of waste at levels which may be harmful to human health and the environment), the Permittee shall submit an Environmental Covenant (EC) for the future land use and management of the property on which the CWP CAMU is located. The EC shall be submitted at least one year prior to the date the Permittee expects to submit the Certification of Completion of Post-Closure.

Pursuant to 39(g) of the Environmental Protection Act, the purpose of the EC is to place restrictions upon the future use of the site necessary to protect public health and the environment, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment. The EC shall be pursuant to a consent order between the Permittee and the State of Illinois and in the form and format specified by Illinois EPA.

4. If the Permittee seeks to exit post-closure care, the Permittee shall submit the following documents to the Illinois EPA Bureau of Land Permit Section by registered mail no later than sixty (60) days after completion of the established post-closure care period for the CWP CAMU listed in Condition II.B.1 of this permit.

1190100004

B-160R2

Page II-7 of II-9

- a. A properly completed Certification of Completion of Post-Closure Form provided in Appendix H to this permit that states the post-closure care for the CWP CAMU was performed in accordance with the specifications in the approved Post-Closure Plan in the approved permit application and the conditions in this permit. The owner, operator and a qualified Professional Engineer registered in the State of Illinois must sign the Certification Form.
- b. A Post-Closure Documentation Report that documents the post-closure conditions and activities at the facility during the post-closure period. The Post-Closure Documentation Report must include the following:
 - i. Background information about the facility and the unit subject to the post-closure certification. Describe the facility and RCRA permit history of the unit.
 - ii. A detailed description of the unit subject to the post-closure care certification that includes:
 1. The unit's design, including liner system, sumps, leachate collection, leak detection, & gas systems, and cover system including stormwater run-off & run-on controls. Provide this information in narrative form, and scale drawings.
 2. How it was operated, and how it was closed.
 3. When it was operated, and when it was closed.
 4. The wastes disposed of in the unit (including waste codes).
 5. The amount of leachate pumped each year from each sump in the unit's leachate collection and leak detection systems during the post-closure period. Provide this information in both a table and graphically. Demonstrate the unit has met the requirements of 35 Ill. Adm. Code 724.410(b)(2).
 6. A scaled map showing location of the unit within the facility. Include all wells in the groundwater monitoring system for the unit on this map.
 7. Scaled drawings (plan view and cross-section) showing the horizontal and vertical extent of the unit at the time it was certified closed, every 10 years after it was closed, and the time the Post-Closure Documentation Report is submitted (e.g., at the end of the post-closure period). The scale of the plan view should be 1 inch =

1190100004

B-160R2

Page II-8 of II-9

200 feet. All design components of the unit must be shown on the drawings.

When the drawings are compared; if difference in elevation of more than 2 feet exists at any location on the unit, the Post-Closure Documentation Report needs to indicate the reason for the change in elevation, and why it would not be a concern in the future.

8. A survey of the unit when it was certified closed and at the time the Post-Closure Documentation Report is submitted (e.g., when the post-closure period ended). The surveys must be certified by a professional land surveyor.
 - iii. A general discussion on the inspection and maintenance of, and repairs to, the cover system, leachate collection, leak detection, gas collection, stormwater run-off & run-on controls, and wells in the groundwater monitoring system. Describe any problems and/or repairs to these systems that were addressed over the post-closure care period in chronological order. Show the locations of each of the repairs to these systems during post-closure care on a scaled drawing of the unit.
 - iv. A discussion on the groundwater monitoring program, including any corrective measures that were completed during the post-closure care period and a summary of the three (3) most recent years of groundwater data. Identify the horizontal and vertical extent of any groundwater contaminant plume from the unit that existed at the beginning of the post-closure period and every 5 years after that. The facility must have complied with all requirements of 35 Ill. Adm. Code 620 and 724 in order to certify completion of post-closure care activities.
 - v. Colored photos of unit(s) at post-closure completion. Photo documentation of the unit should include at least one aerial(satellite) photo and photos of all design features of the unit.
 - vi. Completed Illinois EPA LPC-PA23 and 39i Forms.
- c. Documentation that the EC required by Condition II.F.3 above has been placed on the deed to the property on which the CWP CAMU is located has been filed with the County Recorder's Office.

1190100004

B-160R2

Page II-9 of II-9

5. The certification of completion of post-closure care shall not be approved by the Illinois EPA until the Permittee demonstrated that the EC required by Condition II.F.3 above has been properly filed with the appropriate governmental office (e.g., State of Illinois, or County Recorder's Office).
6. Within sixty (60) days after receiving certifications from the owner or operator and a qualified professional engineer that the post-closure care period has been completed for the CWP CAMU listed in Condition II.B.1 of this permit in accordance with the approved Post-Closure Plan, the Illinois EPA shall notify the owner or operator that it is no longer required to maintain financial assurance for post-closure care of that unit unless the Illinois EPA determines that post-closure care has not been in accordance with the approved Post-Closure Plan. The Illinois EPA shall provide the owner or operator with a detailed written statement of any such determination that post-closure care has not been in accordance with the approved Post-Closure Plan.

G. FINANCIAL ASSURANCE

1. The Permittee shall maintain financial assurance for post-closure care of the closed CWP CAMU listed in Condition II.B.1 of this permit of at least the amount of \$578,380 (2021 dollars) until such time as it is required to be modified pursuant to Special Condition V.B.1.a. A summary of the cost estimate for post-closure care of this facility is shown in Attachment E to this permit. The financial assurance maintained by the facility shall be sufficient to meet the requirements of 35 Ill. Adm. Code 724 Subpart H.
2. Post-closure care costs are determined by multiplying annual costs by the full 30-year post-closure care period.

1190100004

B-160R2

Page III-1 of III-12

SECTION III: GROUNDWATER DETECTION MONITORING PROGRAM**A. SUMMARY**

Groundwater parameters monitored in the Uppermost Aquifer below the CWP CAMU indicate that, at the present time, no groundwater impacts have occurred. Therefore, a Groundwater Detection Monitoring Program meeting the requirements of 35 Ill. Adm. Code 724.198 shall be implemented at the facility.

The ASI facility has six (6) existing wells to monitor groundwater in the Upper Silty Clay Unit (Uppermost Aquifer) and three (3) piezometers to monitor groundwater elevation in the Lower Sand and Gravel Unit that are utilized for the Groundwater Detection Monitoring Program. The Groundwater Detection Monitoring Program will therefore consist of two (2) upgradient wells, four (4) Point of Compliance wells and three (3) piezometers for determining groundwater surface elevation only.

B. DEFINITIONS

As used herein, the words or phrases set forth below shall have the following definitions:

1. "Uppermost Aquifer" refers to the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically connected with the aquifer in the vicinity of the facility. The Uppermost Aquifer in the vicinity of the Alton Steel facility consists of silty clay deposits and has been designated as 35 Ill. Adm. Code 620, Class II Groundwater.
2. "Permit" refers to the RCRA Post-Closure permit.
3. "ASI" shall refer to Alton Steel, Inc.
4. "Site" or "Facility" shall refer to the location as defined in Section I.A of the Permit.
5. "Permittee" refers to the Facility.
6. "Illinois EPA" refers to the Illinois Environmental Protection Agency.
7. "RCRA" shall mean the Resource Conservation and Recovery Act as defined by Section 3.425 of the Environmental Protection Act, 415 ILCS 5/3.90(2007).
8. "Point of Compliance" refers to the vertical surface located at the hydraulically downgradient limits of the CWP CAMU extending down into the Uppermost Aquifer underlying the regulated unit.

1190100004

B-160R2

Page III-2 of III-12

9. "Ft-bgs" refers to the number of feet below the ground surface.
10. "Ft-MSL" refers to the elevation referenced to mean sea level datum.
11. "Detected" shall mean a concentration equal to or above the PQL listed in the latest version of USEPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)" for the applicable analytical methods specified in the approved Sampling and Analysis Plan, which are incorporated by reference in Condition II.H of the Permit.
12. "Stick-up" refers to the height of the referenced survey datum. This point is determined within ± 0.01 foot in relation to mean sea level, which in turn is established by reference to an established National Geodetic Vertical Datum.

C. IMPLEMENTATION

1. The Permittee shall implement the Groundwater Detection Monitoring Program, upon the effective date of this Permit. On that date, the groundwater monitoring requirements set forth in this Permit shall supersede those previously established.
2. The Permittee shall carry out the detection monitoring specified in this Permit on the groundwater beneath the ASI CWP CAMU in Alton, Illinois. The Uppermost Aquifer beneath the CWP CAMU has been identified as the silty clay layer and is underlain by unconsolidated sediment layers consisting of sand, and sand and gravel extending to a lower confining layer within the bedrock. For the purpose of this Permit and in accordance with 35 Ill. Adm. Code 620 regulations, the Uppermost Aquifer has been designated a Class II: General Resource Groundwater.
3. The Point of Compliance is delineated by the wells identified as the Point of Compliance wells in Condition III.D.1.

D. WELL LOCATIONS AND CONSTRUCTION

1. The Permittee shall maintain the groundwater monitoring wells and piezometers at the locations identified in the table below to allow for the collection of groundwater samples and elevations from the Uppermost Aquifer and groundwater elevations from the Lower Sand and Gravel Unit. The location of these wells and piezometers are specified in Section C of the approved permit application.

1190100004

B-160R2

Page III-3 of III-12

IEPA Well No.	Facility Well No.	Well Depth (Ft-bgs)	Well Depth Elevation (Ft MSL)	Well Screen Interval (Ft-bgs)
---------------------	-------------------------	---------------------------	-------------------------------------	-------------------------------------

Upgradient Well

R005	MW-5A	15.3	408.63	5.85-15.30
G006	MW-6	35	398.66	25-35

Point of Compliance Wells

G106	MW-B4	35	389.93	15-25
R007	R007	29.9	398.09	19.8-29.9
G008	MW-8	35	397.85	25-35
G009	MW-9	32	401.38	22-32

Piezometers

P101	P-1	61	372.58	54-59
P102	P-2	100	332.80	45-50
P103	P-3	45	388.34	40-45

2. Construction of any new monitoring well/piezometer must be at a minimum in accordance with the diagram contained in Attachment C to this Permit unless otherwise approved by the Illinois EPA. Any new monitor wells/piezometers to be installed must be continuously sampled and logged on Illinois EPA boring logs which can be found on the Illinois EPA website.
3. The Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Condition III.D.1 above are damaged or the structural integrity has been compromised. A proposal for the replacement of the subject well shall accompany this notification. The well shall not be plugged until the new well is installed and monitoring data has been obtained and verified, unless the well is extremely damaged and would create a potential route for groundwater contamination. Prior to replacing the subject well, the Permittee shall obtain written approval from the Illinois EPA regarding the proposed installation procedures and construction.
4. Should any well become consistently dry or unserviceable; a replacement well shall be installed within ten (10) feet of the existing well. This well shall monitor the same geologic zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitoring well construction standards at the time that the well is placed. A replacement well which is more than ten (10) feet from the existing well or does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well.

1190100004

B-160R2

Page III-4 of III-12

5. The Permittee shall submit boring logs, construction diagrams, and data sheets from the installation and development of a new or replacement well to the Illinois EPA at the address below within thirty (30) days of the date that installation of the well is completed. In addition, the Permittee shall submit certification that plugging, and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. Any additional information should be submitted to the appropriate State Agencies.

Illinois Environmental Protection Agency
Bureau of Land - #33
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

6. All wells/piezometers shall be equipped with protective caps and locks. Monitoring wells or piezometers located in high traffic areas must be equipped with bumper guards.
7. All groundwater monitoring wells and piezometers not utilized in the groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 Ill. Adm. Code 920 regulations. Monitoring wells and piezometers that are improperly constructed must be abandoned in accordance with Condition III.D.5.

E. MONITORING PARAMETERS

1. The Permittee shall determine groundwater quality at groundwater monitoring wells identified in Condition III.D.1 at both upgradient and Point of Compliance locations semi-annually during the active life (including closure and post-closure care period) of the CWP CAMU. Samples collected during the semi-annual sampling events of each year shall be analyzed for the field parameters and the waste constituents below. Total (unfiltered) values shall be used for comparison with groundwater quality standards. Dissolved (filtered) shall be used for statistical analysis.

Semi-Annual Groundwater Sampling

<u>Field Parameters</u>	<u>Storet Numbers</u>	<u>Reporting Units</u>
pH	00400	6.30-13.71 s.u.
Specific Conductance	00094	3200 umhos/cm
Temperature of Water Sample	00011	(°F)
Turbidity	45626	Ntus
Depth to Water (below land surface)	72019	Ft

1190100004

B-160R2

Page III-5 of III-12

Depth to Water (below measuring point)	72109	Ft
Elevation of Bottom of Well#	72020	Ft MSL
Elevation of Groundwater Surface	71993	Ft MSL
Elevation of Measuring Point (Top of casing)##	72110	Ft MSL

#Shall be determined during the first semi-annual sampling event as required by Condition III.G.3.

##Shall be surveyed once every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes as required by Condition III.G.2.

<u>Indicator Parameters</u>	<u>Storet Numbers</u>	<u>BGQ/Reporting Units</u>
Cadmium (Total)	01027	2.5 ug/L
Cadmium (Dissolved)	01025	1.4 ug/L
Chloride (Total)	00940	480 mg/L
Chloride (Dissolved)	00941	450 mg/L
Chromium (Total)	01034	33 ug/L
Chromium (Dissolved)	01030	23 ug/L
Fluoride (Total)	00951	8.9 mg/L
Fluoride (Dissolved)	00950	9 mg/L
Iron (Total)	01045	32000 ug/L
Iron (Dissolved)	01046	27000 ug/L
Lead (Total)	01051	100 ug/L
Lead (Dissolved)	01049	96 ug/L
Manganese (Total)	01055	2800 ug/L
Manganese (Dissolved)	01056	2400 ug/L
Nickel (Total)	01067	110 ug/L
Nickel (Dissolved)	01065	59 ug/L
Nitrate - Nitrogen	00620	3.1 mg/L
Sulfate (Dissolved)	00946	240 mg/L
Total Dissolved Solids	70300	1700 mg/L
Zinc (Total)	01092	130 ug/L
Zinc (Dissolved)	01090	85ug/L

NOTE: All parameters with the "(Dissolved)" label to the right shall be determined using groundwater samples which have been filtered through a 0.45 micron filter. All other parameters shall be determined from unfiltered samples.

2. Background Groundwater Quality (BGQ) values for those constituents listed above in Condition III.E.1 were previously established using a minimum of four (4) quarters of monitoring data.

1190100004

B-160R2

Page III-6 of III-12

3. Alternate concentration limits may be established where the Permittee can determine a constituent will not pose a substantial hazard to human health and the environment.
 - a. Where a hazardous constituent has a standard in 35 Ill. Adm. Code Part 620, the facility must apply for an adjusted standard as outlined in Section 28.1 of the Environmental Protection Act.
 - b. For those hazardous constituents without a 35 Ill. Code Part 620 standard, the alternative concentration limit(s) proposed by the facility must be approved by the Illinois EPA.

F. DETECTION MONITORING PROGRAM

1. The Permittee shall determine groundwater quality at each monitoring well at the Point of Compliance well identified in Condition III.D.1 semi-annually during the active life of a regulated unit (including the closure and post-closure care periods). The Permittee shall express the groundwater quality at each monitoring well in a form necessary for the determination of statistically significant changes (i.e., means, variances, etc.).
2. The Permittee shall determine the groundwater flow rate and direction in the Uppermost Aquifer semi-annually and report at least annually from the monitoring wells identified in Condition III.D.1.
3. The Permittee shall determine whether there is a statistically significant increase (or decrease in the case of pH) over the background values established for each parameter identified in Conditions III.E.1 each time groundwater quality is determined at the Point of Compliance. In determining whether such a change has occurred, the Permittee must compare the groundwater quality at each monitoring well identified in Condition III.D.1 to the background values derived in accordance with the statistical procedures specified in Section C of the approved permit application.

G. GROUNDWATER ELEVATIONS

1. The Permittee shall determine the groundwater surface elevation referenced to mean sea level (MSL) at each well each time groundwater is sampled in accordance with Condition III.J.3.
2. The Permittee shall determine the surveyed evaluation of "stick-up" referenced to MSL when the well is installed (with as-built diagrams) and every five (5) years or at the request of the Illinois EPA, or whenever the elevation changes in accordance with Condition III.J.5.

1190100004

B-160R2

Page III-7 of III-12

3. Elevation, as referenced to MSL, of the bottom of each monitoring well (STORET 72020), is to be reported at least annually. The mandatory measurement shall be taken during the first semi-annual sampling event in accordance with Condition III.J.6.

H. SAMPLING AND ANALYSIS PROCEDURES

1. The Permittee shall use the techniques and procedures described in Appendix C-4 of the approved permit application except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition III.D.1 above:
 - a. Samples shall be collected by the techniques described in Appendix C-4 of the approved permit application.
 - b. Samples shall be preserved and shipped (when shipped off-site for analysis) in accordance with the procedures specified in Appendix C-4 of the approved permit application.
 - c. Samples shall be analyzed in accordance with the procedures specified in Appendix C-4 of the approved permit application.
 - d. Samples shall be tracked and controlled using the chain of custody procedures specified in Appendix C-4 of the approved permit application.
2. Sampling will be conducted first from upgradient wells, proceeding to non-contaminated downgradient wells, then proceed to the downgradient wells which are known to be contaminated, if any.
3. Purging of groundwater must continue until measurements of field parameters (pH, specific conductance and temperature) have stabilized within approximately 10% over at least two measurements collected over three to five minute intervals. If field parameters are not stable after three well volumes have been removed, up to two additional well volumes will be purged. If a well is purged to dryness or is purged such that the full recovery exceeds two hours, the well should be sampled as soon as sufficient volume of groundwater has entered the well to enable the collection of the necessary groundwater samples.
4. All purged groundwater must be collected, containerized, and disposed of properly. Water collected during purging activities must be collected then stored in appropriate containers for immediate disposal to the on-site Wastewater Treatment Plant or collected then stored in appropriate containers until analytical results are available, at which time proper arrangements for disposal or treatment must be made.

1190100004

B-160R2

Page III-8 of III-12

5. Analytical methods to be utilized by the facility must be in accordance with the latest version of USEPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Third Edition, Final Update III, Revision 4.
6. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all sampling and analysis efforts. In addition, sample collection, handling, preservation, preparation, and analysis must be conducted in accordance with the procedures set forth in SW-846.

I. STATISTICAL PROCEDURES

When evaluating the monitoring results in accordance with Condition III.F, the Permittee shall use the following procedures:

1. The statistical methods to be used shall be as specified in Section C of the approved permit application.
2. Analytical data shall be compared to the Class II, Groundwater Quality Standards and BGQ (interwell) values. Background Groundwater Concentrations (intrawell) shall be developed for parameters which exceed both Class II, Groundwater Quality Standards and BGQ values as described in Section C of the approved permit application.
3. Data exceeding the Class II, Groundwater Quality Standards, interwell, and intrawell shall be further evaluated using Shewart CUSUM Control Charts using all available data.
4. A statistically significant increase occurs when an analyzed parameter exceeds the Class II, Groundwater Quality Standards, interwell values, intrawell values, and Shewart CUSUM Control Limits.
5. If any parameter exceeds: (1) both interwell and intrawell data; (2) the Class II, Groundwater Quality Standards; or (3) Shewart CUSUM Control Charts, the Permittee may resample within thirty (30) days of the date that the apparent exceedance is determined.

J. REPORTING AND RECORDKEEPING

1. The Permittee shall enter all monitoring, testing and analytical data obtained in accordance with Conditions III.E, III.F, III.G, III.H and III.I into the operating record. The data must include all computations and results of statistical test.
2. Samples collected to meet the requirements of the groundwater monitoring program described in Conditions III.E, III.F, III.G, and III.I shall be collected and reported as identified in the table below. All additional information required by the groundwater

1190100004

B-160R2

Page III-9 of III-12

monitoring program as specified in Conditions III.E, III.F, III.G, III.H and III.I shall also be submitted to the Illinois EPA at the address listed in Condition III.D.5 in accordance with this schedule:

Sampling Event of Calendar Year	To be Sampled During the Months of	Results Submitted to the Illinois EPA by the Following Date
First semi-annual	April - June	July 15
Second semi-annual	October - December	January 15

3. Groundwater surface elevation measured pursuant to Condition III.G.1 shall be collected semi-annually and submitted to the Illinois EPA as identified in the table above.
4. The Permittee shall report the groundwater flow rate and direction in the Uppermost Aquifer, as required by Condition III.F.2 during the first semi-annual reporting of each year.
5. The Permittee shall report the surveyed elevation, as required by Condition III.G.2, of the top of the well casing "stick-up", referenced to MSL, in accordance with the following schedule:
 - a. For the wells identified in Condition III.D.1 every five (5) years (during the first semi-annual sampling event), or at the request of the Illinois EPA, or whenever the elevation changes.
 - b. For any new wells, at the time of installation and reported in the as-built diagrams, subsequent measurements shall be made every five (5) years (during the first semi-annual sampling event) or at the request of the Illinois EPA or whenever the elevation changes.
6. Elevation of the bottom of each monitoring well identified in Condition III.D.1, referenced to MSL, is to be reported annually. This measurement shall be taken during the first semi-annual sampling event (Storet 72020) in accordance with Condition III.G.3.
7. Information required by Conditions III.J.2, III.J.3, III.J.5 and III.J.6 must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment C of this Permit, in accordance with the schedule found in Condition III.J.2 above. Additional guidance regarding the submittal of the information in an electronic format can be found on the Illinois EPA website.
8. The Permittee shall submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC-592) as a cover sheet for any notices or reports required

1190100004

B-160R2

Page III-10 of III-12

by the Permit for identification purposes. Only one copy of the LPC-592 must accompany your submittal. However, the Permittee must submit one (1) original and (excluding the groundwater leachate monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The form is not to be used for Permit Modification requests.

9. The Permittee shall report all information to the Illinois EPA in a form which can be easily reviewed. All submittals must contain tables of data, drawings, and texts (as necessary) to accurately describe the information contained in the submittal.
10. If the Permittee determines, pursuant to Condition III.F.3 that there is a statistically significant increase for any of the parameters specified in Condition III.E.1 above at any monitoring well at the Point of Compliance, the Permittee shall:
 - a. Notify the Illinois EPA in writing indicating what parameters and wells have shown statistically significant increases and provide all statistical calculations. This notification shall be submitted to the Illinois EPA within seven (7) days of the date that the increases are discovered.
 - b. Sample the groundwater in all wells listed in Condition III.D.1 and determine the concentration of all constituents of the approved subset of Appendix I of 35 Ill. Adm. Code 724, located in Attachment C of this Permit (hereinafter Appendix I), such that the results will accompany the permit modification required by Condition III.J.10.d.
 - c. For any of the approved subset of Appendix I compounds found in the analysis pursuant to this condition, the Permittee may resample within one month and repeat the analysis for those compounds detected. If the results of the second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring. If the Permittee does not resample for the compounds pursuant to this condition, the hazardous constituents found during this initial approved subset of Appendix I analysis will form the basis for compliance monitoring.
 - d. Submit to the Illinois EPA an application for a permit modification to establish a compliance monitoring program meeting the requirements of 35 Ill. Adm. Code 724.199. The application shall be submitted to the Illinois EPA within ninety (90) days of the date that the increase is discovered. Furthermore, the application must include the following information:
 - i. An identification of the concentration of any 35 Ill. Adm. Code 724, approved subset of Appendix I constituents found in the groundwater at each monitoring well at the Point of Compliance;

1190100004

B-160R2

Page III-11 of III-12

- ii. Any proposed changes to the groundwater monitoring system at the facility necessary to meet the requirements of 35 Ill. Adm. Code 724.199;
 - iii. Any proposed changes to the monitoring frequency, sampling and analysis procedures, or methods or statistical procedures used at the facility necessary to meet the requirements of Section 724.199; and
 - iv. For each hazardous constituent found at the Point of Compliance, a proposed concentration limit under 35 Ill. Adm. Code 724.194(a)(1) or 724.194(a)(2), or a notice of intent to seek an alternative concentration limit for a hazardous constituent under 35 Ill. Adm. Code 724.194(b).
- e. Submit to the Illinois EPA a corrective action feasibility plan to meet the requirements of 35 Ill. Adm. Code 724.200 unless the concentration of all hazardous constituents identified under Condition III.J.10.b are listed in 35 Ill. Adm. Code 620.420 and their concentrations do not exceed the respective Groundwater Quality Standard or the Permittee has sought an alternative concentration limit under III.J.10.d.iv for every hazardous constituent identified under Condition III.J.10.b. This plan must be submitted to the Illinois EPA within 180 days of the date that the increase is discovered.
- f. Submit to the Illinois EPA all data necessary to justify any alternative concentration limit for a hazardous constituent sought under Condition III.J.10.d.iv. This data shall be submitted to the Illinois EPA within 180 days of the date that the increase is discovered.
11. If the Permittee determines, pursuant to Condition III.F.3 above, that there is a statistically significant increase above the BGQ values for the parameters specified in Condition III.E.1 above, the Permittee may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. The Permittee shall submit a permit modification application in accordance with Condition III.J.10.d unless the demonstration successfully shows that a source other than the regulated unit caused the increase or that the increase resulted from errors in sampling-analysis or evaluation and the Illinois EPA concurs.

To make this demonstration the Permittee shall:

- a. Notify the Illinois EPA in writing that they intend to make this demonstration. This notification must be submitted to the Illinois EPA within seven (7) days of the date that the increase is discovered.
- b. Submit a report to the Illinois EPA which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in

1190100004

B-160R2

Page III-12 of III-12

sampling, analysis, or evaluation. This report must be submitted within ninety (90) days of the date that the increase is discovered.

- c. Submit to the Illinois EPA an application to make any appropriate changes to the Groundwater Detection Monitoring Program. This application must be submitted within ninety (90) days of the date that the increase is discovered.
- d. Continue to monitor in accordance with the Groundwater Detection Monitoring Program at the facility.

K. REQUEST FOR PERMIT MODIFICATION

1. If the Permittee determines that the Groundwater Detection Monitoring Program no longer satisfies the requirements of 35 Ill. Adm. Code 724.198, the Permittee must, within ninety (90) days, submit an application for a permit modification to the Illinois EPA to make any appropriate changes to the program which will satisfy the regulations.
2. Conditions in this section of the Permit may be modified in accordance with 35 Ill. Adm. Code 705.128 if there is cause for such modification, as defined in 35 Ill. Adm. Code 702.184. Causes for modification identified in this section include, but are not limited to, alterations to the permitted facility, additional information which would have justified the application of different permit conditions at the time of issuance, and new regulations.

1190100004

B-160R2

Page III-A-1 of III-A-11

**SECTION III-A:
PERIMETER GROUNDWATER OBSERVATION MONITORING PROGRAM**

A. SUMMARY

In addition to the Groundwater Detection Monitoring Program utilized to monitor the Uppermost Aquifer at the CWP CAMU, ASI has eleven (11) existing wells to monitor groundwater in the shallow groundwater zone (Upper Silty Clay Unit) and four piezometers to monitor groundwater elevations in the deep groundwater zone (Lower Sand and Gravel Unit) at the perimeter of the ASI facility. These groundwater monitoring wells are intended to detect and prevent any groundwater contamination from extending beyond the perimeter of the facility as required by the Settlement Agreement.

B. IMPLEMENTATION

1. The Permittee shall implement the Perimeter Groundwater Observation Monitoring Program upon the effective date of this Permit. On that date, the groundwater monitoring requirements set forth in this Permit shall supersede those previously established.
2. The Permittee shall carry out the groundwater monitoring specified in this Permit on the groundwater beneath the Alton Steel, Inc. facility in Alton, Illinois located on the portion of the facility where manufacturing occurs.

C. WELL LOCATION AND CONSTRUCTION

1. The Permittee shall install and maintain groundwater monitoring wells and piezometers at the locations identified in the table below to allow for the collection of groundwater samples and elevations from the shallow groundwater zone and groundwater elevations from the deep groundwater zone:

IEPA Well No. _____	Facility Well No. _____	Well Depth (Ft-bgs)	Well Depth Elevation (Ft-MSL)	Well Screen Interval (Ft-bgs)
---------------------------	-------------------------------	---------------------------	-------------------------------------	-------------------------------------

Upgradient Well

G111	PS-01	8.9	415.75	4.0-8.5
G112	PS-02	14.5	414.07	4.5-139
G113	PS-03	14.5	414.72	4.6-14.1
G114	PS-04	26.4	411.00	16.7-25.6
G115	PS-05	29.0	405.12	19.2-28.2

1190100004

B-160R2

Page III-A-2 of III-A-11

Downgradient Wells

G121	PS-11	26.7	397.51	9.0-26.5
G122	PS-12	29.7	398.64	11.0-29.5
R123	R123	30.49	398.07	10.22-29.93
G124	PS-14	30.6	399.24	15.8-30.3
G125	PS-15	32.1	402.83	16.9-32.0
G126	PS-16	37.2	394.29	21.4-37.1

Piezometers

G117	PS-07	54.6	377.36	44.6-54.0
P113	P-1-13	39.0	386.26	28.9-38.6
P213	P-2-13	43.5	385.93	34.4-43.2
P313	P-3-13	19.78	419.00	14.7-19.61
P413	P-4-13	20.07	414.14	9.8-19.72
	P01S	26.36	402.44	16.23-26.01
	P02S	36.78	402.23	26.65-36.43
	P01D	57.75	370.87	52.62-57.40
	P02D	68.26	370.19	63.14-67.94

2. Construction of any new monitoring well/piezometer must be at a minimum in accordance with the diagram contained in Attachment C to this Permit unless otherwise approved in writing by the Illinois EPA. Any new monitoring well/piezometer to be installed must be continuously sampled and logged on Illinois EPA boring logs which can be found on the Illinois EPA website.
3. The Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Condition III-A.C.1 above are damaged or the structural integrity has been compromised. A proposal for the replacement of the subject well shall accompany this notification. The well shall not be plugged until the new well is installed and monitoring data has been obtained and verified, unless the well is extremely damaged and would create a potential route for groundwater contamination. Prior to replacing the subject well the Permittee shall obtain written approval from the Illinois EPA regarding the proposed installation procedures and construction.
4. Should any well become consistently dry or unserviceable; a replacement well shall be installed within ten (10) feet of the existing well. This well shall monitor the same zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitoring well construction standards at the time that the well is replaced. A replacement well which is more than ten (10) feet from the existing well or does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well.

1190100004

B-160R2

Page III-A-3 of III-A-11

5. The Permittee shall submit boring logs, construction diagrams, and data sheets from installation and development of a new or replacement well to the Illinois EPA at the address below within thirty (30) days of the date that installation of the well is completed. In addition, the Permittee shall submit certification that plugging, and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. Any additional information should be submitted to the appropriate State Agencies.

Illinois Environmental Protection Agency
 Bureau of Land - #33
 Permit Section
 1021 North Grand Avenue East
 Post Office Box 19276
 Springfield, Illinois 62794-9276

6. All wells shall be equipped with protective caps and locks. Monitoring wells located in high traffic areas must be protected with bumper guards.
7. All wells not utilized in the groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 Ill. Adm. Code 920 regulations. Monitoring wells that are improperly constructed must be abandoned in accordance with Condition III-A.C.5.

D. MONITORING PARAMETERS

1. The Permittee shall determine groundwater quality at groundwater monitoring wells identified in Condition III-A.C.1, semi-annually. Samples collected during the semi-annual sampling events of each year shall be analyzed for the parameters listed below.

Semi-Annual Groundwater Sampling

<u>Field Parameters</u>	<u>Storet Units</u>	<u>BGQ/ Reporting</u>
pH	00400	6.39-7.71 s.u.
Specific Conductance	00094	1599 umhos/cm
Temperature of Water Sample	00011	(°F)
Turbidity	45626	Ntus
Depth to Water (below land surface)	72019	Feet
Depth to Water (below measuring point)	72109	Feet
Elevation of Bottom of Well#	72020	Ft-MSL

1190100004

B-160R2

Page III-A-4 of III-A-11

Elevation of Groundwater Surface	71993	Ft-MSL
Elevation of Measuring Point (top of casing)##	72110	Ft-MSL

Shall be determined during the first semi-annual sampling event each year as required by Condition III-A.F.3.

Shall be surveyed once every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes as required by Condition III-A.F.2.

<u>Indicator Parameters</u>	<u>Storet</u>	<u>BGQ/ Reporting Units</u>
Cadmium (Total)	01027	3 ug/L
Cadmium (Dissolved)	01025	1 ug/L
Chromium (Total)	01034	71 ug/L
Chromium (Dissolved)	01030	15 ug/L
Lead (Total)	01051	43 ug/L
Lead (Dissolved)	01049	1 ug/L
Zinc (Total)	01092	154 ug/L
Zinc (Dissolved)	01090	21 ug/L
4-methylphenol (p-Cresol)	77146	10 ug/L
Polychlorinated biphenyls	39516	2.5 ug/L
Total Petroleum Hydrocarbons (as motor oil Method PA-2)	03870	400 ug/L

NOTE: All parameters with "(Dissolved)" label to the right shall be determined using groundwater samples which have been filtered through a 0.45 micron filter. All other parameters shall be determined from unfiltered samples.

2. BGQ for these constituents listed in Condition III-A.D.1 above were previously established for the wells identified in Condition III-A.C.1 using a minimum of four (4) quarters of monitoring data.

E. PERIMETER GROUNDWATER OBSERVATION MONITORING PROGRAM

1. The Permittee shall determine groundwater quality at each well identified in Section III-A.C.1 semi-annually for the constituents listed in Condition III-A.D.1 above. The Permittee shall express the groundwater quality at each monitoring well in a form necessary for the determination of statistically significant changes (i.e. means, variances, etc.).
2. The Permittee shall evaluate the results of analysis required by III-A.D.1 above and identify:

1190100004

B-160R2

Page III-A-5 of III-A-11

- a. The concentration of any constituent detected which was not detected in the previous sampling event.
 - b. The concentration of any constituent detected which exhibits a progressive increase over four (4) consecutive sampling events.
3. The Permittee shall determine whether there is a statistically significant increase, (or decrease in the case of pH) over the background values established for each parameter identified in Condition III-A.D.1 each time groundwater quality is determined at each well. In determining whether such a change has occurred, the Permittee must compare the groundwater quality at each groundwater monitoring well identified in Condition III-A.C.1 to the background value derived in accordance with the statistical procedures specified in Section C of the approved permit application.
 4. The Permittee shall perform the evaluations described in Conditions III-A.E.1, III-A.E.2, and III-A.E.3 above within sixty (60) days after completion of semi-annual sampling.

F. GROUNDWATER ELEVATION

1. The Permittee shall determine the groundwater surface elevation referenced to mean sea level (MSL) at each well each time groundwater is sampled in accordance with Condition III-A.I.3.
2. The Permittee shall report the surveyed elevation of “stick-up” referenced to MSL when the well is installed (with as-built diagrams) and every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes in accordance with Condition III-A.I.4.
3. Elevation, as referenced to MSL, of the bottom of each monitoring well (Storet 72020), is to be reported at least annually. The mandatory measurement shall be taken during the first semi-annual sampling event in accordance with Condition III-A.I.5.

G. SAMPLING AND ANALYTICAL PROCEDURES

1. The Permittee shall use the techniques and procedures described in Appendix C-4 of the approved permit application, except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition III-A.C.1.
 - a. Samples shall be collected using the techniques described in Appendix C-4 of the approved permit application.

1190100004

B-160R2

Page III-A-6 of III-A-11

- b. Samples shall be preserved and shipped (when shipped off-site for analysis) in accordance with the procedures specified in Appendix C-4 of the approved permit application.
 - c. Samples shall be analyzed in accordance with the procedures specified in Appendix C-4 of the approved permit application.
 - d. Samples shall be tracked and controlled using the chain-of-custody procedures specified in Appendix C-4 of the approved permit application.
2. Purging of groundwater must continue until field parameters (pH, specific conductance and temperature) have stabilized within approximately 10% over at least two measurements collected over three to five minute intervals. If a well is purged to dryness or is purged such that the full recovery exceeds two hours, the well should be sampled as soon as sufficient volume of groundwater has entered the well to enable the collection of the necessary groundwater samples.
 3. All purged groundwater must be collected, containerized and disposed of properly. Water collected during purging activities must be collected then stored in appropriate containers for immediate disposal to the on-site Wastewater Treatment Plant or collected then stored in appropriate containers until analytical results are available, at which time proper arrangements for disposal or treatment must be made.
 4. Analytical methods to be utilized by the facility must be in accordance with the latest version of USEPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods "SW-846 Third Edition, Final Update III, Revision 4."
 5. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all sampling and analysis efforts. In addition, sample collection, handling, preservation, preparation, and analysis must be conducted in accordance with the procedures set forth in SW-846.

H. STATISTICAL PROCEDURES

When evaluating the monitoring results in accordance with Condition III-A.E, the Permittee shall use the following procedures:

1. The statistical methods to be used shall be as specified in Section C of the approved permit application.
2. Analytical data shall be compared to the Class II, Groundwater Quality Standards and BGQ (interwell) values. Background Groundwater Concentrations (intrawell) shall be developed for parameters which exceed both Class II, Groundwater Quality

1190100004

B-160R2

Page III-A-7 of III-A-11

Standards and BGQ values as described in Section C of the approved permit application.

3. Data exceeding the Class II, Groundwater Quality Standards, interwell, and intrawell shall be further evaluated using Shewart CUSUM Control Charts using all available data.
4. A statistically significant increase occurs when an analyzed parameter exceeds its applicable Ill. Adm. Code 620, Class II, Groundwater Quality Standards, interwell values, intrawell values, and Shewart CUSUM Control Limits.
5. If any parameter exceeds: (1) both interwell and intrawell data; (2) the Class II, Groundwater Quality Standards; or (3) Shewart CUSUM Control Charts, the Permittee may resample within thirty (30) days of the date that the apparent exceedance is determined.
6. The facility must resubmit BGQ values that are developed utilizing interwell analysis from a pooled dataset to develop Prediction Limits. Resubmission of the BGQ values must be submitted as a Class 1* permit modification request within forty-five (45) days from the date of this permit modification.

I. REPORTING AND RECORDKEEPING

1. The Permittee shall enter all monitoring, testing, and analytical data obtained in accordance with Conditions III-A.D, III-A.E, III-A.F, III-A.G and III-A.H. in the operating record. The data must include all computations and results of statistical test.
2. Samples collected to meet the requirements of the groundwater monitoring program described in Conditions III-A.D, III-A.E, III-A.F and III-A.H shall be collected and reported, as identified in the table below. All additional data collected for the groundwater monitoring program (as specified in Conditions III-A.D, III-A.E, III-A.F and III-A.H) shall also be submitted to the Illinois EPA at the address listed in Condition III-A.C.5 in accordance with this schedule.

Sampling Event of Calendar Year	To be Sampled During the Months of	Results Submitted to the Illinois EPA by the Following Date
First semi-annual	April -June	July 15
Second semi-annual	October - December	January 15

3. Groundwater surface elevation measured pursuant to Condition III-A.F.1 shall be collected semi-annually and submitted to the Illinois EPA as identified in the table above.

1190100004

B-160R2

Page III-A-8 of III-A-11

4. The Permittee shall report the surveyed elevation, as required by Condition III-A.F.2 of the top of the well casing “stick-up”, referenced to MSL in accordance with the following schedule:
 - a. For wells identified in Condition III-A.C.1, every five (5) years (during the first semi-annual sampling event), or at the request of the Illinois EPA or whenever the elevation changes.
 - b. For any new wells, at the time of installation and reported in the as-built diagrams, subsequent measurements shall be made every five (5) years (during the first semi-annual sampling event), or whenever the elevation changes.
5. Elevation of the bottom of each monitoring well identified in Condition III-A.C.1, as referenced to MSL, is to be reported at least annually. This measurement shall be taken during the first semi-annual sampling event (Storet 72020) each year in accordance with Condition III-A.F.3.
6. Information required by Conditions III-A.I.2, III-A.I.3, III-A.I.4 and III-A.I.5 must be submitted in an electronic format. The information is to be submitted, as fixed-width text files formatted as found in Attachment C of this Permit, in accordance with the schedule found in Condition III-A.I.2 above. Additional guidance regarding the submittal of the information in an electronic format can be found on the Illinois EPA website.
7. A RCRA Facility Groundwater, Leachate and Gas Reporting Form (LPC-592) must accompany all reports and forms submitted for RCRA regulated facilities, for identification purposes, to the Illinois EPA.
8. The Permittee shall report all information to the Illinois EPA in a form which can be easily reviewed. All submittals must contain tables of data drawings and text (as necessary) to accurately describe the information contained in the submittal.
9. If the Permittee determines, pursuant to Condition III-A.E.3 that there is statistically significant increase for any of the parameters specified in Condition III-A.D.1 at any monitoring well in Condition III-A.C.1 the Permittee shall:
 - a. Notify the Illinois EPA in writing indicating what parameters and wells have shown is statistically significant increases and provide all statistical calculations. This notification shall be submitted to the Illinois EPA within seven (7) days of the date that the increases are discovered.
 - b. Sample the groundwater in all wells listed in Condition III-A.C.1 and determine the concentration of all constituents of the approved subset of Appendix I, located

1190100004

B-160R2

Page III-A-9 of III-A-11

in Attachment C to this Permit, such that the results will accompany the permit modification required by Condition III-A.I.9.d below.

- c. For any of the approved subset of Appendix I compounds found in the analysis pursuant to this Condition, the Permittee may resample within one month and repeat the analysis for those compounds detected. If results of the second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring. If the Permittee does not resample for the compounds pursuant to this condition, the hazardous constituents found during the initial Appendix I analysis will form the basis for compliance monitoring.
- d. Submit to the Illinois EPA an application for a permit modification to establish a compliance monitoring program meeting the requirements of 35 Ill. Adm. Code 724.199. The application shall be submitted to the Illinois EPA within ninety (90) days of the date that the exceedance is discovered. Furthermore, the application must include the following information:
 - i. An identification of the concentration of any 35 Ill. Adm. Code 724, of the approved subset of Appendix I constituents found in the groundwater at each monitoring well;
 - ii. Any proposed changes to the groundwater monitoring system at the facility necessary to meet the requirements 35 Ill. Adm. Code 724.199;
 - iii. Any proposed changes to the monitoring frequency, sampling and analysis procedures, or methods or statistical procedures used at the facility necessary to meet the requirements of 35 Ill. Adm. Code 724.199; and
 - iv. For each hazardous constituent found, a proposed concentration limit under 35 Ill. Adm. Code 724.194(a)(1) or 724.194(a)(2), or a notice of intent to seek an alternate concentration limit for a hazardous constituent under 35 Ill. Adm. Code 724.194(b).
- e. Submit to the Illinois EPA a corrective action feasibility plan to meet the requirements of 35 Ill. Adm. Code 724.200 unless the concentrations of all hazardous constituents identified under Condition III-A.I.9.b above are listed in 35 Ill. Adm. Code 620.420 and their concentrations do not exceed the respective Groundwater Quality Standards or the Permittee has sought an alternate concentration limits under Condition III-A.I.9.d.iv above for every hazardous constituent identified under Condition III-A.I.9.b above. This plan must be submitted to the Illinois EPA within 180 days of the date the increases are discovered.

1190100004

B-160R2

Page III-A-10 of III-A-11

- f. Submit to the Illinois EPA all data necessary to justify any alternate concentration limit for a hazardous constituent sought under Condition III-A.I.9.d.iv above. This plan must be submitted to the Illinois EPA within 180 days of the date the increases are discovered.
10. If the Permittee determines, pursuant to Condition III-A.E.3, that there is a statistically significant increase above the background values for the parameters specified in Condition III-A.D.1, the Permittee may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. The Permittee shall submit a permit modification application in accordance with Condition III-A.I.9.d above unless the demonstration successfully shows that a source other than the regulated unit caused the increase or that the increase resulted from errors in sampling, analysis or evaluation and the Illinois EPA concurs.

To make this demonstration, the Permittee shall:

- a. Notify the Illinois EPA in writing that they intend to make this demonstration. This notification must be submitted to the Illinois EPA within seven (7) days of the date that the increase is discovered.
- b. Submit a report to the Illinois EPA which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation. This report must be submitted within ninety (90) days of the date that the increase is discovered.
- c. Submit to the Illinois EPA an application to make any appropriate changes to the Perimeter Groundwater Observation Monitoring Program. This application must be submitted within ninety (90) days of the date that the increase is discovered.
- d. Continue to monitor in accordance with the Perimeter Groundwater Observation Monitoring Program at the facility.

J. REQUEST FOR PERMIT MODIFICATION

1. If the Permittee determines that the Perimeter Groundwater Observation Monitoring Program no longer satisfies the requirements of 35 Ill. Adm. Code 724.198, the Permittee must, within ninety (90) days, submit an application for a permit modification to the Illinois EPA to make any appropriate changes to the program which will satisfy the regulations.
2. Conditions in this section of the Permit may be modified in accordance with 35 Ill. Adm. Code 705.128 if there is cause for such modification, as defined in 35 Ill. Adm. Code 702.184. Causes for modification identified in this section include, but are not

1190100004

B-160R2

Page III-A-11 of III-A-11

limited to, alterations to the permitted facility, additional information which would have justified the application of different permit conditions at the time of issuance, and new regulations.

SECTION IV: CORRECTIVE ACTION

A. INTRODUCTION

1. In accordance with Section 3004(u) of RCRA and 35 Ill. Adm. Code 724.201, the Permittee shall institute such corrective action as necessary to protect human health and the environment from all releases of hazardous wastes or hazardous constituents from any Solid Waste Management Unit (SWMU) at its facility. This section contains the conditions which must be followed to ensure these requirements are met.
2. The Permittee must develop and implement a Corrective Measure Program to protect human health and the environment from any of the SWMUs of concern at the facility.
3. The original RCRA permit was issued by Illinois EPA to Laclede Steel for this facility on June 28, 1996; Section I.B (RCRA Closure) of that permit contained closure requirements for two Hazardous Waste Management Units (HWMUs) (the Pelletizer Area and the Rod Patenting Building). The Permittee has completed closure of a former interim-status hazardous waste storage unit and waste pile in and around the Rod Patenting Building. The Permittee has also completed closure of a former interim-status hazardous waste treatment unit and waste pile at the Pelletizer Area. The locations of these HWMUs are shown on Figure B-5 of the approved permit application. This section describes the closure efforts that have been completed.
4. Alton Steel acquired the facility from Laclede's bankrupt estate in May 2003. The Illinois EPA issued a renewal permit to Alton Steel on December 4, 2009. Thus, this facility is also the subject of a Settlement Agreement filed in the United States Bankruptcy Court for the Eastern District of Missouri, Eastern Division, Case No. 01-48321. All requirements of the Settlement Agreement including but not limited to those which deal with closure, corrective action, investigation, monitoring, remediation, financial assurance, or transfer of property are incorporated herein by reference and must be carried out in accordance with the terms of that agreement and this permit.
5. Both the previous and current Permittee have conducted a substantial amount of corrective action activities to date to meet the requirements of the previous RCRA permits for the facility. The locations of all the SWMUs discussed in this permit are shown on Figures B-2E and B-2W of the approved permit application.

Section IV.C of this permit describes the corrective action efforts which have been completed at the units which have received No Further Action (NFA) letters or do not require corrective action efforts at this time.

6. This permit requires the Permittee to implement a corrective action program by completing or having completed the corrective action at the facility. Section IV.D of this permit describes the corrective action efforts which must still be completed at this area.
7. The Permittee must carry out interim measures in accordance with the terms, conditions and requirements of this permit to address existing contamination at the facility until such time as a final corrective measure can be developed and implemented.
8. The Permittee must provide corrective action, as appropriate, for: (1) any newly discovered SWMUs; or (2) future releases for existing SWMUs.
9. The requirements of 35 Ill. Adm. Code 620 and 742 must be met, when applicable, in establishing remediation objectives for corrective action. In addition, all corrective action efforts must meet the requirements of 35 Ill. Adm. Code 724.201.
10. All Illinois EPA final decisions regarding RCRA corrective action at this facility are subject to the appeal provisions of the Illinois Environmental Protection Act.
11. All documents submitted to Illinois EPA regarding corrective action efforts must be accompanied by a completed RCRA Corrective Action Certification Form. This form can be found on Illinois EPA's website.

B. CORRECTIVE ACTION REQUIREMENTS

To date, the Permittee has conducted a substantial amount of investigation at the SWMUs of concern at this facility. Condition IV.C. below includes the facility's corrective action efforts that have been completed to date. Condition IV.D. below includes the required corrective action that still must be completed at the facility.

In general, the RCRA Facility Investigation (RFI) must be carried out in accordance with the following requirements:

1. The following nine (9) HWMUs and SWMUs that have been identified as units to be addressed by the facility's corrective action program at the facility:

<u>SWMU</u>	<u>Name</u>
#2	Rod Patenting Building
#3	Pelletizer Area

#4	Solid Waste Landfill
#5	Wastewater Treatment Plant Area and Surface Impoundments
#6	HTMR (High Temperature Metal Recovery)
#7	Baghouse Dust Accumulation Area
#8	Former Waste Oil Tank
#9	Dowel Assembly Building
#12	Pre-RCRA Waste Pile

2. Conduct additional investigation and remediation, as necessary, to address any on-site contamination and off-site contamination, which has migrated beyond the property boundaries from the former operation of the facility;
3. Obtain NFA determinations from the Illinois EPA for the units and any other impacted areas identified during the RFI, where the contamination has migrated off-site from the former operation of the facility, when sufficient information has been provided by the Permittee that the media of interest has been adequately remediated for the SWMUs and other identified areas of concern.
4. As required by Section III-A of the permit, the Permittee has eleven (11) existing wells to monitor groundwater in the Uppermost Aquifer (Upper Silty Clay Unit) and four (4) piezometers to monitor groundwater elevations in the deep groundwater zone (Lower Sand and Gravel Unit) at the perimeter of the ASI facility. These groundwater monitoring wells are intended to detect and prevent any groundwater contamination from extending beyond the perimeter of the facility as required by the Settlement Agreement.

C. CLOSURE AND CORRECTIVE ACTION EFFORTS COMPLETED TO DATE

1. The table below identifies the current status of corrective action completed at each SWMU to date. It also identifies the SWMUs which have received NFA determinations from the Illinois EPA.

Note that the following abbreviation is used in the table below:

ELUC = Environmental Land Use Control

SWMU # & Name	Description of Key Actions
#2 - Rob Patenting Building (RPB)	The RPB has been investigated and remediated. In a letter dated July 3, 2007, the Illinois EPA required that an engineered barrier and institutional control be established to complete closure of this unit. An engineered barrier consisting of an asphalt layer on top of the original concrete floor was installed in late 2008. This unit was closed with an approved, recorded ELUC per Illinois EPA letter dated June 2, 2009 (B-160-CA-47). The ELUC and associated documentation were filed with the Madison County Recorder's

SWMU # & Name	Description of Key Actions
	Office on April 7, 2009, as Document Number 2009R17047. No further closure efforts are required for this unit other than continued compliance with the subject ELUC.
#3 – Pelletizer Area (PA)	The PA has been dismantled, investigated, and remediated. A barrier (approximately three feet of clean fill used to backfill the excavated soil) was completed in August 1998. This unit was closed with an approved, recorded Environmental Land Use Control (ELUC) per Illinois EPA letter dated October 19, 2005 (Log No. B-160-CA-27). The ELUC and associated documentation were filed with the Madison County Recorder's Office on May 2, 2005, as Document Number 2005R22653. (This is same ELUC as used for the Pre-RCRA Waste Pile.) No further closure efforts are required for this unit other than continued compliance with the subject ELUC.
#4 – Solid Waste Landfill (SWL)	The SWL was certified closed by Illinois EPA on October 6, 1994. The Permittee is required to continue the post-closure care of this unit in accordance with the October 6, 1994 Illinois EPA letter (Log No. 1994-324). The CWP CAMU is on top of a portion of this landfill.
#6 -- High Temperature Metals Recovery (HTMR)	The HTMR building was damaged in an explosion in 1997. It was not repaired and is inactive. The building is locked. No further corrective action is required unless operation of the unit is restarted. If restarted, corrective action would include removing wastes in a timely manner, monthly inspections and repairing any cracks or deterioration, etc. observed in the secondary containment system.
#7 -- Baghouse Dust Accumulation Area (BDAA)	Some investigation and remediation efforts have been completed at this unit, mainly in response to a release of EAF dust on March 31, 2000. A plan to conduct an additional soil investigation effort and to establish an engineered barrier (and associated institutional control) over a portion of this area was approved by Illinois EPA on August 19, 2008 (Log No. B-160-CA-40). An engineered barrier was constructed over the soils beneath BDAA. An ELUC was approved, recorded and filed in Madison County Recorder's Office on December 7, 2012, as Document Number 2012R52154. Illinois EPA approved the recorded ELUC in a letter dated February 21, 2013 (Log No. B-160R-CA-4). No further action efforts are required at the BDAA other than continued compliance with the subject ELUC.

SWMU # & Name	Description of Key Actions
#8 -- Former Waste Oil Tank (WOT)	The WOT was emptied, cleaned, and dismantled in 2004. Soil and groundwater investigations were completed in the vicinity of the WOT. An asphalt engineered barrier was constructed over the footprint of the WOT and some surrounding area. An ELUC was approved, recorded and filed in Madison County Recorder's Office on September 27, 2006, as Document Number 2006R51294. Illinois EPA determined no further action was required in a letter dated August 1, 2008 (Log No. B-160-CA-38). No further corrective action efforts are required at the WOT other than continued compliance with the subject ELUC.
#9 – Dowel Assembly Building (DAB)	The DAB was cleaned and swept in 2003 as required by the original RCRA permit. The building was inspected by Illinois EPA and no further corrective action is required at this unit per an Illinois EPA letter dated June 18, 2004 (Log No. B-160-CA-16). No additional corrective action is required at this unit. The dismantling of this building was completed in May 2013.
#12 Pre-RCRA Waste Pile (PRWP)	The PRWP has been investigated and remediated. A barrier (approximately ten feet of clean fill to backfill the excavated contaminated soil) was completed in August 1998. This unit was closed with an approved, recorded and filed ELUC per Illinois EPA letter dated October 19, 2005 (Log No. B-160-CA-27). The ELUC and associated documentation was filed with the Madison County Recorder's Office on May 2, 2005, as Document Number 2005R22653. (ELUC for PRWP also covers Pelletizer Area.) No further corrective action efforts are required for this unit other than continued compliance with the subject ELUC.

2. The Permittee has also completed two other corrective action activities associated with the acquisition of the facility by ASI. Illinois EPA has reviewed the reports for these activities and found them to adequately document the completion of the two projects. These two waste remedial activities were (1) clean-up of dust and repairs at the Electric Melt Shop Building and the Baghouse area; and (2) collection, inventory, and disposal of containerized waste left by Laclede Steel.
3. The following ELUC(s) have been established following the NFA determinations by Illinois EPA and recorded with the Madison County Recorder's Office as shown in the table below.

ELUC Recorded for Alton Steel Inc.

Area Name	Size (Acres)	Date of NFA Letter	County Recorder's No. /Date Recorded	PIN/TAX ID
SWMU #2 Rod Patenting Bld. (RPB)	.918	06/02/09	2009R17047/ 04/07/09	23-1-08-18-00-000-011 (Part)
SWMU #3 & #12 Pelletizer Area (PA) & Pre-RCRA Waste Pile (PRWP)	61.9	10/19/05	2005R22653 05/02/05	23-1-08-18-00-000-011.T00
SWMU #7 Baghouse Dust Accumulation Area (BDAA)	.0523	2/21/13	2012R52154 12/7/12	23-1-08-10-00-000-011 (Part)
SWMU #8 Former Waste Oil Tank (WOT)	61.9	08/01/08	2006R1294 09/27/06	23-1-08-18-00-000-011.T00

4. ELUCs have been established in accordance with 35 Ill. Adm. Code 742 as part of the completed corrective action efforts at this facility for PIN 23-1-08-00-000-011.T00 as summarized in Condition IV.C.3 above. The ELUCs place the following restrictions on future activities at the facility.
- a. The property may only be used for industrial/commercial activities;
 - b. Potable use of groundwater at the Property is restricted;
 - c. A site safety plan to address possible worker exposure to the soil beneath the engineered barrier must be developed and implemented for any future excavation or construction activities in this area and any soil that is removed or excavated from this area must be handled in accordance with all applicable laws and regulations;
 - d. Any soil removed from the affected areas will be managed in accordance with 35 Ill. Adm. Code, Subtitle G: Waste Disposal; and
 - e. Maintain and inspect engineered barriers as follows:
 - i. Approximately 3 feet of clean fill placed over the PA as a barrier and approximately 10 feet of clean fill placed over the PRWP.
 - ii. Barrier meeting the requirement of 35 Ill. Adm. Code 742 must be in place over the Former WOT and the BDAA.

- iii. Approximate 2.5 inches thick compacted asphalt barrier over the entire concrete floor of the RPB.
5. Failure to comply with the limitations or requirements of an ELUC may result in avoidance of an Illinois EPA no further action/remediation determination in accordance with the program under which the determination was made. The failure to comply with the limitations or requirements of an ELUC may also be grounds for an enforcement action pursuant to Title VIII of the Illinois Environmental Protection Act.
6. The limitations or requirements of the ELUC apply in perpetuity or until:
 - a. The Illinois EPA issues a new no further action/remediation determination approving modification or removal of the limitation/requirement; and
 - b. A release or modification of the land use limitation is filed on the chain of title for the property that is the subject of the ELUC.
7. At no time shall this site be used in a manner inconsistent with the land use limitations established in the approved ELUC, unless: (1) attainment of objectives appropriate for the new land use is achieved, and (2) a new NFA determination is obtained from Illinois EPA and subsequently recorded in accordance with 35 Ill. Adm. Code 742.
 - a. Requests to release or modify an ELUC must be formally requested in writing from Illinois EPA as a: (1) request to amend the certification of closure; or (2) a permit modification request. Sufficient information must be provided in these requests to demonstrate that the requested change meets all the requirements of 35 Ill. Adm. Code 742.
 - b. Any final approval by Illinois EPA of a request to release or modify an ELUC must be filed with the chain of title for the subject facility.
8. A summary of overall corrective action efforts carried out at this facility, based on Illinois EPA's approval letters regarding workplans or reports associated with these efforts, is provided in Attachment F.

D. CORRECTIVE ACTION EFFORTS STILL TO BE COMPLETED

1. Corrective action activities at SWMU #5 must be completed to meet the following requirements and to obtain a NFA determination for this unit by Illinois EPA. The SWMU #5 is the Wastewater Treatment Plant (WWTP) Area and surface impoundments located directly south of the 14-inch Mill and the former Wire Mill.

- a. Wastewater Treatment Plant (WWTP) Area (SWMU #5) includes both current and historical WWTP, the sewer system, the Crown House, the Serpentine Lagoon, two historical underground storage tanks (USTs), three emergency sludge holding lagoons, and the wastewater drainage system (i.e., surface impoundments and interconnecting channels) located directly south of the 14-inch Mill extending westward to the former Wire Mill. Parts of this unit are still active.

A RCRA Facility Investigation (RFI) Phase I was completed for this unit. Illinois EPA required submittal of an RFI Phase II Work Plan in a letter dated October 18, 2000. A Phase II Work Plan for this unit was submitted April 10, 2007. The work plan proposed additional sampling and analyses for this unit. Illinois EPA approved the Phase II RFI Work Plan with conditions and modifications in a letter dated May 28, 2009 (B-160-CA-36). Illinois EPA approved the Phase II RFI investigation report, with conditions and modifications, and the proposed additional sampling in a letter dated May 4, 2017 (B-160R-CA-2).
 - b. Corrective action efforts for this unit must continue to be carried out in accordance with: (1) the afore-mentioned Settlement Agreement; (2) 35 Ill. Adm. Code 724.201 and 742; (3) plans and reports approved by Illinois EPA; and (4) this Permit.
 - c. The end result of corrective action efforts at this unit must meet the requirements of 35 Ill. Adm. Code 724.201 and 742.
 - d. The Permittee may request that changes be made to the approved corrective action program for this unit by submitting requests to modify this approved program to Illinois EPA for review and approval. Such requests must contain detailed information about the modification being requested and justification for the change.
2. The aforementioned Settlement Agreement for this facility requires, among other items, that: (1) a health and safety plan (HASP) meeting the requirements of 29 CFR be developed and implemented for any construction or excavation effort carried out at the facility; (2) any material excavated during these efforts be managed in accordance with 35 Ill. Admin. Code, Subtitle G and applicable federal law; and (3) the Permittee will implement a corrective action program to prevent groundwater contamination from extending beyond the perimeter of the facility in accordance with plans and reports approved by the Illinois EPA (known as the Perimeter Groundwater Observation Monitoring Program and is discussed further in Section III-A of this permit).

E. GROUNDWATER SPECIFIC CORRECTIVE ACTION

1. Section III-A of the Permit implements the regulatory requirements of 35 Ill. Adm. Code Part 724, Subpart F and outlines the groundwater monitoring requirements necessary to determine if groundwater impacts have extended at or beyond the perimeter of the ASI facility. The Perimeter Groundwater Observation Monitoring Program has eleven (11) existing wells to monitor groundwater in the Uppermost Aquifer at the perimeter of the ASI facility. In addition, the Perimeter Groundwater Observation Monitoring Program includes four (4) piezometers that monitor groundwater movement in the Lower Sand and Gravel Unit. This unit is located vertically beneath the Uppermost Aquifer.

F. CORRECTIVE MEASURES

1. If it is determined that corrective measures must be taken at a SWMU, then the Permittee must implement a Corrective Measures Program (CMP) for such SWMUs in general accordance with the procedures set forth in Attachment E to this permit. The corrective measures implemented by the Permittee must be sufficient to ensure the appropriate requirements of 35 Ill. Adm. Code 302, 620, 724, and 742 are met.
2. The types of corrective measures which may be implemented include, but are not limited to:
 - a. Removal of the contaminants or the contaminated media so that the remaining media meet remediation objectives developed in accordance with 35 Ill. Adm. Code 742;
 - b. Closing the SWMU as a landfill by establishing a proper final cover over the SWMU and then providing proper long-term monitoring/maintenance/management of: (1) leachate; (2) subsurface gas; (3) final cover system; and (4) groundwater;
 - c. Establishing engineered barriers to restrict exposure to the contaminants remaining at the SWMU (necessary to certain remediation objectives developed in accordance with 35 Ill. Adm. Code 742);
 - d. Establishing institutional controls to restrict activities at the facility, as necessary, to support remediation objectives established in accordance with 35 Ill. Adm. Code 742.
3. The Corrective Measures Program described in Attachment E to this permit consists of five phases:
 - a. Phase I--conceptual design of the selected corrective measure;

- b. Phase II--development of the final design plans for the corrective measure, including installation and operation/maintenance plans;
 - c. Phase III--actual construction/installation/implementation of the corrective measure;
 - d. Phase IV—operation/maintenance/monitoring, as necessary, of the corrective measure to ensure it is being properly implemented and is properly protecting human health and the environment.
 - e. Phase V--demonstration/verification that the corrective measure has been completed and that the established remediation objectives have been achieved.
 - f. Phases may be combined or skipped, depending on the actual corrective measure selected. The overall CMP implemented at a given SWMU must: (1) set forth a path to allow for an orderly progression of necessary corrective measures; and (2) allow for Illinois EPA oversight and approval throughout the entire process. The Permittee shall submit workplans and reports regarding all aspects of corrective measures for the Illinois EPA review and approval prior to carrying out any corrective measure activity.
4. A Phase I CMP Workplan, or its equivalent, must be submitted to the Illinois EPA within ninety (90) days of the date that the Illinois EPA notifies the Permittee of the need for a CMP.
 5. Subsequent CMP related workplans and reports must be submitted to the Illinois EPA for review and approval in accordance with a schedule approved by the Illinois EPA.
 6. For units closed as landfills:
 - a. The Phase II report must include a plan for the construction of a final cover system as well as a post-closure care plan (the post-closure care plan must include provisions for (1) inspecting the final cover; (2) monitoring the groundwater, leachate, and soil gas; and (3) taking corrective action if any problems are observed during the inspection/monitoring effort.
 - b. The Phase III report must document the construction of the approved final cover system and any other systems required for closure of the unit.
 - c. During Phase IV, quarterly reports must be submitted documenting the results of the inspection/monitoring efforts as well as any corrective measures taken in response to problems observed during these efforts.

The Permittee shall submit plans to the Illinois EPA for review and approval to address any groundwater quality or gas migration problems.

- d. The Phase V report will not be submitted until the post-closure care/corrective measures monitoring period has been completed. This report must demonstrate that all applicable post-closure requirements have been met and that the groundwater at the site meets the applicable standards.
7. Once all corrective measures have been completed, a report must be developed documenting all efforts and results associated with the completed measure, including, as appropriate, information demonstrating the approved remediation objectives for the project have been achieved.
8. The Illinois EPA's action on all Corrective Measures Program submittals shall be subject to the appeal provisions of Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

G. REQUIREMENTS FOR ADDRESSING NEWLY- IDENTIFIED SWMU(s) AND AREAS OF CONCERN AOC(s)

1. The Permittee shall notify the Illinois EPA in writing of any newly-identified SWMU or Area of Concern (AOC) discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, no later than thirty (30) calendar days after discovery. The notification shall provide the following information, as available:
 - a. The location of the newly-identified SWMU or AOC in relation to other SWMUs or AOCs on a scaled map or drawing;
 - b. The type and past and present function of the unit;
 - c. The general dimensions, capacities, and structural description of the unit (available drawings and specifications provided);
 - d. The period during which the unit was operated;
 - e. The specifics on all materials, including but not limited to, wastes and hazardous constituents, that have been or are being managed at the SWMU or AOC, to the extent available; and
 - f. The results of any relevant available sampling and analysis which may aid in determining whether releases of hazardous wastes or hazardous constituents have occurred or are occurring from the unit.
2. If the information submitted demonstrates a potential for a release of hazardous waste or hazardous constituents from the newly identified SWMU/AOC, the Illinois EPA may request in writing, that the Permittee prepare a SWMU Assessment Plan and a proposed schedule of implementation and completion of the Plan for any additional

SWMU(s)/AOC(s). This SWMU Assessment Plan must also propose investigations, including field investigations, if necessary, to determine the release potential to specific environmental media for the newly-identified SWMU/AOC. The SWMU Assessment Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste and hazardous constituents from the newly discovered SWMU(s)/AOC(s) to the environment.

3. Within ninety (90) calendar days after receipt of the Illinois EPA's request for a SWMU Assessment Plan, the Permittee shall submit a SWMU Assessment Plan.
4. After the Permittee submits the SWMU Assessment Plan, the Illinois EPA shall either approve, approve with conditions, or disapprove the Plan in writing. If the Plan is approved, or approved with conditions, the Permittee shall begin to implement the Plan within forty-five (45) calendar days of receiving such written notification. If the Plan is disapproved, the Illinois EPA shall notify the Permittee, in writing, of the Plan's deficiencies and specify a due date for submittal of a revised plan.
5. The Permittee shall submit a report documenting the results of the approved SWMU Assessment Plan to the Illinois EPA in accordance with the schedule in the approved Plan. The SWMU Assessment Report shall describe all results obtained from the implementation of the approved SWMU Assessment Plan.
6. Additional investigation plans and reports must be submitted to and approved by Illinois EPA, as necessary, to ensure the nature and extent of contamination at the SWMU/AOC is adequately characterized. Once the contamination is characterized, the Permittee shall develop remedial objectives for the SWMU in accordance with 35 Ill. Adm. Code 742; such objectives are subject to Illinois EPA review and approval.
7. The Permittee must implement a Corrective Measures Program, as necessary, to properly address any contamination encountered during the assessment which exceeds the approved remediation objectives for the SWMU. It must also be necessary to implement a Corrective Measures Program to support the approved remediation objectives (such as the establishment of any required engineered barriers or institutional controls).
8. All efforts carried out at newly identified SWMUs must meet the requirements of 35 Ill. Adm. Code 724.201.

H. FUTURE RELEASES FROM SWMUs

There exists a potential that a release may occur in the future from SWMUs identified in the RCRA Facility Assessment (RFA) which did not require any corrective action at the time that the RFA or RFI was completed. If the Permittee discovers that a release has

occurred from such a SWMU in the future, then the Illinois EPA must be notified of this release within thirty (30) days after its discovery following the procedures set forth in Condition IV.F.1. Additional investigation and, as necessary, corrective measures efforts at this SWMU must be carried out in accordance with the procedures set forth in Condition IV.G. The results of all corrective action efforts required by this condition must meet the requirements of 35 Ill. Adm. Code 724.201.

I. INTERIM MEASURES

At any time during the course of this permit, the Permittee may initiate interim measures for the purpose of preventing continuing releases and/or mitigating the results of releases and/or mitigating the migration of hazardous wastes or hazardous waste constituents. It shall not be necessary to conduct all phases of an investigation prior to implementing an interim measure if the Illinois EPA and the Permittee agree that a problem can be corrected, or a release mitigated, without additional study and/or without a formal Corrective Measures Study (CMS).

1. Prior to implementing any interim measures, the Permittee must submit detailed information regarding the proposed interim measure to the Illinois EPA for approval. This information shall include, at a minimum:
 - a. The objectives of the interim measure, including how the measure is mitigating a potential threat to human health and the environment; and/or, is consistent with, and integrated into, any long-term solution at the facility;
 - b. The design, construction, and maintenance requirements;
 - c. A schedule for design and construction; and
 - d. A schedule for progress reports.
2. If the Illinois EPA determines that a release cannot be addressed without additional study and/or a formal CMS, then the Illinois EPA will notify the Permittee that these must be performed. Any proposal made under this provision or any other activity resulting from such proposal shall not affect the schedule for implementation of any other portion of the Permit.
3. If the Illinois EPA determines that interim measures are necessary to protect human health or the environment, the Permittee will be notified by way of a permit modification.

J. FINANCIAL ASSURANCE

35 Ill. Adm. Code 724.201 requires that financial assurance be established for completing required corrective actions at solid waste management units:

1. At this time, there are no closure efforts required at the facility; and therefore, there are no required cost estimates for closure activities. The currently approved corrective action cost estimate for the SWMUs and the Perimeter Groundwater Observation Monitoring Program is \$479,389 in 2021 dollars. A more detailed breakdown of these cost estimates is provided in Attachment E.
2. The cost estimate for completing corrective action at the Wastewater Treatment Plant (SWMU 5) must be updated if additional investigation and/or remediation work is eventually required at this unit.
3. The Permittee shall prepare updated cost estimates each year for the completion of any closure or corrective action required under this permit, in order to provide financial assurance for completion of corrective action, as required under 35 Ill. Adm. Code 724.201(b). Such a cost estimate must be based upon the cost of contamination investigations and assessments for the SWMUs, and design, construction, operation, inspection, monitoring, and maintenance of the corrective measure(s) to meet the requirements of 35 Ill. Adm. Code 724.201 and this permit. Estimates are required only for known and quantifiable costs. These estimates must be based upon third party costs and be submitted to the Illinois EPA, if the corrective action cost estimates require updating. Adjustments to corrective action cost estimates for inflation should be submitted on or before the Permittee's anniversary date for submitting financial assurance. Adjustments due to reasons beyond inflation only shall be submitted as a permit modification.
4. Except as provided in Condition IV.J.5, the Permittee shall demonstrate continuous compliance with 35 Ill. Adm. Code 724.201 by providing documentation of financial assurance using a mechanism specified in 35 Ill. Adm. Code 724.243, in at least the amount of the cost estimate required under Condition IV.J.1. The words "completion of corrective action" shall be substituted for "closure and/or post-closure", as appropriate in the financial instrument specified in 35 Ill. Adm. Code 724.251. The documentation shall be submitted to the Illinois EPA within sixty (60) days after the approval of the initial or revised cost estimates required under Condition II.G. The Illinois EPA may accept financial assurance for the completion of corrective action in combination with another financial mechanism that is acceptable under 35 Ill. Admin. Code 724.246 at its discretion.
5. The terms of the financial assurance mechanisms for closure, post-closure care and corrective action activities are included in Section VI.11.a of the Settlement Agreement.

- a. Illinois EPA placed \$287,000 received under a previous Letter of Credit provided by Laclede for financial assurance relating to the Facility in a standby trust fund (the "Standby Trust Fund") where it shall remain until released by Illinois EPA.

- b. Alton Steel shall establish a trust fund in accordance with 35 Ill. Adm. Codes 724.243 and 724.245, and with terms approved by the Agency (the "Alton Trust Fund"). Alton Steel shall place \$25,000 in the Alton Trust Fund before the end of every quarter of each calendar year, from March 31, 2003, until such time as the value of the Alton Trust Fund plus the Standby Trust Fund equals or exceeds the current approved cost estimate. In lieu of the trust fund mechanism set forth in this paragraph, Alton Steel may provide financial assurance in the full amount required by the Permit using any other statutorily available financial assurance mechanism.

1190100004

B-160R2

Page V-1

SECTION V: SPECIAL CONDITIONS**A. 39i CERTIFICATION**

The Permittee shall submit a current 39i certification and supporting documentation with all applications for a permit.

B. COMPLIANCE SCHEDULE

1. Cost Estimates: Within ninety (90) days of the effective date of this Permit,
 - a. The Permittee shall submit revised post-closure cost estimates and financial assurance to meet the required minimum of thirty (30) years post-closure care costs for the CWP CAMU, as stated in Condition II.G.1 as a Class 1* permit modification.
 - b. The Permittee shall include an updated corrective action cost estimate for completing investigation /remediation work at SWMU 5, as required in 35 Ill. Adm. Code 724.201.
 - c. All cost estimates must be updated to the current year.

1190100004

B-160R2

Page VI-1 of VI-8

SECTION VI: STANDARD CONDITIONS FOR POST-CLOSURE CARE**GENERAL REQUIREMENTS**

1. **EFFECT OF PERMIT.** The existence of a RCRA permit shall not constitute a defense to a violation of the Environmental Protection Act or Subtitle G, except for development, modification or operation without a permit. Issuance of this permit does not convey property rights or any exclusive privilege. Issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or infringement of state or local law or regulations. (35 Ill. Adm. Code 702.181)
2. **PERMIT ACTIONS.** This permit may be modified, reissued or revoked for cause as specified in 35 Ill. Adm. Code 703.270 through 703.273 and Section 702.186. The filing of a request by the Permittee for a permit modification or revocation, or a notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition. (35 Ill. Adm. Code 702.146)
3. **SEVERABILITY.** The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. (35 Ill. Adm. Code 700.107)
4. **PERMIT CONDITION CONFLICT.** In case of conflict between a special permit condition and a standard condition, the special condition will prevail. (35 Ill. Adm. Code 702.160)
5. **DUTY TO COMPLY.** The Permittee shall comply with all conditions of this permit except for the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of the Environmental Protection Act and is grounds for enforcement action; permit revocation or modification; or for denial of a permit renewal application. (35 Ill. Adm. Code 702.141 and 703.242)
6. **DUTY TO REAPPLY.** If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee must apply for a new permit at least 180 days before this permit expires, unless permission for a later date has been granted by the Illinois EPA. (35 Ill. Adm. Code 702.142 and 703.125)
7. **PERMIT EXPIRATION.** This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application (see 35 Ill. Adm. Code 703.181-703.209) and, through no fault of the Permittee, the Illinois EPA has not issued a new permit as set forth in 35 Ill. Adm. Code 702.125.
8. **NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE.** It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or

1190100004

B-160R2

Page VI-2 of VI-8

reduce the permitted activity in order to maintain compliance with the conditions of this permit. (35 Ill. Adm. Code 702.143)

9. DUTY TO MITIGATE. In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. (35 Ill. Adm. Code 702.144)
10. PROPER OPERATION AND MAINTENANCE. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance include effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory, and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. (35 Ill. Adm. Code 702.145)
11. DUTY TO PROVIDE INFORMATION. The Permittee shall furnish to the Illinois EPA, within a reasonable time, any relevant information which the Illinois EPA may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Illinois EPA, upon request, copies of records required to be kept by this permit. (35 Ill. Adm. Code 702.148)
12. INSPECTION AND ENTRY. The Permittee shall allow an authorized representative of the Illinois EPA, upon the presentation of credentials and other documents as may be required by law, to:
 - a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location. (35 Ill. Adm. Code 702.149)

1190100004

B-160R2

Page VI-3 of VI-8

13. MONITORING AND RECORDS. (35 Ill. Adm. Code 702.150)
- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste must be the appropriate method from Appendix A of 35 Ill. Adm. Code 721. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, latest versions; Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, latest versions; or an equivalent method as specified in the approved Waste Analysis Plan.
 - b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report or application. These periods may be extended by request of the Illinois EPA at any time. The permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.
 - c. Records of monitoring information shall include:
 - i. The date(s), exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical technique(s) or method(s) used; and
 - vi. The result(s) of such analyses. (35 Ill. Adm. Code 702.150)
14. REPORTING PLANNED CHANGES. The permittee shall give written notice to the Illinois EPA as soon as possible of any planned physical alterations or additions to the permitted facility. In general, proposed changes to the facility will need to be submitted to the Illinois EPA as permit modification request that complies with the requirements of 35 Ill. Adm. Code 703.280. (35 Ill. Adm. Code 702.152(a))
15. CONSTRUCTION CERTIFICATION. For a new hazardous waste management facility, the permittee may not commence treatment, storage or disposal of hazardous waste; and for a facility being modified the permittee may not treat, store or dispose of hazardous waste in the modified portion of the facility, until:

1190100004

B-160R2

Page VI-4 of VI-8

- a. The permittee has submitted to the Illinois EPA by certified mail or hand delivery a letter signed by the permittee and a qualified professional engineer stating that the facility has been constructed or modified in compliance with the permit; and
 - b.
 1. The Illinois EPA has inspected the modified or newly constructed facility and finds it is in compliance with the condition of the permit; or
 2. If, within 15 days of the date of submission of the letter in paragraph (a), the permittee has not received notice from the Illinois EPA of its intent to inspect, prior inspection is waived, and the permittee may commence treatment, storage or disposal of hazardous waste. (35 Ill. Adm. Code 703.247)
16. **ANTICIPATED NONCOMPLIANCE.** The Permittee shall give advance notice to the Illinois EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements, regulations or the Act. (35 Ill. Adm. Code 702.152(b))
17. **TRANSFER OF PERMITS.** This permit may not be transferred by the Permittee to a new owner or operator unless the permit has been modified or reissued pursuant to 35 Ill. Adm. Code 703.260(b) or 703.272. Changes in the ownership or operational control of a facility must be made as a Class 1 modification with the prior written approval of the Illinois EPA. The new owner or operator shall submit a revised permit application no later than 90 days prior to the scheduled change. (35 Ill. Adm. Code 703.260)
18. **MONITORING REPORTS.** Monitoring results shall be reported at the intervals specified in the permit. (35 Ill. Adm. Code 702.152(d))
19. **COMPLIANCE SCHEDULES.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than specified in 35 Ill. Adm. Code 702.162. (35 Ill. Adm. Code 702.152(e))
20. **TWENTY-FOUR HOUR REPORTING.**
- a. The Permittee shall report to the Illinois EPA any noncompliance with the permit which may endanger health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the following circumstances. This report shall include the following:
 - i. Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.

1190100004

B-160R2

Page VI-5 of VI-8

- ii. Information concerning the release or discharge of any hazardous waste or of a fire or explosion at the HWM facility, which could threaten the environment or human health outside the facility.
 - b. The description of the occurrence and its cause shall include:
 - i. Name, address, and telephone number of the owner or operator;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident;
 - iv. Name and quantity of material(s) involved;
 - v. The extent of injuries, if any;
 - vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where applicable; and
 - vii. Estimated quantity and disposition of recovered material that resulted from the incident.
 - c. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Illinois EPA may waive the five day written notice requirement in favor of a written report within fifteen days. (35 Ill. Adm. Code 702.152(f) and 703.245(b))
- 21. OTHER NONCOMPLIANCE. The Permittee shall report all instances of noncompliance not otherwise required to be reported under Standard Conditions 14, 15, and 16, at the time monitoring reports, as required by this permit, are submitted. The reports shall contain the information listed in Standard Condition 20. (35 Ill. Adm. Code 702.152(g))
- 22. OTHER INFORMATION. Where the Permittee becomes aware that it failed to submit any relevant facts in the permit application or submitted incorrect information in a permit application or in any report to the Illinois EPA, the Permittee shall promptly submit such facts or information. (35 Ill. Adm. Code 702.152(h))
- 23. SUBMITTAL OF REPORTS OR OTHER INFORMATION. All written reports or other written information required to be submitted by the terms of this permit shall be sent to:

1190100004

B-160R2

Page VI-6 of VI-8

Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
1021 N. Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

24. **SIGNATORY REQUIREMENT.** All permit applications, reports or information submitted to the Illinois EPA shall be signed and certified as required by 35 Ill. Adm. Code 702.126. (35 Ill. Adm. Code 702.151)
25. **CONFIDENTIAL INFORMATION.** Any claim of confidentiality must be asserted in accordance with 35 Ill. Adm. Code 702.103 and 35 Ill. Adm. Code 161.
26. **DOCUMENTS TO BE MAINTAINED AT FACILITY SITE.** The Permittee shall maintain at the facility, until post-closure is complete, the following documents and amendments, revisions and modifications to these documents:
 - a. Post-closure plan as required by 35 Ill. Adm. Code 724.218(a) and this permit.
 - b. Cost estimate for post-closure care as required by 35 Ill. Adm. Code 724.244(d) and this permit.
 - c. Operating record as required by 35 Ill. Adm. Code 724.173 and this permit.
 - d. Inspection schedules as required by 35 Ill. Adm. Code 724.115(b) and this permit.

GENERAL FACILITY STANDARDS

27. **GENERATOR REQUIREMENTS.** Any hazardous waste generated at this facility shall be managed in accordance with the generator requirements at 35 Ill. Adm. Code Part 722.
28. **SECURITY.** The Permittee shall comply with the security provisions of 35 Ill. Adm. Code 724.114(b) and (c).
29. **GENERAL INSPECTION REQUIREMENTS.** The Permittee shall follow the approved inspection schedule. The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by 35 Ill. Adm. Code 724.115(c). Records of inspections shall be kept as required by 35 Ill. Adm. Code 724.115(d).
30. **CLOSURE REQUIREMENTS FOR ACCUMULATION AREAS.** The Permittee shall close containers storage areas, tanks, drip pads, or containment buildings used for the accumulation of on-site generated hazardous waste in accordance with the requirements identified at 35 Ill. Adm. Code 722.117(a)(8).

1190100004

B-160R2

Page VI-7 of VI-8

PREPAREDNESS AND PREVENTION

31. **DESIGN AND OPERATION OF FACILITY.** The Permittee shall maintain and operate the facility to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. (35 Ill. Adm. Code 724.131)

RECORD KEEPING

32. **OPERATING RECORD.** The Permittee shall maintain a written operating record at the facility in accordance with 35 Ill. Adm. Code 724.173.

POST-CLOSURE

33. **CARE AND USE OF PROPERTY.** The Permittee shall provide post-closure care for the facility as required by 35 Ill. Adm. Code 724.217 and in accordance with the approved post-closure plan.
34. **AMENDMENT TO POST-CLOSURE PLAN.** The Permittee must amend the post-closure plan whenever a change in the facility operation plans or facility design affects the post-closure plan or when an unexpected event has occurred which has affected the post-closure plan pursuant to 35 Ill. Adm. Code 724.218(d).
35. **COST ESTIMATE FOR POST-CLOSURE.** The Permittee's original post-closure cost estimate, prepared in accordance with 35 Ill. Adm. Code 724.244, must be:
- a. Adjusted for inflation either 60 days prior to each anniversary of the date on which the first post-closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year. This permit condition is applicable throughout the entirety of the post-closure care period.
 - b. Revised whenever there is a change in the facility's post-closure plan increasing the cost of the post-closure plan.
 - c. Kept on record at the facility and updated. (35 Ill. Adm. Code 724.244)
 - d. Maintained at the value approved by Illinois EPA with annual adjustment for inflation during the post-closure care period and cannot be decreased unless approved by the Illinois EPA in a permit modification.
36. **FINANCIAL ASSURANCE FOR POST-CLOSURE CARE.** The Permittee shall demonstrate compliance with 35 Ill. Adm. Code 724.245 and 703.241(a)(2) by providing documentation of financial assurance, as required by 35 Ill. Adm. Code 724.251, in at least the amount of the cost estimates required by Permit Condition 35. This financial assurance shall be maintained at such value throughout the post-closure care period and shall be

1190100004

B-160R2

Page VI-8 of VI-8

adjusted accordingly pursuant to Permit Condition 35. Changes in financial assurance mechanisms must be approved by the Illinois EPA pursuant to 35 Ill. Adm. Code 724.245.

Financial assurance documents submitted to Illinois EPA should be directed to the following address:

Illinois Environmental Protection Agency
Bureau of Land #24
Financial Assurance Program
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL. 62794-9276

37. INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS. The Permittee shall comply with 35 Ill. Adm. Code 724.248 whenever necessary.

SECTION VII: REPORTING AND NOTIFICATION REQUIREMENTS

The reporting and notification requirements of each section of the RCRA Post-Closure permit is summarized below. This summary is provided to highlight the various reporting and notification requirements of this permit.

Condition	Submittal	Date
SECTION II: POST CLOSURE CARE		
F.2	Request permit modification to remove the liner or hazardous waste	Prior to removing the liner or wastes
F.4	Certify to Illinois EPA that post-closure care was performed in accordance with the specifications and submit Post-Closure Documentation Report	Within 60 days after completion of the post-closure care period
SECTION III: GROUNDWATER DETECTION MONITORING PROGRAM		
J.2	Groundwater monitoring data and statistical calculations required	Semi-annually
J.3	Groundwater Surface Elevation	Collected semi-annually Reported annually, due July 15
J.4	Groundwater flow rate and direction	Annually with the groundwater data due July 15
J.5	Surveyed Elevation	Every 5 years, due July 15 or at the request of Illinois EPA or whenever the elevation changes. In addition, for new wells, at the time of installation.
J.6	Elevation of the bottom of each well	Annually due July 15
J.10.a	Notify Illinois EPA in writing of statistically significant increase	Within 7 days after the increase was discovered
J.10.b	Sample groundwater in all wells for the approved subset of Appendix I constituents	Immediately after increase is discovered
J.10.d	Apply for permit modification establishing compliance monitoring program	Within 90 days after the increase was discovered
J.10.e	Provide Illinois EPA with corrective action feasibility plan	Within 180 days after the increase was discovered
J.11.a	Notify Illinois EPA in writing of intent to make demonstration	Within 7 days after the increase was discovered
J.11.b	Submit a report to Illinois EPA which demonstrates that a source other than a	Within 90 days after the increase was discovered

1190100004

B-160R2

Page VII-2 of VII-4

	regulated unit caused the increase, or resulted from error	
J.11.c	Submit to Illinois EPA application to change detection monitoring program	Within 90 days after the increase was discovered
SECTION III-A: PERIMETER GROUNDWATER OBSERVATION MONITORING PROGRAM		
I.2	Groundwater monitoring data and statistical calculations required	Semi-annually
I.3	Groundwater surface elevation	Evaluated semi-annually; reported annually, due July 15.
I.4	Surveyed elevation	Every 5 years, due July 15 or at the request of Illinois EPA or whenever the elevation changes. In addition, for new wells, at the time of installation.
I.5	Elevation of bottom of each well	Annually due July 15
I.9.a	Notify Illinois EPA in writing of significant increase	Within 7 days after the increase was discovered
I.9.b	Sample groundwater in all wells for Appendix I	Immediately after the increase discovered
I.9.d	Apply for a permit modification establishing a compliance monitoring program	Within 90 days after the increase was discovered
I.9.e	Provide Illinois EPA with a corrective action feasibility plan	Within 180 days after the increase was discovered.
I.10.a	Notify Illinois EPA in writing of intent to make demonstration	Within 7 days after the increase was discovered
I.10.b	Submit a report to Illinois EPA which demonstrates that a source other than a regulated unit caused the increase, or resulted from error	Within 90 days after the increase was discovered
I.10.c	Submit to Illinois EPA application to change detection monitoring program	Within 90 days after the increase was discovered
SECTION IV: CORRECTIVE ACTION		
G.1	Notify Illinois EPA of newly identified SWMUs	Within 30 days of discovery
G.3	SWMU Assessment Plan	Within 90 days after receipt of Illinois EPA's request

119010004

B-160R2

Page VII-3 of VII-4

H.	Notify Illinois EPA of release from SWMU	Within 30 days of discovery
J.3	Submit annual corrective action cost estimate if required	As necessary
SECTION V: SPECIAL CONDITIONS		
A.	Submit 39i certification and supporting documentation	With all application for a permit
B.1	Submit revised post-closure cost estimates and financial assurance	Within 60 days of the effective date of this Permit
SECTION VI: STANDARD CONDITIONS		
6	Complete application for new permit	At least 180 days prior to permit expiration
11	Information requested by Illinois EPA and copies of records required to be kept by this permit	Reasonable time
14	Notify Illinois EPA of planned physical alterations or additions	At least 15 days prior to planned change
16	Notify Illinois EPA of changes which may result in permit noncompliance	Within 15 days of change
17	Application for permit modification indicating permit is to be transferred	At least 90 days prior to transfer date
19	Submission of any information required in a compliance schedule	Within 14 days after each schedule date
20	Report to Illinois EPA any non-compliance which may endanger health or environment	
	By telephone	Within 24 hours after discovery
	In writing	Within 5 days after discovery
21	Report all other instances of noncompliance	At the time monitoring reports, as required by this permit, are submitted
34	Application for permit modification amending post-closure plan	60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred
35(a)	Adjust post-closure cost estimate for inflations	Within 60 days after anniversary date
35(b)	Revision of post-closure cost estimate	As needed, within 90 days of discovery of revision

1190100004

B-160R2

Page VII-4 of VII-4

36	Change in financial assurance mechanism for post-closure	As needed
37	Notify Illinois EPA of commencement of voluntary or involuntary bankruptcy proceedings	Within 10 days after commencement of proceeding

ATTACHMENT A

INSPECTION SCHEDULE & INSPECTION FORM

STATE ID # 1190100004

ILD006280606

Post-Closure Permit Log No. B-160R2

1190100004

B-160R2

Page A-1 of A-2

ATTACHMENT A**Inspection Schedule for Alton Steel, Inc.**

<u>Inspection Item</u>	<u>Frequency</u>	<u>Procedure</u>
1. Integrity of Cap and Cover Erosion Subsidence Run-on/Run-off Control Weed/Vegetation	Semi-Annual	Inspections must be conducted in accordance with Section E.6 of the approved permit application.
2. Security Devices Fence Locks Warning Signs	Semi-Annual	
3. Groundwater Monitoring Wells Cap Casings Concrete Collar	Semi-Annual	

1190100004

B-160R2

Page A-2 of A-2

**CONSOLIDATED WASTE PILE MONTHLY INSPECTION CHECKLIST
ALTON STEEL, INC.**

Inspector's Name	Date
Weather Conditions? Sunny/Cloudy/Windy/Rainy/Snow	Ground Conditions? Wet/Dry/Snow

GROUNDWATER MONITORING WELLS

NOTE: Any "No" answer requires explanation

	YES	NO	COMMENTS
Monitoring wells locked and in good condition?			
Guard posts or protective casings in good condition?			
Locks in good condition?			
Well ID numbers clearly marked?			
Concrete collars in good condition?			
Is the surveyed benchmark used to prepare the survey plat for the consolidated waste pile visible, accessible, clearly labeled and undisturbed?			

SECURITY DEVICES

	YES	NO	COMMENTS
Fence in good condition?			
Fence posts in good condition?			
Surface pads in good condition?			
Gates closed and locked upon arrival?			
Locks in good condition?			
Warning signs posted at each entrance?			

INTEGRITY OF CAP/COVER

NOTE: Any "Yes" answer requires explanation

	YES	NO	COMMENTS
Any ponding or seeps?			
Any cracks or erosion channels greater than 1 inch wide?			
Any subsidence?			
Any gas odor, vegetative or vector problems?			
Any signs of stressed vegetation or no vegetation?			
Any vegetation with tap roots (shrubs or trees) growing on the cover?			
Vegetation growth impedes inspection of the cap?			
Any significant quantity of materials in the run-off ditches?			

SUMMARY OF REPAIRS OR CORRECTIVE ACTION TAKEN AND DATE COMPLETED:

ATTACHMENT B
CONSTRUCTION CERTIFICATION FORM
STATE ID # 1190100004
ILD006280606
Post-Closure Permit Log No. B-160R2

1190100004

B-160R2

Page B-1 of B-2

When submitting certifications required by this post-closure permit for construction of any new unit, please complete the attached certification form. This will help to ensure that the submittal reaches its proper destination, and the certification will meet the regulatory requirements. Sending the Field Operations Section (FOS) copy directly to the FOS Office is acceptable as long as all copies have a completed copy of the enclosed form, and you advise the Permit Section, in writing, that a copy has been sent to the FOS Office.

A documentation report and as-built drawings (sealed and signed by an Illinois Professional Engineer) must be included with this certification. Information necessary to document the construction of the unit and to support the certification must be contained within the report. This report should include a thorough description of all construction data and drawings and should be formatted in a logical and orderly manner. The construction documentation report must contain at least the following items:

1. An introduction and summary which describes the scope and purpose of the project;
2. A description of all construction activities, including quality assurance and quality control;
3. As-built drawings of the unit and a description of any deviations from the plans and specifications approved in the permit;
4. A description of the test methods used and justification for any deviations from standard test methods;
5. A summary of test results, identification of any samples which did not meet the specifications, and the corrective action and retesting which was undertaken in response to any failing test results;
6. Any necessary information associated with construction of the unit to document that construction was in accordance with the plans and specifications approved by the permit;
7. Information specifically required by the permit; and
8. Any available photographs of the unit.

1190100004
B-160R2
Page B-2 of B-2

CONSTRUCTION CERTIFICATION

This statement is to be completed by both the responsible officer and the qualified professional engineer upon completion of construction in accordance with 35 Ill. Adm. Code 702.126. Submit one copy of the certification with original signatures and two additional copies. Forward these certification statements and any information required by the permit to the following address:

Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
1021 N. Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

FACILITY NAME: Alton Steel, Inc.

IEPA SITE CODE: LPC No. 1190100004

USEPA ID NO.: ILD006280606

PERMIT LOG NO. B-160R2

PERMIT (OR MODIFICATION) ISSUANCE DATE:

PERMIT CONDITION NO. REQUIRING CERTIFICATION:

The _____ has been constructed in accordance with the specifications in the post-closure permit application. Documentation that the construction was in accordance with the permit is contained in the enclosed report. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Owner/Operator

Name and Title

Signature of Registered P.E.

Name of Registered P.E. and
Illinois Registration Number
(P.E. Seal)

DATE

ATTACHMENT C

GROUNDWATER MONITORING PROGRAM ATTACHMENTS

STATE ID # 1190100004

ILD006280606

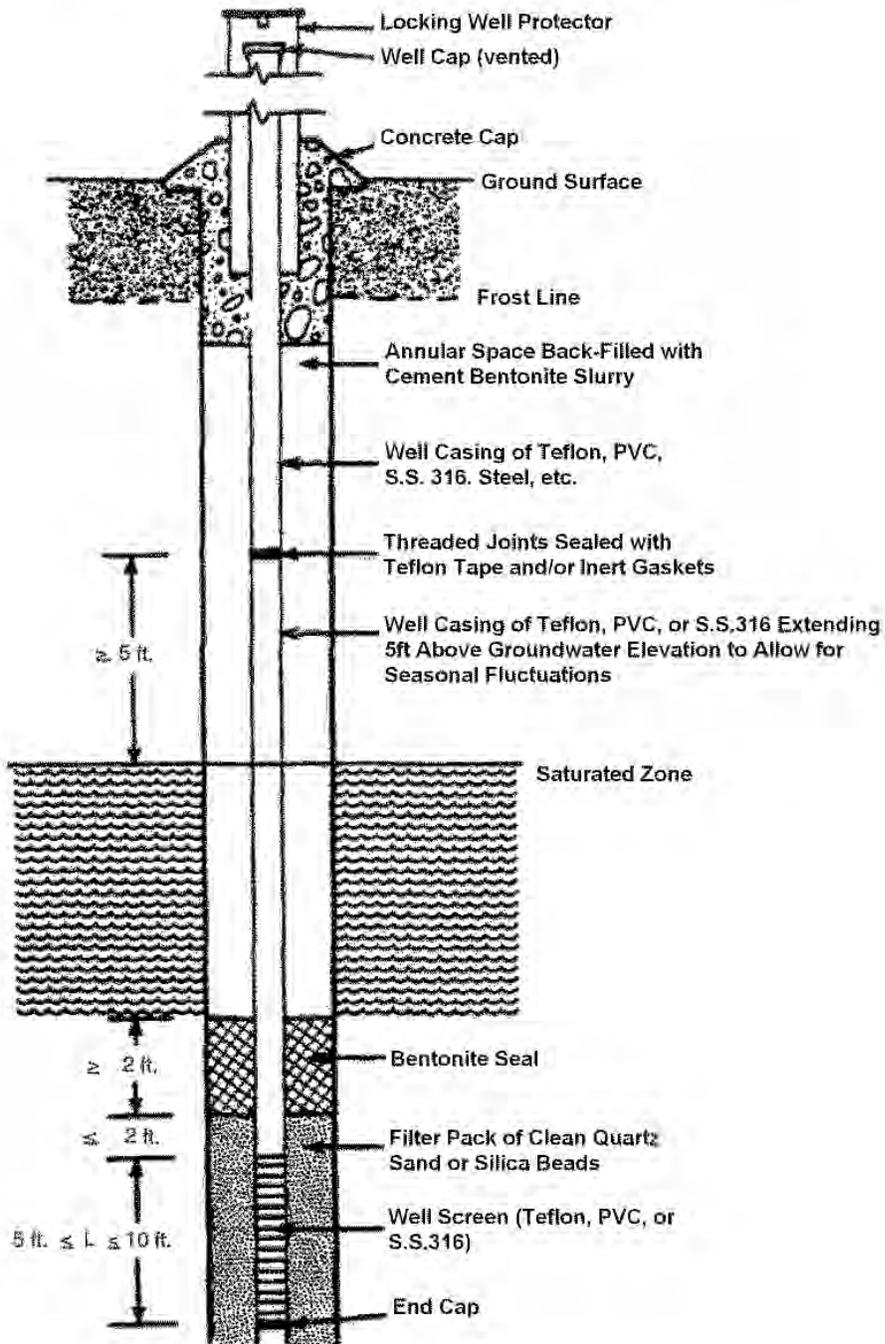
Post-Closure Permit Log No. B-160R2

1190100004

B-160R2

Page C-1 of C-9

Monitoring Well Diagram



1190100004
 B-160R2
 Page C-2 of C-9



Illinois Environmental Protection Agency

Well Completion Report

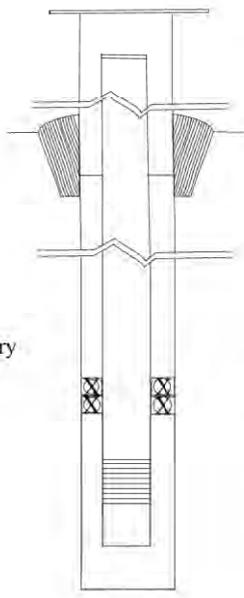
Site Number: _____ County: _____

Site Name: _____ Well #: _____
 State _____
 Plane Coordinate: X _____ Y _____ (or) Latitude: _____ Longitude: _____ Borehole #: _____

Surveyed by: _____ IL Registration #: _____
 Drilling Contractor: _____ Driller: _____
 Consulting Firm: _____ Geologist: _____
 Drilling Method: _____ Drilling Fluid (Type): _____
 Logged By: _____ Date Started: _____ Date Finished: _____
 Report Form Completed By: _____ Date: _____

ANNULAR SPACE DETAILS

Type of Surface Seal: _____
 Type of Annular Sealant: _____
 Installation Method: _____
 Setting Time: _____
 Type of Bentonite Seal - - Granular, Pellet, Slurry
 (Choose One)
 Installation Method: _____
 Setting Time: _____
 Type of Sand Pack: _____
 Grain Size: _____ (Sieve Size)
 Installation Method: _____
 Type of Backfill Material: _____
 (if applicable)
 Installation Method: _____



	Elevations (MSL)*	Depths (BGS)	(.01ft.)
	_____	_____	Top of Protective Casing
	_____	_____	Top of Riser Pipe
	_____	_____	Ground Surface
	_____	_____	Top of Annular Sealant
	_____	_____	Static Water Level (After Completion)
	_____	_____	Top of Seal
	_____	_____	Top of Sand Pack
	_____	_____	Top of Screen
	_____	_____	Bottom of Screen
	_____	_____	Bottom of Well
	_____	_____	Bottom of Borehole

* Referenced to a National Geodetic Datum

WELL CONSTRUCTION MATERIAL
 (Choose one type of material for each area)

Protective Casing	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Above W.T.	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Below W.T.	SS304, SS316, PTFE, PVC, or Other
Screen	SS304, SS316, PTFE, PVC, or Other

CASING MEASUREMENTS

Diameter of Borehole (inches)	
ID of Riser Pipe (inches)	
Protective Casing Length (feet)	
Riser Pipe Length (feet)	
Bottom of Screen to End Cap (feet)	
Screen Length (1" slot to last slot) (feet)	
Total Length of Casing (feet)	
Screen Slot Size **	

**Hand-Slotted Well Screens are Unacceptable

1190100004

B-160R2

Page C-5 of C-9

Formatting Requirements for the 01 Record of the Electronically Submitted Groundwater and Leachate Data (the 01 Record portion of the LPC-160 is included for example purposes)

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM

Page 1 of _____

RECORD CODE: L P C S M 0 1
TRANS CODE: A
REPORT DUE DATE: 36 M D / Y 41

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER: 9 _____ 18
MONITOR POINT NUMBER (see Instructions): 19 _____ 22
REGION _____ CO. _____
DATE COLLECTED: 23 M D / Y 28
FACILITY NAME _____

FOR IEPA USE ONLY
LAB: 29
DATE RECEIVED: 42 M D / Y 47

BACKGROUND SAMPLE (X) _____ 54
TIME COLLECTED (24 Hr. Clock): 55 11 M 58

UNABLE TO COLLECT SAMPLE (see Instructions) _____ 59

MONITOR POINT SAMPLED BY (see Instructions) _____ 60
OTHER (SPECIFY) _____

SAMPLE FIELD FILTERED — INORGANICS (X) _____ 61
ORGANICS (X) _____ 62

SAMPLE APPEARANCE: _____ 63

COLLECTOR COMMENTS: _____ 102
_____ 103

LAB COMMENTS: _____ 142
_____ 150
_____ 199

IL 532 1213
LPC 160 01/90

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$25,000 for each day the failure continues a fine up to \$1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

*Only Keypunch with Data in Column 35 or Columns 38-47

1190100004
B-160R2
Page C-6 of C-9

KEY:

<u>Spaces Numbered</u>	<u>Description</u>	<u>Format</u>
Spaces 1-7	Record Code	LPCSM01
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	G000
Spaces 23-28	Date Collected	000000
Space 29	Lab	
Spaces 30-35	Filler	
Spaces 36-41	Report Due Date	000000
Spaces 42-47	Date Received	000000
Spaces 48-53	Filler 2	
Space 54	Background Sample	
Spaces 55-58	Time Collected	0000
Space 59	Unable to Collect Sample	
Space 60	Monitoring Point Sampled By	
Space 61	Field Filtered – Inorganic	
Space 62	Field Filtered – Organic	
Spaces 63-102	Sample Appearance	
Spaces 103-142	Collector Comments	
Spaces 143-149	Filler 3	
Spaces 150-199	Lab Comments	

1190100004

B-160R2

Page C-8 of C-9

APPENDIX I MONITORING

SUBSET PARAMETERS

Groundwater Detection Monitoring Program

Antimony (total and dissolved)
Arsenic (total and dissolved)
Barium (total and dissolved)
Beryllium (total and dissolved)
Cadmium (total and dissolved)
Chromium (Hexavalent-total and dissolved)
Chromium (total and dissolved)
Lead (total and dissolved)
Mercury (total and dissolved)
Nickel (total and dissolved)
Selenium (total and dissolved)
Thallium (total and dissolved)
Zinc (total and dissolved)

1190100004

B-160R2

Page C-9 of C-9

APPENDIX I MONITORING**SUBSET PARAMETERS****Perimeter Groundwater Observation Monitoring Program**

Antimony (total and dissolved)	Benzo(a)anthracene
Arsenic (total and dissolved)	Benzo(a)pyrene
Barium (total and dissolved)	Benzo(b)fluoranthene
Beryllium (total and dissolved)	Chrysene
Cadmium (total and dissolved)	Dibenzo(a,h)anthracene
Chromium (Hexavalent-total and dissolved)	Fluoranthene
Chromium (total and dissolved)	Fluorene
Copper (total and dissolved)	Indeno(1,2,3-c,d)pyrene
Lead (total and dissolved)	Naphthalene
Manganese (total and dissolved)	Pyrene
Mercury (total and dissolved)	Acenaphthalene
Nickel (total and dissolved)	Benzo(g,h,i)perylene
Selenium (total and dissolved)	Phenanthrene
Silver (total and dissolved)	Total PCBs
Thallium (total and dissolved)	Arochlor 1016
Zinc (total and dissolved)	Arochlor 1221
Benzene	Arochlor 1232
Ethylbenzene	Arochlor 1242
Toluene	Arochlor 1248
Total Xylene	Arochlor 1254
Acenaphthene	Arochlor 1260
Anthracene	

ATTACHMENT D

APPROVED PERMIT APPLICATION IDENTIFICATION

STATE ID # 1190100004

ILD006280606

Post-Closure Permit Log No. B-160R2

1190100004

B-160R2

Page D-1

IDENTIFICATION OF APPROVED PERMIT APPLICATION

This permit is based on the information in the approved permit application. The approved permit application consists of the following documents:

<u>Document</u>	<u>Date</u>	<u>Date Received</u>
RCRA Post-Closure Permit Renewal Application	7/12/19	7/15/19
ADDITIONAL INFORMATION	3/31/20	4/6/20
ADDITIONAL INFORMATION	6/11/20	6/17/20
ADDITIONAL INFORMATION	8/26/20	9/1/20
ADDITIONAL INFORMATION	10/9/20	10/15/20
ADDITIONAL INFORMATION	9/24/21	9/27/21

ATTACHMENT E

CORRECTIVE ACTION, CLOSURE AND POST CLOSURE CARE

COST ESTIMATE SUMMARY

STATE ID # 1190100004

ILD006280606

Post-Closure Permit Log No. B-160R2

1190100004

B-160R2

Page E-1

CORRECTIVE ACTION, CLOSURE AND POST-CLOSURE CARE**COST ESTIMATE SUMMARY****Alton Steel, Inc.**

These estimates are based on using 2021 dollars and include the cost of: (1) activities carried out each year (i.e., annual costs); and (2) one-time or non-annual costs.

ACTIVITY	COST ESTIMATES			
	Annual Cost Per Year	Total Amount of Annual Costs	Non-Annual Costs	Total Costs w/Contingencies
Corrective Action	\$29,063	\$290,630	\$145,178	\$479,389*
Closure	\$0	\$0	\$0	\$0
Post Closure Care	\$16,508	\$495,240	\$30,560	\$578,380*
TOTAL	\$45,571	\$785,870	\$175,738	\$1,057,769

Notes:

Total Annual Costs = Annual Cost per Yr. x 30 years

10% Contingency applied

*See Special Condition V.B.1(a) and (b).

1190100004

B-160R2

Page F-1 of F-7

ATTACHMENT F**CHRONOLOGICAL SUMMARY OF RCRA CORRECTIVE ACTION ACTIVITIES****STATE ID # 1190100004****ILD006280606****Post-Closure Permit Log No. B-160R2**

The table below summarizes the corrective action activities completed to date at Alton Steel, Inc. (Illinois EPA ID No. 1190100004, USEPA ID No. ILD006280606) under its RCRA permit (Log No, B-160, B-160R, B-160R2 and associated modifications). This summary is based on a chronological presentation of the various letters sent by Illinois EPA.

Date of IEPA Letter and Log No.	Brief Description of Action
June 28, 1996 (B-160)	Issued a RCRA Post-Closure Permit for a hazardous waste landfill. This permit allows Laclede to operate the Consolidated Waste Pile as a CAMU with post-closure care and requires them to close two other HWMUs. It also requires the facility to conduct Corrective Action at eight SWMUs.
January 21, 1997 (B-160-M-1 and B-160-M-2)	Approved requests to modify the Part B Permit: (1) a Class 1 permit modification request to modify Conditions IV.D.2 and IV.G.1.a.ii.; and (2) a Class I permit modification request to extend the time limits for closure activities contained in Condition I.A.D.3 and I.B.E.1.
July 7, 1997 (B-160-CA-1)	Approved the RCRA Facility Investigation Phase I Work Plan, submitted on December 11, 1996 and March 21, 1997 with conditions and modifications. The work plan included an investigation plan for the following four units as required in Condition II.C.2 of the Part B Permit: (1) Existing WWTP area (SWMU 5); (2) Former Waste Oil Tank (SWMU 8); (3) Pre-RCRA Waste Piles (SWMU 12); and (4) Facility in General (SWMU 13).

1190100004

B-160R2

Page F-2 of F-7

Date of IEPA Letter and Log No.	Brief Description of Action
July 15, 1997 (B-160-M-3)	Approved a closure plan modification for the Rod Patenting Building, with conditions and modifications. The submittal proposed additional activities to further assess the integrity of the concrete floor and soil sampling/analysis plan to determine if underlying soils have been impacted. This request was reviewed as a Class I RCRA post-closure permit modification request.
January 9, 1998 (B-160-M-5)	Requested additional information regarding a Tier 3 evaluation submitted for the lead levels remaining at the Rod Patenting building.
June 10, 1998 (B-160-CA-1)	Determined that, subject to certain conditions: (1) closure of the Pelletizer Area has met the requirements of 35 Ill. Adm. Code 725.211 and 725.358; and (2) the corrective action activities at the Pre-RCRA waste pile have met the requirements of 35 Ill. Adm. Code 724.201. The conditions required for the Pelletizer are: (1) at least 3' of clean fill be placed over the area and property maintained; and (2) the access to the remaining material is restricted. The conditions required for the Pre-RCRA Waste Pile are: (1) at least 10' of clean fill be placed over the area and property maintained; (2) the access to the remaining material be restricted; and (3) a demonstration be made that groundwater has not been impacted at this unit.
June 18, 1999 (B-160-CA-4)	Approved Laclede's May 1, 1998 submittal regarding proposed installation of groundwater monitoring wells at WOT area with conditions and modifications. The letter also contained approval for the Phase I RFI report relative to groundwater at WOT.
June 28, 1999 (B-160-M-5)	Approved request to modify the language of Condition IV.G.2 (groundwater requirements) of the permit. Also modified the permit to include the established background concentrations for the total fraction of the listed indicator parameters, as listed in Permit Conditions IV.D.1, List G 1, and IV.B.2 has been modified to reflect the Class II status of the groundwater beneath the site.
July 8, 1999 (B-160-M-4)	Disapproved four submittals submitted by Laclede regarding RPB closure. Laclede's submittal included the soil sampling results at RPB and Tier 3 analysis (for lead) of the sampling results.
July 6, 2000 (B-160-CA-7)	Approved Laclede's "Safe Work Plan" for the Baghouse decommissioning work with conditions and modifications. This letter specifically identified the soil sampling required for the Scrap Aisle area near the Baghouses (SWMU 7).
July 7, 2000 (B-160-CA-6)	Approved Laclede's January 12, 2000 submittal with conditions and modifications. The submittal contained groundwater sampling results and a proposal for additional groundwater work at WOT.
August 1, 2000 (B-160-CA-8)	Approved July 6, 2000 letter regarding the cleanup for the EAF dust release at the Electric Melt Shop. This letter indicated that the closure of the Scrap Aisle near the Electric Melt Shop will be approved given that an institutional control and a warning layer of buried plastic in the vicinity of the Scrap Aisle area will be placed to restrict all access to the contaminated soil beneath.

1190100004

B-160R2

Page F-3 of F-7

Date of IEPA Letter and Log No.	Brief Description of Action
August 24, 2000 (B-160-M-4)	Responded to the four submittals made by Laclede regarding closure of Rod Patenting Building (RPB), which describes activities conducted at RPB. Additional soil sampling was required to determine the extent of contamination in the area of the RPB.
October 18, 2000 (B-160-CA-3)	Approved the RFI Phase I Report with conditions and modifications. This submittal summarized investigations conducted at Waste Oil Tank (WOT) and Wastewater Treatment Plant (WWTP). Required submittal of a Phase II Workplan for work at WWTP, WOT and Pre-RCRA Waste Pile.
November 2, 2000 (B-160)	Approved the closure of the Consolidated Waste Pile in accordance with 35 Ill. Adm. Code 724. Laclede's continuing post-closure care is required at this unit.
May 7, 2001 (B-160-CA-11)	Approved the request to modify the approved corrective action program at WOT with conditions and modifications. This submittal reported the results of additional work conducted at the WOT and requested to close the groundwater portion of the corrective action requirements for this unit. IEPA approved the work conducted at this unit; however, the request to close the groundwater portion of the project was not approved since the soil component is still under investigation.
July 10, 2001 (B-160-CA-10 and B-160-CA-13)	Approved two reports regarding the remedial activities conducted at the area around Baghouse Dust Accumulation Area (SWMU 7) with conditions and modifications. These reports summarized the cleanup and remedial activities conducted at SWMU 7 due to the K061 release from the collapsed duct at the Electric Melt Shop. For the remedial activities, only the Scrap Aisle Area portion of the impacted area was approved.
April 23, 2003 Settlement Agreement	A Settlement Agreement was signed between Alton Steel, Laclede Steel, Illinois EPA and U.S. EPA, as a part of the property transfer and Laclede's bankruptcy case to address the many environmental concerns at the facility. This Settlement Agreement is associated with Case No. 01-48321 filed in United States Bankruptcy Court for the Eastern District of Missouri, Eastern Division.
March 23, 2004 (B-160-CA-15)	Approved a workplan for cleaning and dismantling of the Waste Oil Tank (SWMU 8) with conditions and modifications. This workplan did not include any investigation plan at the unit.
June 18, 2004 (B-160-CA-16)	Approved Dowel Assembly Building (SWMU 9) Cleaning Report and determined that no further corrective action was required at this unit.
August 16, 2004 (B-160-CA-17)	Approved a workplan for soil investigation at Waste Oil Tank (SWMU 8) with conditions and modifications.
August 26, 2004 (B-160-CA-14)	Approved the Phase II Environmental Site Assessment (ESA) workplan for the facility with conditions and modifications. This was submitted in accordance with the Settlement Agreement. .

1190100004

B-160R2

Page F-4 of F-7

Date of IEPA Letter and Log No.	Brief Description of Action
September 13, 2004 (B-160, B-160-M-5, B-160-M-6 and B-160-CA-12)	Approved 6 submittals with conditions and modifications. In this letter, NFR was approved and an ELUC was required at both the Pelletizer Area (SWMU 3) and the Pre-RCRA Waste Pile (SWMU 12). In addition, at SWMU 2 (Rod Pat Building), the proposed Tier 3 evaluation was disapproved, requiring the facility to conduct additional investigation or remediation at SWMU 2.
September 16, 2004 (B-160-CA-14)	Made a minor modification to Condition 2 of Illinois EPA's August 26, 2004 letter.
September 17, 2004 (B-160-CA-18) (Financial)	Requested Associated Trust Company, where Alton Steel's Purchase Price Trust fund is managed, to release funds to Alton Steel and Tetra Tech EM for completing various remedial works required in the Settlement Agreement. (1) Removal of EAF dust from the Electric Melt Shop, and (2) cleanup of the Dowel Assembly Building.
February 24, 2005 (B-160-CA-21)	Approved submitted draft ELUC subject to conditions and modifications. Constitutes IEPA's no further action determination instrument that must be filed, provided terms and conditions of this letter are met for the Pelletizer Area (SWMU 3) and the Pre-RCRA Waste Pile (SWMU 12).
April 12, 2005 (B-160-CA-23) (Financial)	Requested Associated Trust Company, where Alton Steel's Purchase Price Trust fund is managed, to release funds to Alton Steel and Tetra Tech EM for completing remedial work required in the Settlement Agreement consisting of cleaning and dismantling the Waste Oil Tank.
May 13, 2005 (B-160-CA-24) (Financial)	Requested Associated Trust Company, where Alton Steel's Purchase Price Trust fund is managed, to release funds to Alton Steel, Tetra Tech EM, and Environmental Management Alternatives, Inc. for completing remedial work required in the Settlement Agreement consisting of inventorying, characterizing and disposing of containerized waste generated by Laclede prior to its closure.
August 11, 2005 (B-160-CA-26)	Approved a submittal re: closure/corrective action efforts at the Rod Pat Building (SWMU 2) with conditions and modifications. Actions included establishing engineered barriers in and around the building and conducting additional soil investigation in certain areas near the building.
August 30, 2005 (B-160-M-7)	Approved a Class 1* modification to change ownership from Laclede Steel to Alton Steel. The Corrective Action Section of the permit was also changed to reflect the conditions of the Settlement Agreement filed with the U.S. Bankruptcy Court, Case No. 01-48321.
October 19, 2005 (B-160-CA-27)	Approved recorded ELUCs for the Pelletizer Area (SWMU 3) and the Pre-RCRA Waste Pile (SWMU 12). This completes the closure of the Pelletizer Area, and the corrective actions at the Pre-RCRA Waste Pile.
November 1, 2005 (B-160-CA-28)	Approved report for the Waste Oil Tank Soil and Groundwater Investigation with conditions and modifications. The soil ingestion route is to be addressed by the use of an engineered barrier. Closure of the groundwater cannot be approved at this time.

1190100004

B-160R2

Page F-5 of F-7

Date of IEPA Letter and Log No.	Brief Description of Action
May 8, 2006 (B-160-CA-29)	Approved the Phase II Environmental Site Assessment (ESA) Report with conditions and modifications. ASI must submit a groundwater monitoring work plan to implement a groundwater monitoring system (6 new perimeter monitoring wells) and investigate groundwater exceedances found in the Phase II ESA. ASI may address the contamination identified during the Phase II ESA through IEPA's SRP.
May 25, 2006 (B-160-CA-30)	Approved submittal made by Shaw Environmental Group w/results of a supplemental soil investigation at the RPB. It was reviewed as a request to modify the approved RCRA corrective action program for the RPB, and was approved w/conds & mods. An engineered barrier and an institutional control must be established both inside the RPB and an area outside the building.
August 1, 2006 (B-160-CA-22)	Approved revised WOT Cleaning and Dismantling Report with conditions and modifications.
August 16, 2006 (B-160-CA-31)	Approved submittal regarding groundwater investigation & engineered barrier at WOT. NFA included. Approved draft ELUC. ELUC needs slight modification and then be recorded.
November 30, 2006 (B-160-CA-33)	Approved recorded institutional control/ELUC and NFA letter for WOT w/Madison County Recorder's Office.
March 2, 2007 (B-160-CA-32)	GAU approved the <u>Perimeter Well Groundwater Monitoring Work Plan</u> w/conditions & modifications. Work plan is for additional gw monitoring wells at the facility.
April 11, 2007 (B-160-CA-35)	Approved, with conditions and modifications, the Tier 3 TACO Risk Assessment for the soil around the Rod Pat Bldg. An ELUC and an engineered barrier are two of the requirements.
July 3, 2007 (B-160-CA-37)	Submittal was faxed lab results of 2001 wipe tests at the Rod Pat Bldg. (SWMU 2). The info was reviewed and the following are required: (1) an engineered barrier is required over the entire floor of the Rod Pat Bldg; (2) a description of the engineered barrier must be submitted; and (3) an ELUC must be recorded for the Rod Pat Bldg.
May 7, 2008 (B-160-CA-39)	Approved a layer of asphalt, engineered barrier, on top of the entire existing floor of the Rod Patenting Bldg. (RPB). Requires a draft ELUC for the RPB and the surrounding area.
August 1, 2008 (B-160-CA-38)	Approved Completion Report for the Placement of an Engineered Barrier at the Former WOT. Engineered barrier has been constructed and ELUC was previously filed. No further action is necessary at the WOT other than compliance with terms and conditions of this letter.
August 19, 2008 (B-160-CA-40)	Approved submittal regarding Baghouse Dust Accumulation Area (SWMU 7). Submittal discussed past soil investigations, proposed work plan for additional soil sampling and analysis, and stated an engineered barrier and an ELUC would be established.

1190100004

B-160R2

Page F-6 of F-7

Date of IEPA Letter and Log No.	Brief Description of Action
March 6, 2009 (B-160-CA-44)	Approved portions of report documenting installation of new wells and sampling of Perimeter GW Monitoring. Required the following: (1) additional information for renewal application; (2) quarterly GW monitoring and new list of parameters; and (3) additional information on the hydrogeology at the site.
March 31, 2009 (B-160-CA 43 and B-160-CA-46)	Approved RCRA Closure Certification Report and revised draft ELUC for Rod Patenting Building. An asphalt layer was installed on top of the concrete floor as an engineered barrier. Determined that no further corrective action is required. Letter constitutes IEPA's no further action determination instrument. ELUC must be filed and a copy submitted to IEPA.
May 28, 2009 (B-160-CA-36)	Approved the Phase II RFI Work Plan for SWMU 5 (WWTP) for additional soil, sediment, sludge, and surface water samples and analyses with conditions and modifications.
June 2, 2009 (B-160-CA-45)	Approved a submittal for SWMU 7 (Baghouse Dust Accumulation Area) containing (1) the results of the approved additional investigation at SWMU 7, (2) a revised proposal for an engineered barrier, and (3) a proposal for further soil investigation at the unit, with conditions and modifications.
June 2, 2009 (B -160-CA-47)	Approved the submittal of a certified copy of the ELUC filed with Madison County for SWU 2 (RPB) with conditions and modifications. No further action is necessary to complete RCRA closure of the Rod Patenting Building, other than compliance with the ELUC.
December 4, 2009 (B-160R)	Issued RCRA Post-Closure Renewal Permit to allow ASI to continue to provide PCC for a closed CWP CAMU and continue corrective action activities at eight SWMUs. Permit effective January 8, 2010 and expires January 8, 2020.
December 29, 2009 (B-160-CA-19)	Approved the submittal of the EMS Building Cleanup Final Report. The work included cleaning of dust and repairs in the electric melt shop and the baghouse areas.
December 29, 2009 (B-160-CA-25)	Approved the submittal of the report for the collection, inventory, and disposal of containerized waste left by Laclede Steel.
March 15, 2010 (B-160R-CA-1)	Approved (1) the results of an additional soil investigation at the Baghouse Dust Accumulation Area; (2) a proposed engineered barrier over a portion of the area; and (3) required the submittal of a draft ELUC to Illinois EPA for review and approval.
April 15, 2011 (B-160-CA-48, 49, 50 & 51)	Approved a Groundwater Investigation Plan with the following conditions and modifications: (1) the installation of two piezometers nests; (2) GW elevations must be collected quarterly for one year to determine GW flow, potentiometric maps must be constructed, GW elevations table must be provided; (3) provide GW investigation report within 90 days of the 4 th quarter GW elevations; (4) provide Class 1* modification to designate wells as piezometers.

1190100004

B-160R2

Page F-7 of F-7

Date of IEPA Letter and Log No.	Brief Description of Action
November 10, 2011 (B-160R-M-5)	Class 2 permit modification that approved the following: (1) the proposed Appendix I Subset Parameter List for the Perimeter GW Observation Monitoring Program; but did not approve the initial Background GW Quality values.
May 23, 2012 (B-160R-M-6)	Approved proposed interwell Background Groundwater Quality (BGQ) values for the Perimeter Groundwater Observation Monitoring Program.
November 28, 2012 (B-160R-CA-3)	Approved the installation of the engineered barrier and a draft ELUC for the Baghouse Dust Accumulation Area/SWMU 7. No further action required except to file ELUC with Madison County.
February 21, 2013 B-160R-CA-4)	Approved the ELUC filed with Madison County for the Baghouse Dust Accumulation Area and restated the requirements of the ELUC.
August 15, 2013 (B-160R-CA-5)	Approved GW Investigation Report and proposed additional investigation with conditions and modifications: (1) submit Class 1* modification to remove and add piezometers; (2) require sampling and logging during installation of new piezometer; (3) submit bore logs, construction diagrams and data sheets for new piezometer; and (4) submit final GW investigation report.
June 29, 2016 (B-160R-M-11)	Approved updated corrective action, closure and post-closure cost estimates and revised the permit to reflect approval of the closure of SWMU 7.
May 4, 2017 (B-160R-CA-2)	Approved the Phase II RCRA RFI report regarding SWMU 5 known as the Wastewater Treatment Plant Area and the request for additional investigation activities.

ATTACHMENT G

LEGAL DESCRIPTION and FACILITY MAP

STATE ID # 1190100004

ILD006280606

Post-Closure Permit Log No. B-160R2

1190100004

B-160R2

Page G-1 of G-3

ATTACHMENT G**ALTON STEEL PERMITTED FACILITY DESCRIPTION**

For this RCRA Post-Closure Permit, the Alton Steel, Inc. (ASI) facility is comprised of approximately 238 acres of property owned by ASI, with its principal gate at 5 Cut Street in Alton, Illinois. This attachment will further define the boundaries of the ASI facility covered by this permit.

The boundaries of ASI facility covered by this permit includes the contiguous land and structures, other appurtenances, and improvements on the land used for treating, storing, or disposing of hazardous waste. Adjacent properties that are owned by ASI and located outside the facility boundaries covered by this permit do not have any structures, appurtenances, or improvements used for treating, storing, or disposing of hazardous waste, and do not contain any solid waste management units required to be addressed by the corrective action provisions of this permit.

The ASI facility covered by this permit includes the following properties:

1. A 34.4 acre, more or less, piece of property that contains the two units referred to as the Consolidated Waste Pile (CWP) (SWMU 1) and the Solid Waste Landfill (SWMU 4). The CWP is approximately six (6) acres and is on top of the Solid Waste Landfill. The legal description of this piece of property is on page 2 of this attachment. This property is also shown on page 3 of this attachment.
2. The properties identified by the Madison County Assessor as Parcel Number 23-1-08-00-000-011 (197.76 acres more or less), Parcel Number 23-1-08-18-00-000-011.001 (2.83 acres), and Parcel Number 23-1-08-00-000-012 (1.84 acres more or less). These parcels are located west of Chessen Lane and make up the bulk of the past and present manufacturing areas. These parcels are shown on page 3 of this attachment.
3. A 1.5 acre, more or less, piece of ASI property that is a roadway connecting the two (2) aforementioned properties. Page 3 of this attachment shows the roadway connecting the two properties.

1190100004

B-160R2

Page G-2 of G-3

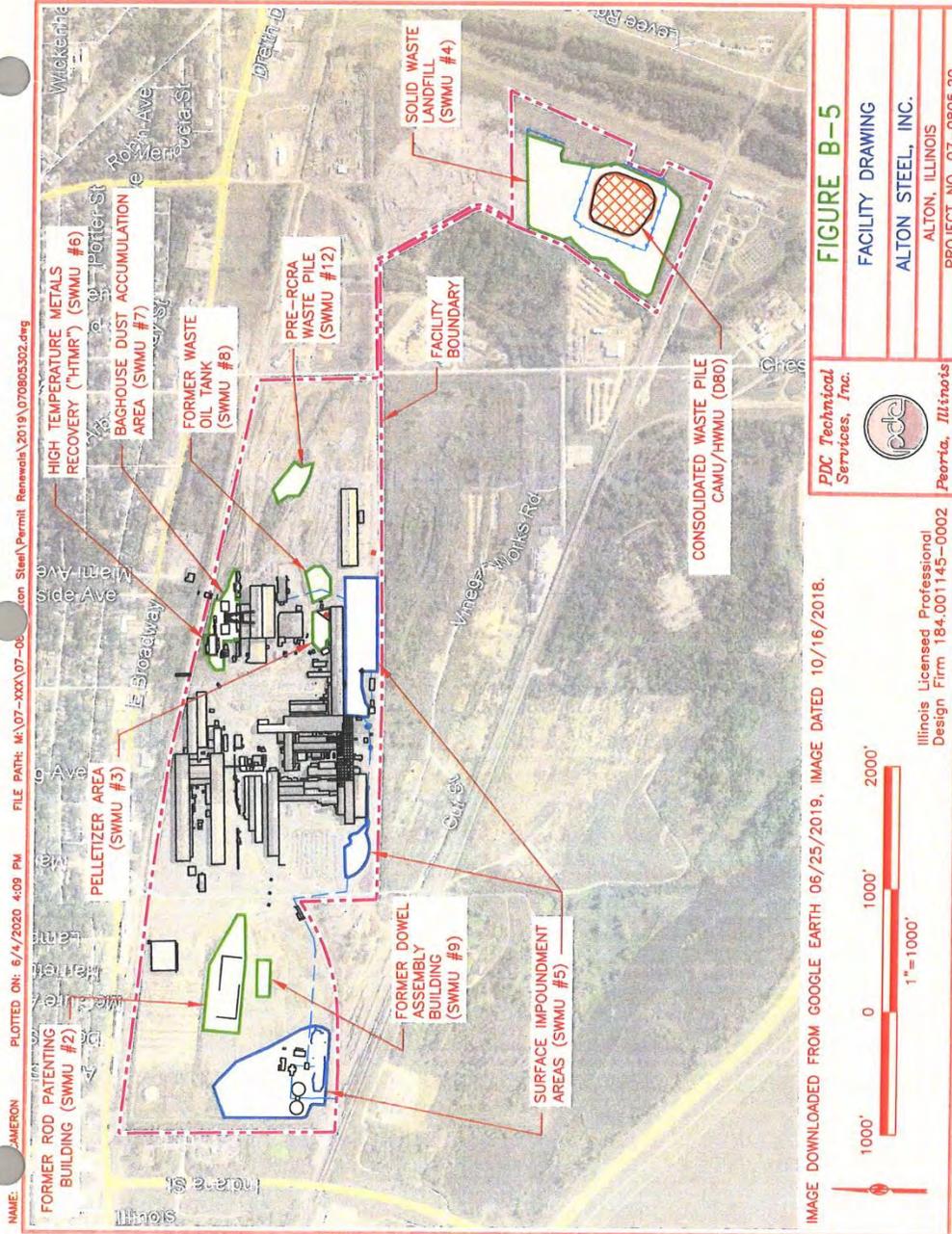
Legal Description - Laclede Steel Company Landfill Site (Solid Waste Landfill and Consolidated Waste Pile within that Landfill)- Alton, Illinois

A tract of land located in the Southwest quarter of Section 17 and the Northwest quarter of Section 20, Township 5 North, Range 9 West of the Third Principal Meridian, within the Corporate Limits of the City of Alton, Madison County, Illinois, more fully described as follows:

From the southeast corner of the Southwest quarter of Section 17 measure South 88 degrees 52 minutes West along the south line of said quarter section a distance of 634.65 feet to the west right-of-way line of the Wood River Drainage and Levee District and the Point of Beginning of this tract; thence South 22 degrees 27 minutes West from said beginning point along said west right-of-way line a distance of 770.6 feet; thence North 64 degrees 35 minutes West along said line a distance of 40.00 feet; thence South 25 degrees 25 minutes West along said line a distance of 150.00 feet; thence South 64 degrees 35 minutes East along said line a distance of 55.00 feet; thence South 22 degrees 07 minutes West along said line a distance of 358.27 feet to an intersection with the north right-of-way line of Norfolk and Western Railroad (formerly Illinois Terminal Railroad); thence westerly along said line a distance of 288.49 feet to an offset in said right-of-way line; thence northerly at right angles to the last described course a distance of 6.00 feet; thence westerly along said north right-of-way line a distance of 915.00 feet to an offset in said right-of-way line; thence northerly at right angles to the last described course a distance of 15.00 feet; thence westerly continuing along said north right-of-way line a distance of 31.00 feet to the center of Old Wood River; then North 44 degrees 00 minutes East a distance of 300.00 feet; thence North 71 degrees 00 minutes East a distance of 120.00 feet; thence North 27 degrees 00 minutes East a distance of 545.00 feet; thence NORTH a distance of 250.00 feet; thence easterly a distance of 125 feet more or less to the southwest corner of a tract of land leased to International Mill Service; thence North 88 degrees 40 minutes 23 seconds East along the south line of said lease tract and the easterly extension thereof a distance of 1150 feet, more or less to an intersection with the west right-of-way line of the Wood River Drainage and Levee District; thence South 21 degrees 24 minutes West along said right-of-way line a distance of 20 feet, more or less to an angle point; thence South 49 degrees 19 minutes West continuing along said right-of-way line a distance of 114.1 feet; thence South 22 degrees 27 minutes West continuing along said right-of-way line a distance of 247.05 feet to the Point of Beginning. Containing 34.4 acres, more or less.

Subject to conditions, restrictions and easements or record.

Facility Drawing



ATTACHMENT H

CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

STATE ID # 1190100004

ILD006280606

Post-Closure Permit Log No. B-160R2

1190100004

B-160R2

Page H-1

CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

Alton Steel Inc. (1190100004) – Madison County

USEPA ID: ILD010284248

RCRA Permit Log No. B-160R2

To meet the requirements of 35 Ill. Adm. Code 724.220, this statement is to be completed by both a responsible officer of the owner/operator (as defined in 35 Ill. Adm. Code 702.126) and by a qualified professional engineer upon completion of post-closure care of the UNIT NAME. Submit one copy of the certification with original signatures and two additional copies.

The hazardous waste management unit closed as a landfill, known as the UNIT NAME, has been closed in accordance with the specifications in the approved closure plan. Post-Closure care required for the UNIT NAME has been provided and completed in accordance with the RCRA Permit. A report documenting that required post-closure care have been carried out and completed in accordance with the approved post-closure care plan is attached.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS5/44(h))

Facility Name

Printed Name of Responsible Officer

Signature of Owner/Operator Date
Responsible Officer

Printed Title of Responsible Officer

Signature of Licensed P.E. Date

**Printed Name of Licensed P.E. and
Illinois License Number**

Mailing Address of P.E.:

Licensed P.E.'s Seal:



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

R 001138

217/524-3301

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

James P. Hrusovsky
Alton Steel, Inc.
5 Cut Street
Alton, IL. 62002

RE: 1190100004 – Madison County
Alton Steel, Inc.
ILD006280606
Log No. B-160R2
RCRA Administrative Record
Permit Approval

Dear Mr. Hrusovsky:

Enclosed is a final renewed Resource Conservation and Recovery Act (RCRA) Post-Closure Permit. The final permit decision is based on the administrative record contained in the Illinois EPA's files. The contents of the administrative record are described in Title 35 Illinois Administrative Code 705.211.

Please read the permit carefully. Failure to meet any portion of the permit could result in civil and/or criminal penalties. The only comments received on the Draft Renewed RCRA Post-Closure Permit were from for Alton Steel, Inc. Illinois EPA response to these comments and Permit are attached to this letter.

This action shall constitute Illinois EPA's final action on the subject submittal. The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Illinois Environmental Protection Act by filing a petition for a hearing within thirty-five (35) days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed ninety (90) days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

Illinois Environmental Protection Agency
Division of Legal Counsel
1021 North Grand Avenue East
Post Office Box 19276

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

Electronic Filing: Received, Clerk's Office 03/14/2024

1190100004-Alton Steel, Inc.

Log No. B-160R2

Page 2

R 001139

Springfield, IL 62794-9276

217/782-5544

For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk

State of Illinois Center

100 West Randolph, Suite 11 500

Chicago, IL 60601

312/814-3620

Any questions regarding groundwater issues, please contact Paula Stine at 217/557-8770. For all other question, please contact Kelly Huser at 217/524-3867.

Sincerely,

Jacqueline M. Cooperider, P.E.

Permit Section Manager

Bureau of Land

JMC: KDH:1190100004-RCRA-B160R2-Approval.docx

Attachment: Renewed RCRA Post-Closure Permit

cc: Norberto Gonzalez, U.S. EPA – Region V

Emily Keener, U.S. EPA – Region V

Matt Gill, Alton Steel, Inc.

ILLINOIS EPA'S RESPONSE TO COMMENTS
Alton Steel, Inc.
Draft RCRA Renewal Post-Closure Permit
Dated 06/12/23

R 001140

The responses below address comments received from Alton Steel, Inc. (Alton Steel) dated July 27, 2023, and received by Illinois EPA on August 2, 2023 pertaining to the draft renewal permit for Alton Steel, Inc. issued June 12, 2023.

Alton Steel Comment 1:

Page II-3 of II-9 (Section C.1.): This paragraph should be deleted. Pursuant to 35 IAC 724.217(a)(2)(B), the post-closure care period can only be extended past 30 years by Illinois Pollution Control Board action by an adjusted standard issue to protect human health and the environment (e.g. groundwater monitoring results indicate a potential for migration of hazardous wastes at levels that may be harmful to human health and the environment). Groundwater monitoring results at the site have not shown any significant migration of hazardous wastes. No Board action on an adjusted standard has been suggested or initiated.

The Draft Permit suggests that ongoing corrective action activities at the site are a reason to require extending the post-closure care period, however the corrective action activities are well outside of the area containing the CWP CAMU. Groundwater monitoring at the perimeter of the plant boundaries is on-going and would detect any migration of constituents of concern in the corrective action areas.

None of the codes or sections of the Act cited in the Draft Permit authorizes the Agency to extend the post-closure care period.

Illinois EPA Response:

Post-closure care at Alton Steel is being extended because a closed hazardous waste consolidated waste pile corrective action management unit (CWP CAMU) continues to manage a listed hazardous waste, electric arc furnace dust (K061), and presents an inherent risk to human health and the environment. These permit conditions were developed based on the following applicable regulations and reference materials:

- a. Title 35 Illinois Administrative Code (35 Ill. Adm. Code) Part 724 Section 724.131, Sections 724.210 through 724.220, and Section 724.410;
- b. 35 Ill. Adm. Code 703 Section 241(a)(2) and 35 Ill. Adm. Code 703 Appendix A.E.2;
- c. Sections 12(a), 21(n) and 39(g) of the Environmental Protection Act (Act);
- d. USEPA's Guideline for Evaluating Post-Closure Care Period, dated December 15, 2016;

- b. Association of State and Territorial Solid Waste Management Officials (ASTSWMO) Position Paper, dated July 20, 2022 “Post-Closure Care Beyond 30 Years at RCRA Subtitle C Facilities”; and
- c. Illinois EPA’s recent decisions regarding extending post-closure care at other RCRA facilities in Illinois.

Regulatory Authority for Extending Post-Closure Care

In addition to 35 Ill. Adm. Code 724.217(b)(2)(B), Illinois EPA may request the facility to submit a permit modification, in accordance with 724.218(d)(4) to amend the post-closure care plan allowed under 724.218(d)(2). Any modification submitted per request of Illinois EPA must meet the requirements of 35 Ill. Adm. Code 703 and 705. 35 Ill. Adm. Code 703.270 requires that the facility must submit a permit modification requested by the Illinois EPA or the Illinois EPA may initiate the permit modification.

35 Ill. Adm. Code 703, Appendix A.E.2 specifies that extending post-closure care is classified as a Class 2 Modification request. Therefore, it is appropriate for the Illinois EPA to require the facility to submit a request to extend the post-closure care period by a specified date in a compliance schedule of the RCRA Post-Closure Permit. Extending post-closure care is a necessary requirement to meet the terms of 35 Ill. Adm. Code Part 724. A minimum of 180-days prior to the end date of the initial 30 years of post-closure care period is the recommend timeline for a facility to submit a Class 2 Modification to the permit as it involves a public comment period before making the final decision.

Illinois EPA Justification for Extending Post-Closure Care

Hazardous waste, as long as it is present on site, is subject to long term stewardship requirements in accordance with Sections 12(a), 21(n) and 39(g) of the Act. Illinois EPA is required to establish permit conditions in RCRA permits to protect human health and the environment in perpetuity. Illinois EPA believes extending post-closure care at Alton Steel, Inc. meets these requirements. In addition, 35 Ill. Adm. Code 724 is applicable to all RCRA permitted facilities and has specific requirements regarding the post-closure care, the property use and extending the post-closure care period.

Maintenance of Facility

In accordance with Section 724.131, facilities must be designed, constructed, maintained and operated to minimize the possibility of any release of hazardous waste or hazardous waste constituents to air, soil, or surface water that *could* threaten human health or the environment.

Post-Closure Use of Property

Subsection 724.217(c)(1) prohibits any disturbance of the integrity of the final cover, liner, or any other components of the containment system or the function of the monitoring system unless it is necessary to protect and reduce the threat to human health and the environment.

Land Disposal Unit Specific Requirements for Closure/Post-Closure under Section 724.410
Section 724.410 lists specific closure/post-closure requirements for landfills. Subsection 724.410(a) specifies the minimum standards for construction of the final closure of a landfill, which includes, among other things, long-term minimization of liquid through the closed landfill and maintain the integrity and effectiveness of the landfill cover system.

Subsection 724.410 (b) requires the facility to maintain the integrity of the final cover and perform maintenance on the final cover. It also requires maintenance and monitoring of the groundwater monitoring system.

In addition, 35 Ill. Adm. Code 703.241(a)(2) (Establishing Permit Conditions) requires:

Each RCRA permit issued pursuant to Section 39(d) of the Environmental Protection Act [415 ILCS 5/39(d)] must contain terms and conditions that the Agency determines are necessary to adequately protect human health and the environment.

Section 39(d) of the Act specifies that all RCRA permits must contain terms and conditions, schedules of compliance, which may be required to accomplish the purpose and provisions of the Act.

In accordance with *USEPA Guideline for Evaluating Post-Closure Care Period, dated December 15, 2016*, because many hazardous wastes degrade slowly or do not degrade under containment in these units, the continued presence of hazardous waste in the unit (*i.e.*, any case other than clean closure) indicates the potential for unacceptable impacts on human health and the environment in the future if post-closure care is not maintained. For example, there are often uncertainties in whether controls will continue to function as planned and whether future activities will lead to unplanned exposures to human and environmental receptors. Even if there is no evidence of actual current releases from the facility, significant factors can change over time. As far as the thirty (30) year post-closure period goes, the regulations' identification of a default 30-year post-closure care period does **not** reflect a determination by USEPA that 30 years of post-closure care is necessarily sufficient to eliminate potential threats to human health and the environment in all cases.

Illinois EPA has made similar decisions to extend the post-closure care period at other hazardous waste management facilities in Illinois based on the regulatory citations provided above and the USEPA 2016 Guidance. In addition, ASTSWMO's July 20, 2022 position paper provided to the USEPA also supports such decision.

Alton Steel Comment 2:

Page II-3 of II-9 (Section C.2.): This paragraph should be deleted. The post-closure care period should not be extended another 30 years based on the comments on Section C.1. above.

Illinois EPA Response:

See Illinois EPA response to Comment 1.

Alton Steel Comment 3:

Page II-9 of II-9 (Section G.2.): This paragraph should be revised to state that costs are determined by multiplying annual costs by the higher of either 10 years or the remainder of the post-closure care period. In the past, the Agency has allowed the annual cost estimates to be reduced as the remaining post-closure period decreases, up to a minimum of 10 years. There is no underlying requirement in either the Illinois Administrative Code or the Act to determine costs based on 30 years when the post-closure period is less than 30 years.

Illinois EPA Response:

In accordance with 35 Ill. Adm. Code 724.244 and 724.217(a)(1), the post-closure cost estimate is determined by the annual post-closure cost multiplied by the number of years for post-closure care required under 724.217. For a hazardous waste landfill this is 30 years. Illinois EPA has reevaluated this requirement and determined that a reduction of financial assurance based solely on completing one year of post-closure care is not appropriate based on the Illinois EPA's response provided for Comment 1. A RCRA permitted facility shall maintain a 30-year total for the entire post-closure care period unless it has completed a post-closure activity or changed the frequency of an activity, that would cause a reduction in the post-closure cost estimate. At that point, the facility may submit a request for a reduced post-closure cost estimate to Illinois EPA. All facilities with a closed hazardous waste landfill will be required to maintain financial assurance for 30 years of post-closure care until such time the facility can certify completion of post-closure care. The Permittee must adjust the post-closure cost estimate for inflation each year.

Alton Steel Comment 4:

Page III-A-4 of III-A-11 (Section D.1.): Three indicator parameters were added to the semi-annual groundwater sampling: 4-methylphenol (p-Cresol), Polychlorinated biphenyls, and Total Petroleum Hydrocarbons (as motor oil Method PA-2). These parameters were previously only sampled annually, and have not shown any significant increases, therefore should remain sampled only annually.

Illinois EPA Response:

The final permit will be revised to sample 4-methylphenol (p-Cresol), Polychlorinated biphenyls, and Total Petroleum Hydrocarbons (as motor oil Method PA-2) annually. Conditions III-A.D.1, III-A.E.1, and III-A.E.4 have been revised to reflect annual sampling.

Alton Steel Comment 5:

Page IV-9 of IV-15 (Section F.1.): "...the Permittee must implement a Corrective Measures Program (CMP) for such SWMUs in general accordance with the procedures set forth in attachment E to this permit." Attachment E is a Cost Estimate Summary and does not contain any procedures with respect to a CMP. Please clarify where CMP procedures can be found.

Illinois EPA Response:

Attachment I, Corrective Measures Program Requirements, was inadvertently left out of the draft permit. Attachment I has been added to the final permit. The references in Conditions IV.F.1 and IV.F.3 have been changed to Attachment I.



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

R 001145

HAZARDOUS WASTE MANAGEMENT RCRA POST-CLOSURE PERMIT

1190100004 -- Madison County
Alton Steel, Inc.
ILD006280606
Permit Log No. B-160R2
RCRA Administrative Record

Issue Date:
Effective Date:
Expiration Date:

PERMITTEE

Alton Steel, Inc.
5 Cut Street
Alton, Illinois 62002

A RCRA Post-Closure permit is hereby granted to Alton Steel, Inc. (ASI) as Owner, Operator and Permittee pursuant to Section 39(d) of the Illinois Environmental Protection Act, and Title 35 Illinois Administrative Code Subtitle G (35 Ill. Adm. Code).

PERMITTED HAZARDOUS WASTE ACTIVITY

This permit requires ASI to conduct the following hazardous waste activities in accordance with the approved permit application and conditions of this permit.

Post-Closure Care of a closed landfill (CWP CAMU) (D80)

Groundwater Monitoring Detection Monitoring and Perimeter Observation Monitoring
Corrective Action for several Solid Waste Management Units (SWMUs)

This permit consists of the conditions contained herein and those in the sections and attachments in this permit. The Permittee must comply with all terms and conditions of this permit and the applicable regulations contained in 35 Ill. Adm. Code Parts 702, 703, 705 and 720 through 729 in effect on the effective date of this permit.

This permit is issued based on the information submitted in the approved permit application identified in Attachment D of this permit and any subsequent amendments. Any inaccuracies found in this information provided in the permit application may be grounds for the termination or modification of this permit (see 35 Ill. Adm. Code 702.187 and 702.186) and potential enforcement action (415 ILCS 5/44(h)).

Jacqueline M. Cooperider, P.E.
Permit Section Manager
Bureau of Land

JMC: KDH:1190100004-RCRA-B160R2-Approval.docx

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

RCRA POST-CLOSURE PERMIT

ISSUED TO

ALTON STEEL, INC.

ALTON, ILLINOIS

STATE ID # 1190100004

ILD006280606

LOG # B-160R2

**RCRA POST-CLOSURE PERMIT
B-160R2**

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGES</u>
I. General Facility Description	I-1
II. Post Closure Care	II-1 to II-9
III. Groundwater Detection Monitoring Program	III-1 to III-12
III-A Perimeter Groundwater Observation Monitoring Program	III-A-1 to III-A-11
IV. Corrective Action	IV-1 to IV-15
V. Special Conditions	V-1
VI. Standard Conditions for Post-Closure Care	VI-1 to VI-8
VII. Reporting and Notification Requirements	VII-1 to VII-4

LIST OF ATTACHMENTS

Attachment A -- Inspection Schedule & Inspection Form	A-1 to A-2
Attachment B -- Construction Certification Form	B-1 to B-2
Attachment C -- Groundwater Monitoring Program Attachments	C-1 to C-9
Attachment D -- Approved Permit Application Identification	D-1
Attachment E -- Corrective Action and Post-Closure Care Cost Estimate Summary	E-1
Attachment F -- Chronological Summary of RCRA Corrective Action Activities	F-1 to F-7
Attachment G -- Legal Description and Facility Map	G-1 to G-3
Attachment H -- Certification of Completion of Post-Closure Care	H-1
Attachment I -- Corrective Measures Program Requirements	I-1 to I-11

SECTION I: GENERAL FACILITY DESCRIPTION

1. OWNER AND OPERATOR

The facility is owned and operated by Alton Steel, Inc., herein referred to as the "Permittee." (35 Ill. Adm. Code 702.121, 702.123 & 703.181)

Alton Steel, Inc.
5 Cut Street
Alton, Illinois 62002

2. LOCATION

1. Location of Facility

The Alton Steel, Inc. facility is in Alton, Illinois. Alton Steel owns approximately 400 acres at this location with approximately 238 acres devoted to the management of hazardous waste. The Alton Steel, Inc. facility is located at:

Alton Steel, Inc.
5 Cut Street
Alton, Illinois 62002

The facility contact is the Director of Environmental Compliance. They may be reached at 618-374-3570.

2. Facility Map

The location of the closed Consolidated Waste Pile (CWP CAMU) (D80) within the ASI facility is shown on the facility drawing in Attachment G of this permit.

3. DESCRIPTION OF HAZARDOUS WASTE MANAGEMENT ACTIVITIES

As part of its steel manufacturing process, ASI generates electric arc furnace dust which is a listed hazardous waste (K061). ASI is a generator of K061 and recycles this waste at an off-site recycling facility in which several of the metals in the dust are recovered, primarily zinc.

There were three hazardous waste management units at the Laclede facility that managed the K061 dust. These units were identified as the CWP CAMU, Rod Patenting Building, and Pelletizer Area. Under conditions of the RCRA Post-Closure permit, hazardous waste, including contaminated soil, has been removed from the Pelletizer Area and Rod Patenting Building and placed in the CWP CAMU. The CWP CAMU was capped and closed in accordance with Laclede's RCRA Post-Closure permit on December 22, 1997.

SECTION II: POST-CLOSURE CARE

A. SUMMARY

For this RCRA Post-Closure permit, the ASI facility is comprised of approximately 238 acres of property owned by ASI, with its principal gate at 5 Cut Street in Alton, Illinois. Attachment G of this permit defines the boundaries of the ASI facility covered by this permit. The boundaries of the permitted facility include the contiguous land and structures, other appurtenances, and improvements on the land used for treating, storing, or disposing of hazardous waste. Adjacent properties that are owned by ASI and located outside the facility boundaries covered by this permit do not have any structures, appurtenances, or improvements used for treating, storing, or disposing of hazardous waste, and do not contain any Solid Waste Management Units (SWMUs) required to be addressed by the corrective action provisions of this permit.

For the purpose of implementing remedies under 35 Illinois Administrative Code (Ill. Adm. Code) 724.201, the Illinois EPA is designating the Consolidated Waste Pile as a Corrective Action Management Unit (CWP CAMU), as defined in 35 Ill. Adm. Code 720.110. The operation of the CWP CAMU must be conducted in accordance with the requirements contained in this section and the regulations contained in 35 Ill. Adm. Code 724, Subpart S.

Hazardous waste management units where waste is left in place must receive post-closure care for at least 30 years after the date the certification of closure is approved in writing by the Illinois EPA's Division of Land Pollution Control (DLPC). The CWP CAMU was certified closed on December 22, 1997. Activities required during post-closure care include but are not limited to (1) maintenance of final cover, (2) monitoring of the groundwater, (3) providing financial assurance for post-closure activities pursuant to 35 Ill. Adm. Code Part 724.

B. UNIT IDENTIFICATION

1. The Permittee shall provide post-closure care for the following hazardous waste management unit, as described in the approved permit application, subject to the terms and conditions of this permit:

Unit Designation	Capacity	Surface Area Dimensions of Unit (Acres)	Description of Waste and Hazardous Waste No.
Consolidated Waste Pile (CWP CAMU) (D80) Closed	90,000 Cubic Yards	6 acres (approximate)	Emission control dust/sludge from the primary production of steel in electric furnaces (K061)

2. Additional waste from the Rod Patenting Building, the Pelletizer Area, and certain on-site SWMUs that contained waste similar in composition to the electric arc furnace dust were deposited in the CWP CAMU.
3. The location and horizontal extent of the closed CWP CAMU is identified in Attachment G of this permit. The lowest elevations of the CWP CAMU ranges from 424.1 ft msl (mean sea level) and 431.5 ft msl. The highest elevation of the final cover system for the closed CWP CAMU is at or below 466 ft msl. The slope of the final cover on the CWP CAMU was constructed at a 4:1 slope.
4. The closed CWP CAMU is located on top of a portion of the Solid Waste Landfill (SWMU #4) and does not have an engineered liner or leachate collection system. The CWP CAMU is underlain by approximately 10-20 feet of "Fill/Slag" overlaying 15-20 feet of silty clay.
5. The cover system on top of the closed CWP CAMU is constructed of the following layers, described from the top to bottom:
 - 6 inches of topsoil
 - 30 inches of borrow soil
 - HDPE geonet between two layers of non-woven geotextile filter fabric
 - 3 feet of compacted clay soil
6. A survey plat indicating the location and dimensions of the closed CWP CAMU with respect to permanently surveyed benchmarks was prepared and certified by a professional land surveyor. The notes on the Plat of Survey state the owner's and operator's obligation to restrict disturbance of the closed CWP CAMU in accordance with the applicable 35 Ill. Adm. Code 724, Subpart G regulations. These notes state:
 - a. The waste materials contained in the CWP CAMU are considered RCRA hazardous wastes. They include, slag, scrap steel, electric arc furnace (EAF) baghouse dust, and materials or debris impacted by EAF dust that were generated during closure activities. The EAF dust is a listed hazardous waste (K061).
 - b. Any material removed from the CWP CAMU during future activities must be managed as a hazardous waste in accordance with 35 Ill. Adm. Code 724 Subtitle G: Waste Disposal.
 - c. The use of this area is restricted.

1190100004-Alton Steel Inc.
Log No. B-160R2
Page II-3 of II-9
R 001151

7. The Plat of Survey (PIN 23-1-08-20-00-000-003) and Drawing A1-439F were filed with the Madison County Recorder's Office in Edwardsville, IL on March 18, 1998. The record data is Document No. 2363-8, Book 4215, Pages 0013-0018.

The Plat of Survey was attached to the deed to the property and serves as an instrument which is normally examined during a title search that will in perpetuity notify any potential purchaser of the property that:

- a) The waste material in the CWP CAMU is considered a RCRA hazardous waste;
 - b) Use of the area is restricted; and
 - c) A survey plat and record of the type, location and quantity of waste material in the CWP CAMU was filed with the Illinois EPA and the County Recorder.
8. The Permittee shall develop a scaled topographic drawing of each unit identified in Condition II.B.1 to determine the vertical and horizontal dimensions of each unit at least every 10 years. If a topographic drawing of a unit has not been developed in the 10 years prior to the date of this permit, it must be developed and submitted within 60 days of the effective date of the permit and every 10 years thereafter. The topographic drawings shall be maintained as part of the operating record.

Each scaled topographic drawing shall be compared to the permitted dimensions for that unit. If a difference in elevation of more than 2 feet exists at any location on the unit, the Permittee shall notify the Illinois EPA Bureau of Land Permit Section of this finding within 30 days of the most recent survey. The notification must include the most recent survey and scale drawings of the permitted dimension for the unit, a discussion of why the difference exists, and a plan that includes a schedule for repairing the cover system to its permitted dimensions. Repairs to the cover system, and/or its components, may be considered a permit modification.

C. POST-CLOSURE CARE PERIOD

1. The post-closure care period for the CWP CAMU began on December 22, 1997, the date of completion of closure of the unit listed in Condition II.B.1 of this permit. December 22, 2027 marks the minimum requirement of thirty (30) years after the date post-closure care began.

Hazardous waste remains in the CWP CAMU, and corrective action activities are ongoing at the site. Due to these conditions and pursuant to 35 Ill. Adm. Code 703.241, 724.131, 724.410 as well as Section 12(a), 21(n), and 39(g) of the Environmental Protection Act, the Permittee must continue to provide post-closure care for the CWP CAMU beyond the initial 30 years of post-closure care (i.e. December 22, 2027). Post-closure care shall be extended for an additional 30 years

or until such time as no unacceptable risks to human health and the environment are present at the CWP CAMU, as determined by the Illinois EPA.

2. On or prior to December 22, 2026 (1-year before December 22, 2027), the Permittee must submit a Class 2 Permit Modification request to Illinois EPA in accordance with 35 Ill. Adm. Code 703.241(a)(2) and 35 Ill. Adm. Code 703 Appendix A.E.2 to extend the post-closure care of the CWP CAMU for an additional thirty (30) years or until such time as no unacceptable risks to human health and the environment are present at the CWP CAMU, as determined by Illinois EPA, as required in Condition II.C.1 above.
3. The Illinois EPA may include restrictions upon the future use of the site if necessary, to protect public health and the environment, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment. After administrative and judicial challenges to such restrictions have been exhausted, the Illinois EPA shall file such restrictions of record in the Office of the Recorder of the county in which the hazardous waste, remaining in place, is located.
4. The Permittee shall not allow the property where the unit identified in Condition II.B.1 is located to be used in a way that could disturb the integrity of the final cover, liners, any components of the containment system, or function of the facility's monitoring systems unless the Illinois EPA finds, by way of a permit modification, that such use is necessary for either of the following reasons:
 - a) It is necessary to the proposed use of the property, and will not increase the potential hazard to the public health or the environment, or
 - b) It is necessary to reduce a threat to human health or the environment.
5. The Illinois EPA may require the continuation of any of the security requirements during part or all of the post-closure period.

D. INSPECTIONS

1. The Permittee shall inspect the components, structures, and equipment at the site in accordance with the inspection schedule in Attachment A and the conditions in this permit. The form in Attachment A shall be used to document inspections and any repairs done at the facility.
2. The Permittee shall inspect the CWP CAMU at least semi-annually and within 72 hours of any rainfall event of 3 or more inches in a 24-hour period for evidence of any of the following:

- a. Deterioration, malfunctions, or improper operation of run-on and run-off systems.
 - b. The deterioration of the cover systems.
3. Appropriate corrective action shall be taken if problems, including erosion, blockage of the channels, slope failure, etc. are observed at any time. If corrective action is taken, the area involved shall be reinspected one month following completion of the work to ensure the corrective actions have adequately corrected the problem(s) noted.
 4. The Permittee shall inspect the benchmarks used to identify the location of the CWP CAMU within 60 days of the effective date of this permit and thereafter in accordance with the Inspection Schedule in the approved permit application. Benchmarks shall be repaired and resurveyed whenever an inspection of the benchmarks indicates they have been damaged. The inspection results, repairs, and surveys of the benchmarks shall be maintained as part of the operating record.
 5. Results of all inspections and a description of any remedial actions taken shall be documented in the Repair Log in the Operating Record and maintained for the entire post-closure period.

E. MONITORING, MAINTENANCE, AND RECORDKEEPING

1. The Permittee shall keep and maintain a written operating record that includes all the records, reports, notification, monitoring data, testing or analytical data, and corrective action data required by 35 Ill. Adm. Code 724.173 and the conditions in this permit, for the entirety of the post-closure care period. The operating record shall be kept onsite at the facility and available for Illinois EPA review.
2. The Permittee shall maintain and monitor the groundwater monitoring system and comply with the other applicable regulations of 35 Ill. Adm. Code 724 Subpart F (Groundwater Protection) during the post-closure period.
3. The Permittee shall maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, and other events.
4. The Permittee shall prevent run-on from eroding or otherwise damaging the final cover. At a minimum the run-on control system shall be capable of preventing flow onto the CWP CAMU during peak discharge from a 25-year storm event.
5. The Permittee shall prevent run-off from eroding or otherwise damaging the final cover. At a minimum, the run-off management system shall be capable of collecting and controlling the volume of water resulting from a 24-hour, 25-year storm event.

6. The Permittee shall comply with the requirements for landfills described in the approved permit application and the conditions of this permit. Corrective action shall be taken if ponding has been observed, if cracks or erosion channels greater than one inch wide have formed and if gas, odor, vegetative or vector problems arise, if leachate popouts or seeps are present, or if vegetation with tap roots is found to be growing in areas which are not designed to accommodate such vegetation.

F. NOTICES AND CERTIFICATION

1. A request to change the Post-Closure Plan must be submitted in the form of a permit modification request. This request must be in accordance with applicable requirements of 35 Ill. Adm. Code Parts 702, 703 and 724 and must include a copy of the amended Post-Closure Plan for approval by the Illinois EPA.
2. If the Permittee or any subsequent owner or operator of the land upon which the CWP CAMU listed in Condition II.B.1 above is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, or contaminated soils, they must request a modification to this RCRA Post-Closure permit in accordance with the applicable requirements in 35 Ill. Adm. Code, Parts 703, 705 and 724. The owner or operator must at a minimum demonstrate that the removal of hazardous wastes will satisfy the criteria of 35 Ill. Adm. Code 724.217(c).
3. If the Permittee seeks to demonstrate that they should be allowed to end the post-closure care period (e.g., all waste has been removed, and leachate and groundwater monitoring results do not indicate a potential for migration of waste at levels which may be harmful to human health and the environment), the Permittee shall submit an Environmental Covenant (EC) for the future land use and management of the property on which the CWP CAMU is located. The EC shall be submitted at least one year prior to the date the Permittee expects to submit the Certification of Completion of Post-Closure.

Pursuant to 39(g) of the Environmental Protection Act, the purpose of the EC is to place restrictions upon the future use of the site necessary to protect public health and the environment, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment. The EC shall be pursuant to a consent order between the Permittee and the State of Illinois and in the form and format specified by Illinois EPA.

4. If the Permittee seeks to exit post-closure care, the Permittee shall submit the following documents to the Illinois EPA Bureau of Land Permit Section by registered mail no later than sixty (60) days after completion of the established post-closure care period for the CWP CAMU listed in Condition II.B.1 of this permit.

- a. A properly completed Certification of Completion of Post-Closure Form provided in Appendix H to this permit that states the post-closure care for the CWP CAMU was performed in accordance with the specifications in the approved Post-Closure Plan in the approved permit application and the conditions in this permit. The owner, operator and a qualified Professional Engineer registered in the State of Illinois must sign the Certification Form.
- b. A Post-Closure Documentation Report that documents the post-closure conditions and activities at the facility during the post-closure period. The Post-Closure Documentation Report must include the following:
 - i. Background information about the facility and the unit subject to the post-closure certification. Describe the facility and RCRA permit history of the unit.
 - ii. A detailed description of the unit subject to the post-closure care certification that includes:
 1. The unit's design, including liner system, sumps, leachate collection, leak detection, & gas systems, and cover system including stormwater run-off & run-on controls. Provide this information in narrative form, and scale drawings.
 2. How it was operated, and how it was closed.
 3. When it was operated, and when it was closed.
 4. The wastes disposed of in the unit (including waste codes).
 5. The amount of leachate pumped each year from each sump in the unit's leachate collection and leak detection systems during the post-closure period. Provide this information in both a table and graphically. Demonstrate the unit has met the requirements of 35 Ill. Adm. Code 724.410(b)(2).
 6. A scaled map showing location of the unit within the facility. Include all wells in the groundwater monitoring system for the unit on this map.
 7. Scaled drawings (plan view and cross-section) showing the horizontal and vertical extent of the unit at the time it was certified closed, every 10 years after it was closed, and the time the Post-Closure Documentation Report is submitted (e.g., at the end of the post-closure period). The scale of the plan view should be 1 inch =

200 feet. All design components of the unit must be shown on the drawings.

When the drawings are compared; if difference in elevation of more than 2 feet exists at any location on the unit, the Post-Closure Documentation Report needs to indicate the reason for the change in elevation, and why it would not be a concern in the future.

8. A survey of the unit when it was certified closed and at the time the Post-Closure Documentation Report is submitted (e.g., when the post-closure period ended). The surveys must be certified by a professional land surveyor.
 - iii. A general discussion on the inspection and maintenance of, and repairs to, the cover system, leachate collection, leak detection, gas collection, stormwater run-off & run-on controls, and wells in the groundwater monitoring system. Describe any problems and/or repairs to these systems that were addressed over the post-closure care period in chronological order. Show the locations of each of the repairs to these systems during post-closure care on a scaled drawing of the unit.
 - iv. A discussion on the groundwater monitoring program, including any corrective measures that were completed during the post-closure care period and a summary of the three (3) most recent years of groundwater data. Identify the horizontal and vertical extent of any groundwater contaminant plume from the unit that existed at the beginning of the post-closure period and every 5 years after that. The facility must have complied with all requirements of 35 Ill. Adm. Code 620 and 724 in order to certify completion of post-closure care activities.
 - v. Colored photos of unit(s) at post-closure completion. Photo documentation of the unit should include at least one aerial(satellite) photo and photos of all design features of the unit.
 - vi. Completed Illinois EPA LPC-PA23 and 39i Forms.
- c. Documentation that the EC required by Condition II.F.3 above has been placed on the deed to the property on which the CWP CAMU is located has been filed with the County Recorder's Office.

5. The certification of completion of post-closure care shall not be approved by the Illinois EPA until the Permittee demonstrated that the EC required by Condition II.F.3 above has been properly filed with the appropriate governmental office (e.g., State of Illinois, or County Recorder's Office).
6. Within sixty (60) days after receiving certifications from the owner or operator and a qualified professional engineer that the post-closure care period has been completed for the CWP CAMU listed in Condition II.B.1 of this permit in accordance with the approved Post-Closure Plan, the Illinois EPA shall notify the owner or operator that it is no longer required to maintain financial assurance for post-closure care of that unit unless the Illinois EPA determines that post-closure care has not been in accordance with the approved Post-Closure Plan. The Illinois EPA shall provide the owner or operator with a detailed written statement of any such determination that post-closure care has not been in accordance with the approved Post-Closure Plan.

G. FINANCIAL ASSURANCE

1. The Permittee shall maintain financial assurance for post-closure care of the closed CWP CAMU listed in Condition II.B.1 of this permit of at least the amount of \$578,380 (2021 dollars) until such time as it is required to be modified pursuant to Special Condition V.B.1.a. A summary of the cost estimate for post-closure care of this facility is shown in Attachment E to this permit. The financial assurance maintained by the facility shall be sufficient to meet the requirements of 35 Ill. Adm. Code 724 Subpart H.
2. Post-closure care costs are determined by multiplying annual costs by the full 30-year post-closure care period.

SECTION III: GROUNDWATER DETECTION MONITORING PROGRAM

A. SUMMARY

Groundwater parameters monitored in the Uppermost Aquifer below the CWP CAMU indicate that, at the present time, no groundwater impacts have occurred. Therefore, a Groundwater Detection Monitoring Program meeting the requirements of 35 Ill. Adm. Code 724.198 shall be implemented at the facility.

The ASI facility has six (6) existing wells to monitor groundwater in the Upper Silty Clay Unit (Uppermost Aquifer) and three (3) piezometers to monitor groundwater elevation in the Lower Sand and Gravel Unit that are utilized for the Groundwater Detection Monitoring Program. The Groundwater Detection Monitoring Program will therefore consist of two (2) upgradient wells, four (4) Point of Compliance wells and three (3) piezometers for determining groundwater surface elevation only.

B. DEFINITIONS

As used herein, the words or phrases set forth below shall have the following definitions:

1. "Uppermost Aquifer" refers to the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically connected with the aquifer in the vicinity of the facility. The Uppermost Aquifer in the vicinity of the Alton Steel facility consists of silty clay deposits and has been designated as 35 Ill. Adm. Code 620, Class II Groundwater.
2. "Permit" refers to the RCRA Post-Closure permit.
3. "ASI" shall refer to Alton Steel, Inc.
4. "Site" or "Facility" shall refer to the location as defined in Section I.A of the Permit.
5. "Permittee" refers to the Facility.
6. "Illinois EPA" refers to the Illinois Environmental Protection Agency.
7. "RCRA" shall mean the Resource Conservation and Recovery Act as defined by Section 3.425 of the Environmental Protection Act, 415 ILCS 5/3.90(2007).
8. "Point of Compliance" refers to the vertical surface located at the hydraulically downgradient limits of the CWP CAMU extending down into the Uppermost Aquifer underlying the regulated unit.

9. "Ft-bgs" refers to the number of feet below the ground surface.
10. "Ft-MSL" refers to the elevation referenced to mean sea level datum.
11. "Detected" shall mean a concentration equal to or above the PQL listed in the latest version of USEPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)" for the applicable analytical methods specified in the approved Sampling and Analysis Plan, which are incorporated by reference in Condition II.H of the Permit.
12. "Stick-up" refers to the height of the referenced survey datum. This point is determined within ± 0.01 foot in relation to mean sea level, which in turn is established by reference to an established National Geodetic Vertical Datum.

C. IMPLEMENTATION

1. The Permittee shall implement the Groundwater Detection Monitoring Program, upon the effective date of this Permit. On that date, the groundwater monitoring requirements set forth in this Permit shall supersede those previously established.
2. The Permittee shall carry out the detection monitoring specified in this Permit on the groundwater beneath the ASI CWP CAMU in Alton, Illinois. The Uppermost Aquifer beneath the CWP CAMU has been identified as the silty clay layer and is underlain by unconsolidated sediment layers consisting of sand, and sand and gravel extending to a lower confining layer within the bedrock. For the purpose of this Permit and in accordance with 35 Ill. Adm. Code 620 regulations, the Uppermost Aquifer has been designated a Class II: General Resource Groundwater.
3. The Point of Compliance is delineated by the wells identified as the Point of Compliance wells in Condition III.D.1.

D. WELL LOCATIONS AND CONSTRUCTION

1. The Permittee shall maintain the groundwater monitoring wells and piezometers at the locations identified in the table below to allow for the collection of groundwater samples and elevations from the Uppermost Aquifer and groundwater elevations from the Lower Sand and Gravel Unit. The location of these wells and piezometers are specified in Section C of the approved permit application.

IEPA Well No.	Facility Well No.	Well Depth (Ft-bgs)	Well Depth Elevation (Ft MSL)	Well Screen Interval (Ft-bgs)
---------------------	-------------------------	---------------------------	-------------------------------------	-------------------------------------

Upgradient Well

R005	MW-5A	15.3	408.63	5.85-15.30
G006	MW-6	35	398.66	25-35

Point of Compliance Wells

G106	MW-B4	35	389.93	15-25
R007	R007	29.9	398.09	19.8-29.9
G008	MW-8	35	397.85	25-35
G009	MW-9	32	401.38	22-32

Piezometers

P101	P-1	61	372.58	54-59
P102	P-2	100	332.80	45-50
P103	P-3	45	388.34	40-45

2. Construction of any new monitoring well/piezometer must be at a minimum in accordance with the diagram contained in Attachment C to this Permit unless otherwise approved by the Illinois EPA. Any new monitor wells/piezometers to be installed must be continuously sampled and logged on Illinois EPA boring logs which can be found on the Illinois EPA website.
3. The Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Condition III.D.1 above are damaged or the structural integrity has been compromised. A proposal for the replacement of the subject well shall accompany this notification. The well shall not be plugged until the new well is installed and monitoring data has been obtained and verified, unless the well is extremely damaged and would create a potential route for groundwater contamination. Prior to replacing the subject well, the Permittee shall obtain written approval from the Illinois EPA regarding the proposed installation procedures and construction.
4. Should any well become consistently dry or unserviceable; a replacement well shall be installed within ten (10) feet of the existing well. This well shall monitor the same geologic zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitoring well construction standards at the time that the well is placed. A replacement well which is more than ten (10) feet from the existing well or does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well.

5. The Permittee shall submit boring logs, construction diagrams, and data sheets from the installation and development of a new or replacement well to the Illinois EPA at the address below within thirty (30) days of the date that installation of the well is completed. In addition, the Permittee shall submit certification that plugging, and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. Any additional information should be submitted to the appropriate State Agencies.

Illinois Environmental Protection Agency
 Bureau of Land - #33
 Permit Section
 1021 North Grand Avenue East
 Post Office Box 19276
 Springfield, Illinois 62794-9276

6. All wells/piezometers shall be equipped with protective caps and locks. Monitoring wells or piezometers located in high traffic areas must be equipped with bumper guards.
7. All groundwater monitoring wells and piezometers not utilized in the groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 Ill. Adm. Code 920 regulations. Monitoring wells and piezometers that are improperly constructed must be abandoned in accordance with Condition III.D.5.

E. MONITORING PARAMETERS

1. The Permittee shall determine groundwater quality at groundwater monitoring wells identified in Condition III.D.1 at both upgradient and Point of Compliance locations semi-annually during the active life (including closure and post-closure care period) of the CWP CAMU. Samples collected during the semi-annual sampling events of each year shall be analyzed for the field parameters and the waste constituents below. Total (unfiltered) values shall be used for comparison with groundwater quality standards. Dissolved (filtered) shall be used for statistical analysis.

Semi-Annual Groundwater Sampling

<u>Field Parameters</u>	<u>Storet Numbers</u>	<u>Reporting Units</u>
pH	00400	6.30-13.71 s.u.
Specific Conductance	00094	3200 umhos/cm
Temperature of Water Sample	00011	(°F)
Turbidity	45626	Ntus
Depth to Water (below land surface)	72019	Ft

Depth to Water (below measuring point)	72109	Ft
Elevation of Bottom of Well#	72020	Ft MSL
Elevation of Groundwater Surface	71993	Ft MSL
Elevation of Measuring Point (Top of casing)##	72110	Ft MSL

#Shall be determined during the first semi-annual sampling event as required by Condition III.G.3.

##Shall be surveyed once every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes as required by Condition III.G.2.

<u>Indicator Parameters</u>	<u>Storet Numbers</u>	<u>BGQ/Reporting Units</u>
Cadmium (Total)	01027	2.5 ug/L
Cadmium (Dissolved)	01025	1.4 ug/L
Chloride (Total)	00940	480 mg/L
Chloride (Dissolved)	00941	450 mg/L
Chromium (Total)	01034	33 ug/L
Chromium (Dissolved)	01030	23 ug/L
Fluoride (Total)	00951	8.9 mg/L
Fluoride (Dissolved)	00950	9 mg/L
Iron (Total)	01045	32000 ug/L
Iron (Dissolved)	01046	27000 ug/L
Lead (Total)	01051	100 ug/L
Lead (Dissolved)	01049	96 ug/L
Manganese (Total)	01055	2800 ug/L
Manganese (Dissolved)	01056	2400 ug/L
Nickel (Total)	01067	110 ug/L
Nickel (Dissolved)	01065	59 ug/L
Nitrate - Nitrogen	00620	3.1 mg/L
Sulfate (Dissolved)	00946	240 mg/L
Total Dissolved Solids	70300	1700 mg/L
Zinc (Total)	01092	130 ug/L
Zinc (Dissolved)	01090	85ug/L

NOTE: All parameters with the "(Dissolved)" label to the right shall be determined using groundwater samples which have been filtered through a 0.45 micron filter. All other parameters shall be determined from unfiltered samples.

2. Background Groundwater Quality (BGQ) values for those constituents listed above in Condition III.E.1 were previously established using a minimum of four (4) quarters of monitoring data.

3. Alternate concentration limits may be established where the Permittee can determine a constituent will not pose a substantial hazard to human health and the environment.
 - a. Where a hazardous constituent has a standard in 35 Ill. Adm. Code Part 620, the facility must apply for an adjusted standard as outlined in Section 28.1 of the Environmental Protection Act.
 - b. For those hazardous constituents without a 35 Ill. Code Part 620 standard, the alternative concentration limit(s) proposed by the facility must be approved by the Illinois EPA.

F. DETECTION MONITORING PROGRAM

1. The Permittee shall determine groundwater quality at each monitoring well at the Point of Compliance well identified in Condition III.D.1 semi-annually during the active life of a regulated unit (including the closure and post-closure care periods). The Permittee shall express the groundwater quality at each monitoring well in a form necessary for the determination of statistically significant changes (i.e., means, variances, etc.).
2. The Permittee shall determine the groundwater flow rate and direction in the Uppermost Aquifer semi-annually and report at least annually from the monitoring wells identified in Condition III.D.1.
3. The Permittee shall determine whether there is a statistically significant increase (or decrease in the case of pH) over the background values established for each parameter identified in Conditions III.E.1 each time groundwater quality is determined at the Point of Compliance. In determining whether such a change has occurred, the Permittee must compare the groundwater quality at each monitoring well identified in Condition III.D.1 to the background values derived in accordance with the statistical procedures specified in Section C of the approved permit application.

G. GROUNDWATER ELEVATIONS

1. The Permittee shall determine the groundwater surface elevation referenced to mean sea level (MSL) at each well each time groundwater is sampled in accordance with Condition III.J.3.
2. The Permittee shall determine the surveyed evaluation of "stick-up" referenced to MSL when the well is installed (with as-built diagrams) and every five (5) years or at the request of the Illinois EPA, or whenever the elevation changes in accordance with Condition III.J.5.

3. Elevation, as referenced to MSL, of the bottom of each monitoring well (STORET 72020), is to be reported at least annually. The mandatory measurement shall be taken during the first semi-annual sampling event in accordance with Condition III.J.6.

H. SAMPLING AND ANALYSIS PROCEDURES

1. The Permittee shall use the techniques and procedures described in Appendix C-4 of the approved permit application except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition III.D.1 above:
 - a. Samples shall be collected by the techniques described in Appendix C-4 of the approved permit application.
 - b. Samples shall be preserved and shipped (when shipped off-site for analysis) in accordance with the procedures specified in Appendix C-4 of the approved permit application.
 - c. Samples shall be analyzed in accordance with the procedures specified in Appendix C-4 of the approved permit application.
 - d. Samples shall be tracked and controlled using the chain of custody procedures specified in Appendix C-4 of the approved permit application.
2. Sampling will be conducted first from upgradient wells, proceeding to non-contaminated downgradient wells, then proceed to the downgradient wells which are known to be contaminated, if any.
3. Purging of groundwater must continue until measurements of field parameters (pH, specific conductance and temperature) have stabilized within approximately 10% over at least two measurements collected over three to five minute intervals. If field parameters are not stable after three well volumes have been removed, up to two additional well volumes will be purged. If a well is purged to dryness or is purged such that the full recovery exceeds two hours, the well should be sampled as soon as sufficient volume of groundwater has entered the well to enable the collection of the necessary groundwater samples.
4. All purged groundwater must be collected, containerized, and disposed of properly. Water collected during purging activities must be collected then stored in appropriate containers for immediate disposal to the on-site Wastewater Treatment Plant or collected then stored in appropriate containers until analytical results are available, at which time proper arrangements for disposal or treatment must be made.

5. Analytical methods to be utilized by the facility must be in accordance with the latest version of USEPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Third Edition, Final Update III, Revision 4.
6. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all sampling and analysis efforts. In addition, sample collection, handling, preservation, preparation, and analysis must be conducted in accordance with the procedures set forth in SW-846.

I. STATISTICAL PROCEDURES

When evaluating the monitoring results in accordance with Condition III.F, the Permittee shall use the following procedures:

1. The statistical methods to be used shall be as specified in Section C of the approved permit application.
2. Analytical data shall be compared to the Class II, Groundwater Quality Standards and BGQ (interwell) values. Background Groundwater Concentrations (intrawell) shall be developed for parameters which exceed both Class II, Groundwater Quality Standards and BGQ values as described in Section C of the approved permit application.
3. Data exceeding the Class II, Groundwater Quality Standards, interwell, and intrawell shall be further evaluated using Shewart CUSUM Control Charts using all available data.
4. A statistically significant increase occurs when an analyzed parameter exceeds the Class II, Groundwater Quality Standards, interwell values, intrawell values, and Shewart CUSUM Control Limits.
5. If any parameter exceeds: (1) both interwell and intrawell data; (2) the Class II, Groundwater Quality Standards; or (3) Shewart CUSUM Control Charts, the Permittee may resample within thirty (30) days of the date that the apparent exceedance is determined.

J. REPORTING AND RECORDKEEPING

1. The Permittee shall enter all monitoring, testing and analytical data obtained in accordance with Conditions III.E, III.F, III.G, III.H and III.I into the operating record. The data must include all computations and results of statistical test.
2. Samples collected to meet the requirements of the groundwater monitoring program described in Conditions III.E, III.F, III.G, and III.I shall be collected and reported as identified in the table below. All additional information required by the groundwater

monitoring program as specified in Conditions III.E, III.F, III.G, III.H and III.I shall also be submitted to the Illinois EPA at the address listed in Condition III.D.5 in accordance with this schedule:

Sampling Event of Calendar Year	To be Sampled During the Months of	Results Submitted to the Illinois EPA by the Following Date
First semi-annual	April - June	July 15
Second semi-annual	October - December	January 15

3. Groundwater surface elevation measured pursuant to Condition III.G.1 shall be collected semi-annually and submitted to the Illinois EPA as identified in the table above.
4. The Permittee shall report the groundwater flow rate and direction in the Uppermost Aquifer, as required by Condition III.F.2 during the first semi-annual reporting of each year.
5. The Permittee shall report the surveyed elevation, as required by Condition III.G.2, of the top of the well casing "stick-up", referenced to MSL, in accordance with the following schedule:
 - a. For the wells identified in Condition III.D.1 every five (5) years (during the first semi-annual sampling event), or at the request of the Illinois EPA, or whenever the elevation changes.
 - b. For any new wells, at the time of installation and reported in the as-built diagrams, subsequent measurements shall be made every five (5) years (during the first semi-annual sampling event) or at the request of the Illinois EPA or whenever the elevation changes.
6. Elevation of the bottom of each monitoring well identified in Condition III.D.1, referenced to MSL, is to be reported annually. This measurement shall be taken during the first semi-annual sampling event (Storet 72020) in accordance with Condition III.G.3.
7. Information required by Conditions III.J.2, III.J.3, III.J.5 and III.J.6 must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment C of this Permit, in accordance with the schedule found in Condition III.J.2 above. Additional guidance regarding the submittal of the information in an electronic format can be found on the Illinois EPA website.
8. The Permittee shall submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC-592) as a cover sheet for any notices or reports required

by the Permit for identification purposes. Only one copy of the LPC-592 must accompany your submittal. However, the Permittee must submit one (1) original and (excluding the groundwater leachate monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The form is not to be used for Permit Modification requests.

9. The Permittee shall report all information to the Illinois EPA in a form which can be easily reviewed. All submittals must contain tables of data, drawings, and texts (as necessary) to accurately describe the information contained in the submittal.
10. If the Permittee determines, pursuant to Condition III.F.3 that there is a statistically significant increase for any of the parameters specified in Condition III.E.1 above at any monitoring well at the Point of Compliance, the Permittee shall:
 - a. Notify the Illinois EPA in writing indicating what parameters and wells have shown statistically significant increases and provide all statistical calculations. This notification shall be submitted to the Illinois EPA within seven (7) days of the date that the increases are discovered.
 - b. Sample the groundwater in all wells listed in Condition III.D.1 and determine the concentration of all constituents of the approved subset of Appendix I of 35 Ill. Adm. Code 724, located in Attachment C of this Permit (hereinafter Appendix I), such that the results will accompany the permit modification required by Condition III.J.10.d.
 - c. For any of the approved subset of Appendix I compounds found in the analysis pursuant to this condition, the Permittee may resample within one month and repeat the analysis for those compounds detected. If the results of the second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring. If the Permittee does not resample for the compounds pursuant to this condition, the hazardous constituents found during this initial approved subset of Appendix I analysis will form the basis for compliance monitoring.
 - d. Submit to the Illinois EPA an application for a permit modification to establish a compliance monitoring program meeting the requirements of 35 Ill. Adm. Code 724.199. The application shall be submitted to the Illinois EPA within ninety (90) days of the date that the increase is discovered. Furthermore, the application must include the following information:
 - i. An identification of the concentration of any 35 Ill. Adm. Code 724, approved subset of Appendix I constituents found in the groundwater at each monitoring well at the Point of Compliance;

- ii. Any proposed changes to the groundwater monitoring system at the facility necessary to meet the requirements of 35 Ill. Adm. Code 724.199;
 - iii. Any proposed changes to the monitoring frequency, sampling and analysis procedures, or methods or statistical procedures used at the facility necessary to meet the requirements of Section 724.199; and
 - iv. For each hazardous constituent found at the Point of Compliance, a proposed concentration limit under 35 Ill. Adm. Code 724.194(a)(1) or 724.194(a)(2), or a notice of intent to seek an alternative concentration limit for a hazardous constituent under 35 Ill. Adm. Code 724.194(b).
- e. Submit to the Illinois EPA a corrective action feasibility plan to meet the requirements of 35 Ill. Adm. Code 724.200 unless the concentration of all hazardous constituents identified under Condition III.J.10.b are listed in 35 Ill. Adm. Code 620.420 and their concentrations do not exceed the respective Groundwater Quality Standard or the Permittee has sought an alternative concentration limit under III.J.10.d.iv for every hazardous constituent identified under Condition III.J.10.b. This plan must be submitted to the Illinois EPA within 180 days of the date that the increase is discovered.
- f. Submit to the Illinois EPA all data necessary to justify any alternative concentration limit for a hazardous constituent sought under Condition III.J.10.d.iv. This data shall be submitted to the Illinois EPA within 180 days of the date that the increase is discovered.
11. If the Permittee determines, pursuant to Condition III.F.3 above, that there is a statistically significant increase above the BGQ values for the parameters specified in Condition III.E.1 above, the Permittee may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. The Permittee shall submit a permit modification application in accordance with Condition III.J.10.d unless the demonstration successfully shows that a source other than the regulated unit caused the increase or that the increase resulted from errors in sampling-analysis or evaluation and the Illinois EPA concurs.

To make this demonstration the Permittee shall:

- a. Notify the Illinois EPA in writing that they intend to make this demonstration. This notification must be submitted to the Illinois EPA within seven (7) days of the date that the increase is discovered.
- b. Submit a report to the Illinois EPA which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in

sampling, analysis, or evaluation. This report must be submitted within ninety (90) days of the date that the increase is discovered.

- c. Submit to the Illinois EPA an application to make any appropriate changes to the Groundwater Detection Monitoring Program. This application must be submitted within ninety (90) days of the date that the increase is discovered.
- d. Continue to monitor in accordance with the Groundwater Detection Monitoring Program at the facility.

K. REQUEST FOR PERMIT MODIFICATION

1. If the Permittee determines that the Groundwater Detection Monitoring Program no longer satisfies the requirements of 35 Ill. Adm. Code 724.198, the Permittee must, within ninety (90) days, submit an application for a permit modification to the Illinois EPA to make any appropriate changes to the program which will satisfy the regulations.
2. Conditions in this section of the Permit may be modified in accordance with 35 Ill. Adm. Code 705.128 if there is cause for such modification, as defined in 35 Ill. Adm. Code 702.184. Causes for modification identified in this section include, but are not limited to, alterations to the permitted facility, additional information which would have justified the application of different permit conditions at the time of issuance, and new regulations.

**SECTION III-A:
 PERIMETER GROUNDWATER OBSERVATION MONITORING PROGRAM**

A. SUMMARY

In addition to the Groundwater Detection Monitoring Program utilized to monitor the Uppermost Aquifer at the CWP CAMU, ASI has eleven (11) existing wells to monitor groundwater in the shallow groundwater zone (Upper Silty Clay Unit) and four piezometers to monitor groundwater elevations in the deep groundwater zone (Lower Sand and Gravel Unit) at the perimeter of the ASI facility. These groundwater monitoring wells are intended to detect and prevent any groundwater contamination from extending beyond the perimeter of the facility as required by the Settlement Agreement.

B. IMPLEMENTATION

1. The Permittee shall implement the Perimeter Groundwater Observation Monitoring Program upon the effective date of this Permit. On that date, the groundwater monitoring requirements set forth in this Permit shall supersede those previously established.
2. The Permittee shall carry out the groundwater monitoring specified in this Permit on the groundwater beneath the Alton Steel, Inc. facility in Alton, Illinois located on the portion of the facility where manufacturing occurs.

C. WELL LOCATION AND CONSTRUCTION

1. The Permittee shall install and maintain groundwater monitoring wells and piezometers at the locations identified in the table below to allow for the collection of groundwater samples and elevations from the shallow groundwater zone and groundwater elevations from the deep groundwater zone:

IEPA Well No. _____	Facility Well No. _____	Well Depth (Ft-bgs)	Well Depth Elevation (Ft-MSL)	Well Screen Interval (Ft-bgs)
<u>Upgradient Well</u>				
G111	PS-01	8.9	415.75	4.0-8.5
G112	PS-02	14.5	414.07	4.5-139
G113	PS-03	14.5	414.72	4.6-14.1
G114	PS-04	26.4	411.00	16.7-25.6
G115	PS-05	29.0	405.12	19.2-28.2

Downgradient Wells

G121	PS-11	26.7	397.51	9.0-26.5
G122	PS-12	29.7	398.64	11.0-29.5
R123	R123	30.49	398.07	10.22-29.93
G124	PS-14	30.6	399.24	15.8-30.3
G125	PS-15	32.1	402.83	16.9-32.0
G126	PS-16	37.2	394.29	21.4-37.1

Piezometers

G117	PS-07	54.6	377.36	44.6-54.0
P113	P-1-13	39.0	386.26	28.9-38.6
P213	P-2-13	43.5	385.93	34.4-43.2
P313	P-3-13	19.78	419.00	14.7-19.61
P413	P-4-13	20.07	414.14	9.8-19.72
	P01S	26.36	402.44	16.23-26.01
	P02S	36.78	402.23	26.65-36.43
	P01D	57.75	370.87	52.62-57.40
	P02D	68.26	370.19	63.14-67.94

- Construction of any new monitoring well/piezometer must be at a minimum in accordance with the diagram contained in Attachment C to this Permit unless otherwise approved in writing by the Illinois EPA. Any new monitoring well/piezometer to be installed must be continuously sampled and logged on Illinois EPA boring logs which can be found on the Illinois EPA website.
- The Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Condition III-A.C.1 above are damaged or the structural integrity has been compromised. A proposal for the replacement of the subject well shall accompany this notification. The well shall not be plugged until the new well is installed and monitoring data has been obtained and verified, unless the well is extremely damaged and would create a potential route for groundwater contamination. Prior to replacing the subject well the Permittee shall obtain written approval from the Illinois EPA regarding the proposed installation procedures and construction.
- Should any well become consistently dry or unserviceable; a replacement well shall be installed within ten (10) feet of the existing well. This well shall monitor the same zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitoring well construction standards at the time that the well is replaced. A replacement well which is more than ten (10) feet from the existing well or does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well.

5. The Permittee shall submit boring logs, construction diagrams, and data sheets from installation and development of a new or replacement well to the Illinois EPA at the address below within thirty (30) days of the date that installation of the well is completed. In addition, the Permittee shall submit certification that plugging, and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. Any additional information should be submitted to the appropriate State Agencies.

Illinois Environmental Protection Agency
 Bureau of Land - #33
 Permit Section
 1021 North Grand Avenue East
 Post Office Box 19276
 Springfield, Illinois 62794-9276

6. All wells shall be equipped with protective caps and locks. Monitoring wells located in high traffic areas must be protected with bumper guards.
7. All wells not utilized in the groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 Ill. Adm. Code 920 regulations. Monitoring wells that are improperly constructed must be abandoned in accordance with Condition III-A.C.5.

D. MONITORING PARAMETERS

1. The Permittee shall determine groundwater quality at groundwater monitoring wells identified in Condition III-A.C.1, semi-annually and annually. Samples collected during the semi-annual sampling events of each year shall be analyzed for the parameters listed below.

Semi-Annual Groundwater Sampling

<u>Field Parameters</u>	<u>Storet Units</u>	<u>BGQ/ Reporting</u>
pH	00400	6.39-7.71 s.u.
Specific Conductance	00094	1599 umhos/cm
Temperature of Water Sample	00011	(°F)
Turbidity	45626	Ntus
Depth to Water (below land surface)	72019	Feet
Depth to Water (below measuring point)	72109	Feet

1190100004-Alton Steel, Inc.
 Log No. B-160R2
 Page III-A-4 of III-A-11

Elevation of Bottom of Well#	72020	Ft-MSL
Elevation of Groundwater Surface	71993	Ft-MSL
Elevation of Measuring Point (top of casing)##	72110	Ft-MSL

Shall be determined during the first semi-annual sampling event each year as required by Condition III-A.F.3.

Shall be surveyed once every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes as required by Condition III-A.F.2.

<u>Indicator Parameters</u>	<u>Storet</u>	<u>BGQ/ Reporting Units</u>
Cadmium (Total)	01027	3 ug/L
Cadmium (Dissolved)	01025	1 ug/L
Chromium (Total)	01034	71 ug/L
Chromium (Dissolved)	01030	15 ug/L
Lead (Total)	01051	43 ug/L
Lead (Dissolved)	01049	1 ug/L
Zinc (Total)	01092	154 ug/L
Zinc (Dissolved)	01090	21 ug/L

NOTE: All parameters with "(Dissolved)" label to the right shall be determined using groundwater samples which have been filtered through a 0.45 micron filter. All other parameters shall be determined from unfiltered samples.

	<u>Annual Groundwater Sampling</u>	
4-methylphenol (p-Cresol)	77146	10 ug/L
Polychlorinated biphenyls	39516	2.5 ug/L
Total Petroleum Hydrocarbons (as motor oil Method PA-2)	03870	400 ug/L

Note: annual samples shall be collected and reported during the first semi-annual sampling event in accordance with Condition III.A.I.2.

2. BGQ for these constituents listed in Condition III-A.D.1 above were previously established for the wells identified in Condition III-A.C.1 using a minimum of four (4) quarters of monitoring data.

E. PERIMETER GROUNDWATER OBSERVATION MONITORING PROGRAM

1. The Permittee shall determine groundwater quality at each well identified in Section III-A.C.1 semi-annually and annually for the constituents listed in Condition III-A.D.1 above. The Permittee shall express the groundwater quality at each monitoring well in a form necessary for the determination of statistically significant changes (i.e. means,

variances, etc.).

2. The Permittee shall evaluate the results of analysis required by III-A.D.1 above and identify:
 - a. The concentration of any constituent detected which was not detected in the previous sampling event.
 - b. The concentration of any constituent detected which exhibits a progressive increase over four (4) consecutive sampling events.
3. The Permittee shall determine whether there is a statistically significant increase, (or decrease in the case of pH) over the background values established for each parameter identified in Condition III-A.D.1 each time groundwater quality is determined at each well. In determining whether such a change has occurred, the Permittee must compare the groundwater quality at each groundwater monitoring well identified in Condition III-A.C.1 to the background value derived in accordance with the statistical procedures specified in Section C of the approved permit application.
4. The Permittee shall perform the evaluations described in Conditions III-A.E.1, III-A.E.2, and III-A.E.3 above within sixty (60) days after completion of semi-annual and annual sampling.

F. GROUNDWATER ELEVATION

1. The Permittee shall determine the groundwater surface elevation referenced to mean sea level (MSL) at each well each time groundwater is sampled in accordance with Condition III-A.I.3.
2. The Permittee shall report the surveyed elevation of “stick-up” referenced to MSL when the well is installed (with as-built diagrams) and every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes in accordance with Condition III-A.I.4.
3. Elevation, as referenced to MSL, of the bottom of each monitoring well (Storet 72020), is to be reported at least annually. The mandatory measurement shall be taken during the first semi-annual sampling event in accordance with Condition III-A.I.5.

G. SAMPLING AND ANALYTICAL PROCEDURES

1. The Permittee shall use the techniques and procedures described in Appendix C-4 of the approved permit application, except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition III-A.C.1.

- a. Samples shall be collected using the techniques described in Appendix C-4 of the approved permit application.
 - b. Samples shall be preserved and shipped (when shipped off-site for analysis) in accordance with the procedures specified in Appendix C-4 of the approved permit application.
 - c. Samples shall be analyzed in accordance with the procedures specified in Appendix C-4 of the approved permit application.
 - d. Samples shall be tracked and controlled using the chain-of-custody procedures specified in Appendix C-4 of the approved permit application.
2. Purging of groundwater must continue until field parameters (pH, specific conductance and temperature) have stabilized within approximately 10% over at least two measurements collected over three to five minute intervals. If a well is purged to dryness or is purged such that the full recovery exceeds two hours, the well should be sampled as soon as sufficient volume of groundwater has entered the well to enable the collection of the necessary groundwater samples.
 3. All purged groundwater must be collected, containerized and disposed of properly. Water collected during purging activities must be collected then stored in appropriate containers for immediate disposal to the on-site Wastewater Treatment Plant or collected then stored in appropriate containers until analytical results are available, at which time proper arrangements for disposal or treatment must be made.
 4. Analytical methods to be utilized by the facility must be in accordance with the latest version of USEPA's "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods "SW-846 Third Edition, Final Update III, Revision 4."
 5. Quality assurance/quality control procedures which meet the requirements of SW-846 must be implemented during all sampling and analysis efforts. In addition, sample collection, handling, preservation, preparation, and analysis must be conducted in accordance with the procedures set forth in SW-846.

H. STATISTICAL PROCEDURES

When evaluating the monitoring results in accordance with Condition III-A.E, the Permittee shall use the following procedures:

1. The statistical methods to be used shall be as specified in Section C of the approved permit application.

2. Analytical data shall be compared to the Class II, Groundwater Quality Standards and BGQ (interwell) values. Background Groundwater Concentrations (intrawell) shall be developed for parameters which exceed both Class II, Groundwater Quality Standards and BGQ values as described in Section C of the approved permit application.
3. Data exceeding the Class II, Groundwater Quality Standards, interwell, and intrawell shall be further evaluated using Shewart CUSUM Control Charts using all available data.
4. A statistically significant increase occurs when an analyzed parameter exceeds its applicable Ill. Adm. Code 620, Class II, Groundwater Quality Standards, interwell values, intrawell values, and Shewart CUSUM Control Limits.
5. If any parameter exceeds: (1) both interwell and intrawell data; (2) the Class II, Groundwater Quality Standards; or (3) Shewart CUSUM Control Charts, the Permittee may resample within thirty (30) days of the date that the apparent exceedance is determined.
6. The facility must resubmit BGQ values that are developed utilizing interwell analysis from a pooled dataset to develop Prediction Limits. Resubmission of the BGQ values must be submitted as a Class 1* permit modification request within forty-five (45) days from the date of this permit modification.

I. REPORTING AND RECORDKEEPING

1. The Permittee shall enter all monitoring, testing, and analytical data obtained in accordance with Conditions III-A.D, III-A.E, III-A.F, III-A.G and III-A.H. in the operating record. The data must include all computations and results of statistical test.
2. Samples collected to meet the requirements of the groundwater monitoring program described in Conditions III-A.D, III-A.E, III-A.F and III-A.H shall be collected and reported, as identified in the table below. All additional data collected for the groundwater monitoring program (as specified in Conditions III-A.D, III-A.E, III-A.F and III-A.H) shall also be submitted to the Illinois EPA at the address listed in Condition III-A.C.5 in accordance with this schedule.

Sampling Event of Calendar Year	To be Sampled During the Months of	Results Submitted to the Illinois EPA by the Following Date
First semi-annual	April -June	July 15
Second semi-annual	October - December	January 15

3. Groundwater surface elevation measured pursuant to Condition III-A.F.1 shall be collected semi-annually and submitted to the Illinois EPA as identified in the table above.
4. The Permittee shall report the surveyed elevation, as required by Condition III-A.F.2 of the top of the well casing “stick-up”, referenced to MSL in accordance with the following schedule:
 - a. For wells identified in Condition III-A.C.1, every five (5) years (during the first semi-annual sampling event), or at the request of the Illinois EPA or whenever the elevation changes.
 - b. For any new wells, at the time of installation and reported in the as-built diagrams, subsequent measurements shall be made every five (5) years (during the first semi-annual sampling event), or whenever the elevation changes.
5. Elevation of the bottom of each monitoring well identified in Condition III-A.C.1, as referenced to MSL, is to be reported at least annually. This measurement shall be taken during the first semi-annual sampling event (Storet 72020) each year in accordance with Condition III-A.F.3.
6. Information required by Conditions III-A.I.2, III-A.I.3, III-A.I.4 and III-A.I.5 must be submitted in an electronic format. The information is to be submitted, as fixed-width text files formatted as found in Attachment C of this Permit, in accordance with the schedule found in Condition III-A.I.2 above. Additional guidance regarding the submittal of the information in an electronic format can be found on the Illinois EPA website.
7. A RCRA Facility Groundwater, Leachate and Gas Reporting Form (LPC-592) must accompany all reports and forms submitted for RCRA regulated facilities, for identification purposes, to the Illinois EPA.
8. The Permittee shall report all information to the Illinois EPA in a form which can be easily reviewed. All submittals must contain tables of data drawings and text (as necessary) to accurately describe the information contained in the submittal.
9. If the Permittee determines, pursuant to Condition III-A.E.3 that there is statistically significant increase for any of the parameters specified in Condition III-A.D.1 at any monitoring well in Condition III-A.C.1 the Permittee shall:
 - a. Notify the Illinois EPA in writing indicating what parameters and wells have shown is statistically significant increases and provide all statistical calculations. This notification shall be submitted to the Illinois EPA within seven (7) days of

the date that the increases are discovered.

- b. Sample the groundwater in all wells listed in Condition III-A.C.1 and determine the concentration of all constituents of the approved subset of Appendix I, located in Attachment C to this Permit, such that the results will accompany the permit modification required by Condition III-A.I.9.d below.
- c. For any of the approved subset of Appendix I compounds found in the analysis pursuant to this Condition, the Permittee may resample within one month and repeat the analysis for those compounds detected. If results of the second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring. If the Permittee does not resample for the compounds pursuant to this condition, the hazardous constituents found during the initial Appendix I analysis will form the basis for compliance monitoring.
- d. Submit to the Illinois EPA an application for a permit modification to establish a compliance monitoring program meeting the requirements of 35 Ill. Adm. Code 724.199. The application shall be submitted to the Illinois EPA within ninety (90) days of the date that the exceedance is discovered. Furthermore, the application must include the following information:
 - i. An identification of the concentration of any 35 Ill. Adm. Code 724, of the approved subset of Appendix I constituents found in the groundwater at each monitoring well;
 - ii. Any proposed changes to the groundwater monitoring system at the facility necessary to meet the requirements 35 Ill. Adm. Code 724.199;
 - iii. Any proposed changes to the monitoring frequency, sampling and analysis procedures, or methods or statistical procedures used at the facility necessary to meet the requirements of 35 Ill. Adm. Code 724.199; and
 - iv. For each hazardous constituent found, a proposed concentration limit under 35 Ill. Adm. Code 724.194(a)(1) or 724.194(a)(2), or a notice of intent to seek an alternate concentration limit for a hazardous constituent under 35 Ill. Adm. Code 724.194(b).
- e. Submit to the Illinois EPA a corrective action feasibility plan to meet the requirements of 35 Ill. Adm. Code 724.200 unless the concentrations of all hazardous constituents identified under Condition III-A.I.9.b above are listed in 35 Ill. Adm. Code 620.420 and their concentrations do not exceed the respective Groundwater Quality Standards or the Permittee has sought an alternate concentration limits under Condition III-A.I.9.d.iv above for every hazardous constituent identified under Condition III-A.I.9.b above. This plan must be

submitted to the Illinois EPA within 180 days of the date the increases are discovered.

- f. Submit to the Illinois EPA all data necessary to justify any alternate concentration limit for a hazardous constituent sought under Condition III-A.I.9.d.iv above. This plan must be submitted to the Illinois EPA within 180 days of the date the increases are discovered.
10. If the Permittee determines, pursuant to Condition III-A.E.3, that there is a statistically significant increase above the background values for the parameters specified in Condition III-A.D.1, the Permittee may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. The Permittee shall submit a permit modification application in accordance with Condition III-A.I.9.d above unless the demonstration successfully shows that a source other than the regulated unit caused the increase or that the increase resulted from errors in sampling, analysis or evaluation and the Illinois EPA concurs.

To make this demonstration, the Permittee shall:

- a. Notify the Illinois EPA in writing that they intend to make this demonstration. This notification must be submitted to the Illinois EPA within seven (7) days of the date that the increase is discovered.
- b. Submit a report to the Illinois EPA which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation. This report must be submitted within ninety (90) days of the date that the increase is discovered.
- c. Submit to the Illinois EPA an application to make any appropriate changes to the Perimeter Groundwater Observation Monitoring Program. This application must be submitted within ninety (90) days of the date that the increase is discovered.
- d. Continue to monitor in accordance with the Perimeter Groundwater Observation Monitoring Program at the facility.

J. REQUEST FOR PERMIT MODIFICATION

1. If the Permittee determines that the Perimeter Groundwater Observation Monitoring Program no longer satisfies the requirements of 35 Ill. Adm. Code 724.198, the Permittee must, within ninety (90) days, submit an application for a permit modification to the Illinois EPA to make any appropriate changes to the program which will satisfy the regulations.

2. Conditions in this section of the Permit may be modified in accordance with 35 Ill. Adm. Code 705.128 if there is cause for such modification, as defined in 35 Ill. Adm. Code 702.184. Causes for modification identified in this section include, but are not limited to, alterations to the permitted facility, additional information which would have justified the application of different permit conditions at the time of issuance, and new regulations.

SECTION IV: CORRECTIVE ACTION

A. INTRODUCTION

1. In accordance with Section 3004(u) of RCRA and 35 Ill. Adm. Code 724.201, the Permittee shall institute such corrective action as necessary to protect human health and the environment from all releases of hazardous wastes or hazardous constituents from any Solid Waste Management Unit (SWMU) at its facility. This section contains the conditions which must be followed to ensure these requirements are met.
2. The Permittee must develop and implement a Corrective Measure Program to protect human health and the environment from any of the SWMUs of concern at the facility.
3. The original RCRA permit was issued by Illinois EPA to Laclede Steel for this facility on June 28, 1996; Section I.B (RCRA Closure) of that permit contained closure requirements for two Hazardous Waste Management Units (HWMUs) (the Pelletizer Area and the Rod Patenting Building). The Permittee has completed closure of a former interim-status hazardous waste storage unit and waste pile in and around the Rod Patenting Building. The Permittee has also completed closure of a former interim-status hazardous waste treatment unit and waste pile at the Pelletizer Area. The locations of these HWMUs are shown on Figure B-5 of the approved permit application. This section describes the closure efforts that have been completed.
4. Alton Steel acquired the facility from Laclede's bankrupt estate in May 2003. The Illinois EPA issued a renewal permit to Alton Steel on December 4, 2009. Thus, this facility is also the subject of a Settlement Agreement filed in the United States Bankruptcy Court for the Eastern District of Missouri, Eastern Division, Case No. 01-48321. All requirements of the Settlement Agreement including but not limited to those which deal with closure, corrective action, investigation, monitoring, remediation, financial assurance, or transfer of property are incorporated herein by reference and must be carried out in accordance with the terms of that agreement and this permit.
5. Both the previous and current Permittee have conducted a substantial amount of corrective action activities to date to meet the requirements of the previous RCRA permits for the facility. The locations of all the SWMUs discussed in this permit are shown on Figures B-2E and B-2W of the approved permit application.

Section IV.C of this permit describes the corrective action efforts which have been completed at the units which have received No Further Action (NFA) letters or do not require corrective action efforts at this time.

6. This permit requires the Permittee to implement a corrective action program by completing or having completed the corrective action at the facility. Section IV.D of this permit describes the corrective action efforts which must still be completed at this area.
7. The Permittee must carry out interim measures in accordance with the terms, conditions and requirements of this permit to address existing contamination at the facility until such time as a final corrective measure can be developed and implemented.
8. The Permittee must provide corrective action, as appropriate, for: (1) any newly discovered SWMUs; or (2) future releases for existing SWMUs.
9. The requirements of 35 Ill. Adm. Code 620 and 742 must be met, when applicable, in establishing remediation objectives for corrective action. In addition, all corrective action efforts must meet the requirements of 35 Ill. Adm. Code 724.201.
10. All Illinois EPA final decisions regarding RCRA corrective action at this facility are subject to the appeal provisions of the Illinois Environmental Protection Act.
11. All documents submitted to Illinois EPA regarding corrective action efforts must be accompanied by a completed RCRA Corrective Action Certification Form. This form can be found on Illinois EPA's website.

B. CORRECTIVE ACTION REQUIREMENTS

To date, the Permittee has conducted a substantial amount of investigation at the SWMUs of concern at this facility. Condition IV.C. below includes the facility's corrective action efforts that have been completed to date. Condition IV.D. below includes the required corrective action that still must be completed at the facility.

In general, the RCRA Facility Investigation (RFI) must be carried out in accordance with the following requirements:

1. The following nine (9) HWMUs and SWMUs that have been identified as units to be addressed by the facility's corrective action program at the facility:

<u>SWMU</u>	<u>Name</u>
#2	Rod Patenting Building
#3	Pelletizer Area

#4	Solid Waste Landfill
#5	Wastewater Treatment Plant Area and Surface Impoundments
#6	HTMR (High Temperature Metal Recovery)
#7	Baghouse Dust Accumulation Area
#8	Former Waste Oil Tank
#9	Dowel Assembly Building
#12	Pre-RCRA Waste Pile

2. Conduct additional investigation and remediation, as necessary, to address any on-site contamination and off-site contamination, which has migrated beyond the property boundaries from the former operation of the facility;
3. Obtain NFA determinations from the Illinois EPA for the units and any other impacted areas identified during the RFI, where the contamination has migrated off-site from the former operation of the facility, when sufficient information has been provided by the Permittee that the media of interest has been adequately remediated for the SWMUs and other identified areas of concern.
4. As required by Section III-A of the permit, the Permittee has eleven (11) existing wells to monitor groundwater in the Uppermost Aquifer (Upper Silty Clay Unit) and four (4) piezometers to monitor groundwater elevations in the deep groundwater zone (Lower Sand and Gravel Unit) at the perimeter of the ASI facility. These groundwater monitoring wells are intended to detect and prevent any groundwater contamination from extending beyond the perimeter of the facility as required by the Settlement Agreement.

C. CLOSURE AND CORRECTIVE ACTION EFFORTS COMPLETED TO DATE

1. The table below identifies the current status of corrective action completed at each SWMU to date. It also identifies the SWMUs which have received NFA determinations from the Illinois EPA.

Note that the following abbreviation is used in the table below:

ELUC = Environmental Land Use Control

SWMU # & Name	Description of Key Actions
#2 - Rob Patenting Building (RPB)	The RPB has been investigated and remediated. In a letter dated July 3, 2007, the Illinois EPA required that an engineered barrier and institutional control be established to complete closure of this unit. An engineered barrier consisting of an asphalt layer on top of the original concrete floor was installed in late 2008. This unit was closed with an approved, recorded ELUC per Illinois EPA letter dated June 2, 2009 (B-160-CA-47). The ELUC and associated documentation were filed with the Madison County Recorder's

1190100004-Alton Steel, Inc.

Log No. B-160R2

Page IV-4 of IV-15

SWMU # & Name	Description of Key Actions
	Office on April 7, 2009, as Document Number 2009R17047. No further closure efforts are required for this unit other than continued compliance with the subject ELUC.
#3 – Pelletizer Area (PA)	The PA has been dismantled, investigated, and remediated. A barrier (approximately three feet of clean fill used to backfill the excavated soil) was completed in August 1998. This unit was closed with an approved, recorded Environmental Land Use Control (ELUC) per Illinois EPA letter dated October 19, 2005 (Log No. B-160-CA-27). The ELUC and associated documentation were filed with the Madison County Recorder's Office on May 2, 2005, as Document Number 2005R22653. (This is same ELUC as used for the Pre-RCRA Waste Pile.) No further closure efforts are required for this unit other than continued compliance with the subject ELUC.
#4 – Solid Waste Landfill (SWL)	The SWL was certified closed by Illinois EPA on October 6, 1994. The Permittee is required to continue the post-closure care of this unit in accordance with the October 6, 1994 Illinois EPA letter (Log No. 1994-324). The CWP CAMU is on top of a portion of this landfill.
#6 -- High Temperature Metals Recovery (HTMR)	The HTMR building was damaged in an explosion in 1997. It was not repaired and is inactive. The building is locked. No further corrective action is required unless operation of the unit is restarted. If restarted, corrective action would include removing wastes in a timely manner, monthly inspections and repairing any cracks or deterioration, etc. observed in the secondary containment system.
#7 -- Baghouse Dust Accumulation Area (BDAA)	Some investigation and remediation efforts have been completed at this unit, mainly in response to a release of EAF dust on March 31, 2000. A plan to conduct an additional soil investigation effort and to establish an engineered barrier (and associated institutional control) over a portion of this area was approved by Illinois EPA on August 19, 2008 (Log No. B-160-CA-40). An engineered barrier was constructed over the soils beneath BDAA. An ELUC was approved, recorded and filed in Madison County Recorder's Office on December 7, 2012, as Document Number 2012R52154. Illinois EPA approved the recorded ELUC in a letter dated February 21, 2013 (Log No. B-160R-CA-4). No further action efforts are required at the BDAA other than continued compliance with the subject ELUC.

1190100004-Alton Steel, Inc.

Log No. B-160R2

Page IV-5 of IV-15

SWMU # & Name	Description of Key Actions
#8 -- Former Waste Oil Tank (WOT)	The WOT was emptied, cleaned, and dismantled in 2004. Soil and groundwater investigations were completed in the vicinity of the WOT. An asphalt engineered barrier was constructed over the footprint of the WOT and some surrounding area. An ELUC was approved, recorded and filed in Madison County Recorder's Office on September 27, 2006, as Document Number 2006R51294. Illinois EPA determined no further action was required in a letter dated August 1, 2008 (Log No. B-160-CA-38). No further corrective action efforts are required at the WOT other than continued compliance with the subject ELUC.
#9 – Dowel Assembly Building (DAB)	The DAB was cleaned and swept in 2003 as required by the original RCRA permit. The building was inspected by Illinois EPA and no further corrective action is required at this unit per an Illinois EPA letter dated June 18, 2004 (Log No. B-160-CA-16). No additional corrective action is required at this unit. The dismantling of this building was completed in May 2013.
#12 Pre-RCRA Waste Pile (PRWP)	The PRWP has been investigated and remediated. A barrier (approximately ten feet of clean fill to backfill the excavated contaminated soil) was completed in August 1998. This unit was closed with an approved, recorded and filed ELUC per Illinois EPA letter dated October 19, 2005 (Log No. B-160-CA-27). The ELUC and associated documentation was filed with the Madison County Recorder's Office on May 2, 2005, as Document Number 2005R22653. (ELUC for PRWP also covers Pelletizer Area.) No further corrective action efforts are required for this unit other than continued compliance with the subject ELUC.

2. The Permittee has also completed two other corrective action activities associated with the acquisition of the facility by ASI. Illinois EPA has reviewed the reports for these activities and found them to adequately document the completion of the two projects. These two waste remedial activities were (1) clean-up of dust and repairs at the Electric Melt Shop Building and the Baghouse area; and (2) collection, inventory, and disposal of containerized waste left by Laclede Steel.
3. The following ELUC(s) have been established following the NFA determinations by Illinois EPA and recorded with the Madison County Recorder's Office as shown in the table below.

ELUC Recorded for Alton Steel Inc.

Area Name	Size (Acres)	Date of NFA Letter	County Recorder's No. /Date Recorded	PIN/TAX ID
SWMU #2 Rod Patenting Bld. (RPB)	.918	06/02/09	2009R17047/ 04/07/09	23-1-08-18-00-000-011 (Part)
SWMU #3 & #12 Pelletizer Area (PA) & Pre-RCRA Waste Pile (PRWP)	61.9	10/19/05	2005R22653 05/02/05	23-1-08-18-00-000-011.T00
SWMU #7 Baghouse Dust Accumulation Area (BDAA)	.0523	2/21/13	2012R52154 12/7/12	23-1-08-10-00-000-011 (Part)
SWMU #8 Former Waste Oil Tank (WOT)	61.9	08/01/08	2006R1294 09/27/06	23-1-08-18-00-000-011.T00

4. ELUCs have been established in accordance with 35 Ill. Adm. Code 742 as part of the completed corrective action efforts at this facility for PIN 23-1-08-00-000-011.T00 as summarized in Condition IV.C.3 above. The ELUCs place the following restrictions on future activities at the facility.
- a. The property may only be used for industrial/commercial activities;
 - b. Potable use of groundwater at the Property is restricted;
 - c. A site safety plan to address possible worker exposure to the soil beneath the engineered barrier must be developed and implemented for any future excavation or construction activities in this area and any soil that is removed or excavated from this area must be handled in accordance with all applicable laws and regulations;
 - d. Any soil removed from the affected areas will be managed in accordance with 35 Ill. Adm. Code, Subtitle G: Waste Disposal; and
 - e. Maintain and inspect engineered barriers as follows:
 - i. Approximately 3 feet of clean fill placed over the PA as a barrier and approximately 10 feet of clean fill placed over the PRWP.
 - ii. Barrier meeting the requirement of 35 Ill. Adm. Code 742 must be in place over the Former WOT and the BDAA.

1190100004-Alton Steel, Inc.

Log No. B-160R2

Page IV-7 of IV-15

- iii. Approximate 2.5 inches thick compacted asphalt barrier over the entire concrete floor of the RPB.
5. Failure to comply with the limitations or requirements of an ELUC may result in avoidance of an Illinois EPA no further action/remediation determination in accordance with the program under which the determination was made. The failure to comply with the limitations or requirements of an ELUC may also be grounds for an enforcement action pursuant to Title VIII of the Illinois Environmental Protection Act.
6. The limitations or requirements of the ELUC apply in perpetuity or until:
 - a. The Illinois EPA issues a new no further action/remediation determination approving modification or removal of the limitation/requirement; and
 - b. A release or modification of the land use limitation is filed on the chain of title for the property that is the subject of the ELUC.
7. At no time shall this site be used in a manner inconsistent with the land use limitations established in the approved ELUC, unless: (1) attainment of objectives appropriate for the new land use is achieved, and (2) a new NFA determination is obtained from Illinois EPA and subsequently recorded in accordance with 35 Ill. Adm. Code 742.
 - a. Requests to release or modify an ELUC must be formally requested in writing from Illinois EPA as a: (1) request to amend the certification of closure; or (2) a permit modification request. Sufficient information must be provided in these requests to demonstrate that the requested change meets all the requirements of 35 Ill. Adm. Code 742.
 - b. Any final approval by Illinois EPA of a request to release or modify an ELUC must be filed with the chain of title for the subject facility.
8. A summary of overall corrective action efforts carried out at this facility, based on Illinois EPA's approval letters regarding workplans or reports associated with these efforts, is provided in Attachment F.

D. CORRECTIVE ACTION EFFORTS STILL TO BE COMPLETED

1. Corrective action activities at SWMU #5 must be completed to meet the following requirements and to obtain a NFA determination for this unit by Illinois EPA. The SWMU #5 is the Wastewater Treatment Plant (WWTP) Area and surface impoundments located directly south of the 14-inch Mill and the former Wire Mill.

- a. Wastewater Treatment Plant (WWTP) Area (SWMU #5) includes both current and historical WWTP, the sewer system, the Crown House, the Serpentine Lagoon, two historical underground storage tanks (USTs), three emergency sludge holding lagoons, and the wastewater drainage system (i.e., surface impoundments and interconnecting channels) located directly south of the 14-inch Mill extending westward to the former Wire Mill. Parts of this unit are still active.

A RCRA Facility Investigation (RFI) Phase I was completed for this unit. Illinois EPA required submittal of an RFI Phase II Work Plan in a letter dated October 18, 2000. A Phase II Work Plan for this unit was submitted April 10, 2007. The work plan proposed additional sampling and analyses for this unit. Illinois EPA approved the Phase II RFI Work Plan with conditions and modifications in a letter dated May 28, 2009 (B-160-CA-36). Illinois EPA approved the Phase II RFI investigation report, with conditions and modifications, and the proposed additional sampling in a letter dated May 4, 2017 (B-160R-CA-2).
 - b. Corrective action efforts for this unit must continue to be carried out in accordance with: (1) the afore-mentioned Settlement Agreement; (2) 35 Ill. Adm. Code 724.201 and 742; (3) plans and reports approved by Illinois EPA; and (4) this Permit.
 - c. The end result of corrective action efforts at this unit must meet the requirements of 35 Ill. Adm. Code 724.201 and 742.
 - d. The Permittee may request that changes be made to the approved corrective action program for this unit by submitting requests to modify this approved program to Illinois EPA for review and approval. Such requests must contain detailed information about the modification being requested and justification for the change.
2. The aforementioned Settlement Agreement for this facility requires, among other items, that: (1) a health and safety plan (HASP) meeting the requirements of 29 CFR be developed and implemented for any construction or excavation effort carried out at the facility; (2) any material excavated during these efforts be managed in accordance with 35 Ill. Admin. Code, Subtitle G and applicable federal law; and (3) the Permittee will implement a corrective action program to prevent groundwater contamination from extending beyond the perimeter of the facility in accordance with plans and reports approved by the Illinois EPA (known as the Perimeter Groundwater Observation Monitoring Program and is discussed further in Section III-A of this permit).

E. GROUNDWATER SPECIFIC CORRECTIVE ACTION

1. Section III-A of the Permit implements the regulatory requirements of 35 Ill. Adm. Code Part 724, Subpart F and outlines the groundwater monitoring requirements necessary to determine if groundwater impacts have extended at or beyond the perimeter of the ASI facility. The Perimeter Groundwater Observation Monitoring Program has eleven (11) existing wells to monitor groundwater in the Uppermost Aquifer at the perimeter of the ASI facility. In addition, the Perimeter Groundwater Observation Monitoring Program includes four (4) piezometers that monitor groundwater movement in the Lower Sand and Gravel Unit. This unit is located vertically beneath the Uppermost Aquifer.

F. CORRECTIVE MEASURES

1. If it is determined that corrective measures must be taken at a SWMU, then the Permittee must implement a Corrective Measures Program (CMP) for such SWMUs in general accordance with the procedures set forth in Attachment I to this permit. The corrective measures implemented by the Permittee must be sufficient to ensure the appropriate requirements of 35 Ill. Adm. Code 302, 620, 724, and 742 are met.
2. The types of corrective measures which may be implemented include, but are not limited to:
 - a. Removal of the contaminants or the contaminated media so that the remaining media meet remediation objectives developed in accordance with 35 Ill. Adm. Code 742;
 - b. Closing the SWMU as a landfill by establishing a proper final cover over the SWMU and then providing proper long-term monitoring/maintenance/management of: (1) leachate; (2) subsurface gas; (3) final cover system; and (4) groundwater;
 - c. Establishing engineered barriers to restrict exposure to the contaminants remaining at the SWMU (necessary to certain remediation objectives developed in accordance with 35 Ill. Adm. Code 742);
 - d. Establishing institutional controls to restrict activities at the facility, as necessary, to support remediation objectives established in accordance with 35 Ill. Adm. Code 742.
3. The Corrective Measures Program described in Attachment I to this permit consists of five phases:
 - a. Phase I--conceptual design of the selected corrective measure;

- b. Phase II--development of the final design plans for the corrective measure, including installation and operation/maintenance plans;
 - c. Phase III--actual construction/installation/implementation of the corrective measure;
 - d. Phase IV—operation/maintenance/monitoring, as necessary, of the corrective measure to ensure it is being properly implemented and is properly protecting human health and the environment.
 - e. Phase V--demonstration/verification that the corrective measure has been completed and that the established remediation objectives have been achieved.
 - f. Phases may be combined or skipped, depending on the actual corrective measure selected. The overall CMP implemented at a given SWMU must: (1) set forth a path to allow for an orderly progression of necessary corrective measures; and (2) allow for Illinois EPA oversight and approval throughout the entire process. The Permittee shall submit workplans and reports regarding all aspects of corrective measures for the Illinois EPA review and approval prior to carrying out any corrective measure activity.
4. A Phase I CMP Workplan, or its equivalent, must be submitted to the Illinois EPA within ninety (90) days of the date that the Illinois EPA notifies the Permittee of the need for a CMP.
 5. Subsequent CMP related workplans and reports must be submitted to the Illinois EPA for review and approval in accordance with a schedule approved by the Illinois EPA.
 6. For units closed as landfills:
 - a. The Phase II report must include a plan for the construction of a final cover system as well as a post-closure care plan (the post-closure care plan must include provisions for (1) inspecting the final cover; (2) monitoring the groundwater, leachate, and soil gas; and (3) taking corrective action if any problems are observed during the inspection/monitoring effort.
 - b. The Phase III report must document the construction of the approved final cover system and any other systems required for closure of the unit.
 - c. During Phase IV, quarterly reports must be submitted documenting the results of the inspection/monitoring efforts as well as any corrective measures taken in response to problems observed during these efforts.

1190100004-Alton Steel, Inc.

Log No. B-160R2

Page IV-11 of IV-15

The Permittee shall submit plans to the Illinois EPA for review and approval to address any groundwater quality or gas migration problems.

- d. The Phase V report will not be submitted until the post-closure care/corrective measures monitoring period has been completed. This report must demonstrate that all applicable post-closure requirements have been met and that the groundwater at the site meets the applicable standards.
7. Once all corrective measures have been completed, a report must be developed documenting all efforts and results associated with the completed measure, including, as appropriate, information demonstrating the approved remediation objectives for the project have been achieved.
8. The Illinois EPA's action on all Corrective Measures Program submittals shall be subject to the appeal provisions of Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

G. REQUIREMENTS FOR ADDRESSING NEWLY- IDENTIFIED SWMU(s) AND AREAS OF CONCERN AOC(s)

1. The Permittee shall notify the Illinois EPA in writing of any newly-identified SWMU or Area of Concern (AOC) discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, no later than thirty (30) calendar days after discovery. The notification shall provide the following information, as available:
 - a. The location of the newly-identified SWMU or AOC in relation to other SWMUs or AOCs on a scaled map or drawing;
 - b. The type and past and present function of the unit;
 - c. The general dimensions, capacities, and structural description of the unit (available drawings and specifications provided);
 - d. The period during which the unit was operated;
 - e. The specifics on all materials, including but not limited to, wastes and hazardous constituents, that have been or are being managed at the SWMU or AOC, to the extent available; and
 - f. The results of any relevant available sampling and analysis which may aid in determining whether releases of hazardous wastes or hazardous constituents have occurred or are occurring from the unit.
2. If the information submitted demonstrates a potential for a release of hazardous waste or hazardous constituents from the newly identified SWMU/AOC, the Illinois EPA may request in writing, that the Permittee prepare a SWMU Assessment Plan and a proposed schedule of implementation and completion of the Plan for any additional

1190100004-Alton Steel, Inc.

Log No. B-160R2

Page IV-12 of IV-15

SWMU(s)/AOC(s). This SWMU Assessment Plan must also propose investigations, including field investigations, if necessary, to determine the release potential to specific environmental media for the newly-identified SWMU/AOC. The SWMU Assessment Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste and hazardous constituents from the newly discovered SWMU(s)/AOC(s) to the environment.

3. Within ninety (90) calendar days after receipt of the Illinois EPA's request for a SWMU Assessment Plan, the Permittee shall submit a SWMU Assessment Plan.
4. After the Permittee submits the SWMU Assessment Plan, the Illinois EPA shall either approve, approve with conditions, or disapprove the Plan in writing. If the Plan is approved, or approved with conditions, the Permittee shall begin to implement the Plan within forty-five (45) calendar days of receiving such written notification. If the Plan is disapproved, the Illinois EPA shall notify the Permittee, in writing, of the Plan's deficiencies and specify a due date for submittal of a revised plan.
5. The Permittee shall submit a report documenting the results of the approved SWMU Assessment Plan to the Illinois EPA in accordance with the schedule in the approved Plan. The SWMU Assessment Report shall describe all results obtained from the implementation of the approved SWMU Assessment Plan.
6. Additional investigation plans and reports must be submitted to and approved by Illinois EPA, as necessary, to ensure the nature and extent of contamination at the SWMU/AOC is adequately characterized. Once the contamination is characterized, the Permittee shall develop remedial objectives for the SWMU in accordance with 35 Ill. Adm. Code 742; such objectives are subject to Illinois EPA review and approval.
7. The Permittee must implement a Corrective Measures Program, as necessary, to properly address any contamination encountered during the assessment which exceeds the approved remediation objectives for the SWMU. It must also be necessary to implement a Corrective Measures Program to support the approved remediation objectives (such as the establishment of any required engineered barriers or institutional controls).
8. All efforts carried out at newly identified SWMUs must meet the requirements of 35 Ill. Adm. Code 724.201.

H. FUTURE RELEASES FROM SWMUs

There exists a potential that a release may occur in the future from SWMUs identified in the RCRA Facility Assessment (RFA) which did not require any corrective action at the time that the RFA or RFI was completed. If the Permittee discovers that a release has

occurred from such a SWMU in the future, then the Illinois EPA must be notified of this release within thirty (30) days after its discovery following the procedures set forth in Condition IV.F.1. Additional investigation and, as necessary, corrective measures efforts at this SWMU must be carried out in accordance with the procedures set forth in Condition IV.G. The results of all corrective action efforts required by this condition must meet the requirements of 35 Ill. Adm. Code 724.201.

I. INTERIM MEASURES

At any time during the course of this permit, the Permittee may initiate interim measures for the purpose of preventing continuing releases and/or mitigating the results of releases and/or mitigating the migration of hazardous wastes or hazardous waste constituents. It shall not be necessary to conduct all phases of an investigation prior to implementing an interim measure if the Illinois EPA and the Permittee agree that a problem can be corrected, or a release mitigated, without additional study and/or without a formal Corrective Measures Study (CMS).

1. Prior to implementing any interim measures, the Permittee must submit detailed information regarding the proposed interim measure to the Illinois EPA for approval. This information shall include, at a minimum:
 - a. The objectives of the interim measure, including how the measure is mitigating a potential threat to human health and the environment; and/or, is consistent with, and integrated into, any long-term solution at the facility;
 - b. The design, construction, and maintenance requirements;
 - c. A schedule for design and construction; and
 - d. A schedule for progress reports.
2. If the Illinois EPA determines that a release cannot be addressed without additional study and/or a formal CMS, then the Illinois EPA will notify the Permittee that these must be performed. Any proposal made under this provision or any other activity resulting from such proposal shall not affect the schedule for implementation of any other portion of the Permit.
3. If the Illinois EPA determines that interim measures are necessary to protect human health or the environment, the Permittee will be notified by way of a permit modification.

J. FINANCIAL ASSURANCE

35 Ill. Adm. Code 724.201 requires that financial assurance be established for completing required corrective actions at solid waste management units:

1. At this time, there are no closure efforts required at the facility; and therefore, there are no required cost estimates for closure activities. The currently approved corrective action cost estimate for the SWMUs and the Perimeter Groundwater Observation Monitoring Program is \$479,389 in 2021 dollars. A more detailed breakdown of these cost estimates is provided in Attachment E.
2. The cost estimate for completing corrective action at the Wastewater Treatment Plant (SWMU 5) must be updated if additional investigation and/or remediation work is eventually required at this unit.
3. The Permittee shall prepare updated cost estimates each year for the completion of any closure or corrective action required under this permit, in order to provide financial assurance for completion of corrective action, as required under 35 Ill. Adm. Code 724.201(b). Such a cost estimate must be based upon the cost of contamination investigations and assessments for the SWMUs, and design, construction, operation, inspection, monitoring, and maintenance of the corrective measure(s) to meet the requirements of 35 Ill. Adm. Code 724.201 and this permit. Estimates are required only for known and quantifiable costs. These estimates must be based upon third party costs and be submitted to the Illinois EPA, if the corrective action cost estimates require updating. Adjustments to corrective action cost estimates for inflation should be submitted on or before the Permittee's anniversary date for submitting financial assurance. Adjustments due to reasons beyond inflation only shall be submitted as a permit modification.
4. Except as provided in Condition IV.J.5, the Permittee shall demonstrate continuous compliance with 35 Ill. Adm. Code 724.201 by providing documentation of financial assurance using a mechanism specified in 35 Ill. Adm. Code 724.243, in at least the amount of the cost estimate required under Condition IV.J.1. The words "completion of corrective action" shall be substituted for "closure and/or post-closure", as appropriate in the financial instrument specified in 35 Ill. Adm. Code 724.251. The documentation shall be submitted to the Illinois EPA within sixty (60) days after the approval of the initial or revised cost estimates required under Condition II.G. The Illinois EPA may accept financial assurance for the completion of corrective action in combination with another financial mechanism that is acceptable under 35 Ill. Admin. Code 724.246 at its discretion.
5. The terms of the financial assurance mechanisms for closure, post-closure care and corrective action activities are included in Section VI.11.a of the Settlement Agreement.

- a. Illinois EPA placed \$287,000 received under a previous Letter of Credit provided by Laclede for financial assurance relating to the Facility in a standby trust fund (the "Standby Trust Fund") where it shall remain until released by Illinois EPA.

- b. Alton Steel shall establish a trust fund in accordance with 35 Ill. Adm. Codes 724.243 and 724.245, and with terms approved by the Agency (the "Alton Trust Fund"). Alton Steel shall place \$25,000 in the Alton Trust Fund before the end of every quarter of each calendar year, from March 31, 2003, until such time as the value of the Alton Trust Fund plus the Standby Trust Fund equals or exceeds the current approved cost estimate. In lieu of the trust fund mechanism set forth in this paragraph, Alton Steel may provide financial assurance in the full amount required by the Permit using any other statutorily available financial assurance mechanism.

SECTION V: SPECIAL CONDITIONS

A. 39i CERTIFICATION

The Permittee shall submit a current 39i certification and supporting documentation with all applications for a permit.

B. COMPLIANCE SCHEDULE

1. Cost Estimates: Within ninety (90) days of the effective date of this Permit,
 - a. The Permittee shall submit revised post-closure cost estimates and financial assurance to meet the required minimum of thirty (30) years post-closure care costs for the CWP CAMU, as stated in Condition II.G.1 as a Class 1* permit modification.
 - b. The Permittee shall include an updated corrective action cost estimate for completing investigation /remediation work at SWMU 5, as required in 35 Ill. Adm. Code 724.201.
 - c. All cost estimates must be updated to the current year.

SECTION VI: STANDARD CONDITIONS FOR POST-CLOSURE CARE

GENERAL REQUIREMENTS

1. **EFFECT OF PERMIT.** The existence of a RCRA permit shall not constitute a defense to a violation of the Environmental Protection Act or Subtitle G, except for development, modification or operation without a permit. Issuance of this permit does not convey property rights or any exclusive privilege. Issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or infringement of state or local law or regulations. (35 Ill. Adm. Code 702.181)
2. **PERMIT ACTIONS.** This permit may be modified, reissued or revoked for cause as specified in 35 Ill. Adm. Code 703.270 through 703.273 and Section 702.186. The filing of a request by the Permittee for a permit modification or revocation, or a notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition. (35 Ill. Adm. Code 702.146)
3. **SEVERABILITY.** The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. (35 Ill. Adm. Code 700.107)
4. **PERMIT CONDITION CONFLICT.** In case of conflict between a special permit condition and a standard condition, the special condition will prevail. (35 Ill. Adm. Code 702.160)
5. **DUTY TO COMPLY.** The Permittee shall comply with all conditions of this permit except for the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of the Environmental Protection Act and is grounds for enforcement action; permit revocation or modification; or for denial of a permit renewal application. (35 Ill. Adm. Code 702.141 and 703.242)
6. **DUTY TO REAPPLY.** If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee must apply for a new permit at least 180 days before this permit expires, unless permission for a later date has been granted by the Illinois EPA. (35 Ill. Adm. Code 702.142 and 703.125)
7. **PERMIT EXPIRATION.** This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application (see 35 Ill. Adm. Code 703.181-703.209) and, through no fault of the Permittee, the Illinois EPA has not issued a new permit as set forth in 35 Ill. Adm. Code 702.125.
8. **NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE.** It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or

1190100004-Alton Steel, Inc.
Log No. B-160R2
Page VI-2 of VI-8

reduce the permitted activity in order to maintain compliance with the conditions of this permit. (35 Ill. Adm. Code 702.143)

9. DUTY TO MITIGATE. In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. (35 Ill. Adm. Code 702.144)
10. PROPER OPERATION AND MAINTENANCE. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance include effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory, and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. (35 Ill. Adm. Code 702.145)
11. DUTY TO PROVIDE INFORMATION. The Permittee shall furnish to the Illinois EPA, within a reasonable time, any relevant information which the Illinois EPA may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Illinois EPA, upon request, copies of records required to be kept by this permit. (35 Ill. Adm. Code 702.148)
12. INSPECTION AND ENTRY. The Permittee shall allow an authorized representative of the Illinois EPA, upon the presentation of credentials and other documents as may be required by law, to:
 - a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location. (35 Ill. Adm. Code 702.149)

13. MONITORING AND RECORDS. (35 Ill. Adm. Code 702.150)
- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste must be the appropriate method from Appendix A of 35 Ill. Adm. Code 721. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, latest versions; Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, latest versions; or an equivalent method as specified in the approved Waste Analysis Plan.
 - b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report or application. These periods may be extended by request of the Illinois EPA at any time. The permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.
 - c. Records of monitoring information shall include:
 - i. The date(s), exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical technique(s) or method(s) used; and
 - vi. The result(s) of such analyses. (35 Ill. Adm. Code 702.150)
14. REPORTING PLANNED CHANGES. The permittee shall give written notice to the Illinois EPA as soon as possible of any planned physical alterations or additions to the permitted facility. In general, proposed changes to the facility will need to be submitted to the Illinois EPA as permit modification request that complies with the requirements of 35 Ill. Adm. Code 703.280. (35 Ill. Adm. Code 702.152(a))
15. CONSTRUCTION CERTIFICATION. For a new hazardous waste management facility, the permittee may not commence treatment, storage or disposal of hazardous waste; and for a facility being modified the permittee may not treat, store or dispose of hazardous waste in the modified portion of the facility, until:

- a. The permittee has submitted to the Illinois EPA by certified mail or hand delivery a letter signed by the permittee and a qualified professional engineer stating that the facility has been constructed or modified in compliance with the permit; and
 - b.
 1. The Illinois EPA has inspected the modified or newly constructed facility and finds it is in compliance with the condition of the permit; or
 2. If, within 15 days of the date of submission of the letter in paragraph (a), the permittee has not received notice from the Illinois EPA of its intent to inspect, prior inspection is waived, and the permittee may commence treatment, storage or disposal of hazardous waste. (35 Ill. Adm. Code 703.247)
16. **ANTICIPATED NONCOMPLIANCE.** The Permittee shall give advance notice to the Illinois EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements, regulations or the Act. (35 Ill. Adm. Code 702.152(b))
17. **TRANSFER OF PERMITS.** This permit may not be transferred by the Permittee to a new owner or operator unless the permit has been modified or reissued pursuant to 35 Ill. Adm. Code 703.260(b) or 703.272. Changes in the ownership or operational control of a facility must be made as a Class 1 modification with the prior written approval of the Illinois EPA. The new owner or operator shall submit a revised permit application no later than 90 days prior to the scheduled change. (35 Ill. Adm. Code 703.260)
18. **MONITORING REPORTS.** Monitoring results shall be reported at the intervals specified in the permit. (35 Ill. Adm. Code 702.152(d))
19. **COMPLIANCE SCHEDULES.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than specified in 35 Ill. Adm. Code 702.162. (35 Ill. Adm. Code 702.152(e))
20. **TWENTY-FOUR HOUR REPORTING.**
- a. The Permittee shall report to the Illinois EPA any noncompliance with the permit which may endanger health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the following circumstances. This report shall include the following:
 - i. Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.

- ii. Information concerning the release or discharge of any hazardous waste or of a fire or explosion at the HWM facility, which could threaten the environment or human health outside the facility.
 - b. The description of the occurrence and its cause shall include:
 - i. Name, address, and telephone number of the owner or operator;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident;
 - iv. Name and quantity of material(s) involved;
 - v. The extent of injuries, if any;
 - vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where applicable; and
 - vii. Estimated quantity and disposition of recovered material that resulted from the incident.
 - c. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Illinois EPA may waive the five day written notice requirement in favor of a written report within fifteen days. (35 Ill. Adm. Code 702.152(f) and 703.245(b))
- 21. OTHER NONCOMPLIANCE. The Permittee shall report all instances of noncompliance not otherwise required to be reported under Standard Conditions 14, 15, and 16, at the time monitoring reports, as required by this permit, are submitted. The reports shall contain the information listed in Standard Condition 20. (35 Ill. Adm. Code 702.152(g))
- 22. OTHER INFORMATION. Where the Permittee becomes aware that it failed to submit any relevant facts in the permit application or submitted incorrect information in a permit application or in any report to the Illinois EPA, the Permittee shall promptly submit such facts or information. (35 Ill. Adm. Code 702.152(h))
- 23. SUBMITTAL OF REPORTS OR OTHER INFORMATION. All written reports or other written information required to be submitted by the terms of this permit shall be sent to:

1190100004-Alton Steel, Inc.
Log No. B-160R2
Page VI-6 of VI-8

Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
1021 N. Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

24. SIGNATORY REQUIREMENT. All permit applications, reports or information submitted to the Illinois EPA shall be signed and certified as required by 35 Ill. Adm. Code 702.126. (35 Ill. Adm. Code 702.151)
25. CONFIDENTIAL INFORMATION. Any claim of confidentiality must be asserted in accordance with 35 Ill. Adm. Code 702.103 and 35 Ill. Adm. Code 161.
26. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE. The Permittee shall maintain at the facility, until post-closure is complete, the following documents and amendments, revisions and modifications to these documents:
 - a. Post-closure plan as required by 35 Ill. Adm. Code 724.218(a) and this permit.
 - b. Cost estimate for post-closure care as required by 35 Ill. Adm. Code 724.244(d) and this permit.
 - c. Operating record as required by 35 Ill. Adm. Code 724.173 and this permit.
 - d. Inspection schedules as required by 35 Ill. Adm. Code 724.115(b) and this permit.

GENERAL FACILITY STANDARDS

27. GENERATOR REQUIREMENTS. Any hazardous waste generated at this facility shall be managed in accordance with the generator requirements at 35 Ill. Adm. Code Part 722.
28. SECURITY. The Permittee shall comply with the security provisions of 35 Ill. Adm. Code 724.114(b) and (c).
29. GENERAL INSPECTION REQUIREMENTS. The Permittee shall follow the approved inspection schedule. The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by 35 Ill. Adm. Code 724.115(c). Records of inspections shall be kept as required by 35 Ill. Adm. Code 724.115(d).
30. CLOSURE REQUIREMENTS FOR ACCUMULATION AREAS. The Permittee shall close containers storage areas, tanks, drip pads, or containment buildings used for the accumulation of on-site generated hazardous waste in accordance with the requirements identified at 35 Ill. Adm. Code 722.117(a)(8).

1190100004-Alton Steel, Inc.
Log No. B-160R2
Page VI-7 of VI-8

PREPAREDNESS AND PREVENTION

31. **DESIGN AND OPERATION OF FACILITY.** The Permittee shall maintain and operate the facility to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. (35 Ill. Adm. Code 724.131)

RECORD KEEPING

32. **OPERATING RECORD.** The Permittee shall maintain a written operating record at the facility in accordance with 35 Ill. Adm. Code 724.173.

POST-CLOSURE

33. **CARE AND USE OF PROPERTY.** The Permittee shall provide post-closure care for the facility as required by 35 Ill. Adm. Code 724.217 and in accordance with the approved post-closure plan.
34. **AMENDMENT TO POST-CLOSURE PLAN.** The Permittee must amend the post-closure plan whenever a change in the facility operation plans or facility design affects the post-closure plan or when an unexpected event has occurred which has affected the post-closure plan pursuant to 35 Ill. Adm. Code 724.218(d).
35. **COST ESTIMATE FOR POST-CLOSURE.** The Permittee's original post-closure cost estimate, prepared in accordance with 35 Ill. Adm. Code 724.244, must be:
- a. Adjusted for inflation either 60 days prior to each anniversary of the date on which the first post-closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year. This permit condition is applicable throughout the entirety of the post-closure care period.
 - b. Revised whenever there is a change in the facility's post-closure plan increasing the cost of the post-closure plan.
 - c. Kept on record at the facility and updated. (35 Ill. Adm. Code 724.244)
 - d. Maintained at the value approved by Illinois EPA with annual adjustment for inflation during the post-closure care period and cannot be decreased unless approved by the Illinois EPA in a permit modification.
36. **FINANCIAL ASSURANCE FOR POST-CLOSURE CARE.** The Permittee shall demonstrate compliance with 35 Ill. Adm. Code 724.245 and 703.241(a)(2) by providing documentation of financial assurance, as required by 35 Ill. Adm. Code 724.251, in at least the amount of the cost estimates required by Permit Condition 35. This financial assurance shall be maintained at such value throughout the post-closure care period and shall be

adjusted accordingly pursuant to Permit Condition 35. Changes in financial assurance mechanisms must be approved by the Illinois EPA pursuant to 35 Ill. Adm. Code 724.245.

Financial assurance documents submitted to Illinois EPA should be directed to the following address:

Illinois Environmental Protection Agency
Bureau of Land #24
Financial Assurance Program
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL. 62794-9276

37. INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS. The Permittee shall comply with 35 Ill. Adm. Code 724.248 whenever necessary.

SECTION VII: REPORTING AND NOTIFICATION REQUIREMENTS

The reporting and notification requirements of each section of the RCRA Post-Closure permit is summarized below. This summary is provided to highlight the various reporting and notification requirements of this permit.

Condition	Submittal	Date
SECTION II: POST CLOSURE CARE		
F.2	Request permit modification to remove the liner or hazardous waste	Prior to removing the liner or wastes
F.4	Certify to Illinois EPA that post-closure care was performed in accordance with the specifications and submit Post-Closure Documentation Report	Within 60 days after completion of the post-closure care period
SECTION III: GROUNDWATER DETECTION MONITORING PROGRAM		
J.2	Groundwater monitoring data and statistical calculations required	Semi-annually
J.3	Groundwater Surface Elevation	Collected semi-annually Reported annually, due July 15
J.4	Groundwater flow rate and direction	Annually with the groundwater data due July 15
J.5	Surveyed Elevation	Every 5 years, due July 15 or at the request of Illinois EPA or whenever the elevation changes. In addition, for new wells, at the time of installation.
J.6	Elevation of the bottom of each well	Annually due July 15
J.10.a	Notify Illinois EPA in writing of statistically significant increase	Within 7 days after the increase was discovered
J.10.b	Sample groundwater in all wells for the approved subset of Appendix I constituents	Immediately after increase is discovered
J.10.d	Apply for permit modification establishing compliance monitoring program	Within 90 days after the increase was discovered
J.10.e	Provide Illinois EPA with corrective action feasibility plan	Within 180 days after the increase was discovered
J.11.a	Notify Illinois EPA in writing of intent to make demonstration	Within 7 days after the increase was discovered
J.11.b	Submit a report to Illinois EPA which demonstrates that a source other than a	Within 90 days after the increase was discovered

	regulated unit caused the increase, or resulted from error	
J.11.c	Submit to Illinois EPA application to change detection monitoring program	Within 90 days after the increase was discovered
SECTION III-A: PERIMETER GROUNDWATER OBSERVATION MONITORING PROGRAM		
I.2	Groundwater monitoring data and statistical calculations required	Semi-annually and annually
I.3	Groundwater surface elevation	Evaluated semi-annually; reported annually, due July 15.
I.4	Surveyed elevation	Every 5 years, due July 15 or at the request of Illinois EPA or whenever the elevation changes. In addition, for new wells, at the time of installation.
I.5	Elevation of bottom of each well	Annually due July 15
I.9.a	Notify Illinois EPA in writing of significant increase	Within 7 days after the increase was discovered
I.9.b	Sample groundwater in all wells for Appendix I	Immediately after the increase discovered
I.9.d	Apply for a permit modification establishing a compliance monitoring program	Within 90 days after the increase was discovered
I.9.e	Provide Illinois EPA with a corrective action feasibility plan	Within 180 days after the increase was discovered.
I.10.a	Notify Illinois EPA in writing of intent to make demonstration	Within 7 days after the increase was discovered
I.10.b	Submit a report to Illinois EPA which demonstrates that a source other than a regulated unit caused the increase, or resulted from error	Within 90 days after the increase was discovered
I.10.c	Submit to Illinois EPA application to change detection monitoring program	Within 90 days after the increase was discovered
SECTION IV: CORRECTIVE ACTION		
G.1	Notify Illinois EPA of newly identified SWMUs	Within 30 days of discovery
G.3	SWMU Assessment Plan	Within 90 days after receipt of Illinois EPA's request

H.	Notify Illinois EPA of release from SWMU	Within 30 days of discovery
J.3	Submit annual corrective action cost estimate if required	As necessary
SECTION V: SPECIAL CONDITIONS		
A.	Submit 39i certification and supporting documentation	With all application for a permit
B.1	Submit revised post-closure cost estimates and financial assurance	Within 60 days of the effective date of this Permit
SECTION VI: STANDARD CONDITIONS		
6	Complete application for new permit	At least 180 days prior to permit expiration
11	Information requested by Illinois EPA and copies of records required to be kept by this permit	Reasonable time
14	Notify Illinois EPA of planned physical alterations or additions	At least 15 days prior to planned change
16	Notify Illinois EPA of changes which may result in permit noncompliance	Within 15 days of change
17	Application for permit modification indicating permit is to be transferred	At least 90 days prior to transfer date
19	Submission of any information required in a compliance schedule	Within 14 days after each schedule date
20	Report to Illinois EPA any non-compliance which may endanger health or environment	
	By telephone	Within 24 hours after discovery
	In writing	Within 5 days after discovery
21	Report all other instances of noncompliance	At the time monitoring reports, as required by this permit, are submitted
34	Application for permit modification amending post-closure plan	60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred
35(a)	Adjust post-closure cost estimate for inflations	Within 60 days after anniversary date
35(b)	Revision of post-closure cost estimate	As needed, within 90 days of discovery of revision

R 001208
1190100004-Alton Steel, Inc.
Log No. B-160R2
Page VII-4 of VII-4

36	Change in financial assurance mechanism for post-closure	As needed
37	Notify Illinois EPA of commencement of voluntary or involuntary bankruptcy proceedings	Within 10 days after commencement of proceeding

ATTACHMENT A
INSPECTION SCHEDULE & INSPECTION FORM
STATE ID # 1190100004
ILD006280606
Post-Closure Permit Log No. B-160R2

ATTACHMENT A

Inspection Schedule for Alton Steel, Inc.

<u>Inspection Item</u>	<u>Frequency</u>	<u>Procedure</u>
1. Integrity of Cap and Cover Erosion Subsidence Run-on/Run-off Control Weed/Vegetation	Semi-Annual	Inspections must be conducted in accordance with Section E.6 of the approved permit application.
2. Security Devices Fence Locks Warning Signs	Semi-Annual	
3. Groundwater Monitoring Wells Cap Casings Concrete Collar	Semi-Annual	

**CONSOLIDATED WASTE PILE MONTHLY INSPECTION CHECKLIST
ALTON STEEL, INC.**

Inspector's Name	Date
Weather Conditions? Sunny/Cloudy/Windy/Rainy/Snow	Ground Conditions? Wet/Dry/Snow

GROUNDWATER MONITORING WELLS

NOTE: Any "No" answer requires explanation

	YES	NO	COMMENTS
Monitoring wells locked and in good condition?			
Guard posts or protective casings in good condition?			
Locks in good condition?			
Well ID numbers clearly marked?			
Concrete collars in good condition?			
Is the surveyed benchmark used to prepare the survey plat for the consolidated waste pile visible, accessible, clearly labeled and undisturbed?			

SECURITY DEVICES

	YES	NO	COMMENTS
Fence in good condition?			
Fence posts in good condition?			
Surface pads in good condition?			
Gates closed and locked upon arrival?			
Locks in good condition?			
Warning signs posted at each entrance?			

INTEGRITY OF CAP/COVER

NOTE: Any "Yes" answer requires explanation

	YES	NO	COMMENTS
Any ponding or seeps?			
Any cracks or erosion channels greater than 1 inch wide?			
Any subsidence?			
Any gas odor, vegetative or vector problems?			
Any signs of stressed vegetation or no vegetation?			
Any vegetation with tap roots (shrubs or trees) growing on the cover?			
Vegetation growth impedes inspection of the cap?			
Any significant quantity of materials in the run-off ditches?			

SUMMARY OF REPAIRS OR CORRECTIVE ACTION TAKEN AND DATE COMPLETED:

ATTACHMENT B
CONSTRUCTION CERTIFICATION FORM
STATE ID # 1190100004
ILD006280606
Post-Closure Permit Log No. B-160R2

When submitting certifications required by this post-closure permit for construction of any new unit, please complete the attached certification form. This will help to ensure that the submittal reaches its proper destination, and the certification will meet the regulatory requirements. Sending the Field Operations Section (FOS) copy directly to the FOS Office is acceptable as long as all copies have a completed copy of the enclosed form, and you advise the Permit Section, in writing, that a copy has been sent to the FOS Office.

A documentation report and as-built drawings (sealed and signed by an Illinois Professional Engineer) must be included with this certification. Information necessary to document the construction of the unit and to support the certification must be contained within the report. This report should include a thorough description of all construction data and drawings and should be formatted in a logical and orderly manner. The construction documentation report must contain at least the following items:

1. An introduction and summary which describes the scope and purpose of the project;
2. A description of all construction activities, including quality assurance and quality control;
3. As-built drawings of the unit and a description of any deviations from the plans and specifications approved in the permit;
4. A description of the test methods used and justification for any deviations from standard test methods;
5. A summary of test results, identification of any samples which did not meet the specifications, and the corrective action and retesting which was undertaken in response to any failing test results;
6. Any necessary information associated with construction of the unit to document that construction was in accordance with the plans and specifications approved by the permit;
7. Information specifically required by the permit; and
8. Any available photographs of the unit.

CONSTRUCTION CERTIFICATION

This statement is to be completed by both the responsible officer and the qualified professional engineer upon completion of construction in accordance with 35 Ill. Adm. Code 702.126. Submit one copy of the certification with original signatures and two additional copies. Forward these certification statements and any information required by the permit to the following address:

Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
1021 N. Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

FACILITY NAME: Alton Steel, Inc.

IEPA SITE CODE: LPC No. 1190100004

USEPA ID NO.: ILD006280606

PERMIT LOG NO. B-160R2

PERMIT (OR MODIFICATION) ISSUANCE DATE:

PERMIT CONDITION NO. REQUIRING CERTIFICATION:

The _____ has been constructed in accordance with the specifications in the post-closure permit application. Documentation that the construction was in accordance with the permit is contained in the enclosed report. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Owner/Operator

Name and Title

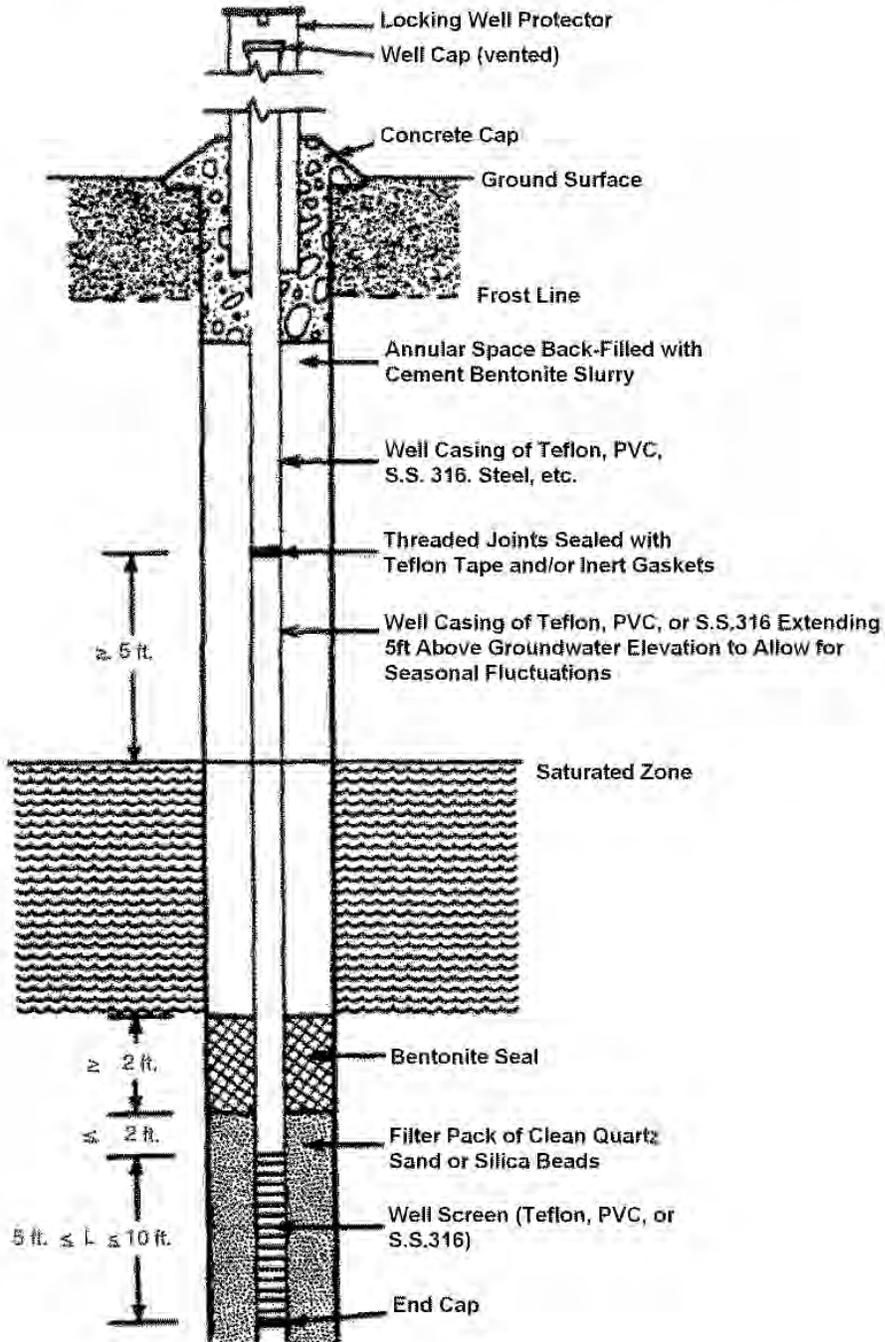
Signature of Registered P.E.

Name of Registered P.E. and
Illinois Registration Number
(P.E. Seal)

DATE

ATTACHMENT C
GROUNDWATER MONITORING PROGRAM ATTACHMENTS
STATE ID # 1190100004
ILD006280606
Post-Closure Permit Log No. B-160R2

Monitoring Well Diagram





Illinois Environmental Protection Agency

Well Completion Report

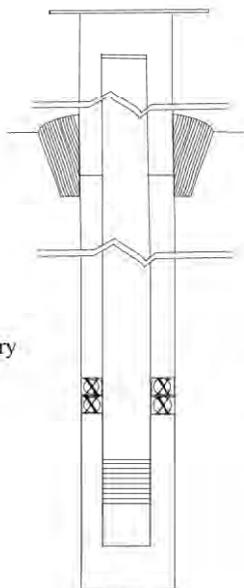
Site Number: _____ County: _____

Site Name: _____ Well #: _____
 State _____
 Plane Coordinate: X _____ Y _____ (or) Latitude: _____ Longitude: _____ Borehole #: _____

Surveyed by: _____ IL Registration #: _____
 Drilling Contractor: _____ Driller: _____
 Consulting Firm: _____ Geologist: _____
 Drilling Method: _____ Drilling Fluid (Type): _____
 Logged By: _____ Date Started: _____ Date Finished: _____
 Report Form Completed By: _____ Date: _____

ANNULAR SPACE DETAILS

	Elevations (MSL)*	Depths (BGS)	(.01ft.)
	_____	_____	Top of Protective Casing
	_____	_____	Top of Riser Pipe
Type of Surface Seal: _____	_____	_____	Ground Surface
Type of Annular Sealant: _____	_____	_____	Top of Annular Sealant
Installation Method: _____	_____	_____	Static Water Level (After Completion)
Setting Time: _____	_____	_____	
Type of Bentonite Seal - - Granular, Pellet, Slurry (Choose One)	_____	_____	Top of Seal
Installation Method: _____	_____	_____	Top of Sand Pack
Setting Time: _____	_____	_____	Top of Screen
Type of Sand Pack: _____	_____	_____	Bottom of Screen
Grain Size: _____ (Sieve Size)	_____	_____	Bottom of Well
Installation Method: _____	_____	_____	Bottom of Borehole
Type of Backfill Material: _____ (if applicable)			
Installation Method: _____			



* Referenced to a National Geodetic Datum

CASING MEASUREMENTS

Diameter of Borehole (inches)	
ID of Riser Pipe (inches)	
Protective Casing Length (feet)	
Riser Pipe Length (feet)	
Bottom of Screen to End Cap (feet)	
Screen Length (1" slot to last slot) (feet)	
Total Length of Casing (feet)	
Screen Slot Size **	

**Hand-Slotted Well Screens are Unacceptable

WELL CONSTRUCTION MATERIAL

(Choose one type of material for each area)

Protective Casing	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Above W.T.	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Below W.T.	SS304, SS316, PTFE, PVC, or Other
Screen	SS304, SS316, PTFE, PVC, or Other

**Formatting Requirements for the 01 Record of the Electronically Submitted
Groundwater and Leachate Data (the 01 Record portion of the LPC-160 is included
for example purposes)**

**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM**

RECORD CODE							TRANS CODE	
L	P	C	S	M	0	1	A	
1					7		8	

REPORT DUE DATE ____/____/____
36 M D Y 41

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER _____ 9 18	MONITOR POINT NUMBER _____ (see Instructions) 19 22
REGION _____ CO. _____	DATE COLLECTED ____/____/____ 23 M D Y 28
FACILITY NAME _____	

FOR IEPA USE ONLY
LAB _____ 29
DATE RECEIVED ____/____/____ 42 M D Y 47

BACKGROUND SAMPLE (X) _____ TIME COLLECTED ____:____:____
54 (24 Hr. Clock) 55 11 M 58

UNABLE TO COLLECT SAMPLE _____
(see Instructions) 59

MONITOR POINT SAMPLED BY _____
(see Instructions) 60 OTHER (SPECIFY) _____

SAMPLE FIELD FILTERED — INORGANICS (X) _____ ORGANICS (X) _____
61 62

SAMPLE APPEARANCE _____
63

COLLECTOR COMMENTS _____
102
103

LAB COMMENTS _____
142
150
199

IL 532 1213
LPC 160 01/90

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 ½, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$25,000 for each day the failure continues a fine up to \$1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Agency. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

*Only Keypunch with Data in Column 35 or Columns 38-47

KEY:

<u>Spaces Numbered</u>	<u>Description</u>	<u>Format</u>
Spaces 1-7	Record Code	LPCSM01
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	G000
Spaces 23-28	Date Collected	000000
Space 29	Lab	
Spaces 30-35	Filler	
Spaces 36-41	Report Due Date	000000
Spaces 42-47	Date Received	000000
Spaces 48-53	Filler 2	
Space 54	Background Sample	
Spaces 55-58	Time Collected	0000
Space 59	Unable to Collect Sample	
Space 60	Monitoring Point Sampled By	
Space 61	Field Filtered – Inorganic	
Space 62	Field Filtered – Organic	
Spaces 63-102	Sample Appearance	
Spaces 103-142	Collector Comments	
Spaces 143-149	Filler 3	
Spaces 150-199	Lab Comments	

APPENDIX I MONITORING

SUBSET PARAMETERS

Groundwater Detection Monitoring Program

Antimony (total and dissolved)
Arsenic (total and dissolved)
Barium (total and dissolved)
Beryllium (total and dissolved)
Cadmium (total and dissolved)
Chromium (Hexavalent-total and dissolved)
Chromium (total and dissolved)
Lead (total and dissolved)
Mercury (total and dissolved)
Nickel (total and dissolved)
Selenium (total and dissolved)
Thallium (total and dissolved)
Zinc (total and dissolved)

APPENDIX I MONITORING

SUBSET PARAMETERS

Perimeter Groundwater Observation Monitoring Program

Antimony (total and dissolved)	Benzo(a)anthracene
Arsenic (total and dissolved)	Benzo(a)pyrene
Barium (total and dissolved)	Benzo(b)fluoranthene
Beryllium (total and dissolved)	Chrysene
Cadmium (total and dissolved)	Dibenzo(a,h)anthracene
Chromium (Hexavalent-total and dissolved)	Fluoranthene
Chromium (total and dissolved)	Fluorene
Copper (total and dissolved)	Indeno(1,2,3-c,d)pyrene
Lead (total and dissolved)	Naphthalene
Manganese (total and dissolved)	Pyrene
Mercury (total and dissolved)	Acenaphthalene
Nickel (total and dissolved)	Benzo(g,h,i)perylene
Selenium (total and dissolved)	Phenanthrene
Silver (total and dissolved)	Total PCBs
Thallium (total and dissolved)	Arochlor 1016
Zinc (total and dissolved)	Arochlor 1221
Benzene	Arochlor 1232
Ethylbenzene	Arochlor 1242
Toluene	Arochlor 1248
Total Xylene	Arochlor 1254
Acenaphthene	Arochlor 1260
Anthracene	

ATTACHMENT D

APPROVED PERMIT APPLICATION IDENTIFICATION

STATE ID # 1190100004

ILD006280606

Post-Closure Permit Log No. B-160R2

IDENTIFICATION OF APPROVED PERMIT APPLICATION

This permit is based on the information in the approved permit application. The approved permit application consists of the following documents:

<u>Document</u>	<u>Date</u>	<u>Date Received</u>
RCRA Post-Closure Permit Renewal Application	7/12/19	7/15/19
ADDITIONAL INFORMATION	3/31/20	4/6/20
ADDITIONAL INFORMATION	6/11/20	6/17/20
ADDITIONAL INFORMATION	8/26/20	9/1/20
ADDITIONAL INFORMATION	10/9/20	10/15/20
ADDITIONAL INFORMATION	9/24/21	9/27/21

ATTACHMENT E

CORRECTIVE ACTION AND POST CLOSURE CARE

COST ESTIMATE SUMMARY

STATE ID # 1190100004

ILD006280606

Post-Closure Permit Log No. B-160R2

CORRECTIVE ACTION, CLOSURE AND POST-CLOSURE CARE**COST ESTIMATE SUMMARY****Alton Steel, Inc.**

These estimates are based on using 2021 dollars and include the cost of: (1) activities carried out each year (i.e., annual costs); and (2) one-time or non-annual costs.

ACTIVITY	COST ESTIMATES			
	Annual Cost Per Year	Total Amount of Annual Costs	Non-Annual Costs	Total Costs w/Contingencies
Corrective Action	\$29,063	\$290,630	\$145,178	\$479,389*
Closure	\$0	\$0	\$0	\$0
Post Closure Care	\$16,508	\$495,240	\$30,560	\$578,380*
TOTAL	\$45,571	\$785,870	\$175,738	\$1,057,769

Notes:

Total Annual Costs = Annual Cost per Yr. x 30 years

10% Contingency applied

*See Special Condition V.B.1(a) and (b).

ATTACHMENT F

CHRONOLOGICAL SUMMARY OF RCRA CORRECTIVE ACTION ACTIVITIES

STATE ID # 1190100004

ILD006280606

Post-Closure Permit Log No. B-160R2

The table below summarizes the corrective action activities completed to date at Alton Steel, Inc. (Illinois EPA ID No. 1190100004, USEPA ID No. ILD006280606) under its RCRA permit (Log No, B-160, B-160R, B-160R2 and associated modifications). This summary is based on a chronological presentation of the various letters sent by Illinois EPA.

Date of IEPA Letter and Log No.	Brief Description of Action
June 28, 1996 (B-160)	Issued a RCRA Post-Closure Permit for a hazardous waste landfill. This permit allows Laclede to operate the Consolidated Waste Pile as a CAMU with post-closure care and requires them to close two other HWMUs. It also requires the facility to conduct Corrective Action at eight SWMUs.
January 21, 1997 (B-160-M-1 and B-160-M-2)	Approved requests to modify the Part B Permit: (1) a Class 1 permit modification request to modify Conditions IV.D.2 and IV.G.1.a.ii.; and (2) a Class I permit modification request to extend the time limits for closure activities contained in Condition I.A.D.3 and I.B.E.1.
July 7, 1997 (B-160-CA-1)	Approved the RCRA Facility Investigation Phase I Work Plan, submitted on December 11, 1996 and March 21, 1997 with conditions and modifications. The work plan included an investigation plan for the following four units as required in Condition II.C.2 of the Part B Permit: (1) Existing WWTP area (SWMU 5); (2) Former Waste Oil Tank (SWMU 8); (3) Pre-RCRA Waste Piles (SWMU 12); and (4) Facility in General (SWMU 13).

Date of IEPA Letter and Log No.	Brief Description of Action
July 15, 1997 (B-160-M-3)	Approved a closure plan modification for the Rod Patenting Building, with conditions and modifications. The submittal proposed additional activities to further assess the integrity of the concrete floor and soil sampling/analysis plan to determine if underlying soils have been impacted. This request was reviewed as a Class I RCRA post-closure permit modification request.
January 9, 1998 (B-160-M-5)	Requested additional information regarding a Tier 3 evaluation submitted for the lead levels remaining at the Rod Patenting building.
June 10, 1998 (B-160-CA-1)	Determined that, subject to certain conditions: (1) closure of the Pelletizer Area has met the requirements of 35 Ill. Adm. Code 725.211 and 725.358; and (2) the corrective action activities at the Pre-RCRA waste pile have met the requirements of 35 Ill. Adm. Code 724.201. The conditions required for the Pelletizer are: (1) at least 3' of clean fill be placed over the area and property maintained; and (2) the access to the remaining material is restricted. The conditions required for the Pre-RCRA Waste Pile are: (1) at least 10' of clean fill be placed over the area and property maintained; (2) the access to the remaining material be restricted; and (3) a demonstration be made that groundwater has not been impacted at this unit.
June 18, 1999 (B-160-CA-4)	Approved Laclede's May 1, 1998 submittal regarding proposed installation of groundwater monitoring wells at WOT area with conditions and modifications. The letter also contained approval for the Phase I RFI report relative to groundwater at WOT.
June 28, 1999 (B-160-M-5)	Approved request to modify the language of Condition IV.G.2 (groundwater requirements) of the permit. Also modified the permit to include the established background concentrations for the total fraction of the listed indicator parameters, as listed in Permit Conditions IV.D.1, List G 1, and IV.B.2 has been modified to reflect the Class II status of the groundwater beneath the site.
July 8, 1999 (B-160-M-4)	Disapproved four submittals submitted by Laclede regarding RPB closure. Laclede's submittal included the soil sampling results at RPB and Tier 3 analysis (for lead) of the sampling results.
July 6, 2000 (B-160-CA-7)	Approved Laclede's "Safe Work Plan" for the Baghouse decommissioning work with conditions and modifications. This letter specifically identified the soil sampling required for the Scrap Aisle area near the Baghouses (SWMU 7).
July 7, 2000 (B-160-CA-6)	Approved Laclede's January 12, 2000 submittal with conditions and modifications. The submittal contained groundwater sampling results and a proposal for additional groundwater work at WOT.
August 1, 2000 (B-160-CA-8)	Approved July 6, 2000 letter regarding the cleanup for the EAF dust release at the Electric Melt Shop. This letter indicated that the closure of the Scrap Aisle near the Electric Melt Shop will be approved given that an institutional control and a warning layer of buried plastic in the vicinity of the Scrap Aisle area will be placed to restrict all access to the contaminated soil beneath.

Date of IEPA Letter and Log No.	Brief Description of Action
August 24, 2000 (B-160-M-4)	Responded to the four submittals made by Laclede regarding closure of Rod Patenting Building (RPB), which describes activities conducted at RPB. Additional soil sampling was required to determine the extent of contamination in the area of the RPB.
October 18, 2000 (B-160-CA-3)	Approved the RFI Phase I Report with conditions and modifications. This submittal summarized investigations conducted at Waste Oil Tank (WOT) and Wastewater Treatment Plant (WWTP). Required submittal of a Phase II Workplan for work at WWTP, WOT and Pre-RCRA Waste Pile.
November 2, 2000 (B-160)	Approved the closure of the Consolidated Waste Pile in accordance with 35 Ill. Adm. Code 724. Laclede's continuing post-closure care is required at this unit.
May 7, 2001 (B-160-CA-11)	Approved the request to modify the approved corrective action program at WOT with conditions and modifications. This submittal reported the results of additional work conducted at the WOT and requested to close the groundwater portion of the corrective action requirements for this unit. IEPA approved the work conducted at this unit; however, the request to close the groundwater portion of the project was not approved since the soil component is still under investigation.
July 10, 2001 (B-160-CA-10 and B-160-CA-13)	Approved two reports regarding the remedial activities conducted at the area around Baghouse Dust Accumulation Area (SWMU 7) with conditions and modifications. These reports summarized the cleanup and remedial activities conducted at SWMU 7 due to the K061 release from the collapsed duct at the Electric Melt Shop. For the remedial activities, only the Scrap Aisle Area portion of the impacted area was approved.
April 23, 2003 Settlement Agreement	A Settlement Agreement was signed between Alton Steel, Laclede Steel, Illinois EPA and U.S. EPA, as a part of the property transfer and Laclede's bankruptcy case to address the many environmental concerns at the facility. This Settlement Agreement is associated with Case No. 01-48321 filed in United States Bankruptcy Court for the Eastern District of Missouri, Eastern Division.
March 23, 2004 (B-160-CA-15)	Approved a workplan for cleaning and dismantling of the Waste Oil Tank (SWMU 8) with conditions and modifications. This workplan did not include any investigation plan at the unit.
June 18, 2004 (B-160-CA-16)	Approved Dowel Assembly Building (SWMU 9) Cleaning Report and determined that no further corrective action was required at this unit.
August 16, 2004 (B-160-CA-17)	Approved a workplan for soil investigation at Waste Oil Tank (SWMU 8) with conditions and modifications.
August 26, 2004 (B-160-CA-14)	Approved the Phase II Environmental Site Assessment (ESA) workplan for the facility with conditions and modifications. This was submitted in accordance with the Settlement Agreement. .

Date of IEPA Letter and Log No.	Brief Description of Action
September 13, 2004 (B-160, B-160-M-5, B-160-M-6 and B-160-CA-12)	Approved 6 submittals with conditions and modifications. In this letter, NFR was approved and an ELUC was required at both the Pelletizer Area (SWMU 3) and the Pre-RCRA Waste Pile (SWMU 12). In addition, at SWMU 2 (Rod Pat Building), the proposed Tier 3 evaluation was disapproved, requiring the facility to conduct additional investigation or remediation at SWMU 2.
September 16, 2004 (B-160-CA-14)	Made a minor modification to Condition 2 of Illinois EPA's August 26, 2004 letter.
September 17, 2004 (B-160-CA-18) (Financial)	Requested Associated Trust Company, where Alton Steel's Purchase Price Trust fund is managed, to release funds to Alton Steel and Tetra Tech EM for completing various remedial works required in the Settlement Agreement. (1) Removal of EAF dust from the Electric Melt Shop, and (2) cleanup of the Dowel Assembly Building.
February 24, 2005 (B-160-CA-21)	Approved submitted draft ELUC subject to conditions and modifications. Constitutes IEPA's no further action determination instrument that must be filed, provided terms and conditions of this letter are met for the Pelletizer Area (SWMU 3) and the Pre-RCRA Waste Pile (SWMU 12).
April 12, 2005 (B-160-CA-23) (Financial)	Requested Associated Trust Company, where Alton Steel's Purchase Price Trust fund is managed, to release funds to Alton Steel and Tetra Tech EM for completing remedial work required in the Settlement Agreement consisting of cleaning and dismantling the Waste Oil Tank.
May 13, 2005 (B-160-CA-24) (Financial)	Requested Associated Trust Company, where Alton Steel's Purchase Price Trust fund is managed, to release funds to Alton Steel, Tetra Tech EM, and Environmental Management Alternatives, Inc. for completing remedial work required in the Settlement Agreement consisting of inventorying, characterizing and disposing of containerized waste generated by Laclede prior to its closure.
August 11, 2005 (B-160-CA-26)	Approved a submittal re: closure/corrective action efforts at the Rod Pat Building (SWMU 2) with conditions and modifications. Actions included establishing engineered barriers in and around the building and conducting additional soil investigation in certain areas near the building.
August 30, 2005 (B-160-M-7)	Approved a Class 1* modification to change ownership from Laclede Steel to Alton Steel. The Corrective Action Section of the permit was also changed to reflect the conditions of the Settlement Agreement filed with the U.S. Bankruptcy Court, Case No. 01-48321.
October 19, 2005 (B-160-CA-27)	Approved recorded ELUCs for the Pelletizer Area (SWMU 3) and the Pre-RCRA Waste Pile (SWMU 12). This completes the closure of the Pelletizer Area, and the corrective actions at the Pre-RCRA Waste Pile.
November 1, 2005 (B-160-CA-28)	Approved report for the Waste Oil Tank Soil and Groundwater Investigation with conditions and modifications. The soil ingestion route is to be addressed by the use of an engineered barrier. Closure of the groundwater cannot be approved at this time.

Date of IEPA Letter and Log No.	Brief Description of Action
May 8, 2006 (B-160-CA-29)	Approved the Phase II Environmental Site Assessment (ESA) Report with conditions and modifications. ASI must submit a groundwater monitoring work plan to implement a groundwater monitoring system (6 new perimeter monitoring wells) and investigate groundwater exceedances found in the Phase II ESA. ASI may address the contamination identified during the Phase II ESA through IEPA's SRP.
May 25, 2006 (B-160-CA-30)	Approved submittal made by Shaw Environmental Group w/results of a supplemental soil investigation at the RPB. It was reviewed as a request to modify the approved RCRA corrective action program for the RPB, and was approved w/conds & mods. An engineered barrier and an institutional control must be established both inside the RPB and an area outside the building.
August 1, 2006 (B-160-CA-22)	Approved revised WOT Cleaning and Dismantling Report with conditions and modifications.
August 16, 2006 (B-160-CA-31)	Approved submittal regarding groundwater investigation & engineered barrier at WOT. NFA included. Approved draft ELUC. ELUC needs slight modification and then be recorded.
November 30, 2006 (B-160-CA-33)	Approved recorded institutional control/ELUC and NFA letter for WOT w/Madison County Recorder's Office.
March 2, 2007 (B-160-CA-32)	GAU approved the <u>Perimeter Well Groundwater Monitoring Work Plan</u> w/conditions & modifications. Work plan is for additional gw monitoring wells at the facility.
April 11, 2007 (B-160-CA-35)	Approved, with conditions and modifications, the Tier 3 TACO Risk Assessment for the soil around the Rod Pat Bldg. An ELUC and an engineered barrier are two of the requirements.
July 3, 2007 (B-160-CA-37)	Submittal was faxed lab results of 2001 wipe tests at the Rod Pat Bldg. (SWMU 2). The info was reviewed and the following are required: (1) an engineered barrier is required over the entire floor of the Rod Pat Bldg; (2) a description of the engineered barrier must be submitted; and (3) an ELUC must be recorded for the Rod Pat Bldg.
May 7, 2008 (B-160-CA-39)	Approved a layer of asphalt, engineered barrier, on top of the entire existing floor of the Rod Patenting Bldg. (RPB). Requires a draft ELUC for the RPB and the surrounding area.
August 1, 2008 (B-160-CA-38)	Approved Completion Report for the Placement of an Engineered Barrier at the Former WOT. Engineered barrier has been constructed and ELUC was previously filed. No further action is necessary at the WOT other than compliance with terms and conditions of this letter.
August 19, 2008 (B-160-CA-40)	Approved submittal regarding Baghouse Dust Accumulation Area (SWMU 7). Submittal discussed past soil investigations, proposed work plan for additional soil sampling and analysis, and stated an engineered barrier and an ELUC would be established.

Date of IEPA Letter and Log No.	Brief Description of Action
March 6, 2009 (B-160-CA-44)	Approved portions of report documenting installation of new wells and sampling of Perimeter GW Monitoring. Required the following: (1) additional information for renewal application; (2) quarterly GW monitoring and new list of parameters; and (3) additional information on the hydrogeology at the site.
March 31, 2009 (B-160-CA 43 and B-160-CA-46)	Approved RCRA Closure Certification Report and revised draft ELUC for Rod Patenting Building. An asphalt layer was installed on top of the concrete floor as an engineered barrier. Determined that no further corrective action is required. Letter constitutes IEPA's no further action determination instrument. ELUC must be filed and a copy submitted to IEPA.
May 28, 2009 (B-160-CA-36)	Approved the Phase II RFI Work Plan for SWMU 5 (WWTP) for additional soil, sediment, sludge, and surface water samples and analyses with conditions and modifications.
June 2, 2009 (B-160-CA-45)	Approved a submittal for SWMU 7 (Baghouse Dust Accumulation Area) containing (1) the results of the approved additional investigation at SWMU 7, (2) a revised proposal for an engineered barrier, and (3) a proposal for further soil investigation at the unit, with conditions and modifications.
June 2, 2009 (B -160-CA-47)	Approved the submittal of a certified copy of the ELUC filed with Madison County for SWU 2 (RPB) with conditions and modifications. No further action is necessary to complete RCRA closure of the Rod Patenting Building, other than compliance with the ELUC.
December 4, 2009 (B-160R)	Issued RCRA Post-Closure Renewal Permit to allow ASI to continue to provide PCC for a closed CWP CAMU and continue corrective action activities at eight SWMUs. Permit effective January 8, 2010 and expires January 8, 2020.
December 29, 2009 (B-160-CA-19)	Approved the submittal of the EMS Building Cleanup Final Report. The work included cleaning of dust and repairs in the electric melt shop and the baghouse areas.
December 29, 2009 (B-160-CA-25)	Approved the submittal of the report for the collection, inventory, and disposal of containerized waste left by Laclede Steel.
March 15, 2010 (B-160R-CA-1)	Approved (1) the results of an additional soil investigation at the Baghouse Dust Accumulation Area; (2) a proposed engineered barrier over a portion of the area; and (3) required the submittal of a draft ELUC to Illinois EPA for review and approval.
April 15, 2011 (B-160-CA-48, 49, 50 & 51)	Approved a Groundwater Investigation Plan with the following conditions and modifications: (1) the installation of two piezometers nests; (2) GW elevations must be collected quarterly for one year to determine GW flow, potentiometric maps must be constructed, GW elevations table must be provided; (3) provide GW investigation report within 90 days of the 4 th quarter GW elevations; (4) provide Class 1* modification to designate wells as piezometers.

Date of IEPA Letter and Log No.	Brief Description of Action
November 10, 2011 (B-160R-M-5)	Class 2 permit modification that approved the following: (1) the proposed Appendix I Subset Parameter List for the Perimeter GW Observation Monitoring Program; but did not approve the initial Background GW Quality values.
May 23, 2012 (B-160R-M-6)	Approved proposed interwell Background Groundwater Quality (BGQ) values for the Perimeter Groundwater Observation Monitoring Program.
November 28, 2012 (B-160R-CA-3)	Approved the installation of the engineered barrier and a draft ELUC for the Baghouse Dust Accumulation Area/SWMU 7. No further action required except to file ELUC with Madison County.
February 21, 2013 B-160R-CA-4)	Approved the ELUC filed with Madison County for the Baghouse Dust Accumulation Area and restated the requirements of the ELUC.
August 15, 2013 (B-160R-CA-5)	Approved GW Investigation Report and proposed additional investigation with conditions and modifications: (1) submit Class 1* modification to remove and add piezometers; (2) require sampling and logging during installation of new piezometer; (3) submit bore logs, construction diagrams and data sheets for new piezometer; and (4) submit final GW investigation report.
June 29, 2016 (B-160R-M-11)	Approved updated corrective action, closure and post-closure cost estimates and revised the permit to reflect approval of the closure of SWMU 7.
May 4, 2017 (B-160R-CA-2)	Approved the Phase II RCRA RFI report regarding SWMU 5 known as the Wastewater Treatment Plant Area and the request for additional investigation activities.

ATTACHMENT G

LEGAL DESCRIPTION and FACILITY MAP

STATE ID # 1190100004

ILD006280606

Post-Closure Permit Log No. B-160R2

ATTACHMENT G

ALTON STEEL PERMITTED FACILITY DESCRIPTION

For this RCRA Post-Closure Permit, the Alton Steel, Inc. (ASI) facility is comprised of approximately 238 acres of property owned by ASI, with its principal gate at 5 Cut Street in Alton, Illinois. This attachment will further define the boundaries of the ASI facility covered by this permit.

The boundaries of ASI facility covered by this permit includes the contiguous land and structures, other appurtenances, and improvements on the land used for treating, storing, or disposing of hazardous waste. Adjacent properties that are owned by ASI and located outside the facility boundaries covered by this permit do not have any structures, appurtenances, or improvements used for treating, storing, or disposing of hazardous waste, and do not contain any solid waste management units required to be addressed by the corrective action provisions of this permit.

The ASI facility covered by this permit includes the following properties:

1. A 34.4 acre, more or less, piece of property that contains the two units referred to as the Consolidated Waste Pile (CWP) (SWMU 1) and the Solid Waste Landfill (SWMU 4). The CWP is approximately six (6) acres and is on top of the Solid Waste Landfill. The legal description of this piece of property is on page 2 of this attachment. This property is also shown on page 3 of this attachment.
2. The properties identified by the Madison County Assessor as Parcel Number 23-1-08-00-000-011 (197.76 acres more or less), Parcel Number 23-1-08-18-00-000-011.001 (2.83 acres), and Parcel Number 23-1-08-00-000-012 (1.84 acres more or less). These parcels are located west of Chessen Lane and make up the bulk of the past and present manufacturing areas. These parcels are shown on page 3 of this attachment.
3. A 1.5 acre, more or less, piece of ASI property that is a roadway connecting the two (2) aforementioned properties. Page 3 of this attachment shows the roadway connecting the two properties.

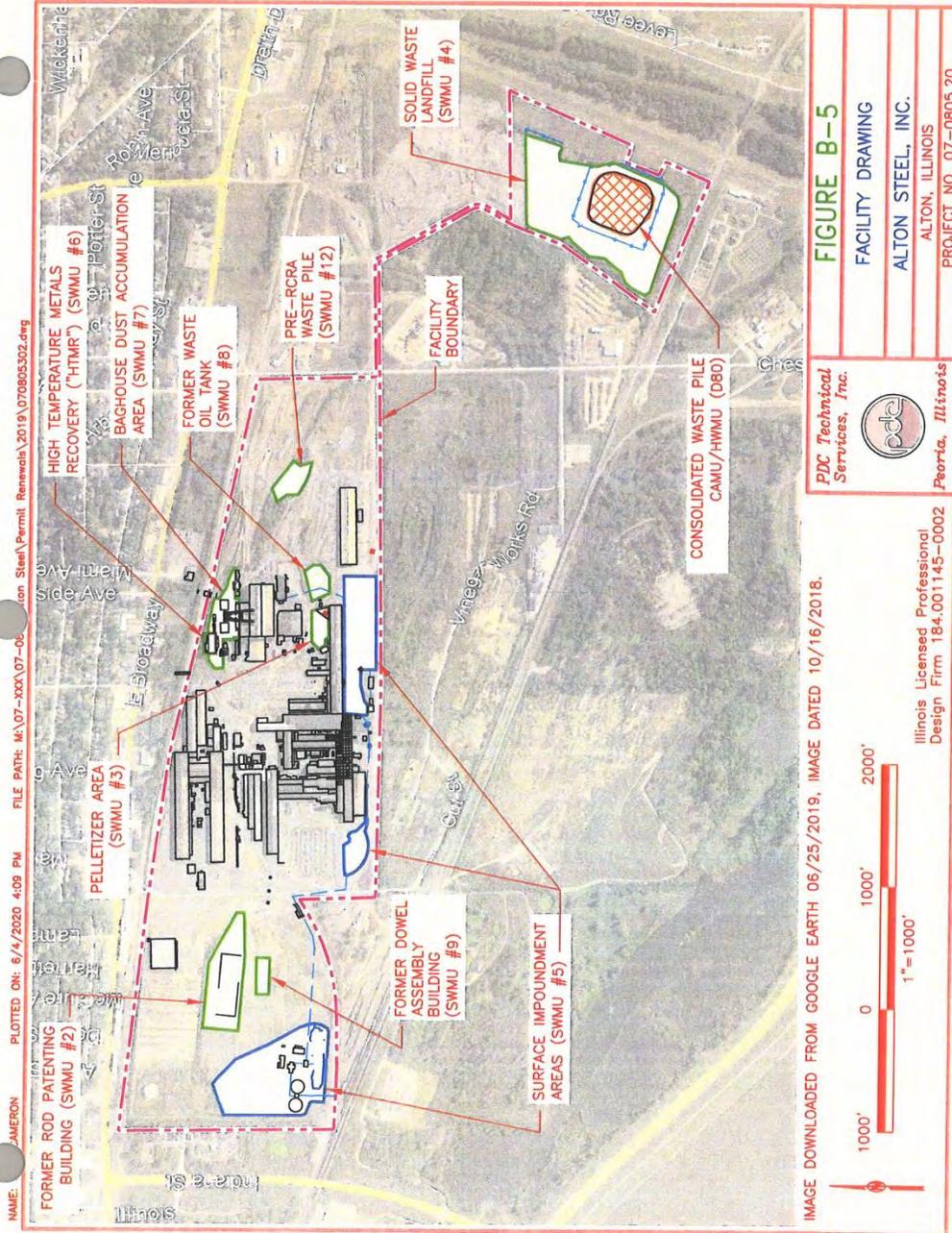
Legal Description - Laclede Steel Company Landfill Site (Solid Waste Landfill and Consolidated Waste Pile within that Landfill)- Alton, Illinois

A tract of land located in the Southwest quarter of Section 17 and the Northwest quarter of Section 20, Township 5 North, Range 9 West of the Third Principal Meridian, within the Corporate Limits of the City of Alton, Madison County, Illinois, more fully described as follows:

From the southeast corner of the Southwest quarter of Section 17 measure South 88 degrees 52 minutes West along the south line of said quarter section a distance of 634.65 feet to the west right-of-way line of the Wood River Drainage and Levee District and the Point of Beginning of this tract; thence South 22 degrees 27 minutes West from said beginning point along said west right-of-way line a distance of 770.6 feet; thence North 64 degrees 35 minutes West along said line a distance of 40.00 feet; thence South 25 degrees 25 minutes West along said line a distance of 150.00 feet; thence South 64 degrees 35 minutes East along said line a distance of 55.00 feet; thence South 22 degrees 07 minutes West along said line a distance of 358.27 feet to an intersection with the north right-of-way line of Norfolk and Western Railroad (formerly Illinois Terminal Railroad); thence westerly along said line a distance of 288.49 feet to an offset in said right-of-way line; thence northerly at right angles to the last described course a distance of 6.00 feet; thence westerly along said north right-of-way line a distance of 915.00 feet to an offset in said right-of-way line; thence northerly at right angles to the last described course a distance of 15.00 feet; thence westerly continuing along said north right-of-way line a distance of 31.00 feet to the center of Old Wood River; then North 44 degrees 00 minutes East a distance of 300.00 feet; thence North 71 degrees 00 minutes East a distance of 120.00 feet; thence North 27 degrees 00 minutes East a distance of 545.00 feet; thence NORTH a distance of 250.00 feet; thence easterly a distance of 125 feet more or less to the southwest corner of a tract of land leased to International Mill Service; thence North 88 degrees 40 minutes 23 seconds East along the south line of said lease tract and the easterly extension thereof a distance of 1150 feet, more or less to an intersection with the west right-of-way line of the Wood River Drainage and Levee District; thence South 21 degrees 24 minutes West along said right-of-way line a distance of 20 feet, more or less to an angle point; thence South 49 degrees 19 minutes West continuing along said right-of-way line a distance of 114.1 feet; thence South 22 degrees 27 minutes West continuing along said right-of-way line a distance of 247.05 feet to the Point of Beginning. Containing 34.4 acres, more or less.

Subject to conditions, restrictions and easements or record.

Facility Drawing



ATTACHMENT H

CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

STATE ID # 1190100004

ILD006280606

Post-Closure Permit Log No. B-160R2

CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

Alton Steel Inc. (1190100004) – Madison County

USEPA ID: ILD010284248

RCRA Permit Log No. B-160R2

To meet the requirements of 35 Ill. Adm. Code 724.220, this statement is to be completed by both a responsible officer of the owner/operator (as defined in 35 Ill. Adm. Code 702.126) and by a qualified professional engineer upon completion of post-closure care of the UNIT NAME. Submit one copy of the certification with original signatures and two additional copies.

The hazardous waste management unit closed as a landfill, known as the UNIT NAME, has been closed in accordance with the specifications in the approved closure plan. Post-Closure care required for the UNIT NAME has been provided and completed in accordance with the RCRA Permit. A report documenting that required post-closure care have been carried out and completed in accordance with the approved post-closure care plan is attached.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS5/44(h))

Facility Name

Printed Name of Responsible Officer

Signature of Owner/Operator Date
Responsible Officer

Printed Title of Responsible Officer

Signature of Licensed P.E. Date

Printed Name of Licensed P.E. and Illinois License Number

Mailing Address of P.E.:

Licensed P.E.'s Seal:

ATTACHMENT I

CORRECTIVE MEASURES PROGRAM REQUIREMENTS

STATE ID # 1190100004

ILD006280606

Post-Closure Permit Log No. B-160R2

ATTACHMENT I

CORRECTIVE MEASURES PROGRAM REQUIREMENTS

1.0 INTRODUCTION/PURPOSE

RCRA Corrective Action projects typically consist of two phases: (1) A RCRA Facility Investigation (RFI) where an investigation is conducted at the solid waste management units (SWMU's) of concern at a facility; and (2) implementation of corrective measures needed to properly address any contaminant encountered during the RFI. This document has been developed to outline the procedures to be carried out to implement a corrective measure program.

2.0 BRIEF OVERVIEW OF A RCRA CORRECTIVE MEASURES PROGRAM

Typically, at the end of an RFI, the concentration of contaminants present in the soil/sediments/groundwater/surface waters at a SWMU or other area of concern (AOC) is compared to remediation objectives developed in accordance with Title 35 Illinois Administrative Code (35 Ill. Adm. Code) 742. If the contaminant levels are above these objectives, then some type of corrective measure must be completed to achieve these objectives. In addition, certain corrective measures may need to be carried out to support the established remediation objectives (i.e., the establishment of engineered barriers and/or institutional controls). However, at a unit where waste or high levels of contamination remains, a decision may be made to close the unit as a landfill and then provide post-closure rather than removing the material and/or achieving remediation objectives developed in accordance with 35 Ill. Adm. Code 742.

To allow for a logical and orderly progression in developing and implementing necessary corrective measures, the Corrective Measures Program (CMP) being carried out in accordance with this RCRA permit should be carried out in five phases which build on each other. It is not necessary for a CMP at a given SWMU or other AOCs to follow these five phases step-by-step; rather, phases can be combined and/or skipped, depending on the actual remedial measure selected. The overall CMP implemented must set forth a logical path for its implementation and allow for Illinois EPA oversight and approval throughout the entire process.

A brief discussion of the five phases of a CMP is as follows:

1. Phase I is the conceptual design of the selected corrective measure(s).
2. Phase II is the development of final design plans for the corrective measure, including installation and operation/maintenance plans.
3. Phase III is the actual construction/installation of the selected corrective measure.

4. Phase IV is the operation, maintenance, and monitoring of the selected corrective measure to ensure it is properly protecting human health and the environment.
5. Phase V is the final demonstration/verification that the implemented corrective measure achieved the approved remedial objectives.

Sections 3.0 through 7.0 which follow provide a more detailed discussion of each of these five phases. Section 8.0 has been developed to describe the CMP which may be used in lieu of the afore-mentioned five phase procedure when soil removal is the selected remedy. It must be noted that work plans, reports, etc. must be developed to document how the Permittee carries out the required CMP at each SWMU or other AOCs. All such documents must be reviewed and approved by Illinois EPA prior to their implementation.

3.0 PHASE I OF THE CMP

Phase I of the CMP includes selection of the corrective measure to be taken and developing a basis for completing the final design of the measure. This effort should be documented in a Conceptual Design Report which describes the proposed corrective measure for each SWMU and other AOC and provides a conceptual design for these measures. The main criteria for Illinois EPA review is whether the proposed corrective measures are able to achieve the final cleanup objectives previously established by the Permittee and the Illinois EPA and/or provide the necessary institutional controls to prevent the migration of contaminants from the SWMU of concern. Based upon a review of the Conceptual Design Report, the Illinois EPA may approve the corrective measures, require revisions to the proposed corrective measures, or require that a totally new corrective measures proposal be submitted to the Illinois EPA.

The Conceptual Design Report should contain the following sections:

1. Introduction/Purpose. This section should contain: (1) general background information regarding the project; (2) the purpose and goals of the submittal; and (3) the scope of the project.
2. Existing Site Conditions. This section should contain a summary of the investigative activities conducted for each of the units of concern. Investigation analytical results should be provided in tabular form, and maps depicting both the horizontal and vertical extent of contamination at the site should be provided.
3. Evaluation for Potential Future Migration. Based on the existing site conditions, a conceptual model of the site should be developed and presented in this section. The potential for additional future migration of contamination for each of the units of concern must then be evaluated, especially those units which have been determined to have released hazardous waste/hazardous constituents to the groundwater. It may be helpful to develop conceptual models for contaminant migration. Of special concern in this evaluation are (1) the physical properties of the contaminants (solubility, volatility,

mobility, etc.); and (2) existing site conditions (types of soil present, location of contamination, hydrology, geology, etc.).

4. **Corrective Measures Objectives.** This section should discuss the general objectives of the proposed corrective measure to be constructed/installed, and the ability of the proposed corrective measure to achieve the established remediation objectives (unless the selected corrective measure is closure as a landfill which will require proper establishment of a final cover and proper post-closure care of the closed unit).
5. **Identification of Options Available.** This section should contain a brief discussion of the various options available to achieve the corrective measures objectives for each unit. This discussion should identify: (1) a general overview of each option available, including how the option will achieve the stated objective; (2) the advantages associated with each option; (3) the disadvantages associated with each option and (4) an estimate of the cost associated with choosing each remedial option.
6. **Description of Selected Corrective Measure.** This section should contain a qualitative discussion of the corrective measure chosen, along with the rationale which was used to select this measure from all those identified initially. This discussion should include documentation that the selected corrective measure will be effective.
7. **Identification of Design Criteria.** This section should identify what information must be available to design the selected corrective measure.
8. **Review of Available Information.** This section should contain an evaluation of the existing information to ensure that it is sufficient to complete the design of the selected corrective measure. If insufficient information is available, then the report should contain procedures for collecting the required additional information.
9. **Procedures for Completing the Design.** This section should contain a description of the procedures which will be followed to complete the design of the corrective measure. This should include as appropriate:
 - a. Identification of the references and established guidance which will be used in designing the selected corrective measure. Justification for the selection of this procedure should also be provided.
 - b. A description of the procedures which will be used to complete the design of the corrective measure.
 - c. Identification of assumptions to be used in the design, and the impact these assumptions have on the overall corrective measure;
 - d. Significant data to be used in the design effort;

- e. Identification and discussion of the major equations to be used in the design effort (including a reference to the source of the equations);
- f. Sample calculations to be used in the design effort;
- g. Conceptual process/schematic diagrams;
- h. A site plan showing a preliminary layout of the selected corrective measure;
- i. Tables giving preliminary mass balances;
- j. Site safety and security provisions.

This information will form the technical basis for the detailed design of the remedial measure and the preparation of construction plans/specifications.

- 10. Identification of Required Permits. This section should identify and describe any necessary permits associated with the selected corrective measure, as well as the procedures which will be used to obtain these permits.
- 11. Long lead Procurement Considerations. This section should identify any elements/components of the selected corrective measure which will require a large amount of time to obtain/install. The following issues should also be discussed: (1) the reason why it will take a large amount of time to obtain/install the item; (2) the length of time necessary for procurement and (3) recognized sources of such items.
- 12. Project Management. This section should contain information regarding the procedures and personnel which will be involved in completing the design of the selected corrective measure. A schedule for completing the design should also be provided.

4.0 PHASE II OF THE CMP

Once the Illinois EPA approves the Conceptual Design Report, the facility should complete the design of the approved corrective action (Phase II of the CMP). Upon final completion of the design, a Final Design Report, consisting of final plans, specifications, construction work plan, etc., must be submitted to the Illinois EPA for review and approval.

Several documents must be submitted to the Illinois EPA as part of Phase II of the CMP. The following text describes the expected contents of the various documents which should be developed and submitted to the Illinois EPA as part of Phase II of the CMP.

- 1. Final Design Report and Construction Work Plan. The Final Design Report and Construction Work Plan must contain the detailed plans, specifications and drawings needed to construct the corrective measure. In addition, this document must contain (1) calculations, data etc., in support of the final design; and (2) a detailed description of the

overall management strategy, construction quality assurance procedures and schedule for constructing the corrective measure. It must be noted that the approved Conceptual Design Report forms the basis for this final report. The information which should be provided in this document includes:

- a. Introduction/Purpose. This portion of the document should: (1) provide background information regarding the project, (2) describe the purpose and goals of the project, and (3) describe the scope of the project.
- b. Detailed Plans of the Design System, including the following:
 - 1) Plan views;
 - 2) Section and supplementary views which, together with the specifications and general layouts, facilitate construction of the designed system;
 - 3) Dimensions and relative elevations of structures;
 - 4) Location and outline form of the equipment;
 - 5) Ground elevations; and
 - 6) Descriptive notations, as necessary, for clarity.
- c. Technical Specifications. Complete technical specifications for the construction of the system, including, but are not limited to, the following:
 - 1) All construction information, not shown in the drawings, which is necessary to inform the contractor in detail as to the required quality of materials, workmanship, and fabrication of the project;
 - 2) The type, size, strength, and operating characteristics of the equipment;
 - 3) The complete requirements for all mechanical and electrical equipment, including machinery, valves, piping and jointing of pipe;
 - 4) Electrical apparatus, wiring and meters;
 - 5) Construction materials;
 - 6) Chemicals, when used;
 - 7) Miscellaneous appurtenances;
 - 8) Instruction for testing materials and equipment as necessary; and

- 9) Availability of soil boring information.
- d. **Project Management.** A description of the construction management approach, including the levels of authority and responsibility, lines of communication and qualifications of key personnel who will direct corrective measures construction/installation must be provided in the work plan.
 - e. **Construction Quality Assurance/Quality Control.** A construction quality assurance/quality control plan describing the procedures which will be followed to ensure the corrective measure is constructed/installed in accordance with the approved plans and specifications.
 - f. **Schedule.** The work plan must contain a schedule for completion of all major activities associated with construction/installation of the selected corrective measures. All major points of the construction/installation should be highlighted.
 - g. **Waste Management Practices.** This portion of the document should identify the wastes anticipated to be generated during the construction/installation of the corrective measures and provide a description of the procedures for appropriate characterization and management of these wastes.
 - h. **Required Permits.** Copies of permit applications submitted to other Bureaus of the Illinois EPA for the selected corrective measure must be provided in the report. If it is determined that no permit is required for construction/installation and implementation of the corrective measures, rationale and justification must be provided to support this contention.
 - i. **Cleanup Verification.** The report must contain the procedures which will be followed that the approved remediation objectives have been achieved when operation of the system is completed.
2. **Operation and Maintenance Plan.** An Operation and Maintenance Plan must be developed and submitted as part of Phase II of the CMP. This plan should outline the procedures for performing operations, long term maintenance, and monitoring of the corrective measure.
- a. **Introduction and Purpose.** This portion of the document should provide a brief description of the facility operations, scope of the corrective measures project, and summary of the project objectives.
 - b. **System Description.** This portion of the document should provide a description of the corrective measure and significant equipment, including manufacturer's specifications. This portion of the permit should also include a narrative of how

the selected system equipment is capable of complying with the final engineered design of the corrective measure.

- c. Operation and Maintenance Procedures. This portion of the document should provide a description of the normal operation and maintenance procedures for the corrective measures system, including:
 - 1) Description of tasks for operation;
 - 2) Description of tasks for maintenance;
 - 3) Description of prescribed treatment or operation conditions; and
 - 4) Schedule showing the frequency of each operation and maintenance task.
- d. Inspection Schedule. This portion of the document should provide a description of the procedures for inspection of the corrective measures system, including problems to look for during the inspection procedure, specific inspection items, and frequency of the inspections.
- e. Waste Management Practices. This portion of the document should provide a description of the wastes generated by the corrective measure, and the appropriate procedures for proper characterization/management of these wastes.
- f. Contingency Procedures. This portion of the document should provide a description of the procedures which will address the following items:
 - 1) System breakdowns and operational problems including a list of redundant and emergency backup equipment and procedures;
 - 2) Alternative procedures (i.e., stabilization) which are to be implemented in the event that the corrective measure fails. The alternative procedures must be able to prevent release or threatened releases of hazardous wastes/hazardous constituents which may endanger human health and the environment, or exceed cleanup standards.
 - 3) Notification of facility and regulatory personnel in the event of a breakdown in the corrective measures, including written notification identifying what occurred, what response action is being taken and any potential impacts on human health and the environment.

5.0 PHASE III OF THE CMP

Once the final design report is approved by the Illinois EPA, construction/installation of the approved corrective measure must commence. During this period, quarterly reports should be submitted which contain the following information:

1. Summary of activities completed during the reporting period;
2. An estimate of the percentage of the work completed;
3. Summaries of all actual or proposed changes to the approved plans and specifications or its implementation;
4. Summaries of all actual or potential problems encountered during the reporting period;
5. Proposal for correcting any problems; and
6. Projected work for the next reporting period.

Upon completion of construction/installation of the approved corrective measure, a Construction Completion Report must be submitted to the Illinois EPA documenting that these efforts were carried out in accordance with the Illinois EPA approved plans and specifications. This report should contain a thorough description of the efforts that went into constructing/installing the corrective measure and demonstrate that the procedures in the Illinois EPA approved Final Design Report were followed during this effort. Such a report should be formatted in a logical and orderly manner and contain the following information:

1. An introduction discussing the background of the project and the purpose and scope of the corrective measure described in the report.
2. Identification of the plans, technical specifications and drawings which were used in constructing/installing the corrective measure. These specifications and drawings should have been approved by the Illinois EPA during Phase II.
3. Identification of any variations from the Illinois EPA approved plans, technical specifications and drawings used in construction/installing the corrective measure. Justification regarding the need to vary from the approved plans and specifications must also be provided.
4. A description of the procedures used to construct/install the corrective measure, including the procedures used for quality assurance and quality control.
5. As built drawings, including identification of any variations from the approved plans, technical specifications and drawings.
6. A summary of all test results from the construction/installation effort, including quality assurance/quality control testing.

7. Actual test results, including quality assurance/quality control test results. These results should be located in an attachment/appendix and be well organized.
8. Identification of any test results which did not meet the specified value and a description of the action taken in response to this failure, including re testing efforts.
9. Photographs documenting the various phases of construction.
10. A detailed discussion of how the construction/installation effort met the requirements of the approved Final Design Report.
11. A certification meeting the requirements of 35 Ill. Adm. Code 702.126 by an independent qualified, licensed professional engineer and by an authorized representative of the owner/operator.

6.0 PHASE IV OF THE CMP

Once the corrective measure has been constructed/installed, it must be operated, maintained and monitored in accordance with the approved plans and specifications (this is Phase IV of the CMP). During this period, quarterly reports must be submitted to the Illinois EPA documenting the results of these efforts. These reports include the following:

1. Introduction. -- A brief description of the facility operations, scope of the corrective measures project, and summary of the project objectives.
2. System Description. -- A description of the corrective measures constructed/installed at the site, and identify significant equipment. Describe the corrective measure and identify significant equipment.
3. Monitoring Results. -- A description of the monitoring and inspection procedures to be performed on the corrective measures. A summary of the monitoring results for the corrective measures, including copies of any laboratory analyses which document system effectiveness, provide a description of the monitoring procedures and inspections performed, and include a summary of the monitoring results for the corrective measure. Copies of all laboratory analytical results which document system monitoring must be provided.
4. Effectiveness Determination. -- Calculations and other relevant documentation which demonstrates the effectiveness of the selected corrective measure in remediating/stabilizing contamination to the extent anticipated by the corrective measures final design. Copies of relevant analytical data should be provided to substantiate this determination.
5. System Effectiveness Recommendation. -- Based upon the results of the effectiveness determination required under Item 4 above, recommendations on continued operation of the corrective measure must be provided. If the corrective measure is not performing in

accordance with the final design, a recommendation on revisions or expansion of the system should be provided.

7.0 PHASE V OF THE CMP

Once all corrective measures have been completed, a report must be developed documenting all the efforts which were carried out as part of implementing the corrective measure and demonstrating, as appropriate, that the approved remediation objectives have been achieved. This report should contain a compilation of all previous reports and also contain sufficient information to demonstrate that the approved remediation objectives have been achieved. It must be noted that such a report will not be developed for a unit closed as a landfill until the post-closure care period has been completed.

8.0 PROCEDURES WHICH SHOULD BE FOLLOWED WHEN SOIL REMOVAL IS THE SELECTED CORRECTIVE MEASURE

Sections 3.0 through 6.0 above describe the procedures which should be followed when it is necessary to design a physical corrective measure (e.g., a final cover system, some type of treatment system, etc.). However, such detail is not necessary if excavation/removal is selected as the remedial action for the contaminated soil encountered at the site. In general, a work plan should be developed for this effort (for Illinois EPA review and approval) which fully describes each step to be used in removing the contaminated soil from the property. This includes a description of (1) the equipment utilized in the removal effort, (2) the pattern followed in removing the soil; (3) the depth to which the soil will be removed; (4) management of the soil on-site after it is removed from the ground; (5) loading areas; (6) the ultimate destination of the soil; and (7) any other steps critical to the removal effort.

One way to conduct a soil removal effort is to collect and analyze a sufficient number of soil samples to clearly determine the horizontal and vertical extent of soil contamination prior to conducting the soil removal effort. The boundaries of soil which must be removed are defined by the Illinois EPA established cleanup objectives for the project. Soil excavation must extend to sample locations where soil test results indicate that the remediation objectives are met. Closure verification sampling is not necessary in such cases, if a registered professional engineer oversees the soil removal effort and certifies that the remediation limits extend to these boundaries.

Another way to conduct a soil removal effort is to collect and analyze a limited number of soil samples prior to the soil removal effort and to rely mainly on field observation to determine the extent of the soil removal. In such cases closure verification sampling is necessary. Soil samples must be collected for analysis from the bottom and sidewalls of the final excavation. The following sampling/analysis effort is necessary to demonstrate that the remaining soil meets the established cleanup objectives:

1. A grid system should be established over the excavation.

2. Samples should be collected from the floor of the excavation at each grid intersection, including intersections along the perimeter of the excavation.
3. Samples should be collected at 6"-12" below the ground surface (bgs) along the excavation sidewalls at each grid intersection around the excavation perimeter. Samples must also be collected at the midpoint of the excavation wall at each grid intersection along the excavation perimeter.
4. Collection/analysis of all required samples must be in accordance with the procedures set forth in the approved plan.
5. Soil samples which must be analyzed for volatile organic compounds (VOCs) must be collected in accordance with the procedures set forth in Method 5035 of SW-846. In addition, such samples must be collected 6"-12" beneath the floor/sidewalls of the excavation to minimize the possibility of volatilization of the contaminants prior to the collection of the samples.
6. No random sampling may be conducted to verify achievement of cleanup objectives have been met.
7. Additional soil must be removed, as necessary, until it can be demonstrated that the remaining soil in and around the AOC meets the established cleanup objectives. Additional samples must be collected and analyzed in accordance with the procedures described above from areas where additional soil has been removed.

1190100004 – Madison County
Alton Steel, Inc.
ILD006280606
Log No. B-160R2
RCRA Post-Closure Permit Renewal
RCRA Administrative Record – Final Permit Decision

REVIEW NOTES: Kelly Huser

6-12-23

The draft permit was mailed to the facility on June 12, 2023, and electronic copies sent. The public notice dates are June 14, 2023- July 31, 2023.

8-1-23

ASI submitted comments dated July 27, 2023. Illinois EPA will write a response to each comment and provide it to ASI in our final permit approval.

9-14-23

A copy of each comment and the response that Takako and I compiled is attached to these review notes. Jacki Cooperider, Permit Section Manager, rewrote and organized our response to comments in a different way. Each set of response to comments were sent to Division of Legal Counsel for their opinion on which set they preferred.

In an email dated September 12, 2023, Melanie Jarvis, DLC, stated she preferred Jacki's version, so I used Jacki's version in our final response to comments. (copy of Melanie's email is attached to these review notes.

Additional comments from Nick San Diego, DLC are also attached to these review notes.

9-15-23

John McDonough, DLC provide additional comments on both versions of Response to Comments. His comments are attached to these review notes.

The final RCRA Post-Closure Permit will become effective 35 days after the issue date.

The renewed RCRA Post-Closure Permit will expire 10 years after the effective date.



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

R 001255

217/524-3301

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

BP Products North America, Inc.
Attention: Ms. Michelle Knapp
Liability Manager
301 Evans Avenue
P.O. Box 167
Wood River, Illinois 62095

Re: 1191155009 – Madison County
BP Products North American Inc./Riverfront Property
ILD980503106
Log No. B-145R2
RCRA Administrative Record
Permit Draft

Dear Ms. Knapp:

Attached is a draft renewed RCRA Post-closure permit and fact sheet for the above-referenced facility. The draft permit is based on the administrative record contained in the Illinois EPA's files. The contents of the administrative record are described in Title 35 Illinois Administrative Code (35 IAC) 705.144.

Under the provisions of 35 IAC 705.141(d), the draft permit and administrative record must be publicly noticed and made available for public review and comment. The Illinois EPA must also provide an opportunity for a public hearing. Copies of the draft decision, fact sheet, and renewal application are available for review at the Wood River Public Library, 326 E. Ferguson Avenue, Wood River, Illinois and on the Illinois EPA website. The Illinois EPA has not scheduled a public hearing at the current time. However, any interested party may request a public hearing. The public comment period will close on August 26, 2023.

During the comment period, the applicant or any interested party may submit comments to the Illinois EPA on the draft renewed RCRA Post-closure permit. At the close of the comment period, the Illinois EPA will prepare a response to significant comments. Comments on the draft permit renewal may be submitted to:

Brad Frost, Office of Community Relations (#5)
Illinois Environmental Protection Agency
1021 N. Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

Illinois EPA will issue a final renewal permit after the close of the public comment period unless the Illinois EPA decides to reverse the tentative decision. The appeal process and limitations are addressed in 35 IAC 705.212.

If you have any questions regarding the groundwater monitoring aspects of this draft permit, please contact Amy Butler, P.G. at 217/558-4716. If you have questions regarding the other aspects of this permit, please contact Takako Halteman, P.E. at 217/524-3274.

Sincerely,

Jacqueline M. Cooperider, P.E.
Permit Section Manager
Bureau of Land

JMC:TNH: 1191155009-RCRA-B145R2-Draft.docx

Attachment: Fact Sheet
Draft Renewed RCRA Post-Closure Permit

cc: Norberto Gonzalez, U.S. EPA – Region V
Emily Keener, U.S. EPA – Region V
Michael Hoffman, Wood Environment & Infrastructure Solutions, Inc

ILLINOIS EPA'S RESPONSE TO COMMENTS

BP Products North America, Inc.

Draft RCRA Renewal Post-Closure Permit

Dated: 09/20/23

The responses below address comments received from BP Products North America, Inc. (BP) dated August 23, 2023, and received by Illinois EPA on August 24, 2023, pertaining to the draft renewal permit for BP issued July 12, 2023.

SUBJECT SUBMITTAL

A comment and recommended language is provided by the facility where applicable. The facility comments are included in their entirety in *italics* and is ~~strike-through~~ for language to be removed and underlined language to be added.

BP Comment 1:

Page 1 of 7 (Section II.A.): 1st paragraph, 4th and 5th sentences:

Please revise to clarify the property now owned by Kinder Morgan Phoenix Holdings, LLC (KMPH) is no longer a portion of the Main Plant facility. Please remove the detail regarding operations at the KMPH facility as it is no longer a portion of the Main Plant facility.

In addition, it was used for the management of refinery waste. Currently, Kinder Morgan Liquids Terminal LLC (KMLT) operates and Kinder Morgan Phoenix Holdings, LLC (KMPH) owns a storage and distribution facility for gasoline and petroleum distillates at a site which was formerly a portion of the Main Plant facility ~~but that~~ was sold to KMPH and will be subject to a separate RCRA Permit. ~~Distribution operations are managed via pipelines, aboveground storage tanks at the Main Plant, and barge operations on the Mississippi River.~~

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment. However, Fact Sheet will not be included as a part of the final permit.

BP Comment 2:

Page 2 of 7 (Section II.B.): 2nd paragraph, 2nd sentence:

Please add references to the Main Plant facility and revise "riverfront property" to "Riverfront facility" for clarification.

The Riverfront facility is adjacent to, and its operation was associated with the former Amoco Refinery in Wood River. This 569-acre former refinery (Main Plant facility) is located due east of the Riverfront facility ~~riverfront property~~. Route 143, East Rand Avenue, South Sixth Street, and

Illinois Route 3 bound the former refinery (Main Plant facility) on the north, south, east, and west sides, respectively.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment. However, Fact Sheet will not be included as a part of the final permit.

BP Comment 3:

Page 3 of 7 (Section III.A.1.): Table Please revise to clarify there are no sediments or soil with K048 above the ESP liner. Remove second closing parentheses.

<i>Description of Hazardous Waste & Waste Numbers</i>
<i>Sediments and soil <u>below the liner</u> contaminated with K048 – Dissolved air flotation (DAF) float from the petroleum refining industry</i>

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment. However, Fact Sheet will not be included as a part of the final permit.

BP Comment 4:

*Page 3 of 7 (Section III.A.1.): 2nd paragraph, 1st sentence:
Please revise to clarify treatment and placement of sludges into the landfills.*

The majority of the sludges were removed and treated by the Chemfix process prior to placement in the Permitted Non-Hazardous Waste Landfill (PNWL, or Pond 5 landfill). However, the heavier hazardous sludges and the majority of the impacted soils in these ponds could not be placed in the PNWL and were subsequently removed and placed in the Pond 1 Landfill (this unit is further discussed below).

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment. However, Fact Sheet will not be included as a part of the final permit.

BP Comment 5:

*Page 3 of 7 (Section III.A.1.): 3rd paragraph, last sentence:
Please remove the word influent.*

In the event this level is exceeded, influent water can be diverted to the Temporary Surge Basin or the West Surge Pond.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment. However, Fact Sheet will not be included as a part of the final permit.

BP Comment 6:

*Page N/A (Section III.A.2.): Pg. 11 through 18 of the pdf
Please remove duplicate Fact Sheet*

Not Applicable

Illinois EPA Response:

Fact Sheet will not be included as a part of the final permit.

BP Comment 7:

Page I-2 (Section I.C.): 1st paragraph, 4th and 5th sentences:

Please revise to indicate that Kinder Morgan Phoenix Holdings (KMPH) owns and Kinder Morgan Liquid Terminals LLC (KMLT) operates this former portion of the Main Plant facility.

Please revise to clarify that the property now owned by KMPH is no longer a portion of the Main Plant facility. Please remove the detail regarding operations at the KMPH facility as it is no longer a portion of the Main Plant facility.

Presently, Kinder Morgan Liquid Terminals LLC (KMLT) ~~owns~~operates, and Kinder Morgan Phoenix Holdings (KMPH) ~~operates~~owns, a storage and distribution facility for gasoline and petroleum distillates at a site which was formerly a portion of the Main Plant facility but was sold to KMPH and will be subject to a separate RCRA Permit for gasoline and petroleum distillates. Distribution operations are carried out via pipelines and aboveground tanks at the Main Plant. The Main Plant and Riverfront facilities were owned by Amoco Oil Company until the company merged with BP in 1999.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

Presently, Kinder Morgan Liquid Terminals LLC (KMLT) operates, and Kinder Morgan Phoenix Holdings (KMPH) owns, a storage and distribution facility for gasoline and

petroleum distillates at a site which was formerly a portion of the Main Plant facility but was sold to KMPH and will be subject to a separate RCRA Permit. The Main Plant and Riverfront facilities were owned by Amoco Oil Company until the company merged with BP in 1999.

BP Comment 8:

Page I-2 (Section I.C.): 3rd paragraph, 3rd sentence:

Please add a space after the “,” following (DAF) float in the third sentence of the third paragraph.

From 1977 to 1981, Amoco stored Dissolved Air Flotation (DAF) float, a listed hazardous waste, in Ponds 1, 1A, 2, 2A, 3, 3A and 4 of the former series of wastewater treatment ponds.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP’s comment and has made the changes below:

From 1977 to 1981, Amoco stored Dissolved Air Flotation (DAF) float, a listed hazardous waste, in Ponds 1, 1A, 2, 2A, 3, 3A and 4 of the former series of wastewater treatment ponds.

BP Comment 9:

Page I-3 (Section I.C.): Condition 2, 4th sentence:

Please add Permit reference to define “wastewater from the Main Plant.”

~~These wastewaters include wastewater from the Main Plant are defined in Condition II.B.1, Wood River Wastewater Treatment Plant, and non-hazardous leachate from the Pond 5 landfill, also known as the Permitted Non-Hazardous Waste Landfill (PNWL).~~

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP’s comment and has made the changes below:

These wastewaters are defined in Condition II.B.1.

BP Comment 10:

Page I-3 (Section I.C.): Last 2 paragraphs:

Please remove the second period at the end of the third sentence in the third paragraph.

In the first sentence of the fourth paragraph, revise the word “at” to “the” and revise to clarify corrective action is required at the facility. However, bp does have the option to remove a parcel from the Land Reuse program, whereby Corrective Action would only apply to SWMUs and PRSs and would not include recognized environmental conditions.

As part of the general corrective action program, the facility has been broken up into ten parcels and the SWMUs in each parcel have individual focus.

This permit allows/requires BP to carry out ~~at~~the following activities at the Riverfront facility: (1) continue storing/treating non-hazardous wastewaters in the ESP until closure activities begin; (2) provide post-closure care for the Pond 1 Landfill; (3) conduct corrective action, as appropriate, ~~on the recognized environmental conditions~~ at the facility; and (4) implement a groundwater monitoring/corrective action program.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP’s comment and has made the changes below:

This permit allows/requires BP to carry out the following activities at the Riverfront facility: (1) continue storing/treating non-hazardous wastewaters in the ESP until closure activities begin; (2) provide post-closure care for the Pond 1 Landfill; (3) conduct corrective action, as appropriate, at the facility; and (4) implement a groundwater monitoring/corrective action program.

BP Comment 11:

Page II-1 (Section II.A.): Third Paragraph, 2nd sentence:

Please add the word “to” between allowed and be.

Although some residual soil contamination may remain in the ESP during the delay of closure period, no new hazardous wastes are allowed to be placed in the unit.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP’s comment and has made the changes below:

Although some residual soil contamination may remain in the ESP during the delay of closure period, no new hazardous wastes are allowed to be placed in the unit.

BP Comment 12:

Page II-1 (Section II.B.): B. Condition 1, 1st sentence:

Please revise language to the 80-million-gallon capacity / 2-ft freeboard.

(a) Please add “industrial” sewage to account for process wastewater. Please add a “t” to BP “Main Plan.”

(c) Please define or clarify “seepage water from the Riverfront facility.”

The Permittee may only store/treat non-hazardous wastewaters ~~in~~ total volume of 100million gallons in the ESP subject to the terms of this permit including: (a) domestic and industrial sewage and commingled stormwater from the Cities of Wood River, Hartford, South Roxana, and also BP Main Plant and Riverfront facilities; (b) groundwater pumped as part of BP’s hydraulic gradient control and subsurface hydrocarbon recovery program; and (c) recovered non-hazardous leachate from the PNWL and seepage water from the Riverfront facility.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP’s comment and has made the changes below:

The Permittee may only store/treat non-hazardous wastewaters in total volume of 100 million gallons in the ESP subject to the terms of this permit including: (a) domestic and industrial sewage and commingled stormwater from the Cities of Wood River, Hartford, South Roxana, and also BP Main Plant and Riverfront facilities; (b) groundwater pumped as part of BP’s hydraulic gradient control and subsurface hydrocarbon recovery program; and (c) recovered non-hazardous leachate from the PNWL and captured artisanal waters which have not come into contact with any hazardous wastewaters elsewhere at the Riverfront facility.

BP Comment 13:

Page II-2 (Section II.B.): Condition 2, a:

Please revise to clarify this sample is the first discharge of wastewater sent to the ESP from Pond 3A.

Please define required analytes or add reference to the Condition with requirements.

a. Collect/analyze a sample of the first discharge of wastewater from Pond 3A, ~~sent~~ to the ESP each quarter of the calendar year in accordance with Condition II.B.2.c.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

a. Collect a sample of the first discharge of wastewater from Pond 3A to the ESP each quarter of the calendar year and have the sample analyzed in accordance with Condition II.B.2.c.

Additionally have clarified analytes.

BP Comment 14:

Page II-2 (Section II.B.): Condition 2, b:

As this is a new requirement, please confirm the following:

- 1) that PNWL leachate sampling is necessary;*
- 2) what actions are required if no PNWL leachate is generated/ discharged; and*
- 3) what documentation is required if no PNWL leachate is discharged.*

Please consider the proposed revision to require a quarterly sample of the PNWL leachate discharge as it is not possible to guarantee collection of the "first" PNWL leachate discharge.

Please revise the number formatting if the sample requirements apply to the samples required under both II.B.2.a and II.B.2.b. and add reference to II.B.2.c.

Please clarify if electronic records meet the definition of "operating record" throughout the Permit.

b. Two composite samples of ~~the first~~ leachate discharge, one from the manifolded pipe of odd numbered sumps and one from the even numbered sumps of the PNWL, sent to the East Surge Pond each quarter of the calendar year in accordance with Condition II.B.2.c.

c. These samples must be analyzed for all the characteristics of hazardous waste set forth in 35 IAC 721, Subpart C. The results of these efforts must be documented in the facility's operating record.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

b. Two composite samples of leachate discharge, one from the manifolded pipe of odd numbered sumps and one from the even numbered sumps of the PNWL, sent to the East Surge Pond each quarter of the calendar year in accordance with

Condition II.B.2.c.

- c. *These samples must be analyzed for all the characteristics of hazardous waste set forth in 35 IAC 721, Subpart C. The results of these efforts must be documented in the facility's operating record.*

BP Comment 15:

Page II-3 (Section II.C.): Condition 2:

Please clarify if there is an exception to the 2-foot freeboard requirement in the case of Force Majeure events.

A minimum of two feet of freeboard must be maintained at all times in the ESP. Illinois EPA may modify this requirement when it determines cause exists, such as Force Majeure or events over which the Permittee has no control.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

A minimum of two feet of freeboard must be maintained at all times in the ESP. Illinois EPA may modify this requirement when it determines cause exists, such as Force Majeure or events over which the Permittee has no control.

BP Comment 16:

Page II-3 (Section II.C.): Condition 3:

Please add period to last sentence.

This adjusted standard allows the Permittee to continue using the ESP for the storage/treatment of non-hazardous wastewaters until they decide to close the impoundment in accordance with 35 IAC 724.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

This adjusted standard allows the Permittee to continue using the ESP for the storage/treatment of non-hazardous wastewaters until they decide to close the impoundment in accordance with 35 IAC 724.

BP Comment 17:

Page II-4 (Section II.E.): Condition 3:

Please include reference to Illinois Administrative Code.

If the ESP is taken out of service for more than six months, then prior to returning to service, the Permittee shall obtain a certification from a qualified Professional Engineer registered in the State of Illinois that the surface impoundment and the flood-protection dike, including that portion of any dike which provides freeboard, have structural integrity in accordance with 35 IAC 724.326(c).

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

Please note that in order to maintain consistency throughout the permit IAC has been rewritten to Ill. Adm. Code.

If the ESP is taken out of service for more than six months, then prior to returning to service, the Permittee shall obtain a certification from a qualified Professional Engineer registered in the State of Illinois that the surface impoundment and the flood-protection dike, including that portion of any dike which provides freeboard, have structural integrity in accordance with 35 IAC 724.326(c).

BP Comment 18:

Page II-4 (Section II.F.): Condition 1, 2nd and 3rd sentences:

Please clarify or define "non-closure activity."

The proposed schedule for closure of the ESP required in this section must include and consider any additional non-closure activities associated with the ESP. Any additional non-closure activities associated with the ESP must commence at least five (5) years prior to the expiration of this permit so that the required RCRA closure activities of the ESP may commence prior to the expiration date of this permit unless approved otherwise by Illinois EPA.

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment.

Non-closure activities in this regard are activities which may impact the ESP but are not directly permissible in nature.

No change in permit language is necessary for this clarification.

BP Comment 19:

Page II-4 (Section II.F.): Condition 2, 4th sentence:

Please capitalize “p” in Environmental Protection Act.

Illinois EPA review of this plan will be subject to the permit appeal provisions contained in Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP’s comment and has made the changes below:

Illinois EPA review of this plan will be subject to the permit appeal provisions contained in Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

BP Comment 20:

Page II-6 (Section II.F.): Condition 5, i:

Please add a “;” between geologic cross-sections and groundwater monitoring data.

As appropriate and available: boring logs; well construction diagrams; geologic cross-sections; groundwater monitoring data; and information about any groundwater remediation effort.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP’s comment and has made the changes below:

As appropriate and available: boring logs; well construction diagrams; geologic cross-sections; groundwater monitoring data; and information about any groundwater remediation effort.

BP Comment 21:

Page III-2 (Section III.B.): Condition 4:

Please revise description of cover system to include the Geotextile fabric layer between the 1-ft thick compacted clay layer and the geonet drainage layer.

The cover system on the top of the Pond 1 landfill is constructed of the following layers, specified from the top to bottom:

- a. One foot thick protective soil cover;*
- b. One foot thick compacted clay layer;*
- ~~b.c.~~ c. Geotextile fabric;*
- ~~e.d.~~ d. A geonet drainage layer;*
- ~~d.e.~~ e. 60 mil HDPE geomembrane liner; and*
- ~~e.f.~~ f. Two foot thick compacted clay layer.*

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

The cover system on the top of the Pond 1 landfill is constructed of the following layers, specified from the top to bottom:

- a. One foot thick protective soil cover;
- b. One foot thick compacted clay layer;
- c. Geotextile fabric;
- d. A geonet drainage layer;
- e. A 60 mil HDPE geomembrane liner; and
- f. Two foot thick compacted clay layer.

BP Comment 22:

Page III-3 (Section III.B.): Condition 5, b:

Please revise to include exception for delisting.

Any material removed from the Pond 1 Landfill during future activities must be managed as a hazardous waste in accordance with 35 IAC Subtitle G: Waste Disposal unless material has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

Any material removed from the Pond 1 Landfill during future activities must be managed as a hazardous waste in accordance with 35 IAC Subtitle G: Waste Disposal unless material has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.

BP Comment 23:

Page III-5 (Section III.D.): Condition 4, 1st sentence:

A recent inspection of the benchmark locations at the Riverfront facility could not locate the markers; please consider the proposed revision.

The Permittee shall inspect the benchmarks used to identify the location of the hazardous waste management units (HWMUs) and solid waste management units (SWMUs) within 60 days of the effective date of this permit and thereafter in accordance with the Inspection Schedule in the approved permit application. If benchmarks cannot be located or confirmed, then the Permittee shall have the appropriate benchmark(s) reestablished by a licensed surveyor within 90 days of the effective date of this permit.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

The Permittee shall inspect the benchmarks used to identify the location of the hazardous waste management units (HWMUs) and solid waste management units (SWMUs) within 60 days of the effective date of this permit and thereafter in accordance with the Inspection Schedule in the approved permit application. If benchmarks cannot be located or confirmed, then the Permittee shall have the appropriate benchmark(s) reestablished by a licensed surveyor within 90 days of the effective date of this permit.

BP Comment 24:

Page III-6 (Section III.E.): Condition 1:

Please clarify if electronic records meet the definition of "written operating record."

The Permittee shall keep and maintain a written operating record that includes all the records, reports, notifications, monitoring data, testing or analytical data, and corrective action data

required by 35 IAC 724.173 and the conditions in this permit, for the entirety of the post-closure care period. The operating record shall be kept on-site at the facility and available for Illinois EPA review.

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment.

Keeping electronic records that can be printed meets the definition of "written operating record."

No change in permit language is necessary for this clarification.

BP Comment 25:

Page III-6 (Section III.E.): Conditions 4 and 5, 2nd sentence:

Please remove references to "run-on control system" and "run-off management system" as the landfill is not active; or define and clarify when applicable to the Pond 1 Landfill.

4. The Permittee shall prevent run-on from eroding or otherwise damaging the final cover. ~~At a minimum, the run-on control system shall be capable of preventing flow onto the active portion of the landfill during peak discharge from a 24 hour, 25-year storm event.~~

5. The Permittee shall prevent run off from eroding or otherwise damaging the final cover. ~~At a minimum, the run-off management system shall be capable of collecting and controlling the volume of water resulting from a 24 hour, 25-year storm event.~~

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

4. The Permittee shall prevent run-on from eroding or otherwise damaging the final cover.
5. The Permittee shall prevent run off from eroding or otherwise damaging the final cover.

BP Comment 26:

Page III-6 and III-7 (Section III.E.): Condition 7:

Please consider the following:

The Pond 1 Landfill does not have a current permanent pumping system for leachate extraction. Leachate is removed via vacuum truck. A draft delisting petition for the Pond 1 Landfill leachate has been submitted for review by Illinois EPA prior to submittal to the Illinois Pollution Control Board (IPCB). bp proposes to submit a Compliance Plan to Illinois EPA within 30 days of IPCB approval or denial of this petition, proposing a schedule to comply with the requirements, as applicable.

Please consider revising to require a camera survey of the collection risers and sump every 10 years to inspect and determine if sediment removal is needed.

1. *The Permittee submitted a draft delisting petition dated June 30, 2023 for review by Illinois EPA prior to submittal to the Illinois Pollution Control Board. Within 30 days of Illinois Pollution Control Board approval or denial of this petition, the Permittee shall submit a Compliance Plan to Illinois EPA, proposing a schedule to comply with the requirements stated below, as applicable.:*
 - a. ~~*The Permittee shall m*~~*Install and maintain the* leachate collection system (LCS) *with pumps, and leak detection system (LDS) in accordance with the design plans and specifications contained in the Illinois EPA approved permit application Compliance Plan and the conditions in this permit.*~~*The permittee shall:*~~
 - b. *The LCS will maintain leachate levels within the collection risers at a depth such that leachate does not exceed one (1) foot above the liner.*
 - c. *Remove and clean the pumps from the LCS and LDS at least once every year.*
 - d. *Every 10 years, the permittee will use a camera to inspect the collection risers and sump for sediment build-up. If 10% or more of the screened interval is silted-in, the permittee shall Rremove sediment from the LCS and LDS collection riser*~~*pipes and sumps using a high-pressure jet or equivalent method at least once every 10 years.*~~
 - e. ~~*Install and operate within 30 days of the effective date of this permit, a leak detection alarm system to alert when the level of leachate reaches one (1) foot as described in Condition III.E.11 (b).*~~

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

7. The Permittee submitted a draft delisting petition dated June 30, 2023 for review by Illinois EPA prior to submittal to the Illinois Pollution Control Board. Within 30 days of Illinois Pollution Control Board approval or denial of this petition, the

Permittee shall submit a Compliance Plan to Illinois EPA, proposing a schedule to comply with the requirements stated below, as applicable:

- a. Install and maintain a leachate collection system (LCS) with pumps, and leak detection system (LDS) in accordance with the design plans and specifications contained in the Illinois EPA approved Compliance Plan and the conditions in this permit.
- b. The LCS will maintain leachate levels within the collection risers at a depth such that leachate does not exceed one (1) foot above the liner.
- c. Remove and clean the pumps from the LCS and LDS at least once every year.
- d. Every 10 years, the permittee will use a camera to inspect the collection risers and sump for sediment build-up. If 10% or more of the screened interval is silted-in, the permittee shall remove sediment from the collection risers and sumps using a high-pressure jet or equivalent method.
- e. Install and operate a leak detection alarm system to alert when the level of leachate reaches one (1) foot as described in Condition III.E.11 (b).

BP Comment 27:

Page III-7 (Section III.E.): Condition 10, a and b:

As this is a new requirement, and the Permittee has conducted previous rounds of leachate characterization sampling to support a delisting petition, please clarify or revise based on the following:

In lieu of analyzing annual samples for the 35 IAC 724 Appendix I parameters for the first four years, bp proposes to analyze the first annual sample for the Appendix I parameters and submit these results to Illinois EPA along with results from previous samples collected by bp and/or the Publicly Owned Treatment Works (POTW) that collectively comprise the 35 IAC 724 Appendix I parameters, and use these results to propose a Reduced List for Illinois EPA approval, then subsequent implementation during the second annual sampling event.

The permittee shall collect a representative sample of leachate from the landfill and analyze it for all the constituents listed in 35 IAC 724 Appendix I. These samples shall be collected and analyzed annually in accordance with the sampling and test methods specified in the approved permit application. The results of the leachate quality testing data shall be submitted and maintained in the facility's operating record and submitted to the Illinois EPA by July 15 each year.

- a. *The Reduced List will be based on the four most recent complete 35 IAC 724 Appendix I analyses and include all parameters detected in any of the four Appendix I analyses. Starting the next sampling event after Illinois EPA approval, this Reduced List will be used in lieu of the Appendix I analysis for three out of four years, with the fourth-year reverting to a full Appendix I analysis. Any parameters not included on the existing Reduced List that are detected in the fourth-year Appendix I analysis shall be added to all future Reduced List analyses by means of a permit modification request. This cycle of three years of Reduced List, followed by one year of Appendix I analysis, will repeat for the remainder of the post-closure period.*
- i. *For the first cycle, the Permittee may utilize results from the first annual sample analyzed for all Appendix I parameters in conjunction with previous results from samples collected by the Permittee and/or the Publicly Owned Treatment Works (POTW) that collectively comprise the Appendix I parameters, if available, to propose the first Reduced List for Illinois EPA approval.*

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

- a. *The Reduced List will be based on the four most recent complete 35 IAC 724 Appendix I analyses and include all parameters detected in any of the four Appendix I analyses. Starting the next sampling event after Illinois EPA approval, this Reduced List will be used in lieu of the Appendix I analysis for three out of four years, with the fourth-year reverting to a full Appendix I analysis. Any parameters not included on the existing Reduced List that are detected in the fourth-year Appendix I analysis shall be added to all future Reduced List analyses by means of a permit modification request. This cycle of three years of Reduced List, followed by one year of Appendix I analysis, will repeat for the remainder of the post-closure period.*
- i. *For the first cycle, the Permittee may utilize results from the first annual sample analyzed for all Appendix I parameters in conjunction with previous results from samples collected by the Permittee and/or the Publicly Owned Treatment Works (POTW) that collectively comprise the Appendix I parameters, if available, to propose the first Reduced List for Illinois EPA approval.*

BP Comment 28:

Page III-8 (Section III.E): Condition 11, b:

Please consider the following:

A draft delisting petition for the Pond 1 Landfill leachate has been submitted for review by Illinois EPA prior to submittal to the Illinois Pollution Control Board. A 30-day deadline from the date of approval or denial of the delisting petition is requested for submittal of a Compliance Plan for implementation of any leachate management systems and adherence to Condition III.E.11.b.

In accordance with the Compliance Plan referenced in Condition III.E.7, Leachate shall be removed from the collection risers as necessary to ensure the leachate depth over the liner does not exceed one (1) foot (or approximately at Elevation 403' above mean sea level (MSL) for LCS).

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

In accordance with the Compliance Plan referenced in Condition III.E.7, leachate shall be removed from the collection risers as necessary to ensure the leachate depth over the liner does not exceed one (1) foot (or approximately at Elevation 403' above mean sea level (MSL) for LCS).

BP Comment 29:

Page III-8 (Section III.E.): Condition 11, c:

Please revise to include exception for delisting.

All leachate removed from the LCS and LDS shall be managed as a hazardous waste unless leachate has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

All leachate removed from the LCS and LDS shall be managed as a hazardous waste unless leachate has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.

BP Comment 30:

Page III-8 (Section III.F.): Condition 3:

Please confirm this new data reporting requirement is necessary. If so, please consider allowing this data to be reported in the quarterly Corrective Action Progress Report required in Condition V.J.1 rather than a standalone report.

The leachate quantity and quality data required by Conditions III.E.10 and III.E.11 for the LCS and LDS shall be submitted to the Illinois EPA Bureau of Land Permit Section as part of the Leachate Data Quarterly Monitoring Report in accordance with the following schedule.

<u>Data Collected</u>	<u>Results/ Report Submitted by:</u>
<i>January – March</i>	<i>May 1</i>
<i>April – June</i>	<i>August 1</i>
<i>July – September</i>	<i>November 1</i>
<i>October – December</i>	<i>February 1</i>

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment, as long as the information required is distinctly labeled it can be included in the Corrective Action Progress Report.

BP Comment 31:

Page III-9 (Section III.F.): Condition 6:

Please clarify the number of copies required. This Condition states that an original and one (1) copy is required for this report whereas Condition IV.I.12 states that one (1) original and a minimum of two (2) copies are required for each notice or report submitted to the Illinois EPA.

Please confirm that this new reporting requirement for graphical representations of leachate removal volumes and liquid level elevations should start with the data generated following the effective date of the permit.

6. *The permittee shall submit an original and one (1) copy of each Leachate Data Quarterly Monitoring Report required in Condition III.F.3 above.*
 - a. *A graphical representation of the volumes of leachate removed from the LCS and LDS each month. The leachate generation rates (gallons/month) from the LCS and LDS shall be presented on the same graph. The scale of the abscissa (time) shall be such that no more than one year of data (starting with January each year) is presented on each sheet of paper.*

- b. *A graphical representation of the elevations of the liquid level in the collection risers for the quarter. For each measurement, the graph needs to identify the following: the elevation of leachate over time, elevation of the top of liner, and elevation of the bottom of the cover system all in feet above MSL.*

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

6. The permittee shall submit an original and one (2) copies of each Leachate Data Quarterly Monitoring Report required in Condition III.F.3 above. In addition to the electronic data, each report must include:

The Illinois EPA confirms that this new reporting requirement for graphical representations of leachate removal volumes and liquid level elevations should start with the data generated following the effective date of the permit.

SUBJECT SUBMITTAL

A Groundwater-related comments have been made to Section IV (Groundwater Corrective Action Program).

BP Comment 32:

Page IV-1 (Section IV.A.): Condition 1, 1st sentence:

Please revise to match language in current Permit.

Condition 1, 3rd sentence:

Please revise to match language from current Permit.

Control of groundwater flow in the uppermost aquifer such that groundwater flow in the Riverfront Groundwater Management Zone is towards the interior of the ~~of the contaminated groundwater is towards the interior of the~~ BP Main Plant facility.

Such flow control is necessary as a corrective action to prevent contaminant migration of address contaminants in groundwater from on-site releases of product or waste, beyond the boundaries of the ~~at the~~ BP Riverfront facility and is the basis for the establishment of a Groundwater Management Zone (GMZ).

Illinois EPA Response:

Completed by Amy Butler:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

Control of groundwater flow in the uppermost aquifer such that groundwater flow in the Riverfront Groundwater Management Zone is towards the interior of the Main Plant facility.

Such flow control is necessary as a corrective action to prevent contaminant migration of on-site releases of product or waste, beyond the boundaries of the Riverfront facility and is the basis for the establishment of a Groundwater Management Zone (GMZ).

BP Comment 33:

Page IV-2 (Section IV.C.): Condition 1, 2nd sentence:

Please revise to reference the figure showing the well network for the approved optimized Groundwater Corrective Action Monitoring Program.

The location of these wells is specified in Figure C-27 of the approved permit application.

Illinois EPA Response:

Completed by Amy Butler:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

The location of these wells is specified in Figure C-7 of the approved permit application.

BP Comment 34:

Page IV-2 and IV-3(Section IV.C.): Condition 1:

Please revise well construction information to match what was provided in permit renewal application replacement pages.

Please move IEPA Well No. LOD5 from the gauging and semi-annual sampling network to the gauging and annual sampling network to align with the approved optimized Groundwater Corrective Action Monitoring Program.

Please revise IEPA Well No. RL17B to L17B to meet 4-digit requirement and prevent confusion IEPA Well No. RL-17. Currently, IEPA Well No. RL17B is truncated to RL17 in Storet EDD files submitted to Illinois EPA.

Electronic Filing: Received, Clerk's Office 03/14/2024

1191155009- BP Riverfront

Log No. B-145R2

Response to Comments - Page 21 of 40

001277

Please revise Facility Well No. SUMP-2 to SUMP-8 for IEPA Well No. G512 included in the well network approved in the optimized Groundwater Corrective Action Monitoring Program.

Please correct miscellaneous typos as noted.

<u>IEPA Well No.</u>	<u>Facility Well No.</u>	<u>Area</u>	<u>Well Depth (ft-bgs)</u>	<u>Well Depth Elevation (ft MSL)</u>	<u>Well Screen Interval (ft MSL)</u>
<u>Observation Monitoring Wells (Annual Sampling Only Network³)</u>					
R21L	RL-21BR	WSP	56.00 54.01	369.92 367.93	374.92-369.92 372.60-367.93 ^H
R529	P-29R	LOD	48.61 47.00	372.30 373.91	382.30-372.30 373.91 ^H
R21D	RL-21CR	WSP	70.24 71.00	353.58 352.82	358.58-353.58 356.90-352.82 ^H
LOD6	LOD-6	LOD	28.50	393.20	403.40-393.40 ^C
LOD9	LOD-9	LOD	28.50	394.12	404.12-394.12 ^C
<u>Observation Monitoring Wells (Gauging Only Network⁴)</u>					
G030	C-20	TF	39.10 35.00	386.27 390.37	406.27-386.27 400.35-390.37 ^C
G033	C-23	POTW	35.00	393.54	403.55-393.55 ^C
G037	C-27	PNWL	34.00	393.94	404.04-393.94 ^P
G038	C-28	PNWL	35.69	393.70	403.90-393.80 ^P
G090	G090	PNWL	48.00	378.61	383.74-379.16 ^H
G091	G091	PNWL	66.50	359.14	382.27-377.69 ^H
G102	RL-2	LOD	34.0	388.78	398.78-388.78 ^C
G109	RL-9	ESP	39.00	388.45	398.45-388.45 ^P
G36R	C-26R	PNWL	34.4	392.18	402.48-392.48 ^P
G411	S-1	WSP	41.60	376.83	386.83-376.83 ^H
R034	C-24R	ESP	35.24	393.64	403.88-393.88 ^C
R66L	RL-6BR	ESP	55.30	377.06	382.16-377.06 ^H
G503	PANC-UP01	Parcel A	39.50	378.55	388.75-378.75 ^H
G504	PANC-UP02	Parcel A	39.00	372.06	382.06-372.06 ^H
G505	PANC-UP05	Parcel A	37.10	389.61	399.61-389.61 ^C
G506	PANC-UP09	Parcel A	27.30	389.29	399.49-389.49 ^C
G507	PANC-UP11	Parcel A	37.30	388.62	398.82-388.82 ^C
G508	SWMU4-MW01	Parcel A	30.98	395.10	405.10-395.10 ^P

G509	SWMU4- MW03	Parcel A	29.41	389.24	405.90-395.90 ^P
G510	SWMU4- MW04	Parcel A	32.62	388.96	405.57-395.57 ^P

Observation Monitoring Wells (LNAPL Monitoring Network⁵)

G105	RL-5	ESP	34.00	388.28	398.28-388.28 ^C
G512	SUMP-28	Parcel C	+	+	409.05-406.35 ^P

Observation Monitoring Wells (Sentinel Wells⁶)

G511	SWMU4- MW02	Parcel A	26.43	392.67	402.67-392.67 ^C 403.58- 393.58-403.32-
LOD1 ²	LOD-1	LOD	31.400	393.58 393.48	393.48 ^C 390.15- 380.15-390.02-
LOD2 ²	LOD-2	LOD	41.200	380.15 379.95	379.95 ^C
G029 ⁷	C-19R	MP	24.52	393.98	404.31-394.31 ^C
G056**	G-16	MP	30.00	395.54	415.54-395.54 ^P

<u>IEPA Well No.</u>	<u>Facility Well No.</u>	<u>Area</u>	<u>Well Depth (ft-bgs)</u>	<u>Well Depth Elevation (ft MSL)</u>	<u>Well Screen Interval (ft MSL)</u>
G057 ⁸	G-17	MP	35.02	391.90	411.90-391.90 ^C
G058 ⁸	G-18	MP	36.00	391.27	411.27-391.27 ^C
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				

Illinois EPA Response:

Completed by Amy Butler.

The Illinois EPA acknowledges BP's comment and can accept the recommendations. Condition IV.C.1 has been updated accordingly. The following comments apply:

1. The difference in well details for G401 and G030 are greater than expected. While changes were made to reflect the most current information, the following requirement has been added to the Special Conditions section to require further reporting regarding this difference.

Provide a summary in the next semi-annual groundwater monitoring report required by Section IV which discusses the results of the recent well integrity efforts performed site-wide at the Riverfront facility, and explain specific to wells G401 and G030 why the changes in well depths and/or screened interval occurred since the previous survey. If reasons are unknown, submit a workplan as a Class 1* permit modification within ninety (90) days to investigate the well integrity.

R21L	RL-21BR	WSP	54.01	369.92	374.92-369.92 ^H
R529	P-29R	LOD	48.61	372.30	382.30-372.30 ^H

<u>IEPA Well No.</u>	<u>Facility Well No.</u>	<u>Area</u>	<u>Well Depth (ft-bgs)</u>	<u>Well Depth Elevation (ft MSL)</u>	<u>Well Screen Interval (ft MSL)</u>
----------------------	--------------------------	-------------	----------------------------	--------------------------------------	--------------------------------------

Observation Monitoring Wells (Annual Sampling Only Network³)

R21D	RL-21CR	WSP	70.24	353.58	358.58-353.58 ^H
LOD6	LOD-6	LOD	28.50	393.20	403.40-393.40 ^C
LOD9	LOD-9	LOD	28.50	394.12	404.12-394.12 ^C

Observation Monitoring Wells (Gauging Only Network⁴)

G030	C-20	TF	39.10	386.27	406.27-386.27 ^C
G033	C-23	POTW	35.00	393.54	403.55-393.55 ^C
G037	C-27	PNWL	34.00	393.94	404.04-393.94 ^P
G038	C-28	PNWL	35.69	393.70	403.90-393.80 ^P
G090	G090	PNWL	48.00	378.61	383.74-379.16 ^H
G091	G091	PNWL	66.50	359.14	382.27-377.69 ^H
G102	RL-2	LOD	34.0	388.78	398.78-388.78 ^C
G109	RL-9	ESP	39.00	388.45	398.45-388.45 ^P
G36R	C-26R	PNWL	34.4	392.18	402.48-392.48 ^P
G411	S-1	WSP	41.60	376.83	386.83-376.83 ^H
R034	C-24R	ESP	35.24	393.64	403.88-393.88 ^C
R66L	RL-6BR	ESP	55.30	377.06	382.16-377.06 ^H
G503	PANC-UP01	Parcel A	39.50	378.55	388.75-378.75 ^H
G504	PANC-UP02	Parcel A	39.00	372.06	382.06-372.06 ^H
G505	PANC-UP05	Parcel A	37.10	389.61	399.61-389.61 ^C
G506	PANC-UP09	Parcel A	27.30	389.29	399.49-389.49 ^C
G507	PANC-UP11	Parcel A	37.30	388.62	398.82-388.82 ^C
G508	SWMU4-MW01	Parcel A	30.98	395.10	405.10-395.10 ^P
G509	SWMU4-MW03	Parcel A	29.41	389.24	405.90-395.90 ^P
G510	SWMU4-MW04	Parcel A	32.62	388.96	405.57-395.57 ^P

<u>Observation Monitoring Wells (LNAPL Monitoring Network⁵)</u>					
G105	RL-5	ESP	34.00	388.28	398.28-388.28 ^C
G512	SUMP-8	Parcel C	+	+	409.05-406.35 ^P
<u>Observation Monitoring Wells (Sentinel Wells⁶)</u>					
G511	SWMU4-MW02	Parcel A	26.43	392.67	402.67-392.67 ^C
LOD1 ²	LOD-1	LOD	31.00	393.58	403.58-393.58 ^C
LOD2 ²	LOD-2	LOD	41.00	380.15	390.15-380.15 ^C
G029 ⁷	C-19R	MP	24.52	393.98	404.31-394.31 ^C
G056**	G-16	MP	30.00	395.54	415.54-395.54 ^P
<u>IEPA Well No.</u>	<u>Facility Well No.</u>	<u>Area</u>	<u>Well Depth (ft-bgs)</u>	<u>Well Depth Elevation (ft MSL)</u>	<u>Well Screen Interval (ft MSL)</u>
G057 ⁸	G-17	MP	35.02	391.90	411.90-391.90 ^C
G058 ⁸	G-18	MP	36.00	391.27	411.27-391.27 ^C
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				

BP Comment 35:

Page IV-7 (Section IV.D.): Condition 1:

Please revise the Depth to Water units to Ft below ground surface (bgs) and Ft below top of casing (bTOC).

Please revise hazardous constituents list and footnotes to align with the approved optimized Groundwater Corrective Action Monitoring Program.

Please revise arsenic concentration limit to align with 35 IAC 620, Class I, Groundwater Quality Standards (GQS). Note that the historical drinking water standard for arsenic was 0.05 mg/L; however, the USEPA reduced the standard to 0.01 mg/L in 2006.

Depth to Water (below ~~land~~ ground surface) 72109 Feet bgs
 Depth to Water (below ~~measuring point~~ top of casing) 72109 Ft
~~bgs~~ TOC

<u>Hazardous</u> <u>Constituents</u>	<u>Storet No.</u> <u>(Total)</u>	<u>Storet No.</u> <u>(Dissolved)</u>	<u>Concentration</u> <u>Limits (mg/L)</u>
Arsenic*	01002	01000	0.015
Barium	01007		2.0
Cadmium	01027		0.005
Chloride	00940	00941	200.0
Chrysene	34320		0.1
Lead*	01051	01049	0.0075
Sulfate	00945		400.0
Benzene	34030		0.005
Benzo(b)fluoranthene	34230		0.00018
Bis(2-ethylhexyl) phthalate	39100		0.006
Carbon Disulfide	81309		0.7
Ethylbenzene	78113		0.7
Toluene	34010		1.0
Total Xylenes	34020		10.0
Methyl Tertiary-Butyl Ether	46491		0.07
Phenols	46000		0.1

* = Constituents that must be sampled for both dissolved and total concentrations.

= Constituents that must be sampled annually.

1 = To monitor natural attenuation conditions.

Illinois EPA Response:

Completed by Amy Butler.

1. The Illinois EPA can accept the recommendation to reduce the concentration limit for arsenic to 0.01 mg/L and add biogeochemical parameters, while the following recommendations to Condition D.1 of Section IV cannot be approved:

- a. The “List of STORET Numbers” available on the Illinois EPA website indicates the numbers 72019 and 72109 are associated with the information listed below; therefore, language will not be revised:

72019	DEPTH TO WATER LEVEL (FEET BELOW LAND SURFACE)	DEPTH-FT TO WATER BL L S
72109	DEPTH TO WATER LEVEL FROM A MEASURING POINT (FEET)	DEPTH TO WATER FR MP FT

- b. Due to the Groundwater Corrective Action Program being tied to a landfill, Condition IV.D.4 applies, and the constituents will remain on the hazardous constituents list in IV.D.1 at this time.

BP Comment 36:

Page IV-7 (Section IV.D.): Condition 2, a:

Please add Condition 2.a.i. to include language referencing the proposed site-specific GQS for arsenic. bp submitted a Site-Wide Inorganics and Metals (SWIM) Evaluation Report dated January 25, 2022 for both the Riverfront and Main Plant facilities in which it was demonstrated that increases in dissolved-phase inorganics may be due to naturally occurring fluctuations or other external influences; and that these fluctuations may exceed the established Class 1 GQS. The SWIM evaluation determined that arsenic is present in the uppermost aquifer at background concentrations that exceed the Class 1 GQS of 0.01 mg/L. bp proposed that a site-specific GQS for arsenic be established at a concentration of 0.036 mg/L.

- i. — The Permittee submitted a Site-Wide Inorganics and Metals Evaluation Report dated January 25, 2022, proposing a site-specific groundwater quality standard of 0.036 mg/L for arsenic pending approval by the Illinois EPA.

Illinois EPA Response:

Completed by Amy Butler.

The proposed addition to Condition IV.D.2.a describing the pending review related to an arsenic value will not be added since the referenced report and arsenic value has not been reviewed and/or approved. The groundwater must meet the arsenic value established in 35 Ill. Adm. Code, Part 620.

BP Comment 37:

Page IV-9 (Section IV.E.): Condition 3, b, 1st sentence:

Please revise “daily” to “each business day.”

The pumping rate from each Gradient Control Well (COD well) shall be recorded ~~daily~~each business day.

Illinois EPA Response:

Completed by Amy Butler.

The Illinois EPA can accept the recommendations. The first sentence of Condition IV.E.3.b has been updated accordingly.

The pumping rate from each Gradient Control Well (COD well) shall be recorded each business day.

BP Comment 38:

Page IV-10 (Section IV.E.): Condition 6:

Please revise to clarify “groundwater flow rate” and/or confirm this is a reference to seepage velocity in ft/day.

The Permittee shall determine the groundwater flow rate (i.e., seepage velocity in ft/day) and direction in the uppermost aquifer at least annually from the monitoring wells listed in Condition IV.C.1.

Illinois EPA Response:

Completed by Amy Butler.

The Illinois EPA can accept the recommendations. Condition IV.E.6 has been updated accordingly.

The Permittee shall determine the groundwater flow rate (i.e., seepage velocity in ft/day) and direction in the uppermost aquifer at least annually from the monitoring wells listed in Condition IV.C.1.

BP Comment 39:

Page IV-10 (Section IV.E.): Condition 8:

Please revise the reference.

The GMZ Boundary Wells and Observation Monitoring Wells listed in Condition IV.C.1 shall be monitored for the constituents listed in Condition IV.~~E~~.D.1.

Illinois EPA Response:

Completed by Amy Butler.

The Illinois EPA can accept the recommendations. Condition IV.E.8 has been updated accordingly.

The GMZ Boundary Wells and Observation Monitoring Wells listed in Condition IV.C.1 shall be monitored for the constituents listed in Condition IV.D.1.

BP Comment 40:

Page IV-13 (Section IV.E.): Condition 12:

Please clarify the number of copies required. This Condition states that one (1) original and two (2) copies are required while Condition III.F.6 states one (1) original and one (1) copy is required for the Leachate Data Quarterly Monitoring Report. Please note bp's preference is to mail one (1) original copy and send electronic copies for all Illinois EPA CCs.

The Permittee shall submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) as a cover sheet for any notices or reports required by the facility's permit for identification purposes. Only one (1) copy of the LPC 592 must accompany your submittal. However, the Permittee must submit one (1) original and (excluding the groundwater and leachate monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The LPC 592 form is not to be used for permit modification requests.

Illinois EPA Response:

Completed by Amy Butler.

No specific language is recommended. Condition I.12 states:

The Permittee shall submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) as a cover sheet for any notices or reports required by the facility's permit for identification purposes. Only one (1) copy of the LPC 592 must accompany your submittal. However, the Permittee must submit one (1) original and (excluding the groundwater and leachate monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The LPC 592 form is not to be used for permit modification requests.

1. Leachate reporting is reviewed by the RCRA Unit; therefore, the following comments and revised language only address groundwater reports required by Condition IV.I.12. The Groundwater Unit recommends the RCRA Unit comment, if necessary, with regards to the leachate reports required by Condition III.F.6.
2. Regarding Condition IV.I.12, the number of necessary copies is determined by the Illinois EPA needs. There is a regulatory requirement for an original signature; therefore, at least one paper copy with a wet signature is required at this time. Historically, one (1) original has been sent to the Bureau of Land File, a copy went to the Groundwater Unit reviewer, and a copy went to the regional Field Operations Section. The Collinsville Regional Office has expressed a preference for electronic copies, and this is also preferred by the Groundwater Unit. A reduction in paper copies does not appear to violate any regulatory requirements and will reduce resources and energy. At this time, one (1) original paper submittal, plus electronic copies, is considered adequate as described below:

The Permittee shall submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) as a cover sheet for any notices or reports required by the facility's permit for identification purposes. Only one (1) copy of the LPC 592 must accompany your submittal. However, the Permittee must submit one (1) original paper submittal and ~~(excluding the groundwater and leachate monitoring results submitted in an electronic format)~~ a minimum of two (2) copies of each notice or report you submit to the Illinois EPA, and (excluding the groundwater and leachate monitoring results submitted in an electronic format) a minimum of two (2) copies electronic copies for all additional Illinois EPA copies (i.e., Permit Section and the regional Field Operations Section). Additional paper copies must be provided upon Illinois EPA request. The LPC 592 form is not to be used for permit modification requests.

BP Comment 41:

Page IV-13 (Section IV.E.): Condition 14:

Please confirm that the CDF (Parcel D) and PNWL (Parcel J) reports required by Illinois EPA letters can be incorporated into the semi-annual report since neither are stated in Section VI – Special Conditions.

1. *The Permittee shall submit a written report semi-annually to the Illinois EPA, in accordance with the schedule found in Condition IV.I.2, which discusses the effectiveness of the corrective action program and place it in the operating record for the facility. Groundwater monitoring information required by Illinois EPA letters for all Parcels at the BP Riverfront facility shall be provided within the semi-annual report and separate reports are no longer required unless otherwise stated in Section VI (Special Conditions) of the Permit. At a minimum, the report must:*

- a. *Address the information requirements in Conditions IV.C, IV.D, IV.E and IV.F*
- b. *Evaluate the effectiveness of the hydraulic control and contaminant removal from the GMZ including the information required by Condition IV.D.*
- c. *Provide a discussion of any improvement in the quality of groundwater beneath the facility which has resulted from the corrective action.*

Illinois EPA Response:

Completed by Amy Butler.

1. Condition IV.I.14 is intended to require the groundwater reporting across the entire facility be provided within one report semi-annually as many individual groundwater monitoring wells identified in Section IV are also part of programs identified in Section V. The Illinois EPA previously approved modification to the Permit (Log No. B-145R-M-10 and M-12) dated July 19, 2019 for consolidation of reporting to reduce duplications and centralize information previously provided within separate reports. Condition IV.I.14 has been revised to remove the requirement for groundwater information for Parcels be included in semi-annual monitoring reports, and Condition V.J.1 has been revised to identify reporting requirements, which include groundwater information to be reported for each Parcel as the Parcels contain SWMUs regulated by 35 Ill. Adm. Code 724.201. These revisions eliminate duplicate efforts and retain reporting requirements for the respective sections the units are tied to. These revisions cause no reduction of information to be reported.

Revisions to Condition IV.I.14 include:

The Permittee shall submit a written report semi-annually to the Illinois EPA, in accordance with the schedule found in Condition IV.I.2, which discusses the effectiveness of the corrective action program and place it in the operating record for the facility. ~~Groundwater monitoring information required by Illinois EPA letters for all Parcels at the BP Riverfront facility shall be provided within the semi-annual report and separate reports are no longer required unless otherwise stated in Section VI (Special Conditions) of the Permit.~~ At a minimum, the report must:

- a. Address the information requirements in Conditions IV.C, IV.D, IV.E and IV.F
- b. Evaluate the effectiveness of the hydraulic control and contaminant removal from the GMZ including the information required by Condition IV.D.
- c. Provide a discussion of any improvement in the quality of groundwater beneath the facility which has resulted from the corrective action.

- d. Groundwater monitoring information required by Illinois EPA letters for monitoring programs specific to Solid Waste Management Units (SWMUs) within Parcels identified in Section V of the Permit shall be provided within reports required by Section V.J of the Permit.

Revisions to Condition V.J.1 include the addition of the following language and renumbering to add clarification for where to report information for the CDF and PNWL. The LOD Area is also clarified:

The following condition is added as V.J.1.d to clarify reporting requirements for the PNWL:

- d. The quarterly groundwater monitoring reports required by Attachment A of the December 15, 2006 letter (Log Nos. B-145; and 2001-075) for the landfill identified as the PNWL shall be incorporated into each quarterly Corrective Action Progress Report; and the PNWL annual groundwater monitoring reports required by the December 15, 2006 letter shall be incorporated into the Quarterly Corrective Action Progress Report. Separate reports are no longer required to be submitted.

The following condition is added as V.J.1.e to clarify reporting requirements for the CDF:

- e. CDF landfill reporting requirements in Illinois EPA letters dated September 13, 2002 (Log No. B-145-CA-23), and as modified in Illinois EPA letters dated November 18, 2008 (B-145-CA-77), and September 3, 2009 (Log No. B-145-CA-71), shall be incorporated into the Quarterly and Annual Corrective Action Progress Reports in accordance with the schedule in Condition V.J.1.a (August 1 and March 1 submittal dates for the CDF). This includes the CDF Second and Fourth Quarter Semi-Annual Groundwater Monitoring Reports and the "Annual CDF Operations, Maintenance and Monitoring Report" (referred to Annual CDF OM&M/Liquid Level Report by BP Products North America Inc.). Separate reports are no longer required to be submitted.

The following condition is added as V.J.1.f to clarify reporting requirements for the LOD Area:

- f. The LOD Area reporting required as part of the GMZ approval in the April 4, 1994 Illinois EPA letter (Log No. B-145) and re-evaluation of the GMZ approval letter dated April 24, 2002 (Log No. B-145-CA-31) shall be incorporated into the Quarterly Corrective Action Progress Reports. Separate reports are no longer required to be submitted.

As a result of the added conditions listed above, Condition V.J.1.d has been renumbered to V.J.1.g.

BP Comment 42:

Page V-10 (Section V.F.): Condition 3, c:

bp requests removal of the 20% contingency from the total cost estimate.

e. ~~—A 20% adjustment for contingencies to the total estimated cost;~~

~~c. —An identification of the resources needed to complete each task (type and amount) and the unit cost of each required resource;~~

e.d. —Justification for all values used in the developing all aspects of the estimate.

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment and respectfully declines the request as the 20% contingency is necessary in the event of bankruptcy.

BP Comment 43:

Page V-15 (Section V.J.): Condition 1, b, 1:

Please clarify if the Pond 1 Landfill Leachate Data Quarterly Monitoring Report required in Condition III.F.3 can be included in this Corrective Action Progress Report rather than be submitted as a standalone report.

a summary of activities completed at each parcel during the quarter, including information regarding the amount of free product/groundwater/leachate removed on a weekly basis from various units during the quarter;

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment, as long as the information required by the Pond 1 Landfill Leachate Data Quarterly Monitoring Report is distinctly labeled it can be included in the Corrective Action Progress Report.

BP Comment 44:

Page V-15 (Section V.J.): Condition 1, d:

Please correct number formatting and period in last sentence.

d. An Annual Corrective Action Progress Report must be submitted to Illinois EPA by March 1 of each year which summarizes corrective action program activities completed at the facility

during the previous calendar year (i.e., the previous January 1 to December 31). Among other things, this report must contain a compilation/summary of the information in the quarterly reports for the year, what was completed during the year, and what must still be done in the next year and in the following years. The following shall be incorporated into the Annual Corrective Action Progress Report and separate reports are no longer required:

(1) The corrective action progress report for the fourth quarter (October – December of every year).

(2)e- The “Annual CDF Operations, Maintenance and Monitoring Report” (referred to as Annual CDF OM&M/ Liquid Level Report by BP Products North America Inc-).

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP’s comment and has made the changes below:

d. An Annual Corrective Action Progress Report must be submitted to Illinois EPA by March 1 of each year which summarizes corrective action program activities completed at the facility during the previous calendar year (i.e., the previous January 1 to December 31). Among other things, this report must contain a compilation/summary of the information in the quarterly reports for the year, what was completed during the year, and what must still be done in the next year and in the following years. The following shall be incorporated into the Annual Corrective Action Progress Report and separate reports are no longer required:

- (1) The corrective action progress report for the fourth quarter (October – December of every year).
- (2) The “Annual CDF Operations, Maintenance and Monitoring Report” (referred to as Annual CDF OM&M/ Liquid Level Report by BP Products North America Inc).

SUBJECT SUBMITTAL

Groundwater-related comments have been made to Section VI (Special Conditions).

BP Comment 45:

Page VI-2 (Section VI.C): Condition 4:

The GMZ for the River-front facility was established as a condition in the 1993 RCRA Permit. It is bp’s opinion that the GMZ at the Riverfront facility is grand-fathered and is not subject to requirements for property owner permission that were adopted after the GMZ was established. The 2023 permit condition requiring written permission from property owners for an off-site

GMZ pre-dates 1997 Illinois GMZ regulations and Illinois EPA 2001 guidance requiring written permission. bp proposes that off-site property owners be notified of the previously approved GMZ.

Within ninety (90) days of the effective date of this Permit, the Permittee shall submit a modification to the Corrective Action Section (Section V) of the Permit, for Illinois EPA review and approval, which provides written ~~permission from notification to any applicable off-site property owner acknowledging they accept~~ that a GMZ for the Riverfront facility encompasses is located on their property. This documentation will serve to verify off-site property owners are aware and approve of a GMZ being present on their property.

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment but cannot approve the proposed language to Condition VI.C.4. The current requirements are reflected in the existing condition; therefore, no changes have been made to Condition VI.C.4.

BP Comment 46:

Page VII-7 (Section VII.): Condition 36:

"Closure Requirements for Accumulation Areas" is a new Standard Condition (under "General Facility Standards" subsection). It is bp's opinion that this condition should only be applicable to storage areas operated on or after the date the closure requirement was adopted at 35 IAC 722.117(a)(8).

CLOSURE REQUIREMENTS FOR ACCUMULATION AREAS. The Permittee shall close containers storage areas, tanks, drip pads, or containment buildings used for the accumulation of on-site generated hazardous waste in accordance with the requirements identified at 35 IAC 722.117(a)(8). This requirement is applicable to storage areas used on or after this section was amended at 44 Ill. Reg. 15263, effective September 3, 2020.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

CLOSURE REQUIREMENTS FOR ACCUMULATION AREAS. The Permittee shall close containers storage areas, tanks, drip pads, or containment buildings used for the accumulation of on-site generated hazardous waste in accordance with the requirements identified at 35 IAC 722.117(a)(8). This requirement is applicable to storage areas used on or after this section was amended at 44 Ill. Reg. 15263, effective September 3, 2020.

BP Comment 47:

Page VII-10 (Section VII.): Condition 56:

The numbering missed "d" and skipped to "e". Please revise list formatting.

56. *COST ESTIMATE FOR FACILITY CLOSURE. The Permittee's original closure cost estimate, prepared in accordance with 35 IAC 724.242, must be:*

- a. *Adjusted for inflation 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with Section 724.243. However, if the owner/operator is using the financial test or corporate guarantee, it must be updated for inflation within 30 days after close of the firm's fiscal year, and before the submission of updated information to the Illinois EPA as specified in Section 724.243(f).*
- b. *Revised no later than 30 days after the Illinois EPA has approved a request to modify the closure plan, if the change in the closure plan increases the cost of closure.*
- c. *Kept on record at the facility and updated. (35 IAC 724.242)*
- ~~e.d.~~ *Made immediately available to Illinois EPA personnel upon Illinois EPA request.*
- ~~f.e.~~ *Maintained at the value approved by Illinois EPA with annual adjustment for inflation and cannot be decreased unless approved by the Illinois EPA in a permit modification.*

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

56. *COST ESTIMATE FOR FACILITY CLOSURE. The Permittee's original closure cost estimate, prepared in accordance with 35 IAC 724.242, must be:*

- a. *Adjusted for inflation 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with Section 724.243. However, if the owner/operator is using the financial test or corporate guarantee, it must be updated for inflation within 30 days after close of the firm's fiscal year, and before the submission of updated information to the Illinois EPA as specified in Section 724.243(f).*

- b. Revised no later than 30 days after the Illinois EPA has approved a request to modify the closure plan, if the change in the closure plan increases the cost of closure.
- c. Kept on record at the facility and updated. (35 IAC 724.242)
- d. Made immediately available to Illinois EPA personnel upon Illinois EPA request.
- e. Maintained at the value approved by Illinois EPA with annual adjustment for inflation and cannot be decreased unless approved by the Illinois EPA in a permit modification.

BP Comment 48:

Page VII-11 (Section VII.): Condition 63, a:

Please revise language to align with current permit.

63. STORAGE RESTRICTIONS

- a. *The Permittee shall not store hazardous wastes restricted from land disposal under 35 IAC Part 728, Subpart C unless such wastes are stored only in containers or tanks, or other units approved by Illinois EPA in writing, and are stored solely for the purpose of the accumulation of such quantities as is necessary to facilitate proper recovery, treatment, or disposal, and: (1) each container is clearly marked to identify its contents and the date each period of accumulation begins; (2) each tank is clearly marked to identify its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, as required by 35 IAC 728.150.*

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

63. STORAGE RESTRICTIONS

- a. The Permittee shall not store hazardous wastes restricted from land disposal under 35 IAC Part 728, Subpart C unless such wastes are stored only in containers or tanks, or other units approved by Illinois EPA in writing, and are stored solely for the purpose of the accumulation of such quantities as is necessary to facilitate proper recovery, treatment, or disposal, and: (1) each container is clearly marked to identify its contents and the date each period of accumulation begins; (2) each tank is clearly

marked to identify its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, as required by 35 IAC 728.150.

BP Comment 49:

Page VII-12 (Section VII.): Conditions 67 and 68:

The numbering missed "c" and skipped to "d". Please revise list formatting.

67. *COST ESTIMATE FOR POST-CLOSURE. The Permittee's original post-closure cost estimate, prepared in accordance with 35 IAC 724.244, must be:*

- a. *Adjusted for inflation either 60 days prior to each anniversary of the date on which the first post-closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year. This permit condition is applicable throughout the entirety of the post-closure care period.*
- b. *Revised whenever there is a change in the facility's post-closure plan increasing the cost of the post-closure plan.*
- ~~c.~~ *Kept on record at the facility and updated. (35 IAC 724.244).*
- ~~e.d.~~ *Maintained at the value approved by Illinois EPA with annual adjustment for inflation during the post-closure care period and cannot be decreased unless approved by the Illinois EPA in a permit modification.*

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

67. *COST ESTIMATE FOR POST-CLOSURE. The Permittee's original post-closure cost estimate, prepared in accordance with 35 IAC 724.244, must be:*

- a. *Adjusted for inflation either 60 days prior to each anniversary of the date on which the first post-closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year. This permit condition is applicable throughout the entirety of the post-closure care period.*
- b. *Revised whenever there is a change in the facility's post-closure plan increasing the cost of the post-closure plan.*
- c. *Kept on record at the facility and updated. (35 IAC 724.244).*

- d. Maintained at the value approved by Illinois EPA with annual adjustment for inflation during the post-closure care period and cannot be decreased unless approved by the Illinois EPA in a permit modification.

SUBJECT SUBMITTAL

Groundwater-related comments have been made to Section VIII (Reporting).

BP Comment 50:

Page VIII-1 (Section VIII.): Please revise the incorrect Condition references.

Please clarify the due date for Condition VII.14 regarding Reporting Planned Changes as here it states, "At least 15 days prior to planned change" but Condition VII.14 states, "as soon as possible."

<i>IV.D.4</i>	<i>Notify Illinois EPA if any of the wells identified in Condition IV.DC.1 and IV.DC.2 are damaged, or the structural integrity has been compromised</i>	<i>Within 30 days of the date the damage is detected</i>
<i>IV.DC.6</i>	<i>Provide Illinois EPA boring logs, construction diagrams, and data sheets from new or replacement wells</i>	<i>Within 30 days of the date installation is complete</i>
<i>IV.H.2</i>	<i>Groundwater monitoring data required each quarter, and additional data required in Conditions IV.FE., IV.GF, and IV.H.</i>	<i>Semi-annually</i>
<i>IV.H.3</i>	<i>Collect quarterly groundwater surface elevation data</i>	<i>Semi-annually</i>
<i>IV.H.4</i>	<i>Quarterly groundwater withdrawal rates</i>	<i>Semi-annually</i>
<i>IV.H.5</i>	<i>Gradient control measurements.</i>	<i>Semi-annually</i>
<i>IV.H.6</i>	<i>Statistical evaluations, as required by Condition IV.F.2.eH</i>	<i>Every 5-years in GMZ Evaluation</i>
<i>IV.H.7</i>	<i>Groundwater flow rate and direction in the uppermost aquifer.</i>	<i>Semi-annually</i>
<i>IV.H.8</i>	<i>Collect groundwater samples per Condition IV.FE.8 and depict the extent of dissolved</i>	<i>Semi-annually</i>

contamination to define the extent of contamination.

- | | | |
|----------------|--|---|
| <i>IV.H.9</i> | <i>The surveyed elevation of the top of well casing.</i> | <i>Every 5 years.</i> |
| <i>IV.H.10</i> | <i>Elevation of the bottom of each monitoring well.</i> | <i>Annually during the second quarter sampling event.</i> |
| <i>IV.H.11</i> | <i>Electronic Reporting</i> | <i>Semi-annually</i> |

Illinois EPA Response:

Completed by Amy Butler

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

- | | | |
|---------------|--|--|
| <i>IV.C.4</i> | <i>Notify Illinois EPA if any of the wells identified in Condition IV.C.1 and IV.C.2 are damaged, or the structural integrity has been compromised</i> | <i>Within 30 days of the date the damage is detected</i> |
| <i>IV.C.6</i> | <i>Provide Illinois EPA boring logs, construction diagrams, and data sheets from new or replacement wells</i> | <i>Within 30 days of the date installation is complete</i> |
| <i>IV.I.2</i> | <i>Groundwater monitoring data required each quarter, and additional data required in Conditions IV.E., IV.F, and IV.H.</i> | <i>Semi-annually</i> |
| <i>IV.I.3</i> | <i>Collect quarterly groundwater surface elevation data</i> | <i>Semi-annually</i> |
| <i>IV.I.4</i> | <i>Quarterly groundwater withdrawal rates</i> | <i>Semi-annually</i> |
| <i>IV.I.5</i> | <i>Gradient control measurements.</i> | <i>Semi-annually</i> |
| <i>IV.I.6</i> | <i>Statistical evaluations, as required by Condition IV.H</i> | <i>Every 5-years in GMZ Evaluation</i> |
| <i>IV.I.7</i> | <i>Groundwater flow rate and direction in the uppermost aquifer.</i> | <i>Semi-annually</i> |
| <i>IV.I.8</i> | <i>Collect groundwater samples per Condition IV.E.8 and depict the extent of dissolved contamination to define the extent of contamination.</i> | <i>Semi-annually</i> |

IV.I.9	<i>The surveyed elevation of the top of well casing.</i>	<i>Every 5 years.</i>
IV.I.10	<i>Elevation of the bottom of each monitoring well.</i>	<i>Annually during the second quarter sampling event.</i>
IV.I.11	<i>Electronic Reporting</i>	<i>Semi-annually</i>

In addition, the reference to IV.D.4 was corrected to IV.C.4.

BP Comment 51:

Page Attachment A: Divider Page: Please revise.

***ATTACHMENT A
IDENTIFICATION OF APPROVED PERMIT APPLICATION***

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

***ATTACHMENT A
IDENTIFICATION OF APPROVED PERMIT APPLICATION***

BP Comment 52:

Page Attachment I and J: Divider Page: Please revise.

***ATTACHMENT I
CERTIFICATION OF COMPLETION OF CLOSURE
ATTACHMENT J
CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE***

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

***ATTACHMENT I
CERTIFICATION OF COMPLETION OF CLOSURE
ATTACHMENT J
CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE***



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

RCRA HAZARDOUS WASTE PERMIT

R 001297

1191155009 – Madison County
ILD980503106
BP Products North America/Riverfront
Permit Log B-145R2
RCRA Administrative Record

Issue Date: DRAFT
Effective Date: DRAFT
Expiration Date: DRAFT
Modification Date: DRAFT

PERMITTEE

BP Products North America, Inc.
Attention: Ms. Michelle Knapp
301 Evans Avenue, P.O. Box 167
Wood River, Illinois 62095

A Renewed RCRA POST-CLOSURE hazardous waste permit is hereby issued to BP Products North America Inc.(BP) as Owner and Operator and Permittee pursuant to Section 39(d) of the Illinois Environmental Protection Act and Title 35 Illinois Administrative Code Subtitle G (35 IAC).

PERMITTED HAZARDOUS WASTE ACTIVITY

This permit requires BP to conduct the following hazardous waste activities in accordance with the approved permit application and the conditions in this permit:

Disposal: One surface impoundment (East Surge Pond) for non-hazardous waste only (D83)

Post-Closure Care: One closed landfill (Pond 1 Landfill) (D80) with detection and compliance monitoring

Groundwater Monitoring: Corrective Action Monitoring

Corrective Action: Twelve (12) SWMUs and one Product Release Site in ten (10) Parcels (Parcels A – J)

This permit consists of the conditions contained herein and those in the sections and attachments in this permit. The Permittee must comply with all terms and conditions of this permit and the applicable regulations contained in 35 IAC Parts 702, 703, 705 and 720 through 729, in effect through the effective date of this permit.

This permit is issued based on the information submitted in the approved permit application identified in Attachment A of this permit and any subsequent amendments. Any inaccuracies found in the information provided in the permit application may be grounds for the termination or modification of this permit (see 35 IAC 702.187 and 702.186) and potential enforcement action (415 ILCS 5/44(h)).

DRAFT

Jacqueline M. Cooperider, P.E.
Permit Section Manager
Bureau of Land

JMC:TNH: 1191155009-RCRA-B145R2-Draft.docx

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

Hazardous Waste RCRA Permit

BP Products North America -- Riverfront Facility

Wood River, Illinois

LPC No. 1191155009

ILD980503106

**Hazardous Waste RCRA Permit
 BP Products North America/Riverfront Facility**

TABLE OF CONTENTS

<u>ITEM</u>	<u>PAGE</u>
Table of Contents	i
Section I. General Facility Description	I-1 to I-3
Section II. Surface Impoundments	II-1 to II-8
Section III. Post-Closure for the Pond 1 Landfill Unit	III-1 to III-13
Section IV. Groundwater Corrective Action Program	IV-1 to IV-15
Section V. Corrective Action	V-1 to V-16
Section VI. Special Conditions	VI-1 to VI-3
Section VII. Standard Conditions	VII-1 to VII-13
Section VIII. Reporting and Notification Requirements	VIII-1 to VIII-4
Attachment A – Approved Permit Application	A-1
Attachment B – Location Map & Drawings of Permitted Units	B-1 to B-3
Attachment C – Groundwater Monitoring Attachments	C-1 to C-8
Attachment D – Corrective Action Attachments	D-1 to D-8
Attachment E – Corrective Measures Program Requirements	E-1 to E-11
Attachment F – Construction Certification Form	F-1
Attachment G – Closure, Post-Closure and Corrective Action Cost Estimates	G-1
Attachment H – Post-Closure Inspection Schedule	H-1 to H-2
Attachment I – Certification of Completion of Closure	I-1
Attachment J – Certification of Completion of Post-Closure Care	J-1

SECTION I: GENERAL FACILITY DESCRIPTION**A. OWNER AND OPERATOR**

The facility is owned and operated by BP Products, North America Inc., hereinafter referred to as the "Permittee" (Title 35 Illinois Administrative Code (35 IAC) 702.121, 702.123 and 703.181).

BP Products North America, Inc.
301 Evans Avenue
Wood River, Illinois 62095

Facility Contact:

Michelle Knapp
Liability Manager
Remediation Management Services Company
An Affiliate of BP Products North America Inc.
847-346-7112
michelle.knapp@bp.com

B. LOCATON**1. Location of the facility:**

The BP Riverfront facility is a 231-acre site mainly in Wood River, Illinois, with the 23 southernmost acres being located in the Village of Hartford in Madison County, Illinois. It is located between the levee of the Wood River Drainage Levee District (WRDL) and the Mississippi River, just west of Illinois Route 3. The mailing address for this facility is 301 Evans Avenue, Wood River, Illinois. (Note: This is also the mailing address for BP Main Plant facility).

The Riverfront facility is adjacent to, and its operation was associated with the former Amoco Refinery in Wood River. This 569-acre former refinery is located due east of the BP Riverfront property. The general boundaries of the former refinery are Route 143, East Rand Avenue, South Sixth Street, and Illinois Route 3 on the north, south, east, and west sides, respectively.

2. Facility Maps:

The general location of the facility is shown on Figure B-1, Attachment B of this permit. The locations of the hazardous waste management units (HWMUs), solid waste management units (SWMUs), regulated by this permit are shown on Figure D-2, Attachment D of this permit.

C. DESCRIPTION OF HAZARDOUS WASTE MANAGEMENT ACTIVITIES

Amoco operated an oil refinery at the Main Plant (BP Main Plant facility – 1191150001) from 1908 to 1981 and Amoco Petroleum Additives Company operated in a portion of the Main Plant from 1957 to 1996. The Riverfront facility was used by Amoco to gain access to barges on the Mississippi River. In addition, it was used for the management of refinery waste. Presently, Kinder Morgan Liquid Terminals LLC (KMLT) operates, and Kinder Morgan Phoenix Holdings (KMPH) owns, a storage and distribution facility for gasoline and petroleum distillates at a site which was formerly a portion of the Main Plant facility but was sold to KMPH and will be subject to a separate RCRA Permit. The Main Plant and Riverfront facilities were owned by Amoco Oil Company until the company merged with BP in 1999.

The Riverfront Property is now being remediated and redeveloped and will continue to have industrial and commercial use. It has been split up into ten (10) parcels: Parcels A through J which will be investigated, remediated, reported on, and redeveloped on a parcel-by-parcel basis.

For many years prior to 1977, a series of surface impoundments (or ponds) at the Riverfront facility were used to treat wastewater from the refinery. In the mid-1970s, these ponds were replaced by a new wastewater treatment plant. From 1977 to 1981, Amoco stored Dissolved Air Flotation (DAF) float, a listed hazardous waste, in Ponds 1, 1A, 2, 2A, 3, 3A and 4 of the former series of wastewater treatment ponds. As such, these ponds became HWMUs subject to the requirements of RCRA. Amoco elected to close these hazardous waste surface impoundments; Illinois EPA approved a closure plan for these units on April 4, 1986 (Log No. C-145). The main goal of this closure effort was to remove all sludges and contaminated soil from these ponds, treat the removed material and render it non-hazardous and then dispose of it in a permitted on-site landfill.

The pumpable material from the subject ponds were removed, treated, and placed in the Pond 5 landfill as a non-hazardous waste in accordance with plans approved by and a permit received from Illinois EPA. However, Amoco found that they could not easily remove/treat the heavier sludges and contaminated soils in the ponds and thus pursued an alternative closure effort at these ponds as follows:

1. The heavier sludges and some impacted soils from Ponds 1, 1A and the north portion of Pond 2 were removed and stored in the other ponds to allow for the construction of the Pond 1 landfill (a hazardous waste landfill). The heavier sludges and impacted soils from all the ponds (listed hazardous wastes) were subsequently placed in the Pond 1 landfill, which had been constructed in accordance with the requirements for a hazardous waste landfill at the former location of Ponds 1, 1A and the northern portion of Pond 2.
2. The heavier sludge and some contaminated soil from the southern half of Pond 2, as well as Ponds 2A, 3, 3A and 4 were also placed in the Pond 1 landfill. However, not all contaminated soil was removed from the ponds and the clean closure requirements of RCRA were not achieved. As such, Amoco pursued and

obtained a delay of closure adjusted standard (AS-91-4) allowing the company to continue discharging non-hazardous wastewaters into a unit referred to as the "East Surge Pond" (ESP) which was created from these ponds. These wastewaters are defined in Condition II.B.1. A one-foot compacted clay liner was placed on the floors and walls of the East Surge Pond (from which the sludges and some contaminated soil had been removed) before wastewater began to be discharged into the pond.

The Pond 1 landfill is approximately 4.1 acres and contains 80,000 cubic yards of stabilized heavy sludges and impacted soils. This landfill has been closed in accordance with a plan approved by Illinois and has been under post-closure care since August 1995.

The ESP is 20.9 acres in size with a storage capacity of 100 million gallons, and 80 million gallons are normally available below the 2-foot freeboard level. As indicated above, it is used as a backup system and only accepts non-hazardous wastewater from the Main Plant facility and the Wood River Wastewater Treatment Plant (WWTP); and nonhazardous leachate from the onsite PNWL in accordance with the delay of closure adjusted standard (AS-91-4) and this permit. It will eventually have to be closed in accordance with a plan approved by Illinois EPA.

BP is also conducting a groundwater monitoring/corrective action program at this facility and also a general corrective action for the SWMUs at the facility. The groundwater corrective action program includes: (1) a groundwater management zone and (2) a groundwater pump and treat system whose goal is to prevent any contaminated groundwater from flowing off-site. As part of the general corrective action program, the facility has been broken up into ten parcels and the SWMUs in each parcel have individual focus. BP also has the option of conducting corrective action on all contaminated areas or recognized environmental conditions in a given parcel.

This permit allows/requires BP to carry out the following activities at the Riverfront facility: (1) continue storing/treating non-hazardous wastewaters in the ESP until closure activities begin; (2) provide post-closure care for the Pond 1 Landfill; (3) conduct corrective action, as appropriate, at the facility; and (4) implement a groundwater monitoring/corrective action program. A RCRA permit was initially issued for these activities on September 30, 1993 (Log No B-145) and was previously renewed on August 11, 2008 (Log No. B-145R). This renewal permit (Log No. B-145R2) supersedes the previously issued two permits and any associated modifications.

SECTION II: SURFACE IMPOUNDMENT

A. SUMMARY

The East Surge Pond (ESP) is a hazardous waste surface impoundment that currently only receives/stores/treats non-hazardous wastewaters and non-hazardous leachate from the adjacent and onsite Permitted Non-Hazardous Waste Landfill (PNWL). It covers approximately 20.9 acres and has a capacity of 100 million gallons and is designed so that 80 million gallons of storage are normally available below the 2-foot freeboard level.

The impoundment is constructed in an area where several impoundments (the southern part of Pond 2 and all of Ponds 2A, 3, 3A, and 4) were once present that stored hazardous waste but were not clean closed in accordance with Title 35 Illinois Administrative Code (35 IAC) 724 or 725. During construction of the ESP, all sludges/sediments and most of the contaminated soil was removed from these ponds. The floor and sides of the ESP are lined with 1 foot of recompacted clay, and are protected from a 100-year flood event by a flood-protection dike. The location and layout of the East Surge Pond are presented in Figure B-3 of Attachment B to this permit.

The Illinois Pollution Control Board issued an Adjusted Standard (AS-91-4) to the Permittee to allow operation of the ESP for the storage/treatment of non-hazardous wastewaters under the delay of closure regulations contained in 35 IAC 724.213. Although some residual soil contamination may remain in the ESP during the delay of closure period, no new hazardous wastes are allowed to be placed in the unit. During the delay of closure period, the unit will manage only non-hazardous wastewaters, including nonhazardous leachate from the adjacent PNWL. This section contains provisions for continued operation and eventual closure of this unit; and requires BP to submit a proposed schedule for the closure of the ESP.

B. DESCRIPTION OF SURFACE IMPOUNDMENT AND WASTES

1. The Permittee may only store/treat non-hazardous wastewaters in total volume of 100 million gallons in the ESP subject to the terms of this permit including: (a) domestic and industrial sewage and commingled stormwater from the Cities of Wood River, Hartford, South Roxana, and also BP Main Plan and Riverfront facilities; (b) groundwater pumped as part of BP's hydraulic gradient control and subsurface hydrocarbon recovery program; and (c) recovered non-hazardous leachate from the PNWL and captured artisanal waters which have not come into contact with any hazardous wastewaters elsewhere at the Riverfront facility.

<u>Surface Impoundment Designation</u>	<u>Capacity (gallons)</u>	<u>Dimensions of Impoundment</u>	<u>Description of Hazardous Waste & Waste Numbers</u>
ESP	100 million	20.9 acre	Sediments and soil contaminated with K048 Dissolved Air Flotation (DAF) float from the petroleum refining industry

2. All wastewater managed in the ESP must be evaluated through the approved waste analysis plan for compatibility to ensure that all wastewaters placed into the ESP will be non-hazardous. The Permittee must:
 - a. Collect/analyze a sample of the first discharge of wastewater from Pond 3A to the ESP each quarter of the calendar year in accordance with Condition II.B.2.c.
 - b. Two composite samples of leachate discharge, one from the manifolded pipe of odd numbered sumps and one from the even numbered sumps of the PNWL, sent to the East Surge Pond each quarter of the calendar year in accordance with Condition II.B.2.c.
 - c. These samples must be analyzed for all the characteristics of hazardous waste set forth in 35 IAC 721, Subpart C. The results of these efforts must be documented in the facility's operating record. If it is found that the wastewater/leachate is hazardous, then:
 - (1) Illinois EPA (Bureau of Land Permit Section and Collinsville FOS) must immediately be notified of such findings via email and/or phone call (which determined to be most as most appropriate and effective);
 - (2) No additional wastewaters/wastes must be discharged to the ESP until the Permittee is able to demonstrate to Illinois EPA's satisfaction that no additional hazardous waste will be discharged to the impoundment;
 - (3) The Permittee must develop and implement a plan for determining the source of the hazardous waste. A report documenting the results of this investigation must be developed; this report must also describe the steps to be taken to ensure this problem will not occur in the future. These plans and reports are subject to Illinois EPA review and approval.
3. The Permittee is prohibited from storing, treating, or disposing any waste (hazardous or non-hazardous) in the permitted unit(s) that is not identified in Condition II.B.1.

C. DESIGN AND OPERATING REQUIREMENTS

1. The Permittee shall operate and maintain the surface impoundment in accordance with the plan and narrative contained in "East Surge Pond Addendum to Section E" section of the approved permit application and the conditions in this permit.
2. The Permittee shall operate and maintain the surface impoundment to prevent overtopping in accordance with the detailed design plans and operating practices contained in "East Surge Pond Addendum to Section E" section of the approved permit application. A minimum of two feet of freeboard must be maintained at all times in the ESP. Illinois EPA may modify this requirement when it determines cause exists, such as Force Majeure or events over which the Permittee has no control.
3. The Permittee shall comply with all requirements of the Adjusted Standard for delay of closure of the ESP issued by the Illinois Pollution Control Board, dated March 11, 1992 (AS-91-4). This adjusted standard allows the Permittee to continue using the ESP for the storage/treatment of non-hazardous wastewaters until they decide to close the impoundment in accordance with 35 IAC 724.
4. The requirements of Condition II.B.2 above must be met at all times while the ESP continues to receive non-hazardous wastewaters.
5. The Permittee shall maintain the surface impoundment dike in accordance with the operating practices contained in the approved permit application and the conditions in this permit.

D. REPORTING

The Permittee shall notify the Illinois EPA in writing within seven (7) days after detecting either a leak in the surface impoundment dike or a sudden drop in the liquid level (and the drop is not known to be caused by changes in the flows into or out of the impoundment). The procedures set forth in the contingency plan and 35 IAC 724.327 must then be followed if one of these incidents occur.

E. INSPECTIONS

1. The Permittee shall inspect the surface impoundment (including liner and appurtenances for control of overtopping) in accordance with the inspection schedule in the approved permit application.
2. The Permittee must inspect the surface impoundment on a weekly basis and within 72 hours of any storm or rain fall event of 3 or more inches in 24 hours to detect any evidence of:

- a. deterioration, malfunctions, or improper operation of overtopping control equipment;
 - b. sudden drops in the level of the impoundment's contents; or
 - c. severe erosion or other signs of deterioration in dikes and other containment devices.
3. If the ESP is taken out of service for more than six months, then prior to returning to service, the Permittee shall obtain a certification from a qualified Professional Engineer registered in the State of Illinois that the surface impoundment and the flood-protection dike, including that portion of any dike which provides freeboard, have structural integrity in accordance with 35 IAC 724.326(c).
 4. The results of all inspections conducted on the ESP must be recorded on an inspection log and placed in the operating record for this facility. Appropriate action, including implementation of the contingency plan if necessary, must be carried out in response to deficiencies noted during inspections; the results of these efforts must also be documented on an inspection log/repair log and placed in the operating record for the facility. The forms in Exhibit ESP-3 and Exhibit ESP-4 of the approved permit application shall be used to document inspections and any repairs done at the facility.

F. CLOSURE REQUIREMENTS

At closure, at a minimum, all waste, waste residues, and hazardous constituents must be removed from the unit. Remaining wastes, liner, and underlying soil containing or contaminated with waste, waste residue, or hazardous constituents must also be removed/remediated as appropriate to meet the requirements of 35 IAC 742. Closure of the surface impoundment must be carried out in accordance with the contingent closure plan contained in the "East Surge Pond Addendum to Section E" section of the approved permit application, as modified below:

1. The Permittee shall submit to the Illinois EPA in writing a proposed schedule to close the ESP for Illinois EPA's review and approval within one (1) year of the effective date of this permit. The proposed schedule for closure of the ESP required in this section must include and consider any additional non-closure activities associated with the ESP. Any additional non-closure activities associated with the ESP must commence at least five (5) years prior to the expiration of this permit so that the required RCRA closure activities of the ESP may commence prior to the expiration date of this permit unless approved otherwise by Illinois EPA.
2. The Permittee shall notify the Illinois EPA in writing of its intent to close the ESP at least 180 days prior to the date closure is expected to begin. Along with this notification, the Permittee shall submit a sampling and analysis plan to be used in

demonstrating that all contaminated material (sludge, liner, and underlying soil) has been removed. This plan must be approved by the Illinois EPA in writing prior to being implemented. Illinois EPA review of this plan will be subject to the permit appeal provisions contained in Sections 39(a) and 40(a) of the Illinois Environmental Protection Act. The response from the Illinois EPA will approve with or without conditions, if appropriate and establish:

- a. The sampling and decontamination plan;
 - b. What contaminants must be analyzed for; and
 - c. The level at which decontamination or removal is considered complete. Please note that any proposed risk assessment will be subject to Illinois EPA's review. If the risk assessment is determined to be inadequate, the Illinois EPA may establish cleanup levels that will be protective of human health and the environment based upon the procedures set forth in 35 IAC 742.
3. All sweepings, wash water, and rinsate generated during the closure of the ESP shall be managed as a hazardous waste, unless it can be shown to be exempt under 35 IAC 721.
 4. Additional plans and reports must be submitted to Illinois EPA for approval as necessary, to provide for the proper remediation (i.e., achievement of soil and groundwater remediation objectives developed in accordance with 35 IAC 742) of the sludges, liner, and underlying soil at the ESP.
 5. Within sixty (60) days after closure of the ESP is complete, the Permittee shall submit certification to the Illinois EPA that the unit has been closed in accordance with the approved closure plan.

A closure certification form meeting the requirements of 35 IAC 724.215 must be signed by an authorized representative of the Permittee and a qualified Professional Engineer. Signatures must meet the requirements of 35 IAC Section 702.126. The qualified Professional Engineer (registered in the State of Illinois) must be present at all critical activities during the closure. These activities might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity. Financial assurance must be maintained for the ESP until the Illinois EPA approves the closure certification for the unit.

A Closure Documentation Report must be developed and submitted along with the certification of closure and include:

- a. Background information about the facility overall and the overall closure project.
- b. A description of the unit closed (include scaled maps showing location of unit within facility and layout of unit(s), information related to construction of the unit(s), identification of wastes managed in the unit).
- c. A chronological discussion of all closure activities and what was accomplished as a result of completing these activities.
- d. The volume of waste, waste residue and contaminated soil (if any) removed. The term waste includes wastes resulting from decontamination activities.
- e. Scaled drawings showing the horizontal and vertical boundaries of the extent of any soil removal effort.
- f. A description of the method of waste handling and transport.
- g. The waste manifest numbers.
- h. Copies of the waste manifests.
- i. As appropriate and available: boring logs; well construction diagrams; geologic cross-sections; groundwater monitoring data; and information about any groundwater remediation effort.
- j. Information documenting the results of all sampling/analysis efforts. The goal of presenting this information should be to describe, in a logical manner, the activities and results associated with the sampling/analysis effort. At a minimum, this information must include:
 - (1) identification of the reason for the sampling/analysis effort and the goals of the effort;
 - (2) a summary in tabular form of all analytical data, including all quality assurance/quality control data;
 - (3) a scaled drawing showing the horizontal location from which all soil samples were collected;
 - (4) identification of the depth and vertical interval from which each sample was collected;
 - (5) a description of the soil sampling procedures, sample preservation procedures and chain of custody procedures;

- (6) identification of the test method used, and detection limits achieved, including sample preparation, sample dilution (if necessary) and analytical inferences;
 - (7) copies of the final laboratory report sheets, including final sheets reporting all quality assurance and quality assurance dates;
 - (8) visual classification of each soil sample in accordance with ASTM D-2488;
 - (9) a summary of all procedures used for quality assurance/quality control, including the results of these procedures; and
 - (10) a discussion of the data, as it relates to the overall goal of the sampling/analysis effort.
 - k. Information demonstrating that the remediation objectives approved for the project have been achieved, including establishment of any engineered barriers or institutional controls necessary to support these objectives.
 - l. Color photo documentation of closure. Document conditions before, during, and after closure.
 - m. A detailed summary of the costs incurred in completing the required closure activities.
6. The Permittee shall analyze all samples individually (i.e., no compositing). Sampling and analytical procedures shall be conducted in accordance with the latest edition of SW-846 and Attachment G to the Illinois EPA Bureau of Land's RCRA closure plan guidance. Sample size per interval shall be minimized to prevent dilution of any contamination. Apparent visually contaminated material within a sampling interval shall be included in the same portion of the interval to be analyzed. To demonstrate a parameter is not present in a sample, analysis results must show a detection limit at least as low as the practical quantitation limit (PQL) for that parameter as identified in the latest edition of SW-846.
7. To avoid creating another regulated storage unit during closure, it is recommended that any necessary permits for waste disposal are obtained prior to initiating excavation activities. If it is necessary to store excavated hazardous waste on-site prior to off-site disposal, do so only in containers or tanks or in other units if approved by the Illinois EPA in writing for less than ninety (90) days. Do not create regulated waste pile units by storing excavated hazardous waste in an unapproved manner. The ninety (90) day accumulation time exemption (35 IAC 722.134) only applies to containers and tanks.

8. Under the provisions of 29 CFR 1910, cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination, and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.
9. If the Illinois EPA determines that implementation of this closure plan fails to satisfy the requirements of 35 IAC 724.211, the Illinois EPA reserves the right to amend the closure plan. Revisions of closure plans are subject to the appeal provisions of Section 40 of the Illinois Environmental Protection Act.
10. The Permittee shall provide post-closure care in accordance with 35 IAC 724 for the ESP if all of the wastes or contaminated material or media cannot be removed or decontaminated in accordance with the closure plan and meeting the requirements of 35 IAC 742. If it is determined that the clean closure requirements (closure by removal) cannot be met and post-closure care is required, this permit must be modified to require closure and post-closure care as a landfill in accordance with 35 IAC 724, Subparts G and H.
11. Should post-closure care, as described above, become necessary, the permittee shall submit an application for modification to this permit, including an amended closure and post-closure care plan for this unit, within thirty (30) days following discovery that clean closure cannot be accomplished. If a determination is made not to pursue clean closure prior to the implementation of the closure plan, the modification request shall be made no later than sixty (60) days after such determination is made.
12. Financial assurance for closure and post-closure of the ESP as a landfill, if required, shall be provided within thirty (30) days following modification of the permit as set forth in Condition II.F.11 above.

G. FINANCIAL ASSURANCE REQUIREMENTS

1. The permittee shall maintain financial assurance for closure of the surface impoundment(s) of at least \$538,420 (in 2020 dollars). The cost estimate for closure of this facility is shown in Attachment G to this permit. The financial assurance maintained by the facility shall be sufficient to meet the requirements at 35 IAC 724 Subpart H.

2. The approved cost estimate for closing this unit is as described in Attachment G. The Permittee must provide financial assurance for this amount in accordance with 35 IAC 724, Subpart G.
3. A revised closure cost estimate for the ESP must be submitted with the schedule for the closure for the ESP as required in Condition II.F.1. Such cost estimate must include all activities necessary to initiate and complete the closure of the ESP.
4. If clean closure cannot be achieved for the ESP, ESP will be subject to post-closure care, including the requirements for financial assurance.

SECTION III: POST-CLOSURE FOR THE POND 1 LANDFILL UNIT

A. SUMMARY

Hazardous waste management units where waste is left in place (e.g., landfills) must receive post-closure care for at least 30 years after the date the certification of closure is approved in writing by the Illinois EPA. Activities required during post-closure care include but are not limited to: (1) maintenance of final cover, (2) management of leachate, (3) monitoring, and as necessary, remediation of the groundwater, and (4) providing financial assurance for post-closure activities pursuant to Title 35 Illinois Administrative Code (35 IAC) Part 724.

Presently, there is one closed hazardous waste landfill at this facility which must receive post-closure care –the Pond 1 landfill. If it is determined by way of the closure plan contained in the “East Surge Pond Addendum to Section E” of the approved permit application that the East Surge Pond (ESP) cannot be clean closed (closure by removal), this permit shall be modified to incorporate closure and post-closure care for that unit as a landfill. This section describes the post-closure care requirements for the Pond 1 Landfill.

B. UNIT IDENTIFICATION

1. The Permittee shall provide post-closure care for the following hazardous waste management unit(s), as described in the approved permit application, subject to the terms and conditions of this permit:

Unit Designation	Capacity	Surface Area Dimensions of Unit	Description of Waste and Hazardous Waste No.
Pond 1 Landfill (D80)	100,000 yd ³	4.1 acres (approximate)	Sediments and soil contaminated with K048 – Dissolved air flotation (DAF) float from the petroleum refining industry

The Pond 1 Landfill covers approximately 4.1 acres over Pond 1, Pond 1A and the southern part of Pond 2. The unit contains approximately 100,000 yd³ of contaminated sediment and soils from the closure of Ponds 1, 1A, 2, 2A, 3, 3A, and 4.

2. The location and horizontal extent of the landfill is identified in Figure B-2 of Attachment B to this permit. The lowest elevation of the sumps in the landfill is at or above 402 ft MSL. The highest elevation of the final cover system is at or below 432.99 ft MSL. The slopes of the final cover on the landfill shall not be steeper than 4H:1V or 2%. The landfill was designed and constructed to achieve

a minimum static slope factor of safety greater than or equal to 1.33 and a seismic factor of safety greater than or equal to 1.01.

3. Pond 1 Landfill has an engineered liner system consisting of several layers. From top to bottom (starting directly below the waste), these layers consist of:
 - a. One foot protective soil layer;
 - b. Geotextile fabric (filter);
 - c. One foot sand and gravel primary leachate detection and collection layer including leachate collection piping and leachate collection sumps;
 - d. 60 mil High Density Polyethylene (HDPE) geomembrane;
 - e. 0.25 inch Claymax geosynthetic clay liner (GCL);
 - f. One foot sand and gravel secondary leachate collection system including leachate collection piping and leachate collection sumps;
 - g. A 60 mil HDPE geomembrane;
 - h. Minimum of two feet of imported compacted clay; and
 - i. Minimum of one foot of recompacted in-situ clay.

The unit is protected from a 100-year flood event by a flood protection dike.

4. The cover system on the top of the Pond 1 landfill is constructed of the following layers, specified from the top to bottom:
 - a. One foot thick protective soil cover;
 - b. One foot thick compacted clay layer;
 - c. Geotextile fabric;
 - d. A geonet drainage layer;
 - e. A 60 mil HDPE geomembrane liner; and
 - f. Two foot thick compacted clay layer.
5. A survey plat indicating the location and dimensions of the Pond 1 Landfill and any other hazardous waste disposal units with respect to permanently surveyed benchmarks was prepared and certified by a professional land surveyor. The notes

on the plat state the owner's and operator's obligation to restrict disturbance of the Pond 1 Landfill in accordance with the applicable Subpart G regulations.

These notes state:

- a. The waste materials contained in the Pond 1 Landfill are considered RCRA hazardous wastes; and are sediments and soils contaminated with K048 – Dissolved air flotation (DAF) float from the petroleum refining industry.
 - b. Any material removed from the Pond 1 Landfill during future activities must be managed as a hazardous waste in accordance with 35 IAC Subtitle G: Waste Disposal unless material has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.
 - c. The use of this area is restricted.
6. The Plat of Survey must be attached to the deed to the property and serves as an instrument which is normally examined during title search that will in perpetuity notify any potential purchaser of the property that:
- a. The waste material in the Pond 1 Landfill is considered a RCRA hazardous waste;
 - b. Use of the area is restricted; and
 - c. A survey plat and record of the type, location, and quantity of waste material in the Pond 1 Landfill was filed with the Illinois EPA and the County Recorder.
 - d. Documentation/information regarding the Document No., Parcel Identification Number (PIN) for the Pond 1 Parcel, and the Drawing No. filed with the Madison County Recorder's must be submitted as required in Condition VI.C.7 of this permit.
7. The permittee shall develop a scaled topographic drawing of each unit identified in Condition III.B.1 to determine the vertical and horizontal dimensions of each unit at least once every 10 years. If a topographic drawing of a unit has not been developed in the 10 years prior to the date of this permit, it must be developed within 90 days of the date of the effective date of this permit, and every 10 years thereafter. The topographic drawings shall be maintained as part of the operating record.

Each scaled topographic drawing shall be compared to the permitted dimensions for that unit. The Permittee shall submit the most recent survey and scale drawings of the permitted dimensions for the unit within 60 days of the effective

date of this permit.

If a difference in elevation of more than 2 feet exists at any location on the unit, the Permittee shall notify the Illinois EPA Bureau of Land Permit Section of this finding within 30 days of the most recent survey. The notification must include the most recent survey and scale drawings of the permitted dimensions for the unit, a discussion of why the difference exists, and a plan that includes a schedule for repairing the cover system to its permitted dimensions. Repairs to the cover system, and/or its components, may be considered a permit modification.

C. POST-CLOSURE CARE PERIOD

1. The post-closure care period for the Pond 1 Landfill began on August 14, 1995, the date of completion of closure of the unit listed in Condition III.B.1 of this permit. August 14, 2025, marks the minimum requirement of thirty (30) years of Post-Closure Care.

Hazardous waste remains in the landfill, leachate continues to be generated and pumped out of the unit, and a groundwater corrective action program is required to address groundwater contamination at the site. Due to these site conditions, pursuant to 35 IAC 703.241, 724.131, 724.410 as well as Sections 12(a), 21(n), and 39(g) of the Environmental Protection Act, the Permittee must continue to provide post-closure care for the Pond 1 Landfill. Post-closure care shall be extended for additional 30 years or until such time as no unacceptable risks to human health and the environment are present in the Pond 1 Landfill unit, as determined by the Illinois EPA.

2. On or prior to August 14, 2024 (one year before August 14, 2025), the Permittee must submit a Class 2 Permit Modification request to Illinois EPA in accordance with 35 IAC 703.241(a)(2) and 35 IAC 703 Appendix A.E.2 to extend the Post-Closure Care of the Pond 1 Landfill for an additional thirty (30) years or until such time as no unacceptable risks to human health and the environment are present in the Pond 1 Landfill unit, as determined by the Agency, as specified in Condition III.C.1 above.
3. The Illinois EPA may include restrictions upon the future use of the site if necessary to protect public health and the environment, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment. After any administrative and judicial challenges to such restrictions have been exhausted, the Illinois EPA shall file such restrictions of record in the Office of the Recorder of the county in which the hazardous waste disposal site is located.
4. The Permittee shall not allow the property where the unit(s) identified in Condition B.1 are located to be used in a way that could disturb the integrity of

the final cover, liners, any components of the containment system, or the function of the facility's monitoring systems unless the Illinois EPA finds, by way of a permit modification, that such use is necessary for either of the following reasons:

- a. It is necessary to the proposed use of the property, and will not increase the potential hazard to public health or the environment, or
 - b. It is necessary to reduce a threat to human health or the environment
5. The Illinois EPA may require the continuation of any of the security requirements during part or all of the post-closure period.

D. INSPECTIONS

2. The Permittee shall inspect the components, structures, and equipment at the site in accordance with the inspection schedule in the approved permit application and the conditions in this permit (Attachment H). The forms in Exhibit E-8 of the Post-Closure Plan in the approved permit application shall be used to document inspections and any repairs performed at the facility.
3. The Permittee shall inspect the facility at least quarterly or within 72 hours of any rain fall event of three (3) or more inches in 24 hours for evidence of any of the following:
 - a. Deterioration, malfunctions, or improper operation of run-on and run-off systems.
 - b. The presence of leachate in, and proper functioning of, the leachate collection and removal systems.
 - c. The deterioration of the liner or cover systems.
4. Appropriate corrective action shall be taken if problems; including erosion, blockage of the channels, slope failure, etc. are observed at any time. If corrective action is taken, the area involved shall be reinspected one month following completion of the work to ensure the corrective actions have adequately corrected the problem(s) noted.
5. The Permittee shall inspect the benchmarks used to identify the location of the hazardous waste management units (HWMUs) and solid waste management units (SWMUs) within 60 days of the effective date of this permit and thereafter in accordance with the Inspection Schedule in the approved permit application. If benchmarks cannot be located or confirmed, then the Permittee shall have the appropriate benchmark(s) reestablished by a licensed surveyor within 90 days of the effective date of this permit. Benchmarks shall be repaired and resurveyed whenever an inspection of the benchmarks indicates they have been damaged. The inspection results, repairs, and surveys of the benchmarks shall be maintained as part of the operating record.

6. Results of all inspections and a description of any remedial actions taken shall be documented in the Repair Log in the Operating Record and maintained for the entire post-closure period.

E. MONITORING, MAINTENANCE, AND RECORDKEEPING

1. The Permittee shall keep and maintain a written operating record that includes all the records, reports, notifications, monitoring data, testing or analytical data, and corrective action data required by 35 IAC 724.173 and the conditions in this permit, for the entirety of the post-closure care period. The operating record shall be kept on-site at the facility and available for Illinois EPA review.
2. The Permittee shall maintain and monitor the groundwater monitoring system and comply with the other applicable regulations of 35 IAC 724 Subpart F (Groundwater Protection) during the post-closure period.
3. The Permittee shall maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, and other events.
4. The Permittee shall prevent run-on from eroding or otherwise damaging the final cover.
5. The Permittee shall prevent run-off from eroding or otherwise damaging the final cover.
6. The Permittee shall comply with the requirements for landfills described in the approved permit application and the conditions of this permit as follows:
 - a. Corrective action shall be taken if ponding has been observed, if cracks or erosion channels greater than one inch wide have formed for whatever reason, if gas, odor, vegetative or vector problems arise, if leachate pop-outs or seeps are present, or if vegetation with tap roots is found to be growing in areas which are not designed to accommodate such vegetation.
 - b. Protect and maintain surveyed benchmarks used in complying with surveying and recordkeeping requirements as required in Condition III.D.4.
7. The Permittee submitted a draft delisting petition dated June 30, 2023 for review by Illinois EPA prior to submittal to the Illinois Pollution Control Board. Within 30 days of Illinois Pollution Control Board approval or denial of this petition, the Permittee shall submit a Compliance Plan to Illinois EPA, proposing a schedule to comply with the requirements stated below, as applicable:

- a. Install and maintain a leachate collection system (LCS) with pumps, and leak detection system (LDS) in accordance with the design plans and specifications contained in the Illinois EPA approved Compliance Plan and the conditions in this permit.
 - b. The LCS will maintain leachate levels within the collection risers at a depth such that leachate does not exceed one (1) foot above the liner.
 - c. Remove and clean the pumps from the LCS and LDS at least once every year.
 - d. Every 10 years, the permittee will use a camera to inspect the collection risers and sump for sediment build-up. If 10% or more of the screened interval is silted-in, the permittee shall remove sediment from the collection risers and sumps using a high-pressure jet or equivalent method.
 - e. Install and operate a leak detection alarm system to alert when the level of leachate reaches one (1) foot as described in Condition III.E.11 (b).
8. The permittee shall remove leachate from the landfill until leachate is no longer detected in the LCS or LDS.
 9. Leachate collected in the LCS and LDS, shall be managed in compliance with all applicable federal, state and local regulations. The leachate may be transferred to the City of Wood River Publicly Owned Treatment Works (POTW) by a vacuum truck in accordance with the Illinois EPA Water Pollution Control Permit No. 2020-EP-64994; the approved permit application; and the conditions in this permit.
 10. The permittee shall collect a representative sample of leachate from the landfill and analyze it for all the constituents listed in 35 IAC 724 Appendix I. These samples shall be collected and analyzed annually in accordance with the sampling and test methods specified in the approved permit application. The results of the leachate quality testing data shall be submitted and maintained in the facility's operating record and submitted to the Illinois EPA by July 15 each year.
 - a. The Reduced List will be based on the four most recent complete 35 IAC 724 Appendix I analyses and include all parameters detected in any of the four Appendix I analyses. Starting the next sampling event after Illinois EPA approval, this Reduced List will be used in lieu of the Appendix I analysis for three out of four years, with the fourth-year reverting to a full Appendix I analysis. Any parameters not included on the existing Reduced List that are detected in the fourth-year Appendix I analysis shall be added to all future Reduced List analyses by means of a permit modification request. This cycle of three years of Reduced List, followed

by one year of Appendix I analysis, will repeat for the remainder of the post-closure period.

- i. For the first cycle, the Permittee may utilize results from the first annual sample analyzed for all Appendix I parameters in conjunction with previous results from samples collected by the Permittee and/or the Publicly Owned Treatment Works (POTW) that collectively comprise the Appendix I parameters, if available, to propose the first Reduced List for Illinois EPA approval.
 - b. If an analysis of the leachate from the landfill detects a parameter for which the groundwater is not being analyzed, the permittee shall submit a Class 1* permit modification to the Illinois EPA BOL Permit Section in writing within 30 days of the leachate analysis to add the previously undetected parameter(s) to the groundwater monitoring list.
11. The permittee shall operate, monitor, and maintain the leachate collection system (LCS); and the leachate detection system (LDS) in accordance with the approved permit application and the following conditions:
 - a. The elevation of leachate in the primary and secondary collection risers of the LCS and LDS of the Pond 1 Landfill shall be monitored weekly and recorded in feet above MSL.
 - b. In accordance with the Compliance Plan referenced in Condition III.E.7, leachate shall be removed from the collection risers as necessary to ensure the leachate depth over the liner does not exceed one (1) foot (or approximately at Elevation 403' above mean sea level (MSL) for LCS).
 - c. All leachate removed from the LCS and LDS shall be managed as a hazardous waste unless leachate has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.
 - d. The permittee shall record the amount of liquid removed from each LCS sump (in gallons) at least monthly. The results of the leachate quantity testing data from the LCS shall be maintained in the facility's operating record and submitted electronically to the Illinois EPA.
12. The permittee shall operate and maintain the alarm system as required in Condition III.E.7 (c). The alarm system shall immediately alert the permittee or their representative if there is a problem with the leachate collection or leak detection systems. Within 48 hours of an alarm, a technician will check the LCS and/or LDS and initiate any necessary corrective actions.

F. REPORTING AND NOTIFICATION REQUIREMENTS

1. The leachate quantity and quality data required by Conditions III.E.10 and III.E.11 above must be submitted to the Illinois EPA Bureau of Land Permit Section in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment C to this permit. Additional guidance regarding the submittal of the information in an electronic format can be found at the Illinois EPA's website.
2. A completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) must accompany all Leachate Data Reports required by this permit. A copy of this form is provided in Attachment C to this permit. This form is not be used for permit modification requests. This form is also available on the Illinois EPA website.
3. The leachate quantity and quality data required by Conditions III.E.10 and III.E.11 for the LCS and LDS shall be submitted to the Illinois EPA Bureau of Land Permit Section as part of the Leachate Data Quarterly Monitoring Report in accordance with the following schedule.

<u>Data Collected</u>	<u>Results/ Report Submitted by:</u>
January – March	May 1
April – June	August 1
July – September	November 1
October – December	February 1

4. The following Leachate Monitoring/Withdrawal Wells shall be used in leachate quality analysis required by Conditions III.E.10. For purposes of electronic reporting, the points will be labeled as shown below:

<u>Name in Application</u>	<u>Name for Electronic Reporting</u>
Primary Collection System Riser	PCRW
Primary Collection System Riser	PCRE
Secondary Collection System Riser	SCR1
French Drain Sump	FDS1

5. The following Leachate Monitoring/Withdrawal Well shall be used in leachate elevation and quantity monitoring required by Conditions III.E.11. For purposes of electronic reporting, the points will be labeled as shown below:

<u>Name in Application</u>	<u>Name for Electronic Reporting</u>
Primary Collection System Riser	PCRW
Primary Collection System Riser	PCRE
Secondary Collection System Riser	SCR1
French Drain Sump	FDS1

6. The permittee shall submit an original and one (1) copy of each Leachate Data Quarterly Monitoring Report required in Condition III.F.3 above. In addition to the electronic data, each report must include:
 - c. A graphical representation of the volumes of leachate removed from the LCS and LDS each month. The leachate generation rates (gallons/month) from the LCS and LDS shall be presented on the same graph. The scale of the abscissa (time) shall be such that no more than one year of data (starting with January each year) is presented on each sheet of paper.
 - d. A graphical representation of the elevations of the liquid level in the collection risers for the quarter. For each measurement, the graph needs to identify the following: the elevation of leachate over time, elevation of the top of liner, and elevation of the bottom of the cover system all in feet above MSL.
7. If the leachate quality analysis required in Condition III.E.10 detects a parameter for which the groundwater was not analyzed for in the last sampling event, the permittee shall submit a Class 1* permit modification to the Illinois EPA BOL Permit Section in writing within 30 days of the leachate analysis to add the previously undetected parameter(s) to the groundwater monitoring list. .

G. NOTICES AND CERTIFICATION

1. A request to change the Post-Closure Plan must be submitted in the form of a permit modification request. This request must be in accordance with applicable requirements of 35 IAC Parts 702, 703 and 724 and must include a copy of the amended Post-Closure Plan for approval by the Illinois EPA.
2. If the Permittee or any subsequent owner or operator of the land upon which the Pond 1 Landfill listed in Condition III.B above is located wishes to remove hazardous waste, hazardous waste residue, the liner, or contaminated soil, they must request a modification to this RCRA post-closure permit in accordance with the applicable requirements in 35 IAC Parts 703, 705 and 724. At a minimum, the owner or operator must demonstrate that the removal of such material will satisfy the criteria of 35 IAC 724.217(c).
3. If the Permittee seeks to demonstrate that they should be allowed to end the post-closure care period (e.g., all waste has been removed, and leachate and groundwater monitoring results do not indicate a potential for migration of waste at levels which may be harmful to human health and the environment), the permittee shall submit an Uniform Environmental Covenant (UEC) for the future land use and management of the property on which the Pond 1 Landfill is located. The UEC shall be submitted at least one year prior to the date the permittee

expects to submit the Certification of Completion of Post-Closure and must be approved by Illinois EPA.

Pursuant to Section 39(g) of the Environmental Protection Act and Uniform Environmental Covenant Act, the purpose of the UEC is to place restrictions upon the future use of the site necessary to protect public health and the environment, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment.

4. If the Permittee seeks to exit post-closure care, the Permittee shall submit the following documents to the Illinois EPA Bureau of Land Permit Section by registered mail no later than sixty (60) days after completion of the established post-closure care period for the Pond 1 Landfill listed in Condition III.B of this permit:
 - a. A properly completed Certification of Completion of Post-Closure Care Form provided in Appendix J to this permit that states the post-closure care for the Pond 1 Landfill was performed in accordance with the specifications in the approved post-closure plan in the approved permit application and the conditions in this permit. The owner and operator and a qualified Professional Engineer registered in the State of Illinois must sign the Certification Form.
 - b. A Post-Closure Documentation Report that documents the post-closure care conditions and activities at your facility during the post-closure period. The Post-Closure Documentation Report must include the following:
 - (1) Background information about the facility and the unit subject to the Post-Closure Certification. Describe the facility and RCRA permit history for the unit.
 - (2) A detailed description of the unit subject to the post-closure care certification that includes:
 - i. The unit's design, including liner system, sumps, leachate collection, leak detection, and gas systems, and cover system including stormwater run-off and run-on controls. Provide this information in both a narrative form and scale drawings.
 - ii. How the unit was operated and how it was closed.
 - iii. When the unit was operated and when it was closed.
 - iv. The wastes disposed of (including waste codes).
 - v. The amount of leachate pumped each year from each sump in the unit's leachate collection and leak detection systems during the post-closure period. Provide this information in both a

table and graphically. Demonstrate the unit has met the requirements of 35 IAC 724.410(b)(2).

- vi. A scaled map showing the location of unit within the facility boundary. Include all wells in the groundwater monitoring system for the unit on this map.
- vii. Scaled drawings (plan view and cross-section) that show the horizontal and vertical extent of the unit at the time it was certified closed, every 10 years after it was closed, and at the time the Post-Closure Documentation Report is submitted. The scale of the plan view should be 1 inch = 200 feet. All design components of the unit must be shown on the drawings.

When the drawings are compared, if a difference in elevation of more than 2 feet exists at any location on the unit, the Post-Closure Documentation Report needs to indicate the reason for the change in elevation, and demonstrate it would not be a concern in the future.

- viii. A survey of the unit when it was certified closed and at the time the Post-Closure Documentation Report is submitted. The surveys must be certified by a professional land surveyor.
- (3) A general discussion on the inspection and maintenance of, and repairs to, the cover system, leachate collection, leak detection, gas collection, stormwater run-off and run-on controls, wells in the groundwater monitoring system, and any corrective action system required for the unit or groundwater contamination associated with it. Describe any problems and/or repairs to these systems that were addressed over the post-closure care period in chronological order. Show the locations of each of the repairs to these systems during post-closure care on a scaled drawing of the unit.
 - (4) A discussion on the groundwater monitoring program, including any corrective measures that were completed during the post-closure care period, and a summary of the three (3) most recent years of groundwater data. Identify the horizontal and vertical extent of any groundwater contaminant plume from the unit that existed at the beginning of the post-closure period and every five (5) years after that. The facility must have complied with all requirements of 35 IAC 620 and 724, Subpart F, in order to certify completion of post-closure care activities.
 - (5) Colored photos of unit(s) at post-closure completion. Photo documentation of the unit should include at least one aerial (satellite) photo and photos of all design features of the unit.

- (6) Completed Illinois EPA LPC-PA23 and 39i Forms.
- c. Documentation that the UEC required by Condition III.G.3 above has been placed on the deed to the property on which the Pond 1 Landfill is located has been filed with the County Recorder's Office.
5. The certification of completion of post-closure care shall not be approved by the Illinois EPA until the permittee demonstrates that the UEC required by Condition III.G.3 above has been properly filed with the appropriate governmental office (e.g. State of Illinois, or County Recorder's office).
6. Within 60 days after receiving certification from the owner or operator and a qualified Professional Engineer that the post-closure care period has been completed for the Pond 1 Landfill listed in Condition III.B of this permit in accordance with the approved post-closure plan, the Illinois EPA shall notify the owner or operator that it is no longer required to maintain financial assurance for post-closure care of that unit unless the Illinois EPA determines that post-closure care has not been conducted in accordance with the approved post-closure plan. The Illinois EPA shall provide the owner or operator with a detailed written statement of any such determination that post-closure care has not been in accordance with the approved post-closure plan.

H. POST-CLOSURE CARE COST ESTIMATE/FINANCIAL ASSURANCE

1. The Permittee shall maintain financial assurance for post-closure care of the Pond 1 Landfill listed in Condition III.B.1 of this permit of at least \$2,364,068 in 2020 dollars until such time as it is required to be modified pursuant to Conditions VI.C.1(a) and VI.C.1 (d). A summary of the cost estimate for post-closure care is shown in Attachment G to this permit. The financial assurance maintained by the facility shall be sufficient to meet the requirements at 35 IAC 724 Subpart H.
2. Post-closure care costs are determined by multiplying annual costs by the 30-year post-closure care period.

SECTION IV: GROUNDWATER CORRECTIVE ACTION PROGRAM

A. SUMMARY

Hazardous constituents released from the BP Riverfront facility have been detected in the groundwater at the point of compliance at concentrations which exceed the Groundwater Protection Standards, as well as groundwater quality standards established by Title 35 Illinois Administrative Code (35 IAC) 724.192. Therefore, a Corrective Action Program meeting the requirements of 35 IAC 724.200 must be implemented at the BP Riverfront facility.

The Corrective Action Program required by this permit includes:

1. Control of groundwater flow in the uppermost aquifer such that groundwater flow in the Riverfront Groundwater Management Zone is towards the interior of the Main Plant facility. This control of groundwater flow will be accomplished by withdrawing sufficient quantities of groundwater from the uppermost aquifer through operation of Gradient Control Wells located at the BP Main Plant facility. Such flow control is necessary as a corrective action to prevent contaminant migration of on-site releases of product or waste, beyond the boundaries of the Riverfront facility and is the basis for the establishment of a Groundwater Management Zone (GMZ).
2. Verification that the flow of groundwater is adequately controlled as required by Condition IV.A.1 above.
3. Monitoring the quality and movement of the groundwater in the uppermost aquifer beneath the BP Riverfront facility to determine the effectiveness of the Corrective Action Program, as well as verify compliance with the GMZ.

B. IMPLEMENTATION

1. The Permittee shall implement the Corrective Action Program established in this Permit upon the effective date of this Permit. On that date, the corrective action and groundwater monitoring requirements set forth in this Permit shall supersede those previously established.
2. The Permittee shall carry out the corrective actions specified in this Permit on the groundwater beneath the BP Riverfront facility. The uppermost aquifer at this facility is a sand and gravel aquifer located approximately 30 feet deep below the ground surface (hereinafter ft-bgs) and extending to a depth of about 101 to 113 ft-bgs to the top of the bedrock surface. This aquifer is commonly referred to as the "American Bottoms."

3. For the purposes of this Permit and in accordance with 35 IAC Part 620 regulations, the sand and gravel aquifer has been designated Class I: Potable Resource Groundwater. The analytical results obtained from these groundwater monitoring wells shall be compared to the appropriate Class I concentration limits that comprise the Groundwater Protection Standard found in Condition IV.D.1 or to established background values as appropriate.
4. At this time, the establishment of a Point of Compliance (as defined by 35 IAC 724.195) will be postponed until such time that the monitoring wells at the facility have attained the applicable concentration limits that comprise the Groundwater Protection Standard found in Condition IV.D.1 and the GMZ expires. At that time, facility must submit a proposal for the establishment of a Point of Compliance which satisfies the regulatory requirements found in 35 IAC 724, Subpart F and reflects the current conditions at the facility.

C. WELL LOCATIONS AND CONSTRUCTION

1. The Permittee shall maintain the groundwater monitoring wells identified in the table below to allow for the collection of groundwater samples from the uppermost aquifer. The location of these wells is specified in Figure C-7 of the approved permit application. All wells are gauged quarterly. Sampling frequencies vary and are specified below.

<u>IEPA Well No.</u>	<u>Facility Well No.</u>	<u>Area</u>	<u>Well Depth (ft-bgs)</u>	<u>Well Depth Elevation (ft MSL)</u>	<u>Well Screen Interval (ft MSL)</u>
<u>GMZ Boundary Wells</u> (Gauging and Semi-Annual Sampling Network ²)					
G66D	RL-6C	ESP	70.00	361.38	366.38-361.38 ^H
G103	RL-3	P1LF	39.00	386.27	396.27-386.27 ^C
G106	RL-6	ESP	44.00	386.57	396.57-386.57 ^C
G107	RL-7	ESP	39.00	388.36	398.36-388.36 ^C
G113	SWMU-14/MW-14A	Parcel C	51.94	371.00	381.00-371.00 ^H
G114	SWMU-14/MW-15	Parcel C	56.00	364.46	374.46-364.46 ^H
LOD1	LOD-1	LOD	31.00	393.58	403.58-393.58 ^C
LOD2	LOD-2	LOD	41.00	380.15	390.15-380.15 ^C
LOD7	LOD-7	LOD	29.14	391.20	401.20-391.20 ^C
L17B	RL-17B	LOD	54.84	363.98	373.98-363.98 ^H
<u>Observation Monitoring Wells</u> (Gauging and Annual Sampling Network ²)					
G35L	C-25B	ESP	56.82	371.00	378.00-373.00 ^H
G104	RL-4	P1LF	36.00	388.25	398.25-388.25 ^C

<u>IEPA</u> <u>Well No.</u>	<u>Facility Well</u> <u>No.</u>	<u>Area</u>	<u>Well Depth</u> <u>(ft-bgs)</u>	<u>Well Depth</u> <u>Elevation</u> <u>(ft MSL)</u>	<u>Well Screen</u> <u>Interval (ft MSL)</u>
G115*	RL-15	WSP	52.00	376.18	381.18-376.18 ^H
G116	RL-16	WSP	52.00	375.35	380.35-375.35 ^H
G119	RL-19	ESP	40.00	391.80	406.80-391.80 ^C
G401	T-1	WSP	41.50	380.86	385.86-380.86 ^H
LOD5	LOD-5	LOD	30.24	391.87	401.87-391.87
R21L	RL-21BR	WSP	54.01	369.92	374.92-369.92 ^H
R529	P-29R	LOD	48.61	372.30	382.30-372.30 ^H

Observation Monitoring Wells (Annual Sampling Only Network³)

R21D	RL-21CR	WSP	70.24	353.58	358.58-353.58 ^H
LOD6	LOD-6	LOD	28.50	393.20	403.40-393.40 ^C
LOD9	LOD-9	LOD	28.50	394.12	404.12-394.12 ^C

Observation Monitoring Wells (Gauging Only Network⁴)

G030	C-20	TF	39.10	386.27	406.27-386.27 ^C
G033	C-23	POTW	35.00	393.54	403.55-393.55 ^C
G037	C-27	PNWL	34.00	393.94	404.04-393.94 ^P
G038	C-28	PNWL	35.69	393.70	403.90-393.80 ^P
G090	G090	PNWL	48.00	378.61	383.74-379.16 ^H
G091	G091	PNWL	66.50	359.14	382.27-377.69 ^H
G102	RL-2	LOD	34.0	388.78	398.78-388.78 ^C
G109	RL-9	ESP	39.00	388.45	398.45-388.45 ^P
G36R	C-26R	PNWL	34.4	392.18	402.48-392.48 ^P
G411	S-1	WSP	41.60	376.83	386.83-376.83 ^H
R034	C-24R	ESP	35.24	393.64	403.88-393.88 ^C
R66L	RL-6BR	ESP	55.30	377.06	382.16-377.06 ^H
G503	PANC-UP01	Parcel A	39.50	378.55	388.75-378.75 ^H
G504	PANC-UP02	Parcel A	39.00	372.06	382.06-372.06 ^H
G505	PANC-UP05	Parcel A	37.10	389.61	399.61-389.61 ^C
G506	PANC-UP09	Parcel A	27.30	389.29	399.49-389.49 ^C
G507	PANC-UP11	Parcel A	37.30	388.62	398.82-388.82 ^C
G508	SWMU4- MW01	Parcel A	30.98	395.10	405.10-395.10 ^P
G509	SWMU4- MW03	Parcel A	29.41	389.24	405.90-395.90 ^P
G510	SWMU4- MW04	Parcel A	32.62	388.96	405.57-395.57 ^P

Observation Monitoring Wells (LNAPL Monitoring Network⁵)

G105	RL-5	ESP	34.00	388.28	398.28-388.28 ^C
G512	SUMP-8	Parcel C	+	+	409.05-406.35 ^P

Observation Monitoring Wells (Sentinel Wells⁶)

SWMU4-					
G511	MW02	Parcel A	26.43	392.67	402.67-392.67 ^C
LOD1 ²	LOD-1	LOD	31.00	393.58	403.58-393.58 ^C
LOD2 ²	LOD-2	LOD	41.00	380.15	390.15-380.15 ^C
G029 ⁷	C-19R	MP	24.52	393.98	404.31-394.31 ^C
G056**	G-16	MP	30.00	395.54	415.54-395.54 ^P

<u>IEPA</u>	<u>Facility Well</u>	<u>Area</u>	<u>Well Depth</u>	<u>Well Depth</u>	<u>Well Screen</u>
<u>Well No.</u>	<u>No.</u>		<u>(ft-bgs)</u>	<u>Elevation</u>	<u>Interval (ft MSL)</u>
				<u>(ft MSL)</u>	
G057 ⁸	G-17	MP	35.02	391.90	411.90-391.90 ^C
G058 ⁸	G-18	MP	36.00	391.27	411.27-391.27 ^C
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				

Notes

+ = Well construction information is incomplete

* = Denotes Upgradient Well(s)

** = Also an Observation Well under the BP Main Plant RCRA Permit. Groundwater sampling required until additional sentinel wells are installed and incorporated into the BP Riverfront RCRA Permit in accordance with January 19, 2023 Illinois EPA letter.

C = Wells fully or partially screened within the silty sandy layer of the Cahokia

Sand facies are designated as "UMA C" uppermost aquifer wells.

H = Wells screened within the coarse sand and gravel of the Henry formation are designated as "UMA H" uppermost aquifer wells.

P = Wells within the Cahokia exhibiting perched behavior are designated as "Cahokia Perched" wells.

2 = GMZ Boundary

3 = Groundwater sampling only. Well will still be gauged when sampled in accordance with Condition IV.F.1; however, water level data will not be utilized for developing potentiometric surface maps or evaluation of hydraulic gradients as required under Condition IV.E.6 (3 Observation wells)

4 = Groundwater gauging only. Groundwater sampling not required (20 Observation wells).

5 = LNAPL monitoring only. Groundwater sampling not required (2 Observation wells).

6 = Sentinel wells required to be sampled semi-annually.

7 = Groundwater sampling required until revised GMZ approved and G029 is abandoned in accordance with January 19, 2023 Illinois EPA letter.

8 = Also an Observation Well under the Main Plant RCRA Permit.

9 = Additional sentinel wells to be installed and incorporated into RCRA Permit in accordance with January 19, 2023 Illinois EPA letter.

2. The Permittee shall maintain the Gradient Control Wells identified in the table below to allow for the withdrawal of contaminated groundwater, as well as, the measurement of water levels to verify the flow of groundwater is adequately controlled as required by Condition IV.A.1 above.

IEPA Well No.	Facility Well No.	Area	Well Depth (ft-bgs)	Well Depth Elevation (ft MSL)	Well Screen Interval (ft MSL)
<u>Gradient Control Wells</u>					
G664	PW-64	MP	118.0	309.4	344.4 -309.4
G667	HPW-41	MP	105.0	322.6	347.6 - 322.6
G668	HPW-58	MP	115.0	318.0	358.0 – 318.0
G669	HPW-61	MP	118.0	314.55	345.05 – 314.55

Area Identification

PILF = Pond 1 Landfill	LOD = Light Oils Dock
ESP = East Surge Pond	POTW = Publicly Owned Treatment Works
WSP = West Surge Pond	PNWL = Permitted Non-Hazardous Solid Waste Landfill
MP = Main Plant	PA = Parcel A
TF = Tank Farm	PC = Parcel C

3. Construction of each monitor well/piezometer must be in accordance with the diagram contained in Attachment C to this Permit, unless otherwise approved in writing by the Illinois EPA. All new monitoring wells/piezometers to be installed must be continuously sampled and logged on Illinois EPA boring logs as provided in Attachment C unless otherwise approved by the Illinois EPA.
4. The Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Conditions IV.C.1 and IV.C.2 are damaged or the structural integrity has been compromised causing the well not to serve its function or to act as a contaminant pathway. A proposal for the replacement of the subject well shall accompany this notification. The well shall not be plugged until the new well is on-line and monitoring data has been obtained and verified, unless the well is extremely damaged or would create a potential route for groundwater contamination. Prior to replacing the subject well, the Permittee

shall obtain written approval from the Illinois EPA regarding the proposed installation procedures and construction.

5. Should any well become consistently dry or unserviceable, a replacement well shall be provided within ten (10) feet of the existing well. This well shall monitor the same zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitor well construction standards at the time that the wells are replaced. A replacement well which is more than ten (10) feet from the existing well or which does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well.
6. The Permittee shall submit boring logs, construction diagrams and datasheets from installation and development of a new or replacement well to the Illinois EPA at the address below within thirty (30) days of the date that installation of the well is completed. In addition, the Permittee shall submit certification that plugging, and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. All pertinent information should be submitted to the appropriate State agencies.

Illinois Environmental Protection Illinois EPA
Bureau of Land -- #33
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

7. All wells/piezometers shall be clearly identified and shall be equipped with protective caps and locks. Monitoring wells or piezometers located in high traffic areas must be protected with bumper guards.
8. All groundwater monitoring wells and piezometers not utilized in the approved groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 IAC 920 regulations. Monitoring wells and piezometers that are improperly constructed must be abandoned in accordance with Condition IV.C.4.

D. GROUNDWATER PROTECTION STANDARD

1. The following hazardous constituents and their concentration limits (35 IAC 620, Class I, Groundwater Quality Standards) comprise the Groundwater Protection Standard for the groundwater monitoring wells found in Conditions IV.C.1. (Total (unfiltered) values will be used for the comparison with the 35 IAC 620, Class I, Groundwater Quality Standards. Dissolved values shall be used for statistical evaluations required in Condition IV.H unless otherwise noted.)

<u>Field Parameters</u>	<u>Storet</u>	<u>Units</u>
pH	00400	
Specific Conductance	00094	micromos/cm
Temperature of Water Sample	00011	(°F)
Turbidity	45626	Ntus
Depth to Water (below land surface)	72019	Feet
Depth to Water (below measuring point)	72109	ft bgs
Elevation of Groundwater Surface	71993	ft MSL
Elevation of Bottom of Well #	72020	ft MSL
Elevation of Measuring Point (Top of casing)##	72110	ft MSL

#Shall be determined during the first semi-annual sampling event each year.

##Shall be surveyed once every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes as required by Condition IV.I.9.a.

<u>Hazardous Constituents</u>	<u>Storet No. (Total)</u>	<u>Storet No. (Dissolved)</u>	<u>Concentration Limits (mg/L)</u>
Arsenic*	01002	01000	0.01
Barium	01007		2.0
Cadmium	01027		0.005
Chloride*	00940	00941	200.0
Chrysene	34320		0.1
Lead*	01051	01049	0.0075
Sulfate	00945		400.0
Benzene	34030		0.005
Benzo(b)fluoranthene	34230		0.00018
Bis(2-ethylhexyl) phthalate	39100		0.006
Carbon Disulfide	81309		0.7
Ethylbenzene	78113		0.7
Toluene	34010		1.0
Total Xylenes	34020		10.0
Methyl Tertiary-Butyl Ether	46491		0.07
Phenols	46000		0.1
<u>Biogeochemical Analytes¹</u>			
Dissolved iron		01046	N/A

Dissolved manganese	01056	N/A
Dissolved sulfate	00946	N/A

* = Constituents that must be sampled for both dissolved and total concentrations.
1 = To monitor natural attenuation conditions.

2. Alternate concentration limits may be established where the Permittee can determine a constituent will not pose a substantial hazard to human health or the environment as follows:
 - a. Where a hazardous constituent has a standard in 35 IAC 620, the facility must apply for an adjusted standard as outlined in Section 28.1 of the Environmental Protection Act or reapply once corrective measures have been implemented pursuant to 35 IAC 620.450.
 - b. For those hazardous constituents without a 35 IAC 620 standard, the alternative concentration limits proposed by the facility must be approved by the Illinois EPA.
3. The Permittee must continue corrective action measures for as long as necessary, as determined by the Illinois EPA, to achieve compliance with the Groundwater Protection Standards. The Permittee may terminate corrective action measures taken beyond the period equal to the active life of the waste management area (including the closure period) if it can be demonstrated, based on data from the groundwater monitoring program, that the Groundwater Protection Standards found in Condition IV.D.1 have not been exceeded for a period of three (3) consecutive years.
4. Prior to removal of any constituents identified in Condition IV.D.1, the facility must present leachate analytical results from the Pond 1 landfill to demonstrate these constituents are not present in leachate. Therefore, to request removal of barium, cadmium, sulfate, benzo(b)fluoranthene, carbon disulfide, total xylenes, and phenols, present a demonstration these constituents are not present in leachate. A leachate demonstration is also necessary to reduce the sampling frequency for chloride.

E. GROUNDWATER CORRECTIVE ACTION PROGRAM

The Permittee shall conduct the Corrective Action Program and perform groundwater monitoring detailed in this section, in accordance with the following:

1. The Permittee shall monitor the GMZ Boundary Wells and Observation Wells designated in Condition IV.C.1 on a semi-annual or annual basis (as indicated in Condition IV.C.1) for the hazardous constituents listed in Condition IV.D.1 above.

2. The GMZ must be monitored and maintained as follows:
 - a. The GMZ boundaries shall be defined as follows:
 - Western Boundary: LOD-1 and LOD-5;
 - Eastern Boundary: G103, G106 and G107;
 - Northern Boundary: LOD-2, G113 and G114;
 - Southern Boundary: LOD-7 and G107.
 - Vertical Boundary: RL-17B and G66D.
 - b. The results of monitoring the GMZ shall be submitted to the Illinois EPA semi-annually in accordance with the schedule found in Condition IV.I.2.
 - c. The GMZ expires when all groundwater monitoring wells within the GMZ have attained the appropriate Class I concentration limits that comprise the Groundwater Protection Standard found in Condition IV.D.1.
 - d. The appropriate Class I concentration limits shall be considered attained when groundwater monitoring results meet the appropriate concentration limit for two (2) consecutive years.
 - e. An evaluation of the GMZ shall be submitted in a report for Illinois EPA review and approval, a minimum of every five (5) years, in accordance with the guidance document, “Re-evaluation of Groundwater Management Zones at RCRA Facilities” found at the Illinois EPA website. Statistical analysis required by IV.I must also be included.
3. The Corrective Action Program shall control the horizontal and vertical flow in the vertical column of water present in the uppermost aquifer beneath the facility and monitor the position and rate of migration of the Hydrocarbon Pool as follows:
 - a. The pumping from the Gradient Control Wells (COD wells) shall maintain the cone of depression to ensure groundwater flow is adequately controlled in the uppermost aquifer.
 - b. The pumping rate from each Gradient Control Well (COD well) shall be recorded each business day. This data shall be used to calculate the monthly average withdrawal rate for the Gradient Control System.

4. The Permittee shall monitor the groundwater horizontal and vertical gradients in the uppermost aquifer beneath the facility.
5. The Permittee shall record the following measurements and submit to the Illinois EPA semi-annually as required by Condition IV.I.2.
 - a. A record of the amount of groundwater withdrawn each day by the groundwater withdrawal wells.
 - b. Quarterly monitoring of the piezometric head at wells in the uppermost aquifer identified in Conditions IV.C.1 and IV.C.2 above to demonstrate that groundwater flow is properly controlled throughout the contaminated area requiring corrective action in the uppermost aquifer is being contained.
6. The Permittee shall determine the groundwater flow rate (i.e., seepage velocity in ft/day) and direction in the uppermost aquifer at least annually from the monitoring wells listed in Condition IV.C.1.
7. The groundwater quality in the uppermost aquifer beneath the facility shall be monitored on a semi-annual or an annual basis in Condition IV.C.1 at each of the monitoring wells identified.
8. The GMZ Boundary Wells and Observation Monitoring Wells listed in Condition IV.C.1 shall be monitored for the constituents listed in Condition IV.D.1.
9. Due to the close proximity to the Hydrocarbon Pool (SWMU 7), the facility must propose a location for a new well or replacement well which will monitor the same geologic zone as monitoring well G119. The proposed location must be submitted for Illinois EPA review and approval prior to abandonment of well G119. BP must continue to pursue approval for replacement of G119 from the Corps of Engineers to satisfy replacement requirements from Illinois EPA, and provide updates in each semi-annual report required by Condition IV.I.2.

F. GROUNDWATER ELEVATIONS

1. The Permittee shall determine the groundwater surface elevation referenced to MSL at each well each time groundwater is sampled in accordance with Condition IV.I.3.
2. The Permittee shall report the surveyed elevation of stick-up and ground surface referenced to MSL once every five (5) years or at the request of the Illinois EPA, or whenever the elevation changes in accordance with Condition IV.I.9.
3. Elevation, as referenced to MSL, of the bottom of each monitoring well (STORET 72020), is to be reported at least annually. The mandatory

measurement shall be taken during the first semi-annual sampling event each year.

G. SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall follow the techniques and procedures described in Exhibit C-3 of Attachment B of the approved permit application, except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition IV.C.1:

1. Samples shall be collected by the techniques described for low-flow sample collection in Exhibit C-3 of Attachment B of the approved permit application.
2. Samples shall be preserved, shipped and handled in accordance with the procedures specified in Exhibit C-3 of Attachment B of the approved permit application.
3. Samples shall be analyzed according to the procedures specified in Exhibit C-3 of Attachment B of the approved permit application, with the exception that the most current SW-846 Method states that field blanks must be tested for volatile organic compounds (VOCs), which includes Methyl Tertiary-Butyl Ether (MTBE).
4. Samples shall be tracked and controlled using the chain-of-custody procedures specified in Exhibit C-3 of Attachment B of the approved permit application.

H. STATISTICAL METHODS

The Permittee shall evaluate the quality of groundwater samples collected during semi-annual sampling events identified in Condition IV.E to determine trends and demonstrate effectiveness of corrective action as follows:

1. The GMZ Boundary Wells and Observation Monitoring Wells, as identified in Condition IV.C.1, shall be used for statistical evaluations of groundwater quality data as follows:
 - a. The groundwater quality data shall be statistically evaluated annually for the constituents identified in Condition IV.D.1, in accordance with Exhibit C-4 of the approved permit application.

- b. The results of the statistical evaluations shall be discussed and included within the required five (5)-year GMZ Evaluation reports required by Condition IV.I.6.

I. REPORTING AND RECORDKEEPING

- 1. The Permittee shall enter all monitoring, testing and analytical data obtained in accordance with Conditions IV.D, IV.E, IV.F and IV.H into the operating record.
- 2. Samples collected to meet the requirements of the groundwater monitoring program described in Conditions IV.D, IV.E, IV.F and IV.H shall be collected and reported as identified in the table below. All additional data required by the groundwater monitoring program (as specified in Conditions IV.D, IV.E, IV.F and IV.H) shall also be submitted to the Illinois EPA at the address listed in Condition IV.C.6 in accordance with this schedule.

<u>Sampling Event of Calendar Year</u>	<u>Samples to be Collected During the Months of</u>	<u>Results Submitted to the Illinois EPA by the Following</u>
First Quarter	January - February	August 1
Second Quarter	April - May	August 1
Third Quarter	July - August	February 1
Fourth Quarter	October - November	February 1

- 3. Groundwater surface elevation data measured pursuant to Condition IV.F.1, shall be collected at least quarterly and submitted to the Illinois EPA as identified in Condition IV.I.2.
- 4. Groundwater withdrawal rates collected and calculated pursuant to Condition IV.E.3.b shall be submitted in accordance with the schedule identified in Condition IV.I.2.
- 5. Gradient control measurements collected pursuant to Condition IV.E.5 shall be submitted to the Illinois EPA as part of the second and fourth quarter reports as identified in Condition IV.I.2.
- 6. Statistical evaluations for the year, as required by Condition IV.H, shall be submitted to the Illinois EPA as a part of the required 5-year GMZ Evaluation reports required by Condition IV.E.2.e.
- 7. The Permittee shall report the groundwater flow rate and direction, as required by Condition IV.E.6, during the first and second semi-annual reports each year.

8. Groundwater quality samples collected to meet the requirements of Condition IV.E.8 shall be collected during the second and fourth quarter and submitted to the Illinois EPA as identified in Condition IV.I.2.
9. The Permittee shall report the surveyed elevation, as required by Condition IV.F.2, of the top of the well casing (“stick-up”), referenced to MSL, in accordance with the following schedule:
 - a. For wells identified in Condition IV.C.1 above, every five (5) years (during the second semi-annual sampling event), or at the request of the Illinois EPA, or whenever the elevation changes.
 - b. For any new wells, at the time of installation and reported in the as-built diagrams. Subsequent measurements shall be made every five (5) years (during the second quarter sampling event) or whenever the elevation changes.
10. Elevation of the bottom of each monitoring well identified in Condition IV.C.1, referenced to MSL, is to be reported annually. This measurement shall be taken during the first semi-annual sampling event (Storet 72020).
11. Information required by Conditions IV.I.2, IV.I.3, IV.I.9 and IV.I.10 must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment C of this permit, in accordance with the schedule found in Condition IV.I.2. Additional guidance regarding the submittal of the information in an electronic format can be found at the Illinois EPA’s website.
12. The Permittee shall submit a completed “RCRA Facility Groundwater, Leachate and Gas Reporting Form” (LPC 592) as a cover sheet for any notices or reports required by the facility’s permit for identification purposes. Only one (1) copy of the LPC 592 must accompany your submittal. However, the Permittee must submit one (1) original paper submittal of each notice or report you submit to the Illinois EPA, and (excluding the groundwater and leachate monitoring results submitted in an electronic format) a minimum of two (2) electronic copies for all additional Illinois EPA copies (i.e., Permit Section and the regional Field Operation Section). Additional paper copies must be provided upon Illinois EPA request. The LPC 592 form is not to be used for permit modification requests.
13. The Permittee shall report all information to the Illinois EPA in a form which can be easily reviewed. All submittals must contain tables of data, drawings, and text (as necessary) to accurately describe the information contained in the submittal.
14. The Permittee shall submit a written report semi-annually to the Illinois EPA, in accordance with the schedule found in Condition IV.I.2, which discusses the

effectiveness of the corrective action program and place it in the operating record for the facility. At a minimum, the report must:

- a. Address the information requirements in Conditions IV.C, IV.D, IV.E and IV.F
 - b. Evaluate the effectiveness of the hydraulic control and contaminant removal from the GMZ including the information required by Condition IV.D.
 - c. Provide a discussion of any improvement in the quality of groundwater beneath the facility which has resulted from the corrective action.
 - d. Groundwater monitoring required by Illinois EPA letters for monitoring programs specific to Solid Waste Management Units (SWMUs) within Parcels identified in Section_V of the Permit shall be provided within reports required by Section V.J of the Permit.
15. If the Permittee determines that groundwater flow is not being adequately controlled, the Permittee shall:
- a. Notify the Illinois EPA in writing within seven (7) days of the date that this determination is made;
 - b. Take actions as necessary to regain the control of groundwater flow as required by Condition IV.E.3.
 - c. Submit a written report to the Illinois EPA within thirty (30) days describing the actions taken to regain control of groundwater flow. In addition, the report must contain information which demonstrates that groundwater flow is being adequately controlled.
 - d. Submit a request for permit modification to the Illinois EPA within sixty (60) days describing any changes which must be made to the corrective action program to ensure that the groundwater flow is adequately controlled.

J. REQUEST FOR PERMIT MODIFICATION

1. If the Permittee determines that the Corrective Action Program required by this permit no longer satisfies the requirements of 35 IAC 724, Subpart F, the Permittee must, within ninety (90) days, submit an application for permit modification to the Bureau of Land of the Illinois EPA to make any appropriate changes to the program which will satisfy the regulations.

2. Conditions in this section of the permit may be modified by the Illinois EPA in accordance with 35 IAC 702.183 and 705.128 if there is cause for such modification, as defined in 35 IAC 702.184. Causes for modification in this section of the regulations include, but are not limited to, alterations to the permitted facility, additional information which would have justified the application of different permit conditions at the time of permit issuance, and new regulations.

SECTION V: CORRECTIVE ACTION

A. INTRODUCTION

1. In accordance with Section 3004 of RCRA and Title 35 Illinois Administrative Code (35 IAC) 724.201, the Permittee shall institute such corrective action as necessary to protect human health and the environment from all releases of hazardous wastes or hazardous constituents from any solid waste management unit (SWMU) at its facility in Wood River, Illinois. This section contains the conditions which must be followed to ensure these requirements are met.
2. The original RCRA permit issued by Illinois EPA for this facility on September 30, 1993 required that the facility conduct corrective action on twelve (12) solid waste management units and one product release site. On, August 9, 2001, Illinois EPA approved a plan to expand the scope of the corrective action program at the facility to include all recognized conditions at the facility. To accomplish this, the facility was broken up into ten (10) land reuse investigation parcels so that corrective action at the facility could be addressed on a parcel-by-parcel basis.
3. The facility has completed a substantial amount of corrective action efforts to date at this facility. A summary of these completed efforts, based on the date that Illinois EPA approved workplans and reports associated with these efforts, as of January 2021, is provided in Condition V.C below.
4. The Permittee must develop and implement a Corrective Measures Program to protect human health and the environment from any of the SWMUs and areas of concern at the facility.
5. The Permittee must carry out interim measures in accordance with the terms, conditions, and requirements of this permit to address existing contamination at the facility until such time as a final corrective measure can be developed and implemented.
6. The Permittee must provide corrective action, as appropriate, for: (1) any newly discovered SWMUs; or (2) future releases for existing SWMUs.
7. Investigation and remediation efforts carried out as part of the corrective action program implemented in accordance with this permit must meet the requirements of: (1) this permit, and the regulations cited herein; (2) Illinois EPA and USEPA guidance documents regarding such efforts; and (3) Illinois EPA letters regarding such activities.
8. The requirements of 35 IAC 620 and 742 must be met, when applicable, in establishing remediation objectives for corrective action. In addition, all corrective action efforts must meet the requirements of 35 IAC 724.201.

9. All Illinois EPA final decisions regarding RCRA corrective action at this facility are subject to the appeal provisions of the Illinois Environmental Protection Act.
10. The Illinois EPA may modify this Section when it determines good cause exists for modification of a compliance schedule, such as an act of nature, strike, flood or materials shortage or other Force Majeure or events over which the Permittee has no control and for which there is no reasonably available remedy.

B. CORRECTIVE ACTION REQUIREMENTS

1. Twelve (12) SWMUs and one Product Release Site (PRS) were listed in the 1993 permit as units to be addressed by the facility's corrective action program; SWMU 10 was combined with SWMU 6 in 1994; and a SWMU 14 was added in 1994 (the Former Channel Seep Area). As of January 2021, the following list of SWMUs have been identified at the facility:

<u>SWMU/PRS</u>	<u>Name</u>
SWMU 1	Closed Disposal Facility
SWMU 2	West Surge Pond
SWMU 3	Temporary Surge Basin
SWMU 4	Butene Polymerization Waste Area
SWMU 5	Pond 5 Landfill Adjacent Area
SWMU 6	Tank D-700 Area (includes SWMU 10—Field North of Tank D-700)
SWMU 7	Hydrocarbon Pool
SWMU 9	Chemfix Pad Area
SWMU 11	Pond 5 Landfill
SWMU 12	Heavy Oils Dock
SWMU 13	Mississippi River Seep Area
SWMU 14	Former Channel Seep Area
PRS 1	Marathon Pipeline Area

2. A Phase I RCRA Facility Investigation report for the units above was approved by Illinois EPA on December 2, 1996. The Permittee and Illinois EPA subsequently expanded the scope of corrective action at this facility to all recognized environmental conditions (not just the units identified above) and divided the facility into ten (10) land reuse parcels for remediation and potential redevelopment. Market conditions and environmental priorities will guide the

schedule for investigating, remediating and redeveloping these parcels. The schedule for addressing these parcels is subject to Illinois EPA review and approval. A map of the BP Riverfront land reuse parcels is presented in Figure B-1 of Attachment B to this permit; these parcels are also identified as the following:

<u>Parcel</u>	<u>Name</u>
A	Barge Maintenance Area (BMA), North Channel Tract Areas (NCT), Butene Polymerization Waste Area (BPWA), South Channel Tract Area (SCT), Southwest Channel Tract Area (SWCT)
B	Light Oils Dock (LOD)
C	Former Channel Seep Area (FSCA)
D	Closed Disposal Facility (CDF)
E	Pond 1 Landfill
F	Temporary Surge Pond (TSP)
G	Mississippi River Seep Area (MRSA)
H	East Surge Pond (ESP)
I	West Surge Pond (WSP)
J	Permitted Nonhazardous Landfill (PNWL)

3. The Permittee plans to complete corrective action for the soil and groundwater at the facility through the parcel land reuse investigation remediation process. The goal in following this process is to obtain a no further action (NFA) determination for the entire parcel and address all recognized environmental conditions in the parcel. If the Permittee determines that redevelopment is not likely to occur in a given parcel, the Permittee may focus only on the SWMUs and PRS within the parcel. If the potential for redevelopment of the parcel becomes viable in the future, the Permittee may pursue an NFA determination for all recognized environmental conditions within the parcel at that time. The general process for investigation/remediation of each parcel (or for individual SWMUs/PRSs) is as follows:
 - a. Current conditions will be established for the parcel.
 - b. An Investigation Work Plan incorporating the current conditions will be developed and submitted to Illinois EPA for review and approval to investigate data gaps required to properly characterize the area.
 - c. The investigation, focused on obtaining soil and any perched groundwater data, will be completed. It must be noted that the groundwater within the

uppermost aquifer beneath the facility is being addressed by the requirements of Section IV of this permit.

- d. The results of investigation will be analyzed; as well as all other data remediation objectives will be developed in accordance with 35 IAC 742; a comparison will be made between the data to the developed remediation objectives; and a determination will be made regarding the need for any remedial activities (including the establishment of engineered barriers and institutional controls).
- e. A report documenting the results of the efforts described in Items (c) and (d) above will be submitted to Illinois EPA for review and approval. This report will also identify any required remedial activities (including establishment of any required engineered barriers and/or institutional controls) needed to achieve the proposed remediation objectives.
- f. Based upon the results of its review of the Investigation Report, Illinois EPA will either:
 - (1) require that additional investigative efforts be conducted;
 - (2) issue a draft NFA letter for soil and perched groundwater (if applicable). This draft NFA will identify any required remedial activities (including establishment of an engineered barrier or institutional control) that must be completed before a final NFA letter can be issued. As necessary, the Permittee will conduct the required remedial activities and submit a report to Illinois EPA for review and approval documenting the results of these activities. Additional work must be conducted by the Permittee as necessary in accordance with plans and reports approved by Illinois EPA, until Illinois EPA determines that a final NFA letter can be issued.
 - (3) issue a final NFA letter for soil and perched groundwater (if applicable); or
 - (4) require some combination of the above efforts.
- g. Any engineered barriers and/or institutional controls required in the development of remediation objectives must be established before a No Further Action letter can be issued. Plans for establishing the required barrier/institutional control must be submitted to Illinois EPA for review and approval as well as reports documenting completion of these efforts. Any other proposed remedial efforts to achieve the established remediation objectives must also be completed before a final NFA letter can be issued.

4. Plans and reports associated with all aspects of corrective action at this facility must be submitted to Illinois EPA before being implemented.
5. The investigation efforts conducted at each area must be sufficient to characterize contamination associated with all the identified recognized environmental conditions present in the area. The parcel investigations will focus on soil and perched water.

C. SUMMARY OF CORRECTIVE ACTION EFFORTS COMPLETED TO DATE

1. As of February 2021, the Permittee has obtained NFA for the specific media at the following parcels and SWMUs:

Parcel/ SWMUs Present in Parcel	NFA and Media
Parcel A—Butene Polymerization Waste Area/SWMU 4	NFA letter for soil and perched-groundwater only was issued on March 8, 2005 (Log No. B-145-CA-46). ELUC was established for Parcel A (see Conditions IV.C. 2 and 3 below).
Parcel B—Light Oils Dock/SWMU 6, SWMU 10	NFA Letter for soils-only was issued by IEPA on October 22, 2009 (Log No. B-145-CA-69). Exclusion of perched-groundwater in this parcel was approved on 12/30/2004 (B-145-CA-48).
PRS 1	NFA letter for soils-only was issued for PRS 1 on December 2, 1996 (B-145-CA-1) (see Condition IV.D below).

2. As of February 2021, the following Environmental Land Use Control (ELUC) has been established following the NFA determinations by Illinois EPA and recorded with the Madison County Recorder’s Office as shown in the table below.

ELUC Recorded as Part of RFI for BP Riverfront Facility

Area Name	Size (Acres)	Parcel ID for Site	Date of NFA Letter	County Recorder’s No. /Date Recorded	PIN/TAX ID
Parcel A	64.8-AC (A-1= 63.92-AC; A-2 = 0.88-AC)	Parcel A, which includes Parcel A-1 and Parcel A-2	3/8/2005 (Log No B-145-CA-46)	2007R32644 June 15, 2007	PIN: 19-1-08-28-00-000-009; 19-1-08-28-00-000-009-.001; 19-1-08-29-00-000-07

3. ELUCs have been established in accordance with 35 IAC 742 as part of the completed corrective action efforts at this facility as summarized in Condition C.2 above. The ELUC places following restrictions on future activities at the facility:

- a. Parcel A
 ELUC requires following restrictions: potable groundwater use restriction; no residential use; construction worker health and safety plan for any excavation required; limited access to soils in this area and requirements for soil screening of VOCs and documentation requirements; an engineered barrier at a location which requires 3' of clean soil (including following sampling locations: PASW0702BH02;PALD0109BH01;PASW0702BH06). Note: Certified copy of recorded ELUC was accepted by IEPA on January 14, 2008.

4. At Parcel E (Pond 1 Landfill), the Pond 1 Landfill was closed as a hazardous waste landfill in August 1995;post-closure care is being carried out in accordance with requirements of Section III of this permit.

D. SUMMARY OF CORRECTIVE ACTION EFFORTS STILL TO BE COMPLETED

1. A brief summary of corrective action efforts still to be completed at each parcel, as of June 2023, is presented by the table below. (Please note this is not a complete listing of SWMUs at the subject facility). In addition, for all Parcels and SWMUs, Corrective Action efforts must be completed in accordance with requirements of this permit and corrective action letters issued by Illinois EPA for all media of concern.

Parcel/ SWMUs Present in Parcel	Corrective Action Efforts to be Completed
Parcel A—Butene Polymerization Waste Area/SWMU 4	Groundwater in the upper most aquifer in the vicinity of this parcel must be investigated and remediated as necessary to meet the corrective action requirements.
Parcel B—Light Oils Dock/ SWMU 6; SWMU 10	Groundwater in the vicinity of this parcel must be investigated and remediated as necessary to meet the corrective action requirements.
Parcel C—Former Channel Seep Area/ SWMU 14	Corrective action for all media, including continued LNAPL Recovery, must be carried out to meet the corrective action requirements.
Parcel D—Closed Disposal Facility Landfill/SWMU 1	Corrective action activities, including leachate management; groundwater monitoring and maintenance of the phytoremediation system must be continued.
Parcel E—Pond 1 Landfill	Post-closure care being carried out in accordance with Section III of this permit must be continued.

Parcel/ SWMUs Present in Parcel	Corrective Action Efforts to be Completed
Parcel F—Temporary Surge Pond/ SWMU 3	Current conditions report and groundwater investigation workplan for this parcel must be submitted. Corrective action must be carried out in accordance with the Phase II/ III Work Plan (approved on August 9, 2001 by Illinois EPA) and meet the corrective requirements.
Parcel G— Mississippi River Seep Area (MRSA)/ SWMU 13	Land Reuse Investigation activities in accordance with IEPA's January 22, 2013 letter are in progress. MRSA Corrective Action Reports are being submitted as part of the Quarterly Riverfront Corrective Action Reports. Any remaining corrective action activities must be carried out to meet the corrective action requirements.
Parcel H—East Surge Pond (ESP)/ SWMU 8	The ESP must be operated in accordance with requirements of Section II of this permit. A proposed schedule to close the ESP in accordance with Condition II.F of this permit must be submitted to Illinois EPA within one (1) year of the effective date of this permit. The closure of the ESP must commence prior to the expiration date of this permit as required in Condition II.F.1 of this permit, unless otherwise approved of an alternative closure commencement date by Illinois EPA. If clean closure can't be achieved, this unit must be closed as a landfill and provided necessary post-closure care.
Parcel I—West Surge Pond (WSP)/ SWMU 2	The WSP is currently used for temporary storage of nonhazardous wastewaters. A Current conditions report and RCRA Investigation workplan for this area must be submitted.
Parcel J—Permitted Non-Hazardous Waste Landfill/ SWMU 5/ SWMU 11	Facility is currently providing post-closure care (maintenance of final cover, leachate management, and groundwater monitoring) in accordance with IEPA letter of April 27, 2005 and associated modifications. BP submits groundwater reports quarterly. Any additional corrective action activities must be conducted as necessary to meet the corrective action requirements.
SWMU 7— Hydrocarbon Pool	Further investigation and remediation must be conducted to meet the conditions of IEPA's Corrective Action approval letters for this unit. BP is awaiting USACE, WRDL, and IDOT access authorization for this area to conduct further required corrective action activities. Any remaining corrective action activities must be conducted to meet the corrective action requirements.
PRS-1—Marathon Pipeline Area	BP must continue to monitor groundwater in accordance with corrective action provisions of this permit.
Shallow Groundwater Beneath Facility	BP must continue to address shallow groundwater at the site to meet the corrective action requirements of this permit.
Groundwater Beneath Facility in the American Bottoms Aquifer	BP must continue to address the groundwater at the site in accordance with Section IV of this permit.

2. Within ninety (90) days of the date of the permit, the Permittee must submit a document summarizing the next step for the corrective action and proposed schedule for addressing each Parcel/SWMU listed in Condition V.D.1 above as a corrective action submittal.

E. CORRECTIVE MEASURES REQUIREMENTS

1. If it is determined that corrective measures must be taken at a SWMU, then the Permittee must implement a Corrective Measures Program (CMP) for such SWMUs in general accordance with the procedures set forth in Attachment E to this permit. The corrective measures implemented by the Permittee must be sufficient to ensure the appropriate requirements of 35 IAC 302, 620, 724, and 742 are met.
2. The types of corrective measures which may be implemented include, but are not limited to:
 - a. Removal of the contaminants or the contaminated media so that the remaining media meet remediation objectives developed in accordance with 35 IAC 742;
 - b. Closing the SWMU as a landfill by establishing a proper final cover over the SWMU and then providing proper long-term monitoring/maintenance/management of: (1) leachate; (2) subsurface gas; (3) final cover system; and (4) groundwater;
 - c. Establishing engineered barriers to restrict exposure to the contaminants remaining at the SWMU (necessary to certain remediation objectives developed in accordance with 35 IAC 742);
 - d. Establishing institutional controls to restrict activities at the facility, as necessary, to support remediation objectives established in accordance with 35 IAC 742.
3. The Corrective Measures Program described in Attachment E to this permit consists of five phases:
 - a. Phase I--conceptual design of the selected corrective measure;
 - b. Phase II--development of the final design plans for the corrective measure, including installation and operation/maintenance plans;
 - c. Phase III--actual construction/installation/implementation of the corrective measure;

- d. Phase IV--operation/maintenance/monitoring, as necessary, of the corrective measure to ensure it is being properly implemented and is properly protecting human health and the environment.
 - e. Phase V--demonstration/verification that the corrective measure has been completed and that the established remediation objectives have been achieved.
 - f. Phases may be combined or skipped, depending on the actual corrective measure selected. The overall CMP implemented at a given SWMU must: (1) be logical in nature; and (2) allow for Illinois oversight and approval throughout the entire process. As such, it will be necessary for the Permittee to submit workplans and reports regarding all aspects of corrective measures for the Illinois EPA review and approval prior to carrying out any corrective measure activity.
4. A Phase I CMP Workplan, or its equivalent, must be submitted to the Illinois EPA within ninety (90) days of the date that the Illinois EPA notifies the Permittee of the need for a CMP.
 5. Subsequent CMP related workplans and reports must be submitted to the Illinois EPA for review and approval in accordance with a schedule approved by the Illinois EPA.
 6. For units closed as landfills:
 - a. The Phase II report must include a plan for the construction of a final cover system as well as a post-closure care plan. The post-closure care plan must include provisions for (1) inspecting the final cover; (2) monitoring the groundwater and soil gas; and (3) taking corrective action if any problems are observed during the inspection/monitoring effort.
 - b. The Phase III report must document the construction of the approved final cover system and any other systems required for closure of the unit.
 - c. During Phase IV, quarterly reports must be submitted documenting the results of the inspection/monitoring efforts as well as any corrective measures taken in response to problems observed during these efforts. It will be necessary to submit plans to the Illinois EPA for review and approval to address any groundwater quality or gas migration problems.
 - d. The Phase V report will not be submitted until the post-closure care period has been completed. This report must demonstrate that all applicable post-closure requirements have been met and that the groundwater at the site meets the applicable standards.

7. Once all corrective measures have been completed, a report must be developed documenting all efforts and results associated with the completed measure, including, as appropriate, information demonstrating the approved remediation objectives for the project have been achieved.
8. The Illinois EPA's action on all CMP submittals shall be subject to the appeal provisions of Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

F. FINANCIAL ASSURANCE FOR CORRECTIVE ACTION

1. The current cost-estimate for completing corrective action and groundwater remediation, including 20% contingency, at the BP Riverfront provided by the facility is \$10,359,514 in 2020 dollars as described in Attachment G. The Permittee shall prepare an updated cost estimate for the completion of any corrective action required under this permit in order to provide financial assurance for the approved amount of that cost estimate as required in Condition VI.C.1.c.
2. The Permittee shall demonstrate continuous compliance with 35 IAC 724.201 by providing documentation of financial assurance using a mechanism specified in 35 IAC 724.243, in at least the amount of the cost estimate required under Condition V.E.1 above. The words "completion of corrective action" shall be substituted for "closure and/or post-closure", as appropriate in the financial instrument specified in 35 IAC 724.251. The Illinois EPA may accept financial assurance for completion of corrective action in combination with another financial mechanism that is acceptable under 35 IAC 724.246.
3. At least once per year but no later than January 30 of each year, starting in 2024, the Permittee shall submit an updated estimate of the cost for completing corrective action at this facility to reflect the recent results of the program and the impacts these results have on determining what is needed to complete corrective action at the facility (such updates are also necessary to take into account such things as the completion of investigation efforts, the need for or completion of remediation, etc.). This estimate shall be submitted as a Class 1* modification request and contain the following detailed information in support of the overall cost estimate:
 - a. A brief description of the various tasks which must be carried out to complete corrective action at the facility;
 - b. The estimated cost of completing each identified task;
 - c. A 20% adjustment for contingencies to the total estimated cost;
 - d. An identification of the resources needed to complete each task (type and amount) and the unit cost of each required resource;

- e. Justification for all values used in the developing all aspects of the estimate.
4. The cost estimate must be supported by a detailed breakdown of the estimated third-party cost for completing each required task. The amount of the various resources needed to complete each task must be provided, as well as the unit cost of these resources and an adjustment for contingencies. Justification for all data used in these calculations must also be provided.
5. The financial assurance requirements of 35 IAC 724.201 must also be met for any investigative or corrective action efforts carried out in accordance with Conditions G.1 or I below. Detailed cost estimates must be developed for any activities carried out under this Section and must accompany any workplan/report submitted to Illinois EPA for review and approval. Appropriate documentation of financial assurance in at least the amount of the approved cost estimate must be submitted to Illinois EPA within sixty (60) days after the cost estimates are approved.
6. All cost estimates prepared under the requirements of Conditions V.F.1 through V.F.5 above must be submitted as a Class 1* permit modification request in accordance with 35 IAC 703.281.

G. REQUIREMENTS FOR ADDRESSING NEWLY- IDENTIFIED SWMU(s) AND AREA(s) OF CONCERN (AOCs)

1. The Permittee shall notify the Illinois EPA BOL Permit Section in writing of any newly-identified SWMU(s) and/or Area(s) of Concern (AOCs) discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, no later than thirty (30) calendar days after discovery. The notification shall provide the following information, as available:
 - a. The location of the newly-identified SWMU/AOC in relation to other SWMUs on a scaled map or drawing;
 - b. The type of unit and past and present function of the unit;
 - c. The general dimensions, capacities, and structural description of the unit (available drawings and specifications provided);
 - d. The period during which the unit was operated;
 - e. The specifics on all materials, including but not limited to, wastes and hazardous constituents, that have been or are being managed at the SWMU/AOC, to the extent available; and

- f. The results of any relevant available sampling and analysis which may aid in determining whether releases of hazardous wastes or hazardous constituents have occurred or are occurring from the unit.
2. If the submitted information demonstrates a potential for a release of hazardous waste or hazardous waste constituents from the newly identified SWMU/AOC, the Illinois EPA may request in writing, that the Permittee prepare a SWMU Assessment Plan and a proposed schedule of implementation and completion of the Plan for any additional SWMU(s) discovered subsequent to the issuance of this Permit. This SWMU Assessment Plan must also propose investigations, including field investigations if necessary, to determine the release potential to specific environmental media for the newly identified SWMU/AOC. The SWMU Assessment Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste and hazardous constituents from the newly-discovered SWMU(s)/AOC(s) to the environment.
3. Within ninety (90) calendar days after receipt of the Illinois EPA's request for a SWMU Assessment Plan, the Permittee shall submit a SWMU Assessment Plan to the Illinois EPA for review and approval.
4. After the Permittee submits the SWMU Assessment Plan, the Illinois EPA shall either approve, conditionally approve or disapprove the plan in writing. If the plan is approved, the Permittee shall begin to implement the plan within forty-five (45) calendar days of receiving such written notification or in according to the terms and schedule established within the plan and any conditions placed on it. If the plan is disapproved, the Illinois EPA shall notify the Permittee in writing of the plan's deficiencies and specify a due date for submittal of a revised plan.
5. The Permittee shall submit a report documenting the results of the approved SWMU Assessment Plan to the Illinois EPA in accordance with the schedule in the approved SWMU Assessment Plan. The SWMU Assessment Report shall describe all results obtained from the implementation of the approved SWMU Assessment Plan.
6. The Permittee must implement a Corrective Measures Program, as necessary, to properly address any contamination encountered during the assessment. Guidance regarding the implementation of this program will be provided at the time Illinois EPA notifies the Permittee of the need for such a program.

H. FUTURE RELEASES FROM SWMUs

There exists a potential that a release may occur in the future from SWMUs identified in the RFA which did not require any corrective action at the time that the RFA or RFI was completed. If the Permittee discovers that a release has occurred from such a SWMU in the future, then the Illinois EPA must be notified of this release within thirty (30) days

after its discovery following the procedures set forth in Condition V.G.1 above. Additional investigation and, as necessary, corrective measures efforts at this SWMU must be carried out in accordance with the procedure set forth in Subsection E above. The results of all corrective action efforts required by this condition must meet the requirements of 35 IAC 724.201.

I. INTERIM MEASURES/STABILIZATION

The Permittee shall carry out interim measures/stabilization activities in order to prevent or mitigate the migration of a release of hazardous substances into the environment, and to provide adequate protection to public health, welfare and the environment.

1. At any time during the corrective action process, the Permittee may initiate interim measures for the purpose of preventing continuing releases and/or mitigating the results of releases and/or mitigating the migration of hazardous wastes or hazardous constituents. It shall not be necessary to conduct all phases of a RCRA Facility Investigation (RFI) or a Corrective Measures Study (CMS) prior to implementing an interim measure if the Illinois EPA and the Permittee agree that a problem can be corrected, or a release cleaned up, without additional study and/or without a formal corrective measures study.
2. Prior to implementing any interim measures, the Permittee must submit detailed information regarding the proposed interim measure to the Illinois EPA's BOL Permit Section for approval. This information shall include, at a minimum:
 - a. Objectives of the interim measures: how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long-term solution at the facility;
 - b. Design, construction, and maintenance requirements;
 - c. Schedules for design and construction; and
 - d. Schedules for progress reports.
3. If the Illinois EPA determines that a release cannot be addressed without additional study and/or a formal CMS, then the Illinois EPA will notify the Permittee that these must be performed. Any proposal made under this provision or any other activity resulting from such proposal, including the invocation of dispute resolution, shall not affect the schedule for implementation of the other corrective action efforts being carried out at the facility or of any other portion of the permit.
4. If the Illinois EPA determines that interim measures are necessary to protect human health or the environment, the Permittee will be notified by way of a permit modification.

5. Consistent with the annual reporting requirements of this permit, the Permittee shall submit a report assessing the effectiveness of any interim measures being carried out in accordance with this permit. Based on a review of this report, the Illinois EPA reserves the right to require additional interim measures be carried out if it is determined that the interim measure is unable to protect human health and the environment. This annual report should at a minimum contain the following information regarding each system which comprises the interim measure:
 - a. A discussion of each system's operation during the year. This discussion should address: (1) actual daily, weekly and monthly flow rates through each system; (2) any periods when the systems were not operating; and (3) deviations from the design operating procedures for the system (such as problems with drawing an adequate vacuum, downtime due to equipment failure, etc.);
 - b. Results of all monitoring efforts carried out during the year;
 - c. A discussion of the effectiveness of the system supported as appropriate with data and calculations; and
 - d. Recommended changes, if any, which should be made to the system to improve its effectiveness.
6. The Illinois EPA reserves the right to require the Permittee to remove or treat soil if the Illinois EPA determines that contaminants are present in the soils at levels such that the remediation system is unable to protect human health and the environment. Remediation objectives for corrective measures will be established by the Illinois EPA at a later date.
7. The interim measure approved for a SWMU may not be sufficient to meet the final requirements for corrective action for remediation for the unit. The adequacy of the interim measure will be addressed upon Illinois EPA review and approval of the RFI Reports and the Corrective Measures Plan, as required by this permit. As such, the Permittee may be required to expand this interim measure as necessary to address existing or additional contamination detected through RFI investigations.
8. The Illinois EPA reserves the right to require revision and modification of the interim measures implemented by the facility should it be determined by the Illinois EPA through information obtained through facility monitoring that the interim measures approved by this portion of the permit are ineffective in protecting human health and the environment.

J. REPORTING REQUIREMENTS

1. A “Corrective Action Progress Report (formerly referred to as Riverfront RFI Progress Report by BP Products, North America)” shall be submitted summarizing the corrective action efforts completed at each parcel during each quarter of the calendar year. This report must also contain a general description of the corrective action efforts to be completed during the next quarter of the calendar year.

a. The reports should be submitted in accordance with the following schedule:

<u>Reporting Period</u>	<u>Report to be submitted by the following</u>
January – March	May 1
April – June	August 1
July - September	November 1
October - December	March 1**

** The fourth quarter report must be combined with the Annual “Corrective Action Progress Report” (due by March 1 of every year)

b. Each Corrective Action Progress Report must contain:

(1) a summary of activities completed at each parcel during the quarter, including information regarding the amount of free product/groundwater/leachate removed on a weekly basis from various units during the quarter;

(2) a discussion of any problems encountered while conducting corrective action at each parcel during the quarter; and

(3) A summary of the activities anticipated to be carried out during the next quarter.

c. The “MRSA Corrective Measures Quarterly Report” for each quarter, required by the Illinois EPA’s letter dated January 12, 2006 and the “90-Day SWMU 7 Status Reports” shall be incorporated into each quarterly Corrective Action Progress Report and are no longer required to be submitted as separate reports.

d. An Annual Corrective Action Progress Report must be submitted to Illinois EPA by March 1 of each year which summarizes corrective action

program activities completed at the facility during the previous calendar year (i.e., the previous January 1 to December 31). Among other things, this report must contain a compilation/summary of the information in the quarterly reports for the year, what was completed during the year, and what must still be done in the next year and in the following years. The following shall be incorporated into the Annual Corrective Action Progress Report and separate reports are no longer required:

- (1.) The corrective action progress report for the fourth quarter (October – December of every year).
 - (2.) The “Annual CDF Operations, Maintenance and Monitoring Report” (referred to as Annual CDF OM&M/ Liquid Level Report by BP Products North America Inc.)
2. Final reports must be submitted to Illinois EPA for review and approval when corrective action is complete for a given parcel. Such reports must be certified by a qualified professional engineer and a person of authority from the Permittee. This certification must meet the requirements of 35 IAC 702.126. These reports must contain be detailed in nature and contain sufficient information which (1) describes in detail all investigation/remediation efforts carried out in the parcel; and (2) the efforts were carried out in accordance with the approved plan and this permit.

SECTION VI: SPECIAL CONDITIONS

A. REQUIRED FORMS

- ii. The permittee shall provide a completed Illinois EPA permit application form LPC-PA23 with all additional information, permit modifications, and permit applications that are submitted to the Illinois EPA Bureau of Land.
- iii. The permittee shall submit current 39(i) certifications and supporting documentation with all applications for a permit.

Note: If the applicant wants additional staff to be able to send in future modifications, certifications, etc. those individuals should also send in an individual 39i certification form.

B. REPOSITORY

1. The permittee shall maintain a repository at the Wood River Public Library, located at 326 E. Ferguson Avenue, Wood River, Illinois. The following information shall be sent to the repository:
 - a. A copy of the approved RCRA Post-Closure Renewal Permit.
 - b. All permit applications and permit modification requests.
 - c. All Illinois EPA responses to modification requests made to the RCRA Post-Closure Permit (Log No. B-145R2).

C. COMPLIANCE SCHEDULE

1. Cost Estimates: Within ninety (90) days of the effective date of this Permit,
 - a. The Permittee shall submit revised post-closure cost estimates and financial assurance to meet the required minimum of thirty (30) years post-closure care costs for the Pond 1 Landfill, as stated in Condition III.H. as a Class 1* permit modification.
 - b. The Permittee shall include the corrective action cost estimates for Parcel J/ SMWU 5 - the costs associated with the post-closure care of the Permitted Non-Hazardous Waste Landfill.
 - c. The Permittee must provide an updated cost estimate for the completion of any corrective action required under this permit in order to provide financial assurance for the approved amount of that cost estimate within

90 days of the date of the effective date of this permit, as required in accordance with Title 35 Illinois Administrative Code (35 IAC) 724.201.

- d. All estimated costs must be updated annually beginning with Year 2024.
2. Survey Plat: Within ninety (90) days of the effective date of this Permit,
 - a. The Permittee shall file the certified survey plat and record of the type/location/quantity of material in the Pond 1 Landfill with the Illinois EPA, the County Recorder, and any local zoning authority or authority with jurisdiction over local land use.
 - b. The Permittee must provide to the Illinois EPA a copy of the certified survey plat (at least in a size of 11" X 17" drawing) that includes the documents that the survey plat was placed in; with the County Recorder's Office and the local zoning authority.
 3. Within ninety (90) days of the effective date of this Permit, the Permittee shall submit revised page(s) as a Class 1* modification for Illinois EPA review and approval, which revises Section C.8 of the approved permit application to identify the monitoring wells specific to each monitoring program (i.e., identify the wells which must be monitored for the PNWL Program) and their groundwater quality.
 4. Within ninety (90) days of the effective date of this Permit, the Permittee shall submit a modification to the Corrective Action Section (Section V) of the Permit, for Illinois EPA review and approval, which provides written notification to any applicable off-site property owner that a GMZ for the Riverfront facility encompasses their property. This documentation will serve to verify off-site property owners are aware of a GMZ being present on their property.
 5. Within one (1) year of the effective date of this Permit, the Permittee shall submit a proposed schedule for implementing closure activities for the East Surge Pond (ESP) as required by Condition II.F.1 as a Class 1* modification for Illinois EPA review and approval. In accordance with Condition II.G.3, a revised cost estimate for conducting closure of the ESP must be submitted with the proposed schedule.
 6. Any proposed corrective actions to address leachate at the Pond 1 Landfill as a result of Pond 1 Landfill assessment as described in Sections III. E.3.4 and III. E.4.3 of the approved permit application must be submitted as a permit modification request in accordance with Condition III.G.1 for Illinois EPA's review and approval. The permittee must verify that automated alarm system is in place for leachate detection as required in Condition III.E.7.(c) of the Permit. In addition, as a part of the study, an Action Leakage Rate (ALR) is recommended to be determined for Pond 1 Landfill for corrective action purposed.

7. Within thirty (30) days of the date of this permit, the Permittee must submit a draft deed restriction regarding the Pond 1 Parcel with a Plat of Survey, which will be attached to the deed to the property as described in Condition II.B.6.(d) of this permit as a Class 1* permit modification request. Once the draft deed restriction is approved by Illinois EPA, the deed restriction must be filed with the Madison County Recorder's office. A certified copy of the recorded deed restriction with a Plat of Survey must be submitted to Illinois EPA as a Class 1 permit modification request within thirty (30) days of the Illinois EPA's approval of the draft document.

8. Within ninety (90) days of the date of the permit, the Permittee must submit a document summarizing the next step for the corrective action and proposed schedule for addressing each Parcel/SWMU listed in Condition V.D.1 of this permit as a corrective action submittal.

SECTION VII: STANDARD CONDITIONS

GENERAL REQUIREMENTS

1. **EFFECT OF PERMIT.** The existence of a RCRA permit shall not constitute a defense to a violation of the Environmental Protection Act or Subtitle G, except for development, modification or operation without a permit. Issuance of this permit does not convey property rights or any exclusive privilege. Issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or infringement of state or local law or regulations. (Title 35 Illinois Administrative Code (35 IAC) 702.181)
2. **PERMIT ACTIONS.** This permit may be modified, reissued or revoked for cause as specified in 35 IAC 703.270 through 703.273 and Section 702.186. The filing of a request by the Permittee for a permit modification or reissuance, or a notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition. (35 IAC 702.146)
3. **SEVERABILITY.** The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. (35 IAC 705.202)
4. **PERMIT CONDITION CONFLICT.** In case of conflict between a special permit condition and a standard condition, the special condition will prevail. (35 IAC 702.160)
5. **DUTY TO COMPLY.** The Permittee shall comply with all conditions of this permit except for the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance constitutes a violation of the Environmental Protection Act and is grounds for enforcement action; permit revocation or modification; or for denial of a permit renewal application. (35 IAC 702.141 and 703.242)
6. **DUTY TO REAPPLY.** If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee must apply for a new permit at least 180 days before this permit expires, unless permission for a later date has been granted by the Illinois EPA. (35 IAC 702.142 and 703.125)
7. **PERMIT EXPIRATION.** This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application (see 35 IAC 703.181-703.209) and through no fault of the Permittee the Illinois EPA has not issued a new permit as set forth in 35 IAC 702.125.

8. **NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE.** It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (35 IAC 702.143)
9. **DUTY TO MITIGATE.** In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. (35 IAC 702.144)
10. **PROPER OPERATION AND MAINTENANCE.** The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory, and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. (35 IAC 702.145)
11. **DUTY TO PROVIDE INFORMATION.** The Permittee shall furnish to the Illinois EPA, within a reasonable time, any relevant information which the Illinois EPA may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Illinois EPA, upon request, copies of records required to be kept by this permit. (35 IAC 702.148)
12. **INSPECTION AND ENTRY.** The Permittee shall allow an authorized representative of the Illinois EPA, upon the presentation of credentials and other documents as may be required by law, to:
 - a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location. (35 IAC 702.149)

13. **MONITORING AND RECORDS.** (35 IAC 702.150)
- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste must be the appropriate method from Appendix A of 35 IAC 721. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, latest versions; Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, latest versions; or an equivalent method as specified in the approved Waste Analysis Plan.
 - b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report or application. These periods may be extended by request of the Illinois EPA at any time. The permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.
 - c. Records of monitoring information shall include:
 - i. The date(s), exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical technique(s) or method(s) used; and
 - vi. The result(s) of such analyses. (35 IAC 702.150)
14. **REPORTING PLANNED CHANGES.** The permittee shall give written notice to the Illinois EPA as soon as possible of any planned physical alterations or additions to the permitted facility. In general, proposed changes to the facility will need to be submitted to the Illinois EPA as permit modification request that complies with the requirements of 35 IAC 703.280. (35 IACs 702.152(a))
15. **CONSTRUCTION CERTIFICATION.** For a new hazardous waste management facility, the permittee shall not commence treatment, storage or disposal of hazardous waste; and for a facility being modified the permittee shall not treat, store or dispose of hazardous waste in the modified portion of the facility, until:

- a. The permittee has submitted to the Illinois EPA by certified mail or hand delivery a letter signed by the permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit; and
 - b.
 - i. The Illinois EPA has inspected the modified or newly constructed facility and finds it is in compliance with the condition of the permit; or
 - ii. If, within 15 days of the date of submission of the letter in paragraph (a), the permittee has not received notice from the Illinois EPA of its intent to inspect, prior inspection is waived and the permittee may commence treatment, storage or disposal of hazardous waste. (35 IAC 703.247)
16. **ANTICIPATED NONCOMPLIANCE.** The Permittee shall give advanced written notice to the Illinois EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements, regulations, or the Act. (35 IAC 702.152(b))
17. **TRANSFER OF PERMITS.** This permit may not be transferred by the permittee to a new owner or operator unless the permit has been modified or reissued pursuant to 35 IAC 703.260(b) or 703.272. Changes in the ownership or operational control of a facility must be made as a Class 1 modification with the prior written approval of the Illinois EPA. The new owner or operator shall submit a revised permit application no later than 90 days prior to the scheduled change. (35 IAC 703.260)
18. **MONITORING REPORTS.** Monitoring results shall be reported at the intervals specified in the permit. (35 IAC 702.152(d))
19. **COMPLIANCE SCHEDULES.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than specified in 35 IAC 702.162. (35 IAC 702.152(e))
20. **TWENTY-FOUR HOUR REPORTING.**
- a. The Permittee shall report to the Illinois EPA any noncompliance with the permit which may endanger health or the environment. Any such information shall be reported verbally within 24 hours from the time the Permittee becomes aware of the following circumstances. This report shall include the following:
 - i. Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.
 - ii. Information concerning the release or discharge of any hazardous waste or of a fire or explosion at the hazardous waste management facility, which could threaten the environment or human health outside the facility.

- b. The description of the occurrence and its cause shall include:
 - i. Name, address, and telephone number of the owner or operator;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident;
 - iv. Name and quantity of material(s) involved;
 - v. The extent of injuries, if any;
 - vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where applicable; and
 - vii. Estimated quantity and disposition of recovered material that resulted from the incident.
 - c. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Illinois EPA may waive the five day written notice requirement in favor of a written report within fifteen days. (35 IAC 702.152(f) and 703.245(b))
21. **OTHER NONCOMPLIANCE.** The Permittee shall report all instances of noncompliance not otherwise required to be reported under Standard Conditions 18, 19 and 20, at the time monitoring reports, as required by this permit, are submitted. The reports shall contain the information listed in Standard Condition 20. (35 IAC 702.152(g))
 22. **OTHER INFORMATION.** Where the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Illinois EPA, the Permittee shall promptly submit such facts or information. (35 IAC 702.152(h))
 23. **REPORTING REQUIREMENTS.** The following reports required by 35 IAC 724 shall be submitted in addition to those required by 35 IAC 702.152 (reporting requirements):
 - a. **Manifest discrepancy report:** if a significant discrepancy in a manifest is discovered, the permittee must attempt to reconcile the discrepancy with the waste generator or transporter. If the discrepancy is not resolved within 15 days after receiving the waste, the permittee must immediately submit to the Illinois EPA a

letter describing the discrepancy and attempts to reconcile it and a copy of the manifest or shipping paper at issue. (35 IAC 724.172(b))

- b. Unmanifested waste report: The permittee must submit to the Illinois EPA within 15 days of receipt of unmanifested waste an unmanifested waste report on EPA form 8700-13B. (35 IAC 724.176)
 - c. Annual report: an annual report must be submitted covering facility activities during the previous calendar year. (35 IAC 724.175)
24. **SUBMITTAL OF REPORTS OR OTHER INFORMATION.** All written reports or other written information required to be submitted by the terms of this permit shall be sent to:
- Illinois Environmental Protection Illinois EPA
Bureau of Land
Permit Section - #33
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
25. **SIGNATORY REQUIREMENT.** All permit applications, reports or information submitted to the Illinois EPA shall be signed and certified as required by 35 IAC 702.126. (35 IAC 702.151)
26. **CONFIDENTIAL INFORMATION.** Any claim of confidentiality must be asserted in accordance with 35 IAC 702.103 and 35 IAC 161.
27. **DOCUMENTS TO BE MAINTAINED AT FACILITY SITE.** The Permittee shall maintain at the facility, until closure is complete, the following documents and amendments, revisions and modifications to these documents:
- a. Waste analysis plan as required by 35 IAC 724.113(b) and this permit.
 - b. Personnel training documents and records as required by 35 IAC 724.116(d) and this permit.
 - c. Contingency plan as required by 35 IAC 724.153(a) and this permit.
 - d. Closure plan as required by 35 IAC 724.212(a) and this permit.
 - e. Cost estimate for facility closure as required by 35 IAC 724.242(d) and this permit.
 - f. Operating record as required by 35 IAC 724.173 and this permit.
 - g. Inspection schedules as required by 35 IAC 724.115(b) and this permit.

28. **WASTE MINIMIZATION.** The Permittee shall certify at least annually that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that one generates to the degree determined by the Permittee to be economically practicable, and the proposed method of treatment, storage, or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment, in accordance with 35 IAC 724.173(b)(9).

GENERAL FACILITY STANDARDS

29. **NOTICE OF WASTE FROM A FOREIGN SOURCE.** The permittee who has arranged to receive hazardous waste from a foreign source must notify the Illinois EPA in writing at least four weeks in advance of the date the waste is expected at the facility. (35 IAC 724.112(a))
30. **NOTICE OF WASTE FROM OFF-SITE.** The Permittee who receives hazardous waste from an off-site source (except where the Permittee is also the generator), must inform the generator in writing that the permittee has the appropriate permits for, and will accept, the waste the generator is shipping. The Permittee must keep a copy of this written notice as part of the facility operating record. (35 IAC 724.112(b))
31. **GENERAL WASTE ANALYSIS.** The Permittee shall comply with the procedures described in the approved waste analysis plan. (35 IAC 724.113)
32. **SECURITY.** The Permittee shall comply with the security provisions of 35 IAC 724.114(b) and (c).
33. **GENERAL INSPECTION REQUIREMENTS.** The Permittee shall follow the approved inspection schedule. The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by 35 IAC 724.115(c). Records of inspections shall be kept as required by 35 IAC 724.115(d).
34. **PERSONNEL TRAINING.** The Permittee shall conduct personnel training as required by 35 IAC 724.116 and shall maintain training documents and records as required by 35 IAC 724.116(d) and (e).
35. **GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE.** The Permittee shall comply with the requirements of 35 IAC 724.117.
36. **CLOSURE REQUIREMENTS FOR ACCUMULATION AREAS.** The Permittee shall close containers storage areas, tanks, drip pads, or containment buildings used for the accumulation of on-site generated hazardous waste in accordance with the requirements identified at 35 IAC 722.117(a)(8). This requirement is applicable to storage areas used on or after this section was amended at 44 Ill. Reg. 15263, effective September 3, 2020.

PREPAREDNESS AND PREVENTION

37. **DESIGN AND OPERATION OF FACILITY.** The Permittee shall maintain and operate the facility to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. (35 IAC 724.131)
38. **REQUIRED EQUIPMENT.** The Permittee shall equip the facility with the equipment set forth in the approved contingency plan, as required by 35 IAC 724.132.
39. **TESTING AND MAINTENANCE OF EQUIPMENT.** The Permittee shall test and maintain the equipment specified in the contingency plan and this permit as necessary to assure its proper operation in time of emergency. Such testing and maintenance activities are set forth in the approved inspection schedule. (35 IAC 724.133)
40. **ACCESS TO COMMUNICATIONS OR ALARM SYSTEM.** The Permittee shall maintain access to the communications or alarm system as required by 35 IAC 724.134.
41. **REQUIRED AISLE SPACE.** The Permittee shall maintain aisle space as required by 35 IAC 724.135 and National Fire Protection Association (NFPA) requirements.
42. **ARRANGEMENTS WITH STATE AND LOCAL AUTHORITIES AND EMERGENCY RESPONSE CONTRACTORS.** The Permittee shall attempt to make emergency response arrangements with State and local authorities and agreements with State emergency response teams and emergency response contractors and equipment suppliers as required by 35 IAC 724.137. If State or local officials refuse to enter in preparedness and prevention arrangements with the Permittee, the Permittee must document this refusal in the operating record.

CONTINGENCY PLAN

43. **IMPLEMENTATION OF PLAN.** The provisions of the contingency plan must be carried out by the Permittee immediately whenever there is a fire, explosion or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment (35 IAC 724.151(b)). At a minimum, this includes any fire or explosion which occurs in an area where hazardous waste is being managed (treated, stored or disposed) (35 IAC 703.241). Within 15 days of any incident that requires implementation of the contingency plan, the owner or operator must submit a written report to the Illinois EPA as required by 35 IAC 724.156(j).
44. **COPIES OF PLAN.** A copy of the contingency plan, including any revisions, must be maintained at the facility and submitted to all local police and fire departments, hospitals and state and local emergency response teams as required by 35 IAC 724.153.
45. **AMENDMENTS TO PLAN.** The Permittee shall review and immediately amend, if necessary, the contingency plan, as required by 35 IAC 724.154.

46. EMERGENCY COORDINATOR. A trained emergency coordinator shall be available at all times in case of an emergency as required by 35 IAC 724.155 and 724.156.

MANIFEST SYSTEM RECORD KEEPING AND REPORTING

47. MANIFEST SYSTEM. The Permittee shall comply with the manifest requirements of 35 IAC 724.171, 724.172 and 724.176.
48. OPERATING RECORD. The Permittee shall maintain a written operating record at the facility in accordance with 35 IAC 724.173.
49. ANNUAL REPORT. The Permittee shall prepare and submit an annual report to the Illinois EPA prior to March 1st of each year in accordance with the requirements of 35 IAC 724.175.

CLOSURE

50. PERFORMANCE STANDARD. The Permittee shall close the facility as required by 35 IAC 724.211 and in accordance with the approved closure plan.
51. AMENDMENT TO CLOSURE PLAN. The Permittee must amend the closure plan whenever there is a change in the expected year of closure or whenever a change in the facility operation plans or facility design affects the closure plan pursuant to 35 IAC 724.212(c).
52. NOTIFICATION OF CLOSURE. The Permittee shall notify the Illinois EPA at least 60 days prior to the date it expects to begin closure. (35 IAC 724.212(d))
53. TIME ALLOWED FOR CLOSURE. After receiving the final volume of hazardous waste, the Permittee shall treat or remove from the site all hazardous waste and complete closure activities in accordance with the schedule(s) specified in the closure plan. (35 IAC 724.213)
54. DISPOSAL AND/OR DECONTAMINATION OF EQUIPMENT. When closure is completed, the Permittee shall decontaminate and/or dispose of all facility equipment and structures as required by the approved closure (35 IAC 724.214) plan.
55. CERTIFICATION OF CLOSURE. When closure is completed, the Permittee shall submit certification to the Illinois EPA in accordance with 35 IAC 724.215 that the facility has been closed as specified by the approved closure plans.
56. COST ESTIMATE FOR FACILITY CLOSURE. The Permittee's original closure cost estimate, prepared in accordance with 35 IAC 724.242, must be:

- a. Adjusted for inflation 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with Section 724.243. However, if the owner/operator is using the financial test or corporate guarantee, it must be updated for inflation within 30 days after close of the firm's fiscal year, and before the submission of updated information to the Illinois EPA as specified in Section 724.243(f).
 - b. Revised no later than 30 days after the Illinois EPA has approved a request to modify the closure plan, if the change in the closure plan increases the cost of closure.
 - c. Kept on record at the facility and updated. (35 IAC 724.242)
 - d. Made immediately available to Illinois EPA personnel upon Illinois EPA request.
 - e. Maintained at the value approved by Illinois EPA with annual adjustment for inflation and cannot be decreased unless approved by the Illinois EPA in a permit modification.
57. **FINANCIAL ASSURANCE FOR FACILITY CLOSURE.** The Permittee shall demonstrate compliance with 35 IAC 724.243 by providing documentation of financial assurance, as required by 35 IAC 724.251, in at least the amount of the cost estimates required by the previous Permit Condition. Changes in financial assurance mechanisms must be approved by the Illinois EPA pursuant to 35 IAC 724.243.
- Financial assurance documents submitted to Illinois EPA should be directed to the following address:
- Illinois Environmental Protection Illinois EPA
Bureau of Land #24
Financial Assurance Program
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276
58. **LIABILITY REQUIREMENTS.** The Permittee shall demonstrate continuous compliance with the requirements of 35 IAC 724.247 and the documentation requirements of 35 IAC 724.251.
59. **INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS.** The Permittee shall comply with 35 IAC 724.248 whenever necessary.

LAND DISPOSAL RESTRICTIONS

60. **DISPOSAL PROHIBITION.** Any waste identified in 35 IAC Part 728, Subpart C, or any mixture of such a waste with nonrestricted wastes, is prohibited from land disposal unless it meets the standards of 35 IAC Part 728, Subpart D, or unless it meets the requirements for exemptions under Subpart C. "Land disposal" means placement in or on the land and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, or vault intended for disposal.
61. **DILUTION PROHIBITION.** The Permittee shall not in any way dilute a restricted waste or residual from treatment of a restricted waste as a substitute for adequate treatment in order to achieve compliance with 35 IAC 728, Subpart D (35 IAC 728.103).
62. **WASTE ANALYSIS.**
- a. The Permittee must test his waste or extract developed, using the test method identified in Appendix I of 40 CFR Part 268, or use knowledge of the waste, to determine if the waste is restricted from land disposal.
 - b. For any waste with treatment standards expressed as concentrations in the waste extract, the Permittee must test the treatment residues or an extract of such residues developed using the test method described in Appendix I of 40 CFR Part 268, to assure that the treatment residues or extract meet the applicable treatment standard.
 - c. If the treatment residues do not meet the treatment standards, or if the Permittee ships any restricted wastes to a different facility, the Permittee shall comply with the requirements applicable to generators in 35 IAC 728.107 and 728.150(a)(1).
63. **STORAGE RESTRICTIONS**
- a. The Permittee shall not store hazardous wastes restricted from land disposal under 35 IAC Part 728, Subpart C unless such wastes are stored only in containers or tanks, or other units approved by Illinois EPA in writing, and are stored solely for the purpose of the accumulation of such quantities as is necessary to facilitate proper recovery, treatment, or disposal, and: (1) each container is clearly marked to identify its contents and the date each period of accumulation begins; (2) each tank is clearly marked to identify its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, as required by 35 IAC 728.150.
 - b. The Permittee must comply with the operating record requirements of 35 IAC 724.173.

64. NEW DETERMINATIONS OF PROHIBITED WASTES

Wastes which are prohibited from land disposal under 35 IAC Part 728, Subpart C, or for which treatment standards have been established under 35 IAC 728, Subpart D, subsequent to the date of issuance of this permit, shall be subject to the conditions number 59 through 62 above.

POST-CLOSURE

65. CARE AND USE OF PROPERTY. The Permittee shall provide post-closure care for the facility as required by 35 IAC 724.217 and in accordance with the approved post-closure plan.
66. AMENDMENT TO POST-CLOSURE PLAN. The Permittee must amend the post-closure plan whenever a change in the facility operation plans or facility design affects the post-closure plan or when an unexpected event has occurred which has affected the post-closure plan pursuant to 35 IAC 724.218(d).
67. COST ESTIMATE FOR POST-CLOSURE. The Permittee's original post-closure cost estimate, prepared in accordance with 35 IAC 724.244, must be:
- a. Adjusted for inflation either 60 days prior to each anniversary of the date on which the first post-closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year. This permit condition is applicable throughout the entirety of the post-closure care period.
 - b. Revised whenever there is a change in the facility's post-closure plan increasing the cost of the post-closure plan.
 - c. Kept on record at the facility and updated. (35 IAC 724.244).
 - d. Maintained at the value approved by Illinois EPA with annual adjustment for inflation during the post-closure care period and cannot be decreased unless approved by the Illinois EPA in a permit modification.
68. FINANCIAL ASSURANCE FOR POST-CLOSURE CARE. The Permittee shall demonstrate compliance with 35 IAC 724.245 and 703.241(a)(2) by providing documentation of financial assurance, as required by 35 IAC 724.251, in at least the amount of the cost estimates required by the Permit Condition 67. This financial assurance shall be maintained at such value throughout the post-closure care period and shall be adjusted accordingly pursuant to Permit Condition 67. Changes in financial assurance mechanisms must be approved by the Illinois EPA pursuant to 35 IAC 724.245.

Financial assurance documents submitted to Illinois EPA should be directed to the following address:

Illinois Environmental Protection Illinois EPA
Bureau of Land #24
Financial Assurance Program
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

69. INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS. The Permittee shall comply with 35 IAC 724.248 whenever necessary.

SECTION VIII: REPORTING AND NOTIFICATION REQUIREMENTS

The reporting and notification requirements of each section of the RCRA permit are summarized below. This summary table is provided to “highlight” the various reporting and notification requirements of this permit but is not meant to supersede the requirements of the various sections of this permit.

<u>Condition</u>	<u>Action</u>	<u>Due Date</u>
II.B.2	Notify Illinois EPA if the wastewater/ leachate sent to ESP is found hazardous	Immediately
II.D	Notify Illinois EPA of unknown level drop or leaking dike	Within 7 days after problem is detected
II.F.1	Submit to the Illinois EPA of a proposed schedule for the commencement of closure activities to close the ESP	Within 1 year of the effective date of this permit.
II.F.2	Notify Illinois EPA closure of ESP begins and submit a sampling and analysis plan.	180 days prior to date of closure of ESP begins
II.F.5	Submit Certification of Closure	Within 60-day of completion of closure
III.F.3 -6	Submit to the Illinois EPA the Leachate Data Quarterly Monitoring Report; and additional data as per the condition	May 1; August 1; Nov 1; and Feb 1 of each year
III.F.7	Submit Class 1* Modification Request when previously undetected parameter in leachate is detected.	Within 30 days of leachate analysis.
III.G.2	Request permit modification to remove the liner or hazardous wastes	Prior to removing the liner or wastes
III.G.4.	Certify to the Illinois EPA that post-closure was performed in accordance with the approved post-closure plan	Within 60 days of the completion of the post-closure care period
IV.C.4	Notify Illinois EPA if any of the wells identified in Condition IV.C.1 and IV.C.2 are damaged, or the structural integrity has been compromised	Within 30 days of the date the damage is detected

<u>Condition</u>	<u>Action</u>	<u>Due Date</u>
IV.C.6	Provide Illinois EPA boring logs, construction diagrams, and data sheets from new or replacement wells	Within 30 days of the date installation is complete
IV.I.2	Groundwater monitoring data required each quarter, and additional data required in Conditions IV.E., IV.F, and IV.H.	Semi-annually
IV.I.3	Collect quarterly groundwater surface elevation data	Semi-annually
IV.I.4	Quarterly groundwater withdrawal rates	Semi-annually
IV.I.5	Gradient control measurements.	Semi-annually
IV.I.6	Statistical evaluations, as required by Condition IV.H	Every 5-years in GMZ Evaluation
IV.I.7	Groundwater flow rate and direction in the uppermost aquifer.	Semi-annually
IV.I.8	Collect groundwater samples per Condition IV.E.8 and depict the extent of dissolved contamination to define the extent of contamination.	Semi-annually
IV.I.9	The surveyed elevation of the top of well casing.	Every 5 years.
IV.I.10	Elevation of the bottom of each monitoring well.	Annually during the second quarter sampling event.
IV.I.11	Electronic Reporting	Semi-annually
V.F.3	Submit annual Cost Estimate for Corrective Action	By January 30 each year
V.G.1	Notify Illinois EPA of Newly Identified SWMU/AOC	Within 30-day of discovery
V.G.3	Submit to the Illinois EPA a SWMU Assessment Plan	Within 90 days of Illinois EPA's request
V.H.1	Notify Illinois EPA of a new releases from a SWMU	Within 30 days of such discovery

<u>Condition</u>	<u>Action</u>	<u>Due Date</u>
VII.11	Information requested by Illinois EPA and copies of records required to be kept by this permit.	Reasonable time.
VII.14	Notify Illinois EPA of planned physical alterations or additions	At least 15 days prior to planned change
VII.16	Notify Illinois EPA of changes which may result in permit noncompliance	Advanced written notice to the Illinois EPA
VII.17	Application for permit modification indicating permit is to be transferred.	No later than 90 days prior to scheduled change in ownership
VII.19	Submission of any information required in a compliance schedule.	As per Section VI.C of the renewal permit
VII.20	Report to Illinois EPA any non-compliance which may endanger health or environment	
	- via telephone	Within 24 hours after discovery
	- in writing	Within 5 days after discovery
VII.21	Report all other instances of noncompliance	March 1 of each year along with Annual Report
VII.29	Notify Illinois EPA in writing of expected receipt of hazardous waste from foreign source	At least 4 weeks prior to receipt of waste.
VII.43	Implementation of Contingency Plan.	Immediately upon incident
	Notify appropriate state and local agencies with designated response roles.	Within 15 days of incident
	Notify appropriate local officials.	Immediately, if emergency coordinator's assessment indicates evacuation of local area is advisable.
	Notify the Illinois EPA via telephone if emergency coordinator determines there has been a release, fire or explosion which could threaten human health or the environment, outside the facility	Immediately after determination made

<u>Condition</u>	<u>Action</u>	<u>Due Date</u>
	Report to Illinois EPA details regarding incident which required implementation of contingency plan	Within 15 days after event
VII.49	Submit annual report required by 35 IAC 724.175.	March 1 of each year
VII.51	Application for permit modification amending closure plan.	Whenever there is a change that affects the closure plan
VII.52	Notify Illinois EPA of intention/ expectation of closure	At least 60 days prior to beginning closure
VII.56.a and VII.67.a	Adjust closure and post-closure cost estimates for inflation	Within 60 days before anniversary date, or within 30 days after close of the firm's fiscal year
VII.56.b and VII.67.b	Revision of closure and post-closure cost estimates	Withing 30 days of the close of the company's fiscal year
VII.59 and VII.69	Notify Illinois EPA of commencement of voluntary or involuntary bankruptcy proceedings.	Within 10 days after commencement of proceeding.

ATTACHMENT A

IDENTIFICATION OF APPROVED PERMIT APPLICATION

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

ATTACHMENT A
IDENTIFICATION OF APPROVED PERMIT APPLICATION

1. RCRA Post-Closure Draft Renewal Application dated May 17, 2018.
2. "RCRA Part B Permit Renewal Application" dated August 3, 2018 (completely replaced May 2018 draft application).
3. "Response to Illinois EPA Comments dated July 19, 2019" dated September 3, 2019.
4. "Response to Illinois EPA Comments dated May 5, 2020" dated June 19, 2020.
5. Additional Information, dated April 8, 2021.
6. Additional Information for B-145R2- Riverfront Property Renewal Application, dated June 22, 2021.
7. Supplemental Pond 1 Landfill Information to Section E, dated November 24, 2021.
8. Additional Information for B-145R2- Replacement Page, Cone of Depression (COD) Well G669/HPW61 Repairs, dated May 10, 2022.
9. Additional Information for B-145R2- Replacement Page, for Section B and Section C, dated April 12, 2023.

ATTACHMENT B

LOCATION MAP & DRAWING OF PERMITTED UNITS

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

Figure B-1: Site Location map

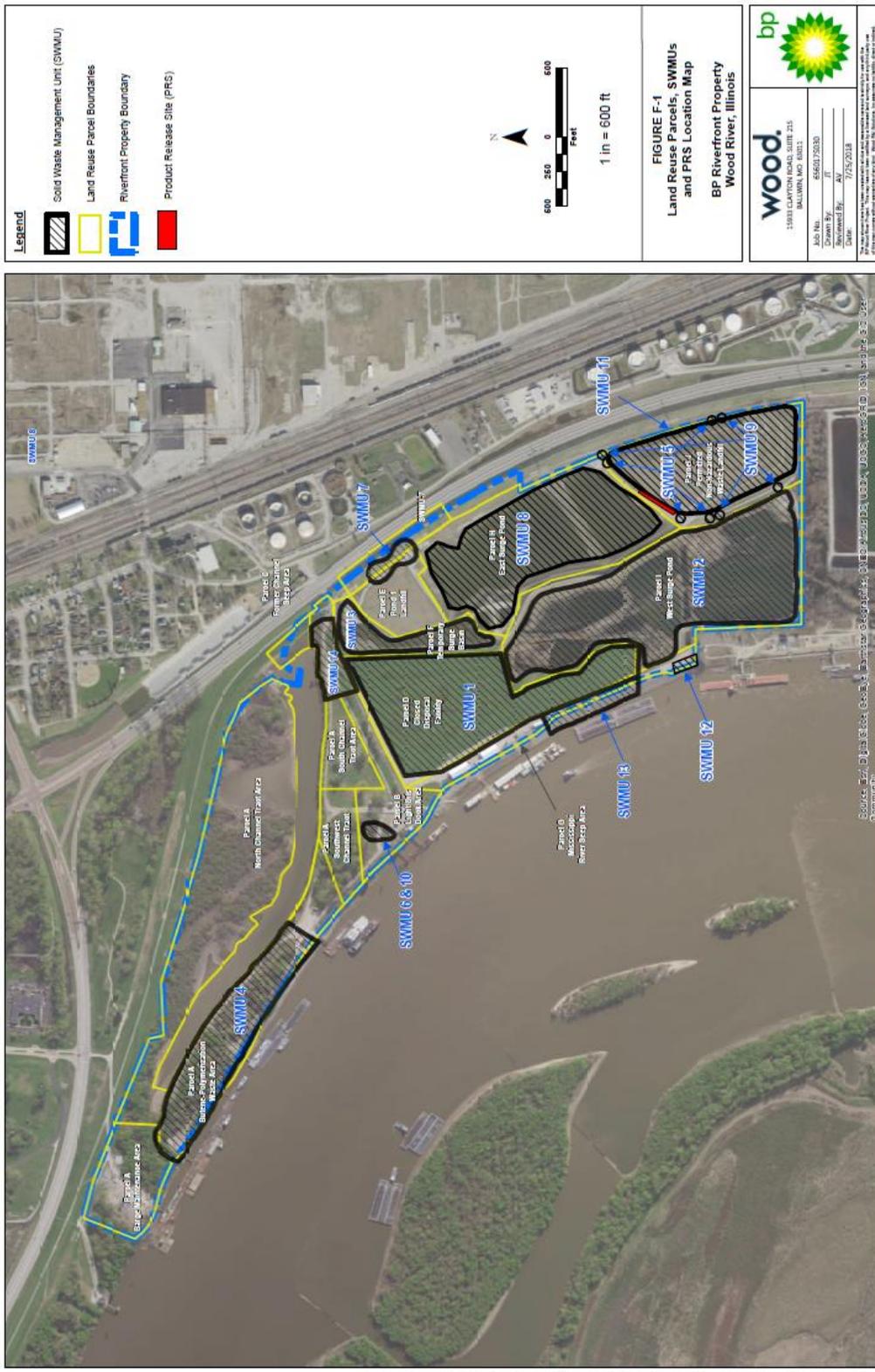


Figure B-2: Pond 1 Landfill

Figure E-2
Pond 1 Landfill Map
BP Riverfront Property
Wood River, IL

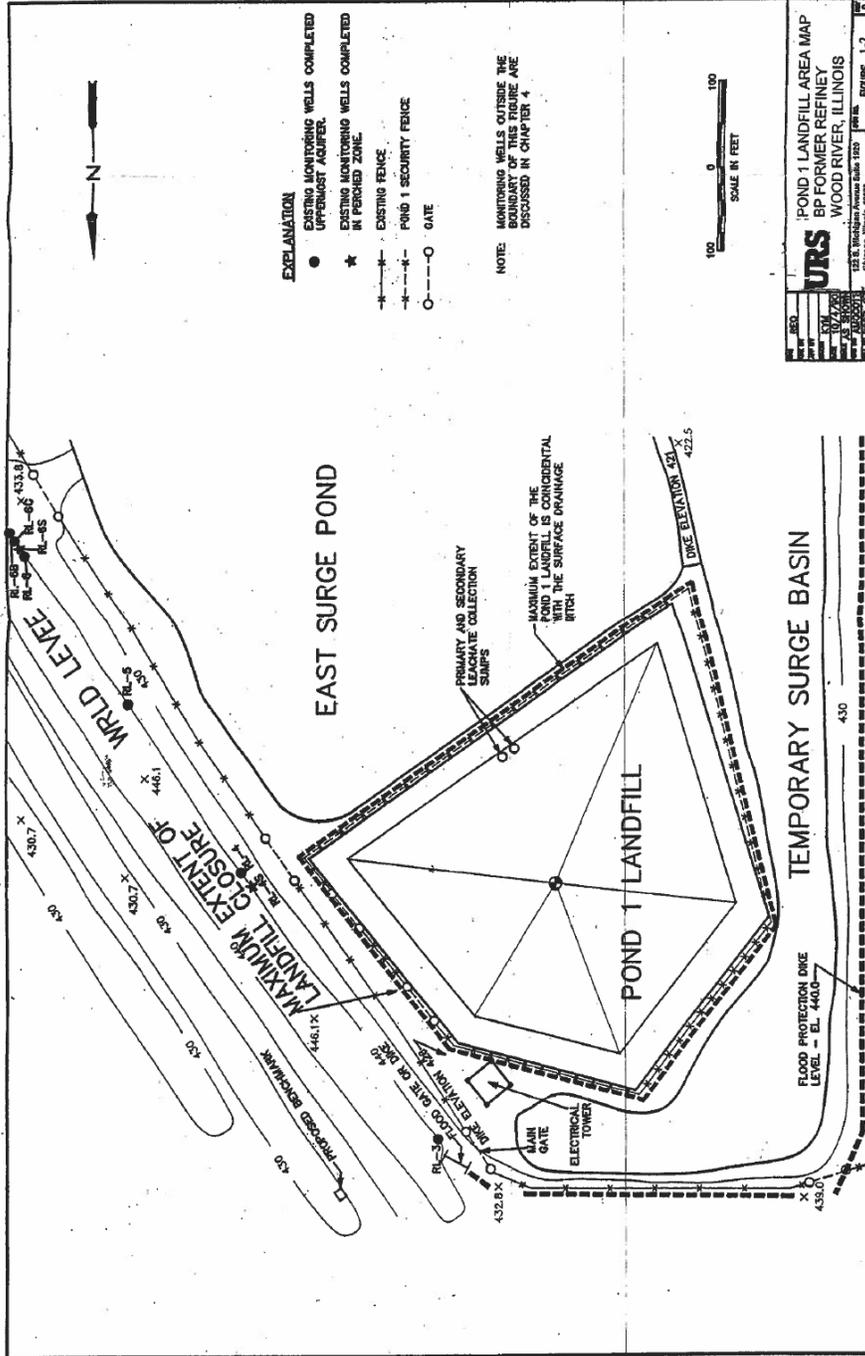


Figure B-3: East Surge Pond



ATTACHMENT C

GROUNDWATER MONITORING ATTACHMENTS (Section IV)

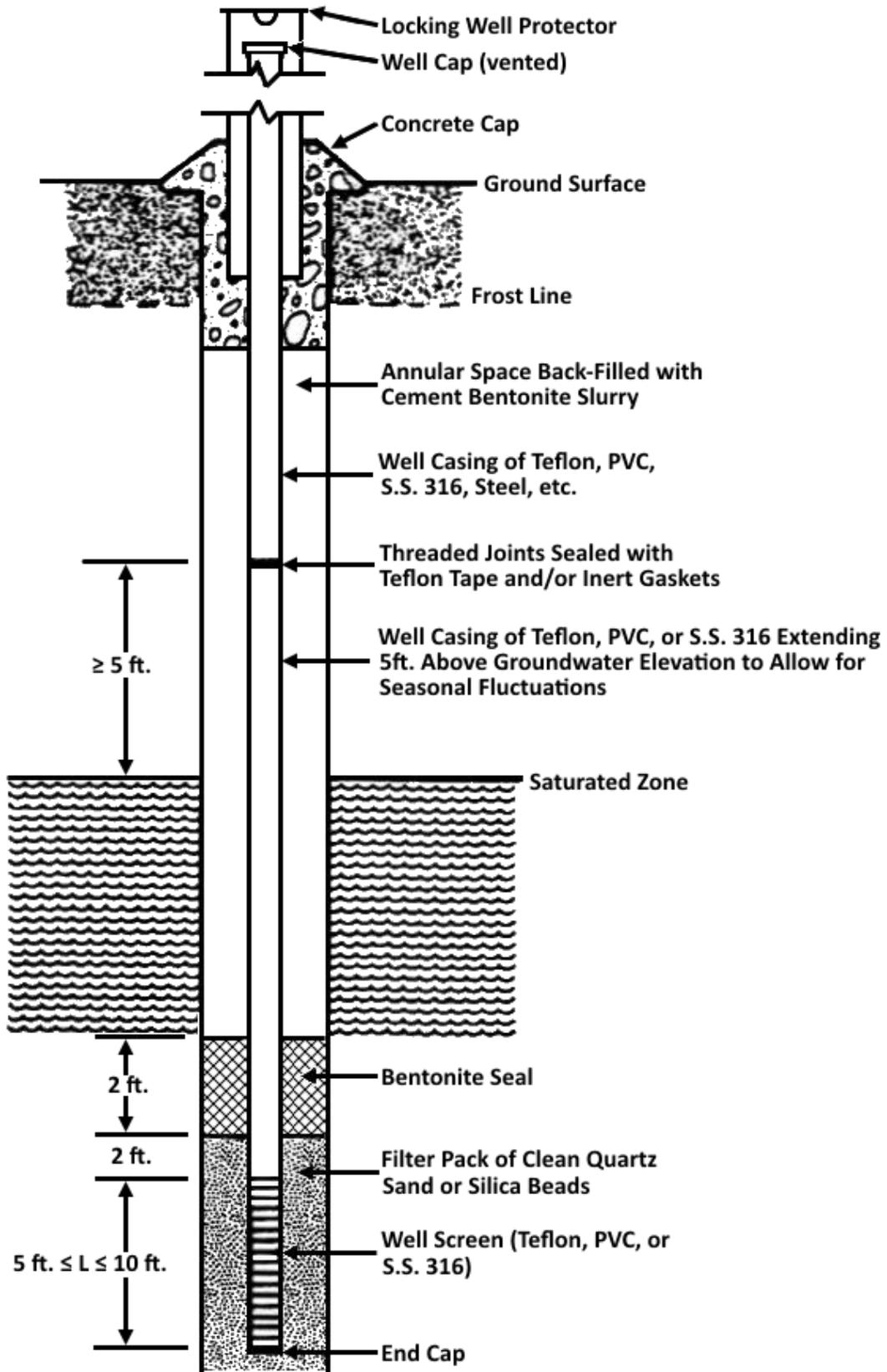
STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

Monitoring Well Diagram

R 001384



ILLINOIS EPA MONITOR WELL PLUGGING AND ABANDONMENT PROCEDURES

		Well Construction	Plugging Procedure
I. Unconsolidated Sediment Wells	I-A	...if backfilled with cement grout above bentonite seal and/or sandpack:	<ol style="list-style-type: none"> 1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 3. Insert tremi pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through tremi pipe. 5. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.
	I-B	...if backfilled with soft sediments (cuttings) above bentonite seal and/or sandpack:	<ol style="list-style-type: none"> 1. Knock out and remove thin surface concrete plug, if present. 2. Re-auger entire length of well. 3. Remove well casing from re-augured borehole. 4. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 5. Insert tremi pipe (1" i.d. pvc) into augers and extend to bottom. 6. Slowly pump slurry under low pressure through tremi pipe. 7. Continue slow pumping until all formation water and the water slurry mix is displaced from top of casing. 8. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry. 9. Pull a flight of augers (5" if in unstable materials and hole collapse is likely or 10" if in competent material and collapse is unlikely). 10. Top off cement slurry after each flight is removed.
	I-C	...if monitor well construction is unknown:	<ol style="list-style-type: none"> 1. Follow procedures in I-A.
II. Bedrock Wells	II-A	...All bedrock monitor wells:	<ol style="list-style-type: none"> 1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 3. Insert tremi-pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through tremi pipe. 5. Slowly withdraw pipe making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.



Electronic Filing: Received, Clerk's Office 03/14/2024
Illinois Environmental Protection Illinois EPA **Well Completion Report**

Site Number: _____

County: _____

R 001387

Site Name: _____

Well #: _____

State _____

Plane Coordinate: X _____ Y _____ (or) Latitude: _____ ° _____ ' _____ " Longitude: _____ ° _____ ' _____ " Borehole #: _____

Surveyed by: _____

IL Registration #: _____

Drilling Contractor: _____

Driller: _____

Consulting Firm: _____

Geologist: _____

Drilling Method: _____

Drilling Fluid (Type): _____

Logged By: _____

Date Started: _____ Date Finished: _____

Report Form

Completed By: _____

Date: _____

ANNULAR SPACE DETAILS

Type of Surface Seal: _____

Type of Annular Sealant: _____

Installation Method: _____

Setting Time: _____

Type of Bentonite Seal – Granular, Pellet, Slurry
(Choose One)

Installation Method: _____

Setting Time: _____

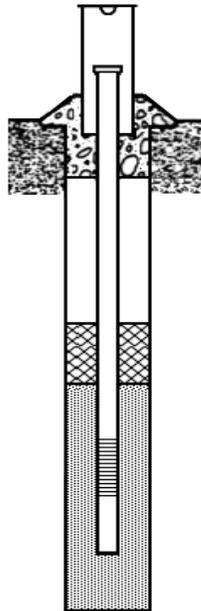
Type of Sand Pack: _____

Grain Size: _____ (Sieve Size)

Installation Method: _____

Type of Backfill Material: _____
(if applicable)

Installation Method: _____



**Elevations
(MSL)***

**Depth (.01ft.)
(BGS)**

_____	_____	Top of Protective
_____	_____	Top of Riser Pipe
_____	_____	Ground Surface
_____	_____	Top of Annular Sealant
_____	_____	Static Water Level (After Completion)
_____	_____	Top of Seal
_____	_____	Top of Sand Pack
_____	_____	Top of Screen
_____	_____	Bottom of Screen
_____	_____	Bottom of Well
_____	_____	Bottom of Borehole

* Referenced to a National Geodetic Datum

WELL CONSTRUCTION MATERIAL

(Choose one type of material for each area)

Protective Casing	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Above W.T.	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Below W.T.	SS304, SS316, PTFE, PVC, or Other
Screen	SS304, SS316, PTFE, PVC, or Other

CASING MEASUREMENTS

Diameter of Borehole (inches)	
ID of Riser Pipe (inches)	
Protective Casing Length (feet)	
Riser Pipe Length (feet)	
Bottom of Screen to End Cap (feet)	
Screen Length (1 st slot to last slot) (feet)	
Total Length of Casing (feet)	
Screen Slot Size**	

**Hand-Slotted Well Screens are Unacceptable



Illinois Environmental Protection Illinois EPA

R 001388

Bureau of Land • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

RCRA FACILITY GROUNDWATER, LEACHATE AND GAS REPORTING FORM

This form must be used as a cover sheet for the notices and reports, identified below as required by: (1) a facility's RCRA interim status closure plan; (2) the RCRA interim status regulations; or (3) a facility's RCRA permit. All reports must be submitted to the Illinois EPA's Bureau of Land Permit Section. This form is for use by Hazardous Waste facilities only. Reporting for Solid Waste facilities should be submitted on a separate form. All reports submitted to the Illinois EPA's Bureau of Land Permit Section must contain an original, plus a minimum of two copies.

Note: This form is not to be used with permit or closure plan modification requests. The facility's approved permit or closure plan will state whether the document you are submitting is required as a report or a modification request.

Facility Name: _____

Facility Address: _____

Site ID #: _____ Fed ID #: _____

Check the appropriate heading. Only one heading may be checked for each corresponding submittal. Check the appropriate sub-heading, where applicable. Attach the original and all copies behind this form.

LPC-160 Forms

Groundwater

___ Quarterly – Enter: 1, 2, 3, or 4

- Semi-Annual
- Annual
- Biennial

Leachate

___ Quarterly – Enter: 1, 2, 3, or 4

- Semi-Annual
- Annual
- Biennial

Groundwater Data (without LPC-160 Forms)

___ Quarterly – Enter: 1, 2, 3, or 4 Annual Semi-Annual Biennial

Well Construction Information

- Well Construction Forms, Boring Logs and/or Abandonment Forms
- Well Survey Data (e.g., Stick-up Elevation Data)

Notice of Statistically Significant Evidence of Groundwater Contamination (35 IAC 724.198)

Notice of Exceedance of Groundwater Concentration Limit (35 IAC 724.199(h))

Notice of Alternate Source or Error in Sampling Analysis or Evaluation of Groundwater (35 IAC 724.199(i))

Gas Monitoring Reports

Other (identify)

Formatting Requirements for the 01 Record of the Electronically Submitted Groundwater and Leachate Data
(the 01 Record portion of the LPC-160 is included for example purposes)

R 001389

**ILLINOIS ENVIRONMENTAL PROTECTION ILLINOIS EPA
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM**

Page 1 of ____

RECORD CODE							TRANS CODE
L	P	C	S	M	O	1	A
1						7	8

REPORT DUE DATE	___/___/___
	36 M D Y 41

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER	9 _____ 18	MONITOR POINT NUMBER	19 22
		(see Instructions)	
REGION _____	CO. _____	DATE COLLECTED	___/___/___
			23 M D Y 28
FACILITY NAME _____			

FOR IEPA USE ONLY
LAB _____
29
DATE RECEIVED ___/___/___
42 M D Y 47

BACKGROUND SAMPLE (X) _____ TIME COLLECTED ___ : ___

54 (24 Hr. Clock) 55 H M 58

UNABLE TO COLLECT SAMPLE _____

(see Instructions) 59

MONITOR POINT SAMPLED BY _____

(see Instructions) 60 OTHER (SPECIFY) _____

SAMPLE FIELD FILTERED - INORGANICS (X) _____ ORGANICS (X) _____

61 62

SAMPLE APPEARANCE _____

63

102

COLLECTOR COMMENTS _____

103

142

LAB COMMENTS _____

150

199

IL 532 1213
LPC 160 12/2011

This Illinois EPA is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 ½, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$25,000 for each day the failure continues a fine up to \$1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Illinois EPA. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

***Only Keypunch with Data in Column 35 or Columns 38-47**

KEY:

<u>Spaces Numbered</u>	<u>Description</u>	<u>Format</u>
Spaces 1-7	Record Code	LPCSM01
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	G000
Spaces 23-28	Date Collected	000000
Space 29	Lab	
Spaces 30-35	Filler	
Spaces 36-41	Report Due Date	000000
Spaces 42-47	Date Received	000000
Spaces 48-53	Filler 2	
Space 54	Background Sample	
Spaces 55-58	Time Collected	0000
Space 59	Unable to Collect Sample	
Space 60	Monitoring Point Sampled By	
Space 61	Field Filtered – Inorganic	
Space 62	Field Filtered – Organic	
Spaces 63-102	Sample Appearance	
Spaces 103-142	Collector Comments	
Spaces 143-149	Filler 3	
Spaces 150-159	Lab Comments	

R 001390

ATTACHMENT D

CORRECTIVE ACTION ATTACHMENTS (Section V)

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

D-1. Summary of Corrective Action and Permit Related Submittals at BP/Riverfront

The following is a list of the corrective action related submittals which have been made to date by BP and that the Illinois EPA approved them. Each submittal was assigned a log number by Illinois EPA and is presented in the order it was received.

Log No.	Topic of Submittal	Date Approved
----	GMZ Proposal	4/6/94
CA-1	RFI Phase I Wkpln and PRS Corrective Action Plan (for 10 SWMUs and 1 PRS).	9/7/94
CA-1	RFI Phase I Report	12/2/96
CA-2	Conceptual Phase II/III Wkpln (for 10 SWMUs and 1 PRS)	8/6/97
CA-3	FCSA Characterization Report	10/7/97
CA-4	LOD Monitoring Program	1/14/98 (disapproved)
CA-5	Updated GMZ	1/14/98 (disapproved)
CA-6	Phase II Workplan for the CDF and MRSA.	8/7/98
CA-7	CDF Cover Evaluation Workplan	6/10/98
CA-8	CDF Well Evaluation Workplan	11/18/98
CA-9	FCSA Phase II workplan	Superseded by CA-15
CA-10	Updated GMZ	12/5/00 (disapproved)
CA-11	LOD Characterization Report	2/26/01 (disapproved)
CA-12	CDF Cover Evaluation Report	9/7/99
CA-13	CDF and MRSA Phase II/III report	8/17/00
CA-14	Workplan for Vegetative Cover Pilot Study at CDF.	6/15/99
CA-15	FCSA Phase II Workplan, Revision 1	Superseded by CA-20
CA-16	CDF Well Evaluation Report	11/28/00
CA-17	Tree Hydraulic Control Pilot Study Workplan -CDF	10/5/99
CA-18	CDF Slurry Wall Investigation Workplan	5/10/01
CA-19	Plan to Remove 36" and 72" Outfalls (FCSA)	8/2/00
CA-20	36" and 72" Outfall Removal Report (at FCSA); <u>and</u> Phase II/III RFI for FCSA	11/13/03
CA-21	Response to IEPA's CA-13 letter re: the CDF/ MRSA	Superseded by CA-26&27
CA-22	Response to Cond. 8 of IEPA's CA-16 letter re: CDF	6/4/01
CA-23	Proposed GW Program for CDF	Superseded by CA-29
CA-24	Phase II/III Workplan (for 10 SWMUs and 1 PRS).	8/9/01
CA-25	Initial CA725 Determination	2/11/02
CA-26	CMP Report for CDF	1/10/02
CA-27	Determination of Class II GW for MRSA	2/6/02
CA-28	CMP Report for MRSA	2/6/02
CA-29	GW Monitoring Program for CDF	9/13/02
CA-30	CA750 Determination	6/11/02
CA-31	Re-Evaluation of GMZ	4/24/02
CA-32	Parcel A workplan	9/5/02
CA-33	FCSA, Class II Determination	9/5/02
CA-34	FCSA RFI Phase II report	11/13/03

Log No.	Topic of Submittal	Date Approved
CA-35	Comments on IEPA's 2/11/02 CA725 approval letter (B-147-CA-25)	6/14/02
CA-36	CDF CMP Report, Addendum 1	6/14/02
CA-37	CCR/Ph II RFI Wkpln, Parcel B and SW Chan Tract	11/15/02
CA-38	Revised Schedule for completing CA	11/14/02
CA-39	Phase II RFI Work Plan -Hydrocarbon Pool (SWMU 7)	1/29/03
CA-40	MRSA Stage 1 Corrective Measures Report	6/4/03
CA-41	CM Design Report for the MRSA	4/28/03
CA-42	Revised Schedule for completing CA	Superseded by CA-48
CA-43	FCSA Trench Interim Measures Const. Report	11/13/03
CA-44	CDF Stage 1 CM Liquid Extraction System Installation	10/30/03
CA-45	CDF 2003 Phytoremediation Status Report	10/11/05
CA-46	Parcel A Investigation Report and Closure Plan	3/8/05
CA-47	Phase I CMP for FCSA	10/28/05
CA-48	Revised CA Schedule	12/30/04
CA-49	Interim Measures to Seal Joints of 84" Sewer at FCSA	4/12/05
CA-50	Phase II RFI Report for SWMU 7 (Hydrocarbon Pool)	1/11/06
CA-51	MRSA Corrective Action Completion Report (Sheet Pile)	1/12/06
CA-52	Extension request for submittal of Final Construction Report for MRSA Sheet Pile Wall/Interceptor Trench	12/16/04
CA-53	Response to IEPA Letter dated 12/15/04 regarding Permitted Non-hazardous Waste Landfill (PNWL).	4/27/05
CA-54	Revised CA Schedule (response to CA-48 letter)	9/21/05
CA-55	Document of recording of Ordinance & MOU for Parcel A	5/1/07
CA-56	Request to postpone replacement of G101 in FCSA.	11/20/06
CA-58	Plan to move forward and status of the FCSA	1/4/07
CA-59	Establishing Background Values for PNWL	8/1/06
CA-60	Submittal assigned this log number subsequently determined not to be associated with this corrective action program and was removed from the tracking system.	1/19/2023
CA-61	FCSA Underground Pipeline Inv Work Plan	Rec'd 3/17/07, Combined with CA-64
CA-62	Draft ELUC for Parcel A and documentation of removal of impacted soil from Barge Maintenance Area	5/1/07
CA-63	Parcel B Land Reuse Investigation Report & Closure Plan	Comments provided by IEPA on 1/24/07(soil) and 5/11/09(gw)
CA-64	Corrective Measures Study for SWMU 7	6/12/09
CA-65	Revised background values for PNWL	8/21/07
CA-66	Proposed GW monitoring locations for PNWL and well abandonment forms for G07S and G12S at PNWL	5/20/09
CA-67	Final Corrective Measures Plan for the CDF	8/1/07
CA-68	Re-Evaluation of GMZ	Rec'd 4/25/07
CA-69	Revised Appendix J and Figure 6-1 for Parcel B.	Rec'd 6/1/07
CA-70	Recorded ELUC for Parcel A	1/14/08
CA-71	Statistical Proposal for CDF	9/31/09

Log No.	Topic of Submittal	Date Approved
CA-72	White Paper –Vertical Parceling	Rec'd 7/2/07
CA-73	Improvements to the FCSA Interim Measures	Rec'd 8/24/07
CA-74	Demo that PNWL exceedances of background values are not due to significant change in gw quality	5/20/09
CA-75	Proposed BG Values for Well G11S at PNWL.	5/20/09
CA-76	Demo for GW Monitoring at PNWL.	5/20/09
CA-77	Final Design and Construction Work Plan for CDF	11/18/08
CA-78	GW Demonstration PNWL on exceedance of background not significant	5/20/09
CA-79	Groundwater Demonstration and PNWL.	5/20/09
R-CA-1	Demo that PNWL exceedances of background are not due to significant change in gw quality	5/20/09
R-CA-2	Parcel A Uppermost Aquifer GW Data Inventory within Butene Polymerization Waste Area	Rec'd 12/16/08
R-CA-3	Demo that PNWL exceedances of background are not due to significant change in gw quality	Rec'd 4/13/09
R-CA-4	Response to IEPA's 3/31/09 Vertical Parceling Letter.	Rec'd 6/01/09
R-CA-5	Construction Document Report - Final Corrective Measure-CDF	Rec'd 6/29/09
R-CA-6	Revised Background Values for PNWL	Rec'd 7/20/09
R-CA-7	Demo that PNWL exceedances are not due to significant changes in gw quality.	1/19/2010
R-CA-8	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	1/9/2010
R-CA-9	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	12/17/2012
R-CA-10	Response to 10/02/09 Letter regarding FCSA (see B-145-CA-73 above)	1/10/2011
R-CA-11	Proposal to Remove FPH and MNA program @ SWMU 7	3/16/2011
R-CA-12	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill. Also includes an Assessment Monitoring Plan	12/17/2012
R-CA-13	Site Wide Geology Report (note: the approval letter for this report is different than the 12/17/12 letter addressing several submittals associated with the PNWL and log numbers CA-9, 12, 16, 24, 26, 28 and 29)	12/17/2012
R-CA-14	Corrective Measure to address FPH plume at LOD Area (different letter than the 3/6/13 letter for CA-15 and CA-17)	3/6/2013
R-CA-15	Summary of GW Removal Activities in Parcel B/FCSA	3/6/2013 (disapproval)
R-CA-16	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	12/17/2012
R-CA-17	Revised Pages of Parcel B (FCSA)Land Reuse Investigation	3/6/2013 (Disapproval)
R-CA-18	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	12/17/2012
R-CA-19	CCR Workplan Uppermost Aquifer for Parcel A	6/15/16

Log No.	Topic of Submittal	Date Approved
R-CA-20	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	12/17/2012
R-CA-21	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill (4Q, 2010)	12/17/2012
R-CA-22	Proposed background value for PNWL	12/17/2012
R-CA-23	Annual Observation Monitoring Program, Evaluation of SSIs associated with the Riverfront GW Monitoring Program	7/24/2014
R-CA-24	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	12/17/2012
R-CA-25	Additional information regarding SWMU 7 submitted in response to IEPA's 3/6/11 letter (see R-CA-11 above)	03/26/14
R-CA-26	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 2Q 2011	12/17/2012
R-CA-27	Semi-Annual Observation Monitoring Program, Evaluation of SSIs associated with the Riverfront GW Monitoring Program	7/24/2014
R-CA-28	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 3Q 2011	12/17/2012
R-CA-29	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 4Q 2011	12/17/2012
R-CA-30	Parcel G Current Report/Characterization Workplan	01/22/2013
R-CA-31	Background values for Wells G090 and G091 at PNWL	12/17/2012
R-CA-32	Semi-Annual Observation Monitoring Program, Evaluation of SSI's associated with the Riverfront GW monitoring program	7/24/2014
R-CA-33	Re-evaluation of GMZ	8/28/13
R-CA-34	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill--1Q12	03/26/14
R-CA-35	Request to incorporate Annual Liquid Level Report into Annual CDF OM&M Report	Rec'd 05/30/12
R-CA-36	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill 2Q 2012	03/26/14
R-CA-37	SSIs identified during 2Q 2012 for CA groundwater monitoring program	7/24/2014
R-CA-38	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 3Q 2012	03/26/14
R-CA-39	Ext request for responding to 12/17/12 letter re: PNWL (see R-CA-9, 12, 16, 18, 20, 21, 22, 24, 24, 26, 28, 29 and 31 above)	2/19/15
R-CA-40	Ext request for responding to 12/17/12 letter re: Sitewide Geology Report and ROST Study (see R-CA-13 above)	11/26/14

Log No.	Topic of Submittal	Date Approved
R-CA-41	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill Q4 2012	03/26/14
R-CA-42	Evaluation of SSIs for the CA groundwater monitoring program	7/24/2014
R-CA-43	Figures in response to 12/17/12 IEPA Letter re: PNWL	2/19/2015
R-CA-44	Response to 12/17/12 letter re: PNWL. Includes gw demo, revised b/g values and proposed assessment monitoring plan	2/19/2015
R-CA-45	Response to comments for the Sitewide Geology Report (see R-CA-13 and R-CA-40 above)	11/26/2014
R-CA-46	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	2/19/2015
R-CA-47	Response to 8/28/13 IEPA comments on Reevaluation of the GMZ (see R-CA-33 above)	7/15/2014
R-CA-48	Response to IEPA letters of March 6, 2013 (regarding the Light Oils Dock) and January 10, 2011 (regarding the Former Channel Seep Area)	5/20/2016
R-CA-49	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 4 Q 2013	3/2/2015
R-CA-51	Demonstration that exceedances of BG values at the PNWL are not associated with the landfill	3/2/2015
R-CA-52	Response to Conditions 4-9 of 3/26/14 IEPA Letter RE: SWMU 7 (see R-CA-25 above)	3/31/2015
R-CA-53	Response to Condition 3&10 of 3/26/14 Letter Re: SWMU7 & MNA Status Update (see R-CA-25 above)	3/31/2015
R-CA-54	SWMU 7 Progress Report	3/31/2015
R-CA-55	Monitored Natural Attenuation Status Report @ SWMU 7	3/31/15
R-CA-56	Updated O&M Manual for MRSA	Rec'd 9/4/14
R-CA-57	Request to incorporate the annual liquid report into the Annual OM&M report for the CDF	Rec'd 9/22/14
R-CA-58	Supplemental gw sampling and gw demo report for the PNWL	3/2/2015
R-CA-59	Response to IEPA's 7/15/14 letter regarding the GMZ evaluation 1 (see R-CA-47 above)	1/19/2023
R-CA-60	2nd Progress Report re: LNAPL recovery efforts at SWMU 7	3/31/2015
R-CA-61	Response to Comments re: Site-Wide Geology Report	Appr'd (Amy Butler)
R-CA-62	SWMU 7 update regarding hydrocarbon gauging, hydrocarbon recovery activities and MNA monitoring	3/31/2015
R-CA-63	Progress Report for LNAPL Recovery Efforts at SWMU 7	8/26/2016
R-CA-64	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 1Q15	4/10/17
R-CA-65	Levee Access Status Update/Extension Request for Work at SWMU 7	8/26/2016
R-CA-66	Benzene Results for G090 and G116 @ PNWL	Rec'd 6/17/2015
R-CA-67	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	4/10/2017
R-CA-68	Evaluation of Potential Statistically Significant Increase	Rec'd 4/23/2015

Log No.	Topic of Submittal	Date Approved
R-CA-69	SWMU 7 Hydrocarbon Recovery 90-Day Update	8/26/2016
R-CA-70	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	4/10/2017
R-CA-71	90-day progress report for LNAPL recovery activities at SWMU 7	8/26/2016
R-CA-72	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 4Q2015	4/10/2017
R-CA-73	SWMU 7 Hydrocarbon Recovery Update	8/26/2016
R-CA-74	Request to Consolidate Required Reports	Rec'd 1/19/2016
R-CA-75	SWMU 7 Monitored Natural Attenuation Status Report	8/26/2016
R-CA-76	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	4/10/2017
R-CA-77	Response to Condition 2 of IEPA 5/20/16 letter (see R-CA-48—pertains to the Light Oils Dock and Former Channel Seep Area)—requests extension for submitting proposed ELUC for Parcel B	Rec'd 8/16/2016
R-CA-78	Response to Conditions 3 and 4 of IEPA 5/20/16 letter (see B-14 R-CA-48—pertains to the Light Oils Dock and FCSA)	Rec'd 6/19/2016
R-CA-79	Response to Conditions 2 thru 5 of IEPA 6/15/16 letter (see B-145 R-CA-19 regarding Parcel A)	04/12/2019
R-CA-80	Parcel B ELUC	Rec'd 10/17/2016
R-CA-81	Response to IEPA's 8/26/16 letter regarding SWMU 7	Rec'd 10/25/2016
R-CA-82	Follow-Up to PNWL 7 Day Notification of BG Exceedances—3Q16	4/10/17
R-CA-83	30 Day Demonstration Report	4/10/17
R-CA-84	Repairs Made to Observation Well R110	Rec'd 3/21/2017
R-CA-85	1Q2017 PNWL 30-day Demonstration Report	Rec'd 7/14/2017
R-CA-86	4Q2016 Demonstration Report	Rec'd 4/24/2017
R-CA-87	30-Day Demonstration Report	Rec'd 8/14/2017
R-CA-88	30-Day Groundwater Demonstration Report	Rec'd 11/13/2017
R-CA-89	Parcel A Groundwater Report	04/12/2019
R-CA-90	Plan for Groundwater Monitoring Plan for Compliance Commitment Agreement	Rec'd 1/22/18
R-CA-91	4Q17 PNWL 30-day Demonstration Report	Rec'd 2/26/18
R-CA-92	4Q2017 demonstration report (SSIE)	08/06/19
R-CA-93	1Q2018 PNWL GW Demo Report	Rec'd 5/23/18
R-CA-94	GW Monitoring Optimization Report	Rec'd 6/29/18
R-CA-95	2Q2018 PNWL GW Demo Report	Rec'd 8/10/18
R-CA-96	PNWL 3Q18 10-Day Notification	04/19/2019
R-CA-97	Site-wide Arsenic/ Inorganic Demo Report	06/24/2019
R-CA-98	PNWL 4Q19 30-Day GW Demo Report	04/19/2019
R-CA-101	PNWL 1Q19 Demo Report	Rec'd 05/23/2019
R-CA-102	4th quarter demonstration report (Statistically Significant Increase Evaluation)	02/08/2020
R-CA-103	2Q19 PNWL 30-Day GW Demo Report	Rec'd 08/22/2019

Log No.	Topic of Submittal	Date Approved
R-CA-104	Site-wide update regarding site-wide inorganics and metals evaluation	Rec'd 11/06/2019
R-CA-105	2nd quarter demonstration report (Statistically Significant Increase Evaluation)	Rec'd 10/28/2019
R-CA-106	3Q19 PNWL 30-Day Groundwater Demonstration Report	Rec'd 11/25/2019
R-CA-107	Evaluation of SSI for semiannual groundwater monitoring	02/28/2020
R-CA-108	4Q19 PNWL 30-Day Groundwater Demonstration Report	Rec'd 02/25/2020
R-CA-109	Proposed modification to 2Q 2020 GW Gauging & Monitoring in response to COVID-19 pandemic	Rec'd 05/19/2020
R-CA-110	4th Quarter 2019 Demonstration Report	Rec'd 05/21/2020
R-CA-111	1 Q20 PNWL 30-Day Demonstration Report	Rec'd 05/26/2020
R-CA-112	3rd quarter 2020 PNWL30-day GW demonstration report	Rec'd 11/23/2020
R-CA-113	Site-wide inorganics and metal evaluation work plan update	Rec'd 12/01/2020
R-CA-114	GMZ Reevaluation Report	Rec'd 12/21/2020
R-CA-115	30-Day GW Demonstration Report. Permitted Non-Hazardous Waste Landfill - Third Quarter 2021	Rec'd 11/29/2021
R-CA-116	Results of the Site-Wide Inorganics & Metals Evaluation Report submitted on 12-20-18	Rec'd 1/26/2022
R-CA-117	Proposed upgrades to the Cone of Depression (COD) Well System, Additional information received on 5/2/2022, 8/1/2022	Rec'd 3/16/2022
R-CA-118	Monitoring Well Condition	Rec'd 3/21/2022
R-CA-119	1Q22 30-Day GW Demonstration Report for the permitted non-hazardous waste Landfill (PNWL)	Rec'd 05/26/2022
R-CA-120	Proposed alternative for riverfront sentinel wells and abandonment of current riverfront sentinel wells	Rec'd 7/18/2022
R-CA-121	Cone of Depression (COD) Well G669/HPW61 Repairs	Rec'd 05/09/2022
R-CA-122	Proposed sentinel well locations	Rec'd 2/22/2022
R-CA-123	4Q21 30-day demonstration report for the PNWL	Rec'd 2/25/2022
R-CA-125	Groundwater management zone hydraulic gradient control notification	Rec'd 3/16/2022
R-CA-126	2nd Semi-Annual 2021 Demonstration Report	Rec'd 5/3/2022
R-CA-127	Monitoring Well Condition Letter for G35D and G403	Rec'd 5/1/2022



Figure D-2

Electronic Filing: Received, Clerk's Office 03/14/2024

R 001402

ATTACHMENT E

CORRECTIVE MEASURES PROGRAM REQUIREMENTS

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

ATTACHMENT E

CORRECTIVE MEASURES PROGRAM REQUIREMENTS

1.0 INTRODUCTION/PURPOSE

RCRA Corrective Action projects typically consist of two phases: (1) A RCRA Facility Investigation (RFI) where an investigation is conducted at the solid waste management units (SWMU's) of concern at a facility; and (2) implementation of corrective measures needed to properly address any contaminant encountered during the RFI. This document has been developed to outline the procedures to be carried out to implement a corrective measure program.

2.0 BRIEF OVERVIEW OF A RCRA CORRECTIVE MEASURES PROGRAM

Typically, at the end of an RFI, the concentration of contaminants present in the soil/sediments/groundwater/surface waters at a SWMU or other area of concern is compared to remediation objectives developed in accordance with Title 35 Illinois Administrative Code (35 IAC) 742. If the contaminant levels are above these objectives, then some type of corrective measure must be completed to achieve these objectives. In addition, certain corrective measures may need to be carried out to support the established remediation objectives (i.e., the establishment of engineered barriers and/or institutional controls). However, at a unit where waste or high levels of contamination remains, a decision may be made to close the unit as a landfill and then provide post-closure rather than removing the material and/or achieving remediation objectives developed in accordance with 35 IAC 742.

To allow for a logical and orderly progression in developing and implementing necessary corrective measures, the Corrective Measures Program (CMP) being carried out in accordance with this RCRA permit should be carried out in five phases which build on each other. It is not necessary for a corrective measures program at a given SWMU or other areas of concern to follow these five phases step-by-step; rather, phases can be combined and/or skipped, depending on the actual remedial measure selected. The overall CMP implemented must set forth a logical path for its implementation and allow for Illinois EPA oversight and approval throughout the entire process.

A brief discussion of the five phases of a CMP is as follows:

1. Phase I is the conceptual design of the selected corrective measure(s).
2. Phase II is the development of final design plans for the corrective measure, including installation and operation/maintenance plans.
3. Phase III is the actual construction/installation of the selected corrective measure.

4. Phase IV is the operation, maintenance, and monitoring of the selected corrective measure to ensure it is properly protecting human health and the environment.
5. Phase V is the final demonstration/verification that the implemented corrective measure achieved the approved remedial objectives.

Sections 3.0 through 7.0 which follow provide a more detailed discussion of each of these five phases. Section 8.0 has been developed to describe the corrective measures program which may be used in lieu of the afore-mentioned five phase procedure when soil removal is the selected remedy. It must be noted that work plans, reports, etc. must be developed to document how the Permittee carries out the required corrective measures program at each SWMU or other areas of concern. All such documents must be reviewed and approved by Illinois EPA prior to their implementation.

3.0 PHASE I OF THE CMP

Phase I of the CMP includes selection of the corrective measure to be taken and developing a basis for completing the final design of the measure. This effort should be documented in a Conceptual Design Report which describes the proposed corrective measure for each SWMU and other areas of concern and provides a conceptual design for these measures. The main criteria for Illinois EPA review is whether the proposed corrective measures are able to achieve the final cleanup objectives previously established by the Permittee and the Illinois EPA and/or provide the necessary institutional controls to prevent the migration of contaminants from the SWMU of concern. Based upon a review of the Conceptual Design Report, the Illinois EPA may approve the corrective measures, require revisions to the proposed corrective measures, or require that a totally new corrective measures proposal be submitted to the Illinois EPA.

The Conceptual Design Report should contain the following sections:

1. Introduction/Purpose. This section should contain: (1) general background information regarding the project; (2) the purpose and goals of the submittal; and (3) the scope of the project.
2. Existing Site Conditions. This section should contain a summary of the investigative activities conducted for each of the units of concern. Investigation analytical results should be provided in tabular form, and maps depicting both the horizontal and vertical extent of contamination at the site should be provided.
3. Evaluation for Potential Future Migration. Based on the existing site conditions, a conceptual model of the site should be developed and presented in this section. The potential for additional future migration of contamination for each of the units of concern must then be evaluated, especially those units which have been determined to have released hazardous waste/hazardous constituents to the groundwater. It may be helpful to develop conceptual models for contaminant migration. Of special concern in this evaluation are (1) the physical properties of the contaminants (solubility, volatility,

mobility, etc.); and (2) existing site conditions (types of soil present, location of contamination, hydrology, geology, etc.).

4. **Corrective Measures Objectives.** This section should discuss the general objectives of the proposed corrective measure to be constructed/installed, and the ability of the proposed corrective measure to achieve the established remediation objectives (unless the selected corrective measure is closure as a landfill which will require proper establishment of a final cover and proper post-closure care of the closed unit.
5. **Identification of Options Available.** This section should contain a brief discussion of the various options available to achieve the corrective measures objectives for each unit. This discussion should identify: (1) a general overview of each option available, including how the option will achieve the stated objective; (2) the advantages associated with each option; (3) the disadvantages associated with each option and (4) an estimate of the cost associated with choosing each remedial option.
6. **Description of Selected Corrective Measure.** This section should contain a qualitative discussion of the corrective measure chosen, along with the rationale which was used to select this measure from all those identified initially. This discussion should include documentation that the selected corrective measure will be effective.
7. **Identification of Design Criteria.** This section should identify what information must be available to design the selected corrective measure.
8. **Review of Available Information.** This section should contain an evaluation of the existing information to ensure that it is sufficient to complete the design of the selected corrective measure. If insufficient information is available, then the report should contain procedures for collecting the required additional information.
9. **Procedures for Completing the Design.** This section should contain a description of the procedures which will be followed to complete the design of the corrective measure. This should include as appropriate:
 - a. Identification of the references and established guidance which will be used in designing the selected corrective measure. Justification for the selection of this procedure should also be provided.
 - b. A description of the procedures which will be used to complete the design of the corrective measure.
 - c. Identification of assumptions to be used in the design, and the impact these assumptions have on the overall corrective measure;
 - d. Significant data to be used in the design effort;

- e. Identification and discussion of the major equations to be used in the design effort (including a reference to the source of the equations);
- f. Sample calculations to be used in the design effort;
- g. Conceptual process/schematic diagrams;
- h. A site plan showing a preliminary layout of the selected corrective measure;
- i. Tables giving preliminary mass balances;
- j. Site safety and security provisions.

This information will form the technical basis for the detailed design of the remedial measure and the preparation of construction plans/specifications.

10. Identification of Required Permits. This section should identify and describe any necessary permits associated with the selected corrective measure, as well as the procedures which will be used to obtain these permits.
11. Long lead Procurement Considerations. This section should identify any elements/components of the selected corrective measure which will require a large amount of time to obtain/install. The following issues should also be discussed: (1) the reason why it will take a large amount of time to obtain/install the item; (2) the length of time necessary for procurement and (3) recognized sources of such items.
12. Project Management. This section should contain information regarding the procedures and personnel which will be involved in completing the design of the selected corrective measure. A schedule for completing the design should also be provided.

4.0 PHASE II OF THE CMP

Once the Illinois EPA approves the Conceptual Design Report, the facility should complete the design of the approved corrective action (Phase II of the CMP). Upon final completion of the design, a Final Design Report, consisting of final plans, specifications, construction work plan, etc., must be submitted to the Illinois EPA for review and approval.

Several documents must be submitted to the Illinois EPA as part of Phase II of the CMP. The following text describes the expected contents of the various documents which should be developed and submitted to the Illinois EPA as part of Phase II of the CMP.

1. Final Design Report and Construction Work Plan. The Final Design Report and Construction Work Plan must contain the detailed plans, specifications and drawings needed to construct the corrective measure. In addition, this document must contain (1) calculations, data etc., in support of the final design; and (2) a detailed description of the overall management strategy, construction quality assurance procedures and schedule for

constructing the corrective measure. It must be noted that the approved Conceptual Design Report forms the basis for this final report. The information which should be provided in this document includes:

- a. Introduction/Purpose. This portion of the document should: (1) provide background information regarding the project, (2) describe the purpose and goals of the project, and (3) describe the scope of the project.
- b. Detailed Plans of the Design System, including the following:
 - 1) Plan views;
 - 2) Section and supplementary views which, together with the specifications and general layouts, facilitate construction of the designed system;
 - 3) Dimensions and relative elevations of structures;
 - 4) Location and outline form of the equipment;
 - 5) Ground elevations; and
 - 6) Descriptive notations, as necessary, for clarity.
- c. Technical Specifications. Complete technical specifications for the construction of the system, including, but are not limited to, the following:
 - 1) All construction information, not shown in the drawings, which is necessary to inform the contractor in detail as to the required quality of materials, workmanship, and fabrication of the project;
 - 2) The type, size, strength, and operating characteristics of the equipment;
 - 3) The complete requirements for all mechanical and electrical equipment, including machinery, valves, piping and jointing of pipe;
 - 4) Electrical apparatus, wiring and meters;
 - 5) Construction materials;
 - 6) Chemicals, when used;
 - 7) Miscellaneous appurtenances;
 - 8) Instruction for testing materials and equipment as necessary; and
 - 9) Availability of soil boring information.

- d. **Project Management.** A description of the construction management approach, including the levels of authority and responsibility, lines of communication and qualifications of key personnel who will direct corrective measures construction/installation must be provided in the work plan.
 - e. **Construction Quality Assurance/Quality Control.** A construction quality assurance/quality control plan describing the procedures which will be followed to ensure the corrective measure is constructed/installed in accordance with the approved plans and specifications.
 - f. **Schedule.** The work plan must contain a schedule for completion of all major activities associated with construction/installation of the selected corrective measures. All major points of the construction/installation should be highlighted.
 - g. **Waste Management Practices.** This portion of the document should identify the wastes anticipated to be generated during the construction/installation of the corrective measures and provide a description of the procedures for appropriate characterization and management of these wastes.
 - h. **Required Permits.** Copies of permit applications submitted to other Bureaus of the Illinois EPA for the selected corrective measure must be provided in the report. If it is determined that no permit is required for construction/installation and implementation of the corrective measures, rationale and justification must be provided to support this contention.
 - i. **Cleanup Verification.** The report must contain the procedures which will be followed that the approved remediation objectives have been achieved when operation of the system is completed.
2. **Operation and Maintenance Plan.** An Operation and Maintenance Plan must be developed and submitted as part of Phase II of the CMP. This plan should outline the procedures for performing operations, long term maintenance, and monitoring of the corrective measure.
 - a. **Introduction and Purpose.** This portion of the document should provide a brief description of the facility operations, scope of the corrective measures project, and summary of the project objectives.
 - b. **System Description.** This portion of the document should provide a description of the corrective measure and significant equipment, including manufacturer's specifications. This portion of the permit should also include a narrative of how the selected system equipment is capable of complying with the final engineered design of the corrective measure.

- c. Operation and Maintenance Procedures. This portion of the document should provide a description of the normal operation and maintenance procedures for the corrective measures system, including:
 - 1) Description of tasks for operation;
 - 2) Description of tasks for maintenance;
 - 3) Description of prescribed treatment or operation conditions; and
 - 4) Schedule showing the frequency of each operation and maintenance task.
- d. Inspection Schedule. This portion of the document should provide a description of the procedures for inspection of the corrective measures system, including problems to look for during the inspection procedure, specific inspection items, and frequency of the inspections.
- e. Waste Management Practices. This portion of the document should provide a description of the wastes generated by the corrective measure, and the appropriate procedures for proper characterization/management of these wastes.
- f. Contingency Procedures. This portion of the document should provide a description of the procedures which will address the following items:
 - 1) System breakdowns and operational problems including a list of redundant and emergency backup equipment and procedures;
 - 2) Alternative procedures (i.e., stabilization) which are to be implemented in the event that the corrective measure fails. The alternative procedures must be able to prevent release or threatened releases of hazardous wastes/hazardous constituents which may endanger human health and the environment, or exceed cleanup standards.
 - 3) Notification of facility and regulatory personnel in the event of a breakdown in the corrective measures, including written notification identifying what occurred, what response action is being taken and any potential impacts on human health and the environment.

5.0 PHASE III OF THE CMP

Once the final design report is approved by the Illinois EPA, construction/installation of the approved corrective measure must commence. During this period, quarterly reports should be submitted which contain the following information:

- 1. Summary of activities completed during the reporting period;
- 2. An estimate of the percentage of the work completed;

3. Summaries of all actual or proposed changes to the approved plans and specifications or its implementation;
4. Summaries of all actual or potential problems encountered during the reporting period;
5. Proposal for correcting any problems; and
6. Projected work for the next reporting period.

Upon completion of construction/installation of the approved corrective measure, a Construction Completion Report must be submitted to the Illinois EPA documenting that these efforts were carried out in accordance with the Illinois EPA approved plans and specifications. This report should contain a thorough description of the efforts that went into constructing/installing the corrective measure and demonstrate that the procedures in the Illinois EPA approved Final Design Report were followed during this effort. Such a report should be formatted in a logical and orderly manner and contain the following information:

1. An introduction discussing the background of the project and the purpose and scope of the corrective measure described in the report.
2. Identification of the plans, technical specifications and drawings which were used in constructing/installing the corrective measure. These specifications and drawings should have been approved by the Illinois EPA during Phase II.
3. Identification of any variations from the Illinois EPA approved plans, technical specifications and drawings used in construction/installing the corrective measure. Justification regarding the need to vary from the approved plans and specifications must also be provided.
4. A description of the procedures used to construct/install the corrective measure, including the procedures used for quality assurance and quality control.
5. As built drawings, including identification of any variations from the approved plans, technical specifications and drawings.
6. A summary of all test results from the construction/installation effort, including quality assurance/quality control testing.
7. Actual test results, including quality assurance/quality control test results. These results should be located in an attachment/appendix and be well organized.
8. Identification of any test results which did not meet the specified value and a description of the action taken in response to this failure, including re testing efforts.
9. Photographs documenting the various phases of construction.

10. A detailed discussion of how the construction/installation effort met the requirements of the approved Final Design Report.
11. A certification meeting the requirements of 35 IAC 702.126 by an independent qualified, licensed professional engineer and by an authorized representative of the owner/operator.

6.0 PHASE IV OF THE CMP

Once the corrective measure has been constructed/installed, it must be operated, maintained and monitored in accordance with the approved plans and specifications (this is Phase IV of the CMP). During this period, quarterly reports must be submitted to the Illinois EPA documenting the results of these efforts. These reports include the following:

1. Introduction. -- A brief description of the facility operations, scope of the corrective measures project, and summary of the project objectives.
2. System Description. -- A description of the corrective measures constructed/installed at the site, and identify significant equipment. Describe the corrective measure and identify significant equipment.
3. Monitoring Results. -- A description of the monitoring and inspection procedures to be performed on the corrective measures. A summary of the monitoring results for the corrective measures, including copies of any laboratory analyses which document system effectiveness, provide a description of the monitoring procedures and inspections performed, and include a summary of the monitoring results for the corrective measure. Copies of all laboratory analytical results which document system monitoring must be provided.
4. Effectiveness Determination. -- Calculations and other relevant documentation which demonstrates the effectiveness of the selected corrective measure in remediating/stabilizing contamination to the extent anticipated by the corrective measures final design. Copies of relevant analytical data should be provided to substantiate this determination.
5. System Effectiveness Recommendation. -- Based upon the results of the effectiveness determination required under Item 4 above, recommendations on continued operation of the corrective measure must be provided. If the corrective measure is not performing in accordance with the final design, a recommendation on revisions or expansion of the system should be provided.

7.0 PHASE V OF THE CMP

Once all corrective measures have been completed, a report must be developed documenting all the efforts which were carried out as part of implementing the corrective measure and demonstrating, as appropriate, that the approved remediation objectives have been achieved. This report should contain a compilation of all previous reports and also contain sufficient information to demonstrate that the approved remediation objectives have been achieved. It must be noted that such a report will not be developed for a unit closed as a landfill until the post-closure care period has been completed.

8.0 PROCEDURES WHICH SHOULD BE FOLLOWED WHEN SOIL REMOVAL IS THE SELECTED CORRECTIVE MEASURE

Sections 2.0 through 6.0 above describe the procedures which should be followed when it is necessary to design some type of physical corrective measure (e.g., a final cover system, some type of treatment system, etc.). However, such detail is not necessary if excavation/removal is selected as the remedial action for the contaminated soil encountered at the site. In general, a work plan should be developed for this effort (for Illinois EPA review and approval) which fully describes each step to be used in removing the contaminated soil from the property. This includes a description of (1) the equipment utilized in the removal effort, (2) the pattern followed in removing the soil; (3) the depth to which the soil will be removed; (4) management of the soil on-site after it is removed from the ground; (5) loading areas; (6) the ultimate destination of the soil; and (7) any other steps critical to the removal effort.

One way to conduct a soil removal effort is to collect and analyze a sufficient number of soil samples to clearly determine the horizontal and vertical extent of soil contamination prior to conducting the soil removal effort. The boundaries of soil which must be removed are defined by the Illinois EPA established cleanup objectives for the project. Soil excavation must extend to sample locations where soil test results indicate that the remediation objectives are met. Closure verification sampling is not necessary in such cases, if a registered professional engineer oversees the soil removal effort and certifies that the remediation limits extend to these boundaries.

Another way to conduct a soil removal effort is to collect and analyze a limited number of soil samples prior to the soil removal effort and to rely mainly on field observation to determine the extent of the soil removal. In such cases closure verification sampling is necessary. Soil samples must be collected for analysis from the bottom and sidewalls of the final excavation. The following sampling/analysis effort is necessary to demonstrate that the remaining soil meets the established cleanup objectives:

1. A grid system should be established over the excavation.
2. Samples should be collected from the floor of the excavation at each grid intersection, including intersections along the perimeter of the excavation.

3. Samples should be collected at 6"-12" below the ground surface (bgs) along the excavation sidewalls at each grid intersection around the excavation perimeter. Samples must also be collected at the midpoint of the excavation wall at each grid intersection along the excavation perimeter.
4. Collection/analysis of all required samples must be in accordance with the procedures set forth in the approved plan.
5. Soil samples which must be analyzed for volatile organic compounds (VOCs) must be collected in accordance with the procedures set forth in Method 5035 of SW-846. In addition, such samples must be collected 6"-12" beneath the floor/sidewalls of the excavation to minimize the possibility of volatilization of the contaminants prior to the collection of the samples.
6. No random sampling may be conducted to verify achievement of cleanup objectives have been met.
7. Additional soil must be removed, as necessary, until it can be demonstrated that the remaining soil in and around the area of concern meets the established cleanup objectives. Additional samples must be collected and analyzed in accordance with the procedures described above from areas where additional soil has been removed.

ATTACHMENT F

CONSTRUCTION CERTIFICATION

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

**ATTACHMENT F
Construction Certification**

This statement is to be completed by both the owner/operator and the registered professional engineer upon completion of construction in accordance with 35 IAC Section 702.126. Submit one copy of the certification with original signatures and two additional copies. Forward these certification statements and any information required by the permit to the following address:

Illinois Environmental Protection Illinois EPA
Bureau of Land #33
Permit Section
1021 North Grand Avenue East
Springfield, Illinois 62702

FACILITY NAME: BP Products North America, Inc.

IEPA's SITE CODE: LPC #1191155009

U.S. EPA ID NO.: ILD980503106

PART B PERMIT LOG #145R2

PERMIT (OR MODIFICATION) ISSUANCE DATE:

PERMIT CONDITION NO. REQUIRING CERTIFICATION:

The _____ has been constructed in accordance with the specifications in the Permit. Documentation that the construction was in accordance with the permit is contained in the enclosed report. I certify under penalty of law that this document and all attachments were prepared under my direction of supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Owner/Operator

Name and Title

Signature of Registered P.E.

Name of Registered P.E. and
Illinois Registration Number

Date

(P.E. SEAL)

ATTACHMENT G

**CLOSURE, POST-CLOSURE AND CORRECTIVE ACTION COST ESTIMATE
SUMMARY**

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

ATTACHMENT G
CLOSURE, POST-CLOSURE, AND CORRECTIVE ACTION
COST ESTIMATE SUMMARY

These estimates are based on using 2020 dollars and include the cost of: (1) activities carried out each year (i.e., annual costs); and (2) one-time or non-annual costs. Post-closure care for Pond 1 Landfill requires the cost of the 30-year of post-closure care and one time certification cost. The East Surge Pond is currently operated to store nonhazardous wastewaters including the nonhazardous leachate from the adjacent onsite Permitted Non-Hazardous Waste Landfill in accordance with this permit. The ESP must be eventually closed in accordance with a plan approved by the Illinois EPA. The approved corrective action cost estimates account for costs associated with Parcels A, B, C, D, F, G, I, SWMU 7, PRS-1 and groundwater corrective action for the Riverfront facility.

COST ESTIMATES

ACTIVITY	Pond 1 Landfill (HWMU)	East Surge Pond	BP Riverfront SWMUs
Closure		\$538,420	
Post-Closure	\$2,364,068 in 2020 *		
SWMUs and Groundwater Corrective Action			\$10,359,514

ATTACHMENT H

POST-CLOSURE INSPECTION SCHEDULE

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

ATTACHMENT H
POST-CLOSURE INSPECTION SCHEDULE

Inspection Schedule

Post-closure inspections for the Pond 1 Landfill will be conducted on a weekly, quarterly and an after-storm event basis. Documentation of all inspections, surveys, repairs performed, or replacements required to properly maintain the facility will be recorded on the inspection logs/repair logs and stored as a part of the Operations, Maintenance, and Monitoring (OM&M) Manual. The OM&M Manual will be maintained at the BP Main Plant Office or a local Waste Management, Inc., office or storage facility. General post-closure inspection procedures will include the following:

1. Visually inspect the perimeter fence and all gates. Check for fence integrity and note any areas of damage. Note the working condition of each gate and check to ensure that all locks and other security systems are in place and functioning.
2. Visually inspect each benchmark. Report any missing benchmarks and note any damage to the benchmarks.
3. Visually inspect the landfill cover, drainage system, and surrounding areas. Note any evidence of cover erosion, settling, or vegetative stress. Also note any unusual conditions such as odors, ponded water, or bubbling. Report any areas requiring further inspection or repairs so arrangements can be made to efficiently make all necessary repairs.
4. Visually inspect each leachate collection riser and note any damage. Check and record the liquid level in each riser. If the liquid level is found to be approaching or above the maximum acceptable level, make arrangements for leachate removal. Record the amount withdrawn, if applicable.
5. Visually inspect each groundwater well protective casing for damage. Check the protective casing and lock to ensure they are functioning and have not been tampered with. Note area around wells for erosion, settling or negative stress.
6. Visually inspect any required safety and emergency equipment. Report missing and/or damaged equipment.
7. Visually inspect the run-on and run-off control measures. Note any erosion, missing riprap, or other disrepair.

Following each inspection, a copy of the inspection log will be sent to the appropriate BP personnel for review. Arrangements will also be made to repair or replace any items in order to maintain the site at a condition equal to that in the application.

Post-Closure Maintenance (Pond 1 Landfill)

Maintenance activities will respond to the needs determined from the inspections. Items that may require repair include:

- Flood Protection Dike;
- security control fencing;
- areas of differential settlement, subsidence and displacement;
- slopes damaged by erosion;
- run-on and run-off control structures;
- leachate collection systems; and
- benchmarks

Groundwater monitoring wells will be repaired or replaced as needed and will be decommissioned upon Illinois EPA approval.

The final cover system will be mowed at least annually and fertilized as needed (except for areas where shrubbery or other structures are present).

Corrective action for the cover materials will be taken if the following problems occur:

- ponding;
- cracks greater than one inch wide;
- gas problems;
- odor problems;
- larger areas of dead or stressed vegetation (areas greater than 50 square feet);
- vegetation with taproots growing in areas not designed to accommodate such;
- vector problems; or
- leachate pop outs or seeps.

Corrective action measures for these types of problems could include regrading, addition of soils to repair cracks or to eliminate ponding, or re-seeding to re-establish vegetation.

Maintenance (East Surge Pond)

Maintenance activities will respond to the needs determined from the inspections. Items that may require repair include:

- water level staff gauge;
- lift station pumps/ sumps;
- gates/ valves; culverts
- dredging
- dikes
- vegetation
- clay liner

Electronic Filing: Received, Clerk's Office 03/14/2024

R 001422

ATTACHMENT I

CERTIFICATION OF COMPLETION OF CLOSURE

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2



Illinois Environmental Protection Illinois EPA

CERTIFICATION OF COMPLETION OF RCRA CLOSURE

BP Products North American Inc./Riverfront Property (1191155009) – Madison County

USEPA ID: ILD980503106

RCRA Permit Log No. B-145R2

To meet the requirements of 35 IAC 725.215, this statement is to be completed by both a responsible officer of the owner/operator (as defined in 35 IAC 702.126) and by a qualified professional engineer upon completion of closure of the East Surge Pond (ESP). Submit one copy of the certification with original signatures and two additional copies.

The hazardous waste management unit, known as the East Surge Pond (ESP), at BP Products North American Inc./Riverfront Property has been closed in accordance with the specifications in the approved closure plan. A report documenting that closure has been carried out in accordance with the approved closure plan is attached.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS5/44(h))

Facility Name

Printed Name of Responsible Officer

Signature of Owner/Operator Date
Responsible Officer

Printed Title of Responsible Officer

Signature of Licensed P.E. Date

Printed Name of Licensed P.E. and
Illinois License Number

Mailing Address of P.E.:

Licensed P.E.'s Seal:

ATTACHMENT J

CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2



Illinois Environmental Protection Illinois EPA

CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

BP Products North American Inc./Riverfront Property (1191155009) – Madison County

USEPA ID: ILD980503106

RCRA Permit Log No. B-145R2

To meet the requirements of 35 IAC 724.220, this statement is to be completed by both a responsible officer of the owner/operator (as defined in 35 IAC 702.126) and by a qualified professional engineer upon completion of post-closure care of the Pond 1 Landfill. Submit one copy of the certification with original signatures and two additional copies.

The hazardous waste management unit closed as a landfill, known as the Pond 1 Landfill, has been closed in accordance with the specifications in the approved closure plan. Post-Closure care required for the Pond 1 Landfill has been provided and completed in accordance with the RCRA Permit. A report documenting that required post-closure care have been carried out and completed in accordance with the approved post-closure care plan is attached.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS5/44(h))

Facility Name

Printed Name of Responsible Officer

Signature of Owner/Operator Date
Responsible Officer

Printed Title of Responsible Officer

Signature of Licensed P.E. Date

**Printed Name of Licensed P.E. and
Illinois License Number**

Mailing Address of P.E.:

Licensed P.E.'s Seal:



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

R 001428

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397

JB PRITZKER, GOVERNOR

JOHN J. KIM, DIRECTOR

217/524-3301

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

BP Products North America, Inc.
Attention: Ms. Michelle Knapp
Liability Manager
301 Evans Avenue
P.O. Box 167
Wood River, Illinois 62095

Re: 1191155009 – Madison County
BP Products North American Inc./Riverfront Property
ILD980503106
Log No. B-145R2
RCRA Administrative Record
Permit Approval

Dear Ms. Knapp:

Enclosed is a final renewed Resource Conservation and Recovery Act (RCRA) Post-Closure Permit for BP Products North America, Inc. - Riverfront Facility (BP). The final permit decision is based on the administrative record contained in the Illinois EPA's files. The contents of the administrative record are described in Title 35 Illinois Administrative Code 705.211.

Please read the permit carefully. Failure to meet any portion of the permit could result in civil and/or criminal penalties. The only comments received on the draft renewed RCRA Post-Closure Permit were from BP. The Illinois EPA's responses to these comments are attached to this letter.

This action shall constitute the Illinois EPA's final action on the subject submittal. The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Illinois Environmental Protection Act by filing a petition for a hearing within thirty-five (35) days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed ninety (90) days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the applicant wishes to receive a 90-day extension, a written request that includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

For information regarding the request for an extension, please contact:

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

Illinois Environmental Protection Agency
Division of Legal Counsel
Attn: Land Enforcement Unit Manager
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276
217/782-5544

For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board, Clerk
State of Illinois Center
100 West Randolph, Suite 11 500
Chicago, IL 60601
312/814-3620

Any questions regarding groundwater issues, please contact Amy Butler, P.G. at 217/558-4716.
For all other questions, please contact Jacob Nutt at 217/524-7048.

Sincerely,

Jacqueline M. Cooperider, P.E.
Permit Section Manager
Bureau of Land

JMC:JDN:1191155009-RCRA-B145R2-approval.docx

Attachment: Illinois EPA's Response to BP's Comments
Renewed RCRA Post-Closure Permit

cc: Norberto Gonzalez, U.S. EPA – Region V
Emily Keener, U.S. EPA – Region V
Michael Hoffman, Wood Environment & Infrastructure Solutions, Inc

ILLINOIS EPA'S RESPONSE TO COMMENTS

BP Products North America, Inc.

Draft Renewed RCRA Post-Closure Permit

The responses below address comments received from BP Products North America, Inc. Riverfront Facility (BP) dated August 23, 2023, and received by Illinois EPA on August 24, 2023, pertaining to the draft renewed RCRA permit for BP issued on July 7, 2023. In addition, typographical errors were corrected throughout the permit as the Illinois EPA initiated changes.

BP'S COMMENTS TO THE FACT SHEET**BP Comment 1:**

Page 1 of 7 (Section II.A.): 1st paragraph, 4th and 5th sentences:

Please revise to clarify the property now owned by Kinder Morgan Phoenix Holdings, LLC (KMPH) is no longer a portion of the Main Plant facility. Please remove the detail regarding operations at the KMPH facility as it is no longer a portion of the Main Plant facility.

In addition, it was used for the management of refinery waste. Currently, Kinder Morgan Liquids Terminal LLC (KMLT) operates and Kinder Morgan Phoenix Holdings, LLC (KMPH) owns a storage and distribution facility for gasoline and petroleum distillates at a site which was formerly a portion of the Main Plant facility ~~but that~~ was sold to KMPH and will be subject to a separate RCRA Permit. ~~Distribution operations are managed via pipelines, aboveground storage tanks at the Main Plant, and barge operations on the Mississippi River.~~

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment. However, the Fact Sheet will not be included as a part of the final permit.

BP Comment 2:

Page 2 of 7 (Section II.B.): 2nd paragraph, 2nd sentence:

Please add references to the Main Plant facility and revise "riverfront property" to "Riverfront facility" for clarification.

The Riverfront facility is adjacent to, and its operation was associated with the former Amoco Refinery in Wood River. This 569-acre former refinery (Main Plant facility) is located due east of the Riverfront facility ~~riverfront property~~. Route 143, East Rand Avenue, South Sixth Street, and Illinois Route 3 bound the former refinery (Main Plant facility) on the north, south, east, and west sides, respectively.

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment. However, the Fact Sheet will not be included as a part of the final permit.

BP Comment 3:

Page 3 of 7 (Section III.A.1.): Table:

Please revise to clarify there are no sediments or soil with K048 above the ESP liner. Remove second closing parentheses.

<u>Description of Hazardous Waste & Waste Numbers</u>
<i>Sediments and soil <u>below the liner</u> contaminated with K048 – Dissolved air flotation (DAF) float from the petroleum refining industry</i>

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment. However, the Fact Sheet will not be included as a part of the final permit.

BP Comment 4:

Page 3 of 7 (Section III.A.1.): 2nd paragraph, 1st sentence:

Please revise to clarify treatment and placement of sludges into the landfills.

The majority of the sludges were removed and treated by the Chemfix process prior to placement in the Permitted Non-Hazardous Waste Landfill (PNWL, or Pond 5 landfill). However, the heavier hazardous sludges and the majority of the impacted soils in these ponds could not be placed in the PNWL and were subsequently removed and placed in the Pond 1 Landfill (this unit is further discussed below).

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment. However, the Fact Sheet will not be included as a part of the final permit.

BP Comment 5:

Page 3 of 7 (Section III.A.1.): 3rd paragraph, last sentence:

Please remove the word influent.

In the event this level is exceeded, ~~influent~~ water can be diverted to the Temporary Surge Basin or the West Surge Pond.

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment. However, the Fact Sheet will not be included as a part of the final permit.

BP Comment 6:

*Page N/A (Section III.A.2.): Pg. 11 through 18 of the pdf
Please remove duplicate Fact Sheet.*

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment. However, the Fact Sheet will not be included as a part of the final permit.

BP'S COMMENTS TO DRAFT PERMIT

BP Comment 7:

Page I-2 (Section I.C.): 1st paragraph, 4th and 5th sentences:

Please revise to indicate that Kinder Morgan Phoenix Holdings (KMPH) owns and Kinder Morgan Liquid Terminals LLC (KMLT) operates this former portion of the Main Plant facility.

Please revise to clarify that the property now owned by KMPH is no longer a portion of the Main Plant facility. Please remove the detail regarding operations at the KMPH facility as it is no longer a portion of the Main Plant facility.

Presently, Kinder Morgan Liquid Terminals LLC (KMLT) ~~owns~~operates, and Kinder Morgan Phoenix Holdings (KMPH) ~~operates~~owns, a storage and distribution facility for gasoline and petroleum distillates at a site which was formerly a portion of the Main Plant facility but was sold to KMPH and will be subject to a separate RCRA Permit ~~for gasoline and petroleum distillates~~. ~~Distribution operations are carried out via pipelines and aboveground tanks at the Main Plant.~~ The Main Plant and Riverfront facilities were owned by Amoco Oil Company until the company merged with BP in 1999.

Illinois EPA Response:

The Illinois EPA can accept the proposed changes, and the 1st paragraph of Section I.C. been revised as proposed.

BP Comment 8:

Page I-2 (Section I.C.): 3rd paragraph, 3rd sentence:

Please add a space after the “,” following (DAF) float in the third sentence of the third paragraph.

From 1977 to 1981, Amoco stored Dissolved Air Flotation (DAF) float, a listed hazardous waste, in Ponds 1, 1A, 2, 2A, 3, 3A and 4 of the former series of wastewater treatment ponds.

Illinois EPA Response:

The typographical error was corrected as proposed in the 3rd paragraph of Section I.C.

BP Comment 9:

Page I-3 (Section I.C.): Condition 2, 4th sentence:

Please add Permit reference to define “wastewater from the Main Plant.”

These wastewaters ~~include wastewater from the Main Plant are defined in Condition II.B.1, Wood River Wastewater Treatment Plant, and non-hazardous leachate from the Pond 5 landfill, also known as the Permitted Non-Hazardous Waste Landfill (PNWL).~~

Illinois EPA Response:

The Illinois EPA can accept the proposed changes, and Condition I.C.2 was revised as proposed.

BP Comment 10:

Page I-3 (Section I.C.): Last 2 paragraphs:

Please remove the second period at the end of the third sentence in the third paragraph.

In the first sentence of the fourth paragraph, revise the word “at” to “the” and revise to clarify corrective action is required at the facility. However, bp does have the option to remove a parcel from the Land Reuse program, whereby Corrective Action would only apply to SWMUs and PRSs and would not include recognized environmental conditions.

As part of the general corrective action program, the facility has been broken up into ten parcels and the SWMUs in each parcel have individual focus.

This permit allows/requires BP to carry out ~~at~~the following activities at the Riverfront facility: (I) continue storing/treating non-hazardous wastewaters in the ESP until closure activities begin;

(2) provide post-closure care for the Pond 1 Landfill; (3) conduct-corrective action, as appropriate, ~~on the recognized environmental conditions~~ at the facility; and (4) implement a groundwater monitoring/corrective action program.

Illinois EPA Response:

The Illinois EPA can accept the proposed changes.

The Illinois EPA disagrees with BP's comment that required corrective action only applies to SWMUs and PRSs. Any newly discovered contamination throughout the site must be addressed under the corrective action, which may be designated as an area(s) of concern. However, the proposed change to remove "on the recognized environmental conditions" does not have any impact on the corrective action requirements in Section I.C of the final permit. Thus, proposed changes were made as proposed in Section I.C.

BP Comment 11:

Page II-1 (Section II.A.): Third Paragraph, 2nd sentence:

Please add the word "to" between allowed and be.

Although some residual soil contamination may remain in the ESP during the delay of closure period, no new hazardous wastes are allowed to be placed in the unit.

Illinois EPA Response:

The Illinois EPA can accept the proposed changes, and Section II.A was revised as proposed.

BP Comment 12:

Page II-1 (Section II.B.): B. Condition 1, 1st sentence:

Please revise language to the 80-million-gallon capacity / 2-ft freeboard.

(a) Please add "industrial" sewage to account for process wastewater. Please add a "t" to BP "Main Plan."

(c) Please define or clarify "seepage water from the Riverfront facility."

The Permittee may only store/treat non-hazardous wastewaters ~~in~~ in total volume of 100 million gallons in the ESP subject to the terms of this permit including: (a) domestic and industrial sewage and commingled stormwater from the Cities of Wood River, Hartford, South Roxana, and also BP Main Plant and Riverfront facilities; (b) groundwater pumped as part of BP's hydraulic gradient control and subsurface hydrocarbon recovery program; and (c) recovered non-hazardous leachate from the PNWL and seepage water from the Riverfront facility.

Illinois EPA Response:

Regarding Item (a): The Illinois EPA corrected the typographical errors in Condition II.B.1. However, at this time, insertion of “and industrial” is not made to the final permit as requested. Section B.1.2 and Section E Addendum of BP’s application for this renewed permit did not include “industrial sewage” regarding the wastewater management at the East Surge Pond (ESP). If BP would like this requirement to be modified, BP may submit a request to modify the permit with a demonstration that managing “industrial sewage” at the ESP is appropriate and meets any consideration for the final order of the Adjusted Standard (AS-91-4) for delay of closure of the unit. In addition, based on the Illinois EPA’s further evaluation of the requirements of wastewater management at the ESP relative to BP’s comment, the Illinois EPA determined that the following additional language is necessary in Section II.B.1: “Any wastewater management activities at the ESP must meet all requirements by the Illinois EPA Bureau of Water, as necessary”.

Seepage water at the Riverfront facility would be water seeping naturally through subsurface soils to surface soils and ground-surface at the Riverfront facility.

Thus, Condition II.B.1 of the permit is revised to read:

The Permittee may only store/treat non-hazardous wastewaters in total volume of 100 million gallons in the ESP subject to the terms of this permit including: (a) domestic sewage and commingled stormwater from the Cities of Wood River, Hartford, South Roxana, and also BP Main Plant and Riverfront facilities; (b) groundwater pumped as part of BP’s hydraulic gradient control and subsurface hydrocarbon recovery program; and (c) recovered non-hazardous leachate from the PNWL and seepage water from the Riverfront facility. Any wastewater management activities at the facility at the ESP must meet all requirements by the Illinois EPA Bureau of Water, as necessary.

BP Comments 13 and 14:

Page II-2 (Section II.B.): Condition 2, a:

Please revise to clarify this sample is the first discharge of wastewater sent to the ESP from Pond 3A.

Please define required analytes or add reference to the Condition with requirements.

a. Collect/analyze a sample of the first discharge of wastewater from Pond 3A, ~~sent~~ to the ESP each quarter of the calendar year in accordance with Condition II.B.2.c.

Page II-2 (Section II.B.): Condition 2, b:

Electronic Filing: Received, Clerk's Office 03/14/2024

1191155009- BP Riverfront

Log No. B-145R2

Response to Comments - Page 7 of 34

As this is a new requirement, please confirm the following:

- 1) that PNWL leachate sampling is necessary;*
- 2) what actions are required if no PNWL leachate is generated/ discharged; and*
- 3) what documentation is required if no PNWL leachate is discharged.*

Please consider the proposed revision to require a quarterly sample of the PNWL leachate discharge as it is not possible to guarantee collection of the "first" PNWL leachate discharge.

Please revise the number formatting if the sample requirements apply to the samples required under both II.B.2.a and II.B.2.b. and add reference to II.B.2.c.

Please clarify if electronic records meet the definition of "operating record" throughout the Permit.

- b. Two composite samples of ~~the first~~ leachate discharge, one from the manifolded pipe of odd numbered sumps and one from the even numbered sumps of the PNWL, sent to the East Surge Pond each quarter of the calendar year in accordance with Condition II.B.2.c.*
- c. These samples must be analyzed for all the characteristics of hazardous waste set forth in 35 IAC 721, Subpart C. The results of these efforts must be documented in the facility's operating record.*

Illinois EPA Response:

In response to BP's comments above, the Illinois EPA has revised Conditions II.B.2 (a) and (b) as proposed and also added Conditions II.B.2 (c) (partially modified previous Condition II.B.2 (b)) and II.B.4 to ensure that any wastewater managed meets necessary requirements by the Illinois EPA Bureau of Water as follows and the constituents of concerns at the ESP are properly analyzed:

Condition II.B.2:

- a. Collect and analyze a sample of the discharge of wastewater from Pond 3A to the ESP each quarter of the calendar year in accordance with Condition II.B.2 (c).
- b. Collect ~~Two~~ (2) composite samples of ~~the first~~ leachate discharge: one from the manifolded pipe of odd numbered sumps; and one (1) from the even numbered sumps of the PNWL, sent to the ESP each quarter of the calendar year, when leachate is present at the PNWL in accordance with Condition II.B.2(c). If leachate is present at the PNWL but is not discharged to the ESP, then it must be noted in the analytical report included in the facility's operating record and annual report, as required in II.B.2 (c) below.
- c. ~~These samples must be analyzed for all the characteristics of hazardous waste set forth in 35 IAC 721, Subpart C.~~ The Permittee shall collect representative samples

of the discharge described in Conditions II.B.2 (a) and (b) above and analyze it for all the constituents listed in 35 IAC 724 Appendix I. The results of these efforts must be documented in the facility's operating record and reported to Illinois EPA annually. If it is found that the wastewater/leachate is hazardous, then:
<Conditions II.B.2 (b) (1) through (3) became Conditions II.B (c) (1) through (3)>

Condition II.B.4:

4. The Permittee must meet all applicable requirements of the Illinois EPA Bureau of Water, as necessary, regarding management of all wastewater at the facility in accordance with all applicable regulations for such activities.

BP Comment 15:

Page II-3 (Section II.C.): Condition 2:

Please clarify if there is an exception to the 2-foot freeboard requirement in the case of Force Majeure events.

A minimum of two feet of freeboard must be maintained at all times in the ESP. Illinois EPA may modify this requirement when it determines cause exists, such as Force Majeure or events over which the Permittee has no control.

Illinois EPA Response:

The Illinois EPA can accept the proposed change, and Condition II.C.2 was revised as proposed.

BP Comment 16:

Page II-3 (Section II.C.): Condition 3:

Please add period to last sentence.

This adjusted standard allows the Permittee to continue using the ESP for the storage/treatment of non-hazardous wastewaters until they decide to close the impoundment in accordance with 35 IAC 724.

Illinois EPA Response:

The typographical error was corrected as proposed in Condition II.C.3.

BP Comment 17:

Page II-4 (Section II.E.): Condition 3:

Please include reference to Illinois Administrative Code.

If the ESP is taken out of service for more than six months, then prior to returning to service, the Permittee shall obtain a certification from a qualified Professional Engineer registered in the State of Illinois that the surface impoundment and the flood-protection dike, including that portion of any dike which provides freeboard, have structural integrity in accordance with 35 IAC 724.326(c).

Illinois EPA Response:

The Illinois EPA can accept the proposed change, and Condition II.E.3 was revised as proposed.

BP Comment 18:

Page II-4 (Section II.F.): Condition 1, 2nd and 3rd sentences:

Please clarify or define “non-closure activity.”

The proposed schedule for closure of the ESP required in this section must include and consider any additional non-closure activities associated with the ESP. Any additional non-closure activities associated with the ESP must commence at least five (5) years prior to the expiration of this permit so that the required RCRA closure activities of the ESP may commence prior to the expiration date of this permit unless approved otherwise by Illinois EPA.

Illinois EPA Response:

Non-closure activities in this regard are activities which may impact the ESP but are not required RCRA interim status closure activities for the ESP. For example, re-routing stormwater from on- and off-site areas to be managed elsewhere than the ESP may be a non-closure activity. It has a direct impact on the operation of the ESP and essentially for the ESP closure activities. However, the action of re-routing of stormwater itself is not a required RCRA closure activity (thus non-closure activity) while removing any existing water in the ESP would be considered a part of closure activity. No changes were made to Condition II.F.1.

BP Comment 19:

Page II-4 (Section II.F.): Condition 2, 4th sentence:

Please capitalize “p” in Environmental Protection Act.

Illinois EPA review of this plan will be subject to the permit appeal provisions contained in Sections 39(a) and 40(a) of the Illinois Environmental protection Act.

Illinois EPA Response:

The typographical error was corrected in Condition II.F.2.

BP Comment 20:

Page II-6 (Section II.F.): Condition 5, i:

Please add a “;” between geologic cross-sections and groundwater monitoring data.

As appropriate and available: boring logs; well construction diagrams; geologic cross-sections; groundwater monitoring data; and information about any groundwater remediation effort.

Illinois EPA Response:

The typographical error was corrected in Condition II.F.5 (i).

BP Comment 21:

Page III-2 (Section III.B.): Condition 4:

Please revise description of cover system to include the Geotextile fabric layer between the 1-ft thick compacted clay layer and the geonet drainage layer.

The cover system on the top of the Pond 1 landfill is constructed of the following layers, specified from the top to bottom:

- a. One foot thick protective soil cover;*
- b. One foot thick compacted clay layer;*
- ~~b.c.~~ Geotextile fabric;*
- ~~c.d.~~ A geonet drainage layer;*
- ~~d.e.~~ 60 mil HDPE geomembrane liner; and*
- ~~e.f.~~ Two foot thick compacted clay layer.*

Illinois EPA Response:

The typographical errors were corrected in Section III.B.4.

BP Comment 22:

Page III-3 (Section III.B.): Condition 5, b:

Please revise to include exception for delisting.

Any material removed from the Pond 1 Landfill during future activities must be managed as a hazardous waste in accordance with 35 IAC Subtitle G: Waste Disposal unless material has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.

Illinois EPA Response:

The Illinois EPA can accept the proposed change, and Condition III.B.5 (b) was revised as proposed.

BP Comment 23:

Page III-5 (Section III.D.): Condition 4, 1st sentence:

A recent inspection of the benchmark locations at the Riverfront facility could not locate the markers; please consider the proposed revision.

The Permittee shall inspect the benchmarks used to identify the location of the hazardous waste management units (HWMUs) and solid waste management units (SWMUs) within 60 days of the effective date of this permit and thereafter in accordance with the Inspection Schedule in the approved permit application. If benchmarks cannot be located or confirmed, then the Permittee shall have the appropriate benchmark(s) reestablished by a licensed surveyor within 90 days of the effective date of this permit.

Illinois EPA Response:

Based on BP's comment regarding not being able to locate previous benchmarks, in addition to BP's proposed language, Illinois EPA has added additional requirements to: (1) evaluate, as much as possible, and document any noticeable changes in the ground elevation in general and any settlement of the unit; and (2) maintain the benchmarks as a part of post-closure care of the unit. Thus, Condition II.D.4 in the final permit will read:

The Permittee shall inspect the benchmarks used to identify the location of the hazardous waste management units (HWMUs) and solid waste management units (SWMUs) within 60 days of the effective date of this permit and thereafter in accordance with the Inspection Schedule in the approved permit application.

If benchmarks cannot be located or confirmed, then the Permittee shall have the appropriate benchmark(s) reestablished by a licensed surveyor within 90 days of the effective date of this permit. Furthermore, the Permitted must: (1) evaluate, as much as possible, and document any noticeable changes in the ground elevation in general and any settlement of the unit; and (2) maintain the benchmarks as a part of post-closure care of the landfill.

BP Comment 24:

Page III-6 (Section III.E.): Condition 1:

Please clarify if electronic records meet the definition of “written operating record.”

The Permittee shall keep and maintain a written operating record that includes all the records, reports, notifications, monitoring data, testing or analytical data, and corrective action data required by 35 IAC 724.173 and the conditions in this permit, for the entirety of the post-closure care period. The operating record shall be kept on-site at the facility and available for Illinois EPA review.

Illinois EPA Response:

Keeping electronic records that can be printed meets the definition of “written operating record”. If any operational record is requested by the Illinois EPA, a written (paper copy) record must be available. No changes were made to Condition III.E.I based on this comment.

BP Comment 25:

Page III-6 (Section III.E.): Conditions 4 and 5, 2nd sentence:

Please remove references to “run-on control system” and “run-off management system” as the landfill is not active; or define and clarify when applicable to the Pond 1 Landfill.

4. The Permittee shall prevent run-on from eroding or otherwise damaging the final cover. ~~At a minimum, the run-on control system shall be capable of preventing flow onto the active portion of the landfill during peak discharge from a 24 hour, 25-year storm event.~~

5. The Permittee shall prevent run off from eroding or otherwise damaging the final cover. ~~At a minimum, the run-off management system shall be capable of collecting and controlling the volume of water resulting from a 24 hour, 25-year storm event.~~

Illinois EPA Response:

Both run-on and run-off stormwater must also be managed at the Pond 1 Landfill to prevent any future erosion and damage to the final cover. Run-on and run-off storm water is especially a concern during a peak discharge from a 24-hr, 25-year (or more intense) storm event. Thus, such a stormwater management system for the landfill must be in-place to prevent any damages to the final cover and other component of the Pond 1 Landfill. Thus, no changes were made to Conditions III.E.4 and 5.

BP Comment 26:

Page III-6 and III-7 (Section III.E.): Condition 7:

Please consider the following:

The Pond 1 Landfill does not have a current permanent pumping system for leachate extraction. Leachate is removed via vacuum truck. A draft delisting petition for the Pond 1 Landfill leachate has been submitted for review by Illinois EPA prior to submittal to the Illinois Pollution Control Board (IPCB). bp proposes to submit a Compliance Plan to Illinois EPA within 30 days of IPCB approval or denial of this petition, proposing a schedule to comply with the requirements, as applicable.

Please consider revising to require a camera survey of the collection risers and sump every 10 years to inspect and determine if sediment removal is needed.

7. The Permittee submitted a draft delisting petition dated June 30, 2023 for review by Illinois EPA prior to submittal to the Illinois Pollution Control Board. Within 30 days of Illinois Pollution Control Board approval or denial of this petition, the Permittee shall submit a Compliance Plan to Illinois EPA, proposing a schedule to comply with the requirements stated below, as applicable.:
 - a. The Permittee shall ~~m~~Install and maintain ~~the~~ leachate collection system (LCS) with pumps, and leak detection system (LDS) in accordance with the design plans and specifications contained in the Illinois EPA approved ~~permit application~~ Compliance Plan and the conditions in this permit. ~~The permittee shall:~~
 - b. The LCS will maintain leachate levels within the collection risers at a depth such that leachate does not exceed one (1) foot above the liner.
 - c. Remove and clean the pumps from the LCS and LDS at least once every year.
 - d. Every 10 years, the permittee will use a camera to inspect the collection risers and sump for sediment build-up. If 10% or more of the screened interval is silted-in, the permittee shall ~~R~~remove sediment from the ~~LCS and LDS~~ collection riser ~~pipes~~ and sumps using a high-pressure jet or equivalent method ~~at least once every 10 years.~~
 - e. Install and operate ~~within 30 days of the effective date of this permit,~~ a leak detection alarm system to alert when the level of leachate reaches one (1) foot as described in Condition III.E.11 (b).

Illinois EPA Response:

The Illinois EPA partially concurs with BP's comment. Any changes to the compliance requirements as a result of BP's delisting petition to the Illinois Pollution Control Board may be submitted as a permit modification request to the Illinois EPA. Condition III.E.7 (a) was revised to reflect BP's comment regarding future revisions in the current LCS and LDS. Condition III.E.7 (b) was revised as proposed by BP. Condition III.E.7 (c) was not

revised as the Illinois EPA determined that a leak detection alarm should be in place at the facility as a necessary safety measure for operating the Pond 1 Landfill. Finally, the requirements in Condition III.E.7 (d) were inserted as requested by BP. Thus, Condition III.E.7 was revised to read:

7. The Permittee shall maintain the leachate collection system (LCS), and leak detection system (LDS) in accordance with the design plans and specifications contained in the approved permit application and the conditions in this permit. The permittee shall:
 - a. ~~Remove and clean the pumps from LCS and LDS must be at least once every year~~ Manage leachate collected in LCS and LDS in accordance with Condition III.E.9 below until an alternative compliance plan is approved by Illinois EPA to install a new LDS with a permanent pumping system and LDS. Any pumps from the LCS and LDS must be removed on cleaned at least once every year, as applicable.
 - b. Every 10 years, the Permittee will use a camera to inspect the collection risers and sump for sediment build-up. If 10% or more of the screened interval is silted-in, the permittee shall Remove sediment from the ~~LCS and LDS~~ collection ~~riser~~ pipes and sumps using a high-pressure jet or equivalent method at least once every 10 years.
 - c. Install and operate within 30 days of the effective date of this permit, a leak detection alarm system to alert when the level of leachate reaches one (1) foot as described in Condition III.E.11 (b).
 - d. The LCS will maintain leachate levels within the collection risers at a depth such that leachate does not exceed one (1) foot above the liner.

BP Comment 27:

Page III-7 (Section III.E.): Condition 10, a and b:

As this is a new requirement, and the Permittee has conducted previous rounds of leachate characterization sampling to support a delisting petition, please clarify or revise based on the following:

In lieu of analyzing annual samples for the 35 IAC 724 Appendix I parameters for the first four years, bp proposes to analyze the first annual sample for the Appendix I parameters and submit these results to Illinois EPA along with results from previous samples collected by bp and/or the Publicly Owned Treatment Works (POTW) that collectively comprise the 35 IAC 724 Appendix I parameters, and use these results to propose a Reduced List for Illinois EPA approval, then subsequent implementation during the second annual sampling event.

The permittee shall collect a representative sample of leachate from the landfill and analyze it for all the constituents listed in 35 IAC 724 Appendix I. These samples shall be collected and analyzed annually in accordance with the sampling and test methods specified in the approved permit application. The results of the leachate quality testing data shall be submitted and maintained in the facility's operating record and submitted to the Illinois EPA by July 15 each year.

- a. *The Reduced List will be based on the four most recent complete 35 IAC 724 Appendix I analyses and include all parameters detected in any of the four Appendix I analyses. Starting the next sampling event after Illinois EPA approval, this Reduced List will be used in lieu of the Appendix I analysis for three out of four years, with the fourth-year reverting to a full Appendix I analysis. Any parameters not included on the existing Reduced List that are detected in the fourth-year Appendix I analysis shall be added to all future Reduced List analyses by means of a permit modification request. This cycle of three years of Reduced List, followed by one year of Appendix I analysis, will repeat for the remainder of the post-closure period.*
- i. *For the first cycle, the Permittee may utilize results from the first annual sample analyzed for all Appendix I parameters in conjunction with previous results from samples collected by the Permittee and/or the Publicly Owned Treatment Works (POTW) that collectively comprise the Appendix I parameters, if available, to propose the first Reduced List for Illinois EPA approval.*

Illinois EPA Response:

The requested changes to Condition III.E.10 (a) by BP were not made as the Long Term Stewardship (LTS) consideration for the Pond 1 Landfill was made to include the subject condition. As the Pond 1 Landfill remains under post-closure care as long as the hazardous waste and associated risks remain in place, the only mechanism for detecting any hazardous constituent released from the landfill waste is to sample its leachate. The Illinois EPA currently has no information to ensure that the proposed four (4) years of sampling of leachate would demonstrate that the same condition of the containment system and the absence of risks would continue in perpetuity. Until such time that an appropriate demonstration can be made to the Illinois EPA that reduction of the parameters in sampling leachate represents the actual conditions of the waste materials managed in the landfill and future risks associated with the Pond 1 Landfill, this condition must be met. It should be noted that the Permittee is allowed to make such demonstration through a permit modification request to the Illinois EPA for its review and approval.

BP Comment 28:

Page II-8 (Section III.E.): Condition 11, b:

Please consider the following:

A draft delisting petition for the Pond 1 Landfill leachate has been submitted for review by Illinois EPA prior to submittal to the Illinois Pollution Control Board. A 30-day deadline from the date of approval or denial of the delisting petition is requested for submittal of a Compliance Plan for implementation of any leachate management systems and adherence to Condition III.E.11.b.

In accordance with the Compliance Plan referenced in Condition III.E.7, ~~leachate~~ shall be removed from the collection risers as necessary to ensure the leachate depth over the liner does not exceed one (1) foot (or approximately at Elevation 403' above mean sea level (MSL) for LCS).

Illinois EPA Response:

The Illinois EPA can accept the proposed changes. Condition III.E.11 (b) was revised to read:

- b. In accordance with an alternative Compliance Plan, if approved by the Illinois EPA as referenced in Condition III.E.7, leachate shall be removed from the collection risers as necessary to ensure the leachate depth over the liner does not exceed one (1) foot (or approximately at Elevation 403' above mean sea level (MSL) for LCS).

BP Comment 29:

Page II-8 (Section III.E.): Condition 11, c:

Please revise to include exception for delisting.

All leachate removed from the LCS and LDS shall be managed as a hazardous waste unless leachate has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.

Illinois EPA Response:

The Illinois EPA can accept the proposed change, and Condition III.E.11 (c) was revised as proposed.

BP Comment 30:

Page III-8 (Section III.F.): Condition 3:

Please confirm this new data reporting requirement is necessary. If so, please consider allowing this data to be reported in the quarterly Corrective Action Progress Report required in Condition V.J.1 rather than a standalone report.

The leachate quantity and quality data required by Conditions III.E.10 and III.E.11 for the LCS and LDS shall be submitted to the Illinois EPA Bureau of Land Permit Section as part of the Leachate Data Quarterly Monitoring Report in accordance with the following schedule.

<u>Data Collected</u>	<u>Results/ Report Submitted by:</u>
January – March	May 1
April – June	August 1
July – September	November 1
October – December	February 1

Illinois EPA Response:

The Illinois EPA is confirming that leachate monitoring report is necessary as required in Conditions III.E.10 and III.E.11. As this is not a part of corrective action required under 35 IAC 724.201, a separate reporting must be made for the leachate data. However, the Permittee may submit the leachate data within the groundwater report required in Condition IV.I.14. Thus, Condition III.F.3 was revised as below:

- The leachate quantity and quality data required by Conditions III.E.10 and III.E.11 for the LCS and LDS shall be submitted to the Illinois EPA Bureau of Land Permit Section as part of the Leachate Data Quarterly Monitoring Report semi-annually in accordance with the following schedule.:- This Leachate Data Quarterly Monitoring Report may be combined with the groundwater monitoring report required in Condition IV.I.14.

<u>Data Collected</u>	<u>Results/ Report Submitted by:</u>
January – March	August 1 May 1
April – June	August 1
July – September	February 1 November 1
October – December	February 1

BP Comment 31:

Page III-9 (Section III.F.): Condition 6:

Please clarify the number of copies required. This Condition states that an original and one (1) copy is required for this report whereas Condition IV.I.12 states that one (1) original and a minimum of two (2) copies are required for each notice or report submitted to the Illinois EPA.

Please confirm that this new reporting requirement for graphical representations of leachate removal volumes and liquid level elevations should start with the data generated following the effective date of the permit.

- The permittee shall submit an original and one (1) copy of each Leachate Data Quarterly Monitoring Report required in Condition III.F.3 above.*

- a. *A graphical representation of the volumes of leachate removed from the LCS and LDS each month. The leachate generation rates (gallons/month) from the LCS and LDS shall be presented on the same graph. The scale of the abscissa (time) shall be such that no more than one year of data (starting with January each year) is presented on each sheet of paper.*
- b. *A graphical representation of the elevations of the liquid level in the collection risers for the quarter. For each measurement, the graph needs to identify the following: the elevation of leachate over time, elevation of the top of liner, and elevation of the bottom of the cover system all in feet above MSL.*

Illinois EPA Response:

The Illinois EPA re-evaluated this condition, Condition III.E.3, and Condition IV.E.14 and made the following changes to Condition III.F.6 to: (1) require semi-annual reporting of the quarterly sampling BP has been conducting; and (2) allow for combining the Leachate Data Quarterly Monitoring Report within semi-annual groundwater monitoring reports for the Pond 1 Landfill:

6. The permittee shall submit one (1) an original paper copy and one (1) copy of each Leachate Data Quarterly Monitoring Report required in Condition III.F.3 above. A Leachate Data Quarterly Monitoring Report may be combined with a groundwater monitoring report required in Condition IV.I.14. In addition to the electronic data, each report must include:

BP Comment 32:

Page IV-1 (Section IV.A.): Condition 1, 1st sentence:

Please revise to match language in current Permit.

Condition 1, 3rd sentence:

Please revise to match language from current Permit.

Control of groundwater flow in the uppermost aquifer such that groundwater flow in the Riverfront Groundwater Management Zone is towards the interior of the ~~of the contaminated groundwater is towards the interior of the~~ BP Main Plant facility.

Such flow control is necessary as a corrective action to prevent contaminant migration of address contaminants in groundwater from on-site releases of product or waste, beyond the boundaries of the ~~at the~~ BP Riverfront facility and is the basis for the establishment of a Groundwater Management Zone (GMZ).

Illinois EPA Response:

The Illinois EPA can accept the proposed changes, and Condition IV.A.1 was revised as proposed.

BP Comments 33 and 34:

Page IV-2 (Section IV.C.): Condition 1, 2nd sentence:

Please revise to reference the figure showing the well network for the approved optimized Groundwater Corrective Action Monitoring Program.

The location of these wells is specified in Figure C-27 of the approved permit application.

Page IV-2 and IV-3(Section IV.C.): Condition 1:

Please revise well construction information to match what was provided in permit renewal application replacement pages.

Please move IEPA Well No. LOD5 from the gauging and semi-annual sampling network to the gauging and annual sampling network to align with the approved optimized Groundwater Corrective Action Monitoring Program.

Please revise IEPA Well No. RL17B to L17B to meet 4-digit requirement and prevent confusion IEPA Well No. RL-17. Currently, IEPA Well No. RL17B is truncated to RL17 in Storet EDD files submitted to Illinois EPA.

Please revise Facility Well No. SUMP-2 to SUMP-8 for IEPA Well No. G512 included in the well network approved in the optimized Groundwater Corrective Action Monitoring Program.

Please correct miscellaneous typos as noted.

<u>IEPA Well No.</u>	<u>Facility Well No.</u>	<u>Area</u>	<u>Well Depth (ft-bgs)</u>	<u>Well Depth Elevation (ft MSL)</u>	<u>Well Screen Interval (ft MSL)</u>
<u>GMZ Boundary Wells (Gauging and Semi-Annual Sampling Network²)</u>					
G66D	RL-6C	ESP	70.00	361.38	366.38-361.38 ^H
G103	RL-3	P1LF	39.00	386.27	396.4327-386.27 ^C
G106	RL-6	ESP	45.28 44.00	385.29 386.57	395.15-385.29 396.57-386.57 ^C
G107	RL-7	ESP	39.00	388.36	398.5936-388.36 ^C
G113	SWMU-14/MW-14A	Parcel C	53.30 51.94	369.64 371.00	378.20-369.64 381.00-371.00 ^H

Electronic Filing: Received, Clerk's Office 03/14/2024

1191155009- BP Riverfront

Log No. B-145R2

Response to Comments - Page 20 of 34

G114	SWMU-14/MW-15	Parcel C	56.00	364.46	374.6546-364.46 ^H
LOD1	LOD-1	LOD	31.40 <u>00</u>	393.48 <u>58</u>	403.3258-393.4858 ^C
LOD2	LOD-2	LOD	41.20 <u>00</u>	379.95 <u>380.15</u>	390.02-379.95 390.15-380.15 ^C
LOD5	LOD-5	LOD	28.50	393.61	401.87-393.61 ^E
LOD7	LOD-7	LOD	28.50 <u>29.14</u>	391.84 <u>20</u>	401.20-391.841.20 ^C
RL17B	RL-17B	LOD	55.00 <u>54.84</u>	363.82 <u>98</u>	373.98-363.8298 ^H
Observation Monitoring Wells (Gauging and Annual Sampling Network²)					
G35L	C-25B	ESP	57.00 <u>56.82</u>	370.82 371.00	378.00-370.82 373.00 ^H
G104	RL-4	P1LF	39.00 <u>36.00</u>	385.25 388.25	398.54-385.25 398.25-388.25 ^C
G115*	RL-15	WSP	52.00	376.18	380.51 381.18- 376.18 ^H
G116	RL-16	WSP	52.00	375.35	379.08 380.35- 375.35 ^H
G119	RL-19	ESP	41.10 <u>40.00</u>	389.53 391.80	405.36-389.53 406.80-391.80 ^C
G401	T-1	WSP	41.50	370.86 380.86	379.76-370.86 385.86-380.86 ^H
LOD5	LOD-5	LOD	30.24	391.87	401.87-391.87 ^C
R21L	RL-21BR	WSP	56.00 <u>54.01</u>	367.93 369.92	372.60-367.93 374.92-369.92 ^H
R529	P-29R	LOD	47.00 <u>48.61</u>	373.91 372.30	382.30-373.91 372.30 ^H
IEPA Well No.	Facility Well No.	Area	Well Depth (ft-bgs)	Well Depth Elevation (ft MSL)	Well Screen Interval (ft MSL)
Observation Monitoring Wells (Annual Sampling Only Network³)					
R21D	RL-21CR	WSP	71.00 <u>70.24</u>	352.82 353.58	356.90-352.82 358.58-353.58 ^H
LOD6	LOD-6	LOD	28.50	393.20	403.40-393.40 ^C
LOD9	LOD-9	LOD	28.50	394.12	404.12-394.12 ^C
Observation Monitoring Wells (Gauging Only Network⁴)					
G030	C-20	TF	35.00 <u>39.10</u>	390.37 386.27	400.35-390.37 406.27-386.27 ^C
G033	C-23	POTW	35.00	393.54	403.55-393.55 ^C
G037	C-27	PNWL	34.00	393.94	404.04-393.94 ^P
G038	C-28	PNWL	35.69	393.70	403.90-393.80 ^P

G090	G090	PNWL	48.00	378.61	383.74-379.16 ^H
G091	G091	PNWL	66.50	359.14	382.27-377.69 ^H
G102	RL-2	LOD	34.0	388.78	398.78-388.78 ^C
G109	RL-9	ESP	39.00	388.45	398.45-388.45 ^P
G36R	C-26R	PNWL	34.4	392.18	402.48-392.48 ^P
G411	S-1	WSP	41.60	376.83	386.83-376.83 ^H
R034	C-24R	ESP	35.24	393.64	403.88-393.88 ^C
R66L	RL-6BR	ESP	55.30	377.06	382.16-377.06 ^H
G503	PANC-UP01	Parcel A	39.50	378.55	388.75-378.75 ^H
G504	PANC-UP02	Parcel A	39.00	372.06	382.06-372.06 ^H
G505	PANC-UP05	Parcel A	37.10	389.61	399.61-389.61 ^C
G506	PANC-UP09	Parcel A	27.30	389.29	399.49-389.49 ^C
G507	PANC-UP11	Parcel A	37.30	388.62	398.82-388.82 ^C
G508	SWMU4-MW01	Parcel A	30.98	395.10	405.10-395.10 ^P
G509	SWMU4-MW03	Parcel A	29.41	389.24	405.90-395.90 ^P
G510	SWMU4-MW04	Parcel A	32.62	388.96	405.57-395.57 ^P
Observation Monitoring Wells (LNAPL Monitoring Network⁵)					
G105	RL-5 <u>RL-5</u>	ESP	34.00	388.28	398.28-388.28 ^C
G512	SUMP-28	Parcel C	+	+	409.05-406.35 ^P
Observation Monitoring Wells (Sentinel Wells⁶)					
G511	SWMU4-MW02	Parcel A	26.43	392.67	402.67-392.67 ^C
LOD1 ²	LOD-1	LOD	31.4000	393.48 393.58	403.32-393.48 403.58-393.58 ^C
LOD2 ²	LOD-2	LOD	41.2000	379.95 380.15	390.02-379.95 390.15-380.15 ^C
G029 ⁷	C-19R	MP	24.52	393.98	404.31-394.31 ^C
G056**	G-16	MP	30.00	395.54	415.54-395.54 ^P
<u>IEPA Well No.</u>	<u>Facility Well No.</u>	<u>Area</u>	<u>Well Depth (ft-bgs)</u>	<u>Well Depth Elevation (ft MSL)</u>	<u>Well Screen Interval (ft MSL)</u>
G057 ⁸	G-17	MP	35.02	391.90	411.90-391.90 ^C
G058 ⁸	G-18	MP	36.00	391.27	411.27-391.27 ^C
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				

Illinois EPA Response:

The Illinois EPA can accept the proposed changes, and Condition IV.C.1 has been updated accordingly. However, the following Illinois EPA comments apply:

The difference in well details for G401 and G030 are greater than expected. While changes were made to reflect the most current information, the following requirement has been added to the Special Conditions section to require further reporting regarding this difference. Thus, Condition VI.C.9 has been added to the Special Conditions section of the final permit to require the following:

9. Provide a summary in the next semi-annual groundwater monitoring report required by Section IV which discusses the results of the recent well integrity efforts performed site-wide at the Riverfront facility, and explain specific to wells G401 and G030 why the changes in well depths and/or screened interval occurred since the previous survey. If reasons are unknown, submit a workplan as a Class 1* permit modification within ninety (90) days to investigate the well integrity.

BP Comment 35:

Page IV-7 (Section IV.D.): Condition 1:

Please revise the Depth to Water units to Ft below ground surface (bgs) and Ft below top of casing (bTOC).

Please revise hazardous constituents list and footnotes to align with the approved optimized Groundwater Corrective Action Monitoring Program.

Please revise arsenic concentration limit to align with 35 IAC 620, Class I, Groundwater Quality Standards (GQS). Note that the historical drinking water standard for arsenic was 0.05 mg/L; however, the USEPA reduced the standard to 0.01 mg/L in 2006.

Depth to Water (below land <u>ground</u> surface)	72109	Feet <u>bgs</u>
Depth to Water (below measuring point <u>top of casing</u>)	72109	Ft bgs <u>bTOC</u>

<u>Hazardous</u> <u>Constituents</u>	<u>Storet No.</u> <u>(Total)</u>	<u>Storet No.</u> <u>(Dissolved)</u>	<u>Concentration</u> <u>Limits (mg/L)</u>
Arsenic*	01002	01000	0.0 <u>1</u> 5
Barium	01007		2.0
Cadmium	01027		0.005
Chloride	00940	00941	200.0
Chrysene	34320		0.1
Lead*	01051	01049	0.0075

Sulfate	00945	400.0
Benzene	34030	0.005
Benzo(b)fluoranthene	34230	0.00018
Bis(2-ethylhexyl) phthalate	39100	0.006
Carbon Disulfide	81309	0.7
Ethylbenzene	78113	0.7
Toluene	34010	1.0
Total Xylenes	34020	10.0
Methyl Tertiary-Butyl Ether	46491	0.07
Phenols	46000	0.1

* = Constituents that must be sampled for both dissolved and total concentrations.

= Constituents that must be sampled annually.

1 = To monitor natural attenuation conditions.

Illinois EPA Response:

The following comments apply:

1. The Illinois EPA can accept the recommendation to reduce the concentration limit for arsenic to 0.01 mg/L and add biogeochemical parameters, while the following recommendations to Condition D.1 of Section IV cannot be approved:
 - a. The “List of STORET Numbers” available on the Illinois EPA website indicates the numbers 72019 and 72109 are associated with the information listed below; therefore, language will not be revised:

72019	DEPTH TO WATER LEVEL (FEET BELOW LAND SURFACE)	DEPTH-FT TO WATER BL L S
72109	DEPTH TO WATER LEVEL FROM A MEASURING POINT (FEET)	DEPTH TO WATER FR MP FT

- b. Due to the Groundwater Corrective Action Program being tied to a landfill, Condition IV.D.4 applies, and the constituents will remain on the hazardous constituents list in IV.D.1 at this time. Condition IV.D.4 states:
4. Prior to removal of any constituents identified in Condition IV.D.1, the facility must present leachate analytical results from the Pond 1 landfill to demonstrate these constituents are not present in leachate. Therefore, to request removal of barium, cadmium, sulfate, benzo(b)fluoranthene, carbon disulfide, total xylenes, and phenols, present a demonstration these

constituents are not present in leachate. A leachate demonstration is also necessary to reduce the sampling frequency for chloride.

BP Comment 36:

Page IV-7 (Section IV.D.): Condition 2, a:

Please add Condition 2.a.i. to include language referencing the proposed site-specific GQS for arsenic. bp submitted a Site-Wide Inorganics and Metals (SWIM) Evaluation Report dated January 25, 2022 for both the Riverfront and Main Plant facilities in which it was demonstrated that increases in dissolved-phase inorganics may be due to naturally occurring fluctuations or other external influences; and that these fluctuations may exceed the established Class 1 GQS. The SWIM evaluation determined that arsenic is present in the uppermost aquifer at background concentrations that exceed the Class 1 GQS of 0.01 mg/L. bp proposed that a site-specific GQS for arsenic be established at a concentration of 0.036 mg/L.

i. — The Permittee submitted a Site-Wide Inorganics and Metals Evaluation Report dated January 25, 2022, proposing a site-specific groundwater quality standard of 0.036 mg/L for arsenic pending approval by the Illinois EPA.

Illinois EPA Response:

The proposed addition to Condition IV.D.2 (a) describing the pending review related to an arsenic value will not be added since the referenced report and arsenic value has not been reviewed and/or approved. The groundwater must meet the arsenic value established in 35 Ill. Adm. Code, Part 620. Thus, no changes were made to Condition IV.D.2 (a).

BP Comment 37:

Page IV-9 (Section IV.E.): Condition 3, b, 1st sentence:

Please revise “daily” to “each business day.”

The pumping rate from each Gradient Control Well (COD well) shall be recorded ~~daily~~each business day.

Illinois EPA Response:

The Illinois EPA can accept the recommendations, and the first sentence of Condition IV.E.3.b was revised as proposed.

BP Comment 38:

Page IV-10 (Section IV.E.): Condition 6:

Please revise to clarify “groundwater flow rate” and/or confirm this is a reference to seepage velocity in ft/day.

The Permittee shall determine the groundwater flow rate (i.e., seepage velocity in ft/day) and direction in the uppermost aquifer at least annually from the monitoring wells listed in Condition IV.C.1.

Illinois EPA Response:

The Illinois EPA can accept the proposed change, and Condition IV.E.6 was revised as proposed.

BP Comment 39:

Page IV-10 (Section IV.E.): Condition 8:

Please revise the reference.

The GMZ Boundary Wells and Observation Monitoring Wells listed in Condition IV.C.1 shall be monitored for the constituents listed in Condition IV.~~E~~D.1.

Illinois EPA Response:

The Illinois EPA can accept the proposed change, and Condition IV.E.8 was revised as proposed.

BP Comment 40:

Page IV-13 (Section IV.I.): Condition 12:

Please clarify the number of copies required. This Condition states that one (1) original and two (2) copies are required while Condition III.F.6 states one (1) original and one (1) copy is required for the Leachate Data Quarterly Monitoring Report. Please note bp’s preference is to mail one (1) original copy and send electronic copies for all Illinois EPA CCs.

The Permittee shall submit a completed “RCRA Facility Groundwater, Leachate and Gas Reporting Form” (LPC 592) as a cover sheet for any notices or reports required by the facility’s permit for identification purposes. Only one (1) copy of the LPC 592 must accompany your submittal. However, the Permittee must submit one (1) original and (excluding the groundwater and leachate monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The LPC 592 form is not to be used for permit modification requests.

Illinois EPA Response:

1. Condition III.F.6 has been updated to partially address BP's comment (see Illinois EPA's Response to Comment 31 above).
2. Regarding Condition IV.I.12, the number of necessary copies is determined by the Illinois EPA needs. There is a regulatory requirement for an original signature; therefore, at least one paper copy with a wet signature is required at this time. A reduction in paper copies does not appear to violate any regulatory requirements and will reduce resources and energy. At this time, one (1) original paper submittal, plus electronic copies, is considered adequate as described below:

The Permittee shall submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) as a cover sheet for any notices or reports required by the facility's permit for identification purposes. Only one (1) copy of the LPC 592 must accompany your submittal. However, the Permittee must submit one (1) original paper submittal and ~~(excluding the groundwater and leachate monitoring results submitted in an electronic format)~~ a minimum of two ~~(2) copies~~ of each notice or report you submit to the Illinois EPA, and ~~(excluding the groundwater and leachate monitoring results submitted in an electronic format)~~ a minimum of two (2) electronic copies for all additional Illinois EPA copies (i.e., Permit Section and the regional Field Operations Section). Additional paper copies must be provided upon Illinois EPA request. The LPC 592 form is not to be used for permit modification requests.

BP Comment 41:

Page IV-13 (Section IV.I.): Condition 14:

Please confirm that the CDF (Parcel D) and PNWL (Parcel J) reports required by Illinois EPA letters can be incorporated into the semi-annual report since neither are stated in Section VI – Special Conditions.

1. *The Permittee shall submit a written report semi-annually to the Illinois EPA, in accordance with the schedule found in Condition IV.I.2, which discusses the effectiveness of the corrective action program and place it in the operating record for the facility. Groundwater monitoring information required by Illinois EPA letters for all Parcels at the BP Riverfront facility shall be provided within the semi-annual report and separate reports are no longer required unless otherwise stated in Section VI (Special Conditions) of the Permit. At a minimum, the report must:*
 - a. *Address the information requirements in Conditions IV.C, IV.D, IV.E and IV.F*
 - b. *Evaluate the effectiveness of the hydraulic control and contaminant removal from the GMZ including the information required by Condition IV.D.*
 - c. *Provide a discussion of any improvement in the quality of groundwater beneath the facility which has resulted from the corrective action.*

Illinois EPA Response:

1. Condition IV.I.14 is intended to require the groundwater reporting across the entire facility be provided within one report semi-annually as many individual groundwater monitoring wells identified in Section IV are also part of programs identified in Section V. The Illinois EPA previously approved modification to the Permit (Log No. B-145R-M-10 and M-12) dated July 19, 2019 for consolidation of reporting to reduce duplications and centralize information previously provided within separate reports. Condition IV.I.14 has been revised to remove the requirement for groundwater information for Parcels be included in semi-annual monitoring reports, and Condition V.J.1 has been revised to identify reporting requirements, which include groundwater information to be reported for each Parcel as the Parcels contain SWMUs regulated by 35 Ill. Adm. Code 724.201. These revisions eliminate duplicate efforts and retain reporting requirements for the respective sections the units are tied to. These revisions cause no reduction of information to be reported.

Revisions to Condition IV.I.14 include:

The Permittee shall submit a written report semi-annually to the Illinois EPA, in accordance with the schedule found in Condition IV.I.2, which discusses the effectiveness of the corrective action program and place it in the operating record for the facility. ~~Groundwater monitoring information required by Illinois EPA letters for all Parcels at the BP Riverfront facility shall be provided within the semi-annual report and separate reports are no longer required unless otherwise stated in Section VI (Special Conditions) of the Permit.~~ At a minimum, the report must:

- a. Address the information requirements in Conditions IV.C, IV.D, IV.E and IV.F
 - b. Evaluate the effectiveness of the hydraulic control and contaminant removal from the GMZ including the information required by Condition IV.D.
 - c. Provide a discussion of any improvement in the quality of groundwater beneath the facility which has resulted from the corrective action.
 - d. Groundwater monitoring information required by Illinois EPA letters for monitoring programs specific to Solid Waste Management Units (SWMUs) within Parcels identified in Section V of the Permit shall be provided within reports required by Section V.J of the Permit.
2. Revisions to Condition V.J.1 include the addition of the following language and renumbering to add clarification for where to report information for the CDF and PNWL. The LOD Area is also clarified:

Electronic Filing: Received, Clerk's Office 03/14/2024

1191155009- BP Riverfront

Log No. B-145R2

Response to Comments - Page 28 of 34

The following condition is added as V.J.1 (d) to clarify reporting requirements for the PNWL:

- d. The quarterly groundwater monitoring reports required by Attachment A of the December 15, 2006 letter (Log Nos. B-145; and 2001-075) for the landfill identified as the PNWL shall be incorporated into each quarterly Corrective Action Progress Report; and the PNWL annual groundwater monitoring reports required by the December 15, 2006 letter shall be incorporated into the Quarterly Corrective Action Progress Report. Separate reports are no longer required to be submitted.
3. The following condition is added as V.J.1 (e) to clarify reporting requirements for the CDF:
 - e. CDF landfill reporting requirements in Illinois EPA letters dated September 13, 2002 (Log No. B-145-CA-23), and as modified in Illinois EPA letters dated November 18, 2008 (B-145-CA-77), and September 3, 2009 (Log No. B-145-CA-71), shall be incorporated into the Quarterly and Annual Corrective Action Progress Reports in accordance with the schedule in Condition V.J.1.a (August 1 and March 1 submittal dates for the CDF). This includes the CDF Second and Fourth Quarter Semi-Annual Groundwater Monitoring Reports and the "Annual CDF Operations, Maintenance and Monitoring Report" (referred to as Annual CDF OM&M/Liquid Level Report by BP Products North America Inc.). Separate reports are no longer required to be submitted.
4. The following condition is added as V.J.1 (f) to clarify reporting requirements for the LOD Area:
 - f. The LOD Area reporting required as part of the GMZ approval in the April 4, 1994 Illinois EPA letter (Log No. B-145) and re-evaluation of the GMZ approval letter dated April 24, 2002 (Log No. B-145-CA-31) shall be incorporated into the Quarterly Corrective Action Progress Reports. Separate reports are no longer required to be submitted.
5. As a result of the added conditions listed above, Conditions V.J.1 (d) through (f) were renumbered and V.J.1. (e) of the draft permit was incorporated into V.J.1. (e) of the final permit.

BP Comment 42:

Page V-10 (Section V.F.): Condition 3, c:

BP requests removal of the 20% contingency from the total cost estimate.

e. ~~A 20% adjustment for contingencies to the total estimated cost;~~

~~d.c.~~ *An identification of the resources needed to complete each task (type and amount) and the unit cost of each required resource;*

~~e.d.~~ *Justification for all values used in the developing all aspects of the estimate.*

Illinois EPA Response:

The Illinois EPA respectfully declines BP's request as the 20% contingency is necessary to ensure the funds to complete corrective action will be available for the BP Riverfront facility located in the flood plain of the Mississippi River.

BP Comment 43:

Page V-15 (Section V.J.): Condition 1, b, 1:

Please clarify if the Pond 1 Landfill Leachate Data Quarterly Monitoring Report required in Condition III.F.3 can be included in this Corrective Action Progress Report rather than be submitted as a standalone report.

a summary of activities completed at each parcel during the quarter, including information regarding the amount of free product/groundwater/leachate removed on a weekly basis from various units during the quarter;

Illinois EPA Response:

Please refer to Illinois EPA's Responses to Comments 30 and 31 above.

BP Comment 44:

Page V-15 (Section V.J.): Condition 1, d:

Please correct number formatting and period in last sentence.

d. An Annual Corrective Action Progress Report must be submitted to Illinois EPA by March 1 of each year which summarizes corrective action program activities completed at the facility during the previous calendar year (i.e., the previous January 1 to December 31). Among other things, this report must contain a compilation/summary of the information in the quarterly reports for the year, what was completed during the year, and what must still be done in the next year and in the following years. The following shall be incorporated into the Annual Corrective Action Progress Report and separate reports are no longer required:

(1) The corrective action progress report for the fourth quarter (October – December of every year).

(2)e. The "Annual CDF Operations, Maintenance and Monitoring Report" (referred to as Annual CDF OM&M/ Liquid Level Report by BP Products North America Inc-).

Illinois EPA Response:

The Illinois EPA agrees with the proposed changes. As Condition V.J.1 (d) has been renumbered to Condition V.J.1 (g) in response to BP's Comment 41 above, the proposed change is made as requested under Condition V.J.1 (g) (1) and (2).

BP Comment 45:

Page VI-2 (Section VI.C.): Condition 4:

The GMZ for the River-front facility was established as a condition in the 1993 RCRA Permit. It is bp's opinion that the GMZ at the Riverfront facility is grand-fathered and is not subject to requirements for property owner permission that were adopted after the GMZ was established. The 2023 permit condition requiring written permission from property owners for an off-site GMZ pre-dates 1997 Illinois GMZ regulations and Illinois EPA 2001 guidance requiring written permission. bp proposes that off-site property owners be notified of the previously approved GMZ.

Within ninety (90) days of the effective date of this Permit, the Permittee shall submit a modification to the Corrective Action Section (Section V) of the Permit, for Illinois EPA review and approval, which provides written ~~permission from~~ notification to any applicable off-site property owner ~~acknowledging they accept~~ that a GMZ for the Riverfront fFacility encompasses is located on their property. This documentation will serve to verify off-site property owners are aware ~~and approve~~ of a GMZ being present on their property.

Illinois EPA Response:

The Illinois EPA cannot approve the proposed language to Condition VI.C.4. The current requirements are reflected in the existing condition; therefore, no changes were made to Condition VI.C.4.

BP Comment 46:

Page VII-7 (Section VII.): Condition 36:

"Closure Requirements for Accumulation Areas" is a new Standard Condition (under "General Facility Standards" subsection). It is bp's opinion that this condition should only be applicable to storage areas operated on or after the date the closure requirement was adopted at 35 IAC 722.117(a)(8).

CLOSURE REQUIREMENTS FOR ACCUMULATION AREAS. The Permittee shall close containers storage areas, tanks, drip pads, or containment buildings used for the accumulation of on-site generated hazardous waste in accordance with the requirements identified at 35 IAC 722.117(a)(8). This requirement is applicable to storage areas used on or after this section was amended at 44 Ill. Reg. 15263, effective September 3, 2020.

Illinois EPA Response:

As this permit is issued after the effective date of the amendment (September 3, 2020), the Illinois EPA does not find the need to revise the condition. Thus, no changes were made to Condition VII.36.

BP Comment 47:

Page VII-10 (Section VII.): Condition 56:

The numbering missed "d" and skipped to "e". Please revise list formatting.

56. *COST ESTIMATE FOR FACILITY CLOSURE. The Permittee's original closure cost estimate, prepared in accordance with 35 IAC 724.242, must be:*

- a. Adjusted for inflation 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with Section 724.243. However, if the owner/operator is using the financial test or corporate guarantee, it must be updated for inflation within 30 days after close of the firm's fiscal year, and before the submission of updated information to the Illinois EPA as specified in Section 724.243(f).*
- b. Revised no later than 30 days after the Illinois EPA has approved a request to modify the closure plan, if the change in the closure plan increases the cost of closure.*
- c. Kept on record at the facility and updated. (35 IAC 724.242)*
- e.d. Made immediately available to Illinois EPA personnel upon Illinois EPA request.*
- f.e. Maintained at the value approved by Illinois EPA with annual adjustment for inflation and cannot be decreased unless approved by the Illinois EPA in a permit modification.*

Illinois EPA Response:

The typographical errors were corrected as proposed.

BP Comment 48:

Page VII-11 (Section VII.): Condition 63, a:

Please revise language to align with current permit.

63. **STORAGE RESTRICTIONS**

- a. The Permittee shall not store hazardous wastes restricted from land disposal under 35 IAC Part 728, Subpart C unless such wastes are stored only in containers or tanks, or other units approved by Illinois EPA in writing, and are stored solely for the purpose of the accumulation of such quantities as is necessary to facilitate proper recovery, treatment, or disposal, and: (1) each container is clearly marked to identify its contents and the date each period of accumulation begins; (2) each tank is clearly marked to identify its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, as required by 35 IAC 728.150.*

Illinois EPA Response:

Regulation 35 IAC 728.150 specifically states hazardous wastes restricted from land disposal are to be stored only in tanks, containers, or containment buildings on-site. It does not allow any other types of hazardous waste accumulation under the specific regulations. Thus, Condition VII.63 (a) was revised as:

63. STORAGE RESTRICTIONS

- a. The Permittee shall not store hazardous wastes restricted from land disposal under 35 IAC Part 728, Subpart C unless such wastes are stored only in containers, ~~or~~ tanks, or containment buildings on-site, and are stored solely for the purpose of the accumulation of such quantities as is necessary to facilitate proper recovery, treatment, or disposal, and: (1) each container is clearly marked to identify its contents and the date each period of accumulation begins; (2) each tank is clearly marked to identify its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, as required by 35 IAC 728.150.

BP Comment 49:

Page VII-12 (Section VII.): Conditions 67 and 68:

The numbering missed "c" and skipped to "d". Please revise list formatting.

67. *COST ESTIMATE FOR POST-CLOSURE. The Permittee's original post-closure cost estimate, prepared in accordance with 35 IAC 724.244, must be:*

- a. *Adjusted for inflation either 60 days prior to each anniversary of the date on which the first post-closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year. This permit condition is applicable throughout the entirety of the post-closure care period.*
- b. *Revised whenever there is a change in the facility's post-closure plan increasing the cost of the post-closure plan.*

~~d.c.~~ *Kept on record at the facility and updated. (35 IAC 724.244).*

~~e.d.~~ *Maintained at the value approved by Illinois EPA with annual adjustment for inflation during the post-closure care period and cannot be decreased unless approved by the Illinois EPA in a permit modification.*

Illinois EPA Response:

The typographical errors were corrected as proposed in Conditions VII.67. Condition VII.68 references Condition VII.67, but no changes were made to Condition III.68.

BP Comment 50:

Page VIII-1 (Section VIII.): Please revise the incorrect Condition references.

Electronic Filing: Received, Clerk's Office 03/14/2024

1191155009- BP Riverfront

Log No. B-145R2

Response to Comments - Page 33 of 34

Please clarify the due date for Condition VII.14 regarding Reporting Planned Changes as here it states, "At least 15 days prior to planned change" but Condition VII.14 states, "as soon as possible."

<i>IV.D.4</i>	<i>Notify Illinois EPA if any of the wells identified in Condition IV.DC.1 and IV.DC.2 are damaged, or the structural integrity has been compromised</i>	<i>Within 30 days of the date the damage is detected</i>
<i>IV.DC.6</i>	<i>Provide Illinois EPA boring logs, construction diagrams, and data sheets from new or replacement wells</i>	<i>Within 30 days of the date installation is complete</i>
<i>IV.H.2</i>	<i>Groundwater monitoring data required each quarter, and additional data required in Conditions IV.FE., IV.GF, and IV.H.</i>	<i>Semi-annually</i>
<i>IV.H.3</i>	<i>Collect quarterly groundwater surface elevation data</i>	<i>Semi-annually</i>
<i>IV.H.4</i>	<i>Quarterly groundwater withdrawal rates</i>	<i>Semi-annually</i>
<i>IV.H.5</i>	<i>Gradient control measurements.</i>	<i>Semi-annually</i>
<i>IV.H.6</i>	<i>Statistical evaluations, as required by Condition IV.F.2.eH</i>	<i>Every 5-years in GMZ Evaluation</i>
<i>IV.H.7</i>	<i>Groundwater flow rate and direction in the uppermost aquifer.</i>	<i>Semi-annually</i>
<i>IV.H.8</i>	<i>Collect groundwater samples per Condition IV.FE.8 and depict the extent of dissolved contamination to define the extent of contamination.</i>	<i>Semi-annually</i>
<i>IV.H.9</i>	<i>The surveyed elevation of the top of well casing.</i>	<i>Every 5 years.</i>
<i>IV.H.10</i>	<i>Elevation of the bottom of each monitoring well.</i>	<i>Annually during the second quarter sampling event.</i>
<i>IV.H.11</i>	<i>Electronic Reporting</i>	<i>Semi-annually</i>

Illinois EPA Response:

The Illinois EPA can accept the proposed changes for Section IV reporting items in Section VIII; therefore, the corrections to references identified for Section IV have been updated accordingly. In addition, the reference to IV.D.4 was corrected to IV.C.4. For Condition VII.14, “as soon as possible of” was replaced with “at least 15 days prior to” to clarify the requirement as requested.

BP Comment 51:

Page Attachment A: Divider Page:

Please revise.

**ATTACHMENT A
IDENTIFICATION OF APPROVED PERMIT APPLICATION**

Illinois EPA Response:

The typographical error was corrected as proposed on the title page for Attachment A.

BP Comment 52:

Page Attachment I and J: Divider Page:

Please revise.

**ATTACHMENT I
CERTIFICATION OF COMPLETION OF CLOSURE**

**ATTACHMENT J
CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE**

Illinois EPA Response:

The typographical errors were corrected as proposed on the title pages for Attachments I and J.



RCRA HAZARDOUS WASTE PERMIT

1191155009 – Madison County
ILD980503106
BP Products North America/Riverfront
Permit Log B-145R2
RCRA Administrative Record

Issue Date:
Effective Date:
Expiration Date:

PERMITTEE

BP Products North America, Inc.
Attention: Ms. Michelle Knapp
301 Evans Avenue, P.O. Box 167
Wood River, Illinois 62095

A renewed RCRA post-closure hazardous waste permit is hereby issued to BP Products North America Inc.(BP) as Owner and Operator and Permittee pursuant to Section 39(d) of the Illinois Environmental Protection Act and Title 35 Illinois Administrative Code Subtitle G (35 IAC).

PERMITTED HAZARDOUS WASTE ACTIVITY

This permit requires BP to conduct the following hazardous waste activities in accordance with the approved permit application and the conditions in this permit:

Disposal: One surface impoundment (East Surge Pond) for non-hazardous waste only (D83)

Post-Closure Care: One closed landfill (Pond 1 Landfill) (D80) with detection and compliance monitoring

Groundwater Monitoring: Corrective Action Monitoring

Corrective Action: Twelve (12) SWMUs and one Product Release Site in ten (10) Parcels (Parcels A – J)

This permit consists of the conditions contained herein and those in the sections and attachments in this permit. The Permittee must comply with all terms and conditions of this permit and the applicable regulations contained in 35 IAC Parts 702, 703, 705 and 720 through 729, in effect through the effective date of this permit.

This permit is issued based on the information submitted in the approved permit application identified in Attachment A of this permit and any subsequent amendments. Any inaccuracies found in the information provided in the permit application may be grounds for the termination or modification of this permit (see 35 IAC 702.187 and 702.186) and potential enforcement action (415 ILCS 5/44(h)).

Jacqueline M. Cooperider, P.E.
Permit Section Manager
Bureau of Land

JMC:JDN: 1191155009-RCRA-B145R2-approval.docx

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000
595 S. State Street, Elgin, IL 60123 (847) 608-3131

2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

Hazardous Waste RCRA Permit

BP Products North America -- Riverfront Facility

Wood River, Illinois

LPC No. 1191155009

ILD980503106

**Hazardous Waste RCRA Permit
BP Products North America/Riverfront Facility**

TABLE OF CONTENTS

<u>ITEM</u>	<u>PAGE</u>
Table of Contents	i
Section I. General Facility Description	I-1 to I-3
Section II. Surface Impoundments	II-1 to II-9
Section III. Post-Closure for the Pond 1 Landfill Unit	III-1 to III-13
Section IV. Groundwater Corrective Action Program	IV-1 to IV-14
Section V. Corrective Action	V-1 to V-16
Section VI. Special Conditions	VI-1 to VI-3
Section VII. Standard Conditions	VII-1 to VII-13
Section VIII. Reporting and Notification Requirements	VIII-1 to VIII-4
Attachment A – Approved Permit Application	A-1
Attachment B – Location Map & Drawings of Permitted Units	B-1 to B-3
Attachment C – Groundwater Monitoring Attachments	C-1 to C-8
Attachment D – Corrective Action Attachments	D-1 to D-8
Attachment E – Corrective Measures Program Requirements	E-1 to E-11
Attachment F – Construction Certification Form	F-1
Attachment G – Closure, Post-Closure and Corrective Action Cost Estimates	G-1
Attachment H – Post-Closure Inspection Schedule	H-1 to H-2
Attachment I – Certification of Completion of Closure	I-1
Attachment J – Certification of Completion of Post-Closure Care	J-1

SECTION I: GENERAL FACILITY DESCRIPTION**A. OWNER AND OPERATOR**

The facility is owned and operated by BP Products, North America Inc., hereinafter referred to as the "Permittee" (Title 35 Illinois Administrative Code (35 IAC) 702.121, 702.123 and 703.181).

BP Products North America, Inc.
301 Evans Avenue
Wood River, Illinois 62095

Facility Contact:
Michelle Knapp
Liability Manager
Remediation Management Services Company
An Affiliate of BP Products North America Inc.
847-346-7112
michelle.knapp@bp.com

B. LOCATON**1. Location of the facility:**

The BP Riverfront facility is a 231-acre site mainly in Wood River, Illinois, with the 23 southernmost acres being located in the Village of Hartford in Madison County, Illinois. It is located between the levee of the Wood River Drainage Levee District (WRDL) and the Mississippi River, just west of Illinois Route 3. The mailing address for this facility is 301 Evans Avenue, Wood River, Illinois. (Note: This is also the mailing address for BP Main Plant facility).

The Riverfront facility is adjacent to, and its operation was associated with the former Amoco Refinery in Wood River. This 569-acre former refinery is located due east of the BP Riverfront property. The general boundaries of the former refinery are Route 143, East Rand Avenue, South Sixth Street, and Illinois Route 3 on the north, south, east, and west sides, respectively.

2. Facility Maps:

The general location of the facility is shown on Figure B-1, Attachment B of this permit. The locations of the hazardous waste management units (HWMUs), solid waste management units (SWMUs), regulated by this permit are shown on Figure D-2, Attachment D of this permit.

C. DESCRIPTION OF HAZARDOUS WASTE MANAGEMENT ACTIVITIES

Amoco operated an oil refinery at the Main Plant (BP Main Plant facility – 1191150001) from 1908 to 1981 and Amoco Petroleum Additives Company operated in a portion of the Main Plant from 1957 to 1996. The Riverfront facility was used by Amoco to gain access to barges on the Mississippi River. In addition, it was used for the management of refinery waste. Presently, Kinder Morgan Liquid Terminals LLC (KMLT) operates, and Kinder Morgan Phoenix Holdings (KMPH) owns, a storage and distribution facility for gasoline and petroleum distillates at a site which was formerly a portion of the Main Plant facility but was sold to KMPH and will be subject to a separate RCRA Permit. The Main Plant and Riverfront facilities were owned by Amoco Oil Company until the company merged with BP in 1999.

The Riverfront Property is now being remediated and redeveloped and will continue to have industrial and commercial use. It has been split up into ten (10) parcels: Parcels A through J which will be investigated, remediated, reported on, and redeveloped on a parcel-by-parcel basis.

For many years prior to 1977, a series of surface impoundments (or ponds) at the Riverfront facility were used to treat wastewater from the refinery. In the mid-1970s, these ponds were replaced by a new wastewater treatment plant. From 1977 to 1981, Amoco stored Dissolved Air Flotation (DAF) float, a listed hazardous waste, in Ponds 1, 1A, 2, 2A, 3, 3A and 4 of the former series of wastewater treatment ponds. As such, these ponds became HWMUs subject to the requirements of RCRA. Amoco elected to close these hazardous waste surface impoundments; Illinois EPA approved a closure plan for these units on April 4, 1986 (Log No. C-145). The main goal of this closure effort was to remove all sludges and contaminated soil from these ponds, treat the removed material and render it non-hazardous and then dispose of it in a permitted on-site landfill.

The pumpable material from the subject ponds were removed, treated, and placed in the Pond 5 landfill as a non-hazardous waste in accordance with plans approved by and a permit received from Illinois EPA. However, Amoco found that they could not easily remove/treat the heavier sludges and contaminated soils in the ponds and thus pursued an alternative closure effort at these ponds as follows:

1. The heavier sludges and some impacted soils from Ponds 1, 1A and the north portion of Pond 2 were removed and stored in the other ponds to allow for the construction of the Pond 1 landfill (a hazardous waste landfill). The heavier sludges and impacted soils from all the ponds (listed hazardous wastes) were subsequently placed in the Pond 1 landfill, which had been constructed in accordance with the requirements for a hazardous waste landfill at the former location of Ponds 1, 1A and the northern portion of Pond 2.
2. The heavier sludge and some contaminated soil from the southern half of Pond 2, as well as Ponds 2A, 3, 3A and 4 were also placed in the Pond 1 landfill. However, not all contaminated soil was removed from the ponds and the clean

closure requirements of RCRA were not achieved. As such, Amoco pursued and obtained a delay of closure adjusted standard (AS-91-4) allowing the company to continue discharging non-hazardous wastewaters into a unit referred to as the "East Surge Pond" (ESP) which was created from these ponds. These wastewaters are defined in Condition II.B.1. A one-foot compacted clay liner was placed on the floors and walls of the East Surge Pond (from which the sludges and some contaminated soil had been removed) before wastewater began to be discharged into the pond.

The Pond 1 landfill is approximately 4.1 acres and contains 80,000 cubic yards of stabilized heavy sludges and impacted soils. This landfill has been closed in accordance with a plan approved by Illinois and has been under post-closure care since August 1995.

The ESP is 20.9 acres in size with a storage capacity of 100 million gallons, and 80 million gallons are normally available below the 2-foot freeboard level. As indicated above, it is used as a backup system and only accepts non-hazardous wastewater from the Main Plant facility and the Wood River Wastewater Treatment Plant (WWTP); and nonhazardous leachate from the onsite PNWL in accordance with the delay of closure adjusted standard (AS-91-4) and this permit. It will eventually have to be closed in accordance with a plan approved by Illinois EPA.

BP is also conducting a groundwater monitoring/corrective action program at this facility and also a general corrective action for the SWMUs at the facility. The groundwater corrective action program includes: (1) a groundwater management zone and (2) a groundwater pump and treat system whose goal is to prevent any contaminated groundwater from flowing off-site. As part of the general corrective action program, the facility has been broken up into ten parcels and the SWMUs in each parcel have individual focus. BP also has the option of conducting corrective action on all contaminated areas or recognized environmental conditions in a given parcel.

This permit allows/requires BP to carry out the following activities at the Riverfront facility: (1) continue storing/treating non-hazardous wastewaters in the ESP until closure activities begin; (2) provide post-closure care for the Pond 1 Landfill; (3) conduct corrective action, as appropriate, at the facility; and (4) implement a groundwater monitoring/corrective action program. A RCRA permit was initially issued for these activities on September 30, 1993 (Log No B-145) and was previously renewed on August 11, 2008 (Log No. B-145R). This renewal permit (Log No. B-145R2) supersedes the previously issued two permits and any associated modifications.

SECTION II: SURFACE IMPOUNDMENT

A. SUMMARY

The East Surge Pond (ESP) is a hazardous waste surface impoundment that currently only receives/stores/treats non-hazardous wastewaters and non-hazardous leachate from the adjacent and onsite Permitted Non-Hazardous Waste Landfill (PNWL). It covers approximately 20.9 acres and has a capacity of 100 million gallons and is designed so that 80 million gallons of storage are normally available below the 2-foot freeboard level.

The impoundment is constructed in an area where several impoundments (the southern part of Pond 2 and all of Ponds 2A, 3, 3A, and 4) were once present that stored hazardous waste but were not clean closed in accordance with Title 35 Illinois Administrative Code (35 IAC) 724 or 725. During construction of the ESP, all sludges/sediments and most of the contaminated soil was removed from these ponds. The floor and sides of the ESP are lined with 1 foot of recompacted clay, and are protected from a 100-year flood event by a flood-protection dike. The location and layout of the East Surge Pond are presented in Figure B-3 of Attachment B to this permit.

The Illinois Pollution Control Board issued an Adjusted Standard (AS-91-4) to the Permittee to allow operation of the ESP for the storage/treatment of non-hazardous wastewaters under the delay of closure regulations contained in 35 IAC 724.213. Although some residual soil contamination may remain in the ESP during the delay of closure period, no new hazardous wastes are allowed to be placed in the unit. During the delay of closure period, the unit will manage only non-hazardous wastewaters, including nonhazardous leachate from the adjacent PNWL. This section contains provisions for continued operation and eventual closure of this unit; and requires BP to submit a proposed schedule for the closure of the ESP.

B. DESCRIPTION OF SURFACE IMPOUNDMENT AND WASTES

1. The Permittee may only store/treat non-hazardous wastewaters in total volume of 100 million gallons in the ESP subject to the terms of this permit including: (a) domestic sewage and commingled stormwater from the Cities of Wood River, Hartford, South Roxana, and also BP Main Plant and Riverfront facilities; (b) groundwater pumped as part of BP's hydraulic gradient control and subsurface hydrocarbon recovery program; and (c) recovered non-hazardous leachate from the PNWL and seepage water from the Riverfront facility. Any wastewater management activities at the facility at the ESP must meet all requirements by the Illinois EPA Bureau of Water, as necessary.

<u>Surface Impoundment Designation</u>	<u>Capacity (gallons)</u>	<u>Dimensions of Impoundment</u>	<u>Description of Hazardous Waste & Waste Numbers</u>
ESP	100 million	20.9 acre	Sediments and soil contaminated with K048 Dissolved Air Flotation (DAF) float from the petroleum refining industry

2. All wastewater managed in the ESP must be evaluated through the approved waste analysis plan for compatibility to ensure that all wastewaters placed into the ESP will be non-hazardous. The Permittee must:
- a. Collect and analyze a sample of the discharge of wastewater from Pond 3A to the ESP each quarter of the calendar year in accordance with Condition II.B.2 (c).
 - b. Collect two (2) composite samples of leachate discharge, one from the manifolded pipe of odd numbered sumps and one from the even numbered sumps of the PNWL, sent to the ESP each quarter of the calendar year, when leachate is present at the PNWL in accordance with Condition II.B.2 (c). If leachate is present at the PNWL but is not discharged to the ESP, then it must be noted in the analytical report included in the facility's operating record and annual report, as required in II.B.2 (c) below.
 - c. The Permittee shall collect representative samples of the discharge described in Conditions II.B.2 (a) and (b) above and analyze it for all the constituents listed in 35 IAC 724 Appendix I. The results of these efforts must be documented in the facility's operating record and reported to Illinois EPA annually. If it is found that the wastewater/leachate is hazardous, then:
 - (1) Illinois EPA (Bureau of Land Permit Section and Collinsville FOS) must immediately be notified of such findings via email and/or phone call (which determined to be most as most appropriate and effective);
 - (2) No additional wastewaters/wastes must be discharged to the ESP until the Permittee is able to demonstrate to Illinois EPA's satisfaction that no additional hazardous waste will be discharged to the impoundment;
 - (3) The Permittee must develop and implement a plan for determining the source of the hazardous waste. A report documenting the results of this investigation must be developed; this report must also describe the steps to be taken to ensure this problem will not occur in the future. These plans and reports are subject to Illinois EPA review and approval.

3. The Permittee is prohibited from storing, treating, or disposing any waste (hazardous or non-hazardous) in the permitted unit(s) that is not identified in Condition II.B.1.
4. The Permittee must meet all applicable requirements of the Illinois EPA Bureau of Water, as necessary, regarding management of all wastewater at the facility in accordance with all applicable regulations for such activities.

C. DESIGN AND OPERATING REQUIREMENTS

1. The Permittee shall operate and maintain the surface impoundment in accordance with the plan and narrative contained in “East Surge Pond Addendum to Section E” section of the approved permit application and the conditions in this permit.
2. The Permittee shall operate and maintain the surface impoundment to prevent overtopping in accordance with the detailed design plans and operating practices contained in “East Surge Pond Addendum to Section E” section of the approved permit application. A minimum of two feet of freeboard must be maintained at all times in the ESP. Illinois EPA may modify this requirement when it determines cause exists, such as Force Majeure or events over which the Permittee has no control.
3. The Permittee shall comply with all requirements of the Adjusted Standard for delay of closure of the ESP issued by the Illinois Pollution Control Board, dated March 11, 1992 (AS-91-4). This adjusted standard allows the Permittee to continue using the ESP for the storage/treatment of non-hazardous wastewaters until they decide to close the impoundment in accordance with 35 IAC 724.
4. The requirements of Condition II.B.2 above must be met at all times while the ESP continues to receive non-hazardous wastewaters.
5. The Permittee shall maintain the surface impoundment dike in accordance with the operating practices contained in the approved permit application and the conditions in this permit.

D. REPORTING

The Permittee shall notify the Illinois EPA in writing within seven (7) days after detecting either a leak in the surface impoundment dike or a sudden drop in the liquid level (and the drop is not known to be caused by changes in the flows into or out of the impoundment). The procedures set forth in the contingency plan and 35 IAC 724.327 must then be followed if one of these incidents occur.

E. INSPECTIONS

1. The Permittee shall inspect the surface impoundment (including liner and appurtenances for control of overtopping) in accordance with the inspection schedule in the approved permit application.
2. The Permittee must inspect the surface impoundment on a weekly basis and within 72 hours of any storm or rain fall event of 3 or more inches in 24 hours to detect any evidence of:
 - a. deterioration, malfunctions, or improper operation of overtopping control equipment;
 - b. sudden drops in the level of the impoundment's contents; or
 - c. severe erosion or other signs of deterioration in dikes and other containment devices.
3. If the ESP is taken out of service for more than six months, then prior to returning to service, the Permittee shall obtain a certification from a qualified Professional Engineer registered in the State of Illinois that the surface impoundment and the flood-protection dike, including that portion of any dike which provides freeboard, have structural integrity in accordance with 35 IAC 724.326(c).
4. The results of all inspections conducted on the ESP must be recorded on an inspection log and placed in the operating record for this facility. Appropriate action, including implementation of the contingency plan if necessary, must be carried out in response to deficiencies noted during inspections; the results of these efforts must also be documented on an inspection log/repair log and placed in the operating record for the facility. The forms in Exhibit ESP-3 and Exhibit ESP-4 of the approved permit application shall be used to document inspections and any repairs done at the facility.

F. CLOSURE REQUIREMENTS

At closure, at a minimum, all waste, waste residues, and hazardous constituents must be removed from the unit. Remaining wastes, liner, and underlying soil containing or contaminated with waste, waste residue, or hazardous constituents must also be removed/remediated as appropriate to meet the requirements of 35 IAC 742. Closure of the surface impoundment must be carried out in accordance with the contingent closure plan contained in the "East Surge Pond Addendum to Section E" section of the approved permit application, as modified below:

1. The Permittee shall submit to the Illinois EPA in writing a proposed schedule to close the ESP for Illinois EPA's review and approval within one (1) year of the effective date of this permit. The proposed schedule for closure of the ESP

required in this section must include and consider any additional non-closure activities associated with the ESP. Any additional non-closure activities associated with the ESP must commence at least five (5) years prior to the expiration of this permit so that the required RCRA closure activities of the ESP may commence prior to the expiration date of this permit unless approved otherwise by Illinois EPA.

2. The Permittee shall notify the Illinois EPA in writing of its intent to close the ESP at least 180 days prior to the date closure is expected to begin. Along with this notification, the Permittee shall submit a sampling and analysis plan to be used in demonstrating that all contaminated material (sludge, liner, and underlying soil) has been removed. This plan must be approved by the Illinois EPA in writing prior to being implemented. Illinois EPA review of this plan will be subject to the permit appeal provisions contained in Sections 39(a) and 40(a) of the Illinois Environmental Protection Act. The response from the Illinois EPA will approve with or without conditions, if appropriate and establish:
 - a. The sampling and decontamination plan;
 - b. What contaminants must be analyzed for; and
 - c. The level at which decontamination or removal is considered complete. Please note that any proposed risk assessment will be subject to Illinois EPA's review. If the risk assessment is determined to be inadequate, the Illinois EPA may establish cleanup levels that will be protective of human health and the environment based upon the procedures set forth in 35 IAC 742.
3. All sweepings, wash water, and rinsate generated during the closure of the ESP shall be managed as a hazardous waste, unless it can be shown to be exempt under 35 IAC 721.
4. Additional plans and reports must be submitted to Illinois EPA for approval as necessary, to provide for the proper remediation (i.e., achievement of soil and groundwater remediation objectives developed in accordance with 35 IAC 742) of the sludges, liner, and underlying soil at the ESP.
5. Within sixty (60) days after closure of the ESP is complete, the Permittee shall submit certification to the Illinois EPA that the unit has been closed in accordance with the approved closure plan.

A closure certification form meeting the requirements of 35 IAC 724.215 must be signed by an authorized representative of the Permittee and a qualified Professional Engineer. Signatures must meet the requirements of 35 IAC Section 702.126. The qualified Professional Engineer (registered in the State of Illinois) must be present at all critical activities during the closure. These activities might

include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity. Financial assurance must be maintained for the ESP until the Illinois EPA approves the closure certification for the unit.

A Closure Documentation Report must be developed and submitted along with the certification of closure and include:

- a. Background information about the facility overall and the overall closure project.
- b. A description of the unit closed (include scaled maps showing location of unit within facility and layout of unit(s), information related to construction of the unit(s), identification of wastes managed in the unit).
- c. A chronological discussion of all closure activities and what was accomplished as a result of completing these activities.
- d. The volume of waste, waste residue and contaminated soil (if any) removed. The term waste includes wastes resulting from decontamination activities.
- e. Scaled drawings showing the horizontal and vertical boundaries of the extent of any soil removal effort.
- f. A description of the method of waste handling and transport.
- g. The waste manifest numbers.
- h. Copies of the waste manifests.
- i. As appropriate and available: boring logs; well construction diagrams; geologic cross-sections; groundwater monitoring data; and information about any groundwater remediation effort.
- j. Information documenting the results of all sampling/analysis efforts. The goal of presenting this information should be to describe, in a logical manner, the activities and results associated with the sampling/analysis effort. At a minimum, this information must include:
 - (1) identification of the reason for the sampling/analysis effort and the goals of the effort;
 - (2) a summary in tabular form of all analytical data, including all quality assurance/quality control data;

- (3) a scaled drawing showing the horizontal location from which all soil samples were collected;
 - (4) identification of the depth and vertical interval from which each sample was collected;
 - (5) a description of the soil sampling procedures, sample preservation procedures and chain of custody procedures;
 - (6) identification of the test method used, and detection limits achieved, including sample preparation, sample dilution (if necessary) and analytical inferences;
 - (7) copies of the final laboratory report sheets, including final sheets reporting all quality assurance and quality assurance dates;
 - (8) visual classification of each soil sample in accordance with ASTM D-2488;
 - (9) a summary of all procedures used for quality assurance/quality control, including the results of these procedures; and
 - (10) a discussion of the data, as it relates to the overall goal of the sampling/analysis effort.
- k. Information demonstrating that the remediation objectives approved for the project have been achieved, including establishment of any engineered barriers or institutional controls necessary to support these objectives.
- l. Color photo documentation of closure. Document conditions before, during, and after closure.
- m. A detailed summary of the costs incurred in completing the required closure activities.
6. The Permittee shall analyze all samples individually (i.e., no compositing). Sampling and analytical procedures shall be conducted in accordance with the latest edition of SW-846 and Attachment G to the Illinois EPA Bureau of Land's RCRA closure plan guidance. Sample size per interval shall be minimized to prevent dilution of any contamination. Apparent visually contaminated material within a sampling interval shall be included in the same portion of the interval to be analyzed. To demonstrate a parameter is not present in a sample, analysis results must show a detection limit at least as low as the practical quantitation limit (PQL) for that parameter as identified in the latest edition of SW-846.

7. To avoid creating another regulated storage unit during closure, it is recommended that any necessary permits for waste disposal are obtained prior to initiating excavation activities. If it is necessary to store excavated hazardous waste on-site prior to off-site disposal, do so only in containers or tanks or in other units if approved by the Illinois EPA in writing for less than ninety (90) days. Do not create regulated waste pile units by storing excavated hazardous waste in an unapproved manner. The ninety (90) day accumulation time exemption (35 IAC 722.134) only applies to containers and tanks.
8. Under the provisions of 29 CFR 1910, cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination, and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.
9. If the Illinois EPA determines that implementation of this closure plan fails to satisfy the requirements of 35 IAC 724.211, the Illinois EPA reserves the right to amend the closure plan. Revisions of closure plans are subject to the appeal provisions of Section 40 of the Illinois Environmental Protection Act.
10. The Permittee shall provide post-closure care in accordance with 35 IAC 724 for the ESP if all of the wastes or contaminated material or media cannot be removed or decontaminated in accordance with the closure plan and meeting the requirements of 35 IAC 742. If it is determined that the clean closure requirements (closure by removal) cannot be met and post-closure care is required, this permit must be modified to require closure and post-closure care as a landfill in accordance with 35 IAC 724, Subparts G and H.
11. Should post-closure care, as described above, become necessary, the permittee shall submit an application for modification to this permit, including an amended closure and post-closure care plan for this unit, within thirty (30) days following discovery that clean closure cannot be accomplished. If a determination is made not to pursue clean closure prior to the implementation of the closure plan, the modification request shall be made no later than sixty (60) days after such determination is made.
12. Financial assurance for closure and post-closure of the ESP as a landfill, if required, shall be provided within thirty (30) days following modification of the permit as set forth in Condition II.F.11 above.

G. FINANCIAL ASSURANCE REQUIREMENTS

1. The permittee shall maintain financial assurance for closure of the surface impoundment(s) of at least \$538,420 (in 2020 dollars). The cost estimate for closure of this facility is shown in Attachment G to this permit. The financial assurance maintained by the facility shall be sufficient to meet the requirements at 35 IAC 724 Subpart H.
2. The approved cost estimate for closing this unit is as described in Attachment G. The Permittee must provide financial assurance for this amount in accordance with 35 IAC 724, Subpart G.
3. A revised closure cost estimate for the ESP must be submitted with the schedule for the closure for the ESP as required in Condition II.F.1. Such cost estimate must include all activities necessary to initiate and complete the closure of the ESP.
4. If clean closure cannot be achieved for the ESP, ESP will be subject to post-closure care, including the requirements for financial assurance.

SECTION III: POST-CLOSURE FOR THE POND 1 LANDFILL UNIT**A. SUMMARY**

Hazardous waste management units where waste is left in place (e.g., landfills) must receive post-closure care for at least 30 years after the date the certification of closure is approved in writing by the Illinois EPA. Activities required during post-closure care include but are not limited to: (1) maintenance of final cover, (2) management of leachate, (3) monitoring, and as necessary, remediation of the groundwater, and (4) providing financial assurance for post-closure activities pursuant to Title 35 Illinois Administrative Code (35 IAC) Part 724.

Presently, there is one closed hazardous waste landfill at this facility which must receive post-closure care –the Pond 1 landfill. If it is determined by way of the closure plan contained in the “East Surge Pond Addendum to Section E” of the approved permit application that the East Surge Pond (ESP) cannot be clean closed (closure by removal), this permit shall be modified to incorporate closure and post-closure care for that unit as a landfill. This section describes the post-closure care requirements for the Pond 1 Landfill.

B. UNIT IDENTIFICATION

1. The Permittee shall provide post-closure care for the following hazardous waste management unit(s), as described in the approved permit application, subject to the terms and conditions of this permit:

Unit Designation	Capacity	Surface Area Dimensions of Unit	Description of Waste and Hazardous Waste No.
Pond 1 Landfill (D80)	100,000 yd ³	4.1 acres (approximate)	Sediments and soil contaminated with K048 – Dissolved air flotation (DAF) float from the petroleum refining industry

The Pond 1 Landfill covers approximately 4.1 acres over Pond 1, Pond 1A and the southern part of Pond 2. The unit contains approximately 100,000 yd³ of contaminated sediment and soils from the closure of Ponds 1, 1A, 2, 2A, 3, 3A, and 4.

2. The location and horizontal extent of the landfill is identified in Figure B-2 of Attachment B to this permit. The lowest elevation of the sumps in the landfill is at or above 402 ft MSL. The highest elevation of the final cover system is at or below 432.99 ft MSL. The slopes of the final cover on the landfill shall not be steeper than 4H:1V or 2%. The landfill was designed and constructed to achieve

a minimum static slope factor of safety greater than or equal to 1.33 and a seismic factor of safety greater than or equal to 1.01.

3. Pond 1 Landfill has an engineered liner system consisting of several layers. From top to bottom (starting directly below the waste), these layers consist of:
 - a. One foot protective soil layer;
 - b. Geotextile fabric (filter);
 - c. One foot sand and gravel primary leachate detection and collection layer including leachate collection piping and leachate collection sumps;
 - d. 60 mil High Density Polyethylene (HDPE) geomembrane;
 - e. 0.25 inch Claymax geosynthetic clay liner (GCL);
 - f. One foot sand and gravel secondary leachate collection system including leachate collection piping and leachate collection sumps;
 - g. A 60 mil HDPE geomembrane;
 - h. Minimum of two feet of imported compacted clay; and
 - i. Minimum of one foot of recompacted in-situ clay.

The unit is protected from a 100-year flood event by a flood protection dike.

4. The cover system on the top of the Pond 1 landfill is constructed of the following layers, specified from the top to bottom:
 - a. One foot thick protective soil cover;
 - b. One foot thick compacted clay layer;
 - c. Geotextile fabric;
 - d. A geonet drainage layer;
 - e. A 60 mil HDPE geomembrane liner; and
 - f. Two foot thick compacted clay layer.
5. A survey plat indicating the location and dimensions of the Pond 1 Landfill and any other hazardous waste disposal units with respect to permanently surveyed benchmarks was prepared and certified by a professional land surveyor. The notes

on the plat state the owner's and operator's obligation to restrict disturbance of the Pond 1 Landfill in accordance with the applicable Subpart G regulations.

These notes state:

- a. The waste materials contained in the Pond 1 Landfill are considered RCRA hazardous wastes; and are sediments and soils contaminated with K048 – Dissolved air flotation (DAF) float from the petroleum refining industry.
 - b. Any material removed from the Pond 1 Landfill during future activities must be managed as a hazardous waste in accordance with 35 IAC Subtitle G: Waste Disposal unless material has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.
 - c. The use of this area is restricted.
6. The Plat of Survey must be attached to the deed to the property and serves as an instrument which is normally examined during title search that will in perpetuity notify any potential purchaser of the property that:
- a. The waste material in the Pond 1 Landfill is considered a RCRA hazardous waste;
 - b. Use of the area is restricted; and
 - c. A survey plat and record of the type, location, and quantity of waste material in the Pond 1 Landfill was filed with the Illinois EPA and the County Recorder.
 - d. Documentation/information regarding the Document No., Parcel Identification Number (PIN) for the Pond 1 Parcel, and the Drawing No. field with the Madison County Recorder's must be submitted as required in Condition VI.C.7 of this permit.
7. The permittee shall develop a scaled topographic drawing of each unit identified in Condition III.B.1 to determine the vertical and horizontal dimensions of each unit at least once every 10 years. If a topographic drawing of a unit has not been developed in the 10 years prior to the date of this permit, it must be developed within 90 days of the date of the effective date of this permit, and every 10 years thereafter. The topographic drawings shall be maintained as part of the operating record.

Each scaled topographic drawing shall be compared to the permitted dimensions for that unit. The Permittee shall submit the most recent survey and scale drawings of the permitted dimensions for the unit within 60 days of the effective

date of this permit.

If a difference in elevation of more than 2 feet exists at any location on the unit, the Permittee shall notify the Illinois EPA Bureau of Land Permit Section of this finding within 30 days of the most recent survey. The notification must include the most recent survey and scale drawings of the permitted dimensions for the unit, a discussion of why the difference exists, and a plan that includes a schedule for repairing the cover system to its permitted dimensions. Repairs to the cover system, and/or its components, may be considered a permit modification.

C. POST-CLOSURE CARE PERIOD

1. The post-closure care period for the Pond 1 Landfill began on August 14, 1995, the date of completion of closure of the unit listed in Condition III.B.1 of this permit. August 14, 2025, marks the minimum requirement of thirty (30) years of Post-Closure Care.

Hazardous waste remains in the landfill, leachate continues to be generated and pumped out of the unit, and a groundwater corrective action program is required to address groundwater contamination at the site. Due to these site conditions, pursuant to 35 IAC 703.241, 724.131, 724.410 as well as Sections 12(a), 21(n), and 39(g) of the Environmental Protection Act, the Permittee must continue to provide post-closure care for the Pond 1 Landfill. Post-closure care shall be extended for additional 30 years or until such time as no unacceptable risks to human health and the environment are present in the Pond 1 Landfill unit, as determined by the Illinois EPA.

2. On or prior to August 14, 2024 (one year before August 14, 2025), the Permittee must submit a Class 2 Permit Modification request to Illinois EPA in accordance with 35 IAC 703.241(a)(2) and 35 IAC 703 Appendix A.E.2 to extend the Post-Closure Care of the Pond 1 Landfill for an additional thirty (30) years or until such time as no unacceptable risks to human health and the environment are present in the Pond 1 Landfill unit, as determined by the Agency, as specified in Condition III.C.1 above.
3. The Illinois EPA may include restrictions upon the future use of the site if necessary to protect public health and the environment, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment. After any administrative and judicial challenges to such restrictions have been exhausted, the Illinois EPA shall file such restrictions of record in the Office of the Recorder of the county in which the hazardous waste disposal site is located.
4. The Permittee shall not allow the property where the unit(s) identified in Condition B.1 are located to be used in a way that could disturb the integrity of

the final cover, liners, any components of the containment system, or the function of the facility's monitoring systems unless the Illinois EPA finds, by way of a permit modification, that such use is necessary for either of the following reasons:

- a. It is necessary to the proposed use of the property, and will not increase the potential hazard to public health or the environment, or
 - b. It is necessary to reduce a threat to human health or the environment
5. The Illinois EPA may require the continuation of any of the security requirements during part or all of the post-closure period.

D. INSPECTIONS

1. The Permittee shall inspect the components, structures, and equipment at the site in accordance with the inspection schedule in the approved permit application and the conditions in this permit (Attachment H). The forms in Exhibit E-8 of the Post-Closure Plan in the approved permit application shall be used to document inspections and any repairs performed at the facility.
2. The Permittee shall inspect the facility at least quarterly or within 72 hours of any rain fall event of three (3) or more inches in 24 hours for evidence of any of the following:
 - a. Deterioration, malfunctions, or improper operation of run-on and run-off systems.
 - b. The presence of leachate in, and proper functioning of, the leachate collection and removal systems.
 - c. The deterioration of the liner or cover systems.
3. Appropriate corrective action shall be taken if problems; including erosion, blockage of the channels, slope failure, etc. are observed at any time. If corrective action is taken, the area involved shall be reinspected one month following completion of the work to ensure the corrective actions have adequately corrected the problem(s) noted.
4. The Permittee shall inspect the benchmarks used to identify the location of the hazardous waste management units (HWMUs) and solid waste management units (SWMUs) within 60 days of the effective date of this permit and thereafter in accordance with the Inspection Schedule in the approved permit application.

If benchmarks cannot be located or confirmed, then the Permittee shall have the appropriate benchmark(s) reestablished by a licensed surveyor within 90 days of the effective date of this permit. Furthermore, the Permitted must: (1) evaluate, as much as possible, and document any noticeable changes in the ground elevation

in general and any settlement of the unit; and (2) maintain the benchmarks as a part of post-closure care of the landfill.

5. Results of all inspections and a description of any remedial actions taken shall be documented in the Repair Log in the Operating Record and maintained for the entire post-closure period.

E. MONITORING, MAINTENANCE, AND RECORDKEEPING

1. The Permittee shall keep and maintain a written operating record that includes all the records, reports, notifications, monitoring data, testing or analytical data, and corrective action data required by 35 IAC 724.173 and the conditions in this permit, for the entirety of the post-closure care period. The operating record shall be kept on-site at the facility and available for Illinois EPA review.
2. The Permittee shall maintain and monitor the groundwater monitoring system and comply with the other applicable regulations of 35 IAC 724 Subpart F (Groundwater Protection) during the post-closure period.
3. The Permittee shall maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, and other events.
4. The Permittee shall prevent run-on from eroding or otherwise damaging the final cover. At a minimum, the run-on control system shall be capable of preventing flow onto the active portion of the landfill during peak discharge from a 24 hour, 25-year storm event.
5. The Permittee shall prevent run-off from eroding or otherwise damaging the final cover. At a minimum, the run-off management system shall be capable of collecting and controlling the volume of water resulting from a 24 hour, 25-year storm event.
6. The Permittee shall comply with the requirements for landfills described in the approved permit application and the conditions of this permit as follows:
 - a. Corrective action shall be taken if ponding has been observed, if cracks or erosion channels greater than one inch wide have formed for whatever reason, if gas, odor, vegetative or vector problems arise, if leachate pop-outs or seeps are present, or if vegetation with tap roots is found to be growing in areas which are not designed to accommodate such vegetation.
 - b. Protect and maintain surveyed benchmarks used in complying with surveying and recordkeeping requirements as required in Condition III.D.4.

7. The Permittee shall maintain the leachate collection system (LCS), and leak detection system (LDS) in accordance with the design plans and specifications contained in the approved permit application and the conditions in this permit. The permittee shall:
 - a. Manage leachate collected in LCS and LDS in accordance with Condition III.E.9 below until an alternative compliance plan is approved by Illinois EPA to install a new LDS with a permanent pumping system and LDS. Any pumps from the LCS and LDS must be removed or cleaned at least once every year, as applicable.
 - b. Every 10 years, the Permittee will use a camera to inspect the collection risers and sump for sediment build-up. If 10% or more of the screened interval is silted-in, the permittee shall remove sediment from the collection riser and sumps using a high-pressure jet or equivalent method.
 - c. Install and operate a leak detection alarm system to alert when the level of leachate reaches one (1) foot as described in Condition III.E.11 (b).
 - d. The LCS will maintain leachate levels within the collection risers at a depth such that leachate does not exceed one (1) foot above the liner.
8. The permittee shall remove leachate from the landfill until leachate is no longer detected in the LCS or LDS.
9. Leachate collected in the LCS and LDS, shall be managed in compliance with all applicable federal, state and local regulations. The leachate may be transferred to the City of Wood River Publicly Owned Treatment Works (POTW) by a vacuum truck in accordance with the Illinois EPA Water Pollution Control Permit No. 2020-EP-64994; the approved permit application; and the conditions in this permit.
10. The permittee shall collect a representative sample of leachate from the landfill and analyze it for all the constituents listed in 35 IAC 724 Appendix I. These samples shall be collected and analyzed annually in accordance with the sampling and test methods specified in the approved permit application. The results of the leachate quality testing data shall be submitted and maintained in the facility's operating record and submitted to the Illinois EPA by July 15 each year.
 - a. The Reduced List will be based on the four most recent complete 35 IAC 724 Appendix I analyses and include all parameters detected in any of the four Appendix I analyses. Starting the next sampling event after Illinois EPA approval, this Reduced List will be used in lieu of the Appendix I analysis for three out of four years, with the fourth-year reverting to a full Appendix I analysis. Any parameters not included on the existing

Reduced List that are detected in the fourth-year Appendix I analysis shall be added to all future Reduced List analyses by means of a permit modification request. This cycle of three years of Reduced List, followed by one year of Appendix I analysis, will repeat for the remainder of the post-closure period.

- b. If an analysis of the leachate from the landfill detects a parameter for which the groundwater is not being analyzed, the permittee shall submit a Class 1* permit modification to the Illinois EPA BOL Permit Section in writing within 30 days of the leachate analysis to add the previously undetected parameter(s) to the groundwater monitoring list.
11. The permittee shall operate, monitor, and maintain the leachate collection system (LCS); and the leachate detection system (LDS) in accordance with the approved permit application and the following conditions:
 - a. The elevation of leachate in the primary and secondary collection risers of the LCS and LDS of the Pond 1 Landfill shall be monitored weekly and recorded in feet above MSL.
 - b. In accordance with an alternative Compliance Plan, if approved by the Illinois EPA as referenced in Condition III.E.7, leachate shall be removed from the collection risers as necessary to ensure the leachate depth over the liner does not exceed one (1) foot (or approximately at Elevation 403' above mean sea level (MSL) for LCS).
 - c. All leachate removed from the LCS and LDS shall be managed as a hazardous waste unless leachate has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.
 - d. The permittee shall record the amount of liquid removed from each LCS sump (in gallons) at least monthly. The results of the leachate quantity testing data from the LCS shall be maintained in the facility's operating record and submitted electronically to the Illinois EPA.
 12. The permittee shall operate and maintain the alarm system as required in Condition III.E.7 (c). The alarm system shall immediately alert the permittee or their representative if there is a problem with the leachate collection or leak detection systems. Within 48 hours of an alarm, a technician will check the LCS and/or LDS and initiate any necessary corrective actions.

F. REPORTING AND NOTIFICATION REQUIREMENTS

1. The leachate quantity and quality data required by Conditions III.E.10 and III.E.11 above must be submitted to the Illinois EPA Bureau of Land Permit

Section in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment C to this permit. Additional guidance regarding the submittal of the information in an electronic format can be found at the Illinois EPA's website.

2. A completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) must accompany all Leachate Data Reports required by this permit. A copy of this form is provided in Attachment C to this permit. This form is not be used for permit modification requests. This form is also available on the Illinois EPA website.
3. The leachate quantity and quality data required by Conditions III.E.10 and III.E.11 for the LCS and LDS shall be submitted to the Illinois EPA Bureau of Land Permit Section as part of the Leachate Data Quarterly Monitoring Report in accordance with the following schedule. This Leachate Data Quarterly Monitoring Report may be combined with the groundwater monitoring report required in Condition IV.I.14.

<u>Data Collected</u>	<u>Results/ Report Submitted by:</u>
January – March	August 1
April – June	August 1
July – September	February 1
October – December	February 1

4. The following Leachate Monitoring/Withdrawal Wells shall be used in leachate quality analysis required by Conditions III.E.10. For purposes of electronic reporting, the points will be labeled as shown below:

<u>Name in Application</u>	<u>Name for Electronic Reporting</u>
Primary Collection System Riser	PCRW
Primary Collection System Riser	PCRE
Secondary Collection System Riser	SCR1
French Drain Sump	FDS1

5. The following Leachate Monitoring/Withdrawal Well shall be used in leachate elevation and quantity monitoring required by Conditions III.E.11. For purposes of electronic reporting, the points will be labeled as shown below:

<u>Name in Application</u>	<u>Name for Electronic Reporting</u>
Primary Collection System Riser	PCRW
Primary Collection System Riser	PCRE
Secondary Collection System Riser	SCR1
French Drain Sump	FDS1

6. The permittee shall submit one (1) original paper copy of each Leachate Data Quarterly Monitoring Report required in Condition III.F.3 above. A Leachate Data Quarterly Monitoring Report may be combined with a groundwater monitoring report required in Condition IV.I.14. In addition to the electronic data, each report must include:
 - a. A graphical representation of the volumes of leachate removed from the LCS and LDS each month. The leachate generation rates (gallons/month) from the LCS and LDS shall be presented on the same graph. The scale of the abscissa (time) shall be such that no more than one year of data (starting with January each year) is presented on each sheet of paper.
 - b. A graphical representation of the elevations of the liquid level in the collection risers for the quarter. For each measurement, the graph needs to identify the following: the elevation of leachate over time, elevation of the top of liner, and elevation of the bottom of the cover system all in feet above MSL.
7. If the leachate quality analysis required in Condition III.E.10 detects a parameter for which the groundwater was not analyzed for in the last sampling event, the permittee shall submit a Class 1* permit modification to the Illinois EPA BOL Permit Section in writing within 30 days of the leachate analysis to add the previously undetected parameter(s) to the groundwater monitoring list. .

G. NOTICES AND CERTIFICATION

1. A request to change the Post-Closure Plan must be submitted in the form of a permit modification request. This request must be in accordance with applicable requirements of 35 IAC Parts 702, 703 and 724 and must include a copy of the amended Post-Closure Plan for approval by the Illinois EPA.
2. If the Permittee or any subsequent owner or operator of the land upon which the Pond 1 Landfill listed in Condition III.B above is located wishes to remove hazardous waste, hazardous waste residue, the liner, or contaminated soil, they must request a modification to this RCRA post-closure permit in accordance with the applicable requirements in 35 IAC Parts 703, 705 and 724. At a minimum, the owner or operator must demonstrate that the removal of such material will satisfy the criteria of 35 IAC 724.217(c).
3. If the Permittee seeks to demonstrate that they should be allowed to end the post-closure care period (e.g., all waste has been removed, and leachate and groundwater monitoring results do not indicate a potential for migration of waste at levels which may be harmful to human health and the environment), the permittee shall submit an Uniform Environmental Covenant (UEC) for the future land use and management of the property on which the Pond 1 Landfill is located.

The UEC shall be submitted at least one year prior to the date the permittee expects to submit the Certification of Completion of Post-Closure and must be approved by Illinois EPA.

Pursuant to Section 39(g) of the Environmental Protection Act and Uniform Environmental Covenant Act, the purpose of the UEC is to place restrictions upon the future use of the site necessary to protect public health and the environment, including permanent prohibition of the use of the site for purposes which may create an unreasonable risk of injury to human health or the environment.

4. If the Permittee seeks to exit post-closure care, the Permittee shall submit the following documents to the Illinois EPA Bureau of Land Permit Section by registered mail no later than sixty (60) days after completion of the established post-closure care period for the Pond 1 Landfill listed in Condition III.B of this permit:
 - a. A properly completed Certification of Completion of Post-Closure Care Form provided in Appendix J to this permit that states the post-closure care for the Pond 1 Landfill was performed in accordance with the specifications in the approved post-closure plan in the approved permit application and the conditions in this permit. The owner and operator and a qualified Professional Engineer registered in the State of Illinois must sign the Certification Form.
 - b. A Post-Closure Documentation Report that documents the post-closure care conditions and activities at your facility during the post-closure period. The Post-Closure Documentation Report must include the following:
 - (1) Background information about the facility and the unit subject to the Post-Closure Certification. Describe the facility and RCRA permit history for the unit.
 - (2) A detailed description of the unit subject to the post-closure care certification that includes:
 - i. The unit's design, including liner system, sumps, leachate collection, leak detection, and gas systems, and cover system including stormwater run-off and run-on controls. Provide this information in both a narrative form and scale drawings.
 - ii. How the unit was operated and how it was closed.
 - iii. When the unit was operated and when it was closed.
 - iv. The wastes disposed of (including waste codes).

- v. The amount of leachate pumped each year from each sump in the unit's leachate collection and leak detection systems during the post-closure period. Provide this information in both a table and graphically. Demonstrate the unit has met the requirements of 35 IAC 724.410(b)(2).
- vi. A scaled map showing the location of unit within the facility boundary. Include all wells in the groundwater monitoring system for the unit on this map.
- vii. Scaled drawings (plan view and cross-section) that show the horizontal and vertical extent of the unit at the time it was certified closed, every 10 years after it was closed, and at the time the Post-Closure Documentation Report is submitted. The scale of the plan view should be 1 inch = 200 feet. All design components of the unit must be shown on the drawings.

When the drawings are compared, if a difference in elevation of more than 2 feet exists at any location on the unit, the Post-Closure Documentation Report needs to indicate the reason for the change in elevation, and demonstrate it would not be a concern in the future.

- viii. A survey of the unit when it was certified closed and at the time the Post-Closure Documentation Report is submitted. The surveys must be certified by a professional land surveyor.
- (3) A general discussion on the inspection and maintenance of, and repairs to, the cover system, leachate collection, leak detection, gas collection, stormwater run-off and run-on controls, wells in the groundwater monitoring system, and any corrective action system required for the unit or groundwater contamination associated with it. Describe any problems and/or repairs to these systems that were addressed over the post-closure care period in chronological order. Show the locations of each of the repairs to these systems during post-closure care on a scaled drawing of the unit.
 - (4) A discussion on the groundwater monitoring program, including any corrective measures that were completed during the post-closure care period, and a summary of the three (3) most recent years of groundwater data. Identify the horizontal and vertical extent of any groundwater contaminant plume from the unit that existed at the beginning of the post-closure period and every five (5) years after that. The facility must have complied with all requirements of 35 IAC 620 and 724, Subpart F, in order to certify completion of post-closure care activities.

- (5) Colored photos of unit(s) at post-closure completion. Photo documentation of the unit should include at least one aerial (satellite) photo and photos of all design features of the unit.
 - (6) Completed Illinois EPA LPC-PA23 and 39i Forms.
 - c. Documentation that the UEC required by Condition III.G.3 above has been placed on the deed to the property on which the Pond 1 Landfill is located has been filed with the County Recorder's Office.
 5. The certification of completion of post-closure care shall not be approved by the Illinois EPA until the permittee demonstrates that the UEC required by Condition III.G.3 above has been properly filed with the appropriate governmental office (e.g. State of Illinois, or County Recorder's office).
 6. Within 60 days after receiving certification from the owner or operator and a qualified Professional Engineer that the post-closure care period has been completed for the Pond 1 Landfill listed in Condition III.B of this permit in accordance with the approved post-closure plan, the Illinois EPA shall notify the owner or operator that it is no longer required to maintain financial assurance for post-closure care of that unit unless the Illinois EPA determines that post-closure care has not been conducted in accordance with the approved post-closure plan. The Illinois EPA shall provide the owner or operator with a detailed written statement of any such determination that post-closure care has not been in accordance with the approved post-closure plan.

H. POST-CLOSURE CARE COST ESTIMATE/FINANCIAL ASSURANCE

1. The Permittee shall maintain financial assurance for post-closure care of the Pond 1 Landfill listed in Condition III.B.1 of this permit of at least \$2,364,068 in 2020 dollars until such time as it is required to be modified pursuant to Conditions VI.C.1(a) and VI.C.1 (d). A summary of the cost estimate for post-closure care is shown in Attachment G to this permit. The financial assurance maintained by the facility shall be sufficient to meet the requirements at 35 IAC 724 Subpart H.
2. Post-closure care costs are determined by multiplying annual costs by the 30-year post-closure care period.

SECTION IV: GROUNDWATER CORRECTIVE ACTION PROGRAM**A. SUMMARY**

Hazardous constituents released from the BP Riverfront facility have been detected in the groundwater at the point of compliance at concentrations which exceed the Groundwater Protection Standards, as well as groundwater quality standards established by Title 35 Illinois Administrative Code (35 IAC) 724.192. Therefore, a Corrective Action Program meeting the requirements of 35 IAC 724.200 must be implemented at the BP Riverfront facility.

The Corrective Action Program required by this permit includes:

1. Control of groundwater flow in the uppermost aquifer such that groundwater flow in the Riverfront Groundwater Management Zone is towards the interior of the Main Plant facility. This control of groundwater flow will be accomplished by withdrawing sufficient quantities of groundwater from the uppermost aquifer through operation of Gradient Control Wells located at the BP Main Plant facility. Such flow control is necessary as a corrective action to prevent contaminant migration of on-site releases of product or waste, beyond the boundaries of the Riverfront facility and is the basis for the establishment of a Groundwater Management Zone (GMZ).
2. Verification that the flow of groundwater is adequately controlled as required by Condition IV.A.1 above.
3. Monitoring the quality and movement of the groundwater in the uppermost aquifer beneath the BP Riverfront facility to determine the effectiveness of the Corrective Action Program, as well as verify compliance with the GMZ.

B. IMPLEMENTATION

1. The Permittee shall implement the Corrective Action Program established in this Permit upon the effective date of this Permit. On that date, the corrective action and groundwater monitoring requirements set forth in this Permit shall supersede those previously established.
2. The Permittee shall carry out the corrective actions specified in this Permit on the groundwater beneath the BP Riverfront facility. The uppermost aquifer at this facility is a sand and gravel aquifer located approximately 30 feet deep below the ground surface (hereinafter ft-bgs) and extending to a depth of about 101 to 113 ft-bgs to the top of the bedrock surface. This aquifer is commonly referred to as the "American Bottoms."

3. For the purposes of this Permit and in accordance with 35 IAC Part 620 regulations, the sand and gravel aquifer has been designated Class I: Potable Resource Groundwater. The analytical results obtained from these groundwater monitoring wells shall be compared to the appropriate Class I concentration limits that comprise the Groundwater Protection Standard found in Condition IV.D.1 or to established background values as appropriate.
4. At this time, the establishment of a Point of Compliance (as defined by 35 IAC 724.195) will be postponed until such time that the monitoring wells at the facility have attained the applicable concentration limits that comprise the Groundwater Protection Standard found in Condition IV.D.1 and the GMZ expires. At that time, facility must submit a proposal for the establishment of a Point of Compliance which satisfies the regulatory requirements found in 35 IAC 724, Subpart F and reflects the current conditions at the facility.

C. WELL LOCATIONS AND CONSTRUCTION

1. The Permittee shall maintain the groundwater monitoring wells identified in the table below to allow for the collection of groundwater samples from the uppermost aquifer. The location of these wells is specified in Figure C-7 of the approved permit application. All wells are gauged quarterly. Sampling frequencies vary and are specified below.

<u>IEPA Well No.</u>	<u>Facility Well No.</u>	<u>Area</u>	<u>Well Depth (ft-bgs)</u>	<u>Well Depth Elevation (ft MSL)</u>	<u>Well Screen Interval (ft MSL)</u>
<u>GMZ Boundary Wells</u> (Gauging and Semi-Annual Sampling Network ²)					
G66D	RL-6C	ESP	70.00	361.38	366.38-361.38 ^H
G103	RL-3	P1LF	39.00	386.27	396.27-386.27 ^C
G106	RL-6	ESP	44.00	386.57	396.57-386.57 ^C
G107	RL-7	ESP	39.00	388.36	398.36-388.36 ^C
G113	SWMU-14/MW-14A	Parcel C	51.94	371.00	381.00-371.00 ^H
G114	SWMU-14/MW-15	Parcel C	56.00	364.46	374.46-364.46 ^H
LOD1	LOD-1	LOD	31.00	393.58	403.58-393.58 ^C
LOD2	LOD-2	LOD	41.00	380.15	390.15-380.15 ^C
LOD7	LOD-7	LOD	29.14	391.20	401.20-391.20 ^C
L17B	RL-17B	LOD	54.84	363.98	373.98-363.98 ^H
<u>Observation Monitoring Wells</u> (Gauging and Annual Sampling Network ²)					
G35L	C-25B	ESP	56.82	371.00	378.00-373.00 ^H
G104	RL-4	P1LF	36.00	388.25	398.25-388.25 ^C

<u>IEPA</u> <u>Well No.</u>	<u>Facility Well</u> <u>No.</u>	<u>Area</u>	<u>Well Depth</u> <u>(ft-bgs)</u>	<u>Well Depth</u>	<u>Well Screen</u> <u>Interval (ft MSL)</u>
				<u>Elevation</u> <u>(ft MSL)</u>	
G115*	RL-15	WSP	52.00	376.18	381.18-376.18 ^H
G116	RL-16	WSP	52.00	375.35	380.35-375.35 ^H
G119	RL-19	ESP	40.00	391.80	406.80-391.80 ^C
G401	T-1	WSP	41.50	380.86	385.86-380.86 ^H
LOD5	LOD-5	LOD	30.24	391.87	401.87-391.87
R21L	RL-21BR	WSP	54.01	369.92	374.92-369.92 ^H
R529	P-29R	LOD	48.61	372.30	382.30-372.30 ^H

Observation Monitoring Wells (Annual Sampling Only Network³)

R21D	RL-21CR	WSP	70.24	353.58	358.58-353.58 ^H
LOD6	LOD-6	LOD	28.50	393.20	403.40-393.40 ^C
LOD9	LOD-9	LOD	28.50	394.12	404.12-394.12 ^C

Observation Monitoring Wells (Gauging Only Network⁴)

G030	C-20	TF	39.10	386.27	406.27-386.27 ^C
G033	C-23	POTW	35.00	393.54	403.55-393.55 ^C
G037	C-27	PNWL	34.00	393.94	404.04-393.94 ^P
G038	C-28	PNWL	35.69	393.70	403.90-393.80 ^P
G090	G090	PNWL	48.00	378.61	383.74-379.16 ^H
G091	G091	PNWL	66.50	359.14	382.27-377.69 ^H
G102	RL-2	LOD	34.0	388.78	398.78-388.78 ^C
G109	RL-9	ESP	39.00	388.45	398.45-388.45 ^P
G36R	C-26R	PNWL	34.4	392.18	402.48-392.48 ^P
G411	S-1	WSP	41.60	376.83	386.83-376.83 ^H
R034	C-24R	ESP	35.24	393.64	403.88-393.88 ^C
R66L	RL-6BR	ESP	55.30	377.06	382.16-377.06 ^H
G503	PANC-UP01	Parcel A	39.50	378.55	388.75-378.75 ^H
G504	PANC-UP02	Parcel A	39.00	372.06	382.06-372.06 ^H
G505	PANC-UP05	Parcel A	37.10	389.61	399.61-389.61 ^C
G506	PANC-UP09	Parcel A	27.30	389.29	399.49-389.49 ^C
G507	PANC-UP11	Parcel A	37.30	388.62	398.82-388.82 ^C
	SWMU4-	Parcel A			
G508	MW01		30.98	395.10	405.10-395.10 ^P
	SWMU4-	Parcel A			
G509	MW03		29.41	389.24	405.90-395.90 ^P
	SWMU4-	Parcel A			
G510	MW04		32.62	388.96	405.57-395.57 ^P

Observation Monitoring Wells (LNAPL Monitoring Network⁵)

G105	RL-5	ESP	34.00	388.28	398.28-388.28 ^C
G512	SUMP-8	Parcel C	+	+	409.05-406.35 ^P

IEPA Well No.	Facility Well No.	Area	Well Depth (ft-bgs)	Well Depth Elevation (ft MSL)	Well Screen Interval (ft MSL)
<u>Observation Monitoring Wells (Sentinel Wells⁶)</u>					
SWMU4-					
G511	MW02	Parcel A	26.43	392.67	402.67-392.67 ^C
LOD1 ²	LOD-1	LOD	31.00	393.58	403.58-393.58 ^C
LOD2 ²	LOD-2	LOD	41.00	380.15	390.15-380.15 ^C
G029 ⁷	C-19R	MP	24.52	393.98	404.31-394.31 ^C
G056**	G-16	MP	30.00	395.54	415.54-395.54 ^P
G057 ⁸	G-17	MP	35.02	391.90	411.90-391.90 ^C
G058 ⁸	G-18	MP	36.00	391.27	411.27-391.27 ^C
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				
GXXX ⁹	Well details will be provided within ninety (90) days of well completion				

Notes

+ = Well construction information is incomplete

* = Denotes Upgradient Well(s)

** = Also an Observation Well under the BP Main Plant RCRA Permit. Groundwater sampling required until additional sentinel wells are installed and incorporated into the BP Riverfront RCRA Permit in accordance with January 19, 2023 Illinois EPA letter.

C = Wells fully or partially screened within the silty sandy layer of the Cahokia Sand facies are designated as “UMA C” uppermost aquifer wells.

H = Wells screened within the coarse sand and gravel of the Henry formation are designated as “UMA H” uppermost aquifer wells.

P = Wells within the Cahokia exhibiting perched behavior are designated as “Cahokia Perched” wells.

2 = GMZ Boundary

3 = Groundwater sampling only. Well will still be gauged when sampled in accordance with Condition IV.F.1; however, water level data will not be utilized for developing potentiometric surface maps or evaluation of hydraulic gradients as required under Condition IV.E.6 (3 Observation wells)

4 = Groundwater gauging only. Groundwater sampling not required (20 Observation wells).

5 = LNAPL monitoring only. Groundwater sampling not required (2 Observation wells).

6 = Sentinel wells required to be sampled semi-annually.

7 = Groundwater sampling required until revised GMZ approved and G029 is abandoned in accordance with January 19, 2023 Illinois EPA letter.

8 = Also an Observation Well under the Main Plant RCRA Permit.

9 = Additional sentinel wells to be installed and incorporated into RCRA Permit in accordance with January 19, 2023 Illinois EPA letter.

2. The Permittee shall maintain the Gradient Control Wells identified in the table below to allow for the withdrawal of contaminated groundwater, as well as, the measurement of water levels to verify the flow of groundwater is adequately controlled as required by Condition IV.A.1 above.

IEPA Well No.	Facility Well No.	Area	Well Depth (ft-bgs)	Well Depth Elevation (ft MSL)	Well Screen Interval (ft MSL)
<u>Gradient Control Wells</u>					
G664	PW-64	MP	118.0	309.4	344.4 -309.4
G667	HPW-41	MP	105.0	322.6	347.6 - 322.6
G668	HPW-58	MP	115.0	318.0	358.0 – 318.0
G669	HPW-61	MP	118.0	314.55	345.05 – 314.55

Area Identification

P1LF = Pond 1 Landfill

ESP = East Surge Pond

WSP = West Surge Pond

MP = Main Plant

TF = Tank Farm

LOD = Light Oils Dock

POTW = Publicly Owned Treatment Works

PNWL = Permitted Non-Hazardous Solid Waste Landfill

PA = Parcel A

PC = Parcel C

3. Construction of each monitor well/piezometer must be in accordance with the diagram contained in Attachment C to this Permit, unless otherwise approved in writing by the Illinois EPA. All new monitoring wells/piezometers to be installed must be continuously sampled and logged on Illinois EPA boring logs as provided in Attachment C unless otherwise approved by the Illinois EPA.
4. The Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Conditions IV.C.1 and IV.C.2 are damaged or the structural integrity has been compromised causing the well not to serve its function or to act as a contaminant pathway. A proposal for the replacement of the subject well shall accompany this notification. The well shall not be plugged until the new well is on-line and monitoring data has been obtained and verified, unless the well is extremely damaged or would create a potential route for groundwater contamination. Prior to replacing the subject well, the Permittee shall obtain written approval from the Illinois EPA regarding the proposed installation procedures and construction.
5. Should any well become consistently dry or unserviceable, a replacement well shall be provided within ten (10) feet of the existing well. This well shall monitor the same zone as the existing well and be constructed in accordance with the

current Illinois EPA groundwater monitor well construction standards at the time that the wells are replaced. A replacement well which is more than ten (10) feet from the existing well or which does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well.

6. The Permittee shall submit boring logs, construction diagrams and datasheets from installation and development of a new or replacement well to the Illinois EPA at the address below within thirty (30) days of the date that installation of the well is completed. In addition, the Permittee shall submit certification that plugging, and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. All pertinent information should be submitted to the appropriate State agencies.

Illinois Environmental Protection Illinois EPA
Bureau of Land -- #33
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois, 62794-9276

7. All wells/piezometers shall be clearly identified and shall be equipped with protective caps and locks. Monitoring wells or piezometers located in high traffic areas must be protected with bumper guards.
8. All groundwater monitoring wells and piezometers not utilized in the approved groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 IAC 920 regulations. Monitoring wells and piezometers that are improperly constructed must be abandoned in accordance with Condition IV.C.4.

D. GROUNDWATER PROTECTION STANDARD

1. The following hazardous constituents and their concentration limits (35 IAC 620, Class I, Groundwater Quality Standards) comprise the Groundwater Protection Standard for the groundwater monitoring wells found in Conditions IV.C.1. (Total (unfiltered) values will be used for the comparison with the 35 IAC 620, Class I, Groundwater Quality Standards. Dissolved values shall be used for statistical evaluations required in Condition IV.H unless otherwise noted.)

<u>Field Parameters</u>	<u>Storet</u>	<u>Units</u>
pH	00400	
Specific Conductance	00094	micromhos/cm
Temperature of Water Sample	00011	(°F)
Turbidity	45626	Ntus

Depth to Water (below land surface)	72019	Feet
Depth to Water (below measuring point)	72109	ft bgs
Elevation of Groundwater Surface	71993	ft MSL
Elevation of Bottom of Well #	72020	ft MSL
Elevation of Measuring Point (Top of casing)##	72110	ft MSL

#Shall be determined during the first semi-annual sampling event each year.

##Shall be surveyed once every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes as required by Condition IV.I.9.a.

Hazardous Constituents	Storet No. (Total)	Storet No. (Dissolved)	Concentration Limits (mg/L)
Arsenic*	01002	01000	0.01
Barium	01007		2.0
Cadmium	01027		0.005
Chloride*	00940	00941	200.0
Chrysene	34320		0.1
Lead*	01051	01049	0.0075
Sulfate	00945		400.0
Benzene	34030		0.005
Benzo(b)fluoranthene	34230		0.00018
Bis(2-ethylhexyl) phthalate	39100		0.006
Carbon Disulfide	81309		0.7
Ethylbenzene	78113		0.7
Toluene	34010		1.0
Total Xylenes	34020		10.0
Methyl Tertiary-Butyl Ether	46491		0.07
Phenols	46000		0.1

Biogeochemical Analytes¹

Dissolved iron	01046	N/A
Dissolved manganese	01056	N/A
Dissolved sulfate	00946	N/A

* = Constituents that must be sampled for both dissolved and total concentrations.

1 = To monitor natural attenuation conditions.

2. Alternate concentration limits may be established where the Permittee can determine a constituent will not pose a substantial hazard to human health or the environment as follows:
 - a. Where a hazardous constituent has a standard in 35 IAC Part 620, the facility must apply for an adjusted standard as outlined in Section 28.1 of the Environmental Protection Act or reapply once corrective measures have been implemented pursuant to 35 IAC 620.450.
 - b. For those hazardous constituents without a 35 IAC Part 620 standard, the alternative concentration limits proposed by the facility must be approved by the Illinois EPA.
3. The Permittee must continue corrective action measures for as long as necessary, as determined by the Illinois EPA, to achieve compliance with the Groundwater Protection Standards. The Permittee may terminate corrective action measures taken beyond the period equal to the active life of the waste management area (including the closure period) if it can be demonstrated, based on data from the groundwater monitoring program, that the Groundwater Protection Standards found in Condition IV.D.1 have not been exceeded for a period of three (3) consecutive years.
4. Prior to removal of any constituents identified in Condition IV.D.1, the facility must present leachate analytical results from the Pond 1 landfill to demonstrate these constituents are not present in leachate. Therefore, to request removal of barium, cadmium, sulfate, benzo(b)fluoranthene, carbon disulfide, total xylenes, and phenols, present a demonstration these constituents are not present in leachate. A leachate demonstration is also necessary to reduce the sampling frequency for chloride.

E. GROUNDWATER CORRECTIVE ACTION PROGRAM

The Permittee shall conduct the Corrective Action Program and perform groundwater monitoring detailed in this section, in accordance with the following:

1. The Permittee shall monitor the GMZ Boundary Wells and Observation Wells designated in Condition IV.C.1 on a semi-annual or annual basis (as indicated in Condition IV.C.1) for the hazardous constituents listed in Condition IV.D.1 above.
2. The GMZ must be monitored and maintained as follows:
 - a. The GMZ boundaries shall be defined as follows:
 - Western Boundary: LOD-1 and LOD-5;

- Eastern Boundary: G103, G106 and G107;
 - Northern Boundary: LOD-2, G113 and G114;
 - Southern Boundary: LOD-7 and G107.
 - Vertical Boundary: RL-17B and G66D.
- b. The results of monitoring the GMZ shall be submitted to the Illinois EPA semi-annually in accordance with the schedule found in Condition IV.I.2.
- c. The GMZ expires when all groundwater monitoring wells within the GMZ have attained the appropriate Class I concentration limits that comprise the Groundwater Protection Standard found in Condition IV.D.1.
- d. The appropriate Class I concentration limits shall be considered attained when groundwater monitoring results meet the appropriate concentration limit for two (2) consecutive years.
- e. An evaluation of the GMZ shall be submitted in a report for Illinois EPA review and approval, a minimum of every five (5) years, in accordance with the guidance document, "Re-evaluation of Groundwater Management Zones at RCRA Facilities" found at the Illinois EPA website. Statistical analysis required by IV.I must also be included.
3. The Corrective Action Program shall control the horizontal and vertical flow in the vertical column of water present in the uppermost aquifer beneath the facility and monitor the position and rate of migration of the Hydrocarbon Pool as follows:
- a. The pumping from the Gradient Control Wells (COD wells) shall maintain the cone of depression to ensure groundwater flow is adequately controlled in the uppermost aquifer.
 - b. The pumping rate from each Gradient Control Well (COD well) shall be recorded each business day. This data shall be used to calculate the monthly average withdrawal rate for the Gradient Control System.
4. The Permittee shall monitor the groundwater horizontal and vertical gradients in the uppermost aquifer beneath the facility.
5. The Permittee shall record the following measurements and submit to the Illinois EPA semi-annually as required by Condition IV.I.2.

- a. A record of the amount of groundwater withdrawn each day by the groundwater withdrawal wells.
 - b. Quarterly monitoring of the piezometric head at wells in the uppermost aquifer identified in Conditions IV.C.1 and IV.C.2 above to demonstrate that groundwater flow is properly controlled throughout the contaminated area requiring corrective action in the uppermost aquifer is being contained.
6. The Permittee shall determine the groundwater flow rate (i.e., seepage velocity in ft/day) and direction in the uppermost aquifer at least annually from the monitoring wells listed in Condition IV.C.1.
 7. The groundwater quality in the uppermost aquifer beneath the facility shall be monitored on a semi-annual or an annual basis in Condition IV.C.1 at each of the monitoring wells identified.
 8. The GMZ Boundary Wells and Observation Monitoring Wells listed in Condition IV.C.1 shall be monitored for the constituents listed in Condition IV.D.1.
 9. Due to the close proximity to the Hydrocarbon Pool (SWMU 7), the facility must propose a location for a new well or replacement well which will monitor the same geologic zone as monitoring well G119. The proposed location must be submitted for Illinois EPA review and approval prior to abandonment of well G119. BP must continue to pursue approval for replacement of G119 from the Corps of Engineers to satisfy replacement requirements from Illinois EPA, and provide updates in each semi-annual report required by Condition IV.I.2.

F. GROUNDWATER ELEVATIONS

1. The Permittee shall determine the groundwater surface elevation referenced to MSL at each well each time groundwater is sampled in accordance with Condition IV.I.3.
2. The Permittee shall report the surveyed elevation of stick-up and ground surface referenced to MSL once every five (5) years or at the request of the Illinois EPA, or whenever the elevation changes in accordance with Condition IV.I.9.
3. Elevation, as referenced to MSL, of the bottom of each monitoring well (STORET 72020), is to be reported at least annually. The mandatory measurement shall be taken during the first semi-annual sampling event each year.

G. SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall follow the techniques and procedures described in Exhibit C-3 of Attachment B of the approved permit application, except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition IV.C.1:

1. Samples shall be collected by the techniques described for low-flow sample collection in Exhibit C-3 of Attachment B of the approved permit application.
2. Samples shall be preserved, shipped and handled in accordance with the procedures specified in Exhibit C-3 of Attachment B of the approved permit application.
3. Samples shall be analyzed according to the procedures specified in Exhibit C-3 of Attachment B of the approved permit application, with the exception that the most current SW-846 Method states that field blanks must be tested for volatile organic compounds (VOCs), which includes Methyl Tertiary-Butyl Ether (MTBE).
4. Samples shall be tracked and controlled using the chain-of-custody procedures specified in Exhibit C-3 of Attachment B of the approved permit application.

H. STATISTICAL METHODS

The Permittee shall evaluate the quality of groundwater samples collected during semi-annual sampling events identified in Condition IV.E to determine trends and demonstrate effectiveness of corrective action as follows:

1. The GMZ Boundary Wells and Observation Monitoring Wells, as identified in Condition IV.C.1, shall be used for statistical evaluations of groundwater quality data as follows:
 - a. The groundwater quality data shall be statistically evaluated annually for the constituents identified in Condition IV.D.1, in accordance with Exhibit C-4 of the approved permit application.
 - b. The results of the statistical evaluations shall be discussed and included within the required five (5)-year GMZ Evaluation reports required by Condition IV.I.6.

I. REPORTING AND RECORDKEEPING

1. The Permittee shall enter all monitoring, testing and analytical data obtained in accordance with Conditions IV.D, IV.E, IV.F and IV.H into the operating record.

2. Samples collected to meet the requirements of the groundwater monitoring program described in Conditions IV.D, IV.E, IV.F and IV.G shall be collected and reported as identified in the table below. All additional data required by the groundwater monitoring program (as specified in Conditions IV.D, IV.E, IV.F and IV.G) shall also be submitted to the Illinois EPA at the address listed in Condition IV.C.6 in accordance with this schedule.

<u>Sampling Event of Calendar Year</u>	<u>Samples to be Collected During the Months of</u>	<u>Results Submitted to the Illinois EPA by the Following</u>
First Quarter	January - February	August 1
Second Quarter	April - May	August 1
Third Quarter	July - August	February 1
Fourth Quarter	October - November	February 1

3. Groundwater surface elevation data measured pursuant to Condition IV.F.1, shall be collected at least quarterly and submitted to the Illinois EPA as identified in Condition IV.I.2.
4. Groundwater withdrawal rates collected and calculated pursuant to Condition IV.E.3.b shall be submitted in accordance with the schedule identified in Condition IV.I.2.
5. Gradient control measurements collected pursuant to Condition IV.E.5 shall be submitted to the Illinois EPA as part of the second and fourth quarter reports as identified in Condition IV.I.2.
6. Statistical evaluations for the year, as required by Condition IV.H, shall be submitted to the Illinois EPA as a part of the required 5-year GMZ Evaluation reports required by Condition IV.E.2.e.
7. The Permittee shall report the groundwater flow rate and direction, as required by Condition IV.E.6, during the first and second semi-annual reports each year.
8. Groundwater quality samples collected to meet the requirements of Condition IV.E.8 shall be collected during the second and fourth quarter and submitted to the Illinois EPA as identified in Condition IV.I.2.
9. The Permittee shall report the surveyed elevation, as required by Condition IV.F.2, of the top of the well casing ("stick-up"), referenced to MSL, in accordance with the following schedule:
- a. For wells identified in Condition IV.C.1 above, every five (5) years (during the second semi-annual sampling event), or at the request of the Illinois EPA, or whenever the elevation changes.

- b. For any new wells, at the time of installation and reported in the as-built diagrams. Subsequent measurements shall be made every five (5) years (during the second quarter sampling event) or whenever the elevation changes.
10. Elevation of the bottom of each monitoring well identified in Condition IV.C.1, referenced to MSL, is to be reported annually. This measurement shall be taken during the first semi-annual sampling event (Storet 72020).
11. Information required by Conditions IV.I.2, IV.I.3, IV.I.9 and IV.I.10 must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment C of this permit, in accordance with the schedule found in Condition IV.I.2. Additional guidance regarding the submittal of the information in an electronic format can be found at the Illinois EPA's website.
12. The Permittee shall submit a completed "RCRA Facility Groundwater, Leachate and Gas Reporting Form" (LPC 592) as a cover sheet for any notices or reports required by the facility's permit for identification purposes. Only one (1) copy of the LPC 592 must accompany your submittal. However, the Permittee must submit one (1) original paper submittal of each notice or report you submit to the Illinois EPA, and (excluding the groundwater and leachate monitoring results submitted in an electronic format) a minimum of two (2) electronic copies for all additional Illinois EPA copies (i.e., Permit Section and the regional Field Operation Section). Additional paper copies must be provided upon Illinois EPA request. The LPC 592 form is not to be used for permit modification requests.
13. The Permittee shall report all information to the Illinois EPA in a form which can be easily reviewed. All submittals must contain tables of data, drawings, and text (as necessary) to accurately describe the information contained in the submittal.
14. The Permittee shall submit a written report semi-annually to the Illinois EPA, in accordance with the schedule found in Condition IV.I.2, which discusses the effectiveness of the corrective action program and place it in the operating record for the facility. At a minimum, the report must:
 - a. Address the information requirements in Conditions IV.C, IV.D, IV.E and IV.F
 - b. Evaluate the effectiveness of the hydraulic control and contaminant removal from the GMZ including the information required by Condition IV.D.
 - c. Provide a discussion of any improvement in the quality of groundwater beneath the facility which has resulted from the corrective action.

- d. Groundwater monitoring required by Illinois EPA letters for monitoring programs specific to Solid Waste Management Units (SWMUs) within Parcels identified in Section V of the Permit shall be provided within reports required by Section V.J of the Permit.
15. If the Permittee determines that groundwater flow is not being adequately controlled, the Permittee shall:
- a. Notify the Illinois EPA in writing within seven (7) days of the date that this determination is made;
 - b. Take actions as necessary to regain the control of groundwater flow as required by Condition IV.E.3.
 - c. Submit a written report to the Illinois EPA within thirty (30) days describing the actions taken to regain control of groundwater flow. In addition, the report must contain information which demonstrates that groundwater flow is being adequately controlled.
 - d. Submit a request for permit modification to the Illinois EPA within sixty (60) days describing any changes which must be made to the corrective action program to ensure that the groundwater flow is adequately controlled.

J. REQUEST FOR PERMIT MODIFICATION

1. If the Permittee determines that the Corrective Action Program required by this permit no longer satisfies the requirements of 35 IAC 724, Subpart F, the Permittee must, within ninety (90) days, submit an application for permit modification to the Bureau of Land of the Illinois EPA to make any appropriate changes to the program which will satisfy the regulations.
2. Conditions in this section of the permit may be modified by the Illinois EPA in accordance with 35 IAC 702.183 and 705.128 if there is cause for such modification, as defined in 35 IAC 702.184. Causes for modification in this section of the regulations include, but are not limited to, alterations to the permitted facility, additional information which would have justified the application of different permit conditions at the time of permit issuance, and new regulations.

SECTION V: CORRECTIVE ACTION**A. INTRODUCTION**

1. In accordance with Section 3004 of RCRA and Title 35 Illinois Administrative Code (35 IAC) 724.201, the Permittee shall institute such corrective action as necessary to protect human health and the environment from all releases of hazardous wastes or hazardous constituents from any solid waste management unit (SWMU) at its facility in Wood River, Illinois. This section contains the conditions which must be followed to ensure these requirements are met.
2. The original RCRA permit issued by Illinois EPA for this facility on September 30, 1993 required that the facility conduct corrective action on twelve (12) solid waste management units and one product release site. On, August 9, 2001, Illinois EPA approved a plan to expand the scope of the corrective action program at the facility to include all recognized conditions at the facility. To accomplish this, the facility was broken up into ten (10) land reuse investigation parcels so that corrective action at the facility could be addressed on a parcel-by-parcel basis.
3. The facility has completed a substantial amount of corrective action efforts to date at this facility. A summary of these completed efforts, based on the date that Illinois EPA approved workplans and reports associated with these efforts, as of January 2021, is provided in Condition V.C below.
4. The Permittee must develop and implement a Corrective Measures Program to protect human health and the environment from any of the SWMUs and areas of concern at the facility.
5. The Permittee must carry out interim measures in accordance with the terms, conditions, and requirements of this permit to address existing contamination at the facility until such time as a final corrective measure can be developed and implemented.
6. The Permittee must provide corrective action, as appropriate, for: (1) any newly discovered SWMUs; or (2) future releases for existing SWMUs.
7. Investigation and remediation efforts carried out as part of the corrective action program implemented in accordance with this permit must meet the requirements of: (1) this permit, and the regulations cited herein; (2) Illinois EPA and USEPA guidance documents regarding such efforts; and (3) Illinois EPA letters regarding such activities.
8. The requirements of 35 IAC 620 and 742 must be met, when applicable, in establishing remediation objectives for corrective action. In addition, all corrective action efforts must meet the requirements of 35 IAC 724.201.

9. All Illinois EPA final decisions regarding RCRA corrective action at this facility are subject to the appeal provisions of the Illinois Environmental Protection Act.
10. The Illinois EPA may modify this Section when it determines good cause exists for modification of a compliance schedule, such as an act of nature, strike, flood or materials shortage or other Force Majeure or events over which the Permittee has no control and for which there is no reasonably available remedy.

B. CORRECTIVE ACTION REQUIREMENTS

1. Twelve (12) SWMUs and one Product Release Site (PRS) were listed in the 1993 permit as units to be addressed by the facility's corrective action program; SWMU 10 was combined with SWMU 6 in 1994; and a SWMU 14 was added in 1994 (the Former Channel Seep Area). As of January 2021, the following list of SWMUs have been identified at the facility:

<u>SWMU/PRS</u>	<u>Name</u>
SWMU 1	Closed Disposal Facility
SWMU 2	West Surge Pond
SWMU 3	Temporary Surge Basin
SWMU 4	Butene Polymerization Waste Area
SWMU 5	Pond 5 Landfill Adjacent Area
SWMU 6	Tank D-700 Area (includes SWMU 10—Field North of Tank D-700)
SWMU 7	Hydrocarbon Pool
SWMU 9	Chemfix Pad Area
SWMU 11	Pond 5 Landfill
SWMU 12	Heavy Oils Dock
SWMU 13	Mississippi River Seep Area
SWMU 14	Former Channel Seep Area
PRS 1	Marathon Pipeline Area

2. A Phase I RCRA Facility Investigation report for the units above was approved by Illinois EPA on December 2, 1996. The Permittee and Illinois EPA subsequently expanded the scope of corrective action at this facility to all recognized environmental conditions (not just the units identified above) and divided the facility into ten (10) land reuse parcels for remediation and potential redevelopment. Market conditions and environmental priorities will guide the

schedule for investigating, remediating and redeveloping these parcels. The schedule for addressing these parcels is subject to Illinois EPA review and approval. A map of the BP Riverfront land reuse parcels is presented in Figure B-1 of Attachment B to this permit; these parcels are also identified as the following:

<u>Parcel</u>	<u>Name</u>
A	Barge Maintenance Area (BMA), North Channel Tract Areas (NCT), Butene Polymerization Waste Area (BPWA), South Channel Tract Area (SCT), Southwest Channel Tract Area (SWCT)
B	Light Oils Dock (LOD)
C	Former Channel Seep Area (FSCA)
D	Closed Disposal Facility (CDF)
E	Pond 1 Landfill
F	Temporary Surge Pond (TSP)
G	Mississippi River Seep Area (MRSA)
H	East Surge Pond (ESP)
I	West Surge Pond (WSP)
J	Permitted Nonhazardous Landfill (PNWL)

3. The Permittee plans to complete corrective action for the soil and groundwater at the facility through the parcel land reuse investigation remediation process. The goal in following this process is to obtain a no further action (NFA) determination for the entire parcel and address all recognized environmental conditions in the parcel. If the Permittee determines that redevelopment is not likely to occur in a given parcel, the Permittee may focus only on the SWMUs and PRS within the parcel. If the potential for redevelopment of the parcel becomes viable in the future, the Permittee may pursue an NFA determination for all recognized environmental conditions within the parcel at that time. The general process for investigation/remediation of each parcel (or for individual SWMUs/PRSs) is as follows:
 - a. Current conditions will be established for the parcel.
 - b. An Investigation Work Plan incorporating the current conditions will be developed and submitted to Illinois EPA for review and approval to investigate data gaps required to properly characterize the area.
 - c. The investigation, focused on obtaining soil and any perched groundwater data, will be completed. It must be noted that the groundwater within the

uppermost aquifer beneath the facility is being addressed by the requirements of Section IV of this permit.

- d. The results of investigation will be analyzed; as well as all other data remediation objectives will be developed in accordance with 35 IAC 742; a comparison will be made between the data to the developed remediation objectives; and a determination will be made regarding the need for any remedial activities (including the establishment of engineered barriers and institutional controls).
- e. A report documenting the results of the efforts described in Items (c) and (d) above will be submitted to Illinois EPA for review and approval. This report will also identify any required remedial activities (including establishment of any required engineered barriers and/or institutional controls) needed to achieve the proposed remediation objectives.
- f. Based upon the results of its review of the Investigation Report, Illinois EPA will either:
 - (1) require that additional investigative efforts be conducted;
 - (2) issue a draft NFA letter for soil and perched groundwater (if applicable). This draft NFA will identify any required remedial activities (including establishment of an engineered barrier or institutional control) that must be completed before a final NFA letter can be issued. As necessary, the Permittee will conduct the required remedial activities and submit a report to Illinois EPA for review and approval documenting the results of these activities. Additional work must be conducted by the Permittee as necessary in accordance with plans and reports approved by Illinois EPA, until Illinois EPA determines that a final NFA letter can be issued.
 - (3) issue a final NFA letter for soil and perched groundwater (if applicable); or
 - (4) require some combination of the above efforts.
- g. Any engineered barriers and/or institutional controls required in the development of remediation objectives must be established before a No Further Action letter can be issued. Plans for establishing the required barrier/institutional control must be submitted to Illinois EPA for review and approval as well as reports documenting completion of these efforts. Any other proposed remedial efforts to achieve the established remediation objectives must also be completed before a final NFA letter can be issued.

4. Plans and reports associated with all aspects of corrective action at this facility must be submitted to Illinois EPA before being implemented.
5. The investigation efforts conducted at each area must be sufficient to characterize contamination associated with all the identified recognized environmental conditions present in the area. The parcel investigations will focus on soil and perched water.

C. SUMMARY OF CORRECTIVE ACTION EFFORTS COMPLETED TO DATE

1. As of February 2021, the Permittee has obtained NFA for the specific media at the following parcels and SWMUs:

Parcel/ SWMUs Present in Parcel	NFA and Media
Parcel A—Butene Polymerization Waste Area/SWMU 4	NFA letter for soil and perched-groundwater only was issued on March 8, 2005 (Log No. B-145-CA-46). ELUC was established for Parcel A (see Conditions IV.C. 2 and 3 below).
Parcel B—Light Oils Dock/SWMU 6, SWMU 10	NFA Letter for soils-only was issued by IEPA on October 22, 2009 (Log No. B-145-CA-69). Exclusion of perched-groundwater in this parcel was approved on 12/30/2004 (B-145-CA-48).
PRS 1	NFA letter for soils-only was issued for PRS 1 on December 2, 1996 (B-145-CA-1) (see Condition IV.D below).

2. As of February 2021, the following Environmental Land Use Control (ELUC) has been established following the NFA determinations by Illinois EPA and recorded with the Madison County Recorder's Office as shown in the table below.

ELUC Recorded as Part of RFI for BP Riverfront Facility

Area Name	Size (Acres)	Parcel ID for Site	Date of NFA Letter	County Recorder's No. /Date Recorded	PIN/TAX ID
Parcel A	64.8-AC (A-1= 63.92-AC; A-2 = 0.88-AC)	Parcel A, which includes Parcel A-1 and Parcel A-2	3/8/2005 (Log No B-145-CA-46)	2007R32644 June 15, 2007	PIN: 19-1-08-28-00-000-009; 19-1-08-28-00-000-009-.001; 19-1-08-29-00-000-07

3. ELUCs have been established in accordance with 35 IAC Part 742 as part of the completed corrective action efforts at this facility as summarized in Condition V.C.2 above. The ELUC places following restrictions on future activities at the facility:

- a. Parcel A
ELUC requires following restrictions: potable groundwater use restriction; no residential use; construction worker health and safety plan for any excavation required; limited access to soils in this area and requirements for soil screening of VOCs and documentation requirements; an engineered barrier at a location which requires 3' of clean soil (including following sampling locations:
PASW0702BH02;PALD0109BH01;PASW0702BH06). Note: Certified copy of recorded ELUC was accepted by IEPA on January 14, 2008.
4. At Parcel E (Pond 1 Landfill), the Pond 1 Landfill was closed as a hazardous waste landfill in August 1995;post-closure care is being carried out in accordance with requirements of Section III of this permit.

D. SUMMARY OF CORRECTIVE ACTION EFFORTS STILL TO BE COMPLETED

1. A brief summary of corrective action efforts still to be completed at each parcel, as of June 2023, is presented by the table below. (Please note this is not a complete listing of SWMUs at the subject facility). In addition, for all Parcels and SWMUs, Corrective Action efforts must be completed in accordance with requirements of this permit and corrective action letters issued by Illinois EPA for all media of concern.

Parcel/ SWMUs Present in Parcel	Corrective Action Efforts to be Completed
Parcel A—Butene Polymerization Waste Area/SWMU 4	Groundwater in the upper most aquifer in the vicinity of this parcel must be investigated and remediated as necessary to meet the corrective action requirements.
Parcel B—Light Oils Dock/ SWMU 6; SWMU 10	Groundwater in the vicinity of this parcel must be investigated and remediated as necessary to meet the corrective action requirements.
Parcel C—Former Channel Seep Area/ SWMU 14	Corrective action for all media, including continued LNAPL Recovery, must be carried out to meet the corrective action requirements.
Parcel D—Closed Disposal Facility Landfill/SWMU 1	Corrective action activities, including leachate management; groundwater monitoring and maintenance of the phytoremediation system must be continued.
Parcel E—Pond 1 Landfill	Post-closure care being carried out in accordance with Section III of this permit must be continued.

Parcel/ SWMUs Present in Parcel	Corrective Action Efforts to be Completed
Parcel F—Temporary Surge Pond/ SWMU 3	Current conditions report and groundwater investigation workplan for this parcel must be submitted. Corrective action must be carried out in accordance with the Phase II/ III Work Plan (approved on August 9, 2001 by the Illinois EPA) and meet the corrective requirements.
Parcel G—Mississippi River Seep Area (MRSA)/ SWMU 13	Land Reuse Investigation activities in accordance with the Illinois EPA's January 22, 2013 letter are in progress. MRSA Corrective Action Reports are being submitted as part of the Quarterly Riverfront Corrective Action Reports. Any remaining corrective action activities must be carried out to meet the corrective action requirements.
Parcel H—East Surge Pond (ESP)/ SWMU 8	The ESP must be operated in accordance with requirements of Section II of this permit. A proposed schedule to close the ESP in accordance with Condition II.F of this permit must be submitted to the Illinois EPA within one (1) year of the effective date of this permit. The closure of the ESP must commence prior to the expiration date of this permit as required in Condition II.F.1 of this permit, unless otherwise approved of an alternative closure commencement date by the Illinois EPA. If clean closure can't be achieved, this unit must be closed as a landfill and provided necessary post-closure care.
Parcel I—West Surge Pond (WSP)/ SWMU 2	The WSP is currently used for temporary storage of nonhazardous wastewaters. A current conditions report and RCRA Investigation workplan for this area must be submitted.
Parcel J—Permitted Non-Hazardous Waste Landfill/ SWMU 5/ SWMU 11	BP is currently providing post-closure care (maintenance of final cover, leachate management, and groundwater monitoring) in accordance with the Illinois EPA letter of April 27, 2005 and associated modifications. BP submits groundwater reports quarterly. Any additional corrective action activities must be conducted as necessary to meet the corrective action requirements.
SWMU 7—Hydrocarbon Pool	Further investigation and remediation must be conducted to meet the conditions of the Illinois EPA's Corrective Action approval letters for this unit. BP is awaiting USACE, WRDLD, and IDOT access authorization for this area to conduct further required corrective action activities. Any remaining corrective action activities must be conducted to meet the corrective action requirements.
PRS-1—Marathon Pipeline Area	BP must continue to monitor groundwater in accordance with corrective action provisions of this permit.
Shallow Groundwater Beneath Facility	BP must continue to address shallow groundwater at the site to meet the corrective action requirements of this permit.
Groundwater Beneath Facility in the American Bottoms Aquifer	BP must continue to address the groundwater at the site in accordance with Section IV of this permit.

2. Within ninety (90) days of the date of the permit, the Permittee must submit a document summarizing the next step for the corrective action and proposed schedule for addressing each Parcel/SWMU listed in Condition V.D.1 above as a corrective action submittal.

E. CORRECTIVE MEASURES REQUIREMENTS

1. If it is determined that corrective measures must be taken at a SWMU, then the Permittee must implement a Corrective Measures Program (CMP) for such SWMUs in general accordance with the procedures set forth in Attachment E to this permit. The corrective measures implemented by the Permittee must be sufficient to ensure the appropriate requirements of 35 IAC Parts 302, 620, 724, and 742 are met.
2. The types of corrective measures which may be implemented include, but are not limited to:
 - a. Removal of the contaminants or the contaminated media so that the remaining media meet remediation objectives developed in accordance with 35 IAC 742;
 - b. Closing the SWMU as a landfill by establishing a proper final cover over the SWMU and then providing proper long-term monitoring/maintenance/management of: (1) leachate; (2) subsurface gas; (3) final cover system; and (4) groundwater;
 - c. Establishing engineered barriers to restrict exposure to the contaminants remaining at the SWMU (necessary to certain remediation objectives developed in accordance with 35 IAC Part 742);
 - d. Establishing institutional controls to restrict activities at the facility, as necessary, to support remediation objectives established in accordance with 35 IAC Part 742.
3. The Corrective Measures Program described in Attachment E to this permit consists of five phases:
 - a. Phase I--conceptual design of the selected corrective measure;
 - b. Phase II--development of the final design plans for the corrective measure, including installation and operation/maintenance plans;
 - c. Phase III--actual construction/installation/implementation of the corrective measure;

- d. Phase IV--operation/maintenance/monitoring, as necessary, of the corrective measure to ensure it is being properly implemented and is properly protecting human health and the environment.
 - e. Phase V--demonstration/verification that the corrective measure has been completed and that the established remediation objectives have been achieved.
 - f. Phases may be combined or skipped, depending on the actual corrective measure selected. The overall CMP implemented at a given SWMU must: (1) be logical in nature; and (2) allow for Illinois oversight and approval throughout the entire process. As such, it will be necessary for the Permittee to submit workplans and reports regarding all aspects of corrective measures for the Illinois EPA review and approval prior to carrying out any corrective measure activity.
4. A Phase I CMP Workplan, or its equivalent, must be submitted to the Illinois EPA within ninety (90) days of the date that the Illinois EPA notifies the Permittee of the need for a CMP.
 5. Subsequent CMP related workplans and reports must be submitted to the Illinois EPA for review and approval in accordance with a schedule approved by the Illinois EPA.
 6. For units closed as landfills:
 - a. The Phase II report must include a plan for the construction of a final cover system as well as a post-closure care plan. The post-closure care plan must include provisions for (1) inspecting the final cover; (2) monitoring the groundwater and soil gas; and (3) taking corrective action if any problems are observed during the inspection/monitoring effort.
 - b. The Phase III report must document the construction of the approved final cover system and any other systems required for closure of the unit.
 - c. During Phase IV, quarterly reports must be submitted documenting the results of the inspection/monitoring efforts as well as any corrective measures taken in response to problems observed during these efforts. It will be necessary to submit plans to the Illinois EPA for review and approval to address any groundwater quality or gas migration problems.
 - d. The Phase V report will not be submitted until the post-closure care period has been completed. This report must demonstrate that all applicable post-closure requirements have been met and that the groundwater at the site meets the applicable standards.

7. Once all corrective measures have been completed, a report must be developed documenting all efforts and results associated with the completed measure, including, as appropriate, information demonstrating the approved remediation objectives for the project have been achieved.
8. The Illinois EPA's action on all CMP submittals shall be subject to the appeal provisions of Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

F. FINANCIAL ASSURANCE FOR CORRECTIVE ACTION

1. The current cost-estimate for completing corrective action and groundwater remediation, including 20% contingency, at the BP Riverfront provided by the facility is \$10,359,514 in 2020 dollars as described in Attachment G. The Permittee shall prepare an updated cost estimate for the completion of any corrective action required under this permit in order to provide financial assurance for the approved amount of that cost estimate as required in Condition VI.C.1 (c).
2. The Permittee shall demonstrate continuous compliance with 35 IAC 724.201 by providing documentation of financial assurance using a mechanism specified in 35 IAC 724.243, in at least the amount of the cost estimate required under Condition V.E.1 above. The words "completion of corrective action" shall be substituted for "closure and/or post-closure", as appropriate in the financial instrument specified in 35 IAC 724.251. The Illinois EPA may accept financial assurance for completion of corrective action in combination with another financial mechanism that is acceptable under 35 IAC 724.246.
3. At least once per year but no later than January 30 of each year, starting in 2024, the Permittee shall submit an updated estimate of the cost for completing corrective action at this facility to reflect the recent results of the program and the impacts these results have on determining what is needed to complete corrective action at the facility (such updates are also necessary to take into account such things as the completion of investigation efforts, the need for or completion of remediation, etc.). This estimate shall be submitted as a Class 1* modification request and contain the following detailed information in support of the overall cost estimate:
 - a. A brief description of the various tasks which must be carried out to complete corrective action at the facility;
 - b. The estimated cost of completing each identified task;
 - c. A 20% adjustment for contingencies to the total estimated cost;
 - d. An identification of the resources needed to complete each task (type and amount) and the unit cost of each required resource;

- e. Justification for all values used in the developing all aspects of the estimate.
4. The cost estimate must be supported by a detailed breakdown of the estimated third-party cost for completing each required task. The amount of the various resources needed to complete each task must be provided, as well as the unit cost of these resources and an adjustment for contingencies. Justification for all data used in these calculations must also be provided.
5. The financial assurance requirements of 35 IAC 724.201 must also be met for any investigative or corrective action efforts carried out in accordance with Conditions G.1 or I below. Detailed cost estimates must be developed for any activities carried out under this Section and must accompany any workplan/report submitted to Illinois EPA for review and approval. Appropriate documentation of financial assurance in at least the amount of the approved cost estimate must be submitted to Illinois EPA within sixty (60) days after the cost estimates are approved.
6. All cost estimates prepared under the requirements of Conditions V.F.1 through V.F.5 above must be submitted as a Class 1* permit modification request in accordance with 35 IAC 703.281.

G. REQUIREMENTS FOR ADDRESSING NEWLY- IDENTIFIED SWMU(s) AND AREA(s) OF CONCERN (AOCs)

1. The Permittee shall notify the Illinois EPA BOL Permit Section in writing of any newly-identified SWMU(s) and/or Area(s) of Concern (AOCs) discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, no later than thirty (30) calendar days after discovery. The notification shall provide the following information, as available:
 - a. The location of the newly-identified SWMU/AOC in relation to other SWMUs on a scaled map or drawing;
 - b. The type of unit and past and present function of the unit;
 - c. The general dimensions, capacities, and structural description of the unit (available drawings and specifications provided);
 - d. The period during which the unit was operated;
 - e. The specifics on all materials, including but not limited to, wastes and hazardous constituents, that have been or are being managed at the SWMU/AOC, to the extent available; and

- f. The results of any relevant available sampling and analysis which may aid in determining whether releases of hazardous wastes or hazardous constituents have occurred or are occurring from the unit.
2. If the submitted information demonstrates a potential for a release of hazardous waste or hazardous waste constituents from the newly identified SWMU/AOC, the Illinois EPA may request in writing, that the Permittee prepare a SWMU Assessment Plan and a proposed schedule of implementation and completion of the Plan for any additional SWMU(s) discovered subsequent to the issuance of this Permit. This SWMU Assessment Plan must also propose investigations, including field investigations if necessary, to determine the release potential to specific environmental media for the newly identified SWMU/AOC. The SWMU Assessment Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste and hazardous constituents from the newly-discovered SWMU(s)/AOC(s) to the environment.
3. Within ninety (90) calendar days after receipt of the Illinois EPA's request for a SWMU Assessment Plan, the Permittee shall submit a SWMU Assessment Plan to the Illinois EPA for review and approval.
4. After the Permittee submits the SWMU Assessment Plan, the Illinois EPA shall either approve, conditionally approve or disapprove the plan in writing. If the plan is approved, the Permittee shall begin to implement the plan within forty-five (45) calendar days of receiving such written notification or in according to the terms and schedule established within the plan and any conditions placed on it. If the plan is disapproved, the Illinois EPA shall notify the Permittee in writing of the plan's deficiencies and specify a due date for submittal of a revised plan.
5. The Permittee shall submit a report documenting the results of the approved SWMU Assessment Plan to the Illinois EPA in accordance with the schedule in the approved SWMU Assessment Plan. The SWMU Assessment Report shall describe all results obtained from the implementation of the approved SWMU Assessment Plan.
6. The Permittee must implement a Corrective Measures Program, as necessary, to properly address any contamination encountered during the assessment. Guidance regarding the implementation of this program will be provided at the time Illinois EPA notifies the Permittee of the need for such a program.

H. FUTURE RELEASES FROM SWMUs

There exists a potential that a release may occur in the future from SWMUs identified in the RFA which did not require any corrective action at the time that the RFA or RFI was completed. If the Permittee discovers that a release has occurred from such a SWMU in the future, then the Illinois EPA must be notified of this release within thirty (30) days

after its discovery following the procedures set forth in Condition V.G.1 above. Additional investigation and, as necessary, corrective measures efforts at this SWMU must be carried out in accordance with the procedure set forth in Subsection E above. The results of all corrective action efforts required by this condition must meet the requirements of 35 IAC 724.201.

I. INTERIM MEASURES/STABILIZATION

The Permittee shall carry out interim measures/stabilization activities in order to prevent or mitigate the migration of a release of hazardous substances into the environment, and to provide adequate protection to public health, welfare and the environment.

1. At any time during the corrective action process, the Permittee may initiate interim measures for the purpose of preventing continuing releases and/or mitigating the results of releases and/or mitigating the migration of hazardous wastes or hazardous constituents. It shall not be necessary to conduct all phases of a RCRA Facility Investigation (RFI) or a Corrective Measures Study (CMS) prior to implementing an interim measure if the Illinois EPA and the Permittee agree that a problem can be corrected, or a release cleaned up, without additional study and/or without a formal corrective measures study.
2. Prior to implementing any interim measures, the Permittee must submit detailed information regarding the proposed interim measure to the Illinois EPA's BOL Permit Section for approval. This information shall include, at a minimum:
 - a. Objectives of the interim measures: how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long-term solution at the facility;
 - b. Design, construction, and maintenance requirements;
 - c. Schedules for design and construction; and
 - d. Schedules for progress reports.
3. If the Illinois EPA determines that a release cannot be addressed without additional study and/or a formal CMS, then the Illinois EPA will notify the Permittee that these must be performed. Any proposal made under this provision or any other activity resulting from such proposal, including the invocation of dispute resolution, shall not affect the schedule for implementation of the other corrective action efforts being carried out at the facility or of any other portion of the permit.
4. If the Illinois EPA determines that interim measures are necessary to protect human health or the environment, the Permittee will be notified by way of a permit modification.

5. Consistent with the annual reporting requirements of this permit, the Permittee shall submit a report assessing the effectiveness of any interim measures being carried out in accordance with this permit. Based on a review of this report, the Illinois EPA reserves the right to require additional interim measures be carried out if it is determined that the interim measure is unable to protect human health and the environment. This annual report should at a minimum contain the following information regarding each system which comprises the interim measure:
 - a. A discussion of each system's operation during the year. This discussion should address: (1) actual daily, weekly and monthly flow rates through each system; (2) any periods when the systems were not operating; and (3) deviations from the design operating procedures for the system (such as problems with drawing an adequate vacuum, downtime due to equipment failure, etc.);
 - b. Results of all monitoring efforts carried out during the year;
 - c. A discussion of the effectiveness of the system supported as appropriate with data and calculations; and
 - d. Recommended changes, if any, which should be made to the system to improve its effectiveness.
6. The Illinois EPA reserves the right to require the Permittee to remove or treat soil if the Illinois EPA determines that contaminants are present in the soils at levels such that the remediation system is unable to protect human health and the environment. Remediation objectives for corrective measures will be established by the Illinois EPA at a later date.
7. The interim measure approved for a SWMU may not be sufficient to meet the final requirements for corrective action for remediation for the unit. The adequacy of the interim measure will be addressed upon Illinois EPA review and approval of the RFI Reports and the Corrective Measures Plan, as required by this permit. As such, the Permittee may be required to expand this interim measure as necessary to address existing or additional contamination detected through RFI investigations.
8. The Illinois EPA reserves the right to require revision and modification of the interim measures implemented by the facility should it be determined by the Illinois EPA through information obtained through facility monitoring that the interim measures approved by this portion of the permit are ineffective in protecting human health and the environment.

J. REPORTING REQUIREMENTS

1. A "Corrective Action Progress Report (formerly referred to as Riverfront RFI Progress Report by BP Products, North America)" shall be submitted summarizing the corrective action efforts completed at each parcel during each quarter of the calendar year. This report must also contain a general description of the corrective action efforts to be completed during the next quarter of the calendar year.

a. The reports should be submitted in accordance with the following schedule:

<u>Reporting Period</u>	<u>Report to be submitted by the following</u>
January – March	May 1
April – June	August 1
July - September	November 1
October - December	March 1**

** The fourth quarter report must be combined with the Annual "Corrective Action Progress Report" (due by March 1 of every year)

b. Each Corrective Action Progress Report must contain:

(1) a summary of activities completed at each parcel during the quarter, including information regarding the amount of free product/groundwater/leachate removed on a weekly basis from various units during the quarter;

(2) a discussion of any problems encountered while conducting corrective action at each parcel during the quarter; and

(3) A summary of the activities anticipated to be carried out during the next quarter.

c. The "MRSA Corrective Measures Quarterly Report" for each quarter, required by the Illinois EPA's letter dated January 12, 2006 and the "90-Day SWMU 7 Status Reports" shall be incorporated into each quarterly Corrective Action Progress Report and are no longer required to be submitted as separate reports.

d. The quarterly groundwater monitoring reports required by Attachment A of the December 15, 2006 letter (Log Nos. B-145; and 2001-075) for the

landfill identified as the PNWL shall be incorporated into each quarterly Corrective Action Progress Report; and the PNWL annual groundwater monitoring reports required by the December 15, 2006 letter shall be incorporated into the Quarterly Corrective Action Progress Report. Separate reports are no longer required to be submitted.

- e. CDF landfill reporting requirements in Illinois EPA letters dated September 13, 2002 (Log No. B-145-CA-23), and as modified in Illinois EPA letters dated November 18, 2008 (B-145-CA-77), and September 3, 2009 (Log No. B-145-CA-71), shall be incorporated into the Quarterly and Annual Corrective Action Progress Reports in accordance with the schedule in Condition V.J.1.a (August 1 and March 1 submittal dates for the CDF). This includes the CDF Second and Fourth Quarter Semi-Annual Groundwater Monitoring Reports and the “Annual CDF Operations, Maintenance and Monitoring Report” (referred to as Annual CDF OM&M/Liquid Level Report by BP Products North America Inc.). Separate reports are no longer required to be submitted.
 - f. The LOD Area reporting required as part of the GMZ approval in the April 4, 1994 Illinois EPA letter (Log No. B-145) and re-evaluation of the GMZ approval letter dated April 24, 2002 (Log No. B-145-CA-31) shall be incorporated into the Quarterly Corrective Action Progress Reports. Separate reports are no longer required to be submitted.
 - g. An Annual Corrective Action Progress Report must be submitted to Illinois EPA by March 1 of each year which summarizes corrective action program activities completed at the facility during the previous calendar year (i.e., the previous January 1 to December 31). Among other things, this report must contain a compilation/summary of the information in the quarterly reports for the year, what was completed during the year, and what must still be done in the next year and in the following years. The following shall be incorporated into the Annual Corrective Action Progress Report and separate reports are no longer required: The corrective action progress report for the fourth quarter (October – December of every year).
2. Final reports must be submitted to Illinois EPA for review and approval when corrective action is complete for a given parcel. Such reports must be certified by a qualified professional engineer and a person of authority from the Permittee. This certification must meet the requirements of 35 IAC 702.126. These reports must contain be detailed in nature and contain sufficient information which (1) describes in detail all investigation/remediation efforts carried out in the parcel; and (2) the efforts were carried out in accordance with the approved plan and this permit.

SECTION VI: SPECIAL CONDITIONS

A. REQUIRED FORMS

- ii. The permittee shall provide a completed Illinois EPA permit application form LPC-PA23 with all additional information, permit modifications, and permit applications that are submitted to the Illinois EPA Bureau of Land.
- iii. The permittee shall submit current 39(i) certifications and supporting documentation with all applications for a permit.

Note: If the applicant wants additional staff to be able to send in future modifications, certifications, etc. those individuals should also send in an individual 39i certification form.

B. REPOSITORY

1. The permittee shall maintain a repository at the Wood River Public Library, located at 326 E. Ferguson Avenue, Wood River, Illinois. The following information shall be sent to the repository:
 - a. A copy of the approved RCRA Post-Closure Renewal Permit.
 - b. All permit applications and permit modification requests.
 - c. All Illinois EPA responses to modification requests made to the RCRA Post-Closure Permit (Log No. B-145R2).

C. COMPLIANCE SCHEDULE

1. Cost Estimates: Within ninety (90) days of the effective date of this Permit,
 - a. The Permittee shall submit revised post-closure cost estimates and financial assurance to meet the required minimum of thirty (30) years post-closure care costs for the Pond 1 Landfill, as stated in Condition III.H. as a Class 1* permit modification.
 - b. The Permittee shall include the corrective action cost estimates for Parcel J/ SMWU 5 - the costs associated with the post-closure care of the Permitted Non-Hazardous Waste Landfill.
 - c. The Permittee must provide an updated cost estimate for the completion of any corrective action required under this permit in order to provide financial assurance for the approved amount of that cost estimate within

90 days of the date of the effective date of this permit, as required in accordance with Title 35 Illinois Administrative Code (35 IAC) 724.201.

- d. All estimated costs must be updated annually beginning with Year 2024.
2. Survey Plat: Within ninety (90) days of the effective date of this Permit,
 - a. The Permittee shall file the certified survey plat and record of the type/location/quantity of material in the Pond 1 Landfill with the Illinois EPA, the County Recorder, and any local zoning authority or authority with jurisdiction over local land use.
 - b. The Permittee must provide to the Illinois EPA a copy of the certified survey plat (at least in a size of 11" X 17" drawing) that includes the documents that the survey plat was placed in; with the County Recorder's Office and the local zoning authority.
 3. Within ninety (90) days of the effective date of this Permit, the Permittee shall submit revised page(s) as a Class 1* modification for Illinois EPA review and approval, which revises Section C.8 of the approved permit application to identify the monitoring wells specific to each monitoring program (i.e., identify the wells which must be monitored for the PNWL Program) and their groundwater quality.
 4. Within ninety (90) days of the effective date of this Permit, the Permittee shall submit a modification to the Corrective Action Section (Section V) of the Permit, for Illinois EPA review and approval, which provides written notification to any applicable off-site property owner that a GMZ for the Riverfront facility encompasses their property. This documentation will serve to verify off-site property owners are aware of a GMZ being present on their property.
 5. Within one (1) year of the effective date of this Permit, the Permittee shall submit a proposed schedule for implementing closure activities for the East Surge Pond (ESP) as required by Condition II.F.1 as a Class 1* modification for Illinois EPA review and approval. In accordance with Condition II.G.3, a revised cost estimate for conducting closure of the ESP must be submitted with the proposed schedule.
 6. Any proposed corrective actions to address leachate at the Pond 1 Landfill as a result of Pond 1 Landfill assessment as described in Sections III. E.3.4 and III. E.4.3 of the approved permit application must be submitted as a permit modification request in accordance with Condition III.G.1 for Illinois EPA's review and approval. The permittee must verify that automated alarm system is in place for leachate detection as required in Condition III.E.7.(c) of the Permit. In addition, as a part of the study, an Action Leakage Rate (ALR) is recommended to be determined for Pond 1 Landfill for corrective action purposed.

7. Within thirty (30) days of the date of this permit, the Permittee must submit a draft deed restriction regarding the Pond 1 Parcel with a Plat of Survey, which will be attached to the deed to the property as described in Condition II.B.6.(d) of this permit as a Class 1* permit modification request. Once the draft deed restriction is approved by Illinois EPA, the deed restriction must be filed with the Madison County Recorder's office. A certified copy of the recorded deed restriction with a Plat of Survey must be submitted to Illinois EPA as a Class 1 permit modification request within thirty (30) days of the Illinois EPA's approval of the draft document.
8. Within ninety (90) days of the date of the permit, the Permittee must submit a document summarizing the next step for the corrective action and proposed schedule for addressing each Parcel/SWMU listed in Condition V.D.1 of this permit as a corrective action submittal.
9. Provide a summary in the next semi-annual groundwater monitoring report required by Section IV which discusses the results of the recent well integrity efforts performed site-wide at the Riverfront facility, and explain specific to wells G401 and G030 why the changes in well depths and/or screened interval occurred since the previous survey. If reasons are unknown, submit a workplan as a Class 1* permit modification within ninety (90) days to investigate the well integrity.

SECTION VII: STANDARD CONDITIONS**GENERAL REQUIREMENTS**

1. **EFFECT OF PERMIT.** The existence of a RCRA permit shall not constitute a defense to a violation of the Environmental Protection Act or Subtitle G, except for development, modification or operation without a permit. Issuance of this permit does not convey property rights or any exclusive privilege. Issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or infringement of state or local law or regulations. (Title 35 Illinois Administrative Code (35 IAC) 702.181)
2. **PERMIT ACTIONS.** This permit may be modified, reissued or revoked for cause as specified in 35 IAC 703.270 through 703.273 and Section 702.186. The filing of a request by the Permittee for a permit modification or reissuance, or a notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition. (35 IAC 702.146)
3. **SEVERABILITY.** The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby. (35 IAC 705.202)
4. **PERMIT CONDITION CONFLICT.** In case of conflict between a special permit condition and a standard condition, the special condition will prevail. (35 IAC 702.160)
5. **DUTY TO COMPLY.** The Permittee shall comply with all conditions of this permit except for the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance constitutes a violation of the Environmental Protection Act and is grounds for enforcement action; permit revocation or modification; or for denial of a permit renewal application. (35 IAC 702.141 and 703.242)
6. **DUTY TO REAPPLY.** If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee must apply for a new permit at least 180 days before this permit expires, unless permission for a later date has been granted by the Illinois EPA. (35 IAC 702.142 and 703.125)
7. **PERMIT EXPIRATION.** This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application (see 35 IAC 703.181-703.209) and through no fault of the Permittee the Illinois EPA has not issued a new permit as set forth in 35 IAC 702.125.

8. **NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE.** It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (35 IAC 702.143)
9. **DUTY TO MITIGATE.** In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. (35 IAC 702.144)
10. **PROPER OPERATION AND MAINTENANCE.** The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory, and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. (35 IAC 702.145)
11. **DUTY TO PROVIDE INFORMATION.** The Permittee shall furnish to the Illinois EPA, within a reasonable time, any relevant information which the Illinois EPA may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Illinois EPA, upon request, copies of records required to be kept by this permit. (35 IAC 702.148)
12. **INSPECTION AND ENTRY.** The Permittee shall allow an authorized representative of the Illinois EPA, upon the presentation of credentials and other documents as may be required by law, to:
 - a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location. (35 IAC 702.149)

13. **MONITORING AND RECORDS.** (35 IAC 702.150)
- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste must be the appropriate method from Appendix A of 35 IAC 721. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, latest versions; Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, latest versions; or an equivalent method as specified in the approved Waste Analysis Plan.
 - b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report or application. These periods may be extended by request of the Illinois EPA at any time. The permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.
 - c. Records of monitoring information shall include:
 - i. The date(s), exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical technique(s) or method(s) used; and
 - vi. The result(s) of such analyses. (35 IAC 702.150)
14. **REPORTING PLANNED CHANGES.** The permittee shall give written notice to the Illinois EPA at least 15 days prior to any planned physical alterations or additions to the permitted facility. In general, proposed changes to the facility will need to be submitted to the Illinois EPA as permit modification request that complies with the requirements of 35 IAC 703.280. (35 IACs 702.152(a))
15. **CONSTRUCTION CERTIFICATION.** For a new hazardous waste management facility, the permittee shall not commence treatment, storage or disposal of hazardous waste; and for a facility being modified the permittee shall not treat, store or dispose of hazardous waste in the modified portion of the facility, until:

- a. The permittee has submitted to the Illinois EPA by certified mail or hand delivery a letter signed by the permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit; and
 - b.
 - i. The Illinois EPA has inspected the modified or newly constructed facility and finds it is in compliance with the condition of the permit; or
 - ii. If, within 15 days of the date of submission of the letter in paragraph (a), the permittee has not received notice from the Illinois EPA of its intent to inspect, prior inspection is waived and the permittee may commence treatment, storage or disposal of hazardous waste. (35 IAC 703.247)
16. **ANTICIPATED NONCOMPLIANCE.** The Permittee shall give advanced written notice to the Illinois EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements, regulations, or the Act. (35 IAC 702.152(b))
17. **TRANSFER OF PERMITS.** This permit may not be transferred by the permittee to a new owner or operator unless the permit has been modified or reissued pursuant to 35 IAC 703.260(b) or 703.272. Changes in the ownership or operational control of a facility must be made as a Class 1 modification with the prior written approval of the Illinois EPA. The new owner or operator shall submit a revised permit application no later than 90 days prior to the scheduled change. (35 IAC 703.260)
18. **MONITORING REPORTS.** Monitoring results shall be reported at the intervals specified in the permit. (35 IAC 702.152(d))
19. **COMPLIANCE SCHEDULES.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than specified in 35 IAC 702.162. (35 IAC 702.152(e))
20. **TWENTY-FOUR HOUR REPORTING.**
- a. The Permittee shall report to the Illinois EPA any noncompliance with the permit which may endanger health or the environment. Any such information shall be reported verbally within 24 hours from the time the Permittee becomes aware of the following circumstances. This report shall include the following:
 - i. Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.
 - ii. Information concerning the release or discharge of any hazardous waste or of a fire or explosion at the hazardous waste management facility, which could threaten the environment or human health outside the facility.

- b. The description of the occurrence and its cause shall include:
- i. Name, address, and telephone number of the owner or operator;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident;
 - iv. Name and quantity of material(s) involved;
 - v. The extent of injuries, if any;
 - vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where applicable; and
 - vii. Estimated quantity and disposition of recovered material that resulted from the incident.
- c. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Illinois EPA may waive the five day written notice requirement in favor of a written report within fifteen days. (35 IAC 702.152(f) and 703.245(b))
21. **OTHER NONCOMPLIANCE.** The Permittee shall report all instances of noncompliance not otherwise required to be reported under Standard Conditions 18, 19 and 20, at the time monitoring reports, as required by this permit, are submitted. The reports shall contain the information listed in Standard Condition 20. (35 IAC 702.152(g))
22. **OTHER INFORMATION.** Where the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Illinois EPA, the Permittee shall promptly submit such facts or information. (35 IAC 702.152(h))
23. **REPORTING REQUIREMENTS.** The following reports required by 35 IAC 724 shall be submitted in addition to those required by 35 IAC 702.152 (reporting requirements):
- a. **Manifest discrepancy report:** if a significant discrepancy in a manifest is discovered, the permittee must attempt to reconcile the discrepancy with the waste generator or transporter. If the discrepancy is not resolved within 15 days after receiving the waste, the permittee must immediately submit to the Illinois EPA a

letter describing the discrepancy and attempts to reconcile it and a copy of the manifest or shipping paper at issue. (35 IAC 724.172(b))

- b. Unmanifested waste report: The permittee must submit to the Illinois EPA within 15 days of receipt of unmanifested waste an unmanifested waste report on EPA form 8700-13B. (35 IAC 724.176)
 - c. Annual report: an annual report must be submitted covering facility activities during the previous calendar year. (35 IAC 724.175)
24. **SUBMITTAL OF REPORTS OR OTHER INFORMATION.** All written reports or other written information required to be submitted by the terms of this permit shall be sent to:
- Illinois Environmental Protection Illinois EPA
Bureau of Land
Permit Section - #33
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276
25. **SIGNATORY REQUIREMENT.** All permit applications, reports or information submitted to the Illinois EPA shall be signed and certified as required by 35 IAC 702.126. (35 IAC 702.151)
26. **CONFIDENTIAL INFORMATION.** Any claim of confidentiality must be asserted in accordance with 35 IAC 702.103 and 35 IAC 161.
27. **DOCUMENTS TO BE MAINTAINED AT FACILITY SITE.** The Permittee shall maintain at the facility, until closure is complete, the following documents and amendments, revisions and modifications to these documents:
- a. Waste analysis plan as required by 35 IAC 724.113(b) and this permit.
 - b. Personnel training documents and records as required by 35 IAC 724.116(d) and this permit.
 - c. Contingency plan as required by 35 IAC 724.153(a) and this permit.
 - d. Closure plan as required by 35 IAC 724.212(a) and this permit.
 - e. Cost estimate for facility closure as required by 35 IAC 724.242(d) and this permit.
 - f. Operating record as required by 35 IAC 724.173 and this permit.
 - g. Inspection schedules as required by 35 IAC 724.115(b) and this permit.

28. **WASTE MINIMIZATION.** The Permittee shall certify at least annually that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that one generates to the degree determined by the Permittee to be economically practicable, and the proposed method of treatment, storage, or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment, in accordance with 35 IAC 724.173(b)(9).

GENERAL FACILITY STANDARDS

29. **NOTICE OF WASTE FROM A FOREIGN SOURCE.** The permittee who has arranged to receive hazardous waste from a foreign source must notify the Illinois EPA in writing at least four weeks in advance of the date the waste is expected at the facility. (35 IAC 724.112(a))
30. **NOTICE OF WASTE FROM OFF-SITE.** The Permittee who receives hazardous waste from an off-site source (except where the Permittee is also the generator), must inform the generator in writing that the permittee has the appropriate permits for, and will accept, the waste the generator is shipping. The Permittee must keep a copy of this written notice as part of the facility operating record. (35 IAC 724.112(b))
31. **GENERAL WASTE ANALYSIS.** The Permittee shall comply with the procedures described in the approved waste analysis plan. (35 IAC 724.113)
32. **SECURITY.** The Permittee shall comply with the security provisions of 35 IAC 724.114(b) and (c).
33. **GENERAL INSPECTION REQUIREMENTS.** The Permittee shall follow the approved inspection schedule. The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by 35 IAC 724.115(c). Records of inspections shall be kept as required by 35 IAC 724.115(d).
34. **PERSONNEL TRAINING.** The Permittee shall conduct personnel training as required by 35 IAC 724.116 and shall maintain training documents and records as required by 35 IAC 724.116(d) and (e).
35. **GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE.** The Permittee shall comply with the requirements of 35 IAC 724.117.
36. **CLOSURE REQUIREMENTS FOR ACCUMULATION AREAS.** The Permittee shall close containers storage areas, tanks, drip pads, or containment buildings used for the accumulation of on-site generated hazardous waste in accordance with the requirements identified at 35 IAC 722.117(a)(8). This requirement is applicable to storage areas used on or after this section was amended at 44 Ill. Reg. 15263, effective September 3, 2020.

PREPAREDNESS AND PREVENTION

37. **DESIGN AND OPERATION OF FACILITY.** The Permittee shall maintain and operate the facility to minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. (35 IAC 724.131)
38. **REQUIRED EQUIPMENT.** The Permittee shall equip the facility with the equipment set forth in the approved contingency plan, as required by 35 IAC 724.132.
39. **TESTING AND MAINTENANCE OF EQUIPMENT.** The Permittee shall test and maintain the equipment specified in the contingency plan and this permit as necessary to assure its proper operation in time of emergency. Such testing and maintenance activities are set forth in the approved inspection schedule. (35 IAC 724.133)
40. **ACCESS TO COMMUNICATIONS OR ALARM SYSTEM.** The Permittee shall maintain access to the communications or alarm system as required by 35 IAC 724.134.
41. **REQUIRED AISLE SPACE.** The Permittee shall maintain aisle space as required by 35 IAC 724.135 and National Fire Protection Association (NFPA) requirements.
42. **ARRANGEMENTS WITH STATE AND LOCAL AUTHORITIES AND EMERGENCY RESPONSE CONTRACTORS.** The Permittee shall attempt to make emergency response arrangements with State and local authorities and agreements with State emergency response teams and emergency response contractors and equipment suppliers as required by 35 IAC 724.137. If State or local officials refuse to enter in preparedness and prevention arrangements with the Permittee, the Permittee must document this refusal in the operating record.

CONTINGENCY PLAN

43. **IMPLEMENTATION OF PLAN.** The provisions of the contingency plan must be carried out by the Permittee immediately whenever there is a fire, explosion or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment (35 IAC 724.151(b)). At a minimum, this includes any fire or explosion which occurs in an area where hazardous waste is being managed (treated, stored or disposed) (35 IAC 703.241). Within 15 days of any incident that requires implementation of the contingency plan, the owner or operator must submit a written report to the Illinois EPA as required by 35 IAC 724.156(j).
44. **COPIES OF PLAN.** A copy of the contingency plan, including any revisions, must be maintained at the facility and submitted to all local police and fire departments, hospitals and state and local emergency response teams as required by 35 IAC 724.153.
45. **AMENDMENTS TO PLAN.** The Permittee shall review and immediately amend, if necessary, the contingency plan, as required by 35 IAC 724.154.

46. EMERGENCY COORDINATOR. A trained emergency coordinator shall be available at all times in case of an emergency as required by 35 IAC 724.155 and 724.156.

MANIFEST SYSTEM RECORD KEEPING AND REPORTING

47. MANIFEST SYSTEM. The Permittee shall comply with the manifest requirements of 35 IAC 724.171, 724.172 and 724.176.
48. OPERATING RECORD. The Permittee shall maintain a written operating record at the facility in accordance with 35 IAC 724.173.
49. ANNUAL REPORT. The Permittee shall prepare and submit an annual report to the Illinois EPA prior to March 1st of each year in accordance with the requirements of 35 IAC 724.175.

CLOSURE

50. PERFORMANCE STANDARD. The Permittee shall close the facility as required by 35 IAC 724.211 and in accordance with the approved closure plan.
51. AMENDMENT TO CLOSURE PLAN. The Permittee must amend the closure plan whenever there is a change in the expected year of closure or whenever a change in the facility operation plans or facility design affects the closure plan pursuant to 35 IAC 724.212(c).
52. NOTIFICATION OF CLOSURE. The Permittee shall notify the Illinois EPA at least 60 days prior to the date it expects to begin closure. (35 IAC 724.212(d))
53. TIME ALLOWED FOR CLOSURE. After receiving the final volume of hazardous waste, the Permittee shall treat or remove from the site all hazardous waste and complete closure activities in accordance with the schedule(s) specified in the closure plan. (35 IAC 724.213)
54. DISPOSAL AND/OR DECONTAMINATION OF EQUIPMENT. When closure is completed, the Permittee shall decontaminate and/or dispose of all facility equipment and structures as required by the approved closure (35 IAC 724.214) plan.
55. CERTIFICATION OF CLOSURE. When closure is completed, the Permittee shall submit certification to the Illinois EPA in accordance with 35 IAC 724.215 that the facility has been closed as specified by the approved closure plans.
56. COST ESTIMATE FOR FACILITY CLOSURE. The Permittee's original closure cost estimate, prepared in accordance with 35 IAC 724.242, must be:

- a. Adjusted for inflation 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with Section 724.243. However, if the owner/operator is using the financial test or corporate guarantee, it must be updated for inflation within 30 days after close of the firm's fiscal year, and before the submission of updated information to the Illinois EPA as specified in Section 724.243(f).
 - b. Revised no later than 30 days after the Illinois EPA has approved a request to modify the closure plan, if the change in the closure plan increases the cost of closure.
 - c. Kept on record at the facility and updated. (35 IAC 724.242)
 - d. Made immediately available to Illinois EPA personnel upon Illinois EPA request.
 - e. Maintained at the value approved by Illinois EPA with annual adjustment for inflation and cannot be decreased unless approved by the Illinois EPA in a permit modification.
57. **FINANCIAL ASSURANCE FOR FACILITY CLOSURE.** The Permittee shall demonstrate compliance with 35 IAC 724.243 by providing documentation of financial assurance, as required by 35 IAC 724.251, in at least the amount of the cost estimates required by the previous Permit Condition. Changes in financial assurance mechanisms must be approved by the Illinois EPA pursuant to 35 IAC 724.243.

Financial assurance documents submitted to Illinois EPA should be directed to the following address:

Illinois Environmental Protection Illinois EPA
Bureau of Land #24
Financial Assurance Program
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

58. **LIABILITY REQUIREMENTS.** The Permittee shall demonstrate continuous compliance with the requirements of 35 IAC 724.247 and the documentation requirements of 35 IAC 724.251.
59. **INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS.** The Permittee shall comply with 35 IAC 724.248 whenever necessary.

LAND DISPOSAL RESTRICTIONS

60. **DISPOSAL PROHIBITION.** Any waste identified in 35 IAC Part 728, Subpart C, or any mixture of such a waste with nonrestricted wastes, is prohibited from land disposal unless it meets the standards of 35 IAC Part 728, Subpart D, or unless it meets the requirements for exemptions under Subpart C. "Land disposal" means placement in or on the land and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, or vault intended for disposal.
61. **DILUTION PROHIBITION.** The Permittee shall not in any way dilute a restricted waste or residual from treatment of a restricted waste as a substitute for adequate treatment in order to achieve compliance with 35 IAC 728, Subpart D (35 IAC 728.103).
62. **WASTE ANALYSIS.**
- a. The Permittee must test his waste or extract developed, using the test method identified in Appendix I of 40 CFR Part 268, or use knowledge of the waste, to determine if the waste is restricted from land disposal.
 - b. For any waste with treatment standards expressed as concentrations in the waste extract, the Permittee must test the treatment residues or an extract of such residues developed using the test method described in Appendix I of 40 CFR Part 268, to assure that the treatment residues or extract meet the applicable treatment standard.
 - c. If the treatment residues do not meet the treatment standards, or if the Permittee ships any restricted wastes to a different facility, the Permittee shall comply with the requirements applicable to generators in 35 IAC 728.107 and 728.150(a)(1).
63. **STORAGE RESTRICTIONS**
- a. The Permittee shall not store hazardous wastes restricted from land disposal under 35 IAC Part 728, Subpart C unless such wastes are stored only in containers or tanks, or containment buildings on-site, and are stored solely for the purpose of the accumulation of such quantities as is necessary to facilitate proper recovery, treatment, or disposal, and: (1) each container is clearly marked to identify its contents and the date each period of accumulation begins; (2) each tank is clearly marked to identify its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, as required by 35 IAC 728.150.
 - b. The Permittee must comply with the operating record requirements of 35 IAC 724.173.

64. NEW DETERMINATIONS OF PROHIBITED WASTES

Wastes which are prohibited from land disposal under 35 IAC Part 728, Subpart C, or for which treatment standards have been established under 35 IAC 728, Subpart D, subsequent to the date of issuance of this permit, shall be subject to the conditions number 59 through 62 above.

POST-CLOSURE

65. CARE AND USE OF PROPERTY. The Permittee shall provide post-closure care for the facility as required by 35 IAC 724.217 and in accordance with the approved post-closure plan.
66. AMENDMENT TO POST-CLOSURE PLAN. The Permittee must amend the post-closure plan whenever a change in the facility operation plans or facility design affects the post-closure plan or when an unexpected event has occurred which has affected the post-closure plan pursuant to 35 IAC 724.218(d).
67. COST ESTIMATE FOR POST-CLOSURE. The Permittee's original post-closure cost estimate, prepared in accordance with 35 IAC 724.244, must be:
- a. Adjusted for inflation either 60 days prior to each anniversary of the date on which the first post-closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year. This permit condition is applicable throughout the entirety of the post-closure care period.
 - b. Revised whenever there is a change in the facility's post-closure plan increasing the cost of the post-closure plan.
 - c. Kept on record at the facility and updated. (35 IAC 724.244).
 - d. Maintained at the value approved by Illinois EPA with annual adjustment for inflation during the post-closure care period and cannot be decreased unless approved by the Illinois EPA in a permit modification.
68. FINANCIAL ASSURANCE FOR POST-CLOSURE CARE. The Permittee shall demonstrate compliance with 35 IAC 724.245 and 703.241(a)(2) by providing documentation of financial assurance, as required by 35 IAC 724.251, in at least the amount of the cost estimates required by the Permit Condition 67. This financial assurance shall be maintained at such value throughout the post-closure care period and shall be adjusted accordingly pursuant to Permit Condition 67. Changes in financial assurance mechanisms must be approved by the Illinois EPA pursuant to 35 IAC 724.245.

Financial assurance documents submitted to Illinois EPA should be directed to the following address:

Illinois Environmental Protection Illinois EPA
Bureau of Land #24
Financial Assurance Program
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

69. INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS. The Permittee shall comply with 35 IAC 724.248 whenever necessary.

SECTION VIII: REPORTING AND NOTIFICATION REQUIREMENTS

The reporting and notification requirements of each section of the RCRA permit are summarized below. This summary table is provided to “highlight” the various reporting and notification requirements of this permit but is not meant to supersede the requirements of the various sections of this permit.

<u>Condition</u>	<u>Action</u>	<u>Due Date</u>
II.B.2	Notify Illinois EPA if the wastewater/ leachate sent to ESP is found hazardous	Immediately
II.D	Notify Illinois EPA of unknown level drop or leaking dike	Within 7 days after problem is detected
II.F.1	Submit to the Illinois EPA of a proposed schedule for the commencement of closure activities to close the ESP	Within 1 year of the effective date of this permit.
II.F.2	Notify Illinois EPA closure of ESP begins and submit a sampling and analysis plan.	180 days prior to date of closure of ESP begins
II.F.5	Submit Certification of Closure	Within 60-day of completion of closure
III.F.3 -6	Submit to the Illinois EPA the Leachate Data Quarterly Monitoring Report; and additional data as per the condition	May 1; August 1; Nov 1; and Feb 1 of each year
III.F.7	Submit Class 1* Modification Request when previously undetected parameter in leachate is detected.	Within 30 days of leachate analysis.
III.G.2	Request permit modification to remove the liner or hazardous wastes	Prior to removing the liner or wastes
III.G.4.	Certify to the Illinois EPA that post-closure was performed in accordance with the approved post-closure plan	Within 60 days of the completion of the post-closure care period
IV.C.4	Notify Illinois EPA if any of the wells identified in Condition IV.C.1 and IV.C.2 are damaged, or the structural integrity has been compromised	Within 30 days of the date the damage is detected

<u>Condition</u>	<u>Action</u>	<u>Due Date</u>
IV.C.6	Provide Illinois EPA boring logs, construction diagrams, and data sheets from new or replacement wells	Within 30 days of the date installation is complete
IV.I.2	Groundwater monitoring data required each quarter, and additional data required in Conditions IV.E., IV.F, and IV.H.	Semi-annually
IV.I.3	Collect quarterly groundwater surface elevation data	Semi-annually
IV.I.4	Quarterly groundwater withdrawal rates	Semi-annually
IV.I.5	Gradient control measurements.	Semi-annually
IV.I.6	Statistical evaluations, as required by Condition IV.H	Every 5-years in GMZ Evaluation
IV.I.7	Groundwater flow rate and direction in the uppermost aquifer.	Semi-annually
IV.I.8	Collect groundwater samples per Condition IV.E.8 and depict the extent of dissolved contamination to define the extent of contamination.	Semi-annually
IV.I.9	The surveyed elevation of the top of well casing.	Every 5 years.
IV.I.10	Elevation of the bottom of each monitoring well.	Annually during the second quarter sampling event.
IV.I.11	Electronic Reporting	Semi-annually
V.F.3	Submit annual Cost Estimate for Corrective Action	By January 30 each year
V.G.1	Notify Illinois EPA of Newly Identified SWMU/AOC	Within 30-day of discovery
V.G.3	Submit to the Illinois EPA a SWMU Assessment Plan	Within 90 days of Illinois EPA's request
V.H.1	Notify Illinois EPA of a new releases from a SWMU	Within 30 days of such discovery

<u>Condition</u>	<u>Action</u>	<u>Due Date</u>
VII.11	Information requested by Illinois EPA and copies of records required to be kept by this permit.	Reasonable time.
VII.14	Notify Illinois EPA of planned physical alterations or additions	At least 15 days prior to planned change
VII.16	Notify Illinois EPA of changes which may result in permit noncompliance	Advanced written notice to the Illinois EPA
VII.17	Application for permit modification indicating permit is to be transferred.	No later than 90 days prior to scheduled change in ownership
VII.19	Submission of any information required in a compliance schedule.	As per Section VI.C of the renewal permit
VII.20	Report to Illinois EPA any non-compliance which may endanger health or environment	
	- via telephone	Within 24 hours after discovery
	- in writing	Within 5 days after discovery
VII.21	Report all other instances of noncompliance	March 1 of each year along with Annual Report
VII.29	Notify Illinois EPA in writing of expected receipt of hazardous waste from foreign source	At least 4 weeks prior to receipt of waste.
VII.43	Implementation of Contingency Plan.	Immediately upon incident
	Notify appropriate state and local agencies with designated response roles.	Within 15 days of incident
	Notify appropriate local officials.	Immediately, if emergency coordinator's assessment indicates evacuation of local area is advisable.
	Notify the Illinois EPA via telephone if emergency coordinator determines there has been a release, fire or explosion which could threaten human health or the environment, outside the facility	Immediately after determination made

<u>Condition</u>	<u>Action</u>	<u>Due Date</u>
	Report to Illinois EPA details regarding incident which required implementation of contingency plan	Within 15 days after event
VII.49	Submit annual report required by 35 IAC 724.175.	March 1 of each year
VII.51	Application for permit modification amending closure plan.	Whenever there is a change that affects the closure plan
VII.52	Notify Illinois EPA of intention/ expectation of closure	At least 60 days prior to beginning closure
VII.56.a and VII.67.a	Adjust closure and post-closure cost estimates for inflation	Within 60 days before anniversary date, or within 30 days after close of the firm's fiscal year
VII.56.b and VII.67.b	Revision of closure and post-closure cost estimates	Withing 30 days of the close of the company's fiscal year
VII.59 and VII.69	Notify Illinois EPA of commencement of voluntary or involuntary bankruptcy proceedings.	Within 10 days after commencement of proceeding.

ATTACHMENT A

IDENTIFICATION OF APPROVED PERMIT APPLICATION

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

**ATTACHMENT A
IDENTIFICATION OF APPROVED PERMIT APPLICATION**

1. RCRA Post-Closure Draft Renewal Application dated May 17, 2018.
2. "RCRA Part B Permit Renewal Application" dated August 3, 2018 (completely replaced May 2018 draft application).
3. "Response to Illinois EPA Comments dated July 19, 2019" dated September 3, 2019.
4. "Response to Illinois EPA Comments dated May 5, 2020" dated June 19, 2020.
5. Additional Information, dated April 8, 2021.
6. Additional Information for B-145R2- Riverfront Property Renewal Application, dated June 22, 2021.
7. Supplemental Pond 1 Landfill Information to Section E, dated November 24, 2021.
8. Additional Information for B-145R2- Replacement Page, Cone of Depression (COD) Well G669/HPW61 Repairs, dated May 10, 2022.
9. Additional Information for B-145R2- Replacement Page, for Section B and Section C, dated April 12, 2023.

ATTACHMENT B

LOCATION MAP & DRAWING OF PERMITTED UNITS

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

Figure B-1: Site Location map

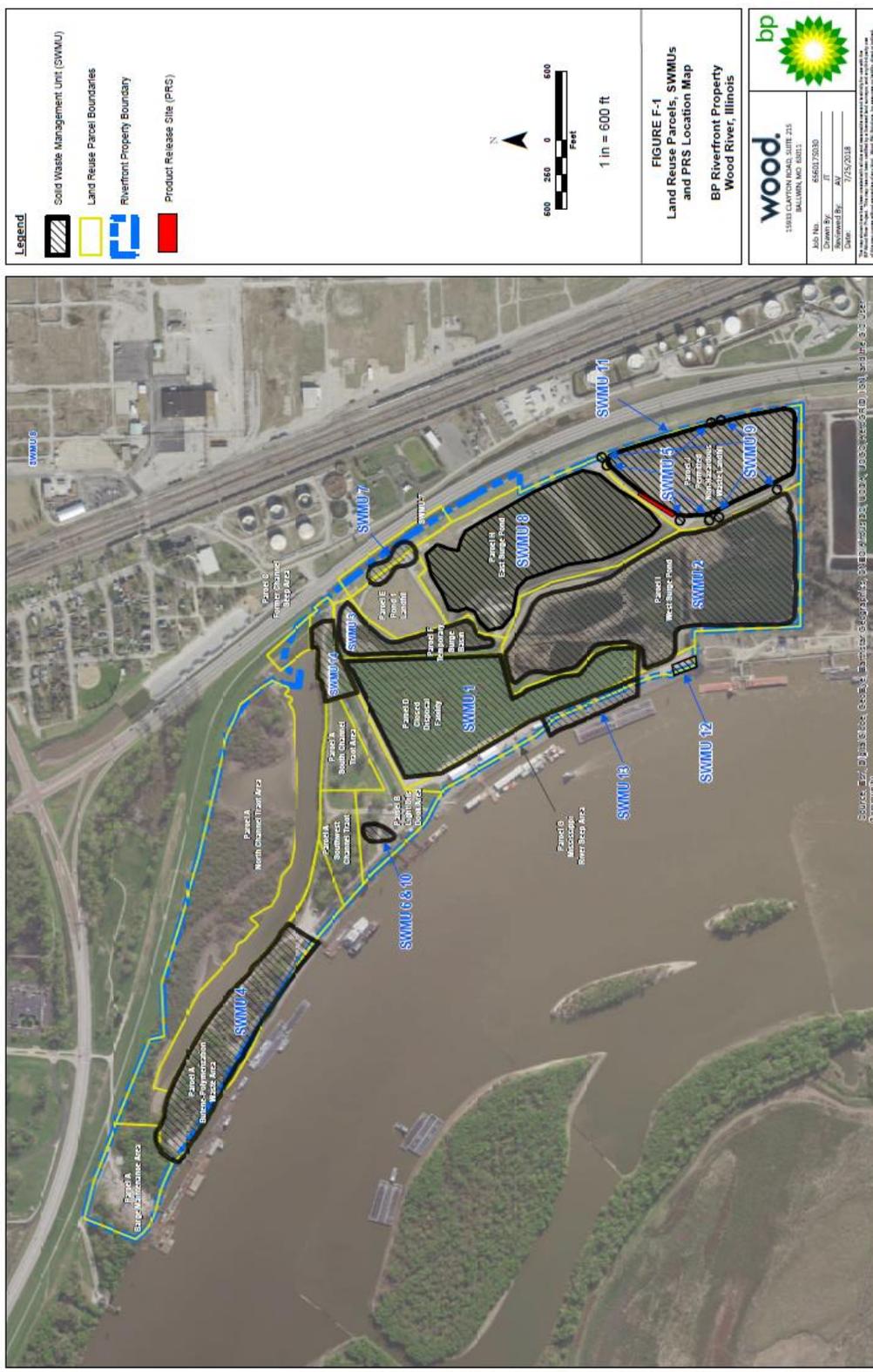


Figure B-3: East Surge Pond



ATTACHMENT C

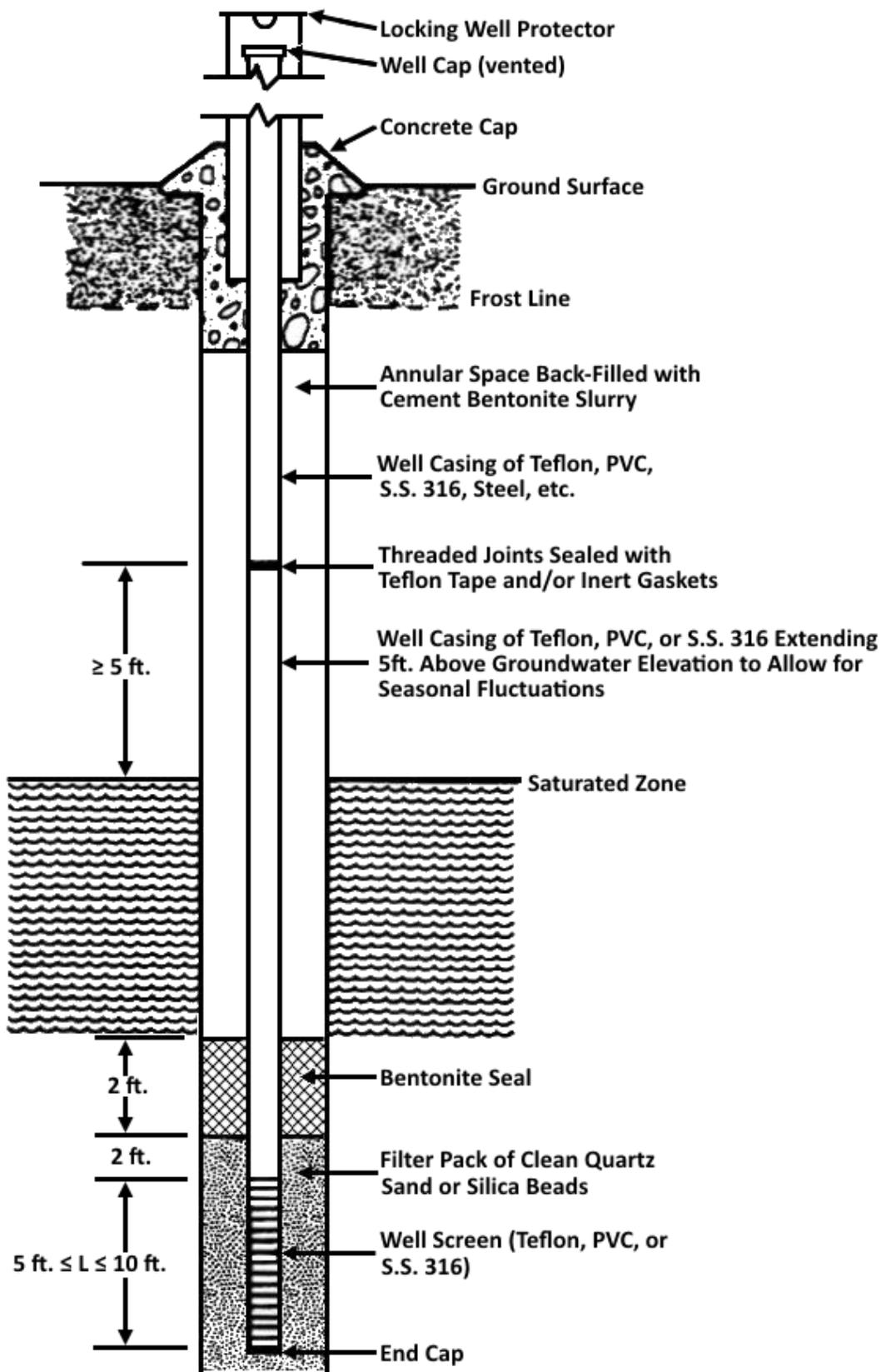
GROUNDWATER MONITORING ATTACHMENTS (Section IV)

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

Monitoring Well Diagram



ILLINOIS EPA MONITOR WELL PLUGGING AND ABANDONMENT PROCEDURES

		Well Construction	Plugging Procedure
I. Unconsolidated Sediment Wells	I-A	...if backfilled with cement grout above bentonite seal and/or sandpack:	<ol style="list-style-type: none"> 1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 3. Insert tremi pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through tremi pipe. 5. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.
	I-B	...if backfilled with soft sediments (cuttings) above bentonite seal and/or sandpack:	<ol style="list-style-type: none"> 1. Knock out and remove thin surface concrete plug, if present. 2. Re-auger entire length of well. 3. Remove well casing from re-augured borehole. 4. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 5. Insert tremi pipe (1" i.d. pvc) into augers and extend to bottom. 6. Slowly pump slurry under low pressure through tremi pipe. 7. Continue slow pumping until all formation water and the water slurry mix is displaced from top of casing. 8. Slowly withdraw tremi pipe - making sure bottom of pipe remains below pure slurry. 9. Pull a flight of augers (5" if in unstable materials and hole collapse is likely or 10" if in competent material and collapse is unlikely). 10. Top off cement slurry after each flight is removed.
	I-C	...if monitor well construction is unknown:	<ol style="list-style-type: none"> 1. Follow procedures in I-A.
II. Bedrock Wells	II-A	...All bedrock monitor wells:	<ol style="list-style-type: none"> 1. Cut casing off at desired depth. 2. Mix neat cement slurry (5 gal. water per 94 lb. bag cement). 3. Insert tremi-pipe (1" i.d. pvc) into well and extend to bottom. 4. Slowly pump slurry under low pressure through tremi pipe. 5. Slowly withdraw pipe making sure bottom of pipe remains below pure slurry. 6. Continue slow pumping until all formation water and the watery slurry mix is displaced from top of casing.



Electronic Filing: Received, Clerk's Office 03/14/2024
Illinois Environmental Protection Illinois EPA **Well Completion Report**

Site Number: _____ County: _____

Site Name: _____ Well #: _____

State _____

Plane Coordinate: X _____ Y _____ (or) Latitude: _____ ° _____ ' _____ " Longitude: _____ ° _____ ' _____ " Borehole #: _____

Surveyed by: _____ IL Registration #: _____

Drilling Contractor: _____ Driller: _____

Consulting Firm: _____ Geologist: _____

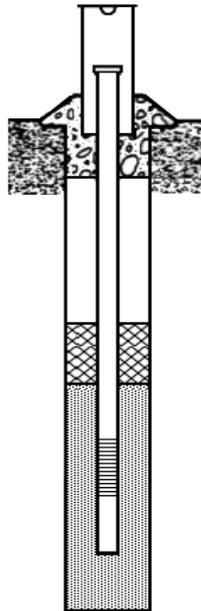
Drilling Method: _____ Drilling Fluid (Type): _____

Logged By: _____ Date Started: _____ Date Finished: _____

Report Form

Completed By: _____ Date: _____

ANNULAR SPACE DETAILS	Elevations (MSL)*	Depth (.01ft.) (BGS)
Type of Surface Seal: _____	_____	_____ Top of Protective
Type of Annular Sealant: _____	_____	_____ Top of Riser Pipe
Installation Method: _____	_____	_____ Ground Surface
Setting Time: _____	_____	_____ Top of Annular Sealant
Type of Bentonite Seal – Granular, Pellet, Slurry (Choose One)	_____	_____ Static Water Level (After Completion)
Installation Method: _____	_____	_____ Top of Seal
Setting Time: _____	_____	_____ Top of Sand Pack
Type of Sand Pack: _____	_____	_____ Top of Screen
Grain Size: _____ (Sieve Size)	_____	_____ Bottom of Screen
Installation Method: _____	_____	_____ Bottom of Well
Type of Backfill Material: _____ (if applicable)	_____	_____ Bottom of Borehole



* Referenced to a National Geodetic Datum

Installation Method: _____

WELL CONSTRUCTION MATERIAL
(Choose one type of material for each area)

Protective Casing	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Above W.T.	SS304, SS316, PTFE, PVC, or Other
Riser Pipe Below W.T.	SS304, SS316, PTFE, PVC, or Other
Screen	SS304, SS316, PTFE, PVC, or Other

CASING MEASUREMENTS

Diameter of Borehole (inches)	
ID of Riser Pipe (inches)	
Protective Casing Length (feet)	
Riser Pipe Length (feet)	
Bottom of Screen to End Cap (feet)	
Screen Length (1 st slot to last slot) (feet)	
Total Length of Casing (feet)	
Screen Slot Size**	

**Hand-Slotted Well Screens are Unacceptable



Illinois Environmental Protection Illinois EPA

Bureau of Land • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

RCRA FACILITY GROUNDWATER, LEACHATE AND GAS REPORTING FORM

This form must be used as a cover sheet for the notices and reports, identified below as required by: (1) a facility's RCRA interim status closure plan; (2) the RCRA interim status regulations; or (3) a facility's RCRA permit. All reports must be submitted to the Illinois EPA's Bureau of Land Permit Section. This form is for use by Hazardous Waste facilities only. Reporting for Solid Waste facilities should be submitted on a separate form. All reports submitted to the Illinois EPA's Bureau of Land Permit Section must contain an original, plus a minimum of two copies.

Note: This form is not to be used with permit or closure plan modification requests. The facility's approved permit or closure plan will state whether the document you are submitting is required as a report or a modification request.

Facility Name: _____

Facility Address: _____

Site ID #: _____ Fed ID #: _____

Check the appropriate heading. Only one heading may be checked for each corresponding submittal. Check the appropriate sub-heading, where applicable. Attach the original and all copies behind this form.

LPC-160 Forms

Groundwater

___ Quarterly – Enter: 1, 2, 3, or 4

Semi-Annual

Annual

Biennial

Leachate

___ Quarterly – Enter: 1, 2, 3, or 4

Semi-Annual

Annual

Biennial

Groundwater Data (without LPC-160 Forms)

___ Quarterly – Enter: 1, 2, 3, or 4

Annual

Semi-Annual

Biennial

Well Construction Information

Well Construction Forms, Boring Logs and/or Abandonment Forms

Well Survey Data (e.g., Stick-up Elevation Data)

Notice of Statistically Significant Evidence of Groundwater Contamination (35 IAC 724.198)

Notice of Exceedance of Groundwater Concentration Limit (35 IAC 724.199(h))

Notice of Alternate Source or Error in Sampling Analysis or Evaluation of Groundwater (35 IAC 724.199(i))

Gas Monitoring Reports

Other (identify)

Formatting Requirements for the 01 Record of the Electronically Submitted Groundwater and Leachate Data
(the 01 Record portion of the LPC-160 is included for example purposes)

**ILLINOIS ENVIRONMENTAL PROTECTION ILLINOIS EPA
DIVISION OF LAND POLLUTION CONTROL
CHEMICAL ANALYSIS FORM**

Page 1 of ____

RECORD CODE							TRANS CODE
L	P	C	S	M	O	1	A
1						7	8

REPORT DUE DATE	___/___/___
	36 M D Y 41

FEDERAL ID NUMBER _____

SITE INVENTORY NUMBER	9 _____ 18	MONITOR POINT NUMBER	19 _____ 22
		(see Instructions)	
REGION _____	CO. _____	DATE COLLECTED	___/___/___
			23 M D Y 28
FACILITY NAME _____			

FOR IEPA USE ONLY
LAB _____
29
DATE RECEIVED ___/___/___
42 M D Y 47

BACKGROUND SAMPLE (X) _____ TIME COLLECTED ___ : ___

54 (24 Hr. Clock) 55 H M 58

UNABLE TO COLLECT SAMPLE _____

(see Instructions) 59

MONITOR POINT SAMPLED BY _____

(see Instructions) 60 OTHER (SPECIFY) _____

SAMPLE FIELD FILTERED - INORGANICS (X) _____ ORGANICS (X) _____

61 62

SAMPLE APPEARANCE _____

63 _____

102

COLLECTOR COMMENTS _____

103 _____

142

LAB COMMENTS _____

150 _____

199

IL 532 1213
LPC 160 12/2011

This Illinois EPA is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 ½, Section 1004 and 1021. Disclosure of this information is required. Failure to do so may result in a civil penalty up to \$25,000 for each day the failure continues a fine up to \$1,000.00 and imprisonment up to one year. This form has been approved by the Forms Management Center.

All analytical procedures must be performed in accordance with the methods contained in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," SW-846, 3rd Edition, September 1986 or equivalent methods approved by the Illinois EPA. Proper sample chain of custody control and quality assurance/quality control procedures must be maintained in accordance with the facility sampling and analysis plan.

***Only Keypunch with Data in Column 35 or Columns 38-47**

KEY:

<u>Spaces Numbered</u>	<u>Description</u>	<u>Format</u>
Spaces 1-7	Record Code	LPCSM01
Space 8	Trans Code	A
Spaces 9-18	Site ID	0000000000
Spaces 19-22	Mon Pt ID	G000
Spaces 23-28	Date Collected	000000
Space 29	Lab	
Spaces 30-35	Filler	
Spaces 36-41	Report Due Date	000000
Spaces 42-47	Date Received	000000
Spaces 48-53	Filler 2	
Space 54	Background Sample	
Spaces 55-58	Time Collected	0000
Space 59	Unable to Collect Sample	
Space 60	Monitoring Point Sampled By	
Space 61	Field Filtered – Inorganic	
Space 62	Field Filtered – Organic	
Spaces 63-102	Sample Appearance	
Spaces 103-142	Collector Comments	
Spaces 143-149	Filler 3	
Spaces 150-159	Lab Comments	

ATTACHMENT D

CORRECTIVE ACTION ATTACHMENTS (Section V)

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

D-1. Summary of Corrective Action and Permit Related Submittals at BP/Riverfront

The following is a list of the corrective action related submittals which have been made to date by BP and that the Illinois EPA approved them. Each submittal was assigned a log number by Illinois EPA and is presented in the order it was received.

Log No.	Topic of Submittal	Date Approved
----	GMZ Proposal	4/6/94
CA-1	RFI Phase I Wkpln and PRS Corrective Action Plan (for 10 SWMUs and 1 PRS).	9/7/94
CA-1	RFI Phase I Report	12/2/96
CA-2	Conceptual Phase II/III Wkplan (for 10 SWMUs and 1 PRS)	8/6/97
CA-3	FCSA Characterization Report	10/7/97
CA-4	LOD Monitoring Program	1/14/98 (disapproved)
CA-5	Updated GMZ	1/14/98 (disapproved)
CA-6	Phase II Workplan for the CDF and MRSA.	8/7/98
CA-7	CDF Cover Evaluation Workplan	6/10/98
CA-8	CDF Well Evaluation Workplan	11/18/98
CA-9	FCSA Phase II workplan	Superseded by CA-15
CA-10	Updated GMZ	12/5/00 (disapproved)
CA-11	LOD Characterization Report	2/26/01 (disapproved)
CA-12	CDF Cover Evaluation Report	9/7/99
CA-13	CDF and MRSA Phase II/III report	8/17/00
CA-14	Workplan for Vegetative Cover Pilot Study at CDF.	6/15/99
CA-15	FCSA Phase II Workplan, Revision 1	Superseded by CA-20
CA-16	CDF Well Evaluation Report	11/28/00
CA-17	Tree Hydraulic Control Pilot Study Workplan -CDF	10/5/99
CA-18	CDF Slurry Wall Investigation Workplan	5/10/01
CA-19	Plan to Remove 36" and 72" Outfalls (FCSA)	8/2/00
CA-20	36" and 72" Outfall Removal Report (at FCSA); <u>and</u> Phase II/III RFI for FCSA	11/13/03
CA-21	Response to IEPA's CA-13 letter re: the CDF/ MRSA	Superseded by CA-26&27
CA-22	Response to Cond. 8 of IEPA's CA-16 letter re: CDF	6/4/01
CA-23	Proposed GW Program for CDF	Superseded by CA-29
CA-24	Phase II/III Workplan (for 10 SWMUs and 1 PRS).	8/9/01
CA-25	Initial CA725 Determination	2/11/02
CA-26	CMP Report for CDF	1/10/02
CA-27	Determination of Class II GW for MRSA	2/6/02
CA-28	CMP Report for MRSA	2/6/02
CA-29	GW Monitoring Program for CDF	9/13/02
CA-30	CA750 Determination	6/11/02
CA-31	Re-Evaluation of GMZ	4/24/02
CA-32	Parcel A workplan	9/5/02
CA-33	FCSA, Class II Determination	9/5/02
CA-34	FCSA RFI Phase II report	11/13/03

Log No.	Topic of Submittal	Date Approved
CA-35	Comments on IEPA's 2/11/02 CA725 approval letter (B-147-CA-25)	6/14/02
CA-36	CDF CMP Report, Addendum 1	6/14/02
CA-37	CCR/Ph II RFI Wkpln, Parcel B and SW Chan Tract	11/15/02
CA-38	Revised Schedule for completing CA	11/14/02
CA-39	Phase II RFI Work Plan -Hydrocarbon Pool (SWMU 7)	1/29/03
CA-40	MRSA Stage 1 Corrective Measures Report	6/4/03
CA-41	CM Design Report for the MRSA	4/28/03
CA-42	Revised Schedule for completing CA	Superseded by CA-48
CA-43	FCSA Trench Interim Measures Const. Report	11/13/03
CA-44	CDF Stage 1 CM Liquid Extraction System Installation	10/30/03
CA-45	CDF 2003 Phytoremediation Status Report	10/11/05
CA-46	Parcel A Investigation Report and Closure Plan	3/8/05
CA-47	Phase I CMP for FCSA	10/28/05
CA-48	Revised CA Schedule	12/30/04
CA-49	Interim Measures to Seal Joints of 84" Sewer at FCSA	4/12/05
CA-50	Phase II RFI Report for SWMU 7 (Hydrocarbon Pool)	1/11/06
CA-51	MRSA Corrective Action Completion Report (Sheet Pile)	1/12/06
CA-52	Extension request for submittal of Final Construction Report for MRSA Sheet Pile Wall/Interceptor Trench	12/16/04
CA-53	Response to IEPA Letter dated 12/15/04 regarding Permitted Non-hazardous Waste Landfill (PNWL).	4/27/05
CA-54	Revised CA Schedule (response to CA-48 letter)	9/21/05
CA-55	Document of recording of Ordinance & MOU for Parcel A	5/1/07
CA-56	Request to postpone replacement of G101 in FCSA.	11/20/06
CA-58	Plan to move forward and status of the FCSA	1/4/07
CA-59	Establishing Background Values for PNWL	8/1/06
CA-60	Submittal assigned this log number subsequently determined not to be associated with this corrective action program and was removed from the tracking system.	1/19/2023
CA-61	FCSA Underground Pipeline Inv Work Plan	Rec'd 3/17/07, Combined with CA-64
CA-62	Draft ELUC for Parcel A and documentation of removal of impacted soil from Barge Maintenance Area	5/1/07
CA-63	Parcel B Land Reuse Investigation Report & Closure Plan	Comments provided by IEPA on 1/24/07(soil) and 5/11/09(gw)
CA-64	Corrective Measures Study for SWMU 7	6/12/09
CA-65	Revised background values for PNWL	8/21/07
CA-66	Proposed GW monitoring locations for PNWL and well abandonment forms for G07S and G12S at PNWL	5/20/09
CA-67	Final Corrective Measures Plan for the CDF	8/1/07
CA-68	Re-Evaluation of GMZ	Rec'd 4/25/07
CA-69	Revised Appendix J and Figure 6-1 for Parcel B.	Rec'd 6/1/07
CA-70	Recorded ELUC for Parcel A	1/14/08
CA-71	Statistical Proposal for CDF	9/31/09

Log No.	Topic of Submittal	Date Approved
CA-72	White Paper –Vertical Parceling	Rec'd 7/2/07
CA-73	Improvements to the FCSA Interim Measures	Rec'd 8/24/07
CA-74	Demo that PNWL exceedances of background values are not due to significant change in gw quality	5/20/09
CA-75	Proposed BG Values for Well G11S at PNWL.	5/20/09
CA-76	Demo for GW Monitoring at PNWL.	5/20/09
CA-77	Final Design and Construction Work Plan for CDF	11/18/08
CA-78	GW Demonstration PNWL on exceedance of background not significant	5/20/09
CA-79	Groundwater Demonstration and PNWL.	5/20/09
R-CA-1	Demo that PNWL exceedances of background are not due to significant change in gw quality	5/20/09
R-CA-2	Parcel A Uppermost Aquifer GW Data Inventory within Butene Polymerization Waste Area	Rec'd 12/16/08
R-CA-3	Demo that PNWL exceedances of background are not due to significant change in gw quality	Rec'd 4/13/09
R-CA-4	Response to IEPA's 3/31/09 Vertical Parceling Letter.	Rec'd 6/01/09
R-CA-5	Construction Document Report - Final Corrective Measure-CDF	Rec'd 6/29/09
R-CA-6	Revised Background Values for PNWL	Rec'd 7/20/09
R-CA-7	Demo that PNWL exceedances are not due to significant changes in gw quality.	1/19/2010
R-CA-8	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	1/9/2010
R-CA-9	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	12/17/2012
R-CA-10	Response to 10/02/09 Letter regarding FCSA (see B-145-CA-73 above)	1/10/2011
R-CA-11	Proposal to Remove FPH and MNA program @ SWMU 7	3/16/2011
R-CA-12	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill. Also includes an Assessment Monitoring Plan	12/17/2012
R-CA-13	Site Wide Geology Report (note: the approval letter for this report is different than the 12/17/12 letter addressing several submittals associated with the PNWL and log numbers CA-9, 12, 16, 24, 26, 28 and 29)	12/17/2012
R-CA-14	Corrective Measure to address FPH plume at LOD Area (different letter than the 3/6/13 letter for CA-15 and CA-17)	3/6/2013
R-CA-15	Summary of GW Removal Activities in Parcel B/FCSA	3/6/2013 (disapproval)
R-CA-16	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	12/17/2012
R-CA-17	Revised Pages of Parcel B (FCSA)Land Reuse Investigation	3/6/2013 (Disapproval)
R-CA-18	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	12/17/2012
R-CA-19	CCR Workplan Uppermost Aquifer for Parcel A	6/15/16

Log No.	Topic of Submittal	Date Approved
R-CA-20	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	12/17/2012
R-CA-21	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill (4Q, 2010)	12/17/2012
R-CA-22	Proposed background value for PNWL	12/17/2012
R-CA-23	Annual Observation Monitoring Program, Evaluation of SSIs associated with the Riverfront GW Monitoring Program	7/24/2014
R-CA-24	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	12/17/2012
R-CA-25	Additional information regarding SWMU 7 submitted in response to IEPA's 3/6/11 letter (see R-CA-11 above)	03/26/14
R-CA-26	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 2Q 2011	12/17/2012
R-CA-27	Semi-Annual Observation Monitoring Program, Evaluation of SSIs associated with the Riverfront GW Monitoring Program	7/24/2014
R-CA-28	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 3Q 2011	12/17/2012
R-CA-29	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 4Q 2011	12/17/2012
R-CA-30	Parcel G Current Report/Characterization Workplan	01/22/2013
R-CA-31	Background values for Wells G090 and G091at PNWL	12/17/2012
R-CA-32	Semi-Annual Observation Monitoring Program, Evaluation of SSI's associated with the Riverfront GW monitoring program	7/24/2014
R-CA-33	Re-evaluation of GMZ	8/28/13
R-CA-34	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill--1Q12	03/26/14
R-CA-35	Request to incorporate Annual Liquid Level Report into Annual CDF OM&M Report	Rec'd 05/30/12
R-CA-36	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill 2Q 2012	03/26/14
R-CA-37	SSIs identified during 2Q 2012 for CA groundwater monitoring program	7/24/2014
R-CA-38	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 3Q 2012	03/26/14
R-CA-39	Ext request for responding to 12/17/12 letter re: PNWL (see R-CA-9, 12, 16, 18, 20, 21, 22, 24, 24, 26, 28, 29 and 31above)	2/19/15
R-CA-40	Ext request for responding to 12/17/12 letter re: Sitewide Geology Report and ROST Study (see R-CA-13 above)	11/26/14

Log No.	Topic of Submittal	Date Approved
R-CA-41	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill Q4 2012	03/26/14
R-CA-42	Evaluation of SSIs for the CA groundwater monitoring program	7/24/2014
R-CA-43	Figures in response to 12/17/12 IEPA Letter re: PNWL	2/19/2015
R-CA-44	Response to 12/17/12 letter re: PNWL. Includes gw demo, revised b/g values and proposed assessment monitoring plan	2/19/2015
R-CA-45	Response to comments for the Sitewide Geology Report (see R-CA-13 and R-CA-40 above)	11/26/2014
R-CA-46	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	2/19/2015
R-CA-47	Response to 8/28/13 IEPA comments on Reevaluation of the GMZ (see R-CA-33 above)	7/15/2014
R-CA-48	Response to IEPA letters of March 6, 2013 (regarding the Light Oils Dock) and January 10, 2011 (regarding the Former Channel Seep Area)	5/20/2016
R-CA-49	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 4 Q 2013	3/2/2015
R-CA-51	Demonstration that exceedances of BG values at the PNWL are not associated with the landfill	3/2/2015
R-CA-52	Response to Conditions 4-9 of 3/26/14 IEPA Letter RE: SWMU 7 (see R-CA-25 above)	3/31/2015
R-CA-53	Response to Condition 3&10 of 3/26/14 Letter Re: SWMU7 & MNA Status Update (see R-CA-25 above)	3/31/2015
R-CA-54	SWMU 7 Progress Report	3/31/2015
R-CA-55	Monitored Natural Attenuation Status Report @ SWMU 7	3/31/15
R-CA-56	Updated O&M Manual for MRSA	Rec'd 9/4/14
R-CA-57	Request to incorporate the annual liquid report into the Annual OM&M report for the CDF	Rec'd 9/22/14
R-CA-58	Supplemental gw sampling and gw demo report for the PNWL	3/2/2015
R-CA-59	Response to IEPA's 7/15/14 letter regarding the GMZ evaluation 1 (see R-CA-47 above)	1/19/2023
R-CA-60	2nd Progress Report re: LNAPL recovery efforts at SWMU 7	3/31/2015
R-CA-61	Response to Comments re: Site-Wide Geology Report	Appr'd (Amy Butler)
R-CA-62	SWMU 7 update regarding hydrocarbon gauging, hydrocarbon recovery activities and MNA monitoring	3/31/2015
R-CA-63	Progress Report for LNAPL Recovery Efforts at SWMU 7	8/26/2016
R-CA-64	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 1Q15	4/10/17
R-CA-65	Levee Access Status Update/Extension Request for Work at SWMU 7	8/26/2016
R-CA-66	Benzene Results for G090 and G116 @ PNWL	Rec'd 6/17/2015
R-CA-67	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	4/10/2017
R-CA-68	Evaluation of Potential Statistically Significant Increase	Rec'd 4/23/2015

Electronic Filing: Received, Clerk's Office 03/14/2024

1191155009 – BP Riverfront

Log No. B-145R2

Page D-6 of D-8

Log No.	Topic of Submittal	Date Approved
R-CA-69	SWMU 7 Hydrocarbon Recovery 90-Day Update	8/26/2016
R-CA-70	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	4/10/2017
R-CA-71	90-day progress report for LNAPL recovery activities at SWMU 7	8/26/2016
R-CA-72	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill for 4Q2015	4/10/2017
R-CA-73	SWMU 7 Hydrocarbon Recovery Update	8/26/2016
R-CA-74	Request to Consolidate Required Reports	Rec'd 1/19/2016
R-CA-75	SWMU 7 Monitored Natural Attenuation Status Report	8/26/2016
R-CA-76	Demonstration that exceedances of BG values in certain gw monitoring wells at the PNWL are not associated with the landfill	4/10/2017
R-CA-77	Response to Condition 2 of IEPA 5/20/16 letter (see R-CA-48—pertains to the Light Oils Dock and Former Channel Seep Area)—requests extension for submitting proposed ELUC for Parcel B	Rec'd 8/16/2016
R-CA-78	Response to Conditions 3 and 4 of IEPA 5/20/16 letter (see B-14 R-CA-48—pertains to the Light Oils Dock and FCSA)	Rec'd 6/19/2016
R-CA-79	Response to Conditions 2 thru 5 of IEPA 6/15/16 letter (see B-145 R-CA-19 regarding Parcel A)	04/12/2019
R-CA-80	Parcel B ELUC	Rec'd 10/17/2016
R-CA-81	Response to IEPA's 8/26/16 letter regarding SWMU 7	Rec'd 10/25/2016
R-CA-82	Follow-Up to PNWL 7 Day Notification of BG Exceedances—3Q16	4/10/17
R-CA-83	30 Day Demonstration Report	4/10/17
R-CA-84	Repairs Made to Observation Well R110	Rec'd 3/21/2017
R-CA-85	1Q2017 PNWL 30-day Demonstration Report	Rec'd 7/14/2017
R-CA-86	4Q2016 Demonstration Report	Rec'd 4/24/2017
R-CA-87	30-Day Demonstration Report	Rec'd 8/14/2017
R-CA-88	30-Day Groundwater Demonstration Report	Rec'd 11/13/2017
R-CA-89	Parcel A Groundwater Report	04/12/2019
R-CA-90	Plan for Groundwater Monitoring Plan for Compliance Commitment Agreement	Rec'd 1/22/18
R-CA-91	4Q17 PNWL 30-day Demonstration Report	Rec'd 2/26/18
R-CA-92	4Q2017 demonstration report (SSIE)	08/06/19
R-CA-93	1Q2018 PNWL GW Demo Report	Rec'd 5/23/18
R-CA-94	GW Monitoring Optimization Report	Rec'd 6/29/18
R-CA-95	2Q2018 PNWL GW Demo Report	Rec'd 8/10/18
R-CA-96	PNWL 3Q18 10-Day Notification	04/19/2019
R-CA-97	Site-wide Arsenic/ Inorganic Demo Report	06/24/2019
R-CA-98	PNWL 4Q19 30-Day GW Demo Report	04/19/2019
R-CA-101	PNWL 1Q19 Demo Report	Rec'd 05/23/2019
R-CA-102	4th quarter demonstration report (Statistically Significant Increase Evaluation)	02/08/2020
R-CA-103	2Q19 PNWL 30-Day GW Demo Report	Rec'd 08/22/2019

Log No.	Topic of Submittal	Date Approved
R-CA-104	Site-wide update regarding site-wide inorganics and metals evaluation	Rec'd 11/06/2019
R-CA-105	2nd quarter demonstration report (Statistically Significant Increase Evaluation)	Rec'd 10/28/2019
R-CA-106	3Q19 PNWL 30-Day Groundwater Demonstration Report	Rec'd 11/25/2019
R-CA-107	Evaluation of SSI for semiannual groundwater monitoring	02/28/2020
R-CA-108	4Q19 PNWL 30-Day Groundwater Demonstration Report	Rec'd 02/25/2020
R-CA-109	Proposed modification to 2Q 2020 GW Gauging & Monitoring in response to COVID-19 pandemic	Rec'd 05/19/2020
R-CA-110	4th Quarter 2019 Demonstration Report	Rec'd 05/21/2020
R-CA-111	1 Q20 PNWL 30-Day Demonstration Report	Rec'd 05/26/2020
R-CA-112	3rd quarter 2020 PNWL30-day GW demonstration report	Rec'd 11/23/2020
R-CA-113	Site-wide inorganics and metal evaluation work plan update	Rec'd 12/01/2020
R-CA-114	GMZ Reevaluation Report	Rec'd 12/21/2020
R-CA-115	30-Day GW Demonstration Report. Permitted Non-Hazardous Waste Landfill - Third Quarter 2021	Rec'd 11/29/2021
R-CA-116	Results of the Site-Wide Inorganics & Metals Evaluation Report submitted on 12-20-18	Rec'd 1/26/2022
R-CA-117	Proposed upgrades to the Cone of Depression (COD) Well System, Additional information received on 5/2/2022, 8/1/2022	Rec'd 3/16/2022
R-CA-118	Monitoring Well Condition	Rec'd 3/21/2022
R-CA-119	1Q22 30-Day GW Demonstration Report for the permitted non-hazardous waste Landfill (PNWL)	Rec'd 05/26/2022
R-CA-120	Proposed alternative for riverfront sentinel wells and abandonment of current riverfront sentinel wells	Rec'd 7/18/2022
R-CA-121	Cone of Depression (COD) Well G669/HPW61 Repairs	Rec'd 05/09/2022
R-CA-122	Proposed sentinel well locations	Rec'd 2/22/2022
R-CA-123	4Q21 30-day demonstration report for the PNWL	Rec'd 2/25/2022
R-CA-125	Groundwater management zone hydraulic gradient control notification	Rec'd 3/16/2022
R-CA-126	2nd Semi-Annual 2021 Demonstration Report	Rec'd 5/3/2022
R-CA-127	Monitoring Well Condition Letter for G35D and G403	Rec'd 5/1/2022



Figure D-2

ATTACHMENT E

CORRECTIVE MEASURES PROGRAM REQUIREMENTS

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

ATTACHMENT E

CORRECTIVE MEASURES PROGRAM REQUIREMENTS

1.0 INTRODUCTION/PURPOSE

RCRA Corrective Action projects typically consist of two phases: (1) A RCRA Facility Investigation (RFI) where an investigation is conducted at the solid waste management units (SWMU's) of concern at a facility; and (2) implementation of corrective measures needed to properly address any contaminant encountered during the RFI. This document has been developed to outline the procedures to be carried out to implement a corrective measure program.

2.0 BRIEF OVERVIEW OF A RCRA CORRECTIVE MEASURES PROGRAM

Typically, at the end of an RFI, the concentration of contaminants present in the soil/sediments/groundwater/surface waters at a SWMU or other area of concern is compared to remediation objectives developed in accordance with Title 35 Illinois Administrative Code (35 IAC) 742. If the contaminant levels are above these objectives, then some type of corrective measure must be completed to achieve these objectives. In addition, certain corrective measures may need to be carried out to support the established remediation objectives (i.e., the establishment of engineered barriers and/or institutional controls). However, at a unit where waste or high levels of contamination remains, a decision may be made to close the unit as a landfill and then provide post-closure rather than removing the material and/or achieving remediation objectives developed in accordance with 35 IAC 742.

To allow for a logical and orderly progression in developing and implementing necessary corrective measures, the Corrective Measures Program (CMP) being carried out in accordance with this RCRA permit should be carried out in five phases which build on each other. It is not necessary for a corrective measures program at a given SWMU or other areas of concern to follow these five phases step-by-step; rather, phases can be combined and/or skipped, depending on the actual remedial measure selected. The overall CMP implemented must set forth a logical path for its implementation and allow for Illinois EPA oversight and approval throughout the entire process.

A brief discussion of the five phases of a CMP is as follows:

1. Phase I is the conceptual design of the selected corrective measure(s).
2. Phase II is the development of final design plans for the corrective measure, including installation and operation/maintenance plans.
3. Phase III is the actual construction/installation of the selected corrective measure.

4. Phase IV is the operation, maintenance, and monitoring of the selected corrective measure to ensure it is properly protecting human health and the environment.
5. Phase V is the final demonstration/verification that the implemented corrective measure achieved the approved remedial objectives.

Sections 3.0 through 7.0 which follow provide a more detailed discussion of each of these five phases. Section 8.0 has been developed to describe the corrective measures program which may be used in lieu of the afore-mentioned five phase procedure when soil removal is the selected remedy. It must be noted that work plans, reports, etc. must be developed to document how the Permittee carries out the required corrective measures program at each SWMU or other areas of concern. All such documents must be reviewed and approved by Illinois EPA prior to their implementation.

3.0 PHASE I OF THE CMP

Phase I of the CMP includes selection of the corrective measure to be taken and developing a basis for completing the final design of the measure. This effort should be documented in a Conceptual Design Report which describes the proposed corrective measure for each SWMU and other areas of concern and provides a conceptual design for these measures. The main criteria for Illinois EPA review is whether the proposed corrective measures are able to achieve the final cleanup objectives previously established by the Permittee and the Illinois EPA and/or provide the necessary institutional controls to prevent the migration of contaminants from the SWMU of concern. Based upon a review of the Conceptual Design Report, the Illinois EPA may approve the corrective measures, require revisions to the proposed corrective measures, or require that a totally new corrective measures proposal be submitted to the Illinois EPA.

The Conceptual Design Report should contain the following sections:

1. Introduction/Purpose. This section should contain: (1) general background information regarding the project; (2) the purpose and goals of the submittal; and (3) the scope of the project.
2. Existing Site Conditions. This section should contain a summary of the investigative activities conducted for each of the units of concern. Investigation analytical results should be provided in tabular form, and maps depicting both the horizontal and vertical extent of contamination at the site should be provided.
3. Evaluation for Potential Future Migration. Based on the existing site conditions, a conceptual model of the site should be developed and presented in this section. The potential for additional future migration of contamination for each of the units of concern must then be evaluated, especially those units which have been determined to have released hazardous waste/hazardous constituents to the groundwater. It may be helpful to develop conceptual models for contaminant migration. Of special concern in this evaluation are (1) the physical properties of the contaminants (solubility, volatility,

mobility, etc.); and (2) existing site conditions (types of soil present, location of contamination, hydrology, geology, etc.).

4. **Corrective Measures Objectives.** This section should discuss the general objectives of the proposed corrective measure to be constructed/installed, and the ability of the proposed corrective measure to achieve the established remediation objectives (unless the selected corrective measure is closure as a landfill which will require proper establishment of a final cover and proper post-closure care of the closed unit.
5. **Identification of Options Available.** This section should contain a brief discussion of the various options available to achieve the corrective measures objectives for each unit. This discussion should identify: (1) a general overview of each option available, including how the option will achieve the stated objective; (2) the advantages associated with each option; (3) the disadvantages associated with each option and (4) an estimate of the cost associated with choosing each remedial option.
6. **Description of Selected Corrective Measure.** This section should contain a qualitative discussion of the corrective measure chosen, along with the rationale which was used to select this measure from all those identified initially. This discussion should include documentation that the selected corrective measure will be effective.
7. **Identification of Design Criteria.** This section should identify what information must be available to design the selected corrective measure.
8. **Review of Available Information.** This section should contain an evaluation of the existing information to ensure that it is sufficient to complete the design of the selected corrective measure. If insufficient information is available, then the report should contain procedures for collecting the required additional information.
9. **Procedures for Completing the Design.** This section should contain a description of the procedures which will be followed to complete the design of the corrective measure. This should include as appropriate:
 - a. Identification of the references and established guidance which will be used in designing the selected corrective measure. Justification for the selection of this procedure should also be provided.
 - b. A description of the procedures which will be used to complete the design of the corrective measure.
 - c. Identification of assumptions to be used in the design, and the impact these assumptions have on the overall corrective measure;
 - d. Significant data to be used in the design effort;

- e. Identification and discussion of the major equations to be used in the design effort (including a reference to the source of the equations);
- f. Sample calculations to be used in the design effort;
- g. Conceptual process/schematic diagrams;
- h. A site plan showing a preliminary layout of the selected corrective measure;
- i. Tables giving preliminary mass balances;
- j. Site safety and security provisions.

This information will form the technical basis for the detailed design of the remedial measure and the preparation of construction plans/specifications.

10. Identification of Required Permits. This section should identify and describe any necessary permits associated with the selected corrective measure, as well as the procedures which will be used to obtain these permits.
11. Long lead Procurement Considerations. This section should identify any elements/components of the selected corrective measure which will require a large amount of time to obtain/install. The following issues should also be discussed: (1) the reason why it will take a large amount of time to obtain/install the item; (2) the length of time necessary for procurement and (3) recognized sources of such items.
12. Project Management. This section should contain information regarding the procedures and personnel which will be involved in completing the design of the selected corrective measure. A schedule for completing the design should also be provided.

4.0 PHASE II OF THE CMP

Once the Illinois EPA approves the Conceptual Design Report, the facility should complete the design of the approved corrective action (Phase II of the CMP). Upon final completion of the design, a Final Design Report, consisting of final plans, specifications, construction work plan, etc., must be submitted to the Illinois EPA for review and approval.

Several documents must be submitted to the Illinois EPA as part of Phase II of the CMP. The following text describes the expected contents of the various documents which should be developed and submitted to the Illinois EPA as part of Phase II of the CMP.

1. Final Design Report and Construction Work Plan. The Final Design Report and Construction Work Plan must contain the detailed plans, specifications and drawings needed to construct the corrective measure. In addition, this document must contain (1) calculations, data etc., in support of the final design; and (2) a detailed description of the overall management strategy, construction quality assurance procedures and schedule for

constructing the corrective measure. It must be noted that the approved Conceptual Design Report forms the basis for this final report. The information which should be provided in this document includes:

- a. Introduction/Purpose. This portion of the document should: (1) provide background information regarding the project, (2) describe the purpose and goals of the project, and (3) describe the scope of the project.
- b. Detailed Plans of the Design System, including the following:
 - 1) Plan views;
 - 2) Section and supplementary views which, together with the specifications and general layouts, facilitate construction of the designed system;
 - 3) Dimensions and relative elevations of structures;
 - 4) Location and outline form of the equipment;
 - 5) Ground elevations; and
 - 6) Descriptive notations, as necessary, for clarity.
- c. Technical Specifications. Complete technical specifications for the construction of the system, including, but are not limited to, the following:
 - 1) All construction information, not shown in the drawings, which is necessary to inform the contractor in detail as to the required quality of materials, workmanship, and fabrication of the project;
 - 2) The type, size, strength, and operating characteristics of the equipment;
 - 3) The complete requirements for all mechanical and electrical equipment, including machinery, valves, piping and jointing of pipe;
 - 4) Electrical apparatus, wiring and meters;
 - 5) Construction materials;
 - 6) Chemicals, when used;
 - 7) Miscellaneous appurtenances;
 - 8) Instruction for testing materials and equipment as necessary; and
 - 9) Availability of soil boring information.

- d. **Project Management.** A description of the construction management approach, including the levels of authority and responsibility, lines of communication and qualifications of key personnel who will direct corrective measures construction/installation must be provided in the work plan.
 - e. **Construction Quality Assurance/Quality Control.** A construction quality assurance/quality control plan describing the procedures which will be followed to ensure the corrective measure is constructed/installed in accordance with the approved plans and specifications.
 - f. **Schedule.** The work plan must contain a schedule for completion of all major activities associated with construction/installation of the selected corrective measures. All major points of the construction/installation should be highlighted.
 - g. **Waste Management Practices.** This portion of the document should identify the wastes anticipated to be generated during the construction/installation of the corrective measures and provide a description of the procedures for appropriate characterization and management of these wastes.
 - h. **Required Permits.** Copies of permit applications submitted to other Bureaus of the Illinois EPA for the selected corrective measure must be provided in the report. If it is determined that no permit is required for construction/installation and implementation of the corrective measures, rationale and justification must be provided to support this contention.
 - i. **Cleanup Verification.** The report must contain the procedures which will be followed that the approved remediation objectives have been achieved when operation of the system is completed.
2. **Operation and Maintenance Plan.** An Operation and Maintenance Plan must be developed and submitted as part of Phase II of the CMP. This plan should outline the procedures for performing operations, long term maintenance, and monitoring of the corrective measure.
- a. **Introduction and Purpose.** This portion of the document should provide a brief description of the facility operations, scope of the corrective measures project, and summary of the project objectives.
 - b. **System Description.** This portion of the document should provide a description of the corrective measure and significant equipment, including manufacturer's specifications. This portion of the permit should also include a narrative of how the selected system equipment is capable of complying with the final engineered design of the corrective measure.

- c. Operation and Maintenance Procedures. This portion of the document should provide a description of the normal operation and maintenance procedures for the corrective measures system, including:
- 1) Description of tasks for operation;
 - 2) Description of tasks for maintenance;
 - 3) Description of prescribed treatment or operation conditions; and
 - 4) Schedule showing the frequency of each operation and maintenance task.
- d. Inspection Schedule. This portion of the document should provide a description of the procedures for inspection of the corrective measures system, including problems to look for during the inspection procedure, specific inspection items, and frequency of the inspections.
- e. Waste Management Practices. This portion of the document should provide a description of the wastes generated by the corrective measure, and the appropriate procedures for proper characterization/management of these wastes.
- f. Contingency Procedures. This portion of the document should provide a description of the procedures which will address the following items:
- 1) System breakdowns and operational problems including a list of redundant and emergency backup equipment and procedures;
 - 2) Alternative procedures (i.e., stabilization) which are to be implemented in the event that the corrective measure fails. The alternative procedures must be able to prevent release or threatened releases of hazardous wastes/hazardous constituents which may endanger human health and the environment, or exceed cleanup standards.
 - 3) Notification of facility and regulatory personnel in the event of a breakdown in the corrective measures, including written notification identifying what occurred, what response action is being taken and any potential impacts on human health and the environment.

5.0 PHASE III OF THE CMP

Once the final design report is approved by the Illinois EPA, construction/installation of the approved corrective measure must commence. During this period, quarterly reports should be submitted which contain the following information:

1. Summary of activities completed during the reporting period;
2. An estimate of the percentage of the work completed;

3. Summaries of all actual or proposed changes to the approved plans and specifications or its implementation;
4. Summaries of all actual or potential problems encountered during the reporting period;
5. Proposal for correcting any problems; and
6. Projected work for the next reporting period.

Upon completion of construction/installation of the approved corrective measure, a Construction Completion Report must be submitted to the Illinois EPA documenting that these efforts were carried out in accordance with the Illinois EPA approved plans and specifications. This report should contain a thorough description of the efforts that went into constructing/installing the corrective measure and demonstrate that the procedures in the Illinois EPA approved Final Design Report were followed during this effort. Such a report should be formatted in a logical and orderly manner and contain the following information:

1. An introduction discussing the background of the project and the purpose and scope of the corrective measure described in the report.
2. Identification of the plans, technical specifications and drawings which were used in constructing/installing the corrective measure. These specifications and drawings should have been approved by the Illinois EPA during Phase II.
3. Identification of any variations from the Illinois EPA approved plans, technical specifications and drawings used in construction/installing the corrective measure. Justification regarding the need to vary from the approved plans and specifications must also be provided.
4. A description of the procedures used to construct/install the corrective measure, including the procedures used for quality assurance and quality control.
5. As built drawings, including identification of any variations from the approved plans, technical specifications and drawings.
6. A summary of all test results from the construction/installation effort, including quality assurance/quality control testing.
7. Actual test results, including quality assurance/quality control test results. These results should be located in an attachment/appendix and be well organized.
8. Identification of any test results which did not meet the specified value and a description of the action taken in response to this failure, including re testing efforts.
9. Photographs documenting the various phases of construction.

10. A detailed discussion of how the construction/installation effort met the requirements of the approved Final Design Report.
11. A certification meeting the requirements of 35 IAC 702.126 by an independent qualified, licensed professional engineer and by an authorized representative of the owner/operator.

6.0 PHASE IV OF THE CMP

Once the corrective measure has been constructed/installed, it must be operated, maintained and monitored in accordance with the approved plans and specifications (this is Phase IV of the CMP). During this period, quarterly reports must be submitted to the Illinois EPA documenting the results of these efforts. These reports include the following:

1. Introduction. -- A brief description of the facility operations, scope of the corrective measures project, and summary of the project objectives.
2. System Description. -- A description of the corrective measures constructed/installed at the site, and identify significant equipment. Describe the corrective measure and identify significant equipment.
3. Monitoring Results. -- A description of the monitoring and inspection procedures to be performed on the corrective measures. A summary of the monitoring results for the corrective measures, including copies of any laboratory analyses which document system effectiveness, provide a description of the monitoring procedures and inspections performed, and include a summary of the monitoring results for the corrective measure. Copies of all laboratory analytical results which document system monitoring must be provided.
4. Effectiveness Determination. -- Calculations and other relevant documentation which demonstrates the effectiveness of the selected corrective measure in remediating/stabilizing contamination to the extent anticipated by the corrective measures final design. Copies of relevant analytical data should be provided to substantiate this determination.
5. System Effectiveness Recommendation. -- Based upon the results of the effectiveness determination required under Item 4 above, recommendations on continued operation of the corrective measure must be provided. If the corrective measure is not performing in accordance with the final design, a recommendation on revisions or expansion of the system should be provided.

7.0 PHASE V OF THE CMP

Once all corrective measures have been completed, a report must be developed documenting all the efforts which were carried out as part of implementing the corrective measure and demonstrating, as appropriate, that the approved remediation objectives have been achieved. This report should contain a compilation of all previous reports and also contain sufficient information to demonstrate that the approved remediation objectives have been achieved. It must be noted that such a report will not be developed for a unit closed as a landfill until the post-closure care period has been completed.

8.0 PROCEDURES WHICH SHOULD BE FOLLOWED WHEN SOIL REMOVAL IS THE SELECTED CORRECTIVE MEASURE

Sections 2.0 through 6.0 above describe the procedures which should be followed when it is necessary to design some type of physical corrective measure (e.g., a final cover system, some type of treatment system, etc.). However, such detail is not necessary if excavation/removal is selected as the remedial action for the contaminated soil encountered at the site. In general, a work plan should be developed for this effort (for Illinois EPA review and approval) which fully describes each step to be used in removing the contaminated soil from the property. This includes a description of (1) the equipment utilized in the removal effort, (2) the pattern followed in removing the soil; (3) the depth to which the soil will be removed; (4) management of the soil on-site after it is removed from the ground; (5) loading areas; (6) the ultimate destination of the soil; and (7) any other steps critical to the removal effort.

One way to conduct a soil removal effort is to collect and analyze a sufficient number of soil samples to clearly determine the horizontal and vertical extent of soil contamination prior to conducting the soil removal effort. The boundaries of soil which must be removed are defined by the Illinois EPA established cleanup objectives for the project. Soil excavation must extend to sample locations where soil test results indicate that the remediation objectives are met. Closure verification sampling is not necessary in such cases, if a registered professional engineer oversees the soil removal effort and certifies that the remediation limits extend to these boundaries.

Another way to conduct a soil removal effort is to collect and analyze a limited number of soil samples prior to the soil removal effort and to rely mainly on field observation to determine the extent of the soil removal. In such cases closure verification sampling is necessary. Soil samples must be collected for analysis from the bottom and sidewalls of the final excavation. The following sampling/analysis effort is necessary to demonstrate that the remaining soil meets the established cleanup objectives:

1. A grid system should be established over the excavation.
2. Samples should be collected from the floor of the excavation at each grid intersection, including intersections along the perimeter of the excavation.

3. Samples should be collected at 6"-12" below the ground surface (bgs) along the excavation sidewalls at each grid intersection around the excavation perimeter. Samples must also be collected at the midpoint of the excavation wall at each grid intersection along the excavation perimeter.
4. Collection/analysis of all required samples must be in accordance with the procedures set forth in the approved plan.
5. Soil samples which must be analyzed for volatile organic compounds (VOCs) must be collected in accordance with the procedures set forth in Method 5035 of SW-846. In addition, such samples must be collected 6"-12" beneath the floor/sidewalls of the excavation to minimize the possibility of volatilization of the contaminants prior to the collection of the samples.
6. No random sampling may be conducted to verify achievement of cleanup objectives have been met.
7. Additional soil must be removed, as necessary, until it can be demonstrated that the remaining soil in and around the area of concern meets the established cleanup objectives. Additional samples must be collected and analyzed in accordance with the procedures described above from areas where additional soil has been removed.

ATTACHMENT F

CONSTRUCTION CERTIFICATION

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

**ATTACHMENT F
Construction Certification**

This statement is to be completed by both the owner/operator and the registered professional engineer upon completion of construction in accordance with 35 IAC Section 702.126. Submit one copy of the certification with original signatures and two additional copies. Forward these certification statements and any information required by the permit to the following address:

Illinois Environmental Protection Illinois EPA
Bureau of Land #33
Permit Section
1021 North Grand Avenue East
Springfield, Illinois 62702

FACILITY NAME: BP Products North America, Inc.

IEPA's SITE CODE: LPC #1191155009

U.S. EPA ID NO.: ILD980503106

PART B PERMIT LOG #145R2

PERMIT (OR MODIFICATION) ISSUANCE DATE:

PERMIT CONDITION NO. REQUIRING CERTIFICATION:

The _____ has been constructed in accordance with the specifications in the Permit. Documentation that the construction was in accordance with the permit is contained in the enclosed report. I certify under penalty of law that this document and all attachments were prepared under my direction of supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Owner/Operator

Name and Title

Signature of Registered P.E.

Name of Registered P.E. and
Illinois Registration Number

Date

(P.E. SEAL)

ATTACHMENT G

**CLOSURE, POST-CLOSURE AND CORRECTIVE ACTION COST ESTIMATE
SUMMARY**

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

ATTACHMENT G
CLOSURE, POST-CLOSURE, AND CORRECTIVE ACTION
COST ESTIMATE SUMMARY

These estimates are based on using 2020 dollars and include the cost of: (1) activities carried out each year (i.e., annual costs); and (2) one-time or non-annual costs. Post-closure care for Pond 1 Landfill requires the cost of the 30-year of post-closure care and one time certification cost. The East Surge Pond is currently operated to store nonhazardous wastewaters including the nonhazardous leachate from the adjacent onsite Permitted Non-Hazardous Waste Landfill in accordance with this permit. The ESP must be eventually closed in accordance with a plan approved by the Illinois EPA. The approved corrective action cost estimates account for costs associated with Parcels A, B, C, D, F, G, I, SWMU 7, PRS-1 and groundwater corrective action for the Riverfront facility.

COST ESTIMATES

ACTIVITY	Pond 1 Landfill (HWMU)	East Surge Pond	BP Riverfront SWMUs
Closure		\$538,420	
Post-Closure	\$2,364,068 in 2020 *		
SWMUs and Groundwater Corrective Action			\$10,359,514

ATTACHMENT H

POST-CLOSURE INSPECTION SCHEDULE

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2

ATTACHMENT H POST-CLOSURE INSPECTION SCHEDULE

Inspection Schedule

Post-closure inspections for the Pond 1 Landfill will be conducted on a weekly, quarterly and an after-storm event basis. Documentation of all inspections, surveys, repairs performed, or replacements required to properly maintain the facility will be recorded on the inspection logs/repair logs and stored as a part of the Operations, Maintenance, and Monitoring (OM&M) Manual. The OM&M Manual will be maintained at the BP Main Plant Office or a local Waste Management, Inc., office or storage facility. General post-closure inspection procedures will include the following:

1. Visually inspect the perimeter fence and all gates. Check for fence integrity and note any areas of damage. Note the working condition of each gate and check to ensure that all locks and other security systems are in place and functioning.
2. Visually inspect each benchmark. Report any missing benchmarks and note any damage to the benchmarks.
3. Visually inspect the landfill cover, drainage system, and surrounding areas. Note any evidence of cover erosion, settling, or vegetative stress. Also note any unusual conditions such as odors, ponded water, or bubbling. Report any areas requiring further inspection or repairs so arrangements can be made to efficiently make all necessary repairs.
4. Visually inspect each leachate collection riser and note any damage. Check and record the liquid level in each riser. If the liquid level is found to be approaching or above the maximum acceptable level, make arrangements for leachate removal. Record the amount withdrawn, if applicable.
5. Visually inspect each groundwater well protective casing for damage. Check the protective casing and lock to ensure they are functioning and have not been tampered with. Note area around wells for erosion, settling or negative stress.
6. Visually inspect any required safety and emergency equipment. Report missing and/or damaged equipment.
7. Visually inspect the run-on and run-off control measures. Note any erosion, missing riprap, or other disrepair.

Following each inspection, a copy of the inspection log will be sent to the appropriate BP personnel for review. Arrangements will also be made to repair or replace any items in order to maintain the site at a condition equal to that in the application.

Post-Closure Maintenance (Pond 1 Landfill)

Maintenance activities will respond to the needs determined from the inspections. Items that may require repair include:

- Flood Protection Dike;
- security control fencing;
- areas of differential settlement, subsidence and displacement;
- slopes damaged by erosion;
- run-on and run-off control structures;
- leachate collection systems; and
- benchmarks

Groundwater monitoring wells will be repaired or replaced as needed and will be decommissioned upon Illinois EPA approval.

The final cover system will be mowed at least annually and fertilized as needed (except for areas where shrubbery or other structures are present).

Corrective action for the cover materials will be taken if the following problems occur:

- ponding;
- cracks greater than one inch wide;
- gas problems;
- odor problems;
- larger areas of dead or stressed vegetation (areas greater than 50 square feet);
- vegetation with taproots growing in areas not designed to accommodate such;
- vector problems; or
- leachate pop outs or seeps.

Corrective action measures for these types of problems could include regrading, addition of soils to repair cracks or to eliminate ponding, or re-seeding to re-establish vegetation.

Maintenance (East Surge Pond)

Maintenance activities will respond to the needs determined from the inspections. Items that may require repair include:

- water level staff gauge;
- lift station pumps/ sumps;
- gates/ valves; culverts
- dredging
- dikes
- vegetation
- clay liner

ATTACHMENT I

CERTIFICATION OF COMPLETION OF CLOSURE

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2



Illinois Environmental Protection Illinois EPA

CERTIFICATION OF COMPLETION OF RCRA CLOSURE

BP Products North American Inc./Riverfront Property (1191155009) – Madison County

USEPA ID: ILD980503106

RCRA Permit Log No. B-145R2

To meet the requirements of 35 IAC 725.215, this statement is to be completed by both a responsible officer of the owner/operator (as defined in 35 IAC 702.126) and by a qualified professional engineer upon completion of closure of the East Surge Pond (ESP). Submit one copy of the certification with original signatures and two additional copies.

The hazardous waste management unit, known as the East Surge Pond (ESP), at BP Products North American Inc./Riverfront Property has been closed in accordance with the specifications in the approved closure plan. A report documenting that closure has been carried out in accordance with the approved closure plan is attached.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS5/44(h))

Facility Name

Printed Name of Responsible Officer

Signature of Owner/Operator Date
Responsible Officer

Printed Title of Responsible Officer

Signature of Licensed P.E. Date

Printed Name of Licensed P.E. and
Illinois License Number

Mailing Address of P.E.:

Licensed P.E.'s Seal:

ATTACHMENT J

CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

STATE ID# 1191155009

ILD980503106

POST-CLOSURE PERMIT LOG NO. B-145R2



Illinois Environmental Protection Illinois EPA

CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE

BP Products North American Inc./Riverfront Property (1191155009) – Madison County

USEPA ID: ILD980503106

RCRA Permit Log No. B-145R2

To meet the requirements of 35 IAC 724.220, this statement is to be completed by both a responsible officer of the owner/operator (as defined in 35 IAC 702.126) and by a qualified professional engineer upon completion of post-closure care of the Pond 1 Landfill. Submit one copy of the certification with original signatures and two additional copies.

The hazardous waste management unit closed as a landfill, known as the Pond 1 Landfill, has been closed in accordance with the specifications in the approved closure plan. Post-Closure care required for the Pond 1 Landfill has been provided and completed in accordance with the RCRA Permit. A report documenting that required post-closure care have been carried out and completed in accordance with the approved post-closure care plan is attached.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS5/44(h))

Facility Name

Printed Name of Responsible Officer

Signature of Owner/Operator Date
Responsible Officer

Printed Title of Responsible Officer

Signature of Licensed P.E. Date

**Printed Name of Licensed P.E. and
Illinois License Number**

Mailing Address of P.E.:

Licensed P.E.'s Seal:



MEMORANDUM

DATE: September 20, 2023

TO: Takako Halteman, RCRA Unit

FROM: Jacob Nutt, Groundwater Unit

SUBJECT: BP Response to Draft Permit Published July 7, 2023

RE: 1191155009 -- Madison County
BP Products North America Inc/Riverfront Property
ILD980503106
Log Nos. B-145R2
RCRA Permit

A technical review has been completed on the groundwater portions of the subject submittal entitled, "Public Notice Comments for Draft Permit" provided by BP Products of North America, Inc. (BP). The submittal is dated August 23, 2023, and was received via email by this reviewer August 24, 2023. An official copy was sent to the Illinois EPA Office of Community Relations and will be incorporated into the Administrative Record for the Renewal Application. The submittal presents comments to the Draft RCRA Post-Closure Permit published for public comment on July 7, 2023. Comments were only received by the facility at the time of this review.

BACKGROUND

The Permit was initially issued September 30, 1993, renewed September 15, 2008. The Illinois EPA published a Draft RCRA Post-Closure Permit published for public comment on July 7, 2023.

PUBLIC COMMENT RESPONSES

The responses below address comments received from BP Products North America, Inc. (BP) dated August 23, 2023, and received by Illinois EPA on August 24, 2023, pertaining to the draft renewal permit for BP issued July 12, 2023.

The fact sheet included with the draft copy of the permit will not be included in the approved copy of the RCRA Post-Closure Permit. Comments #1 -#6 that were received in regard to the fact sheet will still be addressed in the following document.

A comment and recommended language is provided by the facility where applicable. The facility comments are included in their entirety in *italics* and in ~~strike through~~ for language to be removed and underlined language to be added.

BP Comment 1:

Page 1 of 7 (Section II.A.): 1st paragraph, 4th and 5th sentences:

Please revise to clarify the property now owned by Kinder Morgan Phoenix Holdings, LLC (KMPH) is no longer a portion of the Main Plant facility. Please remove the detail regarding operations at the KMPH facility as it is no longer a portion of the Main Plant facility.

In addition, it was used for the management of refinery waste. Currently, Kinder Morgan Liquids Terminal LLC (KMLT) operates and Kinder Morgan Phoenix Holdings, LLC (KMPH) owns a storage and distribution facility for gasoline and petroleum distillates at a site which was formerly a portion of the Main Plant facility ~~but that~~ was sold to KMPH and will be subject to a separate RCRA Permit. ~~Distribution operations are managed via pipelines, aboveground storage tanks at the Main Plant, and barge operations on the Mississippi River.~~

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment. However, Fact Sheet will not be included as a part of the final permit.

BP Comment 2:

Page 2 of 7 (Section II.B.): 2nd paragraph, 2nd sentence:

Please add references to the Main Plant facility and revise "riverfront property" to "Riverfront facility" for clarification.

The Riverfront facility is adjacent to, and its operation was associated with the former Amoco Refinery in Wood River. This 569-acre former refinery (Main Plant facility) is located due east of the Riverfront facility ~~riverfront property~~. Route 143, East Rand Avenue, South Sixth Street, and Illinois Route 3 bound the former refinery (Main Plant facility) on the north, south, east, and west sides, respectively.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment. However, Fact Sheet will not be included as a part of the final permit.

BP Comment 3:

Page 3 of 7 (Section III.A.1.): Table Please revise to clarify there are no sediments or soil with K048 above the ESP liner. Remove second closing parentheses.

<u>Description of Hazardous Waste & Waste Numbers</u>
<i>Sediments and soil <u>below the liner</u> contaminated with K048 – Dissolved air flotation (DAF) float from the petroleum refining industry</i>

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment. However, Fact Sheet will not be included as a part of the final permit.

BP Comment 4:

Page 3 of 7 (Section III.A.1.): 2nd paragraph, 1st sentence:

Please revise to clarify treatment and placement of sludges into the landfills.

The majority of the sludges were removed and treated by the Chemfix process prior to placement in the Permitted Non-Hazardous Waste Landfill (PNWL, or Pond 5 landfill). However, ~~t~~he heavier hazardous sludges and the majority of the impacted soils in these ponds could not be placed in the PNWL and were subsequently removed and placed in the Pond 1 Landfill (this unit is further discussed below).

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment. However, Fact Sheet will not be included as a part of the final permit.

BP Comment 5:

Page 3 of 7 (Section III.A.1.): 3rd paragraph, last sentence:

Please remove the word influent.

In the event this level is exceeded, ~~influent~~ water can be diverted to the Temporary Surge Basin or the West Surge Pond.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment. However, Fact Sheet will not be included as a part of the final permit.

BP Comment 6:

Page N/A (Section III.A.2.): Pg. 11 through 18 of the pdf

Please remove duplicate Fact Sheet

Not Applicable

Illinois EPA Response:

Fact Sheet will not be included as a part of the final permit.

BP Comment 7:

Page I-2 (Section I.C.): 1st paragraph, 4th and 5th sentences:

Please revise to indicate that Kinder Morgan Phoenix Holdings (KMPH) owns and Kinder Morgan Liquid Terminals LLC (KMLT) operates this former portion of the Main Plant facility.

Please revise to clarify that the property now owned by KMPH is no longer a portion of the Main Plant facility. Please remove the detail regarding operations at the KMPH facility as it is no longer a portion of the Main Plant facility.

Presently, Kinder Morgan Liquid Terminals LLC (KMLT) ~~owns~~operates, and Kinder Morgan Phoenix Holdings (KMPH) ~~operates~~owns, a storage and distribution facility for gasoline and petroleum distillates at a site which was formerly a portion of the Main Plant facility but was sold to KMPH and will be subject to a separate RCRA Permit for gasoline and petroleum distillates. Distribution operations are carried out via pipelines and aboveground tanks at the Main Plant. The Main Plant and Riverfront facilities were owned by Amoco Oil Company until the company merged with BP in 1999.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

Presently, Kinder Morgan Liquid Terminals LLC (KMLT) operates, and Kinder Morgan Phoenix Holdings (KMPH) owns, a storage and distribution facility for gasoline and petroleum distillates at a site which was formerly a portion of the Main Plant facility but was sold to KMPH and will be subject to a separate RCRA Permit. The Main Plant and Riverfront facilities were owned by Amoco Oil Company until the company merged with BP in 1999.

BP Comment 8:

Page I-2 (Section I.C.): 3rd paragraph, 3rd sentence:

Please add a space after the “,” following (DAF) float in the third sentence of the third paragraph.

From 1977 to 1981, Amoco stored Dissolved Air Flotation (DAF) float, a listed hazardous waste, in Ponds 1, 1A, 2, 2A, 3, 3A and 4 of the former series of wastewater treatment ponds.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

From 1977 to 1981, Amoco stored Dissolved Air Flotation (DAF) float, a listed hazardous waste, in Ponds 1, 1A, 2, 2A, 3, 3A and 4 of the former series of wastewater treatment ponds.

BP Comment 9:

Page I-3 (Section I.C.): Condition 2, 4th sentence:

Please add Permit reference to define "wastewater from the Main Plant."

These wastewaters ~~include wastewater from the Main Plant~~ are defined in Condition II.B.1, Wood River Wastewater Treatment Plant, and non-hazardous leachate from the Pond 5 landfill, also known as the Permitted Non-Hazardous Waste Landfill (PNWL).

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

These wastewaters are defined in Condition II.B.1.

BP Comment 10:

Page I-3 (Section I.C.): Last 2 paragraphs:

Please remove the second period at the end of the third sentence in the third paragraph.

In the first sentence of the fourth paragraph, revise the word "at" to "the" and revise to clarify corrective action is required at the facility. However, bp does have the option to remove a parcel from the Land Reuse program, whereby Corrective Action would only apply to SWMUs and PRSs and would not include recognized environmental conditions.

As part of the general corrective action program, the facility has been broken up into ten parcels and the SWMUs in each parcel have individual focus.

This permit allows/requires BP to carry out ~~at~~the following activities at the Riverfront facility: (1) continue storing/treating non-hazardous wastewaters in the ESP until closure activities begin; (2) provide post-closure care for the Pond 1 Landfill; (3) conduct corrective action, as appropriate, ~~on the recognized environmental conditions at the facility;~~ and (4) implement a groundwater monitoring/corrective action program.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

This permit allows/requires BP to carry out the following activities at the Riverfront facility: (1) continue storing/treating non-hazardous wastewaters in the ESP until closure activities begin; (2) provide post-closure care for the Pond 1 Landfill; (3) conduct corrective action, as appropriate, at the facility; and (4) implement a groundwater monitoring/corrective action program.

BP Comment 11:

Page II-1 (Section II.A): Third Paragraph, 2nd sentence:

Please add the word "to" between allowed and be.

Although some residual soil contamination may remain in the ESP during the delay of closure period, no new hazardous wastes are allowed to be placed in the unit.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

Although some residual soil contamination may remain in the ESP during the delay of closure period, no new hazardous wastes are allowed to be placed in the unit.

BP Comment 12:

Page II-1 (Section II.B): B. Condition 1, 1st sentence:

Please revise language to the 80-million-gallon capacity / 2-ft freeboard.

(a) Please add "industrial" sewage to account for process wastewater. Please add a "t" to BP "Main Plan."

(c) Please define or clarify "seepage water from the Riverfront facility."

The Permittee may only store/treat non-hazardous wastewaters ~~in~~ total volume of 100 million gallons in the ESP subject to the terms of this permit including: (a) domestic and industrial sewage and commingled stormwater from the Cities of Wood River, Hartford, South Roxana, and also BP Main Plant and Riverfront facilities; (b) groundwater pumped as part of BP's hydraulic gradient control and subsurface hydrocarbon recovery program; and (c) recovered non-hazardous leachate from the PNWL and seepage water from the Riverfront facility.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

The Permittee may only store/treat non-hazardous wastewaters in total volume of 100 million gallons in the ESP subject to the terms of this permit including: (a) domestic and industrial sewage and commingled stormwater from the Cities of Wood River, Hartford, South Roxana, and also BP Main Plant and Riverfront facilities; (b) groundwater pumped as part of BP's hydraulic gradient control and subsurface hydrocarbon recovery program; and (c) recovered non-hazardous leachate from the PNWL and captured artisanal waters which have not come into contact with any hazardous wastewaters elsewhere at the Riverfront facility

BP Comment 13:

Page II-2 (Section II.B.): Condition 2, a:

Please revise to clarify this sample is the first discharge of wastewater sent to the ESP from Pond 3A.

Please define required analytes or add reference to the Condition with requirements.

a. Collect/analyze a sample of the first discharge of wastewater from Pond 3A, ~~sent~~ to the ESP each quarter of the calendar year in accordance with Condition II.B.2.c.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

a. Collect a sample of the first discharge of wastewater from Pond 3A to the ESP each quarter of the calendar year and have the sample analyzed in accordance with Condition II.B.2.c.

Additionally have clarified analytes.

BP Comment 14:

Page II-2 (Section II.B.): Condition 2, b:

As this is a new requirement, please confirm the following:

- 1) that PNWL leachate sampling is necessary;*
- 2) what actions are required if no PNWL leachate is generated/ discharged; and*
- 3) what documentation is required if no PNWL leachate is discharged.*

Please consider the proposed revision to require a quarterly sample of the PNWL leachate discharge as it is not possible to guarantee collection of the "first" PNWL leachate discharge.

Please revise the number formatting if the sample requirements apply to the samples required under both II.B.2.a and II.B.2.b. and add reference to II.B.2.c.

Please clarify if electronic records meet the definition of "operating record" throughout the Permit.

- b. Two composite samples of ~~the first~~ leachate discharge, one from the manifolded pipe of odd numbered sumps and one from the even numbered sumps of the PNWL, sent to the East Surge Pond each quarter of the calendar year in accordance with Condition II.B.2.c.*
- c. These samples must be analyzed for all the characteristics of hazardous waste set forth in 35 IAC 721, Subpart C. The results of these efforts must be documented in the facility's operating record.*

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

- b. Two composite samples of leachate discharge, one from the manifolded pipe of odd numbered sumps and one from the even numbered sumps of the PNWL, sent to the East Surge Pond each quarter of the calendar year in accordance with Condition II.B.2.c.*
- c. These samples must be analyzed for all the characteristics of hazardous waste set forth in 35 IAC 721, Subpart C. The results of these efforts must be documented in the facility's operating record.*

BP Comment 15:

Page II-3 (Section II.C.): Condition 2:

Please clarify if there is an exception to the 2-foot freeboard requirement in the case of Force Majeure events.

A minimum of two feet of freeboard must be maintained at all times in the ESP. Illinois EPA may modify this requirement when it determines cause exists, such as Force Majeure or events over which the Permittee has no control.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

A minimum of two feet of freeboard must be maintained at all times in the ESP. Illinois EPA may modify this requirement when it determines cause exists, such as Force Majeure or events over which the Permittee has no control.

BP Comment 16:

Page II-3 (Section II.C.): Condition 3:

Please add period to last sentence.

This adjusted standard allows the Permittee to continue using the ESP for the storage/treatment of non-hazardous wastewaters until they decide to close the impoundment in accordance with 35 IAC 724.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

This adjusted standard allows the Permittee to continue using the ESP for the storage/treatment of non-hazardous wastewaters until they decide to close the impoundment in accordance with 35 IAC 724.

BP Comment 17:

Page II-4 (Section II.E.): Condition 3:

Please include reference to Illinois Administrative Code.

If the ESP is taken out of service for more than six months, then prior to returning to service, the Permittee shall obtain a certification from a qualified Professional Engineer registered in the State of Illinois that the surface impoundment and the flood-protection dike, including that portion of any dike which provides freeboard, have structural integrity in accordance with 35 IAC 724.326(c).

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

Please note that in order to maintain consistency throughout the permit IAC has been rewritten to Ill. Adm. Code.

If the ESP is taken out of service for more than six months, then prior to returning to service, the Permittee shall obtain a certification from a qualified Professional Engineer registered in the State of Illinois that the surface impoundment and the flood-protection dike, including that portion of any dike which provides freeboard, have structural integrity in accordance with 35 IAC 724.326(c).

BP Comment 18:

Page II-4 (Section II.F.): Condition 1, 2nd and 3rd sentences:

Please clarify or define “non-closure activity.”

The proposed schedule for closure of the ESP required in this section must include and consider any additional non-closure activities associated with the ESP. Any additional non-closure activities associated with the ESP must commence at least five (5) years prior to the expiration of this permit so that the required RCRA closure activities of the ESP may commence prior to the expiration date of this permit unless approved otherwise by Illinois EPA.

Illinois EPA Response:

The Illinois EPA acknowledges BP’s comment.

Non-closure activities in this regard are activities which may impact the ESP but are not directly permissible in nature.

No change to permit language is necessary with this clarification.

BP Comment 19:

Page II-4 (Section II.F.): Condition 2, 4th sentence:

Please capitalize “p” in Environmental Protection Act.

Illinois EPA review of this plan will be subject to the permit appeal provisions contained in Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP’s comment and has made the changes below:

Illinois EPA review of this plan will be subject to the permit appeal provisions contained in Sections 39(a) and 40(a) of the Illinois Environmental Protection Act.

BP Comment 20:

Page II-6 (Section II.F.): Condition 5, i:

Please add a “;” between geologic cross-sections and groundwater monitoring data.

As appropriate and available: boring logs; well construction diagrams; geologic cross-sections; groundwater monitoring data; and information about any groundwater remediation effort.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

As appropriate and available: boring logs; well construction diagrams; geologic cross-sections; groundwater monitoring data; and information about any groundwater remediation effort.

BP Comment 21:

Page III-2 (Section III.B.): Condition 4:

Please revise description of cover system to include the Geotextile fabric layer between the 1-ft thick compacted clay layer and the geonet drainage layer.

The cover system on the top of the Pond 1 landfill is constructed of the following layers, specified from the top to bottom:

- a. One foot thick protective soil cover;*
- b. One foot thick compacted clay layer;*
- b.c. Geotextile fabric;*
- e.d. A geonet drainage layer;*
- d.e. 60 mil HDPE geomembrane liner; and*
- e.f. Two foot thick compacted clay layer.*

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

The cover system on the top of the Pond 1 landfill is constructed of the following layers, specified from the top to bottom:

- a. One foot thick protective soil cover;*
- b. One foot thick compacted clay layer;*
- c. Geotextile fabric;*
- d. A geonet drainage layer;*

- e. A 60 mil HDPE geomembrane liner; and
- f. Two foot thick compacted clay layer.

BP Comment 22:

Page III-3 (Section III.B.): Condition 5, b:

Please revise to include exception for delisting.

Any material removed from the Pond 1 Landfill during future activities must be managed as a hazardous waste in accordance with 35 IAC Subtitle G: Waste Disposal unless material has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

Any material removed from the Pond 1 Landfill during future activities must be managed as a hazardous waste in accordance with 35 IAC Subtitle G: Waste Disposal unless material has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.

BP Comment 23:

Page III-5 (Section III.D.): Condition 4, 1st sentence:

A recent inspection of the benchmark locations at the Riverfront facility could not locate the markers; please consider the proposed revision.

The Permittee shall inspect the benchmarks used to identify the location of the hazardous waste management units (HWMUs) and solid waste management units (SWMUs) within 60 days of the effective date of this permit and thereafter in accordance with the Inspection Schedule in the approved permit application. If benchmarks cannot be located or confirmed, then the Permittee shall have the appropriate benchmark(s) reestablished by a licensed surveyor within 90 days of the effective date of this permit.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

The Permittee shall inspect the benchmarks used to identify the location of the hazardous waste management units (HWMUs) and solid waste management units (SWMUs) within 60 days of the effective date of this permit and thereafter in accordance with the

Inspection Schedule in the approved permit application. If benchmarks cannot be located or confirmed, then the Permittee shall have the appropriate benchmark(s) reestablished by a licensed surveyor within 90 days of the effective date of this permit.

BP Comment 24:

Page III-6 (Section III.E.): Condition 1:

Please clarify if electronic records meet the definition of “written operating record.”

The Permittee shall keep and maintain a written operating record that includes all the records, reports, notifications, monitoring data, testing or analytical data, and corrective action data required by 35 IAC 724.173 and the conditions in this permit, for the entirety of the post-closure care period. The operating record shall be kept on-site at the facility and available for Illinois EPA review.

Illinois EPA Response:

The Illinois EPA acknowledges BP’s comment.

Keeping electronic records that can be printed meets the definition of “written operating record.”

No change to permit language is necessary with this clarification.

BP Comment 25:

Page III-6 (Section III.E.): Conditions 4 and 5, 2nd sentence:

Please remove references to “run-on control system” and “run-off management system” as the landfill is not active; or define and clarify when applicable to the Pond 1 Landfill.

4. The Permittee shall prevent run-on from eroding or otherwise damaging the final cover. ~~At a minimum, the run on control system shall be capable of preventing flow onto the active portion of the landfill during peak discharge from a 24 hour, 25 year storm event.~~

5. The Permittee shall prevent run off from eroding or otherwise damaging the final cover. ~~At a minimum, the run off management system shall be capable of collecting and controlling the volume of water resulting from a 24 hour, 25 year storm event.~~

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

4. The Permittee shall prevent run-on from eroding or otherwise damaging the final cover.
5. The Permittee shall prevent run off from eroding or otherwise damaging the final cover.

BP Comment 26:

Page III-6 and III-7 (Section III.E.): Condition 7:

Please consider the following:

The Pond 1 Landfill does not have a current permanent pumping system for leachate extraction. Leachate is removed via vacuum truck. A draft delisting petition for the Pond 1 Landfill leachate has been submitted for review by Illinois EPA prior to submittal to the Illinois Pollution Control Board (IPCB). bp proposes to submit a Compliance Plan to Illinois EPA within 30 days of IPCB approval or denial of this petition, proposing a schedule to comply with the requirements, as applicable.

Please consider revising to require a camera survey of the collection risers and sump every 10 years to inspect and determine if sediment removal is needed.

7. The Permittee submitted a draft delisting petition dated June 30, 2023 for review by Illinois EPA prior to submittal to the Illinois Pollution Control Board. Within 30 days of Illinois Pollution Control Board approval or denial of this petition, the Permittee shall submit a Compliance Plan to Illinois EPA, proposing a schedule to comply with the requirements stated below, as applicable.:
 - a. ~~The Permittee shall m~~Install and maintain the leachate collection system (LCS) with pumps, and leak detection system (LDS) in accordance with the design plans and specifications contained in the Illinois EPA approved permit application~~Compliance Plan and the conditions in this permit. The permittee shall:~~
 - b. The LCS will maintain leachate levels within the collection risers at a depth such that leachate does not exceed one (1) foot above the liner.
 - c. Remove and clean the pumps from the LCS and LDS at least once every year.
 - d. Every 10 years, the permittee will use a camera to inspect the collection risers and sump for sediment build-up. If 10% or more of the screened interval is silted-in, the permittee shall Rremove sediment from the LCS and LDS collection riser~~pipes~~ and sumps using a high-pressure jet or equivalent method at least once every 10 years.
 - e. ~~Install and operate within 30 days of the effective date of this permit, a leak detection alarm system to alert when the level of leachate reaches one (1) foot as described in Condition III.E.11 (b).~~

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

7. The Permittee submitted a draft delisting petition dated June 30, 2023 for review by Illinois EPA prior to submittal to the Illinois Pollution Control Board. Within 30 days of Illinois Pollution Control Board approval or denial of this petition, the Permittee shall submit a Compliance Plan to Illinois EPA, proposing a schedule to comply with the requirements stated below, as applicable:
 - a. Install and maintain a leachate collection system (LCS) with pumps, and leak detection system (LDS) in accordance with the design plans and specifications contained in the Illinois EPA approved Compliance Plan and the conditions in this permit.
 - b. The LCS will maintain leachate levels within the collection risers at a depth such that leachate does not exceed one (1) foot above the liner.
 - c. Remove and clean the pumps from the LCS and LDS at least once every year.
 - d. Every 10 years, the permittee will use a camera to inspect the collection risers and sump for sediment build-up. If 10% or more of the screened interval is silted-in, the permittee shall remove sediment from the collection risers and sumps using a high-pressure jet or equivalent method.
 - e. Install and operate a leak detection alarm system to alert when the level of leachate reaches one (1) foot as described in Condition III.E.11 (b).

BP Comment 27:

Page III-7 (Section III.E.): Condition 10, a and b:

As this is a new requirement, and the Permittee has conducted previous rounds of leachate characterization sampling to support a delisting petition, please clarify or revise based on the following:

In lieu of analyzing annual samples for the 35 IAC 724 Appendix I parameters for the first four years, bp proposes to analyze the first annual sample for the Appendix I parameters and submit these results to Illinois EPA along with results from previous samples collected by bp and/or the Publicly Owned Treatment Works (POTW) that collectively comprise the 35 IAC 724 Appendix I parameters, and use these results to propose a Reduced List for Illinois EPA approval, then subsequent implementation during the second annual sampling event.

The permittee shall collect a representative sample of leachate from the landfill and analyze it for all the constituents listed in 35 IAC 724 Appendix I. These samples shall be collected and analyzed annually in accordance with the sampling and test methods specified in the approved permit application. The results of the leachate quality testing

data shall be submitted and maintained in the facility's operating record and submitted to the Illinois EPA by July 15 each year.

- a. The Reduced List will be based on the four most recent complete 35 IAC 724 Appendix I analyses and include all parameters detected in any of the four Appendix I analyses. Starting the next sampling event after Illinois EPA approval, this Reduced List will be used in lieu of the Appendix I analysis for three out of four years, with the fourth-year reverting to a full Appendix I analysis. Any parameters not included on the existing Reduced List that are detected in the fourth-year Appendix I analysis shall be added to all future Reduced List analyses by means of a permit modification request. This cycle of three years of Reduced List, followed by one year of Appendix I analysis, will repeat for the remainder of the post-closure period.*
 - i. For the first cycle, the Permittee may utilize results from the first annual sample analyzed for all Appendix I parameters in conjunction with previous results from samples collected by the Permittee and/or the Publicly Owned Treatment Works (POTW) that collectively comprise the Appendix I parameters, if available, to propose the first Reduced List for Illinois EPA approval.*

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

- a. The Reduced List will be based on the four most recent complete 35 IAC 724 Appendix I analyses and include all parameters detected in any of the four Appendix I analyses. Starting the next sampling event after Illinois EPA approval, this Reduced List will be used in lieu of the Appendix I analysis for three out of four years, with the fourth-year reverting to a full Appendix I analysis. Any parameters not included on the existing Reduced List that are detected in the fourth-year Appendix I analysis shall be added to all future Reduced List analyses by means of a permit modification request. This cycle of three years of Reduced List, followed by one year of Appendix I analysis, will repeat for the remainder of the post-closure period.*
 - i. For the first cycle, the Permittee may utilize results from the first annual sample analyzed for all Appendix I parameters in conjunction with previous results from samples collected by the Permittee and/or the Publicly Owned Treatment Works (POTW) that collectively comprise the Appendix I parameters, if available, to propose the first Reduced List for Illinois EPA approval.*

BP Comment 28:

Page III-8 (Section III.E.): Condition 11, b:

Please consider the following:

A draft delisting petition for the Pond 1 Landfill leachate has been submitted for review by Illinois EPA prior to submittal to the Illinois Pollution Control Board. A 30-day deadline from the date of approval or denial of the delisting petition is requested for submittal of a Compliance Plan for implementation of any leachate management systems and adherence to Condition III.E.11.b.

In accordance with the Compliance Plan referenced in Condition III.E.7, leachate shall be removed from the collection risers as necessary to ensure the leachate depth over the liner does not exceed one (1) foot (or approximately at Elevation 403' above mean sea level (MSL) for LCS).

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

In accordance with the Compliance Plan referenced in Condition III.E.7, leachate shall be removed from the collection risers as necessary to ensure the leachate depth over the liner does not exceed one (1) foot (or approximately at Elevation 403' above mean sea level (MSL) for LCS).

BP Comment 29:

Page III-8 (Section III.E.): Condition 11, c:

Please revise to include exception for delisting.

All leachate removed from the LCS and LDS shall be managed as a hazardous waste unless leachate has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

All leachate removed from the LCS and LDS shall be managed as a hazardous waste unless leachate has been delisted by the Illinois Pollution Control Board in accordance with Section 28.1 of the Illinois Environmental Protection Act and 35 IAC 720.122.

BP Comment 30:

Page III-8 (Section III.F.): Condition 3:

Please confirm this new data reporting requirement is necessary. If so, please consider allowing this data to be reported in the quarterly Corrective Action Progress Report required in Condition V.J.1 rather than a standalone report.

The leachate quantity and quality data required by Conditions III.E.10 and III.E.11 for the LCS and LDS shall be submitted to the Illinois EPA Bureau of Land Permit Section as part of the Leachate Data Quarterly Monitoring Report in accordance with the following schedule.

<u>Data Collected</u>	<u>Results/ Report Submitted by:</u>
January – March	May 1
April – June	August 1
July – September	November 1
October – December	February 1

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment, as long as the information required is distinctly labeled it can be included in the Corrective Action Progress Report.

The new data reporting requirement is necessary.

BP Comment 31:

Page III-9 (Section III.F.): Condition 6:

Please clarify the number of copies required. This Condition states that an original and one (1) copy is required for this report whereas Condition IV.I.12 states that one (1) original and a minimum of two (2) copies are required for each notice or report submitted to the Illinois EPA.

Please confirm that this new reporting requirement for graphical representations of leachate removal volumes and liquid level elevations should start with the data generated following the effective date of the permit.

6. *The permittee shall submit an original and one (1) copy of each Leachate Data Quarterly Monitoring Report required in Condition III.F.3 above.*
 - a. *A graphical representation of the volumes of leachate removed from the LCS and LDS each month. The leachate generation rates (gallons/month) from the LCS and LDS shall be presented on the same graph. The scale of the abscissa (time) shall be such that no more than one year of data (starting with January each year) is presented on each sheet of paper.*
 - b. *A graphical representation of the elevations of the liquid level in the collection risers for the quarter. For each measurement, the graph needs to identify the*

following: the elevation of leachate over time, elevation of the top of liner, and elevation of the bottom of the cover system all in feet above MSL.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

6. The permittee shall submit an original and one (2) copies of each Leachate Data Quarterly Monitoring Report required in Condition III.F.3 above. In addition to the electronic data, each report must include:

The Illinois EPA confirms that this new reporting requirement for graphical representations of leachate removal volumes and liquid level elevations should start with the data generated following the effective date of the permit.

SUBJECT SUBMITTAL

A Groundwater-related comments have been made to Section IV (Groundwater Corrective Action Program).

BP Comment 32:

Page IV-1 (Section IV.A.): Condition 1, 1st sentence:

Please revise to match language in current Permit.

Condition 1, 3rd sentence:

Please revise to match language from current Permit.

Control of groundwater flow in the uppermost aquifer such that groundwater flow in the Riverfront Groundwater Management Zone is towards the interior of the ~~of the contaminated groundwater is towards the interior of the~~ BP Main Plant facility.

Such flow control is necessary as a corrective action to prevent contaminant migration of address contaminants in groundwater from on-site releases of product or waste, beyond the boundaries of the ~~at the BP Riverfront facility and is the basis for the establishment of a Groundwater Management Zone (GMZ).~~

Illinois EPA Response:

Completed separately by Amy Butler.

BP Comment 33:

Page IV-2 (Section IV.C.):

Condition 1, 2nd sentence:

Please revise to reference the figure showing the well network for the approved optimized Groundwater Corrective Action Monitoring Program.

The location of these wells is specified in Figure C-27 of the approved permit application.

Illinois EPA Response:

Completed separately by Amy Butler.

BP Comment 34:

Page IV-2 and IV-3(Section IV.C.): Condition 1:

Please revise well construction information to match what was provided in permit renewal application replacement pages.

Please move IEPA Well No. LOD5 from the gauging and semi-annual sampling network to the gauging and annual sampling network to align with the approved optimized Groundwater Corrective Action Monitoring Program.

Please revise IEPA Well No. RL17B to L17B to meet 4-digit requirement and prevent confusion IEPA Well No. RL-17. Currently, IEPA Well No. RL17B is truncated to RL17 in Storet EDD files submitted to Illinois EPA.

Please revise Facility Well No. SUMP-2 to SUMP-8 for IEPA Well No. G512 included in the well network approved in the optimized Groundwater Corrective Action Monitoring Program.

Please correct miscellaneous typos as noted.

R21L	RL-21BR	WSP	56.00 54.01	369.92 367.93	374.92- 369.92 372.60-367.93 ^H
R529	P-29R	LOD	48.61 47.00	372.30 373.94	382.30-372.30 373.94 ^H
<u>IEPA Well No.</u>	<u>Facility Well No.</u>	<u>Area</u>	<u>Well Depth (ft-bgs)</u>	<u>Well Depth Elevation (ft MSL)</u>	<u>Well Screen Interval (ft MSL)</u>
<u>Observation Monitoring Wells (Annual Sampling Only Network³)</u>					
R21D	RL-21CR	WSP	70.24 71.00	353.58 352.82	358.58- 353.58 356.90-352.82 ^H

LOD6	LOD-6	LOD	28.50	393.20	403.40-393.40 ^C
LOD9	LOD-9	LOD	28.50	394.12	404.12-394.12 ^C

Observation Monitoring Wells (Gauging Only Network⁴)

					406.27-
G030	C-20	TF	39.10 ^{35.00}	386.27 ^{390.37}	386.27 ^{400.35-390.37} ^C
G033	C-23	POTW	35.00	393.54	403.55-393.55 ^C
G037	C-27	PNWL	34.00	393.94	404.04-393.94 ^P
G038	C-28	PNWL	35.69	393.70	403.90-393.80 ^P
G090	G090	PNWL	48.00	378.61	383.74-379.16 ^H
G091	G091	PNWL	66.50	359.14	382.27-377.69 ^H
G102	RL-2	LOD	34.0	388.78	398.78-388.78 ^C
G109	RL-9	ESP	39.00	388.45	398.45-388.45 ^P
G36R	C-26R	PNWL	34.4	392.18	402.48-392.48 ^P
G411	S-1	WSP	41.60	376.83	386.83-376.83 ^H
R034	C-24R	ESP	35.24	393.64	403.88-393.88 ^C
R66L	RL-6BR	ESP	55.30	377.06	382.16-377.06 ^H
G503	PANC-UP01	Parcel A	39.50	378.55	388.75-378.75 ^H
G504	PANC-UP02	Parcel A	39.00	372.06	382.06-372.06 ^H
G505	PANC-UP05	Parcel A	37.10	389.61	399.61-389.61 ^C
G506	PANC-UP09	Parcel A	27.30	389.29	399.49-389.49 ^C
G507	PANC-UP11	Parcel A	37.30	388.62	398.82-388.82 ^C
G508	SWMU4-MW01	Parcel A	30.98	395.10	405.10-395.10 ^P
G509	SWMU4-MW03	Parcel A	29.41	389.24	405.90-395.90 ^P
G510	SWMU4-MW04	Parcel A	32.62	388.96	405.57-395.57 ^P

Observation Monitoring Wells (LNAPL Monitoring Network⁵)

G105	RL-5	ESP	34.00	388.28	398.28-388.28 ^C
G512	SUMP-28	Parcel C	+	+	409.05-406.35 ^P

Observation Monitoring Wells (Sentinel Wells⁶)

G511	SWMU4-MW02	Parcel A	26.43	392.67	402.67-392.67 ^C
					403.58-
LOD1 ²	LOD-1	LOD	31.400	393.58 ^{393.48}	393.58 ^{403.32-393.48} ^C
					390.15-
LOD2 ²	LOD-2	LOD	41.200	380.15 ^{379.95}	380.15 ^{390.02-379.95} ^C
G029 ⁷	C-19R	MP	24.52	393.98	404.31-394.31 ^C
G056 ^{**}	G-16	MP	30.00	395.54	415.54-395.54 ^P

<u>IEPA Well No.</u>	<u>Facility Well No.</u>	<u>Area</u>	<u>Well Depth (ft-bgs)</u>	<u>Well Depth Elevation (ft MSL)</u>	<u>Well Screen Interval (ft MSL)</u>
G057 ⁸	G-17	MP	35.02	391.90	411.90-391.90 ^C
G058 ⁸	G-18	MP	36.00	391.27	411.27-391.27 ^C

- GXXX⁹ Well details will be provided within ninety (90) days of well completion
- GXXX⁹ Well details will be provided within ninety (90) days of well completion
- GXXX⁹ Well details will be provided within ninety (90) days of well completion

Illinois EPA Response:

Completed separately by Amy Butler.

BP Comment 35:

Page IV-7 (Section IV.D.): Condition 1:

Please revise the Depth to Water units to Ft below ground surface (bgs) and Ft below top of casing (bTOC).

Please revise hazardous constituents list and footnotes to align with the approved optimized Groundwater Corrective Action Monitoring Program.

Please revise arsenic concentration limit to align with 35 IAC 620, Class I, Groundwater Quality Standards (GQS). Note that the historical drinking water standard for arsenic was 0.05 mg/L; however, the USEPA reduced the standard to 0.01 mg/L in 2006.

Depth to Water (below land <u>ground surface</u>)	72109	Feet <u>bgs</u>	
Depth to Water (below measuring point <u>top of casing</u>)		72109	Ft
<u>bgs</u> <u>bTOC</u>			

<u>Hazardous</u> <u>Constituents</u>	<u>Storet No.</u> <u>(Total)</u>	<u>Storet No.</u> <u>(Dissolved)</u>	<u>Concentration</u> <u>Limits (mg/L)</u>
Arsenic*	01002	01000	0.0 <u>1</u> 5
Barium	01007		2.0
Cadmium	01027		0.005
Chloride	00940	00941	200.0
Chrysene	34320		0.1
Lead*	01051	01049	0.0075
Sulfate	00945		400.0
Benzene	34030		0.005
Benzo(b)fluoranthene	34230		0.00018
Bis(2-ethylhexyl) phthalate	39100		0.006
Carbon Disulfide	81309		0.7
Ethylbenzene	78113		0.7
Toluene	34010		1.0
Total Xylenes	34020		10.0
Methyl Tertiary-Butyl Ether	46491		0.07

Phenols 46000 0.1

* = Constituents that must be sampled for both dissolved and total concentrations.

= Constituents that must be sampled annually.

1 = To monitor natural attenuation conditions.

Illinois EPA Response:

Completed separately by Amy Butler.

BP Comment 36:

Page IV-7 (Section IV.D.): Condition 2, a:

Please add Condition 2.a.i. to include language referencing the proposed site-specific GQS for arsenic. bp submitted a Site-Wide Inorganics and Metals (SWIM) Evaluation Report dated January 25, 2022 for both the Riverfront and Main Plant facilities in which it was demonstrated that increases in dissolved-phase inorganics may be due to naturally occurring fluctuations or other external influences; and that these fluctuations may exceed the established Class 1 GQS. The SWIM evaluation determined that arsenic is present in the uppermost aquifer at background concentrations that exceed the Class 1 GQS of 0.01 mg/L. bp proposed that a site-specific GQS for arsenic be established at a concentration of 0.036 mg/L.

i. — The Permittee submitted a Site-Wide Inorganics and Metals Evaluation Report dated January 25, 2022, proposing a site-specific groundwater quality standard of 0.036 mg/L for arsenic pending approval by the Illinois EPA.

Illinois EPA Response:

Completed separately by Amy Butler.

BP Comment 37:

Page IV-9 (Section IV.E.): Condition 3, b, 1st sentence:

Please revise “daily” to “each business day.”

The pumping rate from each Gradient Control Well (COD well) shall be recorded daily each business day.

Illinois EPA Response:

Completed separately by Amy Butler.

BP Comment 38:

Page IV-10 (Section IV.E.): Condition 6:

Please revise to clarify “groundwater flow rate” and/or confirm this is a reference to seepage velocity in ft/day.

The Permittee shall determine the groundwater flow rate (i.e., seepage velocity in ft/day) and direction in the uppermost aquifer at least annually from the monitoring wells listed in Condition IV.C.1.

Illinois EPA Response:

Completed separately by Amy Butler.

BP Comment 39:

Page IV-10 (Section IV.E.): Condition 8:

Please revise the reference.

The GMZ Boundary Wells and Observation Monitoring Wells listed in Condition IV.C.1 shall be monitored for the constituents listed in Condition IV.~~ED~~.1.

Illinois EPA Response:

Completed separately by Amy Butler.

BP Comment 40:

Page IV-13 (Section IV.E.): Condition 12:

Please clarify the number of copies required. This Condition states that one (1) original and two (2) copies are required while Condition III.F.6 states one (1) original and one (1) copy is required for the Leachate Data Quarterly Monitoring Report. Please note bp’s preference is to mail one (1) original copy and send electronic copies for all Illinois EPA CCs.

The Permittee shall submit a completed “RCRA Facility Groundwater, Leachate and Gas Reporting Form” (LPC 592) as a cover sheet for any notices or reports required by the facility’s permit for identification purposes. Only one (1) copy of the LPC 592 must accompany your submittal. However, the Permittee must submit one (1) original and (excluding the groundwater and leachate monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The LPC 592 form is not to be used for permit modification requests.

Illinois EPA Response:

Completed separately by Amy Butler.

BP Comment 41:

Page IV-13 (Section IV.E.): Condition 14:

Please confirm that the CDF (Parcel D) and PNWL (Parcel J) reports required by Illinois EPA letters can be incorporated into the semi-annual report since neither are stated in Section VI – Special Conditions.

1. *The Permittee shall submit a written report semi-annually to the Illinois EPA, in accordance with the schedule found in Condition IV.I.2, which discusses the effectiveness of the corrective action program and place it in the operating record for the facility. Groundwater monitoring information required by Illinois EPA letters for all Parcels at the BP Riverfront facility shall be provided within the semi-annual report and separate reports are no longer required unless otherwise stated in Section VI (Special Conditions) of the Permit. At a minimum, the report must:
 - a. *Address the information requirements in Conditions IV.C, IV.D, IV.E and IV.F*
 - b. *Evaluate the effectiveness of the hydraulic control and contaminant removal from the GMZ including the information required by Condition IV.D.*
 - c. *Provide a discussion of any improvement in the quality of groundwater beneath the facility which has resulted from the corrective action.**

Illinois EPA Response:

Completed separately by Amy Butler.

BP Comment 42:

Page V-10 (Section V.F.): Condition 3, c:

bp requests removal of the 20% contingency from the total cost estimate.

- ~~e.~~ *A 20% adjustment for contingencies to the total estimated cost;*
- ~~d.c.~~ *An identification of the resources needed to complete each task (type and amount) and the unit cost of each required resource;*
- ~~e.d.~~ *Justification for all values used in the developing all aspects of the estimate.*

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment and respectfully declines the request as the 20% contingency is necessary in the event of bankruptcy.

BP Comment 43:

Page V-15 (Section V.J.): Condition 1, b, 1:

Please clarify if the Pond 1 Landfill Leachate Data Quarterly Monitoring Report required in Condition III.F.3 can be included in this Corrective Action Progress Report rather than be submitted as a standalone report.

a summary of activities completed at each parcel during the quarter, including information regarding the amount of free product/groundwater/leachate removed on a weekly basis from various units during the quarter;

Illinois EPA Response:

The Illinois EPA acknowledges BP's comment, as long as the information required by the Pond 1 Landfill Leachate Data Quarterly Monitoring Report is distinctly labeled it can be included in the Corrective Action Progress Report.

BP Comment 44:

Page V-15 (Section V.J.): Condition 1, d:

Please correct number formatting and period in last sentence.

d. An Annual Corrective Action Progress Report must be submitted to Illinois EPA by March 1 of each year which summarizes corrective action program activities completed at the facility during the previous calendar year (i.e., the previous January 1 to December 31). Among other things, this report must contain a compilation/summary of the information in the quarterly reports for the year, what was completed during the year, and what must still be done in the next year and in the following years. The following shall be incorporated into the Annual Corrective Action Progress Report and separate reports are no longer required:

(1) The corrective action progress report for the fourth quarter (October – December of every year).

(2) ~~e.~~ The “Annual CDF Operations, Maintenance and Monitoring Report” (referred to as Annual CDF OM&M/ Liquid Level Report by BP Products North America Inc.).

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

d. An Annual Corrective Action Progress Report must be submitted to Illinois EPA by March 1 of each year which summarizes corrective action program activities completed at the facility during the previous calendar year (i.e., the previous January 1 to December 31). Among other things, this report must contain a compilation/summary of the information in the quarterly reports for the year, what was completed during the year, and what must still be done in the next year and in the following years. The following shall be incorporated into the Annual Corrective Action Progress Report and separate reports are no longer required:

(1) The corrective action progress report for the fourth quarter (October – December of every year).

(2) The “Annual CDF Operations, Maintenance and Monitoring Report” (referred to as Annual CDF OM&M/ Liquid Level Report by BP Products North America Inc).

SUBJECT SUBMITTAL

Groundwater-related comments have been made to Section VI (Special Conditions).

BP Comment 45:

Page VI-2 (Section VI.C.): Condition 4:

The GMZ for the River-front facility was established as a condition in the 1993 RCRA Permit. It is bp’s opinion that the GMZ at the Riverfront facility is grand-fathered and is not subject to requirements for property owner permission that were adopted after the GMZ was established. The 2023 permit condition requiring written permission from property owners for an off-site GMZ pre-dates 1997 Illinois GMZ regulations and Illinois EPA 2001 guidance requiring written permission. bp proposes that off-site property owners be notified of the previously approved GMZ.

Within ninety (90) days of the effective date of this Permit, the Permittee shall submit a modification to the Corrective Action Section (Section V) of the Permit, for Illinois EPA review and approval, which provides written ~~permission from~~ notification to any applicable off-site property owner ~~acknowledging they accept~~ that a GMZ for the Riverfront ~~Facility encompasses is located on~~ their property. This documentation will serve to verify off-site property owners are aware ~~and approve~~ of a GMZ being present on their property.

Illinois EPA Response:

Completed separately by Amy Butler.

BP Comment 46:

Page VII-7 (Section VII.): Condition 36:

“Closure Requirements for Accumulation Areas” is a new Standard Condition (under “General Facility Standards” subsection). It is bp’s opinion that this condition should only be applicable to storage areas operated on or after the date the closure requirement was adopted at 35 IAC 722.117(a)(8).

CLOSURE REQUIREMENTS FOR ACCUMULATION AREAS. The Permittee shall close containers storage areas, tanks, drip pads, or containment buildings used for the accumulation of on-site generated hazardous waste in accordance with the requirements identified at 35 IAC 722.117(a)(8). This requirement is applicable to storage areas used on or after this section was amended at 44 Ill. Reg. 15263, effective September 3, 2020.

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP’s comment and has made the changes below:

CLOSURE REQUIREMENTS FOR ACCUMULATION AREAS. The Permittee shall close containers storage areas, tanks, drip pads, or containment buildings used for the accumulation of on-site generated hazardous waste in accordance with the requirements identified at 35 IAC 722.117(a)(8). This requirement is applicable to storage areas used on or after this section was amended at 44 Ill. Reg. 15263, effective September 3, 2020.

BP Comment 47:

Page VII-10 (Section VII.): Condition 56:

The numbering missed “d” and skipped to “e”. Please revise list formatting.

56. COST ESTIMATE FOR FACILITY CLOSURE. The Permittee's original closure cost estimate, prepared in accordance with 35 IAC 724.242, must be:

- a. Adjusted for inflation 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with Section 724.243. However, if the owner/operator is using the financial test or corporate guarantee, it must be updated for inflation within 30 days after close of the firm's fiscal year, and before the submission of updated information to the Illinois EPA as specified in Section 724.243(f).*
- b. Revised no later than 30 days after the Illinois EPA has approved a request to modify the closure plan, if the change in the closure plan increases the cost of closure.*
- c. Kept on record at the facility and updated. (35 IAC 724.242)*
 - ~~e.d.~~ Made immediately available to Illinois EPA personnel upon Illinois EPA request.*
 - ~~f.e.~~ Maintained at the value approved by Illinois EPA with annual adjustment for inflation and cannot be decreased unless approved by the Illinois EPA in a permit modification.*

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

56. *COST ESTIMATE FOR FACILITY CLOSURE. The Permittee's original closure cost estimate, prepared in accordance with 35 IAC 724.242, must be:*

- a. Adjusted for inflation 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with Section 724.243. However, if the owner/operator is using the financial test or corporate guarantee, it must be updated for inflation within 30 days after close of the firm's fiscal year, and before the submission of updated information to the Illinois EPA as specified in Section 724.243(f).
- b. Revised no later than 30 days after the Illinois EPA has approved a request to modify the closure plan, if the change in the closure plan increases the cost of closure.
- c. Kept on record at the facility and updated. (35 IAC 724.242)
- d. Made immediately available to Illinois EPA personnel upon Illinois EPA request.
- e. Maintained at the value approved by Illinois EPA with annual adjustment for inflation and cannot be decreased unless approved by the Illinois EPA in a permit modification.

BP Comment 48:

Page VII-11 (Section VII.): Condition 63, a:

Please revise language to align with current permit.

63. *STORAGE RESTRICTIONS*

- a. *The Permittee shall not store hazardous wastes restricted from land disposal under 35 IAC Part 728, Subpart C unless such wastes are stored only in containers or tanks, or other units approved by Illinois EPA in writing, and are stored solely for the purpose of the accumulation of such quantities as is necessary to facilitate proper recovery, treatment, or disposal, and: (1) each container is clearly marked to identify its contents and the date each period of accumulation begins; (2) each tank is clearly marked to identify its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, as required by 35 IAC 728.150.*

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

63. *STORAGE RESTRICTIONS*

- a. The Permittee shall not store hazardous wastes restricted from land disposal under 35 IAC Part 728, Subpart C unless such wastes are stored only in containers or tanks, or other units approved by Illinois EPA in writing, and are stored solely for the purpose of the accumulation of such quantities as is necessary to facilitate proper recovery, treatment, or disposal, and: (1) each container is clearly marked to identify its contents and the date each period of accumulation begins; (2) each tank is clearly marked to identify its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, as required by 35 IAC 728.150.

BP Comment 49:

Page VII-12 (Section VII.): Conditions 67 and 68:

The numbering missed "c" and skipped to "d". Please revise list formatting.

67. *COST ESTIMATE FOR POST-CLOSURE. The Permittee's original post-closure cost estimate, prepared in accordance with 35 IAC 724.244, must be:*
 - a. *Adjusted for inflation either 60 days prior to each anniversary of the date on which the first post-closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year. This permit condition is applicable throughout the entirety of the post-closure care period.*
 - b. *Revised whenever there is a change in the facility's post-closure plan increasing the cost of the post-closure plan.*
 - ~~c.~~ *Kept on record at the facility and updated. (35 IAC 724.244).*
 - ~~e.d.~~ *Maintained at the value approved by Illinois EPA with annual adjustment for inflation during the post-closure care period and cannot be decreased unless approved by the Illinois EPA in a permit modification.*

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

67. *COST ESTIMATE FOR POST-CLOSURE. The Permittee's original post-closure cost estimate, prepared in accordance with 35 IAC 724.244, must be:*
 - a. *Adjusted for inflation either 60 days prior to each anniversary of the date on which the first post-closure cost estimate was prepared or if using the financial test or corporate guarantee, within 30 days after close of the firm's fiscal year. This permit condition is applicable throughout the entirety of the post-closure care period.*
 - b. *Revised whenever there is a change in the facility's post-closure plan increasing the cost of the post-closure plan.*
 - c. *Kept on record at the facility and updated. (35 IAC 724.244).*

- d. Maintained at the value approved by Illinois EPA with annual adjustment for inflation during the post-closure care period and cannot be decreased unless approved by the Illinois EPA in a permit modification.

SUBJECT SUBMITTAL

Groundwater-related comments have been made to Section VIII (Reporting).

BP Comment 50:

Page VIII-1 (Section VIII.): Please revise the incorrect Condition references.

Please clarify the due date for Condition VII.14 regarding Reporting Planned Changes as here it states, "At least 15 days prior to planned change" but Condition VII.14 states, "as soon as possible."

<i>IV.D.4</i>	<i>Notify Illinois EPA if any of the wells identified in Condition IV.DC.1 and IV.DC.2 are damaged, or the structural integrity has been compromised</i>	<i>Within 30 days of the date the damage is detected</i>
<i>IV.DC.6</i>	<i>Provide Illinois EPA boring logs, construction diagrams, and data sheets from new or replacement wells</i>	<i>Within 30 days of the date installation is complete</i>
<i>IV.H.2</i>	<i>Groundwater monitoring data required each quarter, and additional data required in Conditions IV.FE., IV.GF, and IV.HH.</i>	<i>Semi-annually</i>
<i>IV.H.3</i>	<i>Collect quarterly groundwater surface elevation data</i>	<i>Semi-annually</i>
<i>IV.H.4</i>	<i>Quarterly groundwater withdrawal rates</i>	<i>Semi-annually</i>
<i>IV.H.5</i>	<i>Gradient control measurements.</i>	<i>Semi-annually</i>
<i>IV.H.6</i>	<i>Statistical evaluations, as required by Condition IV.F.2.eH</i>	<i>Every 5-years in GMZ Evaluation</i>
<i>IV.H.7</i>	<i>Groundwater flow rate and direction in the uppermost aquifer.</i>	<i>Semi-annually</i>
<i>IV.H.8</i>	<i>Collect groundwater samples per Condition IV.FE.8 and depict the extent of dissolved contamination to define the extent of contamination.</i>	<i>Semi-annually</i>

<i>IV.H.9</i>	<i>The surveyed elevation of the top of well casing.</i>	<i>Every 5 years.</i>
<i>IV.H.10</i>	<i>Elevation of the bottom of each monitoring well.</i>	<i>Annually during the second quarter sampling event.</i>
<i>IV.H.11</i>	<i>Electronic Reporting</i>	<i>Semi-annually</i>

Illinois EPA Response:

Completed separately by Amy Butler.

BP Comment 51:

Page Attachment A: Divider Page:

Please revise.

***ATTACHMENT A
IDENTIFICATION OF APPROVED PERMIT APPLICATION***

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

***ATTACHMENT A
IDENTIFICATION OF APPROVED PERMIT APPLICATION***

BP Comment 52:

Page Attachment I and J: Divider Page:

Please revise.

***ATTACHMENT I
CERTIFICATION OF COMPLETION OF CLOSURE***

***ATTACHMENT J
CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE***

Illinois EPA Response:

The Illinois EPA concurs with and acknowledges BP's comment and has made the changes below:

***ATTACHMENT I
CERTIFICATION OF COMPLETION OF CLOSURE***

ATTACHMENT J
CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE