BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

ILLICO INDEPENDENT OIL CO.,	)	
	)	
Petitioner,	)	
	)	
v.	)	PCB 17-84
	)	(UST Appeal)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
	)	
Respondent.	)	

NOTICE OF FILING

To: Hearing Officer Carol Webb
Illinois Pollution Control Board
1021 North Grand Avenue East
P.O. Box 19274
Springfield, Illinois 62794-9274
Carol.Webb@Illinois.gov

Patrick D. Shaw
Law Office of Patrick D. Shaw
80 Bellerive Road
Springfield, IL 62704
pdshaw1law@gmail.com

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board a Motion for Leave to File Record *Instanter* and the Certificate of Record on Appeal and the accompanying documents comprising the entire record of the decision of the Illinois Environmental Protection Agency, a copy of which is herewith served upon you.

Respectfully submitted,

Dated: July 28, 2017

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,

Respondent,

BY: /s/Scott B. Sievers
Scott B. Sievers
Special Assistant Attorney General

Scott B. Sievers
Attorney Registration No. 6275924
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-5544
Scott.Sievers@Illinois.gov

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

ILLICO INDEPENDENT OIL CO.,	)	
	)	
Petitioner,	)	
	)	
v.	)	PCB 17-84
	)	(UST Appeal)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
	)	
	)	
Respondent.	)	

MOTION FOR LEAVE TO FILE RECORD *INSTANTER*

NOW COMES the Respondent, ILLINOIS ENVIRONMENTAL PROTECTION AGENCY ("Illinois EPA"), by and through its attorney, Special Assistant Attorney General Scott B. Sievers, and moves for leave to file the record *instanter.* In support, the Respondent states the following:

1. On June 27, 2017, the undersigned requested that Illinois EPA Leaking Underground Storage Tank personnel compile the record of the decision in this matter.

2. On July 6, 2017, the Pollution Control Board entered an Order providing, in pertinent part, that Illinois EPA was to file the entire record of its determination in this matter by July 23, 2017.

3. The undersigned reiterated his request to Illinois EPA LUST personnel to compile the record on July 14, 2017.

4. Prior to the July 23, 2017 filing deadline, Illinois EPA LUST personnel provided the undersigned with the documents constituting the record, but they were not compiled in a manner allowing filing by the July 23, 2017 deadline. Illinois EPA Division of Legal Counsel staff spent substantial time compiling the records, then worked with LUST personnel to prepare the accompanying Certificate of Record on Appeal.

5. Due in part to these unanticipated complications, the record was not timely filed, and the Respondent now moves for leave to file the record *instanter*.

WHEREFORE, the Respondent, ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, prays that this honorable Board or the honorable Hearing Officer ALLOW the Respondent's MOTION FOR LEAVE TO FILE RECORD *INSTANTER*.

Respectfully submitted,

Dated: July 28, 2017

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,

Respondent,

Scott B. Sievers
Attorney Registration No. 6275924
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-5544
Scott.Sievers@Illinois.gov

BY: /s/Scott B. Sievers
Scott B. Sievers
Special Assistant Attorney General

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

ILLICO INDEPENDENT OIL CO.,	)	
	)	
Petitioner,	)	
	)	
v.	)	PCB 17-84
	)	(UST Appeal)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
	)	
	)	
Respondent.	)	

CERTIFICATE OF RECORD ON APPEAL

Pursuant to 35 Ill. Adm. Code 105.116(b) and 105.410, the following constitutes an index of documents comprising the record:

PAGES	DOCUMENT	DATE
001	IEMA FIELD REPORT	12/03/1992
002-009	45-Day Report	03/03/1993
010-128	Stage 2 Site Investigation Results Report	10/02/2015
129-173	Stage 3 Site Investigation Plan	10/06/2015
174-237	Corrective Action Plan	12/14/2015
238-421	Site Investigation Completion Report	12/14/2015
422	Email (Marlin Environmental, Inc./Illinois EPA)	12/18/2015
423-424	OSFM Permit #00032-2016INS	01/11/2016
425	OSFM Permit #00042-2016REM	01/12/2016
426-429	Email (Marlin Environmental, Inc./Illinois EPA)	01/20/2016
430-433	Emails (Marlin Environmental, Inc./Illinois EPA)	01/28/2016
434-435	Hazardous Materials Incident Report	01/28/2016

436-437	Email (Marlin Environmental, Inc./Illinois EPA)	01/29/2016
438-442	Illinois EPA Letter (Stage 2 Site Investigation Results Report)	02/01/2016
443-446	Illinois EPA Letter (Stage 3 Site Investigation Plan)	02/01/2016
447-465	Email (Marlin Environmental, Inc./Illinois EPA)	02/18/2016
466-470	Emails (Marlin Environmental, Inc./Illinois EPA)	03/31/2016
471-516	Emails (Marlin Environmental, Inc./Illinois EPA)	04/04/2016
517-550	Emails (Marlin Environmental, Inc./Illinois EPA)	04/05/2016
551-553	Email (Marlin Environmental, Inc./Illinois EPA)	04/06/2016
554	Email (Marlin Environmental, Inc./Illinois EPA)	04/08/2016
555	Email (Green Wave Consulting, LLC/Illinois EPA)	04/08/2016
556-558	Illinois EPA Letter (Site Investigation Completion Report)	08/25/2016
559-560	Email (Green Wave Consulting, LLC/Illinois EPA)	09/28/2016
561-576	LUST TECHNICAL REVIEW NOTES	11/18/2016
577-581	Illinois EPA Letter (Corrective Action Plan dated 12/14/2015)	11/29/2016
582-583	Email (Green Wave Consulting, LLC/Illinois EPA)	12/20/2016
584-628	Corrective Action Plan	01/16/2017
629-632	Emails (Green Wave Consulting, LLC/Illinois EPA)	05/16/2017
633	Environmental Justice (EJ) Area Reporting Form for Leaking UST Program Sites	05/17/2017
634-649	Illinois EPA Letter (Corrective Action Plan dated 01/16/2017)	05/17/2017
650	Partial Key to the Emails	

651-652	PROJECT LABOR AGREEMENT DETERMINATION	05/17/2017
653-654	Right-to-Know Evaluation	05/17/2017
655-656	Handwritten Notes	
657-666	OSFM Information	

I, TRENT BENANTI, certify on information and belief that the entire record of the Respondent's decision, as defined in 35 Ill. Adm. Code 105.410(b), is hereby enclosed.

BY: Trent Benanti

Trent Benanti
Project Manager/Environmental Protection Engineer III
Leaking Underground Storage Tank Section
Illinois Environmental Protection Agency

1430655263/Peoria

Illinois Emergency Management Agency

FIELD REPORT

Incident Number 9 2 3 4 4 1

Notify: ILLINOIS EMERGENCY MANAGEMENT AGENCY
1 - 800 / 782 - 7860 or 217 / 782 - 7860

Date: 12 / 03 /92
Time: 1127
Received by: JW

1. Caller: Alan Green
2. Call back phone#: 309/925-5551
3. Caller represents: Midwest Environmental
4. Type of incident: [ ] Fire [X] Leak or Spill
   [ ] Explosion [ ] Water Involvement
   [ ] Gas or Vapor cloud [ ] Other
5. Incident Location:
   Street 3712 University Ave.
   City Peoria [ ] In [ ] Near
   County Peoria
   Milepost [ ] RR [ ] River [ ] Highway
   Sec. Twp. Range
6. Area Involved: [ ] Highway [ ] Rail [X] Fixed Facility
   [ ] Waterway [ ] Air [ ] Other
7. Material (s) Involved: Gasoline
   [ ] Gas [X] Liquid [ ] Semi-Solid [ ] Solid
   [ ] Pesticide [ ] Radioactive
   CAS #:
   UN/NA #:
   Is this a 302 (a) Extremely Hazardous Substance?
   [ ] Yes [ ] No [ ] Unknown
   Is this a RCRA Hazardous Waste?
   [ ] Yes [ ] No [ ] Unknown
   If Yes, is this a RCRA regulated facility?
   [ ] Yes [ ] No
8. Container: [ ] Truck [ ] RR car [ ] Drum
   [ ] Aboveground tank [ ] Pipeline
   [X] Underground tank [ ] Other
   container size: 5-6,000 gal.
9. Amount released:
   Rate of release: / min.
10. Cause of release:
11. Estimated spill extent:
    [ ] square feet [ ] square yards
12. [ ] Occurred Date: / / Time:
    [X] Discovered Date: 12 / 02 / 92 Time: 1400
13. Emergency units contacted
    [ ] Fire
    [ ] Sheriff
    [ ] Police
    [ ] ESDA
    [ ] Other

    On scene
    [ ] Fire
    [ ] Sheriff
    [ ] Police
    [ ] ESDA
    [ ] Other

14. On Scene Contact:
    On Scene Phone#:
15. No. injured: ------ [ ] Haz-mat related
    Where taken:
16. Public health risks and/or precautions taken, including # evacuated: ------
17. Assistance needed from State Agencies: ------
18. Containment/cleanup actions and plans:
    Caller is Consultant
19. Weather: [ ] sunny [ ] overcast [ ] night
    [ ] ptly. cldy. [ ] rain [ ] snow
    Temp. F wind dir. speed mph.
20. Responsible Party: ILLICO Indiependent Oil Co.
    Contact person: #1
    Phone #: #2
    Mailing address: 123 S. Sampson
    Box 614
    Tremont, IL 61568

Notifications: IEPA/SFM Faxed

SCREENED

This Agency is authorized to require this information under Illinois Revised Statutes, 1989, 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 $50,000 and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

IESDA INCIDENT 923441

Illinois Environmental Protection Agency
LEAKING UNDERGROUND STORAGE TANK PROGRAM
45 DAY REPORT

1430655263/Peoria
Illico Independent Oil Co.
Rust/Deck

A. SITE IDENTIFICATION

Site # (IEPA Generator number): 1430655263
(leave blank if unknown)

IESDA #: 923441

Facility Name: ILLICO INDEPENDENT OIL CO.

Mailing address: 617 KEOKUK   SITE ADDRESS: 3712 N. UNIVERSITY, PEORIA, IL.

City: LINCOLN   Zip Code: 62656

County: LOGAN

WILL THE OWNER/OPERATOR SEEK REIMBURSEMENT FOR CORRECTIVE ACTION COSTS FOR THIS SITE FROM THE UNDERGROUND STORAGE TANK FUND? (CHECK ONE): YES X NO __

Has it been demonstrated that the release associated with this incident has been remediated to Agency clean-up objectives for soil and groundwater. (CHECK ONE) YES__ NO X SITE NOT YET REMEDIATED

OWNER		OPERATOR *(if different from owner)*	
Name:	DAVE GOLWITZER	Name:	
Address:	617 KEOKUK LINCOLN, IL. 62656	Address:	
Contact Name:	AL KIRWAN	Contact Name:	
Phone:	MIDWEST ENV. (309) 925-5551	Phone:	

CONSULTANT		SURVEYOR	
Firm:	MIDWEST ENVIRONMENTAL CONSULT.	Firm:	
Address:	123 S. SAMPSON ST., BOX 614 TREMONT, ILLINOIS 61568	Address:	
Contact Name:	AL KIRWAN	Contact Name:	
Phone:	(309) 925-5551	Phone:	

B. TYPE RELEASE *(please check one)*

Minor __ Significant X Major __

C. SIGNATURES

I hereby affirm that all information contained in this 45 Day Report is true and accurate to the best of my knowledge and belief.

OWNER		OPERATOR *(if different from owner)*	
name:	DAVE GOLWITZER	name:	
title:	PRESIDENT	title:	
signature:	[signature]	signature:	
date:	3/2/93	date:	

RECEIVED
MAR 08 1993
IEPA/DLPC

LAND SURVEYOR

name:

title:

signature:

date: registration number:

IL 532 2019
LPC 425 9/91

SCREENED PF

IESDA INCIDENT 923441

PROFESSIONAL ENGINEER

The release from the Underground Storage Tank(s) System associated with Incident number 923441 at the facility described in this 45 Day Report has been remediated in accordance with 35 Ill. Adm. Code, Part 731, Subpart F, and other applicable rules and regulations. The remediation has achieved the clean-up objectives set forth by the Agency in _____. I certify under penalty of law that this 45 Day Report, supporting documents and all attachments were prepared under my direction or supervision. To the best of my knowledge and belief, the 45 Day Report, supporting documents, and all attachments are 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.

NOTICE: SITE REMEDIATION HAS NOT BEEN COMPLETED AT THIS TIME.

name: James A. Stone

title: Professional Engineer

signature: James A. Stone

SEAL

date: March 3, 1993

registration number: 062-025729

D. REPORTS SUBMITTED

Indicate the name and date of any reports previously submitted and any additional information or documents attached to or submitted with this report which are to be included in the review of this 45 Day Report.

20 DAY CERTIFICATION

SUBSURFACE INVESTIGATION PROPOSAL

E. PERSONNEL ON THE SITE

Provide the name, titles and dates of the regulatory or company personnel on-site during the initial abatement activities (e.g. OSFM inspector, IEPA inspector, etc.).

NAME	TITLE	DATE

THIS SUSPECT RELEASE WAS REPORTED TO IEMA BASED ON TESTS CONDUCTED BY IDOT DURING ROAD IMPROVEMENTS AT THE INTERSECTION OF UNIVERSITY AVE. AND WAR MEMORIAL DRIVE IN PEORIA, IL. NO STATE REGULATORY PERSONNEL WERE PRESENT DURING THE IDOT TESTING.

F. TANK INFORMATION

Total number of underground storage tanks at this site : 5

For each underground storage tank (UST) system removed or release remediated provide:

Capacity (gal) 12,000

Year of Installation: 1981 Condition of UST system upon removal: _____

Product Stored in UST system: GASOLINE

Amount released: UNKNOWN

Cause of release: SPILLS AND OVERFILLS (tanks and piping have tested tight).

Capacity (gal): 12,000

Year of Installation: 1981 Condition of UST system upon removal: _____

Product Stored in UST system: GASOLINE

Amount released: UNKNOWN

Cause of release: SPILLS AND OVERFILLS (tanks and piping have tested tight).

Capacity (gal): 12,000
Year of Installation: 1981 Condition of UST system upon removal: _____
Product Stored in UST system: GASOLINE
Amount released: UNKNOWN
Cause of release: SPILLS AND OVERFILLS (tanks and piping have tested tight).

Capacity (gal): 12,000
Year of Installation: 1981 Condition of UST system upon removal: _____
Product Stored in UST system: DIESEL FUEL
Amount released: UNKNOWN
Cause of release: SPILLS AND OVERFILLS (tanks and piping have tested tight).

Capacity (gal): 6,000
Year of Installation: 1981 Condition of UST system upon removal: _____
Product Stored in UST system: KEROSENE
Amount released: UNKNOWN
Cause of release: SPILLS AND OVERFILLS (tanks and piping have tested tight).

Capacity (gal): _____
Year of Installation: _____ Condition of UST system upon removal: _____
Product Stored in UST system: _____
Amount released: _____
Cause of release: _____

Capacity (gal): _____
Year of Installation: _____ Condition of UST system upon removal: _____
Product Stored in UST system: _____
Amount released: _____
Cause of release: _____

Capacity (gal): _____
Year of Installation: _____ Condition of UST system upon removal: _____
Product Stored in UST system: _____
Amount released: _____
Cause of release: _____

Capacity (gal): _____
Year of Installation: _____ Condition of UST system upon removal _____
Product Stored in UST system: _____
Amount released: _____
Cause of release: _____

Capacity (gal): _____
Year of Installation: _____ Condition of UST system upon removal: _____
Product Stored in UST system: _____
Amount released: _____
Cause of release: _____

(ADD ADDITIONAL PAGES AS NECESSARY)

IESDA INCIDENT 923441

G. SOURCE REMEDIATION INFORMATION

1. Is this 45 Day Report in response to a release from a UST System containing Used Oil or a Hazardous Substances as defined in 35 Ill. Adm. Code, Subtitle G, Section 731.112? (Check One):
YES ___ **NO** X

Is the Owner/Operator requesting site specific objectives for a release from a petroleum material other than those for which generic objectives have been established by the Agency? (Check One):
YES ___ **NO** ___

If YES, for either, provide the following information:

NOTICE: SITE REMEDIATION HAS NOT BEEN COMPLETED AT THIS TIME.

a. Site Name: _____

b. Site Location: City: _____
County: _____
Township: _____
Range: _____
Section: _____

c. Media of concern (such as soil and/or groundwater): _____

d. Analytical Summaries: _____

e. Geological/Hydrogeological Summary: (Should include a map showing the location of all private and public water supply well within one mile of the Site) _____

f. Potentially exposed populations: _____

g. Potentially exposed environments, surface water, fish and wildlife, vegetation, etc.: _____

h. Potential dispersion pathways, prevailing winds, direction of groundwater flow (if known): _____

i. Proposed cleanup techniques; removal and treatment or disposal, in place treatment, etc.: _____

j. Justification for Site Specific Objectives: _____

IESDA INCIDENT 923441

2. Describe the procedures used for cleaning the tank: TANKS ARE PRESENT, ACTIVE, AND HAVE PASSED TIGHTNESS TESTS. THERE ARE NO FORTHCOMING PLANS IN EXISTENCE FOR THE REMOVAL OF THESE TANKS.

3. For any of the following that were removed or generated during the UST system removal, describe the procedures for management and storage, treatment or disposal of this material.

Product: N/A

Tank bottoms: N/A

Tank sludges: N/A

Product in tanks: N/A

Tank rinse waters: N/A

Tank waste-water mixtures: N/A

Tank system: N/A

Other (please describe): N/A

Date that all tank cleaning operations were completed: N/A

4. Provide copies of manifests used to transport the above material from the site.

H. RELEASE INFORMATION

Provide the information below:

1. The steps taken to test for the extent of the release considering the type of the stored substance, type of backfill, depth to groundwater and other factors appropriate for identifying the presence and source of the release. SUBSURFACE INVESTIGATION WILL ENABLE DETERMINATION OF THESE FACTORS.
2. The actions taken to prevent further release of the regulated substance. INVESTIGATION INITIATED.
3. If the release was associated with the lines or dispenser, briefly describe the problem. THE RELEASE IS NOT ASSOCIATED WITH PRODUCT LINES OR DISPENSERS.
4. Provide a discussion of the potential of utility conduits to provide a pathway for the movement of contamination off-site. UTILITY MAINS DO EXIST ALONG PROPERTY BOUNDARY, POTENTIAL FOR CONDUIT PATHWAY DOES EXIST.

I. FREE PRODUCT ACTION

Was free product encountered during the investigation (check one) : **YES** ___ **NO** __ INVESTIGATION NOT YET COMPLETED,

If YES, the following questions must be answered:

1. The name of the person responsible for implementing the free product removal measures. FREE PRODUCT NOT EXPECTED TO BE PRESENT.

IESDA INCIDENT 923441

2. The estimated quantity, type and thickness of free product observed or measured in wells, boreholes and the excavations.

3. The dates that free product was discovered, and the steps taken to remove product.

4. The type of free product recovery system used, including plan sheets, diagrams, description of equipment and a site map indicating the recovery system location.

5. An indication of whether any discharge will take place on-site or off-site during the recovery operation and where this discharge will be located.

6. The type of treatment applied to any discharge and the effluent quality expected.

7. The steps that have been or are being taken to obtain necessary permits for any discharge.

8. The disposition of the recovered free product.

9. Pursuant to 35 Ill. Adm. Code, Section 731.165(b) the Owner/Operator must, within 30 days of this 45 Day Report, submit a completed Corrective Action Form that includes a Groundwater Investigation Plan.

J. SOIL EXCAVATION

Provide information on the following:

1. Dimensions of excavation(s): NOT APPLICABLE.

Original tank backfill material: SAND

Native soil type: ROZETTA SILT LOAM OVERLYING SILTY GLACIAL LOESS.

Quantity of contaminated soil removed: NONE

2. Was groundwater encountered? (check one): **YES** ___ **NO** _ NO SOIL REMOVAL HAS OCCURRED.

If YES, pursuant to 35 Ill. Adm. Code, Section 731.165(b) the Owner/Operator must, within 30 days of this 45 Day Report, submit a completed Corrective Action Form that includes a Groundwater Investigation Plan.

3. Describe the steps which have been taken to control and remedy hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation, site investigation, abatement of corrective action activities. PRESENTLY, NO HAZARDS EXIST TO POPULATION/STRUCTURES. DURING REMEDIAL ACTIVITY, POTENTIAL HAZARDS WILL BE MINIMIZED.

4. Has the owner/operator complied with the requirements of 35 Ill Adm. Code, Parts 702, 703, 705, 722 through 728, 807 through 815 and other applicable rules and regulations for the storage, treatment and/or disposal of soils managed at the site? **YES** X **NO** ___

K. SITE MAPS

1. Provide topographic map which shows the location of the site and provide the following for the site:
township: T. 9 N. range: R. 8 E. section: 29
latitude: 40° 43' 48" longitude: 89° 36

IESDA INCIDENT 923441

N. GROUNDWATER SAMPLING FOR VERIFICATION OF COMPLETION OF REMEDIAL ACTIVITIES

If groundwater samples were taken, the following must be provided:

1. A completed Laboratory Certification Form (attached) must be provided with all groundwater sample data.
2. A sampling protocol for groundwater collection.
3. Basis for determining the well location and minimum number of groundwater samples taken.
4. Discussion of the approach that will be taken to determine the location and number of additional samples required.
5. Activities taken to prevent cross-contamination between samples.
6. The analytical results from groundwater sampling in tabular format showing detection limits and with raw data also included as an attachment.

O. REMEDIATION DOCUMENTATION

1. Original photographs taken during the cleanup to document the site conditions and remedial activities. Photographs must show all important cleanup activities that took place on the site. Photographs must be in duplicate, mounted, and labeled.
2. A copy of the permit for tank removal issued by the Office of the State Fire Marshal or, if in the City of Chicago provide documentation of approval for removing the tank.

IESDA INCIDENT 923441

2. Provide a site map with locations of the:

   - UST System(s)
   - product and dispenser lines
   - pumps and islands
   - sewer, gas, water and electrical utility lines
   - nearby buildings, roads, etc.

3. Provide a site map and cross-section indicating areas of:

   - UST System(s), vertically and horizontally
   - soil excavation
   - soil borings
   - soil and groundwater sampling locations
   - monitoring well locations

4. Provide a map and cross-section showing the extent of soil and groundwater contamination.

L. SOIL BORINGS TO DETERMINE THE EXTENT OF CONTAMINATION

If a soil boring sampling program has been undertaken to determine the extent of contamination, provide the following: SOIL BORINGS ARE PROPOSED FOR THIS SITE.

1. Drilling method(s) that were used, and why these methods were chosen.

2. The basis for determining the location and minimum number of borings to be placed on site.

3. A discussion of the approach that will be taken to determine the location and number of additional borings required.

4. Activities taken to prevent cross-contamination between boreholes.

5. A discussion of how the sampling interval for each boring was determined and collected.

6. A discussion of how off-site soil contamination impacts will be investigated.

7. Copies of borings logs.

M. SOIL SAMPLING FOR VERIFICATION OF COMPLETION OF REMEDIAL ACTIVITIES

The following must be provided:

1. A completed Laboratory Certification Form (attached) must be provided with all soil sample data.

2. A sampling protocol for soil sample collection.

3. Basis for determining the location and minimum number of soil samples taken.

4. Discussion of the approach that will be taken to determine the location and number of additional samples required.

5. Activities taken to prevent cross-contamination between samples.

6. The analytical results from soil sampling in tabular format showing detection limits and with raw data also included as an attachment.

ERS, Inc.
Environmental Remediation Services, Inc.
"Serving Midwest Industry and Environment"

1430655263 – Peoria County
The Premcor Refining Group, Inc.
Incident # 923441
Leaking UST Technical File

USPS PRIORITY MAIL

October 2, 2015

Mr. Trent Benanti
Illinois Environmental Protection Agency
Bureau of Land - #24
Leaking Underground Storage Tank Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

RE: LPC #1430655263 -- Peoria County
Former Clark Store # 2093
3712 North University Street
LUST INCIDENT # 923441
LUST TECHNICAL FILE

Dear Mr. Benanti:

ERS of Illinois, Inc. (ERSI) has enclosed one original and one copy of the Stage 2 Site Investigation Results Report for the above-referenced Site. ERSI prepared this Stage 2 Site Investigation Results Report on behalf of The Premcor Refining Group Inc. (Premcor).

On July 24, 2015, Illico Incorporated and Premcor reached a settlement on multiple properties that Premcor had previously taken the responsibility of conducting the environmental investigative work. Illico Incorporated has taken over control and responsibility of this Site's environmental and corrective actions.

If you have questions regarding the information presented herein, or require additional information, please do not hesitate to contact the undersigned at (630) 896-4090.

Respectfully submitted,
ERS of Illinois, Inc.

Karen Dixon
Senior Project Manager

enclosure: Stage 2 Site Investigation Results Report

cc: Mr. Timothy J. Mauntel, The Premcor Refining Group Inc.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank

Stage 2 Site Investigation Results Report

October 2, 2015

Former Clark Store #2093
3712 North University Street
Peoria, Illinois

Incident #923441

Prepared For:

The Premcor Refining Group Inc.
201 East Hawthorne Street
Hartford, Illinois 62048
Attn: Mr. Timothy J. Mauntel

Prepared By:

ERS of Illinois, Inc.
2272 Cornell Avenue
Montgomery, Illinois 60538

ERSI Project # IL15-13-0020

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Site Investigation Plan

A. Site Identification

IEMA Incident # (6- or 8- digit): 923441 IEPA LPC # (10- digit): 1430655263
Site Name: Former Clark Store #2093
Site Address (not a P.O. Box): 3712 North University Street
City: Peoria County: Peoria Zip Code: 61614
Leaking UST Technical File

B. Site Information

1. Will the owner or operator seek payment from the Underground Storage Tank Fund? Yes ☒ No ☐

2. If yes, is the budget attached? Yes ☐ No ☒

C. Site Investigation

Provide the following:

1. Stage of investigation
   a. Stage 2 ☒
   b. Stage 3 ☐

2. Summary of Stage 1 ☐ or 2 ☒ site investigation activities;

Introduction

ERS of Illinois, Inc. (ERSI) has prepared the Stage 2 Site Investigation Results Report for the above-referenced Site. ERSI prepared this Stage 2 Site Investigation Results Report on behalf of The Premcor Refining Group Inc. (Premcor). This report provides documentation of the recently completed Stage 2 Site Investigation.

On July 24, 2015, Illico Incorporated and Premcor reached a settlement on multiple properties that Premcor had previously taken the responsibility of conducting the environmental investigative work. Illico Incorporated has taken over control and responsibility of this Site's environmental and corrective actions.

3. Characterization of site and surrounding area:

   a. Current and projected post-remediation uses;

   The Site is an active retail convenience store that operates Underground Storage Tanks (USTs) for retail gasoline, kerosene and diesel fuel sales. The Site features include: one

single story building for retail convenience item sales; three (3) 12,000 gallon capacity USTs containing unleaded gasoline; one (1) 12,000 gallon capacity UST containing diesel fuel, one (1) 6,000 gallon UST containing kerosene and the associated fuel dispensers and underground piping.

b. Physical setting:

The Site is located at 3712 North University Street in Peoria, Illinois, in the northeast ¼ of Section 29, Township 9 North, Range 8 East in Peoria County, Illinois. A Site location map is provided on **Figure 1**.

The Site is bounded to the north by commercial and residential properties; to the east by residential homes; to the west by North University Street and a commercial automobile dealership; and, to the south by War Memorial Drive and beyond by commercial properties that include a car dealership and an active gasoline service station. The surrounding properties and adjacent land uses are illustrated on **Figure 2**. The Site features are illustrated on **Figure 3**.

i. Environmental conditions;

Statement of Incident

According to the 45 Day Report dated March 2, 1993, Incident Number 923441 was reported on December 2, 1992, during the Illinois Department of Transportation (IDOT) road construction activities conducted at the intersection of North University Street and War Memorial Drive. A previous contractor (Midwest Environmental) reported the release to the Illinois Emergency Management Agency (IEMA). The Site has one reported release of gasoline, kerosene and diesel fuel (Incident Number 923441) due to spills and overfills, the amount is unknown. The on-site USTs and associated piping had tested tight when inspected to determine the source of the release.

Historic Site Investigations

In November 1999, Parsons Engineering Science, Inc. (Parsons) on behalf of Clark Retail Enterprises, Inc. (CRE) conducted Site investigation activities. The investigation consisted of advancing ten soil borings (SB-1 through SB-10) and converting four of the soil borings into 2-inch groundwater monitoring wells (MW-1 through MW-4).

On November 16, 2000, Parsons conducted off-site investigation activities. The investigation consisted of advancing three soil borings and converting the soil borings into 2-inch groundwater monitoring wells (MW-5 through MW-7).

In April 2002, Parsons advanced one soil boring off-site to the south and converted the soil boring into a 2-inch monitoring well (MW-8).

Between November 1999 and April 2002, Parsons conducted groundwater monitoring and sampling events. The groundwater samples were analyzed for BTEX and select monitoring wells were sampled for PNAs. The monitoring well locations are illustrated on **Figure 3**. The groundwater analytical results are summarized on **Table 1** and **Table 2**.

The historic site investigations were documented in the On and Off-Site Subsurface Investigation/Groundwater Monitoring Summary Report dated March 8, 2001, the Annual Groundwater Monitoring Report dated December 5, 2001 and the Corrective

Action Plan and Budget dated March 26, 2003, previously submitted to the Illinois Environmental Protection Agency (IEPA).

In the IEPA Letter dated December 7, 2011, it was requested that new soil data be collected to evaluate subsurface conditions at the Site. ERSI is not using soil data collected by the previous consultant (Parsons) when evaluating the subsurface Site conditions.

On July 11, 2011, while conducting a groundwater sampling event, ERSI measured and mapped all new structures, features and other improvements to the Site and surroundings, and generated the current figures included in this report. ERSI compared the newly generated figures to the maps prepared by Parsons in the On-Site and Off-site Subsurface Investigation/Groundwater Monitoring Summary Report dated March 8, 2001. ERSI utilized measurements from benchmarks common to both figures (i.e., buildings, property boundaries and distances between wells) in order to determine the locations of the groundwater monitoring wells.

ERSI confirmed the locations of monitoring wells MW-3 and MW-4 by collecting the total depth measurements during a Site visit. The total depths of MW-3 and MW-4 were 14.83 and 13.58, respectively. According to the Boring Logs and Well Construction Diagrams, MW-3 was screened from 6 to 16 feet and MW-4 was screened from 4 to 14 feet. Therefore, the monitoring well with the total depth of 14.83 could not be the well that was screened from 4 to 14 feet, and was determined to be monitoring well MW-3.

On July 11, 2011, ERSI conducted groundwater monitoring activities that consisted of gauging, purging and collecting groundwater samples from monitoring wells MW-1 through MW-8. Monitoring wells MW-5 and MW-8 were not located during the sampling event (MW-5 and MW-8 have since been located during the most recent site investigation activities). Free product was detected in monitoring well MW-7 and, therefore, was not sampled. The groundwater BTEX and PNA analytical results are summarized in **Table 1** and **Table 2**, respectively. The locations of the monitoring wells are illustrated on **Figure 3**. The groundwater laboratory analytical reports were previously submitted to the IEPA in the Stage 2 Site Investigation Plan (SIP) dated December 3, 2012.

On August 5, 2011, ERSI installed an oil-only absorbent sock in monitoring well MW-7, to recover free product. Between August 5, 2011 and November 22, 2011, ERSI conducted weekly free product checks in monitoring well MW-7. The free product checks consisted of inspecting the oil-only absorbent sock placed in monitoring well MW-7 and replacing the sock as-needed basis. Approximately 1.16 gallons of free product were recovered. The free product recovery results were previously submitted in the Stage 2 SIP dated February 21, 2012.

A Stage 2 SIP (dated February 21, 2012) submitted by ERSI, was rejected in an IEPA letter dated June 19, 2012. The IEPA comments included the request of ERSI to submit soil boring logs, monitoring well construction diagrams, laboratory reports, Chain-of-Custody forms and Laboratory Certification forms for Site Investigation activities conducted by previous consultants related to groundwater monitoring well MW-8. ERSI does not have access to any documents other than the ones obtained from the IEPA FOIA request. Therefore, pursuant to 35 Ill. Adm. Code 734.425(c) and 734.430(b), groundwater monitoring well MW-8 has been removed from the tables and figures.

In the IEPA letter dated June 19, 2012, it was noted that the IEPA does not have laboratory reports, a chain of custody, or a Laboratory Certification for Chemical Analysis form for the April 24, 2002 groundwater sampling event. ERSI has no

knowledge or files that document a groundwater sampling event on this date. Therefore, pursuant to 35 ILL. Adm. Code 734.415(a)(1), the results for the April 24, 2002 groundwater sampling event have been removed from the analytical tables.

On August 7 and August 8, 2012, ERSI and GeoServe, Inc., (GeoServe) conducted subsurface investigation activities that consisted of advancing sixteen soil borings (SB-11 through SB-26) utilizing an air knife rig to approximately five (5) feet below ground surface (bgs) and a direct push drilling apparatus from five (5) feet to thirteen (13) feet bgs (maximum depth explored). Fifteen (15) soil borings were installed around the perimeter of the tank pit area, along the UST product lines and the pump islands to assess the indicator contaminants BTEX and PNAs. Two (2) soil borings (SB-20 and SB-21) were abandoned due to low recovery of the tank pit fill material. One (1) soil boring (SB-26) was advanced to collect a soil sample for geotechnical analysis. The soil analytical results are summarized in **Tables 3** and **4**. The soil boring locations are illustrated on **Figure 4**. The investigation activities and soil laboratory analytical reports were previously submitted to the IEPA in the Stage 2 SIP dated December 3, 2012.

Recent Site Investigations

16'	12'	8'
MW-9	SB-27	SB-28
MW-10	MW-1	SB-29
MW-11		SB-30
MW-12		SB-31
MW-13		
MW-14		
MW-15		

On March 10, 2015, ERSI and GeoServe conducted the subsurface investigation activities that consisted of advancing twelve (12) soil borings (MW-9 through MW-15, SB-27 through SB-31) with a hollow stem and direct push drilling apparatus from the ground surface to sixteen (16) feet bgs (maximum depth explored). Seven (7) of the soil borings were converted into groundwater monitoring wells (MW-9 through MW-15). The soil boring and monitoring well locations are illustrated on **Figure 4**. Soil boring SB-31 was advanced to due to the IEPA not accepting the data collected from SB-17 that had detection limits that exceeded the Tier 1 Remediation Objectives.

Soil boring logs: Split spoon

During drilling activities, an ERSI geologist was on-site to observe and supervise the field activities, to collect soil samples, and to visually classify soils in accordance with the Unified Soil Classification System (USCS). The borings were continuously sampled from the surface to a maximum depth of sixteen (16) feet bgs. During drilling, ERSI collected soil samples from select borings at two (2) foot intervals using a macro core sampler. Upon recovery, the sampler was opened to reveal an undisturbed core sample. The soil core was described in accordance with the USCS, checked for odors and staining, and field screened for total volatile organic compounds (TVOCs) using a PID. ERSI conducted field screening of the soil core by placing a sample of the soil core into an airtight container; allowing the container to warm; inserting the probe of the PID equipped with a 10.6eV bulb into the container headspace for approximately 30-seconds; and, recording the highest TVOC measurement. The USCS classification, visual observations and TVOC measurements were recorded on soil boring logs. Copies of the soil boring logs are provided in **Attachment A**.

ERSI collected soil samples from select borings on the basis of the field screening results for submittal to an independent laboratory for analysis of BTEX and PNA. Within select borings, soil samples from each five (5) foot interval of the unsaturated zone having the most elevated PID reading and/or the sample obtained from the maximum unsaturated zone sample interval depth were selected for laboratory analysis. The portion of the sample not selected for field screening was prepared for laboratory analysis of BTEX and PNA in accordance with SW-846 Method 5035/5030. Following sample preparation, each sample container was labeled and immediately placed in an ice-filled cooler. The samples were submitted to First Environmental Laboratories, Inc. (First) of Naperville, Illinois, under chain-of-custody protocol. First analyzed the samples for BTEX and PNA using SW-846 Method 8260 and 8270 and then prepared a report documenting the results. A Site map illustrating the soil boring

and monitoring well locations is presented on **Figure 4**. The BTEX and PNA soil analytical results are summarized in **Table 3** and **Table 4**. A copy of the soil analytical report is provided in **Attachment B**.

Monitoring wells MW-9 through MW-15 were constructed though the annulus of the boring using a 10 foot length of 2 inch diameter polyvinyl chloride (PVC) flush-threaded screen (0.010 inch slots) and blank PVC casing. The wells were constructed such that the screened intervals straddle the water table. Clean, inert, appropriately sized, mesh filter sands were placed in the borehole annular space of each well to approximately one foot above the top of the screened interval. A bentonite seal was placed above the sand pack to prevent down-hole migration of surface water. The well casings were completed as flush grade and secured to prohibit tampering with the well. The monitoring well construction logs are presented in **Attachment C.**

Upon completion, the permanent monitoring wells were developed by removing a minimum of five (5) submerged casing volumes of water. The top of casing of the groundwater monitoring wells were vertically surveyed to within 0.01 foot accuracy.

Soils generated during the subsurface investigations were transported to Waste Management's Peoria City/County Landfill in Brimfield, Illinois. The waste disposal documentation is provided in **Attachment D**.

On April 23, 2015, ERSI conducted groundwater monitoring activities that consisted of gauging, purging and collecting groundwater samples from monitoring wells MW-2 through MW-15. Monitoring well MW-1 was not located. Sampling activities were initiated by measuring the depth to fluid (free product and/or groundwater) in each well to within 0.01 feet using a battery operated oil/water interface probe. The interface probe was decontaminated between uses at successive well locations. ERSI collected groundwater samples from the monitoring wells using a disposable bailer and cord to minimize the potential for cross contamination. After sample collection, ERSI transferred the samples into laboratory-prepared sample containers, placed the sample containers in a cooler with ice and shipped the cooler and samples, under chain-of-custody protocol, to the project laboratory (First) for analysis of BTEX and PNA by SW-846 Method 8260 and 8270. The groundwater analytical results are summarized in **Table 1** and **Table 2**. A copy of the groundwater analytical report is provided in **Attachment E**. The groundwater analytical results and the potentiometric surface contours for the groundwater monitoring event conducted on April 23, 2015, are illustrated on **Figure 5**. The groundwater flow direction was to the west under an approximate groundwater gradient of 0.016 feet/foot.

No calculation

The groundwater purged during the groundwater sampling event was transported to Ortek in McCook, Illinois. The waste disposal documentation is provided in **Attachment F**.

ii. Geologic, hydrogeologic, and hydrologic conditions; and

The Site subsurface has been logged during Site investigation activities conducted to date. The IEPA can use the existing soil boring logs to infer the geology at the Site.

The surficial deposits at the vicinity of the Site may be representative of the Henry Formation (greater than 19.7 feet thick) or the Richland Loess (less than 19.7 feet thick) overlying the Wedron Formation, loamy and sandy diamictons (greater than 19.7 feet thick) (Berg et al., 1987).

According to the Illinois State Geological Survey (ISGS) Circular 532 entitled, "Potential for Contamination of Shallow Aquifers in Illinois" (Berg et al., 1984), the

region underlying the Site is classified as "A2" or "E". Areas classified as "A2" are described as; "thick, permeable sand and gravel within 20 feet of the land surface. Areas classified as "E" are described as; "uniform, relatively impermeable silty or clayey till at least 50 feet thick with no evidence of interbedded sand and gravel."

Shallow groundwater was encountered in Site monitoring wells in April 2015 at depths ranging from approximately 5.52 feet to 10.90 bgs. The groundwater monitoring data and calculated potentiometric groundwater elevations indicate that the apparent direction of groundwater flow beneath the Site is toward the west.

ERSI calculated the groundwater gradient to be approximately 0.016 feet/feet (ft/ft). ERSI calculated the gradient by taking the elevation difference between two wells (MW-9 and MW-13 along the apparent groundwater flow direction to the west. The elevation difference (1.38 feet) was then divided by the distance between these two points (88 feet). 1.16

References

Berg, Richard C., and John P. Kempton, 1987, Stack-Unit Mapping of Geologic Materials in Illinois to a Depth of 15 Meters, Circular 542, Illinois Department of Energy and Natural Resources, State Geological Survey Division, Urbana, Illinois.

Willman, H.B., 1975, Handbook of Illinois Stratigraphy, Bulletin 95, Illinois State Geological Survey, Urbana, Illinois.

Berg, Richard C., John P. Kempton, and Keros Cartwright, 1984, Potential for Contamination of Shallow Aquifers in Illinois, Circular 532, Illinois Department of Energy and Natural Resources, State Geological Survey Division, Urbana, Illinois.

iii. Geographic and topographic conditions;

The Site surface topography at the vicinity of the retail store and motor vehicle fueling dispensers is generally flat. The Site surface elevation is approximately 650 feet above mean sea level (MSL). Peoria Lake (Illinois River) is located approximately 3.5 miles to the east/southeast. The Site location is illustrated on **Figure 1**.

4. Results of Stage 1 or Stage 2 site investigation:

a. Map(s) showing locations of all borings and groundwater monitoring wells completed to date and groundwater flow direction;

A Site Map illustrating the correct groundwater monitoring well locations and the most recent potentiometric surface contours (April 2015) is provided on **Figure 5**. A Site Map illustrating the soil boring locations is presented on **Figure 4**.

b. Map(s) showing locations of all samples collected;

A Site Map illustrating the correct groundwater monitoring well locations is provided on **Figure 3**. A Site Map illustrating the soil boring locations is presented on **Figure 4**.

c. Map(s) showing extents of soil and groundwater contamination that exceeds the most stringent Tier 1 remediation objectives;

The horizontal and vertical extents of soil and groundwater contamination exceeding Tier 1 Remediation Objectives have not been delineated. A Site Map illustrating the recently advanced soil boring locations and analytical results is provided on **Figure 4**. A Site Map

illustrating the groundwater monitoring well locations and analytical results is provided on **Figure 5**.

d. Cross-section(s) showing the geology and the horizontal and vertical extents of soil and groundwater contamination that exceeds the most stringent Tier 1 remediation objectives;

The horizontal and vertical extents of soil and groundwater contamination exceeding Tier 1 Remediation Objectives have not been delineated.

e. Analytical results, chain of custody forms, and laboratory certifications;

The analytical results, chain-of-custody forms and laboratory certificates have been provided in **Attachment B** and **E**.

f. Table(s) comparing analytical results to the most stringent Tier 1 remediation objectives (include sample depth, date collected, and detection limits);

The groundwater BTEX and PNA analytical results are summarized in **Table 1** and **Table 2**, respectively. The soil BTEX and PNA analytical results are summarized in **Table 3** and **Table 4**, respectively. ERSI is not utilizing any soil data collected prior to 2012.

g. Potable water supply well survey (unless provided in previous plan):

i. Map(s) to scale showing:

a) Locations of community water supply wells and other potable wells and the setback zone for each well;
b) Location and extent of regulated recharge areas and wellhead protection areas;
c) Extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives; and,
d) Modeled extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives (if performed as part of site investigation).

ii. Table(s) listing the setback zones for each community water supply well and other potable water supply wells;

iii. A narrative identifying each entity contacted to identify potable water supply wells, the name and title of each person contacted, and any field observations associated with any wells identified; and

iv. A certification from a Licensed Professional Engineer or Licensed Professional Geologist that the survey was conducted in accordance with the requirements and that documentation submitted includes information obtained as a result of the survey;

The potable well search was provided in the February 2012 Stage 2 SIP and updated by the IEPA in the letter dated June 19, 2012.

h. Soil boring logs and monitoring well construction diagrams;

The soil boring logs have been provided in **Attachment A**. The monitoring well logs have been provided in **Attachment C**.

i. Proposal for determining the following parameters:

i. Hydraulic conductivity (K);
ii. Soil bulk density (p_b);
iii. Soil particle density (p_s);
iv. Moisture content (w); and,
v. Organic carbon content (f_{oc}).

On August 8, 2012, soil boring SB-26 was advanced to collect a soil sample for geotechnical analysis for site specific information required to calculate the Site-specific Remediation Objectives. The soil sample was analyzed for hydraulic conductivity (K); soil bulk density (ρ_b); soil particle density (ρ_s), porosity, soil classification and moisture content. The laboratory report has been previously submitted to the IEPA.

j. Budget forms of actual costs (documenting actual work performed during the previous stage).

Budget forms for the work conducted to date are included as **Attachment G**.

5. Stage 2 or 3 sampling plan:

a. Description of and justification for additional activities proposed as part of the plan;
b. A map depicting locations of proposed borings and groundwater monitoring wells; and
c. Depth of borings and construction details of proposed borings;

No additional activities are being proposed by ERSI or Premcor. Illico the responsible party will be submitting a plan for IEPA approval at a future date.

6. Site maps meeting the requirements of 35 Ill. Adm. Code 734.440.

Figures 1 through **5** meet the 35 Ill Adm. Code 734.440. **Figures 3**, **4** and **5** are scaled diagrams and sized for ease of viewing. Offsite properties that are not in the immediate vicinity of the release may contain partial buildings, structures or other features.

D. Signatures

All plans, budgets, and reports must be signed by the owner or operator and list the owner's or operator's full name, address, and telephone number.

UST Owner or Operator

Name:	The Premcor Refining Group Inc.
Contact:	Mr. Timothy J. Mauntel, P.E., R.G
Address:	201 East Hawthorne Street
City:	Hartford
State:	Illinois
Zip Code:	62048
Phone:	(618) 255-5122
Signature:	[signature]
Date:	9/28/15

Consultant

Company:	ERS of Illinois, Inc.
Contact:	Ms. Karen Dixon
Address:	2272 Cornell Avenue
City:	Montgomery
State:	Illinois
Zip Code:	60538
Phone:	(630) 896-4090
Signature:	K Dixon
Date:	9/18/15

I certify under penalty of law that all activities that are the subject of this report were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this report and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in this report has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

Licensed Professional Engineer or Geologist

Name:	Mr. Scott Beasley, P.E.
Company:	ERS, Inc.
Address:	4010 Option Pass
City:	Fort Wayne
State:	Indiana
Zip Code:	46818
Phone:	(260) 489-7062
Ill. Registration No.:	0620409506
License Expiration Date:	November 30, 2015
Signature:	[signature]
Date:	9/15/15

L.P.E. or L.P.G. Seal

SCOTT A. BEASLEY 062049506 LICENSED PROFESSIONAL ENGINEER

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TABLES

Table 1

Groundwater Analytical and Elevation Summary - BTEX

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Well ID	Sample Date	Reference Elevation (feet)	Depth to Water (feet)	Free product Thickness (feet)	Equivalent Water Elevation (feet)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Comments
MW-1	11/22/1999	96.00	9.33	-	86.67	**1,700**	140	**1,200**	3,240	
MW-1 (Duplicate)	11/22/1999			-		**1,700**	150	**1,200**	3,350	
MW-1	11/16/2000	96.00	8.04	-	87.96	**2,100**	180	**1,100**	2,650	
	04/24/2001	96.00	6.54	-	89.46	**1,700**	270	**1,500**	2,930	
	10/03/2001	96.00	8.44	-	87.56	**1,900**	110	**1,100**	2,420	
	07/11/2011	96.35	7.20	-	89.15	**664**	55.3	<T1 **738**	472	odor/no sheen
	04/23/2015	Unable to Locate Well								
MW-2	11/22/1999	98.29	8.55	-	89.74	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	11/16/2000	98.29	8.59	-	89.70	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	04/24/2001	98.29	6.56	-	91.73	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	10/03/2001	98.29	7.42	-	90.87	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	07/11/2011	98.58	6.41	-	92.17	ND<1.0	ND<1.0	ND<1.0	ND<3.0	no odor/no sheen
	04/23/2015	98.58	6.58	-	92.00	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-3	11/22/1999	99.82	9.59	-	90.23	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	11/16/2000	99.82	7.03	-	92.79	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	04/24/2001	99.82	8.09	-	91.73	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	10/03/2001	99.82	8.78	-	91.04	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	07/11/2011	100.20	7.37	-	92.83	ND<1.0	ND<1.0	ND<1.0	ND<3.0	no odor/no sheen
	04/23/2015	100.20	8.03	-	92.17	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-4	11/22/1999	97.73	8.37	-	89.36	**4,500**	580	**2,500**	4,410	
	11/16/2000	97.73	7.26	-	90.47	**4,000**	1,000	**2,600**	6,400	
MW-4 (Duplicate)	11/16/2000			-		**4,100**	980	**2,700**	6,100	
MW-4	04/24/2001	97.73	6.84	-	90.89	**4,500**	**2,000**	**2,100**	5,500	
	10/03/2001	97.73	7.56	-	90.17	**4,900**	1,000	**2,400**	5,800	
	07/11/2011	98.19	6.46	-	91.73	**1,060**	101	**1,360**	1,780	odor/sheen
	04/23/2015	98.19	7.33	-	90.86	**896**	66.9	**2,240**	1,020	odor/sheen
MW-5	11/16/2000	95.53	10.55	-	84.98	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	04/24/2001	95.53	4.82	-	90.71	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	10/03/2001	95.53	7.53	-	88.00	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	07/11/2011	NA	NS	-	NS	NS	NS	NS	NS	
	04/23/2015	96.00	5.52	-	90.48	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-6	11/16/2000	95.74	10.65	-	85.09	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	04/24/2001	95.74	8.35	-	87.39	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	10/03/2001	95.74	10.74	-	85.00	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	07/11/2011	96.27	8.71	-	87.56	ND<1.0	ND<1.0	ND<1.0	ND<3.0	no odor/no sheen
	04/23/2015	96.27	9.48	-	86.79	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-7	11/16/2000	97.27	11.73	-	85.54	**39,000**	**140,000**	**37,000**	**170,000**	
	04/24/2001	97.27	9.79	-	87.48	**26,000**	**43,000**	**5,000**	**23,400**	
	10/03/2001	97.27	NA	-	NA	**19,000**	**34,000**	**5,200**	**26,400**	
	07/11/2011	97.62	9.75	0.60	88.32	NS	NS	NS	NS	free product
	04/23/2015	97.62	10.90	-	86.72	**14,500**	**24,300**	**3,680**	**16,700**	odor/sheen
MW-9	04/23/2015	97.88	6.10	-	91.78	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-10	04/23/2015	98.94	7.03	-	91.91	**126**	ND<5.0	ND<5.0	ND<5.0	odor/sheen
MW-11	04/23/2015	99.72	7.76	-	91.96	ND<5.0	ND<5.0	ND<5.0	ND<5.0	odor/no sheen
MW-12	04/23/2015	97.05	6.35	-	90.70	**307**	189	220	977	odor/no sheen
MW-13	04/23/2015	96.73	6.11	-	90.62	**10,200**	**9,900**	**2,530**	**10,200**	odor/no sheen
MW-14	04/23/2015	97.52	5.97	-	91.55	**386**	27.4	315	1,250	odor/no sheen
MW-15	04/23/2015	100.39	6.67	-	93.72	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
Tier 1 Remediation Objectives for Groundwater										
Tier 1 Remediation Objectives - Class I Groundwater (ug/l)						5	1,000	700	10,000	
Tier 1 Remediation Objectives - Class II Groundwater (ug/l)						25	2,500	1,000	10,000	

Note:
All results are reported in micrograms per liter (ug/L).
Analyses conducted using United States Environmental Protection Agency (USEPA) Methods.
Reference elevation based on temporary benchmark with an assigned elevation of 100.00 feet.
Equivalent Water elevation = Reference Elevation - Depth to Water + (0.75 X Product Thickness).
ND = Analyte not detected at or above the reporting limit.
NA = Not Available.
Comments based on field observations.
Tier 1 Groundwater Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
Bold values exceed Tier 1 Remediation Objectives.
Samples prior to 2011 collected by Parsons Engineering Science, Inc.

Table 2
Groundwater Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Well ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
MW-1	11/22/1999	ND<2.0	1.8	ND<0.085	ND<0.061	ND<0.061	ND<0.061	ND<0.085	ND<0.037
MW-1 (Duplicate)	11/22/1999	ND<32	ND<28	ND<1.4	ND<1.0	ND<1.0	ND<1.0	ND<1.4	ND<0.60
MW-1	11/16/2000	ND<1.2	ND<1.3	ND<0.067	ND<0.053	ND<0.050	ND<0.047	ND<0.040	ND<0.023
	04/24/2001	0.12	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<2.4	ND<2.4	ND<2.4	ND<2.4	ND<2.4	ND<2.4	ND<2.4	ND<2.4
	04/23/2015	NS	NS	NS	NS	NS	NS	NS	NS
MW-2	11/22/1999	ND<2.2	ND<1.9	ND<0.097	ND<0.069	ND<0.069	ND<0.069	ND<0.097	ND<0.042
	11/16/2000	ND<1.2	ND<1.3	ND<0.067	ND<0.053	ND<0.050	ND<0.047	ND<0.040	ND<0.023
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-3	11/22/1999	ND<1.6	ND<1.4	ND<0.070	ND<0.050	ND<0.050	ND<0.050	ND<0.070	ND<0.030
	11/16/2000	ND<1.2	ND<1.3	ND<0.067	ND<0.053	ND<0.050	ND<0.047	ND<0.040	ND<0.023
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-4	11/22/1999	ND<32	ND<28	ND<1.4	ND<1.0	ND<1.0	ND<1.0	ND<1.4	ND<0.60
	11/16/2000	ND<24	ND<26	ND<1.3	ND<1.1	ND<1.0	ND<0.94	ND<0.80	ND<0.46
MW-4 (Duplicate)	11/16/2000	ND<24	ND<26	ND<1.3	ND<1.1	ND<1.0	ND<0.94	ND<0.80	ND<0.46
MW-4	04/24/2001	0.41	0.075	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<47.2	ND<47.2	ND<47.2	ND<47.2	ND<47.2	ND<47.2	ND<47.2	ND<47.2
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-5	11/16/2000	ND<1.2	ND<1.3	ND<0.067	ND<0.053	ND<0.050	ND<0.047	ND<0.040	ND<0.023
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	NS	NS	NS	NS	NS	NS	NS	NS
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-6	11/16/2000	ND<1.2	ND<1.3	ND<0.067	0.10	0.17	0.15	0.096	0.052
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	0.063	0.063	0.31	0.33	0.35	0.20	0.30
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-7	11/16/2000	ND<96,000	ND<100,000	ND<5,400	ND<4,200	ND<4,000	ND<3,800	ND<3,200	ND<1,800
	04/24/2001	7.9	3.6	2.4	1.2	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	NS	NS	NS	NS	NS	NS	NS	NS
	04/23/2015	ND<10	ND<10	ND<5	0.18	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-9	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-10	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-11	04/23/2015	33	ND<10	7	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-12	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-13	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-14	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-15	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
Tier 1 Remediation Objectives for Groundwater									
Class I Groundwater		420	210	2,100	0.13	0.20	0.18	210	0.17
Class II Groundwater		2,100	1,050	10,500	0.65	2.0	0.90	1,050	0.85

Table 2
Groundwater Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Well ID	Sample Date	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
MW-1	11/22/1999	ND<0.061	ND<0.085	ND<0.061	ND<2.3	ND<0.098	61	ND<1.8	ND<0.073
MW-1 (Duplicate)	11/22/1999	ND<1.0	ND<1.4	ND<1.0	ND<3.8	ND<1.6	48	ND<3.0	ND<1.2
MW-1	11/16/2000	ND<0.060	ND<0.053	ND<0.053	ND<0.17	ND<0.047	46	ND<1.8	ND<0.053
	04/24/2001	ND<0.050	ND<0.050	ND<0.050	0.17	ND<0.050	120	0.12	ND<0.050
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<2.4	ND<2.4	ND<2.4	ND<2.4	ND<2.4	16.5	ND<2.4	ND<2.4
	04/23/2015	NS	NS	NS	NS	NS	NS	NS	NS
MW-2	11/22/1999	ND<0.069	ND<0.097	ND<0.069	ND<0.26	ND<0.11	ND<1.9	ND<0.21	ND<0.083
	11/16/2000	ND<0.060	ND<0.053	ND<0.053	ND<0.17	ND<0.047	ND<1.1	ND<0.14	ND<0.053
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	0.12	ND<0.047	ND<0.047
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-3	11/22/1999	ND<0.050	ND<0.070	ND<0.50	ND<0.19	ND<0.080	ND<1.4	ND<0.15	ND<0.060
	11/16/2000	ND<0.060	ND<0.053	ND<0.053	ND<0.17	ND<0.047	ND<1.1	ND<0.14	ND<0.053
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-4	11/22/1999	ND<1.0	ND<1.4	ND<1.0	ND<3.8	ND<1.6	150	ND<3.0	ND<1.2
	11/16/2000	ND<1.2	ND<1.1	ND<1.1	ND<3.4	ND<0.94	160	ND<2.8	ND<1.1
MW-4 (Duplicate)	11/16/2000	ND<1.2	ND<1.1	ND<1.1	ND<3.4	ND<0.94	200	3.5	ND<1.1
MW-4	04/24/2001	ND<0.050	ND<0.050	ND<0.050	0.41	ND<0.050	210	0.27	ND<0.050
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<47.2	ND<47.2	ND<47.2	ND<47.2	ND<47.2	296	ND<47.2	ND<47.2
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	229	ND<5	ND<2
MW-5	11/16/2000	ND<0.060	ND<0.053	ND<0.053	ND<0.17	ND<0.047	ND<1.1	ND<0.14	ND<0.053
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	NS	NS	NS	NS	NS	NS	NS	NS
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-6	11/16/2000	0.08	0.068	0.24	ND<0.17	0.24	ND<1.1	0.21	0.21
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	0.33	0.078	0.49	ND<0.047	0.19	0.075	0.12	0.44
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-7	11/16/2000	ND<4,800	ND<4,200	ND<4,200	ND<14,000	ND<3,800	180,000	31,000	ND<4,200
	04/24/2001	ND<1.0	ND<1.0	2.6	9.5	ND<1.0	2,000	ND<250	2.6
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	NS	NS	NS	NS	NS	NS	NS	NS
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	472	ND<5	ND<2
MW-9	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-10	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-11	04/23/2015	ND<1.5	ND<0.3	ND<2	43	ND<0.3	41	85	ND<2
MW-12	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	13	ND<5	ND<2
MW-13	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	177	ND<5	ND<2
MW-14	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-15	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
Tier 1 Remediation Objectives for Groundwater									
Class I Groundwater		1.5	0.30	280	280	0.43	140	210	210
Class II Groundwater		7.5	1.5	1,400	1,400	2.15	220	1,050	1,050

Note:
All results are reported in micrograms per liter (ug/L).
Polynuclear Aromatic Hydrocarbons (PNA's) analyses conducted using United States Environmental Protection Agency (USEPA) Methods.
ND = Analyte not detected at or above the reporting limit.
NE = Not Established.
NS = Not Sampled.
Tier 1 Groundwater Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
Bold values exceed Tier 1 Remediation Objectives.

Table 3
Soil Analytical Results - BTEX

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Benzene	Toluene	Ethylbenzene	Total Xylenes
SB-11	3.5-5	08/07/2012	**288**	ND<64.2	58.1	332
SB-11	7-8	08/07/2012	**3,980**	**51,600**	**31,600**	**159,000**
SB-12	3.5-5	08/07/2012	**51.5**	ND<64.2	ND<32.1	ND<96.2
SB-12	7-8	08/07/2012	**629**	ND<62.8	3,940	**13,700**
SB-13	3.5-5	08/07/2012	**2,050**	2,720	1,900	**8,400**
SB-13	6-7	08/07/2012	**11,700**	**92,700**	**29,700**	**142,000**
SB-14	3.5-5	08/07/2012	**669**	ND<64.8	213	249
SB-14	6-7	08/07/2012	**833**	ND<62.0	1,330	2,330
SB-15	3.5-5	08/07/2012	**4,210**	**24,100**	9,170	**49,900**
SB-15	5-6	08/07/2012	**41,800**	**305,000**	**103,000**	**568,000**
SB-16	3.5-5	08/07/2012	**1,010**	ND<65.9	164	156
SB-16	6-7	08/07/2012	**3,700**	ND<613	11,200	**36,100**
SB-17	3.5-5	08/08/2012	**337**	ND<126	3,140	**7,820**
SB-17	6-7	08/08/2012	ND<1,200	3,770	**130,000**	**574,000**
SB-18	3.5-5	08/08/2012	**1,190**	ND<64.6	637	645
SB-18	6-7	08/08/2012	**6,790**	903	**27,000**	**112,000**
SB-19	3.5-5	08/08/2012	**40.5**	ND<65.0	ND<32.5	ND<97.5
SB-19	6-7	08/08/2012	**365**	ND<59.5	69.1	ND<89.3
SB-22	3.5-5	08/08/2012	ND<24.8	ND<62.0	ND<31.0	ND<93.0
SB-22	6-7	08/08/2012	ND<24.8	ND<62.0	ND<31.0	ND<93.0
SB-23	3.5-5	08/08/2012	ND<25.5	ND<63.7	ND<31.9	ND<95.6
SB-23	5-6	08/08/2012	ND<24.5	ND<61.2	ND<30.6	ND<91.8
SB-24	3.5-5	08/08/2012	ND<25.6	ND<64.1	ND<32.0	ND<96.1
SB-25	3.5-5	08/08/2012	**148**	ND<64.1	ND<32.1	321
SB-27	0-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-27	4-7	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-28	0-2	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-28	4-6	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-29	2-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-29	4-6	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-30	0-2	03/10/2015	**101**	7.5	126	61.6
SB-30	2-4	03/10/2015	**402**	ND<500	ND<500	ND<500
SB-31	2-4	03/10/2015	**1,600**	ND<500	9,690	**24,200**
SB-31	4-6	03/10/2015	**16,800**	**27,100**	**243,000**	**1,190,000**
MW-9	2-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-9	4-6	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-10	0-4	03/10/2015	ND<5.0	5.7	ND<5.0	ND<5.0
MW-11	2-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-11	4-6	03/10/2015	ND<5.0	7.1	ND<5.0	5.2
MW-12	2-4	03/10/2015	**1,660**	3,620	**42,300**	**168,000**
MW-12	4-6	03/10/2015	**4,230**	4,660	**35,500**	**178,000**
MW-13	2-4	03/10/2015	23.0	ND<5.0	8.4	16.3
MW-13	4-6	03/10/2015	**347**	ND<500	2,550	**6,610**
MW-14	2-4	03/10/2015	ND<5.0	5.9	ND<5.0	5.8
MW-14	4-6	03/10/2015	**654**	ND<500	9,820	**44,600**
MW-15	2-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-15	4-6	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Exposure Route-Specific Values for Soils						
Ingestion - Residential			**12,000**	**16,000,000**	**7,800,000**	**16,000,000**
Inhalation - Residential			**800**	**650,000**	**400,000**	**320,000**
Ingestion - Construction Worker			**2,300,000**	**410,000,000**	**20,000,000**	**41,000,000**
Inhalation - Construction Worker			**2,200**	**42,000**	**58,000**	**5,600**
Ingestion - Industrial/Commercial			**100,000**	**410,000,000**	**200,000,000**	**410,000,000**
Inhalation - Industrial/Commercial			**1,600**	**650,000**	**400,000**	**320,000**
Tier 1 Remediation Objective - Class I Groundwater			**30**	**12,000**	**13,000**	**150,000**
Tier 1 Remediation Objective - Class II Groundwater			**170**	**29,000**	**19,000**	**150,000**

See SB-31

Benzene, Toluene, Ethylbenzene and Total Xylene (BTEX) analysis conducted using United States Environmental Protection Agency (USEPA) Methods.
All results are reported in micrograms per kilogram (ug/kg), dry weight.
Tier 1 Soil Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
ND = The constituent was not measured above the Method Detection Limit indicated.
NA = Not Applicable
Bold values exceed Tier 1 Remediation Objectives.

Table 4
Soil Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
SB-11	3.5-5	08/07/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-11	7-8	08/07/2012	ND<271	ND<271	ND<271	ND<271	ND<271	ND<271	ND<271	ND<271
SB-12	3.5-5	08/07/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-12	7-8	08/07/2012	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7
SB-13	3.5-5	08/07/2012	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0
SB-13	6-7	08/07/2012	ND<104	ND<104	ND<104	ND<104	ND<104	ND<104	ND<104	ND<104
SB-14	3.5-5	08/07/2012	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6
SB-14	6-7	08/07/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-15	3.5-5	08/07/2012	ND<168	ND<168	ND<168	ND<168	ND<168	ND<168	ND<168	ND<168
SB-15	5-6	08/07/2012	ND<261	ND<261	ND<261	ND<261	ND<261	ND<261	ND<261	ND<261
SB-16	3.5-5	08/07/2012	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0
SB-16	6-7	08/07/2012	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0
SB-17	3.5-5	08/08/2012	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0
SB-17	6-7	08/08/2012	ND<3,190	ND<3,190	ND<3,190	ND<3,190	ND<3,190	ND<3,190	ND<3,190	ND<3,190
SB-18	3.5-5	08/08/2012	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5
SB-18	6-7	08/08/2012	ND<207	ND<207	ND<207	ND<207	ND<207	ND<207	ND<207	ND<207
SB-19	3.5-5	08/08/2012	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7
SB-19	6-7	08/08/2012	43.7	ND<19.8	34.8	ND<19.8	ND<19.8	ND<19.8	ND<19.8	ND<19.8
SB-22	3.5-5	08/08/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-22	6-7	08/08/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-23	3.5-5	08/08/2012	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2
SB-23	5-6	08/08/2012	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4
SB-24	3.5-5	08/08/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-25	3.5-5	08/08/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-27	0-4	03/10/2015	ND<50	ND<50	ND<50	90.7	69	76	ND<50	65
SB-27	4-7	03/10/2015	ND<50	ND<50	ND<50	150	ND<15	17	ND<50	14
SB-28	0-2	03/10/2015	ND<50	ND<50	ND<50	328	297	312	176	271
SB-28	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
SB-29	2-4	03/10/2015	ND<50	ND<50	ND<50	14.7	17	19	ND<50	15
SB-29	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
SB-30	0-2	03/10/2015	ND<50	ND<50	ND<50	43.5	59	71	ND<50	46
SB-30	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
SB-31	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
SB-31	4-6	03/10/2015	393	ND<50	60	21.1	ND<15	ND<11	ND<50	ND<11
MW-9	2-4	03/10/2015	ND<50	ND<50	ND<50	39.4	41	39	ND<50	46
MW-9	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-10	0-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-11	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-11	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-12	2-4	03/10/2015	ND<50	ND<50	ND<50	22.2	15	16	ND<50	14
MW-12	4-6	03/10/2015	ND<50	ND<50	ND<50	10.5	ND<15	ND<11	ND<50	ND<11
MW-13	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-13	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-14	2-4	03/10/2015	ND<50	ND<50	ND<50	32.7	35	38	ND<50	40
MW-14	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-15	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-15	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
Exposure Route-Specific Values for Soils										
Ingestion - Residential			4,700,000	2,300,000	23,000,000	900	90	900	2,300,000	9,000
Inhalation - Residential			NE	NE	NE	NE	NE	NE	NE	NE
Ingestion - Construction Worker			120,000,000	61,000,000	610,000,000	170,000	17,000	170,000	61,000,000	1,700,000
Inhalation - Construction Worker			NE	NE	NE	NE	NE	NE	NE	NE
Ingestion - Industrial/Commercial			120,000,000	61,000,000	610,000,000	8,000	800	8,000	61,000,000	78,000
Inhalation - Industrial/Commercial			NE	NE	NE	NE	NE	NE	NE	NE
Class I Groundwater			570,000	85,000	12,000,000	2,000	8,000	5,000	27,000,000	49,000
Class II Groundwater			2,900,000	420,000	59,000,000	8,000	82,000	25,000	130,000,000	250,000
Concentrations of PNA Chemicals in Background Soils			130	70	400	1,800	2,100	2,100	1,700	1,700

See SB-31

Table 1
Soil Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

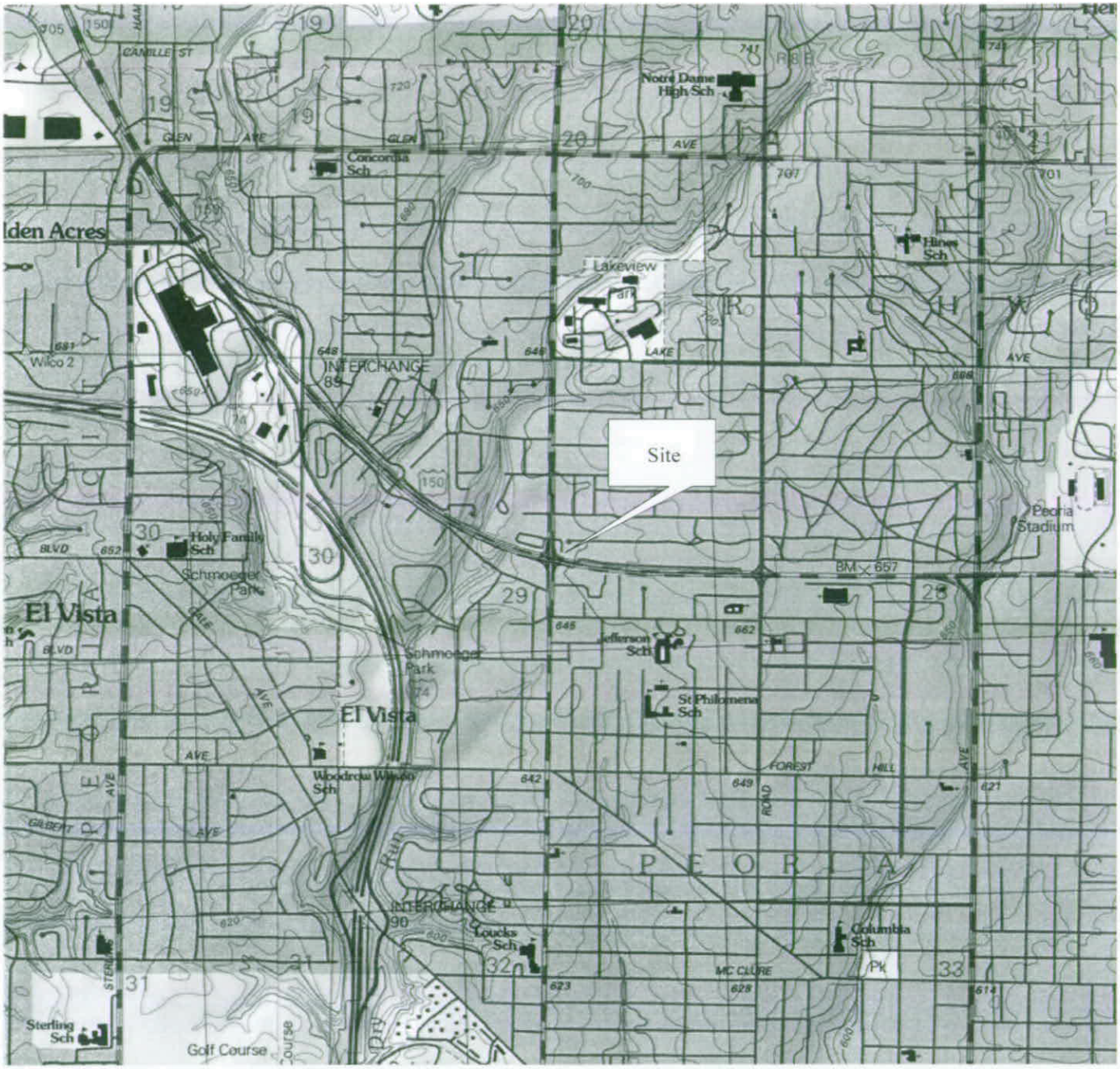
Sample ID	Sample Depth (feet)	Sample Date	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
SB-11	3.5-5	08/07/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	89.8	ND<21.4	ND<21.4
SB-11	7-8	08/07/2012	ND<271	ND<271	ND<271	ND<271	ND<271	**4,630**	ND<271	ND<271
SB-12	3.5-5	08/07/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	41.6	ND<21.4	ND<21.4
SB-12	7-8	08/07/2012	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7	836	ND<69.7	ND<69.7
SB-13	3.5-5	08/07/2012	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	396	ND<22.0	ND<22.0
SB-13	6-7	08/07/2012	ND<104	ND<104	ND<104	ND<104	ND<104	1,660	ND<104	ND<104
SB-14	3.5-5	08/07/2012	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6
SB-14	6-7	08/07/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	130	ND<20.7	ND<20.7
SB-15	3.5-5	08/07/2012	ND<168	ND<168	ND<168	ND<168	ND<168	**2,150**	ND<168	ND<168
SB-15	5-6	08/07/2012	ND<261	ND<261	ND<261	ND<261	ND<261	**5,340**	ND<261	ND<261
SB-16	3.5-5	08/07/2012	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0
SB-16	6-7	08/07/2012	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0	791	141	ND<68.0
SB-17	3.5-5	08/08/2012	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0	313	39.2	ND<21.0
SB-17	6-7	08/08/2012	ND<3,190	**ND<3,190**	ND<3,190	ND<3,190	**ND<3,190**	**45,300**	ND<3,190	ND<3,190
SB-18	3.5-5	08/08/2012	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5	88.9	ND<21.5	ND<21.5
SB-18	6-7	08/08/2012	ND<207	ND<207	ND<207	ND<207	ND<207	**4,180**	ND<207	ND<207
SB-19	3.5-5	08/08/2012	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7
SB-19	6-7	08/08/2012	ND<19.8	ND<19.8	ND<19.8	92.1	ND<19.8	177	231	ND<19.8
SB-22	3.5-5	08/08/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-22	6-7	08/08/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-23	3.5-5	08/08/2012	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2
SB-23	5-6	08/08/2012	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4
SB-24	3.5-5	08/08/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-25	3.5-5	08/08/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-27	0-4	03/10/2015	77	ND<20	189	ND<50	51	ND<25	135	151
SB-27	4-7	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND50
SB-28	0-2	03/10/2015	253	51	483	ND<50	188	ND<25	180	429
SB-28	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
SB-29	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
SB-29	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
SB-30	0-2	03/10/2015	66	ND<20	87	ND<50	50	423	ND<50	86
SB-30	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
SB-31	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	574	93	ND<50
SB-31	4-6	03/10/2015	ND<50	ND<20	65	432	ND<29	**20,700**	935	149
MW-9	2-4	03/10/2015	ND<50	ND<20	82	ND<50	33	ND<25	ND<50	75
MW-9	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-10	0-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-11	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-11	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-12	2-4	03/10/2015	ND<50	ND<20	70	ND<50	ND<29	**4,200**	88	63
MW-12	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	**1,990**	51	ND<50
MW-13	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-13	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	272	ND<50	ND<50
MW-14	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	33	ND<25	ND<50	ND<50
MW-14	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	288	ND<50	ND<50
MW-15	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-15	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
Exposure Route-Specific Values for Soils										
Ingestion - Residential			**88,000**	**90**	**3,100,000**	**3,100,000**	**900**	**1,600,000**	**2,300,000**	**2,300,000**
Inhalation - Residential			**NE**	**NE**	**NE**	**NE**	**NE**	**170,000**	**NE**	**NE**
Ingestion - Construction Worker			**17,000,000**	**17,000**	**82,000,000**	**82,000,000**	**170,000**	**4,100,000**	**61,000,000**	**61,000,000**
Inhalation - Construction Worker			**NE**	**NE**	**NE**	**NE**	**NE**	**1,800**	**NE**	**NE**
Ingestion - Industrial/Commercial			**780,000**	**800**	**82,000,000**	**82,000,000**	**800**	**41,000,000**	**61,000,000**	**61,000,000**
Inhalation - Industrial/Commercial			**NE**	**NE**	**NE**	**NE**	**NE**	**270,000**	**NE**	**NE**
Class I Groundwater			**160,000**	**2,000**	**4,300,000**	**560,000**	**14,000**	**12,000**	**~~200,000~~**	**4,200,000**
Class II Groundwater			800,000	7,600	21,000,000	2,800,000	69,000	18,000	~~1,000,000~~	21,000,000
Concentrations of PNA Chemicals in Background Soils			**2,700**	**420**	**4,100**	**180**	**1,600**	**200**	**2,500**	**3,000**

See SB-31

210,000
1,100,000

Notes:
Polynuclear aromatic hydrocarbon (PNAs) analysis conducted using United States Environmental Protection Agency (USEPA) Methods.
All results are reported in micrograms per kilogram (ug/kg), dry weight.
Tier 1 Soil Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
ND = The constituent was not measured above the Method Detection Limit indicated.
NE = Not Established.
NA = Not Applicable
Bold values exceed Tier 1 Remediation Objectives.

FIGURES



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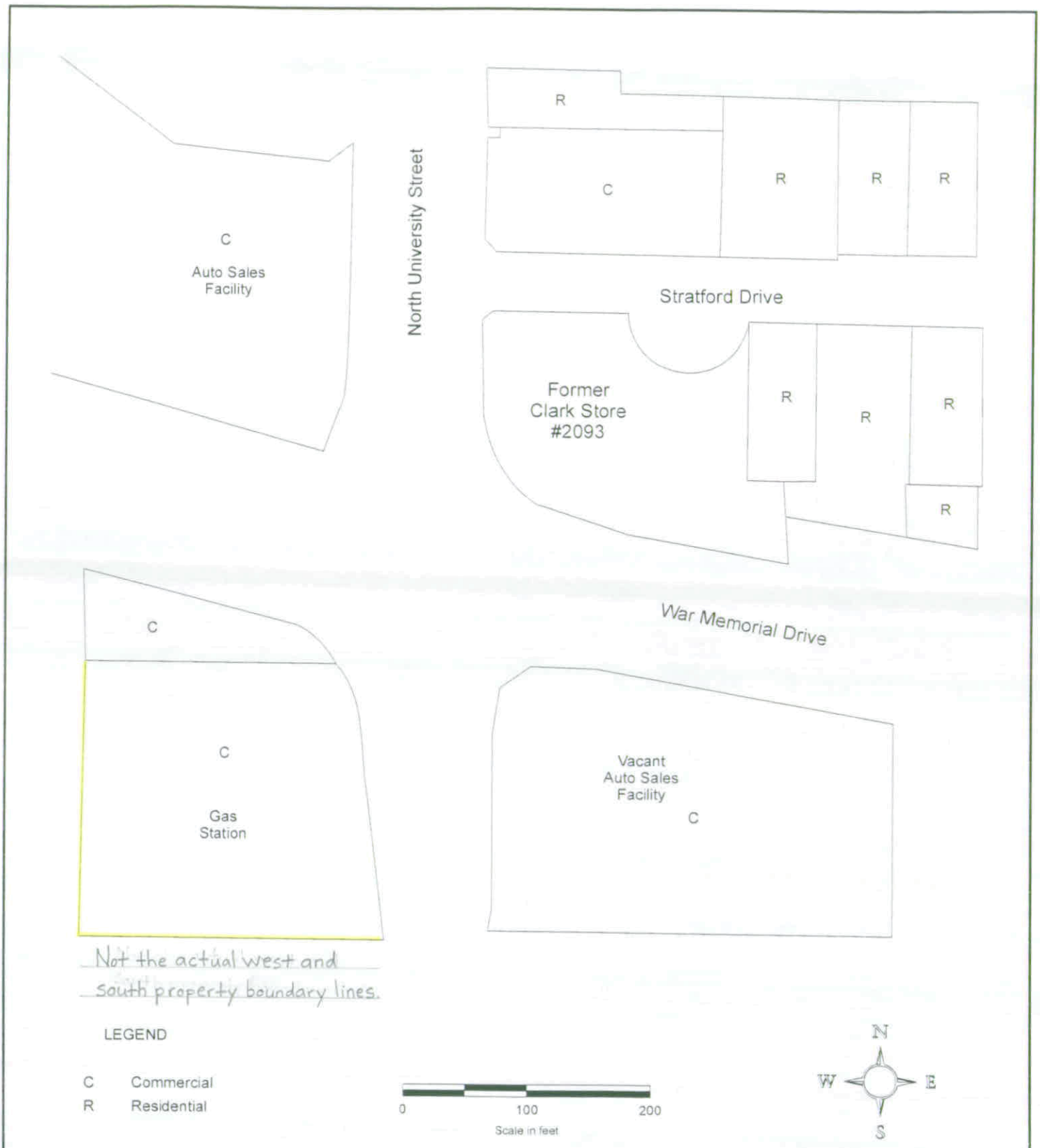
SCALE IN MILES

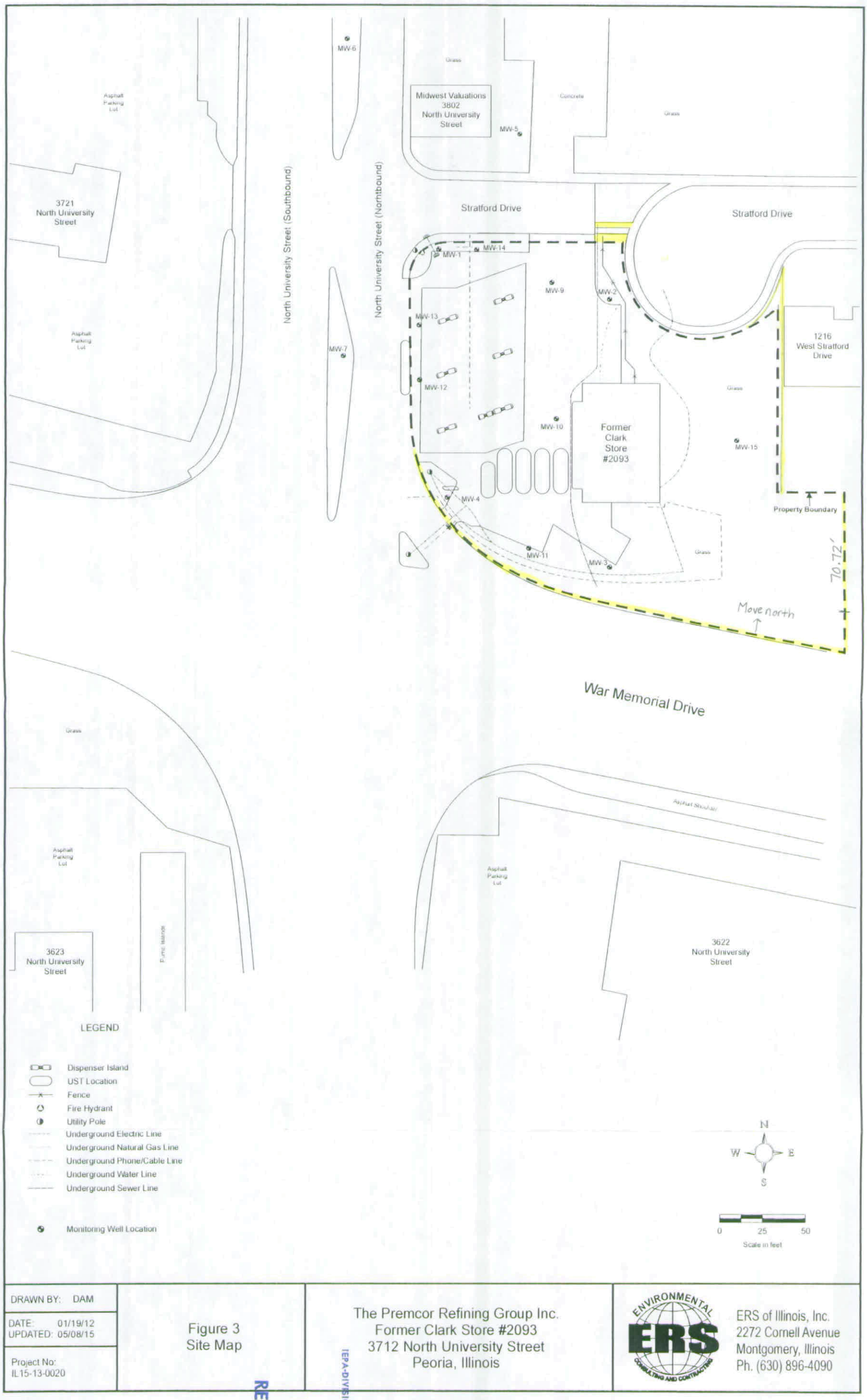
N W E S

DRAWN BY: DAM DATE: 03/25/11 Project No: IL15-13-0020	Figure 1 Site Location Map	The Premcor Refining Group Inc. Former Clark Store #2093 3712 North University Street Peoria, Illinois	ERS of Illinois, Inc. 2272 Cornell Avenue Montgomery, Illinois Ph. (630) 896-4090

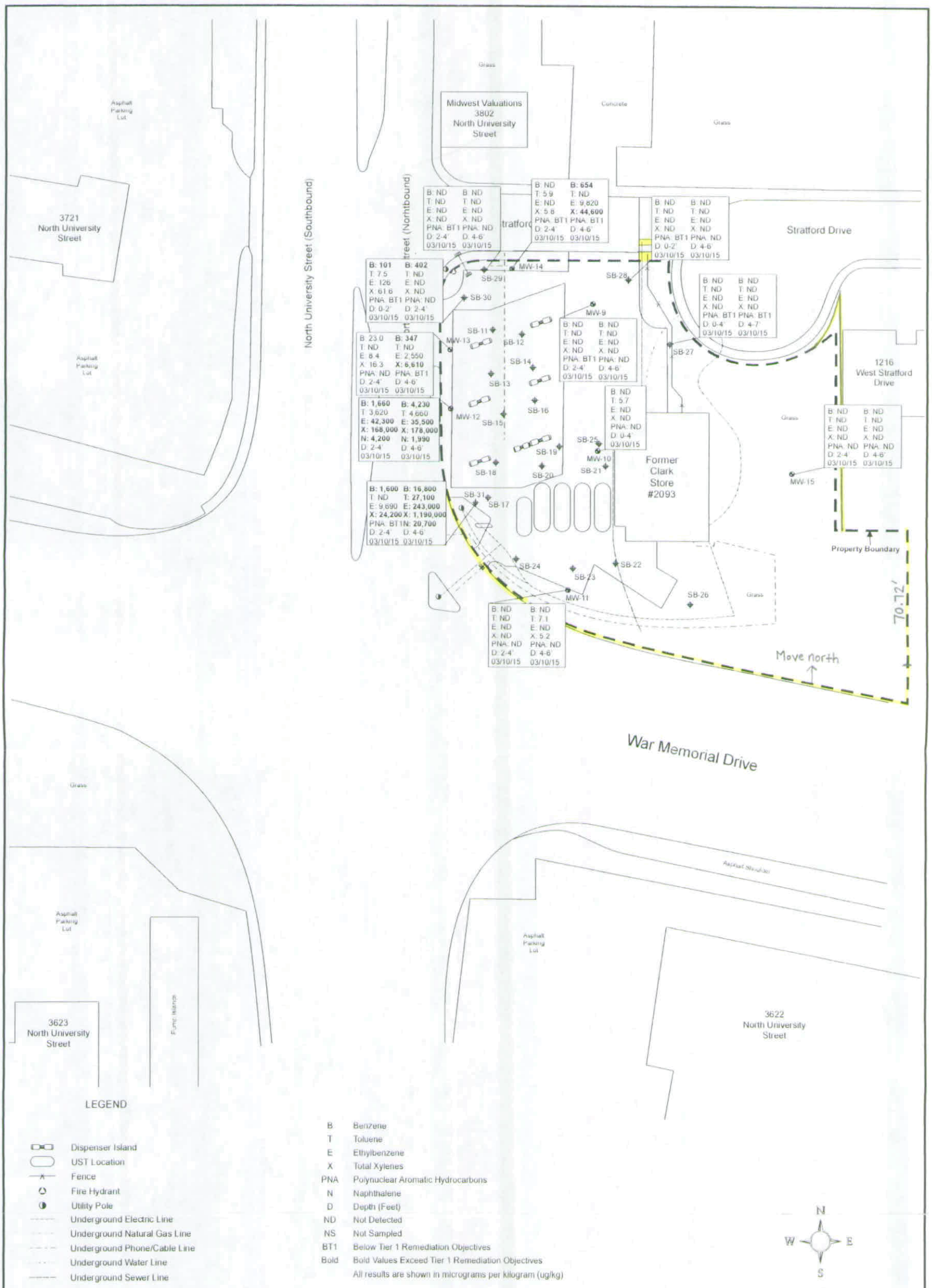


DRAWN BY: DAM DATE: 03/25/11 UPDATED: 04/15/15 Project No: IL15-13-0020	Figure 2 Surrounding Properties Map	The Premcor Refining Group Inc. Former Clark Store #2093 3712 North University Street Peoria, Illinois

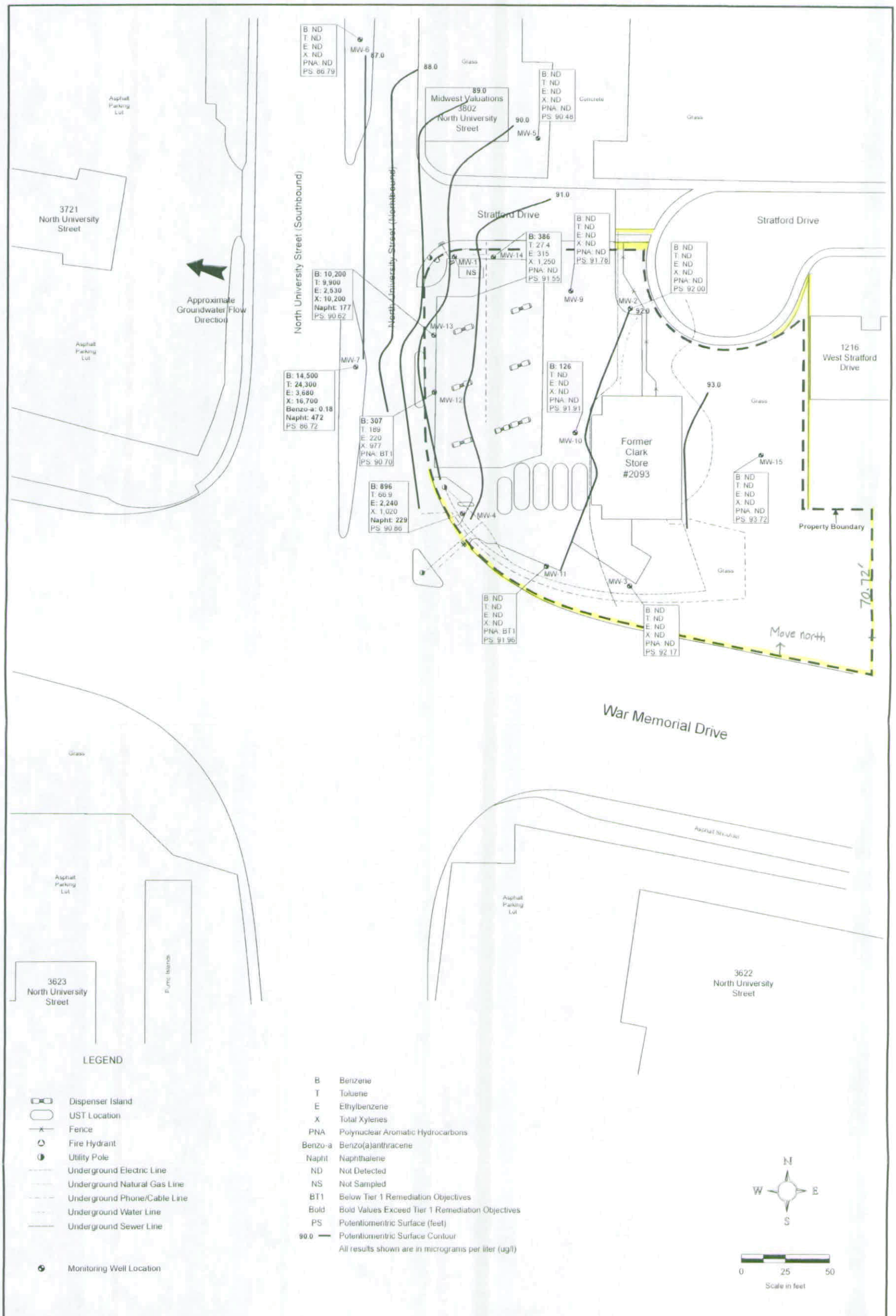
ERS of Illinois, Inc.
2272 Corneil Avenue
Montgomery, Illinois
Ph. (630) 896-4090



DRAWN BY: DAM DATE: 01/19/12 UPDATED: 05/08/15 Project No: IL15-13-0020	Figure 3 Site Map	The Premcor Refining Group Inc. Former Clark Store #2093 3712 North University Street Peoria, Illinois	ERS of Illinois, Inc. 2272 Cornell Avenue Montgomery, Illinois Ph. (630) 896-4090



DRAWN BY: DAM DATE: 01/19/12 UPDATED: 05/08/15 Project No: IL15-13-0020	Figure 4 Site Map Illustrating Soil Boring Locations and Soil Analytical Results (March 2015)	The Premcor Refining Group Inc. Former Clark Store #2093 3712 North University Street Peoria, Illinois	ERS of Illinois, Inc. 2272 Cornell Avenue Montgomery, Illinois Ph. (630) 896-4090



DRAWN BY: DAM DATE: 01/19/12 UPDATED: 05/08/15 Project No: IL15-13-0020	Figure 5 Site Map Illustrating Groundwater Analytical Results and Potentiometric Surface Contours April 2015	The Premcor Refining Group Inc. Former Clark Store #2093 3712 North University Street Peoria, Illinois	ERS of Illinois, Inc. 2272 Cornell Avenue Montgomery, Illinois Ph. (630) 896-4090

ATTACHMENT A

Incident Numbers: 923441	Boring Number: MW-9	Page: 1 of 1
		Date: Start 3/10/2015
Site Name: Former Clark Store #2093 Address: 3712 North University Street Peoria, Illinois	Boring Location: See site map	Finish 3/10/2015

Sample Number	Sample Type	Well Diagram	Sample Recovery	Sample Depth	Detailed Soil and Rock Description	P.L%--------L.L% Natural Moisture Content (20 / 40 / 60)	Penetrometer (TSF)	OVA/PID/FID	Remarks
	SS		50%	1–2	Brown fine grained sand and gravel with dark gray silty clay (SC), damp.			0.3	
	SS		50%	3–4	Black-gray silty clay (CL), soft, damp.			5.0	Sample submitted for laboratory analysis of BTEX and PNA (2-4 feet bgs.)
	SS		75%	5–6	Brown gray silty clay (CL), very stiff, damp.			0.5	Sample submitted for laboratory analysis of BTEX and PNA (4-6 feet bgs.)
	SS		75%	7–8	Same as above but wet.			0.7	
	SS		75%	9–10	Brown-orange sand with fine grained silt and gravel. Wet.			0.3	
	SS		75%	11–12	Brown-orange fine grained sand with silt and gravel (SC), wet.			0.1	
	SS		75%	13–14	Brown silt, soft, wet.			0.1	
	SS		75%	15–16	Same as above with fine grained sand lenses.			0.1	
				17–20	End of boring Set well at 13' bgs. Samples submitted at 2-4' and 4-6' bgs.				

Note: Stratification lines are approximate; insitu transition between soil types may be gradual

Groundwater Data
Depth While Drilling 6.0-feet
Depth After Drilling 6.1-feet

Auger Depth 16-feet **Rig Type** GeoProbe
Rotary Depth –
Driller GeoServe **Geologist** K. Dixon

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Montgomery, Illinois
Ph : (630) 896-4090

Incident Numbers: 923441	Boring Number: MW-10	Page: 1 of 1
		Date: Start 3/10/2015
Site Name: Former Clark Store #2093 Address: 3712 North University Street Peoria, Illinois	Boring Location: See site map	Finish 3/10/2015

Sample Number	Sample Type	Well Diagram	Sample Recovery	Sample Depth	Detailed Soil and Rock Description	P.L%--------L.L% Natural Moisture Content (20 / 40 / 60)	Penetrometer (TSF)	OVA/PID/FID	Remarks
	SS		20%	1	Concrete.			0.1	Sample submitted for laboratory analysis of BTEX and PNA (0-4 feet bgs.)
	SS		20%	2-3	Brown medium grained sand (SW), dry.			0.1	
	SS		75%	4-5	Gray-green silty clay with trace pebbles (CL), wet.			2.5	
	SS		75%	6-8				273.1	
	SS		50%	9	Black medium grained sand with some silt (SW), wet, gasoline odor.			296.4	
	SS		50%	10-11	Brown-gray silt and clay with trace pebbles (CL), wet.			6.8	
	SS		20%	12-13	Brown silt and medium grained sand (SM) with gravel, wet.			0.1	
	SS		20%	14-15				0.1	
				16-20	End of boring. Set well at 13' bgs. Samples submitted at 0-4' bgs.				

Note: Stratification lines are approximate; insitu transition between soil types may be gradual

Groundwater Data
Depth While Drilling ▼ 4.0-feet
Depth After Drilling ▽ 7.03-feet

Auger Depth 16-feet **Rig Type** GeoProbe
Rotary Depth --
Driller GeoServe **Geologist** K. Dixon

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Montgomery, Illinois
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Incident Numbers: 923441	Boring Number: MW-11	Page: 1 of 1
		Date: Start 3/10/2015
Site Name: Former Clark Store #2093 Address: 3712 North University Street Peoria, Illinois	Boring Location: See site map	Finish 3/10/2015

Sample Number	Sample Type	Well Diagram	Sample Recovery	Sample Depth	Detailed Soil and Rock Description	P.L%---------L.L% Natural Moisture Content (20 / 40 / 60)	Penetrometer (TSF)	OVA/PID/FID	Remarks
	SS		75%	1–2	Brown-tan-black mottled silty clay (CL) with trace pebbles, dry.			0.0	
	SS		75%	3–4				0.1	Sample submitted for laboratory analysis of BTEX and PNA (2-4 feet bgs.)
	SS		75%	5–6	Same as above, damp.			0.2	Sample submitted for laboratory analysis of BTEX and PNA (4-6 feet bgs.)
	SS		75%	7–8	Brown-gray silt with clay (CL), very soft, wet.			0.2	
	SS		75%	9–10				0.2	
	SS		75%	11–12				0.2	
	SS		75%	13–14				0.2	
	SS		75%	15–16	Brown silt with clay and trace pebbles (CL), damp.			0.1	
				17–20	End of boring. Set well at 13' bgs. Samples submitted at 2-4' and 4-6' bgs.				

Note: Stratification lines are approximate; insitu transition between soil types may be gradual

Groundwater Data
Depth While Drilling 6.0-feet
Depth After Drilling 7.75-feet

Auger Depth 16-feet **Rig Type** GeoProbe
Rotary Depth –
Driller GeoServe **Geologist** K. Dixon

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Montgomery, Illinois
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7.76' : Monitoring Well Construction Diagram and Table 1.

Incident Numbers: 923441	**Boring Number:** MW-12	**Page:** 1 of 1
		Date: Start 3/10/2015
Site Name: Former Clark Store #2093 **Address:** 3712 North University Street Peoria, Illinois	**Boring Location:** See site map	Finish 3/10/2015

Sample Number	Sample Type	Well Diagram	Sample Recovery	Sample Depth	Detailed Soil and Rock Description	P.L%----------L.L% Natural Moisture Content (20 / 40 / 60)	Penetrometer (TSF)	OVA/PID/FID	Remarks
	SS		60%	1–2	3" is concrete/gravel then gravel and green silty clay (CL) with dry roots, gasoline odor.			591.8	
	SS		60%	3–4	Same as above, damp.			2355	Sample submitted for laboratory analysis of BTEX and PNA (2-4 feet bgs.)
	SS		75%	5				3419	Sample submitted for laboratory analysis of BTEX and PNA (4-6 feet bgs.)
	SS		75%	7–8	Gray-green silt (ML), wet.			1142	
	SS		80%	9–10	Gray-green silt (ML) and black medium grained sand lenses, wet.			1071	
	SS		80%	11–12	Brown medium grained sand (SW) with brown-gray silt, wet.			8.2	
	SS		80%	13–14	Brown-gray silt (ML), damp.			16.6	
	SS		80%	15–16				NA	
				17–20	End of boring. Set well at 13' bgs. Samples submitted at 2-4' and 4-6' bgs.				

Note: Stratification lines are approximate; insitu transition between soil types may be gradual

Groundwater Data
Depth While Drilling 6.0-feet
Depth After Drilling 6.35-feet

Auger Depth 16-feet **Rig Type** GeoProbe
Rotary Depth –
Driller GeoServe **Geologist** K. Dixon

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Incident Numbers: 923441	Boring Number: MW-13	Page: 1 of 1
		Date: Start 3/10/2015
Site Name: Former Clark Store #2093 Address: 3712 North University Street Peoria, Illinois	Boring Location: See site map	Finish 3/10/2015

Sample Number	Sample Type	Well Diagram	Sample Recovery	Sample Depth	Detailed Soil and Rock Description	P.L%——L.L% Natural Moisture Content (20 / 40 / 60)	Penetrometer (TSF)	OVA/PID/FID	Remarks
	SS		50%	1–2	3" is concrete/gravel then green-gray silty clay (CL) with trace pebbles, dry, gasoline odor.			8.8	
	SS		50%	3–4				27.2	Sample submitted for laboratory analysis of BTEX and PNA (2-4 feet bgs.)
	SS		75%	5	Same as above, damp.			668.2	Sample submitted for laboratory analysis of BTEX and PNA (4-6 feet bgs.)
	SS		75%	7–8	Same as above, wet.			394.2	
	SS		75%	9	Gray-green silt with fine sand (SM), wet.			268.8	
	SS		75%	10–12	Gray-green medium grained sand (SM) with silt.			75.8	
	SS		80%	13–14	Brown silt with clay and trace pebbles (CL), stiff, damp.			61.1	
	SS		80%	15–16				11.9	
				17–20	End of boring. Set well at 13' bgs. Samples submitted at 2-4' and 4-6' bgs.				

Note: Stratification lines are approximate; insitu transition between soil types may be gradual

Groundwater Data
Depth While Drilling 8.0-feet
Depth After Drilling 6.11-feet

Auger Depth 16-feet **Rig Type** GeoProbe
Rotary Depth –
Driller GeoServe **Geologist** K. Dixon

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Incident Numbers: 923441	Boring Number: MW-14	Page: 1 of 1
		Date: Start 3/10/2015
Site Name: Former Clark Store #2093 Address: 3712 North University Street Peoria, Illinois	Boring Location: See site map	Finish 3/10/2015

Sample Number	Sample Type	Well Diagram	Sample Recovery	Sample Depth	Detailed Soil and Rock Description	P.L%---------L.L% Natural Moisture Content (20 / 40 / 60)	Penetrometer (TSF)	OVA/PID/FID	Remarks
	SS		80%	1	Mulch and rocks. Brown sand, clay silt and gravel (SP).			0.2	
	SS		80%	3	Brown medium grained sand (SP) with gravel and clay, last 3" is brown-gray silty clay (CL), dry.			0.4	Sample submitted for laboratory analysis of BTEX and PNA (2-4 feet bgs.)
	SS		80%	5	Black silty clay with trace pebbles (CL), grades to green-gray at 6', damp.			163.3	Sample submitted for laboratory analysis of BTEX and PNA (4-6 feet bgs.)
	SS		80%	7	Brown-green-gray silty clay (CL) with trace pebbles, wet.			866.1	
	SS		90%	9				539.6	
	SS		90%	11	Black-green fine grained sand and silt (SM), brown silt at 11.5', wet.			67.8	
	SS		80%	13				1.5	
	SS		80%	15	Brown-rust silt (ML), wet			0.5	
				17	End of boring. Set well at 13' bgs. Samples submitted at 2-4' and 4-6' bgs.				

Note: Stratification lines are approximate; insitu transition between soil types may be gradual

Groundwater Data
Depth While Drilling 6.0-feet
Depth After Drilling 6.11-feet

Auger Depth 16-feet **Rig Type** GeoProbe
Rotary Depth –
Driller GeoServe **Geologist** K. Dixon

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5.97': MW Construction Diagram and Table 1.

Incident Numbers: 923441	Boring Number: MW-15	Page: 1 of 1
		Date: Start 3/10/2015
Site Name: Former Clark Store #2093 Address: 3712 North University Street Peoria, Illinois	Boring Location: See site map	Finish 3/10/2015

Sample Number	Sample Type	Well Diagram	Sample Recovery	Sample Depth	Detailed Soil and Rock Description	P.L%——L.L% Natural Moisture Content (20 40 60)	Penetrometer (TSF)	OVA/PID/FID	Remarks
	SS		75%	1	Brown clayey topsoil then brown silty clay (CL) with trace pebbles, dry.			0.1	
	SS		75%	3	Brown silty clay with trace pebbles (CL), dry.			0.2	Sample submitted for laboratory analysis of BTEX and PNA (2-4 feet bgs.)
	SS		80%	5	Black-brown-orange silty clay with trace pebbles (CL), damp.			0.3	Sample submitted for laboratory analysis of BTEX and PNA (4-6 feet bgs.)
	SS		80%	7	Same as above but wet.			0.1	
	SS		80%	9				0.2	
	SS		80%	11	Grey-brown silt with trace clay (ML), wet.			0.1	
	SS		80%	13				0.3	
	SS		80%	15	Brown silt (ML) with fine grained sand lenses and trace pebbles, very stiff.			0.4	
				17	End of boring. Set well at 13' bgs. Samples submitted at 2-4' and 4-6' bgs.				

Note: Stratification lines are approximate; insitu transition between soil types may be gradual

Groundwater Data
▼ Depth While Drilling 6.0-feet
▽ Depth After Drilling 6.67-feet

Auger Depth 16-feet **Rig Type** GeoProbe
Rotary Depth –
Driller GeoServe **Geologist** K. Dixon

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Incident Numbers: 923441	Boring Number: SB-27	Page: 1 of 1
		Date: Start 3/10/2015
Site Name: Former Clark Store #2093 Address: 3712 North University Street Peoria, Illinois	Boring Location: See site map	Finish 3/10/2015

Sample Number	Sample Type	Well Diagram	Sample Recovery	Sample Depth	Detailed Soil and Rock Description	P.L%——L.L% Natural Moisture Content (20 / 40 / 60)	Penetrometer (TSF)	OVA/PID/FID	Remarks
	SS		25%	1–2	Brown silty clay (CL), gravel and brown medium grained sand with silt (SM), dry.			0.0	Sample submitted for laboratory analysis of BTEX and PNA (0-4 feet bgs.)
	SS		25%	3–4				0.0	
	SS		25%	5–6	Brown medium grained sand (SP)with silt, wet at 7' bgs.			0.0	Sample submitted for laboratory analysis of BTEX and PNA (4-7 feet bgs.)
	SS		25%	7–8				0.0	
	SS		80%	9–10	Brown-gray silty clay (CL).			0.0	
	SS		80%	11–12	Brown fine grained sand with silt and pebbles (SM).			0.0	
				13–20	End of boring. Samples submitted at 0-4' and 4-7' bgs.				

Note: Stratification lines are approximate; insitu transition between soil types may be gradual

Groundwater Data
Depth While Drilling: 7.0-feet
Depth After Drilling: NA

Auger Depth: 12-feet Rig Type: GeoProbe
Rotary Depth: –
Driller: GeoServe Geologist: K. Dixon

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Incident Numbers: 923441	Boring Number: SB-28	Page: 1 of 1
		Date: Start 3/10/2015
Site Name: Former Clark Store #2093 Address: 3712 North University Street Peoria, Illinois	Boring Location: See site map	Finish 3/10/2015

Sample Number	Sample Type	Well Diagram	Sample Recovery	Sample Depth	Detailed Soil and Rock Description	P.L%---------L.L% Natural Moisture Content (20 / 40 / 60)	Penetrometer (TSF)	OVA/PID/FID	Remarks
	SS		80%	1	Brown silty clay with gravel (CL), dry.			0.1	Sample submitted for laboratory analysis of BTEX and PNA (0-2 feet bgs.)
	SS		80%	3	Brown-gray silty clay (CL), dry, soft.			0.2	
	SS		80%	5	Black-brown-gray mottled silty clay (CL), damp, stiff.			0.2	Sample submitted for laboratory analysis of BTEX and PNA (4-6 feet bgs.)
	SS		80%	7	Same as above but soft.			0.1	
				8	End of boring. Samples submitted at 0-2' and 4-6' bgs.				

Note: Stratification lines are approximate; insitu transition between soil types may be gradual

Groundwater Data
Depth While Drilling: NA
Depth After Drilling: NA

Auger Depth: 8-feet Rig Type: GeoProbe
Rotary Depth: –
Driller: GeoServe Geologist: K. Dixon

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Incident Numbers: 923441	Boring Number: SB-29	Page: 1 of 1
		Date: Start 3/10/2015
Site Name: Former Clark Store #2093 Address: 3712 North University Street Peoria, Illinois	Boring Location: See site map	Finish 3/10/2015

Sample Number	Sample Type	Well Diagram	Sample Recovery	Sample Depth	Detailed Soil and Rock Description	P.L%--------L.L% Natural Moisture Content (20 / 40 / 60)	Penetrometer (TSF)	OVA/PID/FID	Remarks
	SS		75%	1-2	Brown medium grained sand with clay and pebbles (SP).			0.1	
	SS		75%	3-4	Dark brown silty clay (CL), dry, stiff.			0.1	Sample submitted for laboratory analysis of BTEX and PNA (2-4 feet bgs.)
	SS		-	5-6	Dark gray silty clay with trace pebbles (CL), damp.			0.1	Sample submitted for laboratory analysis of BTEX and PNA (4-6 feet bgs.)
	SS		-	7-8	Same as above but soft.			0.2	
				9-20	End of boring. Samples submitted at 2-4' and 4-6' bgs.				

Note: Stratification lines are approximate; insitu transition between soil types may be gradual

Groundwater Data
Depth While Drilling: NA
Depth After Drilling: NA

Auger Depth 8-feet **Rig Type** GeoProbe
Rotary Depth --
Driller GeoServe **Geologist** K. Dixon

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Incident Numbers: 923441	Boring Number: SB-30	Page: 1 of 1
		Date: Start 3/10/2015
Site Name: Former Clark Store #2093 Address: 3712 North University Street Peoria, Illinois	Boring Location: See site map	Finish 3/10/2015

Sample Number	Sample Type	Well Diagram	Sample Recovery	Sample Depth	Detailed Soil and Rock Description	P.L%——L.L% Natural Moisture Content (20 / 40 / 60)	Penetrometer (TSF)	OVA/PID/FID	Remarks
	SS		80%	1	Concrete-gravel			65.4	Sample submitted for laboratory analysis of BTEX and PNA (0-2 feet bgs.)
	SS		80%	2–4	Dark brown silty clay with trace pebbles (CL), dry.			7.3	Sample submitted for laboratory analysis of BTEX and PNA (2-4 feet bgs.)
	SS		80%	5 ▼				57.6	
	SS		80%	6–7	Green-gray silty clay with trace pebbles (CL), wet at 5' bgs.			601.3	
				8	End of boring. Samples submitted at 0-2' and 2-4' bgs.				
				9–20					

Note: Stratification lines are approximate; insitu transition between soil types may be gradual

Groundwater Data
▼ Depth While Drilling: 5.0-feet
▽ Depth After Drilling: NA

Auger Depth 8-feet **Rig Type** GeoProbe
Rotary Depth --
Driller GeoServe **Geologist** K. Dixon

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Incident Numbers: 923441	Boring Number: SB-31	Page: 1 of 1
Site Name: Former Clark Store #2093 Address: 3712 North University Street Peoria, IL	Boring Location: See site map	Date: Start 3/10/2015 Finish 3/10/2015

Sample Number	Sample Type	Well Diagram	Sample Recovery	Sample Depth	Detailed Soil and Rock Description	P.L%--------L.L% Natural Moisture Content (20 / 40 / 60)	Penetrometer (TSF)	OVA/PID/FID	Remarks
	SS		80%	1	Concrete and gravel			117.6	
	SS		80%	2–4	Green-grey-brown mottled silty clay (CL), dry.			954.5	Sample submitted for laboratory analysis of BTEX and PNA (2-4 feet bgs.)
	SS		75%	5	Brown medium grained sand (SW), damp.			2238	Sample submitted for laboratory analysis of BTEX and PNA (4-6 feet bgs.)
	SS		75%	7	Brown-green silt (ML), wet, soft.			1629	
				8–20	End of boring. Samples submitted at 2-4' and 4-6' bgs.				

Note: Stratification lines are approximate; insitu transition between soil types may be gradual

Groundwater Data
▼ Depth While Drilling 6.0-feet
▽ Depth After Drilling NA

Auger Depth 8-feet **Rig Type** GeoProbe
Rotary Depth –
Driller GeoServe **Geologist** K. Dixon

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ATTACHMENT B

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

March 20, 2015

Ms. Karen Dixon
ERS of ILLINOIS, INC.
2272 Cornell Avenue
Montgomery, IL 60538

Project ID: Premcor 2093
First Environmental File ID: 15-1022
Date Received: March 12, 2015

Dear Ms. Karen Dixon:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 003469: effective 09/25/2014 through 03/28/2015.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Stan Zaworski
Project Manager

First Environmental Laboratories, Inc.

IL ELAP / NELAC Accreditation # 100292

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Case Narrative

ERS of ILLINOIS, INC.

Lab File ID: **15-1022**

Project ID: **Premcor 2093**

Date Received: **March 12, 2015**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The results in this report apply to the samples in the following table:

Laboratory Sample ID	Client Sample Identifier	Date/Time Collected
15-1022-001	MW-9 @ 2-4'	3/10/2015 8:40
15-1022-002	MW-9 @ 4-6'	3/10/2015 8:45
15-1022-003	MW-10 @ 0-4'	3/10/2015 9:30
15-1022-004	MW-11 @ 2-4'	3/10/2015 10:10
15-1022-005	MW-11 @ 4-6'	3/10/2015 10:15
15-1022-006	MW-12 @ 2-4'	3/10/2015 11:00
15-1022-007	MW-12 @ 4-6'	3/10/2015 11:10
15-1022-008	MW-13 @ 2-4'	3/10/2015 11:40
15-1022-009	MW-13 @ 4-6'	3/10/2015 11:45
15-1022-010	MW-14 @ 2-4'	3/10/2015 12:10
15-1022-011	MW-14 @ 4-6'	3/10/2015 12:15
15-1022-012	MW-15 @ 2-4'	3/10/2015 13:00
15-1022-013	MW-15 @ 4-6'	3/10/2015 13:10
15-1022-014	SB-27 @ 0-4'	3/10/2015 13:50
15-1022-015	SB-27 @ 4-7'	3/10/2015 13:55
15-1022-016	SB-28 @ 0-2'	3/10/2015 14:10
15-1022-017	SB-28 @ 4-6'	3/10/2015 14:15
15-1022-018	SB-29 @ 2-4'	3/10/2015 14:20
15-1022-019	SB-29 @ 4-6'	3/10/2015 14:25
15-1022-020	SB-30 @ 0-2'	3/10/2015 14:40
15-1022-021	SB-30 @ 2-4'	3/10/2015 14:40
15-1022-022	SB-31 @ 2-4'	3/10/2015 15:00
15-1022-023	SB-31 @ 4-6'	3/10/2015 15:10

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Case Narrative

ERS of ILLINOIS, INC.

Lab File ID: **15-1022**

Project ID: **Premcor 2093**

Date Received: **March 12, 2015**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

Sample Batch Comments:

Sample acceptance criteria were met.

Method Comments

Lab Number	Sample ID	Comments:
15-1022-009	MW-13 @ 4-6'	*BTEX Organic Compounds* The reporting limits are elevated due to matrix interference.
15-1022-011	MW-14 @ 4-6'	*BTEX Organic Compounds* The reporting limits are elevated due to matrix interference.
15-1022-021	SB-30 @ 2-4'	*BTEX Organic Compounds* The reporting limits are elevated due to matrix interference.
15-1022-022	SB-31 @ 2-4'	*BTEX Organic Compounds* The reporting limits are elevated due to matrix interference.

The following is a definition of flags that may be used in this report:

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L	LCS recovery outside control limits.
C	Sample received in an improper container for this test.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out: recovery not available.	N	Analyte is not part of our NELAC accreditation.
E	Estimated result: concentration exceeds calibration range.	P	Chemical preservation pH adjusted in lab.
G	Surrogate recovery outside control limits.	Q	Result was determined by a GC/MS database search.
H	Analysis or extraction holding time exceeded.	S	Analysis was subcontracted to another laboratory.
J	Estimated result: concentration is less than routine RL but greater than MDL.	W	Reporting limit elevated due to sample matrix.
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-9 @ 2-4'
Sample No: 15-1022-001

Date Collected: 03/10/15
Time Collected: 8:40
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	78.81		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/13/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	39.4	8.7	ug/kg	
Benzo(a)pyrene	41	15	ug/kg	
Benzo(b)fluoranthene	39	11	ug/kg	
Benzo(k)fluoranthene	46	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	82	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	33	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	75	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-9 @ 4-6'
Sample No: 15-1022-002

Date Collected: 03/10/15
Time Collected: 8:45
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	81.42		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/13/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-10 @ 0-4'
Sample No: 15-1022-003

Date Collected: 03/10/15
Time Collected: 9:30
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	92.97		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	5.7	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/13/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-11 @ 2-4'
Sample No: 15-1022-004

Date Collected: 03/10/15
Time Collected: 10:10
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	77.63		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/13/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-11 @ 4-6'
Sample No: 15-1022-005

Date Collected: 03/10/15
Time Collected: 10:15
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	77.86		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	7.1	5.0	ug/kg	
Xylene, Total	5.2	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/13/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-12 @ 2-4'
Sample No: 15-1022-006

Date Collected: 03/10/15
Time Collected: 11:00
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	79.27		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/16/15				
Benzene	1,660	5.0	ug/kg	
Ethylbenzene	42,300	5.0	ug/kg	
Toluene	3,620	5.0	ug/kg	
Xylene, Total	168,000	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/13/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	22.2	8.7	ug/kg	
Benzo(a)pyrene	15	15	ug/kg	
Benzo(b)fluoranthene	16	11	ug/kg	
Benzo(k)fluoranthene	14	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	70	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	4,200	25	ug/kg	
Phenanthrene	88	50	ug/kg	
Pyrene	63	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-12 @ 4-6'
Sample No: 15-1022-007

Date Collected: 03/10/15
Time Collected: 11:10
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	79.43		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/16/15				
Benzene	4,230	5.0	ug/kg	
Ethylbenzene	35,500	5.0	ug/kg	
Toluene	4,660	5.0	ug/kg	
Xylene, Total	178,000	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/14/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	10.5	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	1,990	25	ug/kg	
Phenanthrene	51	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-13 @ 2-4'
Sample No: 15-1022-008

Date Collected: 03/10/15
Time Collected: 11:40
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	79.89		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	23.0	5.0	ug/kg	
Ethylbenzene	8.4	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	16.3	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/14/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-13 @ 4-6'
Sample No: 15-1022-009

Date Collected: 03/10/15
Time Collected: 11:45
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	82.74		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/16/15				
Benzene	347	5.0	ug/kg	
Ethylbenzene	2,550	5.0	ug/kg	
Toluene	< 500	5.0	ug/kg	
Xylene, Total	6,610	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/14/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	272	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-14 @ 2-4'
Sample No: 15-1022-010

Date Collected: 03/10/15
Time Collected: 12:10
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	83.29		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	5.9	5.0	ug/kg	
Xylene, Total	5.8	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/14/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	32.7	8.7	ug/kg	
Benzo(a)pyrene	35	15	ug/kg	
Benzo(b)fluoranthene	38	11	ug/kg	
Benzo(k)fluoranthene	40	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	33	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-14 @ 4-6'
Sample No: 15-1022-011

Date Collected: 03/10/15
Time Collected: 12:15
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Solids, Total	**Method: 2540B**				
Analysis Date: 03/12/15					
Total Solids		79.41		%	
BTEX Organic Compounds	**Method: 5035A/8260B**				
Analysis Date: 03/16/15					
Benzene		654	5.0	ug/kg	
Ethylbenzene		9,820	5.0	ug/kg	
Toluene		< 500	5.0	ug/kg	
Xylene, Total		44,600	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons	**Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/14/15			Preparation Date: 03/12/15		
Acenaphthene		< 50	50	ug/kg	
Acenaphthylene		< 50	50	ug/kg	
Anthracene		< 50	50	ug/kg	
Benzo(a)anthracene		< 8.7	8.7	ug/kg	
Benzo(a)pyrene		< 15	15	ug/kg	
Benzo(b)fluoranthene		< 11	11	ug/kg	
Benzo(k)fluoranthene		< 11	11	ug/kg	
Benzo(ghi)perylene		< 50	50	ug/kg	
Chrysene		< 50	50	ug/kg	
Dibenzo(a,h)anthracene		< 20	20	ug/kg	
Fluoranthene		< 50	50	ug/kg	
Fluorene		< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene		< 29	29	ug/kg	
Naphthalene		288	25	ug/kg	
Phenanthrene		< 50	50	ug/kg	
Pyrene		< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-15 @ 2-4'
Sample No: 15-1022-012

Date Collected: 03/10/15
Time Collected: 13:00
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	79.87		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/14/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-15 @ 4-6'
Sample No: 15-1022-013

Date Collected: 03/10/15
Time Collected: 13:10
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	79.79		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/14/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: SB-27 @ 0-4'
Sample No: 15-1022-014

Date Collected: 03/10/15
Time Collected: 13:50
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	89.53		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/14/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	90.7	8.7	ug/kg	
Benzo(a)pyrene	69	15	ug/kg	
Benzo(b)fluoranthene	76	11	ug/kg	
Benzo(k)fluoranthene	65	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	77	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	189	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	51	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	135	50	ug/kg	
Pyrene	151	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: SB-27 @ 4-7'
Sample No: 15-1022-015

Date Collected: 03/10/15
Time Collected: 13:55
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	82.11		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/14/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	15.0	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	17	11	ug/kg	
Benzo(k)fluoranthene	14	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: SB-28 @ 0-2'
Sample No: 15-1022-016

Date Collected: 03/10/15
Time Collected: 14:10
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	82.61		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/14/15		Preparation Date: 03/12/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	328	8.7	ug/kg	
Benzo(a)pyrene	297	15	ug/kg	
Benzo(b)fluoranthene	312	11	ug/kg	
Benzo(k)fluoranthene	271	11	ug/kg	
Benzo(ghi)perylene	176	50	ug/kg	
Chrysene	253	50	ug/kg	
Dibenzo(a,h)anthracene	51	20	ug/kg	
Fluoranthene	483	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	188	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	180	50	ug/kg	
Pyrene	429	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: SB-28 @ 4-6'
Sample No: 15-1022-017

Date Collected: 03/10/15
Time Collected: 14:15
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	79.46		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/19/15		Preparation Date: 03/18/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: SB-29 @ 2-4'
Sample No: 15-1022-018

Date Collected: 03/10/15
Time Collected: 14:20
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	78.65		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/19/15		Preparation Date: 03/18/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	14.7	8.7	ug/kg	
Benzo(a)pyrene	17	15	ug/kg	
Benzo(b)fluoranthene	19	11	ug/kg	
Benzo(k)fluoranthene	15	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: SB-29 @ 4-6'
Sample No: 15-1022-019

Date Collected: 03/10/15
Time Collected: 14:25
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	80.28		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/19/15		Preparation Date: 03/18/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: SB-30 @ 0-2'
Sample No: 15-1022-020

Date Collected: 03/10/15
Time Collected: 14:40
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	80.63		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/13/15				
Benzene	101	5.0	ug/kg	
Ethylbenzene	126	5.0	ug/kg	
Toluene	7.5	5.0	ug/kg	
Xylene, Total	61.6	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/19/15		Preparation Date: 03/18/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	43.5	8.7	ug/kg	
Benzo(a)pyrene	59	15	ug/kg	
Benzo(b)fluoranthene	71	11	ug/kg	
Benzo(k)fluoranthene	46	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	66	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	87	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	50	29	ug/kg	
Naphthalene	423	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	86	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: SB-30 @ 2-4'
Sample No: 15-1022-021

Date Collected: 03/10/15
Time Collected: 14:40
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/12/15				
Total Solids	81.84		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/16/15				
Benzene	402	5.0	ug/kg	
Ethylbenzene	< 500	5.0	ug/kg	
Toluene	< 500	5.0	ug/kg	
Xylene, Total	< 500	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/19/15		Preparation Date: 03/18/15		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: SB-31 @ 2-4'
Sample No: 15-1022-022

Date Collected: 03/10/15
Time Collected: 15:00
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Solids, Total	**Method: 2540B**				
Analysis Date: 03/12/15					
Total Solids		76.61		%	
BTEX Organic Compounds	**Method: 5035A/8260B**				
Analysis Date: 03/16/15					
Benzene		1,600	5.0	ug/kg	
Ethylbenzene		9,690	5.0	ug/kg	
Toluene		< 500	5.0	ug/kg	
Xylene, Total		24,200	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons	**Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/19/15			Preparation Date: 03/18/15		
Acenaphthene		< 50	50	ug/kg	
Acenaphthylene		< 50	50	ug/kg	
Anthracene		< 50	50	ug/kg	
Benzo(a)anthracene		< 8.7	8.7	ug/kg	
Benzo(a)pyrene		< 15	15	ug/kg	
Benzo(b)fluoranthene		< 11	11	ug/kg	
Benzo(k)fluoranthene		< 11	11	ug/kg	
Benzo(ghi)perylene		< 50	50	ug/kg	
Chrysene		< 50	50	ug/kg	
Dibenzo(a,h)anthracene		< 20	20	ug/kg	
Fluoranthene		< 50	50	ug/kg	
Fluorene		< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene		< 29	29	ug/kg	
Naphthalene		574	25	ug/kg	
Phenanthrene		93	50	ug/kg	
Pyrene		< 50	50	ug/kg	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: SB-31 @ 4-6'
Sample No: 15-1022-023

Date Collected: 03/10/15
Time Collected: 15:10
Date Received: 03/12/15
Date Reported: 03/20/15

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Solids, Total	**Method: 2540B**				
Analysis Date: 03/12/15					
Total Solids		93.41		%	
BTEX Organic Compounds	**Method: 5035A/8260B**				
Analysis Date: 03/16/15					
Benzene		16,800	5.0	ug/kg	
Ethylbenzene		243,000	5.0	ug/kg	
Toluene		27,100	5.0	ug/kg	
Xylene, Total		1,190,000	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons	**Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/19/15			Preparation Date: 03/18/15		
Acenaphthene		393	50	ug/kg	
Acenaphthylene		< 50	50	ug/kg	
Anthracene		60	50	ug/kg	
Benzo(a)anthracene		21.1	8.7	ug/kg	
Benzo(a)pyrene		< 15	15	ug/kg	
Benzo(b)fluoranthene		< 11	11	ug/kg	
Benzo(k)fluoranthene		< 11	11	ug/kg	
Benzo(ghi)perylene		< 50	50	ug/kg	
Chrysene		< 50	50	ug/kg	
Dibenzo(a,h)anthracene		< 20	20	ug/kg	
Fluoranthene		65	50	ug/kg	
Fluorene		432	50	ug/kg	
Indeno(1,2,3-cd)pyrene		< 29	29	ug/kg	
Naphthalene		20,700	25	ug/kg	
Phenanthrene		935	50	ug/kg	
Pyrene		149	50	ug/kg	

CHAIN OF CUSTODY RECORD

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com
IEPA Certification #100292

Illico (PCB No. 2017-084) R. 074

Company Name: ERS of Illinois, Inc.
Street Address: 2272 Cornell Avenue
City: Montgomery State: IL Zip: 60538
Phone: 630 896 4090 Fax: 630 896 4099 e-mail:
Send Report To: Karen Dixon Via: Fax ☐ e-mail ☐
Sampled By: Karen Dixon

Project I.D.: Premcor 2093
P.O. #.:

Matrix Codes: S = Soil W = Water O = Other

Date/Time Taken	Sample Description	Matrix	Analyses: BTEX	Analyses: PNA	Comments	Lab I.D.
3/10/15 0840	MW-9 @ 2-4'	S	X	X		15-1022-001
0845	MW-9 @ 4-6'					002
0930	MW-10 @ 0-4'					003
1010	MW-11 @ 2-4'					004
1015	MW-11 @ 4-6'					005
1100	MW-12 @ 2-4'				HOT	006
1110	MW-12 @ 4-6'				HOT	007
1140	MW-13 @ 2-4'					008
1145	MW-13 @ 4-6'				HOT	009
1210	MW-14 @ 2-4'					010
1215	MW-14 @ 4-6'				HOT	011
1300	MW-15 @ 2-4'					012

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes ✓ No__ 3.1 ºC
Received within 6 hrs. of collection:_____
Ice Present: Yes ✓ No__

Sample Refrigerated: Yes__ No__
Refrigerator Temperature:_____ºC
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____ºC

Preservation Requirements Met: ☐ Yes ☐ No
Need to meet: IL. TACO ☐ IN. RISC ☐

Notes and Special Instructions: _____

Relinquished By: K Dixon Date/Time 3/12/15 0930 Received By: [signature] Date/Time 3/12/15 930
Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

Rev. 6/12

CHAIN OF CUSTODY RECORD

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com
IEPA Certification #100292

Company Name: ERS of IL
Street Address: 2272 Cornell Avenue
City: Montgomery State: IL Zip 60538
Phone: 6308964090 Fax: 8896 4099 e-mail:
Send Report To: Karen Dixon Via: Fax ☐ e-mail ☐
Sampled By: Karen Dixon

Project I.D.: Premcor 2093
P.O. #.:

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	BTEX	PNA	Comments	Lab I.D.
3/10/15 1310	MW-15 @ 4-6'	S	X	X		15-1022-013
1350	SB-27 @ 0-4'					014
1355	SB-27 @ 4-7'					015
1410	SB-28 @ 0-2'					016
1415	SB-28 @ 4-6'					017
1420	SB-29 @ 2-4'					018
1425	SB-29 @ 4-6'					019
1440	SB-30 @ 0-2'					020
1440	SB-30 @ 2-4'					021
1500	SB-31 @ 2-4					022
1510	SB-31 @ 4-6'					023

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6°C Yes ✓ No__ 3.1 °C
Received within 6 hrs. of collection:
Ice Present: Yes ✓ No__

Sample Refrigerated: Yes__ No__
Refrigerator Temperature: °C
5035 Vials Frozen: Yes__ No__
Freezer Temperature: °C

Preservation Requirements Met: ☑ Yes ☐ No
Need to meet: IL. TACO ☐ IN. RISC ☐

Notes and Special Instructions:

Relinquished By: K Dixon Date/Time 3/12/15 0930 Received By: [signature] Date/Time 3/12/15 930
Relinquished By: Date/Time Received By: Date/Time

Rev. 6/12

Illinois Environmental Protection Agency

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

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 – 57.17). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation, orally or in writing, in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/44 and 57.17). This form has been approved by the Forms Management Center.

Leaking Underground Storage Tank Program
Laboratory Certification for Chemical Analysis

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC# (10-digit): 1430655263

Site Name: Former Clark Store #2093

Site Address (Not a P.O. Box): 3712 North University Street

City: Peoria County: Peoria ZIP Code: 61614

Leaking UST Technical File

B. Sample Collector

I certify that:

1. Appropriate sampling equipment/methods were utilized to obtain representative samples. KP (Initial)
2. Chain-of-custody procedures were followed in the field. KP (Initial)
3. Sample integrity was maintained by proper preservation. KP (Initial)
4. All samples were properly labeled. KP (Initial)

C. Laboratory Representative

I certify that:

1. Proper chain-of-custody procedures were followed as documented on the chain-of-custody forms SSV (Initial)
2. Sample integrity was maintained by proper preservation. SSV (Initial)
3. All samples were properly labeled. SSV (Initial)
4. Quality assurance/quality control procedures were established and carried out. SSV (Initial)
5. Sample holding times were not exceeded. SV (Initial)

6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses. SW (Initial)

7. An accredited lab performed quantitative analysis using test methods identified in 35 IAC 186.180 (for samples collected on or after January 1, 2003). SW (Initial)

D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector

Name Karen Dixon
Title Geologist
Company ERS of Illinois, Inc.
Address 2272 Cornell Avenue
City Montgomery
State Illinois
Zip Code 60538
Phone 630-896-4090
Signature K Dixon
Date 3/10/15

Laboratory Representative

Name STAN ZANORSKI
Title PROJECT MANAGER
Company First Environmental Laboratories, Inc.
Address 1600 Shore Road, Suite D
City Naperville
State Illinois
Zip Code 60563
Phone 630-778-1200
Signature
Date 3/20/15

ATTACHMENT C

Illinois Environmental Protection Agency

Well Completion Report

Incident No:	923441	Well No:	MW-9
Site Name:	Former Clark Store #2093	Date Drilled Start:	03/10/2015
Drilling Contractor:	GeoServe, Inc.	Date Completed:	03/10/2015
Driller:		Geologist:	Karen Dixon
Drilling Method:	Hollow Stem Auger	Drilling Fluids (type):	NA

Annular Space Details

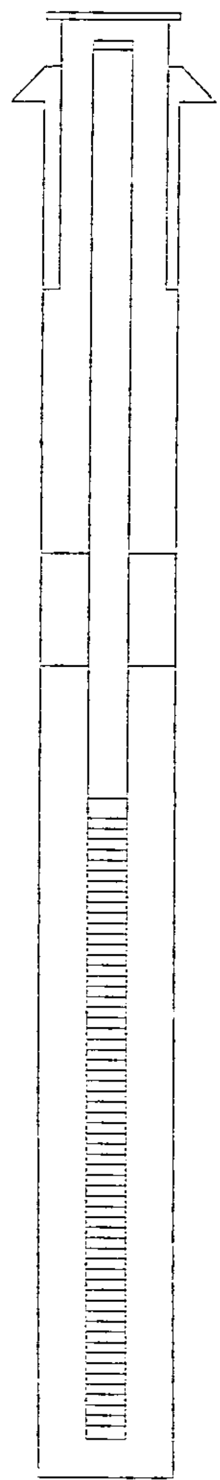
Type of Surface Seal: Concrete

Type of Annular Sealant: Bentonite Chips

Type of Bentonite Seal (Granular, Pellet): Bentonite

Type of Sand Pack: 10/20 Silica Sand

Elevations - .01 ft.



98.13	Top of Protective Casing
97.88	Top of Riser Pipe
NA	Ground Surface
97.71	Top of Annular Sealant
NA	Casing Stickup
97.71	Top of Seal
1.67	Total Seal Interval
96.04	Top of Sand
95.04	Top of Screen
10.00	Total Screen Interval
85.04	Bottom of Screen
82.13	Bottom of Borehole

Well Construction Materials

	Stainless Steel Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint		Schedule 40	
Riser pipe above w.t.		Schedule 40	
Riser pipe below w.t.			
Screen		Schedule 40	
Coupling joint screen to riser		Flush Thread	
Protective casing			

Measurements to 0.01 ft. (where applicable)

Riser pipe length	2.84
Screen length	10.0
Screen slot size	.010
Protective casing length	NA
Depth to water	6.10
Elevation of water	91.78
Free Product thickness	NA
Gallons removed (develop)	5.40
Gallons removed (purge)	
Other	

Completed by: Karen Dixon

The Agency is authorized to require this information under 415 ILCS 5/4 and 21. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000.00 for each day the failure continues, a fine up to $50,000.00 and imprisonment up to five years. This form has been approved by the Forms Management Center.

For Groundwater Monitoring Wells installed due to a release of petroleum.

IL 532 2274

Illinois Environmental Protection Agency

Well Completion Report

Incident No: 923441
Well No: MW-10
Site Name: Former Clark Store #2093
Date Drilled Start: 03/10/2015
Drilling Contractor: GeoServe, Inc.
Date Completed: 03/10/2015
Driller:
Geologist: Karen Dixon
Drilling Method: Hollow Stem Auger
Drilling Fluids (type): NA

Annular Space Details

Type of Surface Seal: Concrete
Type of Annular Sealant: Bentonite Chips
Type of Bentonite Seal (Granular, Pellet): Bentonite
Type of Sand Pack: 10/20 Silica Sand

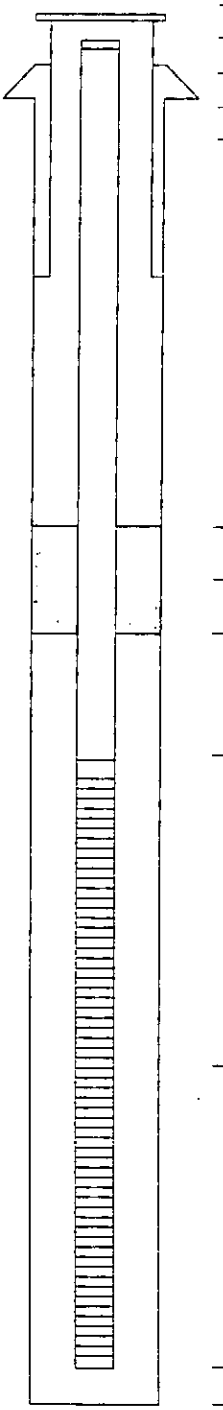
Well Construction Materials

	Stainless Steel Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint		Schedule 40	
Riser pipe above w.t.		Schedule 40	
Riser pipe below w.t.			
Screen		Schedule 40	
Coupling joint screen to riser		Flush Thread	
Protective casing			

Measurements to 0.01 ft. (where applicable)

Riser pipe length	2.63
Screen length	10.0
Screen slot size	.010
Protective casing length	NA
Depth to water	7.03
Elevation of water	91.91
Free Product thickness	NA
Gallons removed (develop)	4.50
Gallons removed (purge)	
Other	

Elevations - .01 ft.



99.19 Top of Protective Casing
98.94 Top of Riser Pipe
NA Ground Surface
98.69 Top of Annular Sealant
NA Casing Stickup

98.69 Top of Seal
1.38 Total Seal Interval
97.31 Top of Sand

96.31 Top of Screen

10.00 Total Screen Interval

86.31 Bottom of Screen
83.19 Bottom of Borehole

Completed by: Karen Dixon

For Groundwater Monitoring Wells installed due to a release of petroleum.
IL. 532 2274

Illinois Environmental Protection Agency

Well Completion Report

Incident No: 923441

Well No: MW-11

Site Name: Former Clark Store #2093

Date Drilled Start: 03/10/2015

Drilling Contractor: GeoServe, Inc.

Date Completed: 03/10/2015

Driller:

Geologist: Karen Dixon

Drilling Method: Hollow Stem Auger

Drilling Fluids (type): NA

Annular Space Details

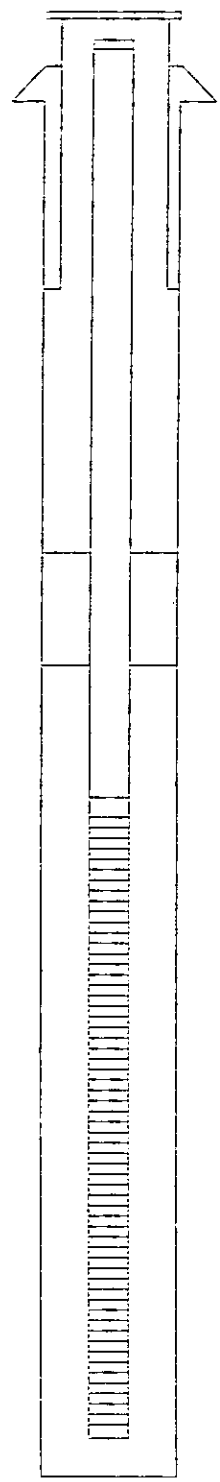
Type of Surface Seal: Concrete

Type of Annular Sealant: Bentonite Chips

Type of Bentonite Seal (Granular, Pellet): Bentonite

Type of Sand Pack: 10/20 Silica Sand

Elevations - .01 ft.



99.97 Top of Protective Casing
99.72 Top of Riser Pipe
NA Ground Surface
99.55 Top of Annular Sealant
NA Casing Stickup

99.55 Top of Seal
1.72 Total Seal Interval
97.83 Top of Sand
96.83 Top of Screen

10.00 Total Screen Interval

86.83 Bottom of Screen
83.97 Bottom of Borehole

Well Construction Materials

	Stainless Steel Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint		Schedule 40	
Riser pipe above w.t.		Schedule 40	
Riser pipe below w.t.			
Screen		Schedule 40	
Coupling joint screen to riser		Flush Thread	
Protective casing			

Measurements to 0.01 ft. (where applicable)

Riser pipe length	2.89
Screen length	10.0
Screen slot size	.010
Protective casing length	NA
Depth to water	7.76
Elevation of water	91.96
Free Product thickness	NA
Gallons removed (develop)	4.10
Gallons removed (purge)	
Other	

Completed by: Karen Dixon

For Groundwater Monitoring Wells installed due to a release of petroleum.

IL 532 2274

Illinois Environmental Protection Agency

(PCB No. 2017-084) R. 082

Well Completion Report

Incident No: 923441 | Well No: MW-12

Site Name: Former Clark Store #2093 | Date Drilled Start: 03/10/2015

Drilling Contractor: GeoServe, Inc. | Date Completed: 03/10/2015

Driller: | Geologist: Karen Dixon

Drilling Method: Hollow Stem Auger | Drilling Fluids (type): NA

Annular Space Details

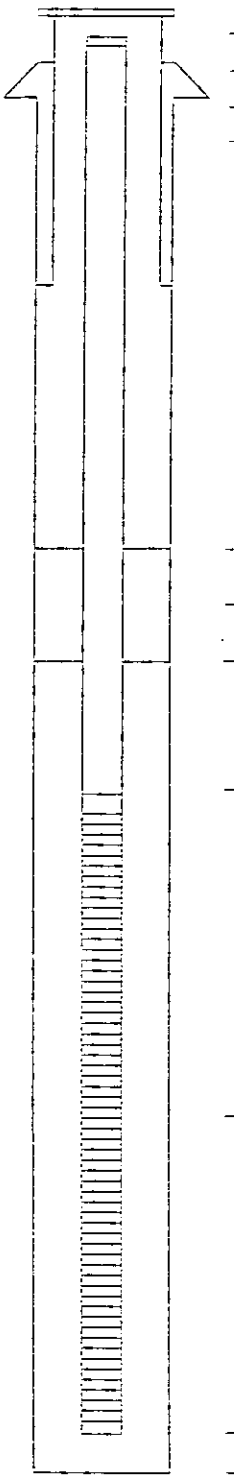
Type of Surface Seal: Concrete

Type of Annular Sealant: Bentonite Chips

Type of Bentonite Seal (Granular, Pellet): Bentonite

Type of Sand Pack: 10/20 Silica Sand

Elevations - .01 ft.



97.30	Top of Protective Casing
97.05	Top of Riser Pipe
NA	Ground Surface
96.88	Top of Annular Sealant
NA	Casing Stickup
96.88	Top of Seal
1.53	Total Seal Interval
95.35	Top of Sand
94.35	Top of Screen
10.00	Total Screen Interval
84.35	Bottom of Screen
81.30	Bottom of Borehole

Well Construction Materials

	Stainless Steel Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint		Schedule 40	
Riser pipe above w.t.		Schedule 40	
Riser pipe below w.t.			
Screen		Schedule 40	
Coupling joint screen to riser		Flush Thread	
Protective casing			

Measurements to 0.01 ft. (where applicable)

Riser pipe length	2.70
Screen length	10.0
Screen slot size	.010
Protective casing length	NA
Depth to water	6.35
Elevation of water	90.70
Free Product thickness	NA
Gallons removed (develop)	5.10
Gallons removed (purge)	
Other	

Completed by: Karen Dixon

For Groundwater Monitoring Wells installed due to a release of petroleum.

IL 532 2274

Illinois Environmental Protection Agency

(EOL No. 2017-084) R. 083

Well Completion Report

Incident No: 923441 | Well No: MW-13

Site Name: Former Clark Store #2093 | Date Drilled Start: 03/10/2015

Drilling Contractor: GeoServe, Inc. | Date Completed: 03/10/2015

Driller: | Geologist: Karen Dixon

Drilling Method: Hollow Stem Auger | Drilling Fluids (type): NA

Annular Space Details

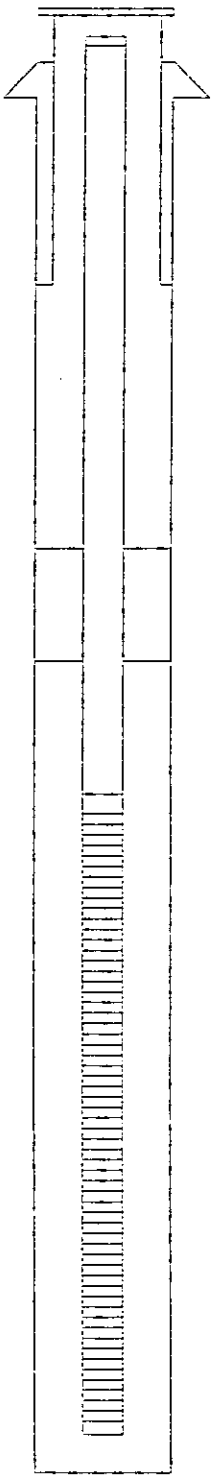
Type of Surface Seal: Concrete

Type of Annular Sealant: Bentonite Chips

Type of Bentonite Seal (Granular, Pellet): Bentonite

Type of Sand Pack: 10/20 Silica Sand

Elevations - .01 ft.



96.98	Top of Protective Casing
96.73	Top of Riser Pipe
NA	Ground Surface
96.56	Top of Annular Sealant
NA	Casing Stickup
96.56	Top of Seal
1.92	Total Seal Interval
94.64	Top of Sand
93.64	Top of Screen
10.00	Total Screen Interval
83.64	Bottom of Screen
80.98	Bottom of Borehole

Well Construction Materials

	Stainless Steel Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint		Schedule 40	
Riser pipe above w.t.		Schedule 40	
Riser pipe below w.t.			
Screen		Schedule 40	
Coupling joint screen to riser		Flush Thread	
Protective casing			

Measurements to 0.01 ft. (where applicable)

Riser pipe length	3.09
Screen length	10.0
Screen slot size	.010
Protective casing length	NA
Depth to water	6.11
Elevation of water	90.62
Free Product thickness	NA
Gallons removed (develop)	5.60
Gallons removed (purge)	
Other	

Completed by: Karen Dixon

For Groundwater Monitoring Wells installed due to a release of petroleum.

IL 532 2274

Illinois Environmental Protection Agency

Well Completion Report

Incident No: 923441

Well No: MW-14

Site Name: Former Clark Store #2093

Date Drilled Start: 03/10/2015

Drilling Contractor: GeoServe, Inc.

Date Completed: 03/10/2015

Driller:

Geologist: Karen Dixon

Drilling Method: Hollow Stem Auger

Drilling Fluids (type): NA

Annular Space Details

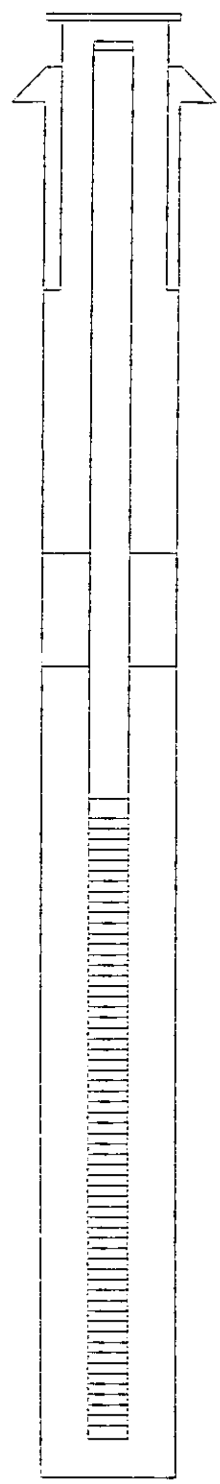
Type of Surface Seal: Concrete

Type of Annular Sealant: Bentonite Chips

Type of Bentonite Seal (Granular, Pellet): Bentonite

Type of Sand Pack: 10/20 Silica Sand

Elevations - .01 ft.



97.77 Top of Protective Casing

97.52 Top of Riser Pipe

NA Ground Surface

97.35 Top of Annular Sealant

NA Casing Stickup

97.35 Top of Seal

1.75 Total Seal Interval

95.60 Top of Sand

94.60 Top of Screen

10.00 Total Screen Interval

84.60 Bottom of Screen

81.77 Bottom of Borehole

Well Construction Materials

	Stainless Steel Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint		Schedule 40	
Riser pipe above w.t.		Schedule 40	
Riser pipe below w.t.			
Screen		Schedule 40	
Coupling joint screen to riser		Flush Thread	
Protective casing			

Measurements to 0.01 ft. (where applicable)

Riser pipe length	2.92
Screen length	10.0
Screen slot size	.010
Protective casing length	NA
Depth to water	5.97
Elevation of water	91.55
Free Product thickness	NA
Gallons removed (develop)	5.60
Gallons removed (purge)	
Other	

Completed by: Karen Dixon

The Agency is authorized to require this information under 415 ILCS 5/4 and 21. Disclosure of this information is required. Failure to do so may result in a civil penalty up to $25,000.00 for each day the failure continues, a fine up to $50,000.00 and imprisonment up to five years. This form has been approved by the Forms Management Center.

For Groundwater Monitoring Wells installed due to a release of petroleum.

IL 532 2274

Illinois Environmental Protection Agency

(PCB No. 2017-084) R. 085

Well Completion Report

Incident No: 923441 | Well No: MW-15

Site Name: Former Clark Store #2093 | Date Drilled Start: 03/10/2015

Drilling Contractor: GeoServe, Inc. | Date Completed: 03/10/2015

Driller: | Geologist: Karen Dixon

Drilling Method: Hollow Stem Auger | Drilling Fluids (type): NA

Annular Space Details

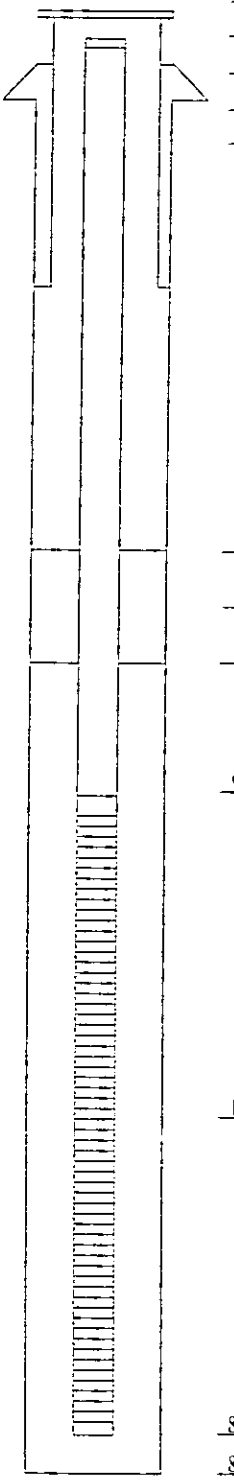
Type of Surface Seal: Concrete

Type of Annular Sealant: Bentonite Chips

Type of Bentonite Seal (Granular, Pellet): Bentonite

Type of Sand Pack: 10/20 Silica Sand

Elevations - .01 ft.



100.64	Top of Protective Casing
100.39	Top of Riser Pipe
NA	Ground Surface
100.22	Top of Annular Sealant
NA	Casing Stickup
100.22	Top of Seal
1.72	Total Seal Interval
98.50	Top of Sand
97.50	Top of Screen
10.00	Total Screen Interval
87.50	Bottom of Screen
84.64	Bottom of Borehole

Well Construction Materials

	Stainless Steel Specify Type	PVC Specify Type	Other Specify Type
Riser coupling joint		Schedule 40	
Riser pipe above w.t.		Schedule 40	
Riser pipe below w.t.			
Screen		Schedule 40	
Coupling joint screen to riser		Flush Thread	
Protective casing			

Measurements to 0.01 ft. (where applicable)

Riser pipe length	2.89
Screen length	10.0
Screen slot size	.010
Protective casing length	NA
Depth to water	6.67
Elevation of water	93.72
Free Product thickness	NA
Gallons removed (develop)	5.00
Gallons removed (purge)	
Other	

Completed by: Karen Dixon

For Groundwater Monitoring Wells installed due to a release of petroleum.

IL. 532 2274

ATTACHMENT D

WASTE MANAGEMENT

10353271

11501 W. Cottonwood Rd
Brimfield, IL, 61517
Ph: 309/565-4281

Peoria City/County Landfill
Ticket# 990728

Customer Name ERS OF ILLINOIS INC ERS OF IL
Ticket Date 04/13/2015
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest na
Destination
PO PREMCOR 2093
Profile 612706IL (EXCLUDED UST CONTAMINATED SOIL)
Generator 117-PREMCOR 2093 PREMCOR 2093

Carrier ERS
Vehicle# 44r
Container
Driver
Check#
Billing # 0000823
Gen EPA ID
Grid

Volume 5.0

	Time	Scale	Operator			
In	04/13/2015 12:42:22	Inbound	SLP	Inbound	Gross	15220 lb
Out	04/13/2015 12:42:38	Outbound	SLP		Tare	15200 lb*
					Net	20 lb
		* Manual Weight			Tons	0.01

Comments

WASTE MANAGEMENT

Product	LD%	Qty	UOM	Rate	Fee	Amount	Origin
1 Declassified SPW-E 100		5	Each				PEORIA

Total Fees
Total Ticket

Driver's Signature

403WM-R

WASTE MANAGEMENT

Industrial Waste Tracking Receipt (Non-Special)

Profile Number: 6127061L

Expiration Date: 04/01/2016

ALL LOADS MUST BE SCHEDULED 24 HOURS IN ADVANCE

2 Copies needed with each driver on their 1st load of each day

Section A **Generator Information**

Generator Name:
Premcor #2093

Technical Contact and Phone:
Karen Dixon 630-896-4090

Street Address: 3712 University Street: Peoria, IL 61614

County: Peoria

On Site Contact: Karen Dixon 630-896-4090

Waste Name: Excluded UST Contaminated Soil

Volume/Number of Drums: 5

Special Conditions:

NO Generator Signature Required

Section B **TRANSPORTER INFORMATION**

Transporter: ERS of Illinois, Inc.

Driver Signature: Matt Wagner

Truck Number: IL-44 **Date:** 4-13-15

Section C **DISPOSAL SITE INFORMATION**

Site Name: Peoria City County #2 **IEPA ID Number:** 1438165003

Authorized Signature

Date (MM/DD/YY)

Load 1 _____ Load 2 _____ Load 3 _____ Load 4 _____ Load 5 _____

ATTACHEMENT E

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

May 01, 2015

Ms. Karen Dixon
ERS of ILLINOIS, INC.
2272 Cornell Avenue
Montgomery, IL 60538

Project ID: Premcor 2093
First Environmental File ID: 15-1975
Date Received: April 24, 2015

Dear Ms. Karen Dixon:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 003596: effective 03/24/2015 through 03/28/2016.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Stan Zaworski
Project Manager

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Case Narrative

ERS of ILLINOIS, INC.
Lab File ID: **15-1975**
Project ID: **Premcor 2093**
Date Received: **April 24, 2015**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The results in this report apply to the samples in the following table:

Laboratory Sample ID	Client Sample Identifier	Date/Time Collected
15-1975-001	MW-2	4/23/2015 16:05
15-1975-002	MW-3	4/23/2015 15:05
15-1975-003	MW-4	4/23/2015 15:30
15-1975-004	MW-5	4/23/2015 14:45
15-1975-005	MW-6	4/23/2015 13:45
15-1975-006	MW-7	4/23/2015 14:10
15-1975-007	MW-9	4/23/2015 13:15
15-1975-008	MW-10	4/23/2015 12:40
15-1975-009	MW-11	4/23/2015 16:25
15-1975-010	MW-12	4/23/2015 16:50
15-1975-011	MW-13	4/23/2015 17:15
15-1975-012	MW-14	4/23/2015 17:40
15-1975-013	MW-15	4/23/2015 18:05

Sample Batch Comments:

Sample acceptance criteria were met.

First Environmental Laboratories, Inc.
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Case Narrative

ERS of ILLINOIS, INC.

Lab File ID: **15-1975**

Project ID: **Premcor 2093**

Date Received: **April 24, 2015**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The following is a definition of flags that may be used in this report:

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L	LCS recovery outside control limits.
C	Sample received in an improper container for this test.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	N	Analyte is not part of our NELAC accreditation.
E	Estimated result; concentration exceeds calibration range.	P	Chemical preservation pH adjusted in lab.
G	Surrogate recovery outside control limits.	Q	Result was determined by a GC/MS database search.
H	Analysis or extraction holding time exceeded.	S	Analysis was subcontracted to another laboratory.
J	Estimated result; concentration is less than routine RL but greater than MDL.	W	Reporting limit elevated due to sample matrix.
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.

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Analytical Report

Client:	ERS of ILLINOIS, INC.	**Date Collected:**	04/23/15
Project ID:	Premcor 2093	**Time Collected:**	16:05
Sample ID:	MW-2	**Date Received:**	04/24/15
Sample No:	15-1975-001	**Date Reported:**	05/01/15

Analyte	Result	R.L.	Units	Flags
BTEX Organic Compounds **Method: 5030B/8260B** Analysis Date: 04/30/15				
Benzene	< 5.0	5.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C** **Preparation Method 3510C** Analysis Date: 04/30/15 Preparation Date: 04/29/15				
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	ERS of ILLINOIS, INC.	**Date Collected:**	04/23/15
Project ID:	Premcor 2093	**Time Collected:**	15:05
Sample ID:	MW-3	**Date Received:**	04/24/15
Sample No:	15-1975-002	**Date Reported:**	05/01/15

Analyte	Result	R.L.	Units	Flags
BTEX Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 04/30/15				
Benzene	< 5.0	5.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 04/30/15		Preparation Date: 04/29/15		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	ERS of ILLINOIS, INC.	**Date Collected:**	04/23/15
Project ID:	Premcor 2093	**Time Collected:**	15:30
Sample ID:	MW-4	**Date Received:**	04/24/15
Sample No:	15-1975-003	**Date Reported:**	05/01/15

Analyte	Result	R.L.	Units	Flags
BTEX Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 04/30/15				
Benzene	896	5.0	ug/L	
Ethylbenzene	2,240	5.0	ug/L	
Toluene	66.9	5.0	ug/L	
Xylene, Total	1,020	5.0	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 04/30/15		Preparation Date: 04/29/15		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	229	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	ERS of ILLINOIS, INC.	**Date Collected:**	04/23/15
Project ID:	Premcor 2093	**Time Collected:**	14:45
Sample ID:	MW-5	**Date Received:**	04/24/15
Sample No:	15-1975-004	**Date Reported:**	05/01/15

Analyte	Result	R.L.	Units	Flags
BTEX Organic Compounds **Method: 5030B/8260B** Analysis Date: 04/30/15				
Benzene	< 5.0	5.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C** **Preparation Method 3510C** Analysis Date: 04/30/15 Preparation Date: 04/29/15				
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	ERS of ILLINOIS, INC.	**Date Collected:**	04/23/15
Project ID:	Premcor 2093	**Time Collected:**	13:45
Sample ID:	MW-6	**Date Received:**	04/24/15
Sample No:	15-1975-005	**Date Reported:**	05/01/15

Analyte	Result	R.L.	Units	Flags
BTEX Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 04/30/15				
Benzene	< 5.0	5.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 04/30/15		Preparation Date: 04/29/15		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	ERS of ILLINOIS, INC.	**Date Collected:**	04/23/15
Project ID:	Premcor 2093	**Time Collected:**	14:10
Sample ID:	MW-7	**Date Received:**	04/24/15
Sample No:	15-1975-006	**Date Reported:**	05/01/15

Analyte	Result	R.L.	Units	Flags
BTEX Organic Compounds **Method: 5030B/8260B** Analysis Date: 04/30/15				
Benzene	14,500	5.0	ug/L	
Ethylbenzene	3,680	5.0	ug/L	
Toluene	24,300	5.0	ug/L	
Xylene, Total	16,700	5.0	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C** **Preparation Method 3510C** Analysis Date: 04/30/15 Preparation Date: 04/29/15				
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	0.18	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	472	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-9
Sample No: 15-1975-007

Date Collected: 04/23/15
Time Collected: 13:15
Date Received: 04/24/15
Date Reported: 05/01/15

Analyte	Result	R.L.	Units	Flags
BTEX Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 04/30/15				
Benzene	< 5.0	5.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 04/30/15		Preparation Date: 04/29/15		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	ERS of ILLINOIS, INC.	**Date Collected:**	04/23/15
Project ID:	Premcor 2093	**Time Collected:**	12:40
Sample ID:	MW-10	**Date Received:**	04/24/15
Sample No:	15-1975-008	**Date Reported:**	05/01/15

Analyte	Result	R.L.	Units	Flags
BTEX Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 04/30/15				
Benzene	126	5.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 04/30/15		Preparation Date: 04/29/15		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	ERS of ILLINOIS, INC.	**Date Collected:**	04/23/15
Project ID:	Premcor 2093	**Time Collected:**	16:25
Sample ID:	MW-11	**Date Received:**	04/24/15
Sample No:	15-1975-009	**Date Reported:**	05/01/15

Analyte	Result	R.L.	Units	Flags
BTEX Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 04/30/15				
Benzene	< 5.0	5.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 04/30/15		Preparation Date: 04/29/15		
Acenaphthene	33	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	7	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	43	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	41	10	ug/L	
Phenanthrene	85	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	ERS of ILLINOIS, INC.	**Date Collected:**	04/23/15
Project ID:	Premcor 2093	**Time Collected:**	16:50
Sample ID:	MW-12	**Date Received:**	04/24/15
Sample No:	15-1975-010	**Date Reported:**	05/01/15

Analyte	Result	R.L.	Units	Flags
BTEX Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 04/30/15				
Benzene	307	5.0	ug/L	
Ethylbenzene	220	5.0	ug/L	
Toluene	189	5.0	ug/L	
Xylene, Total	977	5.0	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 04/30/15		Preparation Date: 04/29/15		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	13	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	ERS of ILLINOIS, INC.	**Date Collected:**	04/23/15
Project ID:	Premcor 2093	**Time Collected:**	17:15
Sample ID:	MW-13	**Date Received:**	04/24/15
Sample No:	15-1975-011	**Date Reported:**	05/01/15

Analyte	Result	R.L.	Units	Flags
BTEX Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 04/30/15				
Benzene	10,200	5.0	ug/L	
Ethylbenzene	2,530	5.0	ug/L	
Toluene	9,900	5.0	ug/L	
Xylene, Total	10,200	5.0	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 04/30/15		Preparation Date: 04/29/15		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	177	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client: ERS of ILLINOIS, INC.
Project ID: Premcor 2093
Sample ID: MW-14
Sample No: 15-1975-012

Date Collected: 04/23/15
Time Collected: 17:40
Date Received: 04/24/15
Date Reported: 05/01/15

Analyte	Result	R.L.	Units	Flags
BTEX Organic Compounds **Method: 5030B/8260B**				
Analysis Date: 04/30/15				
Benzene	386	5.0	ug/L	
Ethylbenzene	315	5.0	ug/L	
Toluene	27.4	5.0	ug/L	
Xylene, Total	1,250	5.0	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3510C**		
Analysis Date: 04/30/15		Preparation Date: 04/29/15		
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

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Analytical Report

Client:	ERS of ILLINOIS, INC.	**Date Collected:**	04/23/15
Project ID:	Premcor 2093	**Time Collected:**	18:05
Sample ID:	MW-15	**Date Received:**	04/24/15
Sample No:	15-1975-013	**Date Reported:**	05/01/15

Analyte	Result	R.L.	Units	Flags
BTEX Organic Compounds **Method: 5030B/8260B** Analysis Date: 04/30/15				
Benzene	< 5.0	5.0	ug/L	
Ethylbenzene	< 5.0	5.0	ug/L	
Toluene	< 5.0	5.0	ug/L	
Xylene, Total	< 5.0	5.0	ug/L	
Polynuclear Aromatic Hydrocarbons **Method: 8270C** **Preparation Method 3510C** Analysis Date: 04/30/15 Preparation Date: 04/29/15				
Acenaphthene	< 10	10	ug/L	
Acenaphthylene	< 10	10	ug/L	
Anthracene	< 5	5	ug/L	
Benzo(a)anthracene	< 0.13	0.13	ug/L	
Benzo(a)pyrene	< 0.2	0.2	ug/L	
Benzo(b)fluoranthene	< 0.18	0.18	ug/L	
Benzo(k)fluoranthene	< 0.17	0.17	ug/L	
Benzo(ghi)perylene	< 0.4	0.4	ug/L	
Chrysene	< 1.5	1.5	ug/L	
Dibenzo(a,h)anthracene	< 0.3	0.3	ug/L	
Fluoranthene	< 2	2	ug/L	
Fluorene	< 2	2	ug/L	
Indeno(1,2,3-cd)pyrene	< 0.3	0.3	ug/L	
Naphthalene	< 10	10	ug/L	
Phenanthrene	< 5	5	ug/L	
Pyrene	< 2	2	ug/L	

CHAIN OF CUSTODY RECORD

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com
IEPA Certification #100292

Company Name: ERS of ILLINOIS, INC.
Street Address: 2272 Connell Ave.
City: Montgomery State: IL Zip: 60538
Phone: 630 896 4090 Fax: e-mail:
Send Report To: Karen Dixon Via: Fax ☐ e-mail ☐
Sampled By: Matt Kaufman

Project I.D.: Premcor 2093
P.O. #.:

Matrix Codes: S = Soil W = Water O = Other

Date/Time Taken	Sample Description	Matrix	Analyses: BTEX 8260	Analyses: PNA 8270	Hold – Do Not Analyze	Comments	Lab I.D.
4-23-15 1605	MW-2	W	X	X			15-1925-001
1505	MW-3						002
1530	MW-4						003
1445	MW-5						004
1345	MW-6						005
1410	MW-7						006
1315	MW-9						007
1240	MW-10						008
1625	MW-11						009
1650	MW-12						010
1715	MW-13						011
1740	MW-14						012

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6°C Yes ✓ No__ 4 °C
Received within 6 hrs. of collection:____
Ice Present: Yes ✓ No__

Sample Refrigerated: Yes__ No__
Refrigerator Temperature:____°C
5035 Vials Frozen: Yes__ No__
Freezer Temperature:____°C

Preservation Requirements Met: ☒ Yes ☐ No
Need to meet: IL. TACO ☒ IN. RISC ☐

Notes and Special Instructions:

Relinquished By: K. Dixon Date/Time 4/24/15 1240 Received By: [signature] Date/Time 4/24/15 1240
Relinquished By:____ Date/Time____ Received By:____ Date/Time____

Rev. 8/14

CHAIN OF CUSTODY RECORD

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com
IEPA Certification #100292

Company Name: ERS of ILLINOIS, INC.
Street Address: 2272 Connell Ave.
City: Montgomery State: IL Zip: 60538
Phone: 630 896 4090 Fax: e-mail:
Send Report To: Karen Dixon Via: Fax ☐ e-mail ☐
Sampled By: Matt Kaufman

Project I.D.: Premcor 2093
P.O. #.:

Matrix Codes: S = Soil W = Water O = Other

Date/Time Taken	Sample Description	Matrix	BTEX 8260	PNA 8270						Hold = Do Not Analyze	Comments	Lab I.D.
4-23-15/1805	MW-15	W	X	X								15-1925-017

Analyses

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6°C Yes No 4 °C
Received within 6 hrs. of collection:
Ice Present: Yes No

Sample Refrigerated: Yes No
Refrigerator Temperature: °C
5035 Vials Frozen: Yes No
Freezer Temperature: °C

Preservation Requirements Met: Yes ☐ No
Need to meet: IL. TACO ☒ IN. RISC ☐

Notes and Special Instructions:

Relinquished By: K Dixon Date/Time 4/24/15 1240 Received By: Date/Time 4/24/15 1240
Relinquished By: Date/Time Received By: Date/Time

Rev. 8/14

Illico (PCB No. 2017-084) R. 107

Illinois Environmental Protection Agency

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

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 – 57.17). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation, orally or in writing, in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/44 and 57.17). This form has been approved by the Forms Management Center.

Leaking Underground Storage Tank Program
Laboratory Certification for Chemical Analysis

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC# (10-digit): 1430655263

Site Name: Former Clark Store #2093

Site Address (Not a P.O. Box): 3712 North University Street

City: Peoria County: Peoria ZIP Code: 61614

Leaking UST Technical File

B. Sample Collector

I certify that:

1. Appropriate sampling equipment/methods were utilized to obtain representative samples. MK (Initial)
2. Chain-of-custody procedures were followed in the field. MK (Initial)
3. Sample integrity was maintained by proper preservation. MK (Initial)
4. All samples were properly labeled. MK (Initial)

C. Laboratory Representative

I certify that:

1. Proper chain-of-custody procedures were followed as documented on the chain-of-custody forms SS✓ (Initial)
2. Sample integrity was maintained by proper preservation. SS✓ (Initial)
3. All samples were properly labeled. SS✓ (Initial)
4. Quality assurance/quality control procedures were established and carried out. SS✓ (Initial)
5. Sample holding times were not exceeded. SS✓ (Initial)

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and not the scanning or filming processes.

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(217) 525-5860

6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses. SSL (Initial)

7. An accredited lab performed quantitative analysis using test methods identified in 35 IAC 186.180 (for samples collected on or after January 1, 2003). SS✓ (Initial)

D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector

Name Matt Kaufman
Title Staff Geologist
Company ERS of Illinois, Inc.
Address 2272 Cornell Avenue
City Montgomery
State Illinois
Zip Code 60538
Phone 630-896-4090
Signature Matt Kaufman
Date 4-23-15

Laboratory Representative

Name STAN ZAWORSKI
Title PROJECT MANAGER
Company First Environmental Laboratories, Inc.
Address 1600 Shore Road, Suite D
City Naperville
State Illinois
Zip Code 60563
Phone 630-778-1200
Signature
Date 5/1/15

ATTACHMENT F

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NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number 14308[illegible]	2. Page 1 of 1	3. Emergency Response Phone 520 [illegible]	4. Waste Tracking Number IL15-14-[illegible]

5. Generator's Name and Mailing Address [illegible] #2013
5712 N. [illegible]

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: ERS of Illinois, Inc. — U.S. EPA ID Number: ILR000014715

7. Transporter 2 Company Name: [illegible] Environmental — U.S. EPA ID Number: ILD[illegible]

8. Designated Facility Name and Site Address — U.S. EPA ID Number

Facility's Phone:

9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1. Non-Hazardous Liquid Waste Non Regulated by DOT	1	DM	45	G
2.				
3.				
4.				

13. Special Handling Instructions and Additional Information

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: [illegible] — Signature: [illegible] — Month 4 Day 23 Year 15

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Matt K[illegible] — Signature: [illegible] — Month 4 Day 23 Year 15

Transporter 2 Printed/Typed Name: [illegible] — Signature: [illegible] — Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month Day Year

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

ATTACHMENT G

General Information for the Budget and Billing Forms

LPC #: 1430655263 County: Peoria

City: Peoria Site Name: Former Clark Store # 2093

Site Address: 3712 North University Street

IEMA Incident No.: 923441

IEMA Notification Date: 12/03/1992

Date this form was prepared: Sep 17, 2015

This form is being submitted as a (check one, if applicable):

- ☒ Budget Proposal
- ☐ Budget Amendment (Budget amendments must include only the costs over the previous budget.)
- ☐ Billing Package

Please provide the name(s) and date(s) of report(s) documenting the costs requested:

Name(s):

Date(s):

This package is being submitted for the site activities indicated below:

35 Ill. Adm. Code 734:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☒ Site Investigation ..... Stage 1: ☐ Actual Costs Stage 2: ☒ Actual Stage 3: ☐
- ☐ Corrective Action

35 Ill. Adm. Code 732:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☐ Site Classification
- ☐ Low Priority Corrective Action
- ☐ High Priority Corrective Action

35 Ill. Adm. Code 731:

- ☐ Site Investigation
- ☐ Corrective Action

General Information for the Budget and Billing Forms

The following address will be used as the mailing address for checks and any final determination letters regarding payment from the Fund.

Pay to the order of: The Premcor Refining Group Inc.

Send in care of: Mr. Timothy J. Mauntel, P.E., R.G.

Address: 201 East Hawthorne Street

City: Hartford State: IL Zip: 62048

The payee is the: Owner ☐ Operator ☒ (Check one or both.)

Signature of the owner or operator of the UST(s) (required)

If you have a change of address, click here to print off a W-9 Form.

Number of petroleum USTs in Illinois presently owned or operated by the owner or operator; any subsidiary, parent or joint stock company of the owner or operator; and any company owned by any parent, subsidiary or joint stock company of the owner or operator:

Fewer than 101: ☐ 101 or more: ☒

Number of USTs at the site: 5 (Number of USTs includes USTs presently at the site and USTs that have been removed.)

Number of incidents reported to IEMA for this site: 1

Incident Numbers assigned to the site due to releases from USTs: 923441

Please list all tanks that have ever been located at the site and tanks that are presently located at the site.

Product Stored in UST	Size (gallons)	Did UST have a release?	Incident No.	Type of Release Tank Leak / Overfill / Piping Leak
unleaded gasoline	12,000	Yes ☒ No ☐	923441	Overfill
unleaded gasoline	12,000	Yes ☒ No ☐	923441	Overfill
unleaded gasoline	12,000	Yes ☒ No ☐	923441	Overfill
diesel fuel	12,000	Yes ☒ No ☐	923441	Overfill
kerosene	6,000	Yes ☒ No ☐	923441	Overfill
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		

Add More Rows | Undo Last Add

Budget Summary

Choose the applicable regulation: (•) 734 ( ) 732

734	Free Product	Stage 1 Site Investigation	Stage 2 Site Investigation	Stage 3 Site Investigation	Corrective Action
Drilling and Monitoring Well Costs Form	$	$	$ 5,783.38	$	$
Analytical Costs Form	$	$	$ 5,426.10	$	$
Remediation and Disposal Costs Form	$	$	$ 1,504.60	$	$
UST Removal and Abandonment Costs Form	$	$	$	$	$
Paving, Demolition, and Well Abandonment Costs Form	$	$	$	$	$
Consulting Personnel Costs Form	$	$	$ 18,978.20	$	$
Consultant's Materials Costs Form	$	$	$ 1,122.98	$	$
Handling Charges Form	Handling charges will be determined at the time a billing package is submitted to the Illinois EPA. The amount of allowable handling charges will be determined in accordance with the Handling Charges Form.				
Total	$	$	$ 32,815.26	$	$

Drilling and Monitoring Well Costs Form

1. Drilling

Number of Borings to Be Drilled	Type HSA/PUSH/ Injection	Depth (feet) of Each Boring	Total Feet Drilled	Reason for Drilling
5	PUSH	8+8+8 +8+12 8.80	44.00	Soil Borings Stage 2 SB-27 ... SB-31
7 5	HSA	16 22.40	112.00	Soil Borings Stage 2 / Monitoring Wells MW-9 ... MW-15

	Total Feet	Rate per Foot ($)	Total Cost
Total Feet via HSA:	112.00	27.39	$3,067.68
Total Feet via PUSH:	44.00	21.06	$926.64
Total Feet for Injection via PUSH:			
		Total Drilling Costs:	$3,994.32

2. Monitoring / Recovery Wells

Number of Wells	Type of Well HSA / PUSH / 4" or 6" Recovery / 8" Recovery	Diameter of Well (inches)	Depth of Well (feet)	Total Feet of Wells to Be Installed
7	HSA	2.00	13.00	91.00

Well Installation	Total Feet	Rate per Foot ($)	Total Cost
Total Feet via HSA:	91.00	19.66	$1,789.06
Total Feet via PUSH:			
Total Feet of 4" or 6" Recovery:			
Total Feet of 8" or Greater Recovery:			
		Total Well Costs:	$1,789.06

Total Drilling and Monitoring Well Costs:	$5,783.38

Analytical Costs Form

Laboratory Analysis	Number of Samples		Cost ($) per Analysis		Total per Parameter
Chemical Analysis					
BETX Soil with MTBE EPA 8260		X		=	
BETX Water with MTBE EPA 8260		X		=	
COD (Chemical Oxygen Demand)		X		=	
Corrosivity		X		=	
Flash Point or Ignitability Analysis EPA 1010		X		=	
Fraction Organic Carbon Content (f_{oc}) ASTM-D 2974-00		X		=	
Fat, Oil, & Grease (FOG)		X		=	
LUST Pollutants Soil - analysis must include volatile, base/ neutral, polynuclear aromatics and metals list in Section 732. Appendix B and 734.Appendix B		X		=	
Dissolved Oxygen (DO)		X		=	
Paint Filter (Free Liquids)		X		=	
PCB / Pesticides (combination)		X		=	
PCBs		X		=	
Pesticides		X		=	
pH		X		=	
Phenol		X		=	
Polynuclear Aromatics PNA, or PAH SOIL EPA 8270	23	X	95.00	=	$2,185.00
Polynuclear Aromatics PNA, or PAH WATER EPA 8270	13	X	95.00	=	$1,235.00
Reactivity		X		=	
SVOC - Soil (Semi-Volatile Organic Compounds)		X		=	
SVOC - Water (Semi-Volatile Organic Compounds)		X		=	
TKN (Total Kjeldahl) "nitrogen"		X		=	
TPH (Total Petroleum Hydrocarbons)		X		=	
VOC (Volatile Organic Compounds) - Soil (Non-Aqueous)		X		=	
VOC (Volatile Organic Compounds) - Water		X		=	
BETX Soil EPA 8260	23	X	45.00	=	$1,035.00
BETX Groundwater EPA 8260	13	X	45.00	=	$585.00
		X		=	
		X		=	
		X		=	
Geo-Technical Analysis					
Soil Bulk Density (p_b) ASTM D2937-94		X		=	
Ex-situ Hydraulic Conductivity / Permeability		X		=	
Moisture Content (w) ASTM D2216-92 / D4643-93		X		=	
Porosity		X		=	
Rock Hydraulic Conductivity Ex-situ		X		=	
Sieve / Particle Size Analysis ASTM D422-63 / D1140-54		X		=	
Soil Classification ASTM D2488-90 / D2487-90		X		=	
Soil Particle Density (p_s) ASTM D854-92		X		=	
Organic Carbon (ASTM-D 2974-87)		X		=	
		X		=	
		X		=	

Analytical Costs Form

Metals Analysis					
Soil preparation fee for Metals TCLP Soil (one fee per soil sample)		X		=	
Soil preparation fee for Metals Total Soil (one fee per soil sample)		X		=	
Water preparation fee for Metals Water (one fee per water sample)		X		=	
Arsenic TCLP Soil		X		=	
Arsenic Total Soil		X		=	
Arsenic Water		X		=	
Barium TCLP Soil		X		=	
Barium Total Soil		X		=	
Barium Water		X		=	
Cadmium TCLP Soil		X		=	
Cadmium Total Soil		X		=	
Cadmium Water		X		=	
Chromium TCLP Soil		X		=	
Chromium Total Soil		X		=	
Chromium Water		X		=	
Cyanide TCLP Soil		X		=	
Cyanide Total Soil		X		=	
Cyanide Water		X		=	
Iron TCLP Soil		X		=	
Iron Total Soil		X		=	
Iron Water		X		=	
Lead TCLP Soil		X		=	
Lead Total Soil		X		=	
Lead Water		X		=	
Mercury TCLP Soil		X		=	
Mercury Total Soil		X		=	
Mercury Water		X		=	
Selenium TCLP Soil		X		=	
Selenium Total Soil		X		=	
Selenium Water		X		=	
Silver TCLP Soil		X		=	
Silver Total Soil		X		=	
Silver Water		X		=	
Metals TCLP Soil (a combination of all metals) RCRA		X		=	
Metals Total Soil (a combination of all metals) RCRA		X		=	
Metals Water (a combination of all metals) RCRA		X		=	
		X		=	
		X		=	
		X		=	
		X		=	
Other					
EnCore® Sampler, purge-and-trap sampler, or equivalent sampling device	23	X	11.70	=	$269.10
Sample Shipping per sampling event[1]	2	X	58.50	=	$117.00

[1]A sampling event, at a minimum, is all samples (soil and groundwater) collected in a calendar day.

Total Analytical Costs: $ 5,426.10

Remediation and Disposal Costs Form

A. Conventional Technology

Excavation, Transportation, and Disposal of contaminated soil and/or the 4-foot backfill material removal during early action activities:

Number of Cubic Yards	Cost per Cubic Yard ($)	Total Cost

Backfilling the Excavation:

Number of Cubic Yards	Cost per Cubic Yard ($)	Total Cost

Overburden Removal and Return:

Number of Cubic Yards	Cost per Cubic Yard ($)	Total Cost

B. Alternative Technology

Alternative Technology Selected:	
Number of Cubic Yards of Soil to Be Remediated	
Total Non-Consulting Personnel Costs Summary Sheet ($)	
Total Remediation Materials Costs Summary Sheet ($)	
Total Cost of the System	

Remediation and Disposal Costs Form

C. Groundwater Remediation and/or Free Product Removal System

Total Non-Consulting Personnel Costs Summary Sheet ($)	
Total Remediation Materials Costs Summary Sheet ($)	
Total Cost of the System	

D. Groundwater and/or Free Product Removal and Disposal

☐ Subpart H minimum payment amount applies.

Number of Gallons	Cost per Gallon ($)	Total Cost ($)

E. Drum Disposal

☐ Subpart H minimum payment amount applies.

Number of Drums of Solid Waste	Cost per Drum ($)	Total Cost ($)
5	297.77	1,488.85
Number of Drums of Liquid Waste	Cost per Drum ($)	Total Cost ($)
1	15.75	15.75
Total Drum Disposal Costs		1,504.60

Total Remediation and Disposal Costs:	$1,504.60

Consulting Personnel Costs Form

Employee Name	Personnel Title	Hours	Rate* ($)	Total Cost
Remediation Category	**Task**			
Scott Beasley	Professional Engineer (Sr.)	10.00	141.76	$1,417.60
Stage 2-Plan	Stage 2 Plan Review, Stage 2 Budget Review, Reimbursement Claims			
Karen Dixon	Senior Project Manager	67.50	109.05	$7,360.88
Stage 2-Plan	PM Reporting, Stage 2 Plan, Stage 2 Budget, Site Investigation, ~~Stage 3 Report~~, IEPA Corresponde			
Karen Dixon	Geologist III	9.50	95.96	$911.62
Stage 2-Field	Drilling, GW Sampling			
Karen Dixon	Senior Acct. Technician	15.00	59.98	$899.70
Stage 2-~~Budget~~ Pay	Reimbursement Claim			
Karen Dixon	Senior Draftperson/CAD	8.75	65.43	$572.51
Stage 2-Plan	Drafting			
David Mannia	Senior Scientist	26.75	92.69	$2,479.46
Stage 2-Plan	IEPA Correspondence, Stage 2 Plan			
David Mannia	Senior Draftperson/CAD	1.50	65.43	$98.14
Stage 2-Plan	Drafting			
Matt Kaufman	Geologist I	48.25	76.33	$3,682.92
Stage 2-Field	Drilling, Survey of MWs, GW Sampling, Boring Logs, Data Entry			
Matt Kaufman	Draftperson/CAD I	21.00	43.62	$916.02
Stage 2-Results	Drafting			

Employee Name	Personnel Title	Hours	Rate* ($)	Total Cost
Remediation Category	**Task**			
Logan Williams	Account Technician I	6.75	38.17	$257.65
Stage 1-Pay	Reimbursement Claim			
Matt Kaufman	Account Technician I	10.00	38.17	$381.70
Stage 2-Pay	Reimbursement Claim			

*Refer to the applicable Maximum Payment Amounts document.

Total of Consulting Personnel Costs	$18,978.20

Consultant's Materials Costs Form

Materials, Equipment, or Field Purchase	Time or Amount Used	Rate ($)	Unit	Total Cost
Remediation Category	**Description/Justification**			
Survey Equipment	1.00	65.00	day	$65.00
Stage 2-Field	Survey TOC of Monitoring Wells			
Interface Probe	1.00	75.00	day	$75.00
Stage 2-Field	Groundwater Sampling			
Vehicle	1.00	200.00	day	$200.00
Stage 2-Field	Drilling			
Stake Bed Truck	1.00	275.00	day	$275.00
Stage 2-Field	Groundwater Sampling			
Nitrile Gloves	2.50	25.00	day	$62.50
Stage 2-Field	Groundwater Sampling			
Disposable Bailer	13.00	13.00	each	$169.00
Stage 2-Field	Groundwater Sampling			
Rope	1.00	5.00	each	$5.00
Stage 2-Field	Groundwater Sampling			
Per Diem	1.00	45.00	day	$45.00
Stage 2-Field	Per Diem			
Hotel	1.00	116.48	day	$116.48
Stage 2-Field	Hotel			

Materials, Equipment, or Field Purchase	Time or Amount Used	Rate ($)	Unit	Total Cost
Remediation Category	**Description/Justification**			
PID	1.00	110.00	day	$110.00

Total of Consultant Materials Costs	$1,122.98

Benanti, Trent

From: Benanti, Trent
Sent: Thursday, January 21, 2016 2:51 PM
To: Karen Dixon (kdixon@ersinc.net)
Subject: Leaking UST Incident #923441

Re: LPC #1430655263 – Peoria County
Peoria/Illico, Inc.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Ms. Dixon:

I am currently reviewing the actual costs budget for the Stage 2 site investigation and noticed that it does not contain the Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form. Please email the Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form to me by 01/28/2016. Thanks.

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Karen Dixon <kdixon@ersinc.net>
Sent: Wednesday, January 27, 2016 9:26 AM
To: Benanti, Trent
Subject: RE: Leaking UST Incident #923441
Attachments: 2093 cert.pdf

Good Morning,

Attached is the requested Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification. Please let me know if you need anything else.

Thank you,
Karen

From: Benanti, Trent [mailto:Trent.Benanti@Illinois.gov]
Sent: Thursday, January 21, 2016 1:51 PM
To: Karen Dixon
Subject: Leaking UST Incident #923441

Re: LPC #1430655263 – Peoria County
Peoria/Illico, Inc.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

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Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form

I hereby certify that I intend to seek payment from the UST Fund for costs incurred while performing corrective action activities for Leaking UST incident 923441. I further certify that the costs set forth in this budget are for necessary activities and are reasonable and accurate to the best of my knowledge and belief. I also certify that the costs included in this budget are not for corrective action in excess of the minimum requirements of 415 ILCS 5/57, no costs are included in this budget that are not described in the corrective action plan, and no costs exceed Subpart H: Maximum Payment Amounts, Appendix D Sample Handling and Analysis amounts, and Appendix E Personnel Titles and Rates of 35 Ill. Adm. Code 732 or 734. I further certify that costs ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 732.606 or 734.630 are not included in the budget proposal or amendment. Such ineligible costs include but are not limited to:

- Costs associated with ineligible tanks.
- Costs associated with site restoration (e.g., pump islands, canopies).
- Costs associated with utility replacement (e.g., sewers, electrical, telephone, etc.).
- Costs incurred prior to IEMA notification.
- Costs associated with planned tank pulls.
- Legal fees or costs.
- Costs incurred prior to July 28, 1989.
- Costs associated with installation of new USTs or the repair of existing USTs.

Owner/Operator: The Premcor Refining Group Inc.

Authorized Representative: Timothy J. Mauntel, P.E., R.G. Title: Manager Environmental Liabilities

Signature: [signature] Date: 1/26/16

Subscribed and sworn to before me the 26 day of January, 2016

Deanna R Hall (Notary Public) Seal:

DEANNA R. HALL
My Commission Expires
April 10, 2018
Franklin County
Commission # 14603903

In addition, I certify under penalty of law that all activities that are the subject of this plan, budget, or report were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan, budget, or report and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in the plan, budget, or report has been completed in accordance with the Environmental Protection Act [415 ILCS 5/] 35 Ill. Adm. Code 732 or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

L.P.E./L.P.G.: Scott Beasley, P.E. L.P.E./L.P.G. Seal:

L.P.E./L.P.G. Signature: [signature] Date: 1/26/16

Subscribed and sworn to before me the 26th day of January, 2016

[signature] (Notary Public) Seal:

BRENDA K ADAMS-TURK
Hancock County
NOTARY PUBLIC
Comm. # 653751
NOTARY SEAL
My Commission Expires
STATE OF INDIANA

The Illinois EPA is authorized to require this information under 415 ILCS 5/1. Disclosure of this information is required. Failure to do so may result in the delay or denial of any budget or payment requested hereunder.

1430655263 – Peoria County
The Premcor Refining Group, Inc.
Incident # 923441
Leaking UST Technical File

MARLIN
Environmental

STAGE 3 SITE INVESTIGATION PLAN AND BUDGET

ILLICO INDEPENDENT OIL CO.
3712 NORTH UNIVERSITY STREET
PEORIA, ILLINOIS 61614
PEORIA COUNTY
LUST INCIDENT # 923441
LPC # 1430655263

Prepared for:

ILLICO INDPENDENT OIL CO.
David Golwitzer
2201 Woodlawn Rd. Suite 600
Lincoln, Illinois 62656

Prepared by:

MARLIN ENVIRONMENTAL, INC.
3900 Wood Duck Drive Suite F.
Springfield, IL 62711

October 6, 2015

Jeff R. Wienhoff, P.E.
Senior Professional Engineer

Joe Buhlig
Project Manager

RECEIVED
OCT 06 2015
IEPA/BOL

TABLE OF CONTENTS

orally or in writing

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SITE INVESTIGATION PLAN

A. Site Identification

IEMA Incident # (6 digit): 923441 IEPA LPC # (10 digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (Not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Site Information

1. Will the owner or operator seek reimbursement from the Underground Storage Tank Fund? Yes ☒ No ☐

2. If yes, is the budget attached? Yes ☒ No ☐

C. Site Investigation Results

Provide the following:

1. Stage of investigation
   a. Stage 2 ☐
   b. Stage 3 ☒

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2. Summary of Stage 1 ☐ or 2 ☒ or 3 ☐ site investigation activities;

The investigation site is the former Premcor station owned by Illico, Inc. and located at 3712 University Street in Peoria, Illinois. **Figure 1** displays the surrounding land usage. **Figure 2** displays the entire subject parcel. The site is currently a gas station property and the surface is made up of concrete and grass.

A release was reported to the Illinois Emergency Management Agency (IEMA) on December 2, 1992 and received Leaking Underground Storage Tank (LUST) incident number 923441 concerning this overfill incident. On July 24, 2015, Illico Incorporated and Premcor reached a settlement on multiple properties the Premcor had previously taken the responsibility of conducting the environmental investigative work. Illico Incorporated has taken over the control and responsibility of this site's environmental and corrective actions.

Early Action

According to the 45 Day Report dated March 2, 1993, Incident #923441 was reported during IDOT construction activities at the intersection of War Memorial Drive and North University Street. The release was related to the overfill and spill of gasoline, kerosene, and diesel fuel.

Historical Investigation

Multiple stages of investigation were performed by Parsons Engineering Science, Inc. and ERS of Illinois, Inc. For information on these investigations please review the previously submitted reports from Parsons and ERS.

Stage 2 Site Investigation

Prior to Marlin Environmental, Inc. involvement with the Illico property, ERS performed a Stage 2 site investigation. The results of the investigation are available in the Stage 2 Site Investigation Results Report that was submitted to the IEPA on October 2, 2015. Received on 10/05.

In August of 2015 Marlin Environmental, Inc. was retained by Illico to address the 923441 incident. Based on the results of the ERS Stage 2 Site Investigation, soil and groundwater contamination lacked delineation off-site. Based upon the results of the Stage 2 Site Investigation, a Stage 3 Site Investigation is necessary to define and properly delineate the extent of soil and groundwater contamination and evaluate potential preferential contaminant migration pathways.

3. Characteristics of the site and the surrounding area:
   a. Current and projected post-remediation uses;

      The investigation site is a current station located at 3712 University Street in Peoria, Peoria County, Illinois. **Figure 1** illustrates the surrounding land usage. The surrounding properties are primarily commercial and residential to the north, residential to the east and commercial to the south and west.

   b. Physical setting:

      i. Environmental conditions;

         Please refer to the October 2015 Stage 2 Site Investigation Results Report submitted by ERS.

      ii. Geologic, hydrogeologic, and hydrologic conditions; and

         The site surface is a mix of concrete and grass areas. According to previous boring logs the site subsurface consists generally of silty clay. Saturated soil conditions were observed at approximately 4' to 8' feet bgs in the soil borings while drilling. 8.5'

      iii. Geographic and topographic conditions;

         The property is located at 3712 North University Street in Peoria, Peoria County, Illinois. The site is currently an active filling station. Geographically the site is located in the NE 1/4 of Section 29, Township 9 North, Range 8 East in Peoria County.

4. Results of Stage 1 or 2 site investigation:

   a. Map(s) showing locations of borings and groundwater monitoring wells completed to date and groundwater flow direction;

      Please refer to **Figures 2**.

   b. Map(s) showing locations of samples collected;

      Please refer to **Figure 2**.

c. Map(s) showing extents of soil and groundwater contamination that exceeds the most stringent Tier 1 remediation objectives;

Figure 2 displays the sampling locations that are above the Tier 1 Remediation Objectives. A map displaying the extent of the soil and groundwater contamination plume limits above the Tier 1 Remediation Objectives will be prepared once the plume limits have been defined.

d. Cross-section(s) showing the geology and the horizontal and vertical extents of soil and groundwater contamination that exceeds the most stringent Tier 1 remediation objectives;

Not applicable, the lateral and vertical extents of contaminants have not yet been defined.

e. Analytical results, chain of custody forms, and laboratory certifications;

Please refer to the previously submitted reports.

f. Table(s) comparing analytical results to the most stringent Tier 1 remediation objectives (include sample depth, date collected, and detection limits);

Please refer to the previously submitted reports. Table 1, Table 2, Table 3, and Table 4

g. Potable water supply well survey (unless provided in previous plan):
   i. Map(s) to scale showing:

      a) Locations of community water supply wells and other potable wells and the setback zone for each well;

      b) Location and extent of regulated recharge areas and wellhead protection areas;

      c) Extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives; and

      d) Modeled extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives (if performed as part of site investigation);

   ii. Table(s) listing the setback zones for each community water supply well and other potable water supply wells;

   iii. A narrative identifying each entity contacted to identify potable water supply wells, the name and title of each person contacted, and any field observations associated with any wells identified; and

   iv. A certification from a Licensed Professional Engineer or Licensed Professional Geologist that the survey was conducted in accordance with the requirements and that documentation submitted includes information obtained as a result of the survey;

   Please refer to the potable well search provided in the February 2012 Stage 2 Site Investigation Plan and will be updated in the SICR.

h. Soil boring logs and monitoring well construction diagrams;

Please refer to the previously submitted reports.

i. Proposal for determining the following parameters:
   i. Hydraulic conductivity (K);

ii. Soil bulk density (ρ_b);
iii. Soil particle density (ρ_s);
iv. Moisture content (w); and
v. Organic carbon content (f_{oc}); and

On August 8, 2012, soil boring SB-26 was advanced for the purpose of collecting site specific geotechnical information. The soil sample was analyzed for hydraulic conductivity, soil bulk density, soil particle density, soil porosity, soil classification and moisture content. An FOC sample was never collected. The results were submitted to the IEPA in a previous report. The laboratory analysis yielded the following chemical and physical parameter results:

Chemical & Physical Soil Parameters				
Sample ID	**Fraction of Organic Carbon** (f_{oc})	**Moisture Content** (w)	**Soil Dry Bulk Density** (ρ_b)	**Soil Particle Density** (ρ_s)
SB-26 (2'-6')	TBD	19 %	1.684 g/cm^3	2.702 g/cm^3

105.18 pcf =

An ex-situ hydraulic conductivity test was performed on SB-26 (2'-6'). The results of the test indicated that the hydraulic conductivity of the subsurface soil materials beneath the site is 5.70 x 10^{-5} centimeters per second (cm/sec). The in-situ hydraulic conductivity will be determined through a bail-down slug test during the proposed Stage 3 Site Investigation Activities.

j. Budget forms of actual costs (documenting actual work performed during the previous stage) N/A

5. Stage 3 sampling plan:

a. Description of and justification for additional activities proposed as part of the plan;

The extent of soil and groundwater contamination was not defined to the most stringent IEPA TACO Tier 1 Remediation Objectives at the conclusion of Stage 2 Site Investigation activities. It appears that soil and groundwater contamination extends off-site thus necessitating the performance of a Stage 3 Site Investigation. Pursuant to 35 IAC 734.325(a), the goal of this proposed Stage 3 Site Investigation is to define the lateral extents of soil and groundwater contamination by soil sampling three (3) soil borings and converting the borings into groundwater monitoring wells to a proposed depth of fifteen (15) feet bgs to define the extent of soil and groundwater contamination off-site. Soil sampling will be performed an all three wells. One additional soil boring will be advanced at the SB-26 location at a depth of 2'-6' for the purpose of collecting a foc sample.

Soil samples will be collected at appropriate depths from the three (3) monitoring well soil borings to define the extent of soil contamination based upon the results of the soil sampling and other investigation activities conducted to date pursuant to 35 IAC 734.325(a)(1). Soil samples will be collected at a minimum of five foot intervals, resulting in the collection of two (2) samples between the surface and the apparent groundwater interface while drilling. It is anticipated that six (6) soil samples will be collected and analyzed for BTEX and PNA constituents to define the extents of soil contamination. While on-site a slug test will be performed on a select on-site monitoring well.

Following gauging of the entire monitoring well network and purging of the newly installed monitoring wells, groundwater samples will be collected from the newly installed monitoring wells pursuant to 35 IAC 734.325(a)(2). The groundwater samples will be analyzed for BTEX and PNA constituents. The field and trip blanks will be analyzed for BTEX only.

The Stage 3 groundwater subsurface investigation will be conducted to help characterize the extent of the indicator contaminants that exceed the most stringent IEPA TACO Tier 1 Remediation Objectives (ROs) of 35 IAC 742 including, but not limited to, the following:

A) The contaminated media;
B) The three-dimensional configuration of the indicator contaminants, with concentrations delineated; and
C) The nature, direction, and rate of movement of the indicator contaminants;

Drilling Methods
A dual capability (direct-push for soil borings and hollow stem augers for monitoring well installation) combination rig will be used for the soil boring and subsequent monitoring well installation tasks.

Soil Boring/Monitoring Well Placement
The Stage 3 subsurface investigation will be performed in an effort to determine the presence and extent of soil and groundwater contamination exceeding the most stringent IEPA TACO Tier 1 ROs. The locations of the proposed Stage 3 monitoring well soil borings were selected for the following reasons:

- To help assess soil and groundwater conditions at locations likely to detect petroleum hydrocarbon impact in the on-site property.
- To help determine the extent of contamination exceeding the IEPA TACO Tier 1 ROs.

The proposed soil boring/monitoring well locations and depths are based upon the results of the previous investigations, knowledge of the apparent groundwater, previous soil boring logs indicating signs of contamination and the current property boundaries. The proposed monitoring well soil boring locations are presented on **Figure 2**.

Soil Sampling
Soil samples will be collected at continuous depth intervals during the advancement of each boring. After each section of soil sample recovery, the macro-core sampler will be removed from the borehole and the acetate sample liner extracted from the sampling tool. The liner will then be cut open to reveal the undisturbed soil sample for inspection and sampling.

Non-disposable sampling tools will be thoroughly cleansed with a non-phosphate detergent wash and distilled water rinse between each sampling event to help prevent possible cross-contamination. A new acetate spoon liner will be used for each sample collection interval. Disposable latex sampling gloves will be worn during the sampling procedures to help safeguard against potential cross-contamination.

Representative soil samples from each interval will be placed into Ziplock baggies and sealed. The soil within the bags will then be broken up to help increase the surface area for volatilization. The bag samples will be allowed to warm to ambient outdoor temperature for approximately one-half hour. The probe tip of a field portable photoionization detector (PID) will be inserted through the seal of the bag to measure the concentration of volatile organic vapors within the headspace of the bag (headspace screening method). The organic hydrocarbon vapors will be measured and recorded in PID meter units or equivalent parts-per-million (ppm) concentrations. The detection limit of the PID is one-ppm meter unit.

Additional portions of soil from selected depth intervals will be collected from the acetate sample liners and placed into laboratory provided jars. The samples will be labeled, properly preserved, stored in a cooler, and kept at a temperature of approximately four degrees centigrade to await possible analytical testing procedures.

Monitoring Well Installation

Marlin Environmental, Inc. will mobilize to the site with a professional crew and an auger rig for well installation. The monitoring wells will be constructed with an 8 ½ inch hollow-stem auger using two-inch diameter Polyvinyl Chloride (PVC) flush-threaded screen (0.010-inch slot) and solid PVC casing. The bottom of the screened interval will be capped with a threaded PVC bottom cap, and the top of the solid casing will be closed with a two-inch diameter lockable expansion plug-type cap.

Clean, inert, and appropriately sized filter sand will be placed in the borehole annular space to approximately one to two feet above the top of the screened interval. A bentonite chip seal will be placed above the sand layer in the annular space of the borehole to a point just below the surface. A flush mounted well box with a bolt down cover will be installed into concrete surrounding the top of the well.

The IEPA Monitoring Well Construction Diagram forms will be completed for the wells and will be included in the SICR on forms prescribed and provided by the Agency and, if specified by the Agency in writing, in an electronic format.

The monitoring wells will be properly closed and abandoned pursuant to the regulations promulgated by the Illinois Department of Public Health in IAC 920.120 once their existence is no longer needed by the site owner.

Well Materials

The wells shall be constructed in a manner that will enable the collection of a representative groundwater sample. The wells shall be cased in a manner that maintains the integrity of the borehole. Casing material shall be inert so as not to affect the water sample. Casing requiring solvent-cement type couplings will not be used. Two-inch PVC casing and well screen materials will be used since they are inert to the petroleum products present at the site, and they will maintain the integrity of the borehole. The wells will be constructed of PVC material for the following reasons:

- PVC has been shown to be an inert material in the presence of aromatic hydrocarbon compounds.
- PVC wells are relatively durable, and typically extend for the life of the project.
- PVC is cost-effective and readily available.

Flush threaded couplings will be used so that no solvent-cements will be needed. The monitoring wells will be screened to allow sampling only at the desired interval. The annular space between the borehole wall and the PVC well screen sections will be packed with clean, well rounded and uniformed sized silica sand to a level one to two feet above the top of the screened interval. Well screens of factory manufactured 0.010-inch slots will be used to help avoid clogging by the material in the zone being monitored. The PVC screens have been shown to be an inert material with respect to the constituents of the groundwater to be sampled.

The annular space in the borehole, above the well screen sections and above the sand pack, will be sealed with bentonite chips to near ground surface. This bentonite material is relatively impermeable, expandable, and does not react with or in any way affect the samples from the well. This seal will help prevent possible contamination of groundwater samples and the groundwater regime from interconnection with the surface.

The surface expression of the wells will be constructed of concrete, which will be formed and mounded above the surface and sloped away from the casing to divert any surface water away from the well. The wells will be equipped with an expandable casing plug. The location of the wells shall be clearly marked and a flush-mounted steel protective cover will be emplaced in the concrete to protect against tampering and damage from vehicular traffic or other activities associated with expected site use.

Screen Depth

So as to provide the greatest likelihood of detecting migration of groundwater contamination from this LUST, Marlin Environmental, Inc. proposes to install approximately 15-foot monitoring wells. The wells shall be screened to allow sampling only at the desired interval intercepting the groundwater zone, while drilling. Ten (10) feet of screened interval will allow for fluctuations in the perched groundwater level and allow for the collection of representative groundwater samples from the saturated unit most conducive to the potential migration of contaminants from the LUST source.

Well Development

The wells shall be developed to allow free entry of groundwater, minimize turbidity of the sample, and minimize clogging. Development procedures will consist of removing several well volumes using a disposable HDPE purge bailer and nylon cord.

By purging the water quickly, the bailer will create a surge effect on the sand pack of the wells that will allow for the free interconnection of water between the sand pack and the saturated formation. Purge water will be disposed of properly.

Well Configuration & Determination of Groundwater Elevation, Flow Direction and Gradient

The proposed well configuration illustrated on **Figure 2** will provide the greatest likelihood of detecting the migration of groundwater contamination and assess the rate and degree of the off-site groundwater impaction. The screened interval will measure water quality within the geologic units that are most conducive to contaminant migration away from the LUST source.

An elevation survey will be conducted using a survey level instrument and measuring rod. An arbitrary benchmark will be established on a stable site feature. The top of well casing, protective cover and general ground elevations will be measured for each well in relation to the arbitrary benchmark of 100.00 feet. Prior to groundwater sampling, static water elevations will be measured using a depth to water meter. Groundwater elevation in each monitoring well will be determined and recorded to establish the gradient of the groundwater. The data collected will be analyzed to determine the direction of groundwater flow. The elevation measurements will be recorded on the monitoring well construction logs as well as being presented in a data table within the *Site Investigation Completion Report* (*SICR*).

Cross-Contamination

Materials will be prepared and kept clean prior to use in the construction of the monitoring well. Clean gloves will be worn during work activities. The hollow stem augers behave like temporary casing to help prevent cross-contamination during well installation. The hollow stem auger technique maintains the integrity of the borehole and allows the well to be constructed inside of the auger, away from the native soils. As the well is constructed, the augers are slowly extracted from the borehole, which allows the well to be set without the risk of cross-contamination from different soil sequences in the boring.

Non-disposable tools and equipment will be thoroughly steam cleaned or cleansed between each event using a non-phosphate detergent wash and clean water rinse to help prevent cross-

contamination.

Soil cuttings will be placed into labeled 55-gallon drums for temporary storage on-site to await disposal coordination. This procedure will help prevent cross-contamination between the boreholes and help ensure that contaminated soils are segregated for proper disposal and not left on the on or off-site properties.

Sampling Procedures

The following activities shall be conducted in accordance with "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846 or other procedures as approved by the Agency:

- Field sampling activities, including but not limited to activities relative to sample collection, documentation, preparation, labeling, storage and shipment, security, quality assurance and quality control, acceptance criteria, corrective action, and decontamination procedures;

- Field measurement activities, including but not limited to activities relative to equipment and instrument operation, calibration and maintenance, corrective action, and data handling; and

- Quantitative analysis of samples to determine concentrations of indicator contaminants, including but not limited to activities relative to facilities, equipment and instrumentation, operating procedures, sample management, test methods, equipment calibration and maintenance, quality assurance and quality control, corrective action, data reduction and validation, reporting, and records management. Analyses of samples that require more exacting detection limits than, or that cannot be analyzed by standard methods identified in, "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846, shall be conducted in accordance with analytical protocols developed in consultation with and approved by the Agency.

- The analytical methodology used for the analysis of indicator contaminants shall have a practical quantitation limit at or below the objectives or detection levels set forth in 35 IAC 742 or as determined by the Agency.

- Quantitative analyses of samples shall be conducted by a laboratory accredited for the analyzed parameters in accordance with the requirements of 35 IAC 186.

- An authorized agent of the accredited laboratory conducting the quantitative analyses shall certify that the analyses were conducted by a laboratory accredited for the analyzed parameters in accordance with 35 IAC 186. The certification shall be submitted with the results of the analyses in the applicable report.

- The owner will develop remediation objectives for applicable indicator contaminants in accordance with 35 IAC 742. If an indicator contaminant does not have a remediation objective set forth in 35 IAC 742, the Agency shall determine the remediation objective on a site-by-site basis.

Soil and groundwater samples will be collected and analyzed from the site investigation soil borings and monitoring wells in accordance with the procedures set forth in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846, as appropriate for the applicable indicator contaminants and methods.

Several well volumes of water will be purged from the well using a dedicated disposable bailer and nylon cord. The representative groundwater sample will then be collected and

placed directly into properly labeled laboratory approved jars. The sample jars will be placed in a cooler, on ice, for delivery to the laboratory following signed chain-of-custody protocol. Groundwater samples shall be analyzed for BTEX and PNA site indicator contaminants.

Indicator Contaminants

Pursuant to 35 IAC Part 734.405, the indicator contaminants for unleaded gasoline, kerosene and diesel associated with the LUST release shall be BTEX and PNA constituents. An independent, Illinois accredited environmental laboratory will analyze the samples. The laboratory analytical testing methodology will have practical quantitation limits (PQL) at or below the objectives or detection levels set forth in 35 IAC Part 742. The analytical sample results will be compared against the indicator contaminant groundwater quality standards specified in 35 IAC Part 742 to determine if there has been an exceedance.

In addition to analytical results, sampling and analytical reports will contain the following information:

1) Sample collection information including but not limited to the name of the sample collector, time and date of sample collection, method of collection, and monitoring location;
2) Sample preservation and shipment information including but not limited to field quality control;
3) Analytical procedures including but not limited to the method detection limits and the PQLs.
4) Chain of custody and control; and
5) Field and lab blanks

Groundwater Sampling Cross-contamination

The monitoring wells will be purged and sampled using a disposable HDPE bailer and nylon cord. Field and laboratory blanks will be prepared for the groundwater sampling activities to help insure that cross-contamination has not occurred. The laboratory will prepare a blank sample, which will be present in the cooler during sampling and transportation activities. While in the field collecting groundwater samples, one set of jars labeled as the field blank will be prepared. The jars will be filled in the field with distilled water to simulate the groundwater sampling procedures, handling and exposure. The field and laboratory trip blank samples will be analyzed for BTEX indicator contaminants.

Physical Parameter Sampling

The required Tier analysis physical parameters pursuant to 35 IAC 734.410 were collected during the previous investigation activities. A foc sample will be collected during this Stage 3 Site Investigation.

b. A map depicting locations of proposed borings and groundwater monitoring wells; and

Please refer to **Figure 2**.

c. Depth of borings/wells and construction details of proposed borings and wells; and

Marlin Environmental, Inc. proposes to advance and install a total of three (3) soil borings/ monitoring wells to a depth of approximately fifteen (15) feet bgs and one (1) soil boring to six (6) feet bgs. Please see above text for construction details of the proposed monitoring wells.

6. Site maps meeting the requirements of 35 Ill. Adm. Code 734.440.
Please refer to **Figures 1** and **2**.

G. Signatures

All plans, budgets, and reports must be signed by the owner or operator and list the owner's or operator's full name, address, and telephone number.

UST Owner or Operator

Name: Illico Independent Oil Co.
Contact: David Golwitzer
Address: 2201 Woodlawn Rd. Suite 600
City: Lincoln
State: Illinois
ZIP Code: 62656
Phone: (217) 732-4193
Signature: VP President
Date: 10-2-15

Consultant

Company: Marlin Environmental, Inc.
Contact: Joe Buhlig
Address: 3900 Wood Duck Dr. Suite F.
City: Springfield
State: Illinois
ZIP Code: 62711
Phone: 217-726-7569 Ext. 300
Signature: ← Email
Date: 10/6/15

I certify under penalty of law that all activities that are the subject of this plan were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in this plan has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 731, 732, or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

RECEIVED
OCT 06 2015
IEPA/BOL

Licensed Professional Engineer

Name: Jeff R. Wienhoff
Company: Marlin Environmental, Inc.
Address: 3900 Wood Duck Dr. Suite F.
City: Springfield
State: Illinois
ZIP Code: 62711
Phone: (217) 726-7569 Ext. 250
Ill. Registration No.: 062-058441
License Expiration Date: 11-30-2015
Signature:
Date: 10/6/15

L.P.E. Seal

JEFFREY R. WIENHOFF
062-058441
LICENSED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

FIGURES

Google, not Peoria

MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

FIGURE:	1
PROJECT NUMBER:	1382
DRAWN DATE:	08/15
PREPARED BY:	BUHLIG
DRAWN BY:	CZARUK

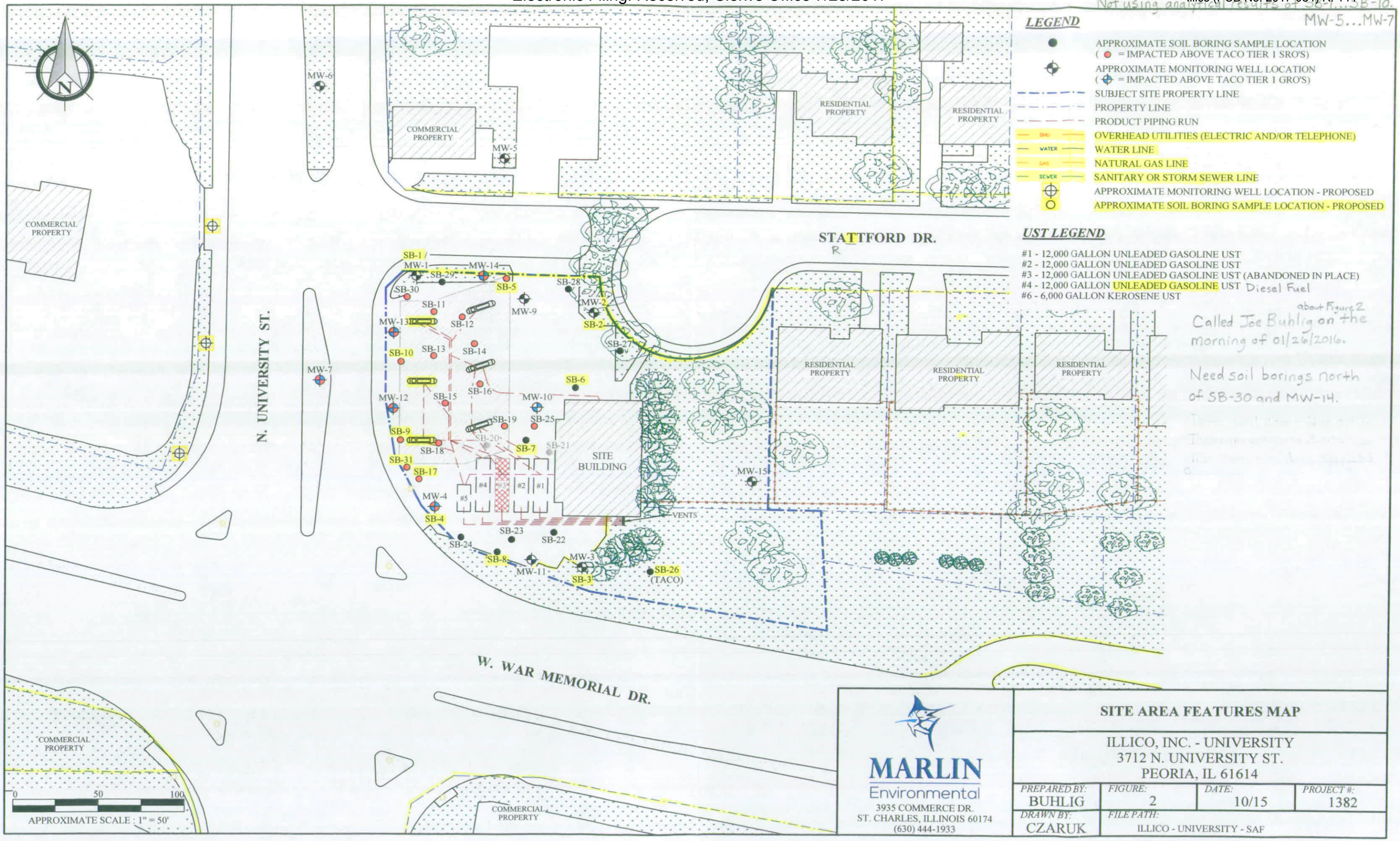
SURROUNDING LAND USAGE MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

FILE NAME: ILLICO - UNIVERSITY - SLUM

Leaking UST Incident #923441

Not using soil analytical results of SB-7...SB-10.
MW-5...MW-7



LEGEND

- APPROXIMATE SOIL BORING SAMPLE LOCATION (● = IMPACTED ABOVE TACO TIER 1 SRO'S)
- APPROXIMATE MONITORING WELL LOCATION (⊕ = IMPACTED ABOVE TACO TIER 1 GRO'S)
- SUBJECT SITE PROPERTY LINE
- PROPERTY LINE
- PRODUCT PIPING RUN
- OHU — OVERHEAD UTILITIES (ELECTRIC AND/OR TELEPHONE)
- WATER — WATER LINE
- GAS — NATURAL GAS LINE
- SEWER — SANITARY OR STORM SEWER LINE
- APPROXIMATE MONITORING WELL LOCATION - PROPOSED
- APPROXIMATE SOIL BORING SAMPLE LOCATION - PROPOSED

UST LEGEND

#1 - 12,000 GALLON UNLEADED GASOLINE UST
#2 - 12,000 GALLON UNLEADED GASOLINE UST
#3 - 12,000 GALLON UNLEADED GASOLINE UST (ABANDONED IN PLACE)
#4 - 12,000 GALLON UNLEADED GASOLINE UST Diesel Fuel
#6 - 6,000 GALLON KEROSENE UST

about Figure 2
Called Joe Buhlig on the morning of 01/26/2016.

Need soil borings north of SB-30 and MW-14.

MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

SITE AREA FEATURES MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

PREPARED BY:	FIGURE:	DATE:	PROJECT #:
BUHLIG	2	10/15	1382
DRAWN BY:	FILE PATH:		
CZARUK	ILLICO - UNIVERSITY - SAF		

TABLES

Not using the analytical results for SB-1... SB-10 and MW-5... MW-7. Therefore, this table was not reviewed.

Table 1
Soil Analytical Results - BTEX

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Benzene	Toluene	Ethylbenzene	Total Xylenes
SB-1	2-4	11/18/1999	ND<6.0	ND<6.0	ND<6.0	ND<18.0
SB-1	6-8	11/18/1999	ND<29	ND<57	1,600	4,180
SB-2	4-6	11/18/1999	ND<5.2	ND<5.2	ND<5.2	ND<15.2
SB-3	2-4	11/18/1999	ND<6.3	ND<6.3	ND<6.3	ND<19.3
SB-3	6-8	11/18/1999	ND<5.4	ND<5.4	ND<5.4	ND<16.4
SB-4	0-2	11/18/1999	ND<5.9	ND<5.9	ND<5.9	ND<17.9
SB-4	4-6	11/18/1999	ND<1,100	11,000	**37,000**	**193,000**
SB-5	2-4	11/18/1999	ND<63	270	400	**7,700**
SB-5	4-6	11/18/1999	ND<65	3,300	3,600	**22,800**
SB-5 Duplicate	4-6	11/18/1999	**1,200**	**23,000**	13,000	**74,000**
SB-6	0-4	11/22/1999	ND<6.0	ND<6.0	ND<6.0	ND<18.0
SB-6	4-8	11/22/1999	ND<5.9	ND<5.9	ND<5.9	ND<17.9
SB-7	0-4	11/22/1999	ND<6.1	ND<6.1	ND<6.1	ND<18.1
SB-7	4-8	11/22/1999	ND<6.4	ND<6.4	ND<6.4	ND<19.4
SB-8	0-4	11/22/1999	ND<6.4	ND<6.4	ND<6.4	ND<19.4
SB-8	4-8	11/22/1999	ND<6.4	ND<6.4	ND<6.4	ND<19.4
SB-9	0-4	11/22/1999	**130**	ND<130	420	2,050
SB-9 Duplicate	0-4	11/22/1999	**230**	ND<65	390	1,780
SB-9	4-8	11/22/1999	**690**	**58,000**	**57,000**	**370,000**
SB-10	0-4	11/22/1999	**7,900**	**83,000**	**42,000**	**182,000**
SB-10	4-8	11/22/1999	**1,400**	**16,000**	7,100	**35,000**
MW-5	2-4	11/16/2000	ND<6.3	ND<6.3	ND<6.3	ND<19.3
MW-5	6-8	11/16/2000	ND<5.8	ND<5.8	ND<5.8	ND<17.8
MW-6	4-6	11/16/2000	ND<6.3	ND<6.3	ND<6.3	ND<19.3
MW-6	8-10	11/16/2000	ND<6.1	ND<6.1	ND<6.1	ND<18.1
MW-7	7-9	11/16/2000	**13,000**	**160,000**	**92,000**	**420,000**
Exposure Route-Specific Values for Soils						
Ingestion - Residential			**12,000**	**16,000,000**	**7,800,000**	**16,000,000**
Inhalation - Residential			**800**	**650,000**	**400,000**	**320,000**
Ingestion - Construction Worker			**2,300,000**	**410,000,000**	**20,000,000**	**41,000,000**
Inhalation - Construction Worker			**2,200**	**42,000**	**58,000**	**5,600**
Ingestion - Industrial/Commercial			**100,000**	**410,000,000**	**200,000,000**	**410,000,000**
Inhalation - Industrial/Commercial			**1,600**	**650,000**	**400,000**	**320,000**
Tier 1 Remediation Objective - Class I Groundwater			**30**	**12,000**	**13,000**	**150,000**
Tier 1 Remediation Objective - Class II Groundwater			**170**	**29,000**	**19,000**	**150,000**

Benzene, Toluene, Ethylbenzene and Total Xylene (BTEX) analysis conducted using United States Environmental Protection Agency (USEPA) Methods.
All results are reported in micrograms per kilogram (ug/kg), dry weight.
Tier 1 Soil Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
ND = The constituent was not measured above the Method Detection Limit indicated.
NA = Not Applicable
Bold values exceed Tier 1 Remediation Objectives.

Table 1
Soil Analytical Results - BTEX

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Benzene	Toluene	Ethylbenzene	Total Xylenes
SB-11	3.5-5	08/07/2012	**288**	ND<64.2	58.1	332
SB-11	7-8	08/07/2012	**3,980**	**51,600**	**31,600**	**159,000**
SB-12	3.5-5	08/07/2012	**51.5**	ND<64.2	ND<32.1	ND<96.2
SB-12	7-8	08/07/2012	**629**	ND<62.8	3,940	**13,700**
SB-13	3.5-5	08/07/2012	**2,050**	2,720	1,900	**8,400**
SB-13	6-7	08/07/2012	**11,700**	**92,700**	**29,700**	**142,000**
SB-14	3.5-5	08/07/2012	**669**	ND<64.8	213	249
SB-14	6-7	08/07/2012	**833**	ND<62.0	1,330	2,330
SB-15	3.5-5	08/07/2012	**4,210**	**24,100**	9,170	**49,900**
SB-15	5-6	08/07/2012	**41,800**	**305,000**	**103,000**	**568,000**
SB-16	3.5-5	08/07/2012	**1,010**	ND<65.9	164	156
SB-16	6-7	08/07/2012	**3,700**	ND<613	11,200	**36,100**
SB-17	3.5-5	08/08/2012	**337**	ND<126	3,140	**7,820**
SB-17	6-7	08/08/2012	ND<1,200	3,770	**130,000**	**574,000**
SB-18	3.5-5	08/08/2012	**1,190**	ND<64.6	637	645
SB-18	6-7	08/08/2012	**6,790**	903	**27,000**	**112,000**
SB-19	3.5-5	08/08/2012	**40.5**	ND<65.0	ND<32.5	ND<97.5
SB-19	6-7	08/08/2012	**365**	ND<59.5	69.1	ND<89.3
SB-22	3.5-5	08/08/2012	ND<24.8	ND<62.0	ND<31.0	ND<93.0
SB-22	6-7	08/08/2012	ND<24.8	ND<62.0	ND<31.0	ND<93.0
SB-23	3.5-5	08/08/2012	ND<25.5	ND<63.7	ND<31.9	ND<95.6
SB-23	5-6	08/08/2012	ND<24.5	ND<61.2	ND<30.6	ND<91.8
SB-24	3.5-5	08/08/2012	ND<25.6	ND<64.1	ND<32.0	ND<96.1
SB-25	3.5-5	08/08/2012	**148**	ND<64.1	ND<32.1	321
SB-27	0-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-27	4-7	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-28	0-2	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-28	4-6	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-29	2-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-29	4-6	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-30	0-2	03/10/2015	**101**	7.5	126	61.6
SB-30	2-4	03/10/2015	**402**	ND<500	ND<500	ND<500
SB-31	2-4	03/10/2015	**1,600**	ND<500	9,690	**24,200**
SB-31	4-6	03/10/2015	**16,800**	**27,100**	**243,000**	**1,190,000**
MW-9	2-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-9	4-6	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-10	0-4	03/10/2015	ND<5.0	5.7	ND<5.0	ND<5.0
MW-11	2-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-11	4-6	03/10/2015	ND<5.0	7.1	ND<5.0	5.2
MW-12	2-4	03/10/2015	**1,660**	3,620	**42,300**	**168,000**
MW-12	4-6	03/10/2015	**4,230**	4,660	**35,500**	**178,000**
MW-13	2-4	03/10/2015	23.0	ND<5.0	8.4	16.3
MW-13	4-6	03/10/2015	**347**	ND<500	2,550	**6,610**
MW-14	2-4	03/10/2015	ND<5.0	5.9	ND<5.0	5.8
MW-14	4-6	03/10/2015	**654**	ND<500	9,820	**44,600**
MW-15	2-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-15	4-6	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Exposure Route-Specific Values for Soils						
Ingestion - Residential			**12,000**	**16,000,000**	**7,800,000**	**16,000,000**
Inhalation - Residential			**800**	**650,000**	**400,000**	**320,000**
Ingestion - Construction Worker			**2,300,000**	**410,000,000**	**20,000,000**	**41,000,000**
Inhalation - Construction Worker			**2,200**	**42,000**	**58,000**	**5,600**
Ingestion - Industrial/Commercial			**100,000**	**410,000,000**	**200,000,000**	**410,000,000**
Inhalation - Industrial/Commercial			**1,600**	**650,000**	**400,000**	**320,000**
Tier 1 Remediation Objective - Class I Groundwater			**30**	**12,000**	**13,000**	**150,000**
Tier 1 Remediation Objective - Class II Groundwater			**170**	**29,000**	**19,000**	**150,000**

See SB-31

Benzene, Toluene, Ethylbenzene and Total Xylene (BTEX) analysis conducted using United States Environmental Protection Agency (USEPA) Methods.
All results are reported in micrograms per kilogram (ug/kg), dry weight.
Tier 1 Soil Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
ND = The constituent was not measured above the Method Detection Limit indicated.
NA = Not Applicable
Bold values exceed Tier 1 Remediation Objectives.

Table 2
Soil Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
SB-1	2-4	11/18/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
SB-1	6-8	11/18/1999	ND<57	ND<57	ND<57	ND<57	ND<57	ND<57	ND<57	ND<57
SB-2	4-6	11/18/1999	ND<52	ND<52	ND<52	ND<52	ND<52	ND<52	ND<52	ND<52
SB-3	2-4	11/18/1999	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64
SB-3	6-8	11/18/1999	ND<54	ND<54	ND<54	ND<54	ND<54	ND<54	ND<54	ND<54
SB-4	0-2	11/18/1999	ND<59	ND<59	ND<59	ND<59	ND<59	ND<59	ND<59	ND<59
SB-4	4-6	11/18/1999	ND<810	ND<810	ND<810	ND<810	ND<810	ND<810	ND<810	ND<810
SB-5	2-4	11/18/1999	ND<150	ND<150	ND<150	ND<150	ND<150	ND<150	ND<150	ND<150
SB-5	4-6	11/18/1999	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62
SB-5 Duplicate	4-6	11/18/1999	ND<150	ND<150	ND<150	ND<150	ND<150	ND<150	ND<150	ND<150
SB-6	0-4	11/22/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
SB-6	4-8	11/22/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
SB-7	0-4	11/22/1999	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62
SB-7	4-8	11/22/1999	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64
SB-8	0-4	11/22/1999	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64
SB-8	4-8	11/22/1999	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63
SB-9	0-4	11/22/1999	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63
SB-9 Duplicate	0-4	11/22/1999	ND<65	ND<65	ND<65	ND<65	ND<65	ND<65	ND<65	ND<65
SB-9	4-8	11/22/1999	ND<61	ND<61	ND<61	ND<61	ND<61	ND<61	ND<61	ND<61
SB-10	0-4	11/22/1999	ND<270	ND<270	ND<270	ND<270	ND<270	ND<270	ND<270	ND<270
SB-10	4-8	11/22/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
MW-5	2-4	11/16/2000	ND<32	ND<32	ND<32	ND<32	ND<32	ND<32	ND<32	ND<32
MW-5	6-8	11/16/2000	ND<29	ND<29	ND<29	ND<29	ND<29	ND<29	ND<29	ND<29
MW-6	4-6	11/16/2000	ND<130	ND<130	ND<130	ND<130	ND<130	ND<130	ND<130	ND<130
MW-6	8-10	11/16/2000	ND<31	ND<31	ND<31	ND<31	ND<31	ND<31	ND<31	ND<31
MW-7	7-9	11/16/2000	ND<860	ND<860	ND<860	ND<860	ND<860	ND<860	ND<860	ND<860
Exposure Route-Specific Values for Soils										
Ingestion - Residential			4,700,000	2,300,000	23,000,000	900	90	900	2,300,000	9,000
Inhalation - Residential			NE	NE	NE	NE	NE	NE	NE	NE
Ingestion - Construction Worker			120,000,000	61,000,000	610,000,000	170,000	17,000	170,000	61,000,000	1,700,000
Inhalation - Construction Worker			NE	NE	NE	NE	NE	NE	NE	NE
Class I Groundwater			570,000	85,000	12,000,000	2,000	8,000	5,000	27,000,000	49,000
Class II Groundwater			2,900,000	420,000	59,000,000	8,000	82,000	25,000	130,000,000	250,000
Concentrations of PNA Chemicals in Background Soils			130	70	400	1,800	2,100	2,100	1,700	1,700

Not using the analytical results of SB-1, SB-10 and MW-5, MW-7. Therefore, this table was not reviewed.

Table 2
Soil Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
SB-1	2-4	11/18/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
SB-1	6-8	11/18/1999	ND<57	ND<57	ND<57	ND<57	ND<57	300	ND<57	ND<57
SB-2	4-6	11/18/1999	ND<52	ND<52	ND<52	ND<52	ND<52	ND<52	ND<52	ND<52
SB-3	2-4	11/18/1999	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64
SB-3	6-8	11/18/1999	ND<54	ND<54	ND<54	ND<54	ND<54	ND<54	ND<54	ND<54
SB-4	0-2	11/18/1999	ND<59	ND<59	ND<59	ND<59	ND<59	ND<59	ND<59	ND<59
SB-4	4-6	11/18/1999	ND<810	ND<810	ND<810	ND<810	ND<810	**11,000**	ND<810	ND<810
SB-5	2-4	11/18/1999	ND<150	ND<150	ND<150	ND<150	ND<150	**2,100**	ND<150	ND<150
SB-5	4-6	11/18/1999	ND<62	ND<62	ND<62	ND<62	ND<62	1,200	ND<62	ND<62
SB-5 Duplicate	4-6	11/18/1999	ND<150	ND<150	ND<150	ND<150	ND<150	1,400	ND<150	ND<150
SB-6	0-4	11/22/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
SB-6	4-8	11/22/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
SB-7	0-4	11/22/1999	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62
SB-7	4-8	11/22/1999	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64
SB-8	0-4	11/22/1999	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64
SB-8	4-8	11/22/1999	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63
SB-9	0-4	11/22/1999	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63
SB-9 Duplicate	0-4	11/22/1999	ND<65	ND<65	ND<65	ND<65	ND<65	ND<65	ND<65	ND<65
SB-9	4-8	11/22/1999	ND<61	ND<61	ND<61	ND<61	ND<61	860	ND<61	ND<61
SB-10	0-4	11/22/1999	ND<270	ND<270	ND<270	ND<270	ND<270	**3,000**	ND<270	ND<270
SB-10	4-8	11/22/1999	ND<60	ND<60	ND<60	ND<60	ND<60	1,200	ND<60	ND<60
MW-5	2-4	11/16/2000	ND<32	ND<32	ND<32	ND<32	ND<32	ND<32	ND<32	ND<32
MW-5	6-8	11/16/2000	ND<29	ND<29	ND<29	ND<29	ND<29	ND<29	ND<29	ND<29
MW-6	4-6	11/16/2000	ND<130	ND<130	ND<130	ND<130	ND<130	**2,400**	ND<130	ND<130
MW-6	8-10	11/16/2000	ND<31	ND<31	52	ND<31	ND<31	ND<31	ND<31	42
MW-7	7-9	11/16/2000	ND<860	ND<860	ND<860	ND<860	ND<860	**25,000**	ND<860	ND<860
Exposure Route-Specific Values for Soils										
Ingestion - Residential			88,000	90	3,100,000	3,100,000	900	1,600,000	2,300,000	2,300,000
Inhalation - Residential			NE	NE	NE	NE	NE	170,000	NE	NE
Ingestion - Construction Worker			17,000,000	17,000	82,000,000	82,000,000	170,000	4,100,000	61,000,000	61,000,000
Inhalation - Construction Worker			NE	NE	NE	NE	NE	1,800	NE	NE
Class I Groundwater			160,000	2,000	4,300,000	560,000	14,000	12,000	210,000	4,200,000
Class II Groundwater			800,000	7,600	21,000,000	2,800,000	69,000	18,000	1,100,000	21,000,000
Concentrations of PNA Chemicals in Background Soils			2,700	420	4,100	180	1,600	200	2,500	3,000

Notes:
Polynuclear aromatic hydrocarbon (PNAs) analysis conducted using United States Environmental Protection Agency (USEPA) Methods.
All results are reported in micrograms per kilogram (ug/kg), dry weight.
Tier 1 Soil Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
ND = The constituent was not measured above the Method Detection Limit indicated.
NE = Not Established.
NA = Not Applicable
Bold values exceed Tier 1 Remediation Objectives.

Soil Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
SB-11	3.5-5	08/07/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-11	7-8	08/07/2012	ND<271	ND<271	ND<271	ND<271	ND<271	ND<271	ND<271	ND<271
SB-12	3.5-5	08/07/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-12	7-8	08/07/2012	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7
SB-13	3.5-5	08/07/2012	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0
SB-13	6-7	08/07/2012	ND<104	ND<104	ND<104	ND<104	ND<104	ND<104	ND<104	ND<104
SB-14	3.5-5	08/07/2012	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6
SB-14	6-7	08/07/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-15	3.5-5	08/07/2012	ND<168	ND<168	ND<168	ND<168	ND<168	ND<168	ND<168	ND<168
SB-15	5-6	08/07/2012	ND<261	ND<261	ND<261	ND<261	ND<261	ND<261	ND<261	ND<261
SB-16	3.5-5	08/07/2012	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0
SB-16	6-7	08/07/2012	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0
SB-17	3.5-5	08/08/2012	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0
SB-17	6-7	08/08/2012	ND<3,190	ND<3,190	ND<3,190	ND<3,190	ND<3,190	ND<3,190	ND<3,190	ND<3,190
SB-18	3.5-5	08/08/2012	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5
SB-18	6-7	08/08/2012	ND<207	ND<207	ND<207	ND<207	ND<207	ND<207	ND<207	ND<207
SB-19	3.5-5	08/08/2012	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7
SB-19	6-7	08/08/2012	43.7	ND<19.8	34.8	ND<19.8	ND<19.8	ND<19.8	ND<19.8	ND<19.8
SB-22	3.5-5	08/08/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-22	6-7	08/08/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-23	3.5-5	08/08/2012	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2
SB-23	5-6	08/08/2012	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4
SB-24	3.5-5	08/08/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-25	3.5-5	08/08/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-27	0-4	03/10/2015	ND<50	ND<50	ND<50	90.7	69	76	ND<50	65
SB-27	4-7	03/10/2015	ND<50	ND<50	ND<50	15.0	ND<15	17	ND<50	14
SB-28	0-2	03/10/2015	ND<50	ND<50	ND<50	328	297	312	176	271
SB-28	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
SB-29	2-4	03/10/2015	ND<50	ND<50	ND<50	14.7	17	19	ND<50	15
SB-29	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
SB-30	0-2	03/10/2015	ND<50	ND<50	ND<50	43.5	59	71	ND<50	46
SB-30	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
SB-31	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
SB-31	4-6	03/10/2015	393	ND<50	60	21.1	ND<15	ND<11	ND<50	ND<11
MW-9	2-4	03/10/2015	ND<50	ND<50	ND<50	39.4	41	39	ND<50	46
MW-9	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-10	0-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-11	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-11	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-12	2-4	03/10/2015	ND<50	ND<50	ND<50	22.2	15	16	ND<50	14
MW-12	4-6	03/10/2015	ND<50	ND<50	ND<50	10.5	ND<15	ND<11	ND<50	ND<11
MW-13	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-13	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-14	2-4	03/10/2015	ND<50	ND<50	ND<50	32.7	35	38	ND<50	40
MW-14	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-15	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-15	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
Exposure Route-Specific Values for Soils										
Ingestion - Residential			**4,700,000**	**2,300,000**	**23,000,000**	**900**	**90**	**900**	**2,300,000**	**9,000**
Inhalation - Residential			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
Ingestion - Construction Worker			**120,000,000**	**61,000,000**	**610,000,000**	**170,000**	**17,000**	**170,000**	**61,000,000**	**1,700,000**
Inhalation - Construction Worker			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
Ingestion - Industrial/Commercial			**120,000,000**	**61,000,000**	**610,000,000**	**8,000**	**800**	**8,000**	**61,000,000**	**78,000**
Inhalation - Industrial/Commercial			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
Class I Groundwater			**570,000**	**85,000**	**12,000,000**	**2,000**	**8,000**	**5,000**	**27,000,000**	**49,000**
Class II Groundwater			2,900,000	420,000	59,000,000	8,000	82,000	25,000	130,000,000	250,000
Concentrations of PNA Chemicals in Background Soils			**130**	**70**	**400**	**1,800**	**2,100**	**2,100**	**1,700**	**1,700**

See SB-31

Table 2
Soil Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
SB-11	3.5-5	08/07/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	89.8	ND<21.4	ND<21.4
SB-11	7-8	08/07/2012	ND<271	ND<271	ND<271	ND<271	ND<271	**4,630**	ND<271	ND<271
SB-12	3.5-5	08/07/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	41.6	ND<21.4	ND<21.4
SB-12	7-8	08/07/2012	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7	836	ND<69.7	ND<69.7
SB-13	3.5-5	08/07/2012	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	396	ND<22.0	ND<22.0
SB-13	6-7	08/07/2012	ND<104	ND<104	ND<104	ND<104	ND<104	1,660	ND<104	ND<104
SB-14	3.5-5	08/07/2012	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6
SB-14	6-7	08/07/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	130	ND<20.7	ND<20.7
SB-15	3.5-5	08/07/2012	ND<168	ND<168	ND<168	ND<168	ND<168	**2,150**	ND<168	ND<168
SB-15	5-6	08/07/2012	ND<261	ND<261	ND<261	ND<261	ND<261	**5,340**	ND<261	ND<261
SB-16	3.5-5	08/07/2012	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0
SB-16	6-7	08/07/2012	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0	791	141	ND<68.0
SB-17	3.5-5	08/08/2012	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0	313	39.2	ND<21.0
SB-17	6-7	08/08/2012	ND<3,190	**ND<3,190**	ND<3,190	ND<3,190	**ND<3,190**	**45,300**	ND<3,190	ND<3,190
SB-18	3.5-5	08/08/2012	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5	88.9	ND<21.5	ND<21.5
SB-18	6-7	08/08/2012	ND<207	ND<207	ND<207	ND<207	ND<207	**4,160**	ND<207	ND<207
SB-19	3.5-5	08/08/2012	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7
SB-19	6-7	08/08/2012	ND<19.8	ND<19.8	ND<19.8	92.1	ND<19.8	177	231	ND<19.8
SB-22	3.5-5	08/08/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-22	6-7	08/08/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-23	3.5-5	08/08/2012	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2
SB-23	5-6	08/08/2012	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4
SB-24	3.5-5	08/08/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-25	3.5-5	08/08/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-27	0-4	03/10/2015	77	ND<20	189	ND<50	51	ND<25	135	151
SB-27	4-7	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND50
SB-28	0-2	03/10/2015	253	51	483	ND<50	188	ND<25	180	429
SB-28	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
SB-29	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
SB-29	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
SB-30	0-2	03/10/2015	66	ND<20	87	ND<50	50	423	ND<50	86
SB-30	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
SB-31	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	574	93	ND<50
SB-31	4-6	03/10/2015	ND<50	ND<20	65	432	ND<29	**20,700**	935	149
MW-9	2-4	03/10/2015	ND<50	ND<20	82	ND<50	33	ND<25	ND<50	75
MW-9	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-10	0-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-11	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-11	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-12	2-4	03/10/2015	ND<50	ND<20	70	ND<50	ND<29	**4,200**	88	63
MW-12	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	**1,990**	51	ND<50
MW-13	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-13	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	272	ND<50	ND<50
MW-14	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	33	ND<25	ND<50	ND<50
MW-14	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	288	ND<50	ND<50
MW-15	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-15	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
Exposure Route-Specific Values for Soils										
Ingestion - Residential			**88,000**	**90**	**3,100,000**	**3,100,000**	**900**	**1,600,000**	**2,300,000**	**2,300,000**
Inhalation - Residential			**NE**	**NE**	**NE**	**NE**	**NE**	**170,000**	**NE**	**NE**
Ingestion - Construction Worker			**17,000,000**	**17,000**	**82,000,000**	**82,000,000**	**170,000**	**4,100,000**	**61,000,000**	**61,000,000**
Inhalation - Construction Worker			**NE**	**NE**	**NE**	**NE**	**NE**	**1,800**	**NE**	**NE**
Ingestion - Industrial/Commercial			**780,000**	**800**	**82,000,000**	**82,000,000**	**800**	**41,000,000**	**61,000,000**	**61,000,000**
Inhalation - Industrial/Commercial			**NE**	**NE**	**NE**	**NE**	**NE**	**270,000**	**NE**	**NE**
Class I Groundwater			**160,000**	**2,000**	**4,300,000**	**560,000**	**14,000**	**12,000**	**200,000**	**4,200,000**
Class II Groundwater			800,000	7,600	21,000,000	2,800,000	69,000	18,000	1,000,000	21,000,000
Concentrations of PNA Chemicals in Background Soils			**2,700**	**420**	**4,100**	**180**	**1,600**	**200**	**2,500**	**3,000**

See SB-31

210,000
1,100,000

Notes:
Polynuclear aromatic hydrocarbon (PNAs) analysis conducted using United States Environmental Protection Agency (USEPA) Methods.
All results are reported in micrograms per kilogram (ug/kg), dry weight.
Tier 1 Soil Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
ND = The constituent was not measured above the Method Detection Limit indicated.
NE = Not Established.
NA = Not Applicable
Bold values exceed Tier 1 Remediation Objectives.

Table 3

Groundwater Analytical and Elevation Summary - BTEX

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Well ID	Sample Date	Reference Elevation (feet)	Depth to Water (feet)	Free product Thickness (feet)	Equivalent Water Elevation (feet)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Comments
MW-1	11/22/1999	96.00	9.33	-	86.67	**1,700**	140	**1,200**	3,240	
MW-1 (Duplicate)	11/22/1999			-		**1,700**	150	**1,200**	3,350	
MW-1	11/16/2000	96.00	8.04	-	87.96	**2,100**	180	**1,100**	2,650	
	04/24/2001	96.00	6.54	-	89.46	**1,700**	270	**1,500**	2,930	
	10/03/2001	96.00	8.44	-	87.56	**1,900**	110	**1,100**	2,420	
	07/11/2011	96.35	7.20	-	89.15	**664**	55.3	<T1 **738**	472	odor/no sheen
	04/23/2015	Unable to Locate Well								
MW-2	11/22/1999	98.29	8.55	-	89.74	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	11/16/2000	98.29	8.59	-	89.70	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	04/24/2001	98.29	6.56	-	91.73	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	10/03/2001	98.29	7.42	-	90.87	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	07/11/2011	98.58	6.41	-	92.17	ND<1.0	ND<1.0	ND<1.0	ND<3.0	no odor/no sheen
	04/23/2015	98.58	6.58	-	92.00	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-3	11/22/1999	99.82	9.59	-	90.23	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	11/16/2000	99.82	7.03	-	92.79	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	04/24/2001	99.82	8.09	-	91.73	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	10/03/2001	99.82	8.78	-	91.04	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	07/11/2011	100.20	7.37	-	92.83	ND<1.0	ND<1.0	ND<1.0	ND<3.0	no odor/no sheen
	04/23/2015	100.20	8.03	-	92.17	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-4	11/22/1999	97.73	8.37	-	89.36	**4,500**	580	**2,500**	4,410	
	11/16/2000	97.73	7.26	-	90.47	**4,000**	1,000	**2,600**	6,400	
MW-4 (Duplicate)	11/16/2000			-		**4,100**	980	**2,700**	6,100	
MW-4	04/24/2001	97.73	6.84	-	90.89	**4,500**	**2,000**	**2,100**	5,500	
	10/03/2001	97.73	7.56	-	90.17	**4,900**	1,000	**2,400**	5,800	
	07/11/2011	98.19	6.46	-	91.73	**1,060**	101	**1,360**	1,780	odor/sheen
	04/23/2015	98.19	7.33	-	90.86	**896**	66.9	**2,240**	1,020	odor/sheen
MW-5	11/16/2000	95.53	10.55	-	84.98	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	04/24/2001	95.53	4.82	-	90.71	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	10/03/2001	95.53	7.53	-	88.00	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	07/11/2011	NA	NS	-	NS	NS	NS	NS	NS	
	04/23/2015	96.00	5.52	-	90.48	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-6	11/16/2000	95.74	10.65	-	85.09	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	04/24/2001	95.74	8.35	-	87.39	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	10/03/2001	95.74	10.74	-	85.00	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	07/11/2011	96.27	8.71	-	87.56	ND<1.0	ND<1.0	ND<1.0	ND<3.0	no odor/no sheen
	04/23/2015	96.27	9.48	-	86.79	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-7	11/16/2000	97.27	11.73	-	85.54	**39,000**	**140,000**	**37,000**	**170,000**	
	04/24/2001	97.27	9.79	-	87.48	**26,000**	**43,000**	**5,000**	**23,400**	
	10/03/2001	97.27	NA	-	NA	**19,000**	**34,000**	**5,200**	**26,400**	
	07/11/2011	97.62	9.75	0.60	88.32	NS	NS	NS	NS	free product
	04/23/2015	97.62	10.90	-	86.72	**14,500**	**24,300**	**3,680**	**16,700**	odor/sheen
MW-9	04/23/2015	97.88	6.10	-	91.78	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-10	04/23/2015	98.94	7.03	-	91.91	**126**	ND<5.0	ND<5.0	ND<5.0	odor/sheen
MW-11	04/23/2015	99.72	7.76	-	91.96	ND<5.0	ND<5.0	ND<5.0	ND<5.0	odor/no sheen
MW-12	04/23/2015	97.05	6.35	-	90.70	**307**	189	220	977	odor/no sheen
MW-13	04/23/2015	96.73	6.11	-	90.62	**10,200**	**9,900**	**2,530**	**10,200**	odor/no sheen
MW-14	04/23/2015	97.52	5.97	-	91.55	**386**	27.4	315	1,250	odor/no sheen
MW-15	04/23/2015	100.39	6.67	-	93.72	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
Tier 1 Remediation Objectives for Groundwater										
Tier 1 Remediation Objectives - Class I Groundwater (ug/l)						5	1,000	700	10,000	
Tier 1 Remediation Objectives - Class II Groundwater (ug/l)						25	2,500	1,000	10,000	

Note:
All results are reported in micrograms per liter (ug/L).
Analyses conducted using United States Environmental Protection Agency (USEPA) Methods.
Reference elevation based on temporary benchmark with an assigned elevation of 100.00 feet.
Equivalent Water elevation = Reference Elevation - Depth to Water + (0.75 X Product Thickness).
ND = Analyte not detected at or above the reporting limit.
NA = Not Available.
Comments based on field observations.
Tier 1 Groundwater Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
Bold values exceed Tier 1 Remediation Objectives.
Samples prior to 2011 collected by Parsons Engineering Science, Inc.

Table 4
Groundwater Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Well ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
MW-1	11/22/1999	ND<2.0	1.8	ND<0.085	ND<0.061	ND<0.061	ND<0.061	ND<0.085	ND<0.037
MW-1 (Duplicate)	11/22/1999	ND<32	ND<28	ND<1.4	**ND<1.0**	**ND<1.0**	**ND<1.0**	ND<1.4	**ND<0.60**
MW-1	11/16/2000	ND<1.2	ND<1.3	ND<0.067	ND<0.053	ND<0.050	ND<0.047	ND<0.040	ND<0.023
	04/24/2001	0.12	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<2.4	ND<2.4	ND<2.4	**ND<2.4**	**ND<2.4**	**ND<2.4**	ND<2.4	**ND<2.4**
	04/23/2015	NS	NS	NS	NS	NS	NS	NS	NS
MW-2	11/22/1999	ND<2.2	ND<1.9	ND<0.097	ND<0.069	ND<0.069	ND<0.069	ND<0.097	ND<0.042
	11/16/2000	ND<1.2	ND<1.3	ND<0.067	ND<0.053	ND<0.050	ND<0.047	ND<0.040	ND<0.023
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-3	11/22/1999	ND<1.6	ND<1.4	ND<0.070	ND<0.050	ND<0.050	ND<0.050	ND<0.070	ND<0.030
	11/16/2000	ND<1.2	ND<1.3	ND<0.067	ND<0.053	ND<0.050	ND<0.047	ND<0.040	ND<0.023
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-4	11/22/1999	ND<32	ND<28	ND<1.4	**ND<1.0**	**ND<1.0**	**ND<1.0**	ND<1.4	**ND<0.60**
	11/16/2000	ND<24	ND<26	ND<1.3	**ND<1.1**	**ND<1.0**	**ND<0.94**	ND<0.80	**ND<0.46**
MW-4 (Duplicate)	11/16/2000	ND<24	ND<26	ND<1.3	**ND<1.1**	**ND<1.0**	**ND<0.94**	ND<0.80	**ND<0.46**
MW-4	04/24/2001	0.41	0.075	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<47.2	ND<47.2	ND<47.2	**ND<47.2**	**ND<47.2**	**ND<47.2**	ND<47.2	**ND<47.2**
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-5	11/16/2000	ND<1.2	ND<1.3	ND<0.067	ND<0.053	ND<0.050	ND<0.047	ND<0.040	ND<0.023
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	NS	NS	NS	NS	NS	NS	NS	NS
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-6	11/16/2000	ND<1.2	ND<1.3	ND<0.067	0.10	0.17	0.15	0.096	0.052
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	0.063	0.063	**0.31**	**0.33**	**0.35**	0.20	**0.30**
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-7	11/16/2000	**ND<96,000**	**ND<100,000**	**ND<5,400**	**ND<4,200**	**ND<4,000**	**ND<3,800**	**ND<3,200**	**ND<1,800**
	04/24/2001	7.9	3.6	2.4	**1.2**	**ND<1.0**	**ND<1.0**	ND<1.0	**ND<1.0**
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	NS	NS	NS	NS	NS	NS	NS	NS
	04/23/2015	ND<10	ND<10	ND<5	**0.18**	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-9	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-10	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-11	04/23/2015	33	ND<10	7	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-12	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-13	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-14	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-15	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
Tier 1 Remediation Objectives for Groundwater									
Class I Groundwater		**420**	**210**	**2,100**	**0.13**	**0.20**	**0.18**	**210**	**0.17**
Class II Groundwater		2,100	1,050	10,500	0.65	2.0	0.90	1,050	0.85

Table 4
Groundwater Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Well ID	Sample Date	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
MW-1	11/22/1999	ND<0.061	ND<0.085	ND<0.061	ND<2.3	ND<0.098	61	ND<1.8	ND<0.073
MW-1 (Duplicate)	11/22/1999	ND<1.0	ND<1.4	ND<1.0	ND<3.8	ND<1.6	48	ND<3.0	ND<1.2
MW-1	11/16/2000	ND<0.060	ND<0.053	ND<0.053	ND<0.17	ND<0.047	46	ND<1.8	ND<0.053
	04/24/2001	ND<0.050	ND<0.050	ND<0.050	0.17	ND<0.050	120	0.12	ND<0.050
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	**ND<2.4**	**ND<2.4**	ND<2.4	ND<2.4	**ND<2.4**	16.5	ND<2.4	ND<2.4
	04/23/2015	NS	NS	NS	NS	NS	NS	NS	NS
MW-2	11/22/1999	ND<0.069	ND<0.097	ND<0.069	ND<0.26	ND<0.11	ND<1.9	ND<0.21	ND<0.083
	11/16/2000	ND<0.060	ND<0.053	ND<0.053	ND<0.17	ND<0.047	ND<1.1	ND<0.14	ND<0.053
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	0.12	ND<0.047	ND<0.047
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-3	11/22/1999	ND<0.050	ND<0.070	ND<0.50	ND<0.19	ND<0.080	ND<1.4	ND<0.15	ND<0.060
	11/16/2000	ND<0.060	ND<0.053	ND<0.053	ND<0.17	ND<0.047	ND<1.1	ND<0.14	ND<0.053
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-4	11/22/1999	ND<1.0	**ND<1.4**	ND<1.0	ND<3.8	**ND<1.6**	**150**	ND<3.0	ND<1.2
	11/16/2000	ND<1.2	**ND<1.1**	ND<1.1	ND<3.4	ND<0.94	**160**	ND<2.8	ND<1.1
MW-4 (Duplicate)	11/16/2000	ND<1.2	**ND<1.1**	ND<1.1	ND<3.4	ND<0.94	**200**	3.5	ND<1.1
MW-4	04/24/2001	ND<0.050	ND<0.050	ND<0.050	0.41	ND<0.050	**210**	0.27	ND<0.050
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	**ND<47.2**	**ND<47.2**	ND<47.2	ND<47.2	**ND<47.2**	**296**	ND<47.2	ND<47.2
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	**229**	ND<5	ND<2
MW-5	11/16/2000	ND<0.060	ND<0.053	ND<0.053	ND<0.17	ND<0.047	ND<1.1	ND<0.14	ND<0.053
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	NS	NS	NS	NS	NS	NS	NS	NS
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-6	11/16/2000	0.08	0.068	0.24	ND<0.17	0.24	ND<1.1	0.21	0.21
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	0.33	0.078	0.49	ND<0.047	0.19	0.075	0.12	0.44
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-7	11/16/2000	**ND<4,800**	**ND<4,200**	**ND<4,200**	**ND<14,000**	**ND<3,800**	**180,000**	**31,000**	**ND<4,200**
	04/24/2001	ND<1.0	**ND<1.0**	2.6	9.5	**ND<1.0**	**2,000**	**ND<250**	2.6
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	NS	NS	NS	NS	NS	NS	NS	NS
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	**472**	ND<5	ND<2
MW-9	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-10	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-11	04/23/2015	ND<1.5	ND<0.3	ND<2	43	ND<0.3	41	85	ND<2
MW-12	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	13	ND<5	ND<2
MW-13	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	**177**	ND<5	ND<2
MW-14	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-15	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
Tier 1 Remediation Objectives for Groundwater									
Class I Groundwater		**1.5**	**0.30**	**280**	**280**	**0.43**	**140**	**210**	**210**
Class II Groundwater		7.5	1.5	1,400	1,400	2.15	220	1,050	1,050

Note:
All results are reported in micrograms per liter (ug/L).
Polynuclear Aromatic Hydrocarbons (PNA's) analyses conducted using United States Environmental Protection Agency (USEPA) Methods.
ND = Analyte not detected at or above the reporting limit.
NE = Not Established.
NS = Not Sampled.
Tier 1 Groundwater Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
Bold values exceed Tier 1 Remediation Objectives.

ATTACHMENT 1

Illinois Environmental Protection Agency

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

General Information for the Budget and Billing Forms

LPC #: 1430655263 County: Peoria

City: Peoria Site Name: Illico Independent Oil Co.

Site Address: 3712 University Street

IEMA Incident No. 923441

IEMA Notification Date: 12/02/1992

Date this form was prepared: 10/02/2015 03

This form is being submitted as a (check one, if applicable):

- ☑ Budget Proposal
- ☐ Budget Amendment (Budget amendments must include only the costs over the previous budget.)
- ☐ Billing Package

Please provide the name(s) and date(s) of report(s) documenting the costs requested:

Name(s):

Date(s):

This form is being submitted for the site activities indicted below:

35 Ill. Adm. Code 734:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☑ Site Investigation — Stage 1: ☐ Stage 2: ☐ Stage 3: ☑
- ☐ Corrective Action — Actual Costs | | Proposed

35 Ill. Adm. Code 732:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☐ Site Classification
- ☐ Low Priority Corrective Action
- ☐ High Priority Corrective Action

35 Ill. Adm. Code 731:

- ☐ Site Investigation
- ☐ Corrective Action

General Information for the Budget and Billing Forms

The following address will be used as the mailing address for checks and any final determination letters regarding payment from the Fund.

Pay to the order of: Illico Independent Oil Co.

Send in care of: Marlin Environmental, Inc.

Address: 3935 Commerce Drive

City: Saint Charles State: IL Zip: 60174

The payee is the: Owner ☒ Operator ☒ (Check one or both.)

Pres

Signature of the owner or operator of the UST(s) (required)

W-9 must be submitted.
Click here to print off a W-9 Form.

Number of petroleum USTs in Illinois presently owned or operated by the owner or operator; any subsidiary, parent or joint stock company of the owner or operator; and any company owned by any parent, subsidiary or joint stock company of the owner or operator:

Fewer than 101: ☒ 101 or more: ☐

Number of USTs at the site: 5 (Number of USTs includes USTs presently at the site and USTs that have been removed.)

Number of incidents reported to IEMA for this site: 1

Incident Numbers assigned to the site due to releases from USTs: 923441

Please list all tanks that have ever been located at the site and tanks that are presently located at the site.

Product Stored in UST	Size (gallons)	Did UST have a release?	Incident No.	Type of Release Tank Leak / Overfill / Piping Leak
Gasoline	12,000	Yes ☒ No ☐	923441	Overfill
Gasoline	12,000	Yes ☒ No ☐	923441	Overfill
Gasoline .	12,000	Yes ☒ No ☐	923441	Overfill
Diesel	12,000	Yes ☒ No ☐	923441	Overfill
Kerosene	6,000	Yes ☒ No ☐	923441	Overfill
		Yes ☐ No ☒		
		Yes ☐ No ☒		
		Yes ☐ No ☒		
		Yes ☐ No ☒		

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Budget Summary

Choose the applicable regulations: ◉ 734 ○ 732

734	Free Product	Stage 1 Site Investigation	Stage 2 Site Investigation	Stage 3 Site Investigation	Corrective Action
Drilling and Monitoring Wells Costs Form				$2,778.96	
Analytical Costs Form				$3,074.41	
Remediation and Disposal Costs Form				$929.37	
UST Removal and Abandonment Costs Form				$0.00	
Paving, Demolition, and Well Abandonment Costs Form				$0.00	
Consulting Personnel Costs Form				$25,407.62	
Consultant's Materials Costs Form				$1,583.52	
Handling Charges Form	Handling charges will be determined at the time a billing package is submitted to the Illinois EPA. The amount of allowable handling charges will be determined in accordance with the Handling Charges Form.				
Total	$0.00	$0.00	$0.00	$33,773.88	$0.00

Drilling and Monitoring Well Costs Form

1. Drilling

Number of Borings to Be Drilled	Type HSA/PUSH/ Injection	Depth (feet) of Each Boring	Total Feet Drilled	Reason for Drilling
3	HSA	15	45	Migration Pathway/Monitoring Well
1	PUSH	6	6	FOC
			0	
			0	
			0	
			0	
			0	
			0	

☑ Subpart H minimum payment amount applies.

	Total Feet	Rate per Foot ($)	Total Cost ($)
Total Feet via HSA:	45	$28.50	$1,282.50
Total Feet via PUSH:	6	$22.30	$133.80
Total Feet for Injection via PUSH:	0	$18.59	$0.00
		Total Drilling Costs:	**$1,858.71**

adjusted to reflect Subpart H minimum payment amount

2. Monitoring / Recovery Wells

Number of Wells	Type of Well HSA / PUSH / 4" or 6" Recovery / 8" Recovery	Diameter of Well (inches)	Depth of Well (feet)	Total Feet of Wells to Be Installed ($)
3	HSA	2"	15	45
				0
				0
				0
				0

Well Installation	Total Feet	Rate per Foot ($)	Total Cost ($)
Total Feet via HSA:	45	$20.45	$920.25
Total Feet via PUSH:	0	$15.49	$0.00
Total Feet of 4" or 6" Recovery:	0	$30.98	$0.00
Total Feet of 8" or Greater Recovery:	0	$50.80	$0.00
		Total Well Costs:	**$920.25**

Total Drilling and Monitoring Well Costs:	**$2,778.96**

Analytical Costs Form

Laboratory Analysis	Number of Samples		Cost ($) per Analysis		Total per Parameter
Chemical Analysis					
BETX Soil with MTBE EPA 8260	6	x	$105.33	=	$631.98
BETX Water with MTBE EPA 8260	3	x	$100.37	=	$301.11
COD (Chemical Oxygen Demand)		x	$37.17	=	$0.00
Corrosivity		x	$18.59	=	$0.00
Flash Point or Ignitability Analysis EPA 1010		x	$40.88	=	$0.00
Fraction Organic Carbon Content (f_{oc}) ASTM-D 2974-00	1	x	$47.08	=	$47.08
Fat, Oil, & Grease (FOG)		x	$74.34	=	$0.00
LUST Pollutants Soil - analysis must include volatile, base/ neutral, polynuclear aromatics and metals list in Section 732. Appendix B and 734.Appendix B		x	$858.73	=	$0.00
Dissolved Oxygen (DO)		x	$29.74	=	$0.00
Paint Filter (Free Liquids)		x	$17.35	=	$0.00
PCB / Pesticides (combination)		x	$275.09	=	$0.00
PCBs		x	$137.54	=	$0.00
Pesticides		x	$173.48	=	$0.00
pH		x	$17.35	=	$0.00
Phenol		x	$42.13	=	$0.00
Polynuclear Aromatics PNA, or PAH SOIL EPA 8270	6	x	$188.36	=	$1,130.16
Polynuclear Aromatics PNA, or PAH WATER EPA 8270	3	x	$188.36	=	$565.08
Reactivity		x	$84.26	=	$0.00
SVOC - Soil (Semi-Volatile Organic Compounds)		x	$387.85	=	$0.00
SVOC - Water (Semi-Volatile Organic Compounds)		x	$387.85	=	$0.00
TKN (Total Kjeldahl) "nitrogen"		x	$54.52	=	$0.00
TPH (Total Petroleum Hydrocarbons)		x	$151.18	=	$0.00
VOC (Volatile Organic Compounds) - Soil (Non-Aqueous)		x	$216.85	=	$0.00
VOC (Volatile Organic Compounds) - Water		x	$209.42	=	$0.00
Field Blank BTEX	1	x	$100.37	=	$100.37
Trip Blank BTEX	1	x	$100.37	=	$100.37
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00
Geo-Technical Analysis					
Soil Bulk Density (p_b) ASTM D2937-94		x	$27.26	=	$0.00
Ex-situ Hydraulic Conductivity / Permeability		x	$315.98	=	$0.00
Moisture Content (w) ASTM D2216-92 / D4643-93		x	$14.87	=	$0.00
Porosity		x	$37.17	=	$0.00
Rock Hydraulic Conductivity Ex-situ		x	$433.70	=	$0.00
Sieve / Particle Size Analysis ASTM D422-63 / D1140-54		x	$179.68	=	$0.00
Soil Classification ASTM D2488-90 / D2487-90		x	$84.26	=	$0.00
Soil Particle Density (ps) ASTM D854-92		x	$90.00	=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00

Analytical Costs Form

Metals Analysis					
Soil preparation fee for Metals TCLP Soil (one fee per soil sample)		x	$97.89	=	$0.00
Soil preparation fee for Metals Total Soil (one fee per soil sample)		x	$19.82	=	$0.00
Water preparation fee for Metals Water (one fee per water sample)		x	$13.62	=	$0.00
Arsenic TCLP Soil		x	$19.82	=	$0.00
Arsenic Total Soil		x	$19.82	=	$0.00
Arsenic Water		x	$22.30	=	$0.00
Barium TCLP Soil		x	$12.39	=	$0.00
Barium Total Soil		x	$12.39	=	$0.00
Barium Water		x	$14.87	=	$0.00
Cadmium TCLP Soil		x	$19.82	=	$0.00
Cadmium Total Soil		x	$19.82	=	$0.00
Cadmium Water		x	$22.30	=	$0.00
Chromium TCLP Soil		x	$12.39	=	$0.00
Chromium Total Soil		x	$12.39	=	$0.00
Chromium Water		x	$14.87	=	$0.00
Cyanide TCLP Soil		x	$34.70	=	$0.00
Cyanide Total Soil		x	$42.13	=	$0.00
Cyanide Water		x	$42.13	=	$0.00
Iron TCLP Soil		x	$12.39	=	$0.00
Iron Total Soil		x	$12.39	=	$0.00
Iron Water		x	$14.87	=	$0.00
Lead TCLP Soil		x	$19.82	=	$0.00
Lead Total Soil		x	$19.82	=	$0.00
Lead Water		x	$22.30	=	$0.00
Mercury TCLP Soil		x	$23.54	=	$0.00
Mercury Total Soil		x	$12.39	=	$0.00
Mercury Water		x	$32.22	=	$0.00
Selenium TCLP Soil		x	$19.82	=	$0.00
Selenium Total Soil		x	$19.82	=	$0.00
Selenium Water		x	$18.59	=	$0.00
Silver TCLP Soil		x	$12.39	=	$0.00
Silver Total Soil		x	$12.39	=	$0.00
Silver Water		x	$14.87	=	$0.00
Metals TCLP Soil (a combination of all metals) RCRA		x	$127.63	=	$0.00
Metals Total Soil (a combination of all metals) RCRA		x	$116.47	=	$0.00
Metals Water (a combination of all metals) RCRA		x	$147.45	=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00
Other					
EnCore® Sampler, purge-and-trap sampler, or equivalent sampling device	6	x	$12.39	=	$74.34
Sample Shipping per sampling event[1]	2	x	$61.96	=	$123.92

[1] A sampling event, at a minimum, is all samples (soil and groundwater) collected in a calendar day

Total Analytical Costs:	**$3,074.41**

Remediation & Disposal Costs Form

A. Conventional Technology

Excavation, Transportation, and Disposal of contaminated soil and/or the 4-foot backfill material removal during early action activities:

Number of Cubic Yards	Cost per Cubic Yard ($)	Total Cost
	$70.63	$0.00

Backfilling the Excavation:

Number of Cubic Yards	Cost per Cubic Yard ($)	Total Cost
	$24.78	$0.00

Overburden Removal and Return:

Number of Cubic Yards	Cost per Cubic Yard ($)	Total Cost
	$8.06	$0.00

B. Alternative Technology

Alternative Technology Selected:	
Number of Cubic Yards of Soil to Be Remediated	
Total Non-Consulting Personnel Costs Summary Sheet ($)	
Total Remediation Materials Costs Summary Sheet ($)	
Total Cost of the System	$0.00

Remediation & Disposal Costs Form

C. Groundwater Remediation and/or Free Product Removal System

Total Non-Consulting Personnel Costs Summary Sheet ($)	
Total Remediation Materials Costs Summary Sheet ($)	
Total Cost of the System	$0.00

D. Groundwater and/or Free Product Removal and Disposal

☐ Subpart H minimum payment amount applies.

Number of Gallons	Cost per Gallon ($)	Total Cost
	$0.84	$0.00

E. Drum Disposal

☐ Subpart H minimum payment amount applies.

Number of Drums of Solid Waste	Cost per Drum ($)	Total Cost
3	$309.79	$929.37
	$309.79	$0.00
	$309.79	$0.00
Number of Drums of Liquid Waste	Cost per Drum ($)	Total Cost
	$185.88	$0.00
	$185.88	$0.00
	$185.88	$0.00
Total Drum Disposal Costs		$929.37

Total Remediation and Disposal Costs:	**$929.37**

Consulting Personnel Costs Form

Employee Name	Personnel Title	Hours	Rate ($)	Total Cost
Remediation Category	**Task**			
	Engineer III	6	$123.91	$743.46
Stage 3-Plan	Determine where to drill and sample, setup and consulting, review stage 2 results			
	Senior Project Manager	8	$123.91	$991.28
Stage 3-Plan	Stage 3 plan design, writing attachements			
	Project Manager	25	$111.52	$2,788.00
Stage 3-Plan	Stage 3 plan preparation			
	Project Manager	7	$111.52	$780.64
Stage 3-Budget	Stage 3 budget preparation			
	Senior Project Manager	5	$123.91	$619.55
Stage 3-Plan	Stage 3 plan and budget review and comment			
	Senior Prof. Engineer	3	$161.09	$483.27
Stage 3-Plan	Stage 3 plan final review and certification			
	Senior Prof. Geologist	3	$136.31	$408.93
Stage 3-Budget	Stage 3 budget final review and certification			
	Senior Draftsperson/CAD	3	$74.34	$223.02
Stage 3-Plan	Stage 3 plan drafting, maps and printing			
	Senior Admin. Assistant	7	$55.76	$390.32
Stage 3-Plan	Stage 3 plan and budget attachments, copying, binding and submittal			
	Project Manager	7	$111.52	$780.64
Stage 3-Field	coordinate off-site access			

Consulting Personnel Costs Form

Employee Name	Personnel Title	Hours	Rate ($)	Total Cost
Remediation Category	**Task**			
	Senior Project Manager	15	$123.91	$1,858.65
Stage 3-Field	Stage 3 office time, project management, subcontractor management, JULIE coordination			
	Senior Project Manager	5	$123.91	$619.55
Stage 3-Field	Field prep, travel to and from the site: drilling			
	Senior Project Manager	6	$123.91	$743.46
Stage 3-Field	Field time: drilling, soil screening, logging			
	Project Manager	5	$111.52	$557.60
Stage 3-Field	Field prep, travel to and from site: drilling			
	Project Manager	6	$111.52	$669.12
Stage 3-Field	Field time: drilling, soil sampling, surveying, well development			
	Senior Project Manager	5	$123.91	$619.55
Stage 3-Field	Field prep, travel to and from site: Gauging the entire network, slug test and groundwater sampling			
	Senior Project Manager	4	$123.91	$495.64
Stage 3-Field	Field time: gauging the entire network and groundwater sampling			
	Project Manager	5	$111.52	$557.60
Stage 3-Field	Field prep, travel to and from site: Gauging entire network and groundwater sampling			
	Project Manager	4	$111.52	$446.08
Stage 3-Field	Field time: Gauging the entire network, surveying and groundwater sampling			
	Project Manager	16	$111.52	$1,784.32
Stage 3-Field	Stage 3 results evaluation and data management			

Consulting Personnel Costs Form

Employee Name	Personnel Title	Hours	Rate ($)	Total Cost
Remediation Category	**Task**			
	Senior Draftsperson/CAD	8	$74.34	$594.72
Stage 3-Field	Stage 3 results drafting: Assessment maps, GW countour & flow mapping, cross section(s)			
	Senior Prof. Engineer	1	$161.09	$161.09
Stage 3-Field	Stage 3 results: GW results review & extent determination concurrence			
	Senior Acct. Technician	5	$68.14	$340.70
Stage 3-Pay	Stage 3 actual costs budget: Project management, waivers			
	Senior Acct. Technician	16	$68.14	$1,090.24
Stage 3-Pay	Stage 3 actual costs budget: Preparation and Attachments			
	Senior Prof. Geologist	5	$136.31	$681.55
Stage 3-Pay	Stage 3 actual costs budget: Review and certification			
	Project Manager	10	$111.52	$1,115.20
SICR	SICR: Report preparation, data, calculations, extent, attachments			
	Project Manager	25	$111.52	$2,788.00
SICR	SICR: Report preparation, writing			
	Senior Draftsperson/CAD	3	$74.34	$223.02
SICR	SICR: Drafting & map printing			
	Senior Prof. Engineer	4	$161.09	$644.36
SICR	SICR: Review & Certification			
	Senior Admin. Assistant	7	$55.76	$390.32
SICR	SICR & Stage 3 actual costs budget: Copies, binding & Submittal			

Consulting Personnel Costs Form

Employee Name	Personnel Title	Hours	Rate ($)	Total Cost
Remediation Category	**Task**			
	Senior Acct. Technician	2	$68.14	$136.28
Stage 3-Pay	Stage 3 reimbursement claim, project management, waivers / affidavits			
	Senior Acct. Technician	6	$68.14	$408.84
Stage 3-Pay	Stage 3 reimbursement claim: Bill, attachments, files & submittal			
	Senior Prof. Geologist	2	$136.31	$272.62
Stage 3-Pay	Stage 3 reimbursement claim: final review & certification			

Total of Consulting Personnel Costs:	**$25,407.62**

Consultant's Materials Costs Form

Employee Name		Time or Amount Used	Rate ($)	Unit	Total Cost
Remediation Category	**Description/Justification**				
Field Vehicle		2	$190.00	Day	$380.00
Stage 3-Field	Drilling and GW sampling				
Consultant Field Sampling Equipment		3	$32.00	Day	$96.00
Stage 3-Field	Drilling, Groundwater sampling & monitoring				
Photoionization Detector		1	$192.00	Day	$192.00
Stage 3-Field	Soil screening during drilling				
Water Level Indicator		2	$87.00	Day	$174.00
Stage 3-Field	DTW drilling, MWs				
Measuring Wheel		1	$42.00	Day	$42.00
Stage 3-Field	Mapping & Site Survey Measurements				
Survey Equipment		1	$191.00	Day	$191.00
Stage 3-Field	Survey Monitoring Well Network				
Consultant Latex Gloves		2	$34.00	Box	$68.00
Stage 3-Field	Sampling Activities drilling and GW sampling				
Bailers		7	$41.00	Each	$287.00
Stage 3-Field	Well Development, sampling (3 develop, 3 sample), 1 Slug test				
Nylon Rope		126	$0.52	Foot	$65.52
Stage 3-Field	Well Development, sampling				
Metal Detector		2	$40.00	Day	$80.00
Stage 3-Field	Locate utilities and buried infrastructure during drilling and locate existing wells during sampling				

Consultant's Materials Costs Form

Employee Name		Time or Amount Used	Rate ($)	Unit	Total Cost
Remediation Category	**Description/Justification**				
Digital Camera		1	$8.00	Day	$8.00
Stage 3-Field	Mapping and Drilling Documentation				
					$0.00
					$0.00
					$0.00
					$0.00
					$0.00
					$0.00
					$0.00
					$0.00

Total of Consultant Materials Costs:	**$1,583.52**

Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form

I hereby certify that I intend to seek payment from the UST Fund for costs incurred while performing corrective action activities for Leaking UST incident 923441. I further certify that the costs set forth in this budget are for necessary activities and are reasonable and accurate to the best of my knowledge and belief. I also certify that the costs included in this budget are not for corrective action in excess of the minimum requirements of 415 ILCS 5/57, no costs are included in this budget that are not described in the corrective action plan, and no costs exceed Subpart H: Maximum Payment Amounts, Appendix D Sample Handling and Analysis amounts, and Appendix E Personnel Titles and Rates of 35 Ill. Adm. Code 732 or 734. I further certify that costs ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 732.606 or 734.630 are not included in the budget proposal or amendment. Such ineligible costs include but are not limited to:

Costs associated with ineligible tanks.
Costs associated with site restoration (e.g., pump islands, canopies).
Costs associated with utility replacement (e.g., sewers, electrical, telephone, etc.).
Costs incurred prior to IEMA notification.
Costs associated with planned tank pulls.
Legal fees or costs.
Costs incurred prior to July 28, 1989.
Costs associated with installation of new USTs or the repair of existing USTs.

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OCT 06 2015
IEPA/BOL

Owner/Operator: Illico Independent Oil Co.

Authorized Representative: David Golwitzer Title: Owner

Signature: [signature] President Date: 10-2-15

Subscribed and sworn to before me the 2nd day of October, 2015

[signature] (Notary Public) Seal:

OFFICIAL SEAL
JEFF WIENHOFF
Notary Public - State of Illinois
My Commission Expires 4/29/2018

In addition, I certify under penalty of law that all activities that are the subject of this plan, budget, or report were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan, budget, or report and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in the plan, budget, or report has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 732 or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

L.P.E./L.P.G.: Jeff Wienhoff L.P.E./L.P.G. Seal:

L.P.E./L.P.G. Signature: [signature] Date: 10/6/15

Subscribed and sworn to before me the 6th day of October, 2015

[signature] (Notary Public) Seal:

D. EGGLESTON
OFFICIAL SEAL
Notary Public - State of Illinois
My Commission Expires
December 06, 2017

The Illinois EPA is authorized to require this information under 415 ILCS 5/1. Disclosure of this information is required. Failure to do so may result in the delay or denial of any budget or payment requested hereunder.

Office of the Illinois
State Fire Marshal

General Office
217-785-0969

Divisions
ARSON INVESTIGATION
217-782-6855
BOILER and PRESSURE VESSEL SAFETY
217-782-2696
FIRE PREVENTION
217-785-4714
MANAGEMENT SERVICES
217-782-9889
INFIRS
217-785-1016
PERSONNEL
217-785-1009
PERSONNEL STANDARDS and EDUCATION
217-782-4542
PETROLEUM and CHEMICAL SAFETY
217-785-5878
PUBLIC INFORMATION
217-785-1021

CERTIFIED MAIL - RECEIPT REQUESTED # P 239 741 688

November 15, 1993

David Golwitzer
Illico Independent Oil Company
617 Keokuk
Lincoln, IL 62656

In re: Facility No. 3-007188
IEMA Incident No. 92-3441
Illico Independent Oil Company
3712 N. University St.
Peoria, PEORIA CO., IL

Dear Mr. Golwitzer:

The Reimbursement Eligibility and Deductibility Application, received on 9-20-93 for the above referenced occurrence has been reviewed. The following determinations have been made based upon this review.

It has been determined that you are eligible to seek corrective action costs in excess of $10,000. The costs must be in response to the occurrence referenced above and associated with the following tanks:

Eligible Tanks

Tank #1 - 12,000 gallon gasoline
Tank #2 - 12,000 gallon gasoline
Tank #3 - 12,000 gallon gasoline
Tank #4 - 12,000 gallon diesel
Tank #5 - 6,000 gallon kerosene

This decision constitutes the preliminary determination regarding your deductible. We reserve the right to change the deductible determination should additional information that would change the determination become available.

The Illinois Environmental Protection Agency will send you a packet of Agency billing forms for submitting your request for payment.

An owner or operator is eligible to access the Underground Storage Tank Fund if the eligibility requirements are satisfied:

1. Neither the owner nor the operator is the United States Government;

2. The tank does not contain fuel which is exempt from the Motor Fuel Tax Law;

3. The costs were incurred as a result of a confirmed release of any of the following substances:

   "Fuel", as defined in Section 1.10 of the Motor Fuel Tax Law

   Aviation fuel

   Heating oil

   Kerosene

   Used oil, which has been refined from crude oil used in a motor vehicle, as defined in Section 1.3 of the Motor Fuel Tax Law.

4. The owner or operator registered the tank and paid all fees in accordance with the statutory and regulatory requirements of the Gasoline Storage Act.

5. The owner or operator notified the Illinois Emergency Management Agency of a confirmed release, the costs were incurred after the notification and the costs were a result of a release of a substance listed in this Section. Costs of corrective action or indemnification incurred before providing that notification shall not be eligible for payment.

6. The costs have not already been paid to the owner or operator under a private insurance policy, other written agreement, or court order.

7. The costs were associated with "corrective action".

This constitutes the final decision as it relates to your eligibility and deductibility. An underground storage tank owner or operator may appeal the decision to the Illinois Pollution Control Board (Board), pursuant to Section 57.9 (c) (2). An owner or operator who seeks to appeal the decision shall file a petition for a hearing before the Board within 35 days of the date of mailing of the final decision (35 Illinois Administrative Code 105.102(a) (2)).

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

Dorothy Gunn, Clerk
Illinois Pollution Control Board
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, Illinois 60601
(312)814-3620

If you have any questions regarding the eligibility or deductibility determinations, please contact Pat Flannigan at (217)785-1020 or (217)785-5878 between 3:00 - 4:00 p.m.

Sincerely,

James I. McCaslin
Director
Division of Petroleum and Chemical Safety

JIM:PF:bc

cc: IEPA
Facility File

#5387

Premcor Refining Group, Inc.
Incident # 923441
Leaking UST Technical File

MARLIN Environmental

December 14, 2015

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
Bureau of Land - #24
Leaking Underground Storage Tank Section
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

Re: LPC# 1430655263 – Peoria County
Peoria / Illico Independent Oil Co.
3712 North University St.
Leaking UST Incident No. 923441

Dear Mr. Benanti:

Please find enclosed the *Corrective Action Plan and Budget* for the above-referenced site. Marlin Environmental, Inc., on behalf of Illico Independent Oil Co., requests that a *Project Labor Agreement* not be required for the activities proposed in the plan. The requirement of a PLA on this project will only delay the implementation of the corrective action steps that need to be taken. By not requiring a *Project Labor Agreement*, the proposed corrective action activities will be able to be completed in a more expeditious and timely manner.

The request is based upon the following reasons:

- Use of a PLA will disproportionately increase the cost of the corrective action work due to higher wage rates costs for union labor. Union work rules will require an increase in manpower to perform identical functions, resulting in a lack of efficiency and ultimately higher costs.
- Corrective action requires highly trained and certified employees. The quality is ensured without a PLA given that the intrusive activities will be completed by capable, skilled workers with more than 20 years combined experience in performing UST removals and excavation activities at LUST sites who have maintained an excellent safety record in that time. Additionally, safety is ensured as each of the workers are required to be 40-hour HAZWOPER trained with current 8-hour Refreshers. Requiring a PLA on this project will not increase project safety since the workers utilized will meet these Occupational Safety and Health Administration (OSHA) requirements.
- Use of a PLA will delay completion of corrective action due to difficulty finding a contractor with properly licensed, trained and experienced union workers. A majority of union workers do not have the required training or certifications. The work could be scheduled immediately if the PLA requirement was rescinded, thereby increasing efficiency to the state and ultimately leading to faster obtainment of the NFR designation.

For these reasons, we do not feel that a PLA advances the state's interest on this project and that it can be completed in a safer, less expensive and timelier manner if allowed to proceed without requiring a PLA.

Should you have any questions or require additional information, please do not hesitate to contact Jeff Wienhoff at (217) 726-7569 x25, jeffw@marlinenv.com or Shawn Wolfe at (630) 444-1933 x14 or shawnw@marlinenv.com.

Sincerely,

MARLIN ENVIRONMENTAL, INC.

Jeff Wienhoff
Senior Professional Engineer

Shawn D. Wolfe
Senior Project Manager

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DEC 14 2015
IEPA/BOL

Cc: Marlin project file

3935 COMMERCE DRIVE • ST. CHARLES, ILLINOIS 60174 • (630) 444-1933 • FAX (630) 444-1939

MARLIN
Environmental

CORRECTIVE ACTION PLAN
REMEDIATION AND TACO CLOSURE

ILLICO INDEPENDENT OIL CO.
3712 NORTH UNIVERSITY STREET
PEORIA, PEORIA COUNTY, ILLINOIS 61614
LUST INCIDENT #923441
LPC #1430655263

Prepared for:

Illico Independent Oil Co.
Mr. David Golwitzer
2201 Woodlawn Road Suite 600
Lincoln, Illinois 62656

Prepared by:

MARLIN ENVIRONMENTAL, INC.
3900 Wood Duck Drive Suite F.
Springfield, Illinois 62711

December 14, 2015

Jeff R. Wienhoff, P.E.
Senior Professional Engineer

Joe Buhlig
Project Manager

TABLE OF CONTENTS

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Corrective Action Plan

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (Not a P.O. Box): 3712 University Street

City: Peoria County: Peoria ZIP Code: 61614

Leaking UST Technical File

B. Site Information

1. Will the owner or operator seek reimbursement from the Underground Storage Tank Fund? Yes ☒ No ☐
2. If yes, is the budget attached? Yes ☒ No ☐
3. Is this an amended plan? Yes ☐ No ☒
4. Identify the material(s) released: Gasoline, Diesel, Kerosene
5. This Corrective Action Plan is being submitted pursuant to:

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   a. 35 Ill. Adm. Code Section 731.166: ☐

      The material released was:
      - petroleum ☐
      - hazardous substance (see Environmental Protection Act Section 3.215) ☐

   b. 35 Ill. Adm. Code Section 732.404 ☐

   c. 35 Ill. Adm. Code Section 734.335 (Pursuant to PA 96-0908) ☒

C. Proposed Methods of Remediation

1. Soil *On-site:* Removal of the four (4) 12,000-gallon capacity and one (1) 6,000-gallon capacity underground storage tanks (USTs) and related integral product piping to eliminate the source of the contaminated soils and provide the ability to access the worst soils. Conventional technology remediation of the contaminant plume in excess of the calculated site-specific Tier 2 Soil Remediation Objectives (SROs), taking into account an on-site potable well restriction and the industrial/commercial use of the property, will be excavated

for transport and proper disposal. Those soils defined as impacted in excess of the Tier 1 SROs, but below the calculated Tier 2 SROs, will be left to remain in-place on-site.

Off-site: The soil contamination that has migrated beneath the adjacent Right-of-Way of North University Street and W. War Memorial Dr. will be addressed with a Highway Authority Agreement through the City of Peoria and the Illinois Department of Transportation (IDOT). The commercial property to the West of N. University Street will be addressed with access denial.

2. Groundwater — Shortly after soil excavation activities have been completed, monitoring well MW-4 will be reinstalled. Approximately two weeks following the completion of backfilling activities each existing well will be resampled to update modeling data. The groundwater contamination that exists at the site will be addressed through institutional controls. Water surrounding the USTs and throughout the excavation have the potential to exhibit free product conditions due to satureated soil contamination levels. These free product conditions will be removed from the base of the excavation during the excavation activities. A Highway Authority Agreement will be sought for the groundwater contamination beneath the Right-of-Way of North University St. and West War Memorial Dr. Contamination that has the potential to affect the commercial property to the west will be addressed through access denial.

D. Soil and Groundwater Investigation Results (for incidents subject to 35 Ill. Adm. Code 731 only or 732 that were classified using Method One or Two, if not previously provided)

Provide the following:

1. **Description of investigation activities performed to define the extent of soil and/or groundwater contamination;**

   Please refer to the IEPA approved *Site Investigation Completion Report* (*SICR*) dated December 14, 2015. The site location and site features are presented as **Figure 1** and **2,** respectively.

2. **Analytical results, chain-of-custody forms, and laboratory certifications;**

   Please refer to the previously submitted reports approved by the IEPA.

3. **Tables comparing analytical results to applicable remediation objectives;**

   Please refer to the previously submitted reports approved by the IEPA along with **Table I**.

4. **Boring logs;**

   Please refer to the previously submitted reports approved by the IEPA.

5. **Monitoring well logs; and**

   Please refer to the previously submitted reports approved by the IEPA.

6. **Site maps meeting the requirements of 35 Ill. Adm. Code 732.110(a) or 734.440 and showing:**
   a. Soil sample locations; Please refer to **Figure 2**.
   b. Monitoring well locations; Please refer to **Figure 2**.
   c. The plume of soil contamination based on analytical results; Please refer to **Figure 2**.

E. Technical Information - Corrective Action Plan

Provide the following:

1. **Executive summary identifying the objectives of the corrective action plan and the technical approach to be utilized to meet such objectives;**

This *Corrective Action Plan* (*CAP*) has been designed to remove on-site soil in excess of the calculated Tier 2 SROs while taking into account an on-site potable well restriction and the industrial/commercial use of the property. Site-specific physical data collected during Site Investigation activities was utilized to calculate appropriate Tier 2 SROs. **Table I** compares the results above Tier 1 SROs to appropriate Tier 2 SROs to demonstrate compliance with TACO. The remediation areas of the site including areas surrounding the USTs and their associated piping will be removed to a depth of 8 and 13 feet below grade. The proposed areas of excavation are delineated in **Figure 2**.

In order to access the soils contaminated above the Tier 2 SROs and remove the source of the contamination, the UST systems at the site along with the contaminated backfill material needs to be removed. There are currently four (4) 10,000-gallon and one (1) 6,000-gallon USTs at the Illico facility. These USTs, along with the dispensers and integral product piping, are illustrated on **Figure 2**. Appropriate Office of the Illinois State Fire Marshal (OSFM) UST Removal Permits will be obtained prior to the removal of the tanks. The USTs, pump islands and associated integral piping will be decommissioned and removed as part of the necessary Corrective Actions for the facility. The USTs will be pumped of any remaining residual free product associated with the USTs by a Licensed Special Waste vacuum truck and disposed off-site at a wastewater treatment facility, if/as applicable. The UST removals will be supervised by a Licensed UST Decommissioner and the OSFM representative and will follow the procedures set forth in 41 Illinois Administrative Code (IAC) Part 170.670 – Removal or Abandonment-in-Place of Underground Storage Tanks.

The proposed on-site excavation at approximate depths of eight (8) feet can be maintained across the entire proposed excavation without significant contact with the fully present saturated zone. If the fully present saturated zone is contacted, then excavation of impacted soils will be halted at that depth interval. Due to the size of the USTs (12,000 & 6,000) the tank pit area will be excavated to thirteen (13) feet in order to remove the tanks and the contaminated backfill surrounding them.

Soil confirmation samples will be collected at 20-foot intervals, per IEPA protocols. The soil confirmation sample results will be compared to the calculated Tier 2 SROs. Confirmation samples will also be modeled using the S28 equation as promulgated in 35 IAC 742, to determine the potential leaching capacity of the soil and whether or not the soil samples pose a potential future leaching threat to the shallow groundwater regime. The soil confirmation samples will be analyzed for BTEX/PNA constituents.

Residual highly contaminated groundwater and groundwater exhibiting a sheen encountered within the excavation cavity will be recovered utilizing a vacuum tanker truck and

transported for proper disposal at a licensed TSD facility. The recovery of highly contaminated groundwater exhibiting a sheen associated with the release is required.

Once the soil remediation actions have concluded, the excavation cavity will be backfilled to grade with suitable clean materials. The on-site areas will be restored to pre-excavation conditions with the concrete pavement also being replaced in the areas where it currently exists. After the site has been returned to pre-excavation conditions, Marlin is proposing to re-install MW-4.

Marlin Environmental, Inc. will then mobilize to the facility to collect one (1) final round of groundwater confirmation samples and measure the effect the soil remediation has on the groundwater regime. The remaining soil and groundwater contaminant levels will be modeled using Equations S28 (soil leaching) and R26 in order to determine the potential long-term extents of groundwater contamination. It is anticipated that the significant amount of source removal will result in a reduction of groundwater contaminant levels.

A Highway Authority Agreement will be sought and executed for the Right-of-Way of West War Memorial Drive with IDOT and North University Street with the City of Peoria. This agreement will address the contamination that has already migrated and has the potential to migrate into the Right-of-Way. An access denial affidavit will be submitted with the CACR for the commercial property to the west.

Following the receipt of an executed Highway Authority, a *Corrective Action Completion Report* (*CACR*) will be submitted to the IEPA with, requesting issuance of a No Further Remediation letter for the incident. Upon issuance of the NFR designation from the IEPA, the owner shall record the NFR document to the title of the site with the County Recorder of Peoria County. The groundwater monitoring wells shall be properly abandoned, in accordance with 77 IAC 920.120, following the receipt of the NFR designation from the IEPA.

The budget for the work associated with this *CAP* proposal is included as **Attachment 2**.

a. The major components (e.g., treatment, containment, removal) of the corrective action plan;

- The major components of this *CAP* include the on-site removal of soils in excess of appropriate Tier 2 SROs to depths of approximately thirteen (13) and eight (8) feet below grade to ensure full removal of the source area soil. An approximate 1,640 cubic yards of contaminated soil will be properly disposed (after properly removing the volume of the USTs).

- Those soils defined as impacted in excess of the Tier 1 SROs, but below the calculated Tier 2 SROs will be left to remain in-place on-site. Once the soil remediation is complete and the areas are restored, Marlin Environmental, Inc. will mobilize to the site to re-install MW-4. Approximately two weeks following the completion of backfill activities Marlin will return to the site and collect a final round of groundwater samples. The soil and groundwater analytical data will be used to assess the success of this remediation plan and establish proper closure reports and controls.

- A Highway Authority Agreement will be sought and executed for the Right-of-Way of West War Memorial Drive with the IDOT and North University Street with the City of Peoria. This agreement will address the contamination that has already migrated and has the potential to migrate into the Right-of-Way.

- An access denial affidavit will address the remaining soil and groundwater contamination that exists at the commercial property to the west.

- Once the remediation *CAP* activities are concluded, and the data interpreted and evaluated, a *CACR* shall be submitted to the Agency.

b. The scope of the problems to be addressed by the proposed corrective action; and

The proposed *CAP* will address the soil contamination above applicable Tier 2 SROs as well as the highly contaminated groundwater conditions at the site and address other contamination that remains through the reliance upon and on-site potable well restriction, an industrial/commercial land use restriction, construction worker caution, a Highway Authority Agreement and access denial affidavit.

c. A schedule for implementation and completion of the plan;

Upon IEPA approval of this *CAP*, the on-site excavation and UST system removal will be scheduled and performed. Once the conventional technology remediation is completed, the excavation will be backfilled, and surface restored. Approximately 14 days following backfilling activities, the groundwater monitoring well network will then be sampled for dissolved BTEX/PNA constituents. The process of obtaining the required Highway Authority Agreement with IDOT and the City of Peoria will then be initiated.

Following receipt of the executed Highway Authority Agreement, the *CACR* will be prepared and submitted. Following issuance of the No Further Remediation letter, the monitoring wells at the site will be abandoned.

2. Identification of the remediation objectives proposed for this site;

The indicator contaminants for the diesel fuel release associated with this facility are BTEX and PNA constituents. Soil cleanup objectives will be based upon the calculated Tier 2 SROs on-site and the Tier 1 SROs off-site. Groundwater remediation objectives are based upon the IEPA TACO Tier 1 GROs for Class I Groundwater.

3. A description of the remedial technologies selected:

Conventional technology has been selected for this site. Removal of the soils in excess of appropriate Tier 2 SROs will address the soil contaminants, along with the appropriate institutional controls to address remaining groundwater contamination and migration of contaminants beneath the Right-of-Way.

a. The feasibility of implementing the remedial technologies;
b. Whether the remedial technologies will perform satisfactorily and reliably until the remediation objectives are achieved; and
c. A schedule of when the technologies are expected to achieve the applicable remediation objectives;

Conventional technology is a feasible, reliable, effective technology for this site and these site conditions. The removal of the highly impacted soils will have an immediate effect on both the soil and shallow groundwater regimes.

4. A confirmation sampling plan that describes how the effectiveness of the corrective action activities will be monitored during their implementation and after their completion;

Soil confirmation samples will be collected from the floor and sidewalls at 20-foot intervals during the soil remediation activities and analyzed for BTEX/PNA LUST site indicators. One (1) final event of groundwater monitoring and sampling will be conducted with each monitoring well being tested for dissolved BTEX/PNA LUST site indicators to determine the long-term migration potential of the remaining contaminants.

Soil Sampling

Soil confirmation samples will be collected from the floor and sidewalls at twenty-foot intervals during the soil remediation activities and analyzed for BTEX and PNA constituents. Non disposable sampling tools will be thoroughly cleansed with a non-phosphate detergent wash and distilled water rinse between each sampling event to help prevent possible cross-contamination between the samples. Disposable latex sampling gloves will be worn during the sampling procedures to help safeguard against potential cross-contamination.

Representative soil samples from each location will be placed into zipper lock baggies and sealed. The soil within the bags will then be broken up to help increase the surface area for volatilization. The probe tip of a field portable PID probe tip will be inserted through the seal of the bag to measure the concentration of volatile organic vapors within the headspace of the bag (headspace screening method). The organic hydrocarbon vapors will be measured and recorded in PID meter units or equivalent ppm concentrations. The detection limit of the PID is one-ppm meter unit.

Additional portions of soil from selected locations will be placed into laboratory provided jars and vials. The samples will be labeled, properly preserved, stored in a cooler, and kept at a temperature of approximately four degrees centigrade to await possible analytical testing procedures.

Sampling Procedures

The following activities shall be conducted in accordance with "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846 or other procedures as approved by the Agency:

- Field sampling activities, including but not limited to activities relative to sample collection, documentation, preparation, labeling, storage and shipment, security, quality assurance and quality control, acceptance criteria, corrective action, and decontamination procedures;

- Field measurement activities, including but not limited to activities relative to equipment and instrument operation, calibration and maintenance, corrective action, and data handling; and

- Quantitative analysis of samples to determine concentrations of indicator contaminants, including but not limited to activities relative to facilities, equipment and instrumentation, operating procedures, sample management, test methods, equipment calibration and maintenance, quality assurance and quality control, corrective action, data reduction and validation, reporting, and records management. Analyses of samples that require more exacting detection limits than, or that cannot be analyzed by standard methods identified in, "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846, shall be conducted in accordance with analytical protocols developed in consultation with and approved by the Agency.

- The analytical methodology used for the analysis of indicator contaminants shall have a practical quantitation limit at or below the objectives or detection levels set forth in 35 IAC 742 or as determined by the Agency.

- Quantitative analyses of samples shall be conducted by a laboratory accredited for the analyzed parameters in accordance with the requirements of 35 IAC 186.

- An authorized agent of the accredited laboratory conducting the quantitative analyses shall certify that the analyses were conducted by a laboratory accredited for the analyzed parameters in accordance with 35 IAC 186. The certification shall be submitted with the results of the analyses in the applicable report.

Groundwater samples will be collected and analyzed from the site monitoring wells in accordance with the procedures set forth in "Test Methods for Evaluating Solid Wastes, Physical/ Chemical Methods," EPA publication No. SW-846, as appropriate for the applicable indicator contaminates and methods. .

Several well volumes of water will be purged from the well using a dedicated disposable bailer and nylon cord. The representative groundwater sample will then be collected and placed directly into properly labeled laboratory approved jars. The sample jars will be placed in a cooler, on ice, for delivery to the laboratory following signed chain-of-custody protocol.

Indicator Contaminants

Based on previous site investigation for the LUST incidents, the indicator contaminants for the LUST site are BTEX and PNA constituents. An independent, Illinois accredited environmental laboratory will analyze the samples. The laboratory analytical testing methodology will have practical quantitation limits (PQL) at or below the objectives or detection levels set forth in 35 IAC 742. The analytical sample results will be compared against the indicator contaminant groundwater quality standards specified in 35 IAC 742 to determine if there has been an exceedance.

In addition to analytical results, sampling and analytical reports will contain the following information:

1) Sample collection information including but not limited to the name of the sample collector, time and date of sample collection, method of collection, and monitoring location;
2) Sample preservation and shipment information including but not limited to field quality control;
3) Analytical procedures including but not limited to the method detection limits and the PQLs.
4) Chain of custody and control; and
5) Field and lab blanks

Groundwater Sampling Cross-contamination

The monitoring wells will be purged and sampled using disposable HDPE bailer and nylon cord dedicated to each well. Field and laboratory blanks will be prepared for the groundwater sampling activities to help insure that cross-contamination has not occurred. The laboratory will prepare a blank sample, which will be present in the cooler during the sampling and transportation activities. While in the field collecting groundwater samples, one set of jars

labeled as the field blank will be prepared. The jars will be filled in the field with distilled water to simulate the groundwater sampling procedures, handling and exposure. The field and laboratory trip blank samples will be analyzed for BTEX indicator contaminants along with the monitoring well groundwater samples.

5. A description of the current and projected future uses of the site;

The current use of the site is as an active gasoline service station. Neighboring properties consist solely of commercial and residential properties. The site and surrounding area are likely to retain similar usage post-remediation, as of the time of this report.

6. A description of engineered barriers or institutional controls that will be relied upon to achieve remediation objectives;

a. An assessment of their long-term reliability;
b. Operating and maintenance plans; and
c. Maps showing area covered by barriers and institutional controls;

The institutional controls that will be required following implementation of the plan are an on-site potable well restriction, an on-site industrial/commercial land use restriction, an access denial affidavit and Highway Authority Agreements with IDOT and the City of Peoria.

7. The water supply well survey:

a. Map(s) showing the locations of community water supply wells and other potable wells and the setback zone for each well;
b. Map(s) showing regulated recharge areas and wellhead protection areas;
c. Map(s) showing the current extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives;
d. Map(s) showing the modeled extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives;
e. Tables listing the setback zone for each community water supply well and other potable water supply wells;
f. A narrative identifying each entity contacted to identify potable water supply wells, the name and title of each person contacted, and any other field observations associated with any wells identified; and
g. A certification from a licensed Professional Engineer or Licensed Professional Geologist that the survey was conducted in accordance with the requirements and that documentation submitted includes information obtained as a result of the survey (certification of this plan satisfies this requirement);

Please refer to the previously submitted reports.

8. Appendices;

a. References and data sources report that are organized; and

Not applicable for this *CAP*.

b. Field logs, well logs, and reports of laboratory analyses;

Please refer to previously submitted reports.

9. Site map(s) meeting the requirements of 35 Ill. Adm. Code 732.110(a) or 734.440;

Please refer to **Figure 2**.

10. Engineering design specifications, diagrams, schematics, calculations, manufacturer's specifications, etc.;

Conventional technology remediation of the contaminant plume defined as impacted in excess of the calculated site-specific Tier 2 SROs for human exposure pathways will be excavated for transport and proper disposal. Those soils defined as impacted in excess of the Tier 1 SROs, but below the calculated Tier 2 SROs, will be left to remain in-place on-site.

11. A description of bench/pilot studies;

Not applicable for this LUST facility.

12. Cost comparison between proposed method of remediation and other methods of remediation;

Not applicable for this LUST facility.

13. For the proposed Tier 2 or 3 remediation objectives, provide the following:

a. The equations used;
b. A discussion of how input variables were determined;
c. Map(s) depicting distances used in equations; and
d. Calculations;

The site-specific data collected during the Site Investigation activities was utilized to determine Tier 2 SROs for the Soil Component of the Groundwater Ingestion Exposure Pathway (using Equations S18 and S28) and Soil Inhalation Exposure Pathway for Residential properties (using Equations S4, S6 and S8 as appropriate) and Construction Worker populations (using Equations S5 and S9 as appropriate). The data calculations sheets, supporting laboratory sheets along with SSL IEPA forms are included in **Attachment 1.** Contaminant fate transport modeling will be performed and included in the *CACR*.

14. Provide documentation to demonstrate the following for alternative technologies:

a. The proposed alternative technology has a substantial likelihood of successfully achieving compliance with all applicable regulations and remediation objectives;
b. The proposed alternative technology will not adversely affect human health and safety or the environment;
c. The owner or operator will obtain all Illinois EPA permits necessary to legally authorize use of alternative technology;
d. The owner or operator will implement a program to monitor whether the requirements of subsection (14)(a) have been met;
e. Within one year from the date of Illinois EPA approval, the owner or operator will provide to the Illinois EPA monitoring program results establishing whether the proposed alternative

technology will successfully achieve compliance with the requirements of subsection (14)(a); and

f. Demonstration that the cost of alternative technology will not exceed the cost of conventional technology and is not substantially higher than at least two other alternative technologies, if available and technically feasible.

Not applicable for this LUST facility.

15. Property Owner Summary Form

This will be provided within the *CACR* for this facility.

F. Exposure Pathway Exclusion

Provide the following:

1. A description of the tests to be performed in determining whether the following requirements will be met:

a. Attenuation capacity of the soil will not be exceeded for any of the organic contaminants;
b. Soil saturation limit will not be exceeded for any of the organic contaminants;
c. Contaminated soils do not exhibit any of the reactivity characteristics of hazardous waste per 35 Ill. Adm. Code 721.123;
d. Contaminated soils do not exhibit a pH <2.0 or >12.5; and
e. Contaminated soils which contain arsenic, barium, cadmium, chromium, lead, mercury, or selenium (or their associated salts) do not exhibit any of the toxicity characteristics of hazardous waste per 35 Ill. Adm. Code 721.124.

Not applicable for this LUST facility.

2. A discussion of how any exposure pathways are to be excluded.

Not applicable for this LUST facility.

G. Signatures

All plans, budgets, and reports must be signed by the owner or operator and list the owner's or operator's full name, address, and telephone number.

UST Owner or Operator

Name: Illico Independent Oil Co.
Contact: David Golwitzer
Address: 2201 Woodlawn Rd. Suite 600
City: Lincoln
State: Illinois
ZIP Code: 62656
Phone: (217) 732-4193
Signature: Mr President
Date: 12-7-15

Consultant

Company: Marlin Environmental, Inc.
Contact: Joe Buhlig
Address: 3900 Wood Duck Dr. Suite F
City: Springfield
State: Illinois
ZIP Code: 62711
Phone: 217-726-7569 x300
Signature: for Joe Buhlig
Date: 12/14/15

I certify under penalty of law that all activities that are the subject of this plan were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in this plan has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 731, 732, or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

RECEIVED
DEC 14 2015
IEPA/BOL

Licensed Professional Engineer

Name: Jeff R. Wienhoff
Company: Marlin Environmental, Inc.
Address: 3900 Wood Duck Dr. Suite F
City: Springfield
State: Illinois
ZIP Code: 62711
Phone: (217) 726-7569 x250
Ill. Registration No.: 062-058441
License Expiration Date: 11-30-2017
Signature:
Date:

L.P.E. Seal

JEFFREY R. WIENHOFF
062-058441
LICENSED PROFESSIONAL ENGINEER OF
ILLINOIS

RECEIVED
DEC 14 2015
IEPA/BOL

FIGURES

MARLIN Environmental 3935 COMMERCE DR. ST. CHARLES, ILLINOIS 60174 (630) 444-1933	FIGURE: 1	SURROUNDING LAND USAGE MAP
	PROJECT NUMBER: 1382	ILLICO, INC. - UNIVERSITY 3712 N. UNIVERSITY ST. PEORIA, IL 61614
	DRAWN DATE: 12/15	
	PREPARED BY: BUHLIG	
	DRAWN BY: CZARUK	FILE NAME: ILLICO - UNIVERSITY - SLUM

PROPOSED CITY OF PEORIA HIGHWAY AUTHORITY AGREEMENT AREA

ACCESS DENIED

COMMERCIAL PROPERTY

ASPHALT PARKING LOT

ASPHALT PARKING LOT

COMMERCIAL PROPERTY

RESIDENTIAL PROPERTY

RESIDENTIAL PROPERTY

STATTFORD DR.

N. UNIVERSITY ST.

W. WAR MEMORIAL DR.

SITE BUILDING

VENTS

RESIDENTIAL PROPERTY

RESIDENTIAL PROPERTY

COMMERCIAL PROPERTY

COMMERCIAL PROPERTY

PROPOSED IDOT HIGHWAY AUTHORITY AGREEMENT AREA

MW-6 MW-5 MW-7 MW-14 MW-9 MW-2 MW-13 MW-12 MW-10 MW-25 MW-4 MW-3 MW-11

SB-29 SB-5 SB-28 SB-30 SB-11 SB-12 SB-2 SB-27 SB-10 SB-13 SB-14 SB-16 SB-6 SB-15 SB-19 SB-9 SB-18 SB-20 SB-7 SB-21 SB-31 SB-17 SB-4 SB-23 SB-24 SB-8 SB-26 (TACO)

#1 #2 #3 #4 #5

0 50 100

APPROXIMATE SCALE : 1" = 50'

LEGEND

- APPROXIMATE SOIL BORING SAMPLE LOCATION
  (= IMPACTED ABOVE TACO TIER 1, BUT BELOW TIER 2 SRO'S)
  (= EXCEEDES TIER 2 CONSTRUCTION WORKER SOIL INHALATION)
- APPROXIMATE MONITORING WELL LOCATION
  (= IMPACTED ABOVE TACO TIER 1 GRO'S)
  (= UNABLE TO LOCATE / DESTROYED)
  (= ACCESS DENIED)
- SUBJECT SITE PROPERTY LINE
- PROPERTY LINE
- PRODUCT PIPING RUN
- OVERBURDEN TO BE USED AS BACKFILL: 0'-4'
  IMPACTED SOIL REMOVED TO LANDFILL: 4'-8'
- IMPACTED SOIL REMOVED TO LANDFILL: 0'-13'

UST LEGEND

#1 - 12,000 GALLON UNLEADED GASOLINE UST
#2 - 12,000 GALLON UNLEADED GASOLINE UST
#3 - 12,000 GALLON UNLEADED GASOLINE UST (ABANDONED IN PLACE)
#4 - 12,000 GALLON UNLEADED GASOLINE UST
#5 - 6,000 GALLON KEROSENE UST

MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

SOIL REMEDIATION CORRECTIVE ACTION PLAN MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

PREPARED BY:	FIGURE:	DATE:	PROJECT #:
BUHLIG	2	12/15	1382
DRAWN BY:	FILE PATH:		
CZARUK	ILLICO - UNIVERSITY - SAF		

TABLES

TABLE I

Comparison of Tier 1 SRO Exceedences On-Site to Applicable Tier 2 SROs

Sample ID	Depth	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	
TACO Tier 2 Soil Component of Groundwater Ingestion SROs for Class I Groundwater			310 110	61,400 60,600	43,000 83,100	614,000 1,470,000	12,000 ^ 25,600	
TACO Tier 2 Residential Inhalation SROs			No M-L: 16,400 7,000 5,460	N/E	N/E	14,400,000 798,000 806,000 #	N/E	
TACO Tier 2 Industrial / Commercial Inhalation SROs			No M-L: 31,400 11,800 9,180	N/E	N/E	23,000,000 798,000 806,000 #	N/E	
TACO Tier 2 Construction Worker Inhalation SROs			No M-L: 44,200 246,000 191,000	No M-L: 4,480,000 580,000 1,607,000 #	No M-L: 11,300,000 350,000 1,009,000 #	No M-L: 595,000 798,000 806,000 #	No M-L: 10,900 9,400 7,350	
TACO Tier 2 Soil Saturation Limit			N/E	1,569,000 1,607,000	997,000 1,009,000	798,000 806,000	N/E	
SB-4	4'-6'	11/18/1999	<1,100	11,000	37,000	193,000	11,000	Remove
SB-5	2'-4'	11/18/1999	<63	*	*	7,700	2,100	
	4'-6'		1,200	23,000	*	74,000	*	
SB-9	0'-4'	11/22/2015	230	*	*	8,100	*	
	4'-8'		690	58,000	57,000	370,000	*	
SB-10	0'-4'	11/22/1999	7,900	83,000	42,000	182,000	3,000	
	4'-8'		1,400	16,000	*	35,000	*	
MW-6	4'-6'	11/16/2000	*	*	*	*	2,400	
MW-7	7'-9'	11/16/2000	13,000	160,000	92,000	420,000	25,000	
SB-11	3.5'-5'	08/07/2012	288	*	*	*	*	
	7'-8'		3,980	51,600	31,600	159,000	4,630	
SB-12	3.5'-5'	08/07/2012	51.5	*	*	*	*	
	7'-8'		629.0	*	*	13,700	*	
SB-13	3.5'-5'	08/07/2012	2,050	*	*	8,400	*	
	6'-7'		11,700	92,700	29,700	142,000	*	
SB-14	3.5'-5'	08/07/2012	669	*	*	*	*	
	6'-7'		833	*	*	*	*	
SB-15	3.5'-5'	08/07/2012	4,210	24,100	*	49,900	2,150	
	5'-6'		41,800	305,000	103,000	568,000	5,340	
SB-16	3.5'-5'	08/07/2012	1,010	*	*	*	*	
	6'-7'		3,700	*	*	36,100	*	
SB-17	3.5'-5'	08/08/2012	337	*	*	7,820	*	Replaced by SB-31
	6'-7'		<1,200 *	*	130,000	574,000	45,300	
SB-18	3.53'-5'	08/08/2012	1,190	*	*	*	*	
	6'-7'		6,790	*	27,000	112,000	4,160	
SB-19	3.5'-5'	08/08/2012	40.5	*	*	*	*	
	6'-7'		365	*	*	*	*	
SB-25	3.5'-5'	08/08/2012	148	*	*	*	*	
SB-30	0'-2'	03/10/2015	101	*	*	*	*	
	2'-4'		402	*	*	*	*	
SB-31	2'-4'	03/10/2015	1,600	*	*	24,200	*	
	4'-6'		16,800	27,100	243,000	1,190,000	20,700	
MW-12	2'-4'	3/10/2015	1,660	*	42,300	168,000	4,200	
	4'-6'		4,230	*	35,500	178,000	1,990	
MW-13	4'-6'	03/10/2015	347	*	*	6,610	*	
MW-14	4'-6'	03/10/2015	654	*	*	44,600	*	

Notes:

Only samples above Tier 1 objectives collected on-site listed in the table.

Analytical testing resultsfor BTEX and PNAs are expressed in parts-per-billion (ppb) concentrations.

Key:

Bold	Indicates Exceeds TACO Tier 2 Soil Comp. of Groundwater Ingestion SRO for Class I GW.
Red	Indicates Exceeds TACO Tier 2 Residential Soil Inhalation SRO.
Underlined	Indicates Exceeds TACO Tier 2 Industrial / Commercial Soil Inhalation SRO.
Shaded	Indicates Exceeds TACO Tier 2 Construction Worker Soil Inhalation SRO.
*	Sample below Tier 1 SROs for specified contaminant
^	Calculated Tier 2 Objective was more restrictive than Tier 1, therefore Tier 1 objective was utilized
#	Calculated Tier 2 Objective exceeded soil saturation limit (SSL), therefore appropriate SSL was utilized
N/E	Specified Exposure Route SRO not exceeded at Tier 1 for on-site samples.

ATTACHMENT 1

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SSL Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: S12, S17, S28): S29: Soil Saturation Limit

Contact Information for Individual Who Performed Calculations: Joe Buhlig Project Manager, Marlin Environmental, Inc. (217) 726-7569 x300

Land Use: not applicable Soil Type: Clay Silty Clay

Groundwater: ☒ Class I ☐ Class II

Does not apply.

Mass Limit: ☒ Yes ☐ No If Yes, then Specify Acreage: ☐ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT (ingestion)	=		yr	d_a	=		m
AT (inhalation)	=		yr	d_s	=		m
AT_c	=	70	yr	D_A	=		cm^2/s
BW	=		kg	D_i	=		cm^2/s
C_{sat}	=		mg/kg	D_w	=		cm^2/s
C_w	=		mg/L	DF	=		unitless
d	=		m	ED (ingestion of carcinogens)	=		yr

Incident #:

Symbol			Unit
ED (inhalation of carcinogens)	=		yr
ED (ingestion of noncarcinogens)	=		yr
ED (inhalation of noncarcinogens)	=		yr
ED (ingestion of groundwater)	=		yr
ED_{M-L}	=	70	yr
EF	=		d/yr
F(x)	=	0.194	unitless
f_{oc}	=	0.0179	g/g
GW_{obj}	=		mg/L
H'	=	see page 3	unitless
i	=		m/m
I	=	0.3	m/yr
I_{M-L}	=	0.18	m/yr
$IF_{soil-adj}$	=	114	(mg-yr)/(kg-d)
IR_{soil}	=		mg/d
IR_w	=		L/d
K	=		m/yr
K_d (non-ionizing organics)	=	see page 3	cm^3/g or L/kg
K_d (ionizing organics)	=		cm^3/g or L/kg
K_d (inorganics)	=		cm^3/g or L/kg

Symbol			Unit
K_{oc}	=	see page 3	cm^3/g or L/kg
K_s	=	8	m/yr
L	=		m
PEF	=		m^3/kg
PEF'	=		m^3/kg
Q/C (VF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
Q/C (PEF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
RfC	=		mg/m^3
RfD_o	=		mg/(kg-d)
S	=	see page 3	mg/L
SF_o	=		$(mg/kg\text{-}d)^{-1}$
T	=		s
T_{M-L}	=	30	yr
THQ	=	1	unitless
TR	=		unitless
U_m	=	4.69	m/s
URF	=		$(\mu g/m^3)^{-1}$
U_t	=	11.32	kg/m^3
V	=		unitless
VF	=		m^3/kg

Incident #: ____ Chemical: BTEX ____ Not Applicable

Symbol			Unit
VF'	=		m^3/kg
VF_{M-L}	=		m^3/kg
VF'_{M-L}	=		m^3/kg
η	=	0.38	L_{pore}/L_{soil}
θ_a	=	0.19 0.05	L_{air}/L_{soil}

Symbol			Unit
θ_w	=	0.17 0.33	L_{water}/L_{soil}
ρ_b	=	1.684	kg/L or g/cm^3
ρ_s	=	2.702	g/cm^3
ρ_w	=	1	g/cm^3
1/(2b+3)	=	0.042	unitless

Equation		Result	Unit(s)
S1	=		mg/kg
S2	=		mg/kg
S3	=		mg/kg
S4	=		mg/kg
S5	=		mg/kg
S6	=		mg/L
S7	=		mg/kg
S17	=		mg/kg
S28	=		mg/kg
S29	=	See Box Below	mg/L

Henry's Law Constant (H'): (dimensionless)

Toluene = 0.271
Ethylbenzene = 0.324
Total Xylenes = 0.271

Solubility in Water (S): (mg/L)

Toluene = 530
Ethylbenzene = 170
Total Xylenes = 110

Organic Carbon Partition Coefficient (K_{oc}): (cm^3/g)

Toluene = 158
Ethylbenzene = 320
Total Xylenes = 398

Soil-Water Partition Coefficient (K_d): Equation S19 (cm^3/g)

Toluene = 2.83
Ethylbenzene = 5.73
Total Xylenes = 7.12

Solution to Equation S29: (mg/kg)

Toluene = 1,569 1,607
Ethylbenzene = 997 1,009
Total Xylenes = 798 806

DERIVATION OF THE SOIL SATURATION LIMIT, Csat
SSL Equations S19 and S29

Illico Independent Oil Co.

$$C_{sat} = \frac{S}{\rho_b} \bullet \left[(K_d \bullet \rho_b) + \theta_w + (H' \bullet \theta_a) \right]$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES	
S	Solubility in Water	mg/l	Toluene	530
ρ_b	Bulk Soil Density	g/cm^3	Gravel	2.0
			Sand	1.8
			Silt	1.6
			Clay	1.7
			or Site-Specific	1.684
K_d	Soil-Water Partition Coefficient	cm^3/g	$K_d = K_{oc} \bullet f_{oc}$	
K_{oc}	Organic Carbon Partition Coefficient	cm^3/g	Toluene	158
f_{oc}	Fractional Organic Carbon	g/g	Site specific	
θ_w	Water Filled Soil Porosity	Dimensionless	Gravel	0.20
			Sand	0.18
			Silt	0.16
			Clay	0.17
			or Site-Specific	Equation S20 0.33
H'	Henry's Law Constant	Dimensionless	Toluene	0.271
θ_a	Air Filled Soil Porosity	Dimensionless	Gravel	0.05
			Sand	0.14
			Silt	0.24
			Clay	0.19
			or Site-Specific	Equation S21 0.05

INPUT PARAMETER VALUES/INTERMEDIATE VALUES

S=	530 mg/l	**K_d=**	2.83E+00 cm^3/g
ρ_b=	1.68 g/cm^3	**θ_w=**	0.17 dimensionless 0.33
K_{oc}=	158 L/kg	**H'=**	0.271 dimensionless
f_{oc}=	17,900 mg/kg	**θ_a=**	0.19 dimensionless 0.05
f_{oc}=	0.0179 g/g		

C_{sat} = 1,568.65 mg/kg

Calculated Tier 2 C_{sat} = 1,569 mg/kg 1,607

Tier 1 Non-Exceedence Check (value of C_{sat} will change if Tier 2 C_{sat} is less than Tier 1 C_{sat}):

C_{sat} (Soil Comp of GW Ingestion) =	**1,569 mg/kg**	1,607
C_{sat} (Soil Outdoor Inhalation) =	**1,569 mg/kg**	1,607

TOLUENE

DERIVATION OF THE SOIL SATURATION LIMIT, Csat
SSL Equations S19 and S29

Illico Independent Oil Co.

$$C_{sat} = \frac{S}{\rho_b} \bullet \left[\left(K_d \bullet \rho_b \right) + \theta_w + \left(H' \bullet \theta_a \right) \right]$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES	
S	Solubility in Water	mg/l	Ethylbenzene	170
ρ_b	Bulk Soil Density	g/cm^3	Gravel	2.0
			Sand	1.8
			Silt	1.6
			Clay	1.7
			or Site-Specific	1.684
K_d	Soil-Water Partition Coefficient	cm^3/g	$K_d = K_{oc} \bullet f_{oc}$	
K_{oc}	Organic Carbon Partition Coefficient	cm^3/g	Ethylbenzene	320
f_{oc}	Fractional Organic Carbon	g/g	Site specific	
θ_w	Water Filled Soil Porosity	Dimensionless	Gravel	0.20
			Sand	0.18
			Silt	0.16
			Clay	0.17
			or Site-Specific	Equation S20 0.33
H'	Henry's Law Constant	Dimensionless	Ethylbenzene	0.324
θ_a	Air Filled Soil Porosity	Dimensionless	Gravel	0.05
			Sand	0.14
			Silt	0.24
			Clay	0.19
			or Site-Specific	Equation S21 0.05

INPUT PARAMETER VALUES/INTERMEDIATE VALUES

S=	170 mg/l	**K_d=**	5.73E+00 cm^3/g
ρ_b=	1.68 g/cm^3	**θ_w=**	0.17 dimensionless 0.33
K_{oc}=	320 L/kg	**H'=**	0.324 dimensionless
f_{oc}=	17,900 mg/kg	**θ_a=**	0.19 dimensionless 0.05
f_{oc}=	0.0179 g/g		

C_{sat} = 997.14 mg/kg

Calculated Tier 2 C_{sat} = ***997 mg/kg*** 1,009

Tier 1 Non-Exceedence Check (value of C_{sat} will change if Tier 2 C_{sat} is less than Tier 1 C_{sat}):

C_{sat} (Soil Comp of GW Ingestion) =	**997 mg/kg** 1,009
C_{sat} (Soil Outdoor Inhalation) =	**997 mg/kg** 1,009

ETHYLBENZENE

DERIVATION OF THE SOIL SATURATION LIMIT, Csat
SSL Equations S19 and S29

Illico Independent Oil Co.

$$C_{sat} = \frac{S}{\rho_b} \bullet \left[\left(K_d \bullet \rho_b \right) + \theta_w + \left(H' \bullet \theta_a \right) \right]$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES	
S	Solubility in Water	mg/l	Total Xylenes	110
ρ_b	Bulk Soil Density	g/cm^3	Gravel	2.0
			Sand	1.8
			Silt	1.6
			Clay	1.7
			or Site-Specific	
K_d	Soil-Water Partition Coefficient	cm^3/g	$K_d = K_{oc} \bullet f_{oc}$	
K_{oc}	Organic Carbon Partition Coefficient	cm^3/g	Total Xylenes	398
f_{oc}	Fractional Organic Carbon	g/g	Site specific	
θ_w	Water Filled Soil Porosity	Dimensionless	Gravel	0.20
			Sand	0.18
			Silt	0.16
			Clay	0.17
			or Site-Specific	Equation S20 0.33
H'	Henry's Law Constant	Dimensionless	Total Xylenes	0.271
θ_a	Air Filled Soil Porosity	Dimensionless	Gravel	0.05
			Sand	0.14
			Silt	0.24
			Clay	0.19
			or Site-Specific	Equation S21 0.05

INPUT PARAMETER VALUES/INTERMEDIATE VALUES

S=	110 mg/l	**K_d=**	7.12E+00 cm^3/g
ρ_b=	1.68 g/cm^3	**θ_w=**	0.17 dimensionless 0.33
K_{oc}=	398 L/kg	**H'=**	0.271 dimensionless
f_{oc}=	17,900 mg/kg	**θ_a=**	0.19 dimensionless 0.05
f_{oc}=	0.0179 g/g		

C_{sat} = 798.13 mg/kg

Calculated Tier 2 C_{sat} = ***798 mg/kg*** 806

Tier 1 Non-Exceedence Check (value of C_{sat} will change if Tier 2 C_{sat} is less than Tier 1 C_{sat}):

C_{sat} (Soil Comp of GW Ingestion) =	**798 mg/kg** 806
C_{sat} (Soil Outdoor Inhalation) =	**798 mg/kg** 806

TOTAL XYLENES

The Agency is authorized to require this information under Section [illegible] of the Environmental Protection Act (415 ILCS 5/57.17). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SSL Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: S12, S17, S28): S18 and S28: Soil Component of GW Ingestion SROs

Contact Information for Individual Who Performed Calculations: Joe Buhlig, Project Manager

Marlin Environmental, Inc. (217) 726-7569 x300

Land Use: not applicable Soil Type: Clay Silty Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☒ Yes ☐ No If Yes, then Specify Acreage: ☒ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30 N/A

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT (ingestion)	=		yr	d_a	=		m
AT (inhalation)	=		yr	d_s	=	2.4384	m
AT_c	=	70	yr	D_A	=		cm^2/s
BW	=		kg	D_i	=		cm^2/s
C_{sat}	=		mg/kg	D_w	=		cm^2/s
C_w	=	see page 3	mg/L	DF	=	20	unitless
d	=		m	ED (ingestion of carcinogens)	=		yr

Incident #: 923441 Chemical: BTEX/Naphthalene Ref: (2017-084) R, 201 Land Use: Not Applicable

Symbol			Unit	Symbol			Unit
ED (inhalation of carcinogens)	=		yr	K_{oc}	=		cm^3/g or L/kg
ED (ingestion of noncarcinogens)	=		yr	K_s	=		m/yr
ED (inhalation of noncarcinogens)	=		yr	L	=		m
ED (ingestion of groundwater)	=		yr	PEF	=		m^3/kg
ED_{M-L}	=	70	yr	PEF'	=		m^3/kg
EF	=		d/yr	Q/C (VF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
F(x)	=	0.194	unitless	Q/C (PEF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
f_{oc}	=		g/g	RfC	=		mg/m^3
GW_{obj}	=	see page 3	mg/L	RfD_o	=		mg/(kg-d)
H'	=		unitless	S	=		mg/L
i	=		m/m	SF_o	=		$(mg/kg\text{-}d)^{-1}$
I	=	0.3	m/yr	T	=		s
I_{M-L}	=	0.18	m/yr	T_{M-L}	=	30	yr
$IF_{soil\text{-}adj}$	=	114	(mg-yr)/(kg-d)	THQ	=	1	unitless
IR_{soil}	=		mg/d	TR	=		unitless
IR_w	=		L/d	U_m	=	4.69	m/s
K	=		m/yr	URF	=		$(\mu g/m^3)^{-1}$
K_d (non-ionizing organics)	=		cm^3/g or L/kg	U_t	=	11.32	kg/m^3
K_d (ionizing organics)	=		cm^3/g or L/kg	V	=		unitless
K_d (inorganics)	=		cm^3/g or L/kg	VF	=		m^3/kg

Incident #: 923441 Chemical: BTEX/Naphthalene Land Use: Not Applicable (2017-084) R 202

Symbol		Unit
VF'	=	m^3/kg
VF_{M-L}	=	m^3/kg
VF'_{M-L}	=	m^3/kg
η	=	L_{pore}/L_{soil}
θ_a	=	L_{air}/L_{soil}

Symbol			Unit
θ_w	=		L_{water}/L_{soil}
ρ_b	=	1.684	kg/L or g/cm^3
ρ_s	=		g/cm^3
ρ_w	=	1	g/cm^3
1/(2b+3)	=		unitless

Equation		Result	Unit(s)
S1	=		mg/kg
S2	=		mg/kg
S3	=		mg/kg
S4	=		mg/kg
S5	=		mg/kg
S6	=		mg/L
S7	=		mg/kg
S17	=		mg/kg
S28	=	See Box to Right	mg/kg
S29	=		mg/L

Groundwater Cleanup Objectives (GW_{obj}): (mg/L)

Benzene: 0.005
Toluene: 1.0
Ethylbenzene: 0.7
Total Xylenes: 10.0
Naphthalene: 0.14

Target Soil Leachate Concentrations (C_w): (mg/L)

Benzene: 0.1
Toluene: 20.0
Ethylbenzene: 14.0
Total Xylenes: 200.0
Naphthalene: 2.8

Solution to Equation S28: (mg/kg)

Benzene = 0.310
Toluene = 61.4
Ethylbenzene = 43.0
Total Xylenes = 614*
Naphthalene = 12.00

*** = Tier 2 Soil Saturation Limit**
needs to be calculated

MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATION S28

Illico Independent Oil Co. - Peoria

Remediation Objective = (milligrams per kilogram, mg/kg) $(C_w \times I_{M-L} \times ED_{M-L}) / (\rho_b \times d_s)$

Target Soil Leachate Concentration C_w = (milligrams per kilogram, mg/kg) $DF \times GW_{obj}$

Dilution Factor DF= (unitless) 20

MODEL PARAMETERS INPUT:

Symbol	Unit	Parameter			Values
I_{M-L}	m/yr	Infiltration Rate for Eq S28			0.18
I	m/yr	Infiltration Rate			0.3
GW_{obj}	mg/L	Ground Water Remdediation Objective			0.005
			Class I	Class II	
		Benzene	0.005	0.025	
d_s	m	Depth of Source			2.4384
ED_{M-L}	year	Exposure Duration for Eq S28			70
ρ_b	kg/L	Dry Soil Bulk Density			1.68

MODEL CALCULATED OUTPUTS:

C_w =	0.1

REFERENCE FOR INPUT PARAMETERS	
	ρb
Gravel	2
Sand	1.8
Silt	1.6
Clay	1.7
or site-specific	1.684

Calculated Soil Remediation Objective:

Soil Remediation Objective =	0.30685 mg/kg

Soil Saturation Limit Exceedence Check (value of SRO will change if soil saturation limit is exceeded for chemical):

Soil Remediation Objective =	**0.31 mg/kg**
Soil Remediation Objective =	**310 µg/kg**

Benzene

MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE SSL EQUATION S28

Illico Independent Oil Co. - Peoria

Remediation Objective = (milligrams per kilogram, mg/kg) $(C_w \times I_{M-L} \times ED_{M-L}) / (\rho_b \times d_s)$

Target Soil Leachate Concentration C_w = (milligrams per kilogram, mg/kg) $DF \times GW_{obj}$

Dilution Factor DF= (unitless) 20

MODEL PARAMETERS INPUT:

Symbol	Unit	Parameter			Values
I_{M-L}	m/yr	Infiltration Rate for Eq S28			0.18
I	m/yr	Infiltration Rate			0.3
GW_{obj}	mg/L	Ground Water Remdiation Objective			1
			Class I	Class II	
		Toluene	1	2.5	
d_s	m	Depth of Source			2.4384
ED_{M-L}	year	Exposure Duration for Eq S28			70
ρ_b	kg/L	Dry Soil Bulk Density			1.684

MODEL CALCULATED OUTPUTS:

C_w =	20

REFERENCE FOR INPUT PARAMETERS	
	ρb
Gravel	2
Sand	1.8
Silt	1.6
Clay	1.7
or site-specific	1.684

Calculated Soil Remediation Objective:

Soil Remediation Objective =	61.36963 mg/kg

Soil Saturation Limit Exceedence Check (value of SRO will change if soil saturation limit is exceeded for chemical):

Soil Remediation Objective =	**61.4 mg/kg**
Soil Remediation Objective =	**61,400 µg/kg**

Toluene

MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE SSL EQUATION S28

Illico Independent Oil Co. - Peoria

Remediation Objective = (milligrams per kilogram, mg/kg) $(C_w \times I_{M-L} \times ED_{M-L}) / (\rho_b \times d_s)$

Target Soil Leachate Concentration Cw = (milligrams per kilogram, mg/kg) $DF \times GW_{obj}$

Dilution Factor DF= (unitless) 20

MODEL PARAMETERS INPUT:

Symbol	Unit	Parameter			Values
I_{M-L}	m/yr	Infiltration Rate for Eq S28			0.18
I	m/yr	Infiltration Rate			0.3
GW_{obj}	mg/L	Ground Water Remdiation Objective			0.7
			Class I	Class II	
		Ethylbenzene	0.7	1	
d_s	m	Depth of Source			2.4384
ED_{M-L}	year	Exposure Duration for Eq S28			70
ρ_b	Kg/L	Dry Soil Bulk Density			1.684

MODEL CALCULATED OUTPUTS:

C_w =	14

REFERENCE FOR INPUT PARAMETERS	
	ρb
Gravel	2
Sand	1.8
Silt	1.6
Clay	1.7
	or site-specific 1.684

Calculated Soil Remediation Objective:

Soil Remediation Objective =	42.95874 mg/kg

Soil Saturation Limit Exceedence Check (value of SRO will change if soil saturation limit is exceeded for chemical):

Soil Remediation Objective =	**43.0 mg/kg**
Soil Remediation Objective =	**43,000 µg/kg**

Ethylbenzene

The Agency is authorized to require this information under Section 4(d) of the Environmental Protection Act (415 ILCS 5/4(d)) and 35 Ill. Adm. Code 732. Failure to do so may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SSL Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61604

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: S12, S17, S28): S6, S7 and S26/S27: Inhalation of Carcinogens SROs

Contact Information for Individual Who Performed Calculations: Joe Buhlig Project Manager, Marlin Environmental, Inc. (217) 726-7569 x300

Land Use: Res., Ind./Com. & Const. Worker Soil Type: Clay Silty Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☒ Yes ☐ No If Yes, then Specify Acreage: ☒ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30 1 or 2 Use 2

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT (ingestion)	=		yr	d_a	=		m
AT (inhalation)	=		yr	d_s	=	2.4384	m
AT_c	=	70	yr	D_A	=		cm^2/s
BW	=		kg	D_i	=		cm^2/s
C_{sat}	=		mg/kg	D_w	=		cm^2/s
C_w	=		mg/L	DF	=		unitless
d	=		m	ED (ingestion of carcinogens)	=		yr

Incident #: 929441 Chemical: Benzene Title 35 Part 742 (2017-084) R. 207 Land Use: Res., Ind./Com., CW

Symbol			Unit
ED (inhalation of carcinogens)	=	see page 3	yr
ED (ingestion of noncarcinogens)	=		yr
ED (inhalation of noncarcinogens)	=		yr
ED (ingestion of groundwater)	=		yr
ED_{M-L}	=	70	yr
EF	=	see page 3	d/yr
F(x)	=	0.194	unitless
f_{oc}	=		g/g
GW_{obj}	=		mg/L
H'	=		unitless
i	=		m/m
I	=	0.3	m/yr
I_{M-L}	=	0.18	m/yr
$IF_{soil-adj}$	=	114	(mg-yr)/(kg-d)
IR_{soil}	=		mg/d
IR_w	=		L/d
K	=		m/yr
K_d (non-ionizing organics)	=		cm^3/g or L/kg
K_d (ionizing organics)	=		cm^3/g or L/kg
K_d (inorganics)	=		cm^3/g or L/kg

Symbol			Unit
K_{oc}	=		cm^3/g or L/kg
K_s	=		m/yr
L	=		m
PEF	=		m^3/kg
PEF'	=		m^3/kg
Q/C (VF equations)	=	97.78 76.08	$(g/m^2\text{-}s)/(kg/m^3)$
Q/C (PEF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
RfC	=		mg/m^3
RfD_o	=		mg/(kg-d)
S	=		mg/L
SF_o	=		$(mg/kg\text{-}d)^{-1}$
T	=		s
T_{M-L}	=	30	yr
THQ	=	1	unitless
TR	=	0.000001	unitless
U_m	=	4.69	m/s
URF	=	see page 3	$(\mu g/m^3)^{-1}$
U_t	=	11.32	kg/m^3
V	=		unitless
VF	=		m^3/kg

Incident #: 923441 Chemical: Benzene Title 35 Ref.: (2017-084) R. 208 Land Use: Res., Ind./Com., CW

Symbol			Unit
VF'	=		m^3/kg
VF_{M-L}	=	9,569.33 17,508.76	m^3/kg
VF'_{M-L}	=	956.93 1,750.88	m^3/kg
η	=		L_{pore}/L_{soil}
θ_a	=		L_{air}/L_{soil}

Symbol			Unit
θ_w	=		L_{water}/L_{soil}
ρ_b	=	1.684	kg/L or g/cm^3
ρ_s	=		g/cm^3
ρ_w	=	1	g/cm^3
1/(2b+3)	=		unitless

Equation	Result	Unit(s)
S1	=	mg/kg
S2	=	mg/kg
S3	=	mg/kg
S4	=	mg/kg
S5	=	mg/kg
S6	= See Boxes Below	mg/L
S7	= See Box Below	mg/kg
S17	=	mg/kg
S28	=	mg/kg
S29	=	mg/L

Exposure Frequency (EF): (days/year)

Residential = 350
Industrial/Commercial = 250
Construction Worker = 30

Exposure Duration (ED): (years)

Residential = 30
Industrial/Commercial = 25
Construction Worker = 1

Inhalation Unit Risk Factor (URF): $[(ug/m^3)^{-1}]$

Benzene = 0.0000078

Solution to Equation S6: (mg/kg) Residential	Solution to Equation S6: (mg/kg) Industrial/Commercial	Solution to Equation S7: (mg/kg) Construction Worker
Benzene = 7.0 5.46	**Benzene = 11.8** 9.18	**Benzene = 246** 191

EQUATIONS AND CONSTANTS FOR INHALATION OF VOLATILES IN SOIL (CARCINOGENS)

Illico Independent Oil Co.
Peoria, Illinois

Residential, Industrial/Commercial Remediation Objectives for Carcinogenic Contaminants (mg/kg)

$$\frac{TR \bullet AT_c \bullet 365 \frac{d}{yr}}{URF \bullet 1000 \frac{\mu g}{mg} \bullet EF \bullet ED \bullet \frac{1}{VF}}$$

Construction Worker Remediation Objectives for Carcinogenic Contaminants (mg/kg)

$$\frac{TR \bullet AT_c \bullet 365 \frac{d}{yr}}{URF \bullet 1000 \frac{\mu g}{mg} \bullet EF \bullet ED \bullet \frac{1}{VF'}}$$

S26 - Mass-Limit Volatilization Factor for the Inhalation Exposure Route - Residential, Industrial/Commercial (m^3/kg)

$$VF_{M-L} = \frac{Q}{C} \bullet \frac{\left[T_{M-L} \bullet \left(3.15 \bullet 10^7 \frac{s}{yr}\right)\right]}{\rho_b \bullet d_s \bullet 10^6 \frac{cm^3}{m^3}}$$

S27 - Mass-Limit Volatilization Factor for the Inhalation Exposure Route - Construction Worker (m^3/kg)

$$VF'_{M-L} = \frac{VF_{M-L}}{10}$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
AT_c	AVERAGING TIME FOR CARCINOGENS	year	70
ED	EXPOSURE DURATION FOR INHALATION OF CARCINOGEN	year	RESIDENTIAL 30 INDUS/COMM. 25 CONST WRKR 1
EF	EXPOSURE FREQUENCY	d/yr	RESIDENTIAL 350 INDUS/COMM. 250 CONST WRKR 30
TR	TARGET CANCER RISK	unitless	RESIDENTIAL 10^{-6} INDUS/COMM. 10^{-6} CONST WRKR 10^{-6}
URF	INHALATION UNIT RISK FACTOR	$(\mu g/m^3)^{-1}$	7.8×10^{-6} benzene
VF_{M-L}	VOLATILIZATION FACTOR	m^3/kg	REFER TO EQ. S26& S27 WITHIN TACO

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
d_s	DEPTH OF SOURCE	m	SITE SPECIFIC 2.4384
ρ_b	DRY BULK DENSITY	g/cm^3	1.5, OR GRAVEL=2.0 SAND=1.8 SILT=1.6 CLAY=1.7, OR SITE SPECIFIC 1.684
Q/C	INVERSE OF THE MEAN CONCENTRATION AT THE CENTER OF A SQUARE SOURCE	$(g/m^2\text{-}s)/(kg/m^3)$	RESIDENTIAL 68.81 INDUS/COMM. 85.81 CONST WRKR 85.81 OR 742.Appendix C, Table H: Q/C by Source Area 76.08
T_{M-L}	EXPOSURE INTERVAL	yr	30

INPUT PARAMETERS FOR VF_{M-L} RES/INDUS/COM PROP

Source Area	0.5	Acre 2
ds=	2.4384	m
Pb=	1.684	kg/L
Q/C=	97.78	$(g/m^2\text{-}s)/(kg/m^3)$ (Residential) 76.08
Q/C=	97.78	$(g/m^2\text{-}s)/(kg/m^3)$ (Industrial/Commercial) 76.08
T_{M-L}=	30	yr
VF_{M-L}=	22502.71	m^3/kg (Residential)
VF_{M-L}=	22502.71	m^3/kg (Industrial/Commercial) 17,508.7554

INPUT PARAMTERS FOR VF'_{M-L} CONSTRUCTION WORKER

Source Area	0.5	Acre 2
ds=	2.4384	m
Pb=	1.684	kg/L
Q/C=	97.78	$(g/m^2\text{-}s)/(kg/m^3)$ 76.08
T_{M-L}=	30	yr
VF'_{M-L}=	2250.27	m^3/kg 1750.88

INPUT PARAMETER VALUES RES/INDUS/COM PROP

AT_c=	70	year
ED=	30	year (Residential)
ED=	25	year (Industrial/Commercial)
EF=	350	d/yr (Residential)
EF=	250	d/yr (Industrial/Commercial)
TR=	1.00E-06	unitless
URF=	7.80E-06	$(\mu g/m^3)^{-1}$
VF_{M-L}=	22502.71	m^3/kg (Residential)
VF_{M-L}=	22502.71	m^3/kg (Industrial/Commercial) 17,508.7554

INPUT PARAMETER VALUES FOR CONSTRUCTION WORKERS

AT_c=	70	year
ED=	1	year
EF=	30	d/yr
TR=	1.00E-06	unitless
URF=	7.80E-06	$(\mu g/m^3)^{-1}$
VF_{M-L}=	2250.27	m^3/kg

Residential Inhalation Remediation Objective (S6) =	**7.02 mg/kg**	5.46
Industrial/Commercial Inhalation Remediation Objective (S6) =	**11.79 mg/kg**	9.18
Construction Worker Inhalation Remediation Objective (S7) =	**245.70 mg/kg**	191

Soil Saturation Limit Exceedence Check (value of SRO will change if soil saturation limit is exceeded for chemical):

Soil Remediation Objective (Residential Inhalation) =	5.46 **7.0 mg/kg**	**7,000 µg/kg**	5,460
Soil Remediation Objective (Industrial/Commercial Inhalation) =	9.18 **11.8 mg/kg**	**11,800 µg/kg**	9,180
Soil Remediation Objective (Construction Worker Inhalation) =	191 **246 mg/kg**	**246,000 µg/kg**	191,000

Tier 1 Soil Remediation Objective Check (value of SRO will default to Tier 1 if calculated Tier 2 SRO is more stringent for chemical):

Soil Remediation Objective (Residential Inhalation) =	5.46 **7.0 mg/kg**	**7,000 µg/kg**	5,460
Soil Remediation Objective (Industrial/Commercial Inhalation) =	9.18 **11.8 mg/kg**	**11,800 µg/kg**	9,180
Soil Remediation Objective (Construction Worker Inhalation) =	191 **246 mg/kg**	**246,000 µg/kg**	191,000

Parts-Per-Million *Parts-Per-Billion*

BENZENE

The Agency is authorized to require this information under Section 4(d) of the Illinois Environmental Protection Act (415 ILCS 5/4(d)). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SSL Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: S12, S17, S28): S4, S5, S26 & S27: Inhalation of Non-Carcinogens SROs

Contact Information for Individual Who Performed Calculations: Joe Buhlig Project Manager, Marlin Environmental, Inc. (217) 726-7569 x300

Land Use: Resid, Indust/Com & Const Worker Soil Type: Clay Silty Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☒ Yes ☐ No If Yes, then Specify Acreage: ☒ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30 1 or 2 Use 2

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT (ingestion)	=		yr	d_a	=		m
AT (inhalation)	=	see page 3	yr	d_s	=	2.4384	m
AT_c	=	70	yr	D_A	=		cm^2/s
BW	=		kg	D_i	=		cm^2/s
C_{sat}	=		mg/kg	D_w	=		cm^2/s
C_w	=		mg/L	DF	=		unitless
d	=		m	ED (ingestion of carcinogens)	=		yr

Incident #: [illegible] Chemical: TEX / Naphthalene Land Use: R, I/O & GW

Symbol			Unit
ED (inhalation of carcinogens)	=		yr
ED (ingestion of noncarcinogens)	=		yr
ED (inhalation of noncarcinogens)	=	see page 3	yr
ED (ingestion of groundwater)	=		yr
ED_{M-L}	=	70	yr
EF	=	see page 3	d/yr
F(x)	=	0.194	unitless
f_{oc}	=		g/g
GW_{obj}	=		mg/L
H'	=		unitless
i	=		m/m
I	=	0.3	m/yr
I_{M-L}	=	0.18	m/yr
$IF_{soil-adj}$	=	114	(mg-yr)/(kg-d)
IR_{soil}	=		mg/d
IR_w	=		L/d
K	=		m/yr
K_d (non-ionizing organics)	=		cm³/g or L/kg
K_d (ionizing organics)	=		cm³/g or L/kg
K_d (inorganics)	=		cm³/g or L/kg

Symbol			Unit
K_{oc}	=		cm³/g or L/kg
K_s	=		m/yr
L	=		m
PEF	=		m³/kg
PEF'	=		m³/kg
Q/C (VF equations)	=	97.78 76.08	(g/m²-s)/(kg/m³)
Q/C (PEF equations)	=		(g/m²-s)/(kg/m³)
RfC	=	see page 3	mg/m³
RfD_o	=		mg/(kg-d)
S	=		mg/L
SF_o	=		$(mg/kg\text{-}d)^{-1}$
T	=		s
T_{M-L}	=	30	yr
THQ	=	1	unitless
TR	=		unitless
U_m	=	4.69	m/s
URF	=		$(\mu g/m^3)^{-1}$
U_t	=	11.32	kg/m³
V	=		unitless
VF	=		m³/kg

Symbol			Unit
VF'	=		m^3/kg
VF_{M-L}	=	9,569.33 17,508.76	m^3/kg
VF'_{M-L}	=	956.93 1,750.88	m^3/kg
η	=		L_{pore}/L_{soil}
θ_a	=		L_{air}/L_{soil}

Symbol			Unit
θ_w	=		L_{water}/L_{soil}
ρ_b	=	1.684	kg/L or g/cm^3
ρ_s	=		g/cm^3
ρ_w	=	1	g/cm^3
1/(2b+3)	=		unitless

Equation		Result	Unit(s)
S1	=		mg/kg
S2	=		mg/kg
S3	=		mg/kg
S4	=	See Boxes Below	mg/kg
S5	=	See Box Below	mg/kg
S6	=		mg/L
S7	=		mg/kg
S17	=		mg/kg
S28	=		mg/kg
S29	=		mg/L

Averaging Time (AT):
(years)

Residential = 30
Industrial/Commercial = 25
Construction Worker = 0.115

Exposure Frequency (EF):
(days/year)

Residential = 350
Industrial/Commercial = 250
Construction Worker = 30

Exposure Duration (ED):
(years)

Residential = 30
Industrial/Commercial = 25
Construction Worker = 1

Inhalation Reference Concentration (RfC):
(mg/m^3)

Toluene - chronic = 5.0
Toluene - subchronic = 5.0
Ethylbenzene - chronic = 1.0
Ethylbenzene - subchronic = 1.0 9
Total Xylenes - chronic = 0.1
Total Xylenes - subchronic = 0.4
Naphthalene - chronic = 0.003
Naphthalene - subchronic = 0.003

Solution to Equation S4:
(mg/kg)
Residential

Total Xylenes = 798* 806*

*** = Soil Saturation Limit**
**** = Tier 1 SRO**

Solution to Equation S4:
(mg/kg)
Industrial/Commercial

Total Xylenes = 798* 806*

*** = Soil Saturation Limit**
**** = Tier 1 SRO**

Solution to Equation S5:
(mg/kg)
Construction Worker

Toluene = 1,607*
Ethylbenzene = 350* 1,009*
Total Xylenes = 798* 806*
Naphthalene = 9.4 7.35

*** = Soil Saturation Limit**

EQUATIONS S4 AND S5 FOR INHALATION CALCULATIONS FOR CONTAMINANTS IN SOIL (NONCARCINOGENS)

Illico Independent Oil Co.
Peoria, Illinois

Residential, Industrial/Commercial Remediation Objectives for Noncarcinogenic Contaminants (mg/kg)

$$\frac{THQ \bullet AT \bullet 365\ \frac{d}{yr}}{EF \bullet ED \bullet \left(\frac{1}{RfC} \bullet \frac{1}{VF}\right)}$$

Construction Worker Remediation Objectives for Noncarcinogenic Contaminants (mg/kg)

$$\frac{THQ \bullet AT \bullet 365\ \frac{d}{yr}}{EF \bullet ED \bullet \left(\frac{1}{RfC} \bullet \frac{1}{VF'}\right)}$$

S26 - Mass-Limit Volatilization Factor for the Inhalation Exposure Route - Residential, Industrial/Commercial (m^3/kg)

$$VF_{M-L} = \frac{Q}{C} \bullet \frac{\left[T_{M-L} \bullet \left(3.15 \bullet 10^7\ \frac{s}{yr}\right)\right]}{\rho_b \bullet d_s \bullet 10^6\ \frac{cm^3}{m^3}}$$

S27 - Mass-Limit Volatilization Factor for the Inhalation Exposure Route - Construction Worker (m^3/kg)

$$VF'_{M-L} = \frac{VF_{M-L}}{10}$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
AT	AVERAGING TIME FOR NONCARCINOGENS	year	RESIDENTIAL 30 INDUS/COMM. 25 CONST WRKR 0.115
ED	EXPOSURE DURATION FOR INHALATION OF NONCARCINOGEN	year	RESIDENTIAL 30 INDUS/COMM. 25 CONST WRKR 1
EF	EXPOSURE FREQUENCY	d/yr	RESIDENTIAL 350 INDUS/COMM. 250 CONST WRKR 30
RfC	INHALATION REFERENCE CONCENTRATION	mg/m^3	RESIDENTIAL 5.0 INDUS/COMM. 5.0 CONST WRKR 5.0
THQ	TARGET HAZARD QUOTIENT	unitless	1
VF_{M-L}	VOLATILIZATION FACTOR	m^3/kg	REFER TO EQ. S26& S27 WITHIN TACO

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
d_s	DEPTH OF SOURCE	m	SITE SPECIFIC 2.4
ρ_b	DRY BULK DENSITY	kg/L	1.5, OR GRAVEL=2.0 SAND=1.8 SILT=1.6 CLAY=1.7, OR SITE SPECIFIC 1.7
Q/C	INVERSE OF THE MEAN CONCENTRATION AT THE CENTER OF A SQUARE SOURCE	(g/m^2-s)/(kg/m^3)	RESIDENTIAL 68.81 INDUS/COMM. 85.81 CONST WRKR 85.81 OR 742.Appendix C, Table H: Q/C by Source Area 76.08
T_{M-L}	EXPOSURE INTERVAL	yr	30

INPUT PARAMETERS FOR VF_{M-L} RES/INDUS/COM PROP

Source Area	0.5	Acre 2
ds=	2.4384	m
Pb=	1.684	kg/L
Q/C=	97.78	(g/m^2-s)/(kg/m^3) (Residential)
Q/C=	97.78	(g/m^2-s)/(kg/m^3) (Industrial/Commercial) 76.08
T_{M-L} =	30.00	yr
VF_{M-L}=	22502.71	m^3/kg (Residential)
VF_{M-L}=	22502.71	m^3/kg (Industrial/Commercial) 17,508.76

INPUT PARAMTERS VF'_{M-L} CONSTRUCTION WORKER

Source Area	0.5	Acre
ds=	2.4384	m
Pb=	1.684	kg/L
Q/C=	97.78	(g/m^2-s)/(kg/m^3) 76.08
T_{M-L} =	30.00	yr
VF'_{M-L}=	2250.27	m^3/kg 1750.88

INPUT PARAMETER VALUES RES/INDUS/COM PROP

AT=	30	year (Residential)
AT=	25	year (Industrial/Commercial)
ED=	30	year (Residential)
ED=	25	year (Industrial/Commercial)
EF=	350	d/yr (Residential)
EF=	250	d/yr (Industrial/Commercial)
RfC=	5.0	mg/m^3
THQ	1	unitless
VF_{M-L}=	22502.71	m^3/kg (Residential)
VF_{M-L}=	22502.71	m^3/kg (Industrial/Commercial) 17,508.76

INPUT PARAMETER VALUES FOR CONSTRUCTION WORKERS

AT=	0.115	year
ED=	1	year
EF=	30	d/yr
RfC=	5.0	mg/m^3
THQ	1	unitless
VF'_{M-L}=	2250.27	m^3/kg 1750.88

Residential Inhalation Remediation Objective (S4) =	**117,335.6 mg/kg**	91,300
Industrial/Commercial Inhalation Remediation Objective (S4) =	**164,269.8 mg/kg**	128,000
Construction Worker Inhalation Remediation Objective (S5) =	**15,742.5 mg/kg**	12,200

Soil Saturation Limit Exceedence Check (value of SRO will change if soil saturation limit is exceeded for chemical):

Soil Remediation Objective (Residential Inhalation) =	1,607 **580 mg/kg**	**580,000 µg/kg**	1,607,000
Soil Remediation Objective (Industrial/Commercial Inhalation) =	1,607 **580 mg/kg**	**580,000 µg/kg**	1,607,000
Soil Remediation Objective (Construction Worker Inhalation) =	1,607 **580 mg/kg**	**580,000 µg/kg**	1,607,000

Tier 1 Soil Remediation Objective Check (value of SRO will default to Tier 1 if calculated Tier 2 SRO is more stringent for chemical):

Soil Remediation Objective (Residential Inhalation) =	1,607 **650 mg/kg**	**650,000 µg/kg**	1,607,000
Soil Remediation Objective (Industrial/Commercial Inhalation) =	1,607 **650 mg/kg**	**650,000 µg/kg**	1,607,000
Soil Remediation Objective (Construction Worker Inhalation) =	1,607 **580 mg/kg**	**580,000 µg/kg**	1,607,000

Parts-Per-Million *Parts-Per-Billion*

TOLUENE

EQUATIONS AND PARAMETERS FOR CALCULATION OF TIER 2 SOIL REMEDIATION OBJECTIVES (NONCARCINOGENS)

Illico Independent Oil Co.
Peoria, Illinois

Residential, Industrial/Commercial Remediation Objectives for Noncarcinogenic Contaminants (mg/kg)

$$\frac{THQ \bullet AT \bullet 365 \frac{d}{yr}}{EF \bullet ED \bullet \left(\frac{1}{RfC} \bullet \frac{1}{VF}\right)}$$

Construction Worker Remediation Objectives for Noncarcinogenic Contaminants (mg/kg)

$$\frac{THQ \bullet AT \bullet 365 \frac{d}{yr}}{EF \bullet ED \bullet \left(\frac{1}{RfC} \bullet \frac{1}{VF'}\right)}$$

S26 - Mass-Limit Volatilization Factor for the Inhalation Exposure Route - Residential, Industrial/Commercial (m^3/kg)

$$VF_{M-L} = \frac{Q}{C} \bullet \frac{\left[T_{M-L} \bullet \left(3.15 \bullet 10^7 \frac{s}{yr}\right)\right]}{\rho_b \bullet d_s \bullet 10^6 \frac{cm^3}{m^3}}$$

S27 - Mass-Limit Volatilization Factor for the Inhalation Exposure Route - Construction Worker (m^3/kg)

$$VF'_{M-L} = \frac{VF_{M-L}}{10}$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
AT	AVERAGING TIME FOR NONCARCINOGENS	YEAR	RESIDENTIAL 30 INDUS/COMM. 25 CONST WRKR 0.115
ED	EXPOSURE DURATION FOR INHALATION OF CARCINOGEN	YEAR	RESIDENTIAL 30 INDUS/COMM. 25 CONST WRKR 1
EF	EXPOSURE FREQUENCY	D/YR	RESIDENTIAL 350 INDUS/COMM. 250 CONST WRKR 30
RfC	INHALATION REFERENCE CONCENTRATION	MG/M³	RESIDENTIAL 1 INDUS/COMM. 1 CONST WRKR 1 9
THQ	TARGET HAZARD QUOTIENT	UNITLESS	1
VF_{M-L}	VOLATILIZATION FACTOR	M^3/KG	REFER TO EQ. S26& S27 WITHIN TACO

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
d_s	DEPTH OF SOURCE	m	SITE SPECIFIC
ρ_b	DRY BULK DENSITY	kg/L	1.5, OR GRAVEL=2.0 SAND=1.8 SILT=1.6 CLAY=1.7, OR SITE SPECIFIC
Q/C	INVERSE OF THE MEAN CONCENTRATION AT THE CENTER OF A SQUARE SOURCE	$(g/m^2\text{-}s)/(kg/m^3)$	RESIDENTIAL 68.81 INDUS/COMM. 85.81 CONST WRKR 85.81 OR 742.Appendix C, Table H: Q/C by Source Area
T_{M-L}	EXPOSURE INTERVAL	yr	30

INPUT PARAMETERS FOR VF_{M-L} RES/INDUS/COM PROP

Source Area	0.5	Acre 2
ds=	2.4384	m
Pb=	1.684	kg/L
Q/C=	97.78	$(g/m^2\text{-}s)/(kg/m^3)$ (Residential) 76.08
Q/C=	97.78	$(g/m^2\text{-}s)/(kg/m^3)$ (Industrial/Commercial)
T_{M-L}=	30.00	yr
VF_{M-L}=	22502.71	m^3/kg (Residential)
VF_{M-L}=	22502.71	m^3/kg (Industrial/Commercial) 17,508.76

INPUT PARAMTERS FOR CONSTRUCTION WORKER

Source Area	0.5	Acre 2
ds=	2.4384	m
Pb=	1.684	kg/L
Q/C=	97.78	$(g/m^2\text{-}s)/(kg/m^3)$ 76.08
T_{M-L}=	30.00	yr
VF'_{M-L}=	2250.27	m^3/kg 1750.88

INPUT PARAMETER VALUES RES/INDUS/COM PROP

AT=	30	year (Residential)
AT=	25	year (Industrial/Commercial)
ED=	30	year (Residential)
ED=	25	year (Industrial/Commercial)
EF=	350	d/yr (Residential)
EF=	250	d/yr (Industrial/Commercial)
RfC=	1.0	mg/m^3
THQ	1	unitless
VF_{M-L}=	22502.71	m^3/kg (Residential)
VF_{M-L}=	22502.71	m^3/kg (Industrial/Commercial) 17,508.76

INPUT PARAMETER VALUES FOR CONSTRUCTION WORKERS

AT=	0.115	year
ED=	1	year
EF=	30	d/yr
RfC=	1.0	mg/m^3 9
THQ	1	unitless
VF'_{M-L}=	2250.271	m^3/kg 1750.88

Residential Inhalation Remediation Objective (S4) =	**23,467.1 mg/kg**	18,300

Construction Worker Inhalation Remediation Objective (S5) =	22,000	**3,148.5 mg/kg**

Industrial/Commercial Inhalation Remediation Objective (S4) =	**32,854.0 mg/kg**	25,600

Soil Saturation Limit Exceedence Check (value of SRO will change if soil saturation limit is exceeded for chemical):

Soil Remediation Objective (Residential Inhalation) =	1,009 **350 mg/kg**	**350,000 µg/kg**	1,009,000
Soil Remediation Objective (Industrial/Commercial Inhalation) =	1,009 **350 mg/kg**	**350,000 µg/kg**	1,009,000
Soil Remediation Objective (Construction Worker Inhalation) =	1,009 **350 mg/kg**	**350,000 µg/kg**	1,009,000

Tier 1 Soil Remediation Objective Check (value of SRO will default to Tier 1 if calculated Tier 2 SRO is more stringent for chemical):

Soil Remediation Objective (Residential Inhalation) =	1,009 **400 mg/kg**	**400,000 µg/kg**	1,009,000
Soil Remediation Objective (Industrial/Commercial Inhalation) =	1,009 **400 mg/kg**	**400,000 µg/kg**	1,009,000
Soil Remediation Objective (Construction Worker Inhalation) =	1,009 **350 mg/kg**	**350,000 µg/kg**	1,009,000

Parts-Per-Million *Parts-Per-Billion*

ETHYLBENZENE

EQUATIONS FOR INHALATION OF CONTAMINANTS IN SOIL (NONCARCINOGENS)

Illico Independent Oil Co.
Peoria, Illinois

Residential, Industrial/Commercial Remediation Objectives for Noncarcinogenic Contaminants (mg/kg)

$$\frac{THQ \bullet AT \bullet 365 \frac{d}{yr}}{EF \bullet ED \bullet \left(\frac{1}{RfC} \bullet \frac{1}{VF}\right)}$$

Construction Worker Remediation Objectives for Noncarcinogenic Contaminants (mg/kg)

$$\frac{THQ \bullet AT \bullet 365 \frac{d}{yr}}{EF \bullet ED \bullet \left(\frac{1}{RfC} \bullet \frac{1}{VF'}\right)}$$

S26 - Mass-Limit Volatilization Factor for the Inhalation Exposure Route - Residential, Industrial/Commercial (m^3/kg)

$$VF_{M-L} = \frac{Q}{C} \bullet \frac{\left[T_{M-L} \bullet \left(3.15 \bullet 10^7 \frac{s}{yr}\right)\right]}{\rho_b \bullet d_s \bullet 10^6 \frac{cm^3}{m^3}}$$

S27 - Mass-Limit Volatilization Factor for the Inhalation Exposure Route - Construction Worker (m^3/kg)

$$VF'_{M-L} = \frac{VF_{M-L}}{10}$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
AT	AVERAGING TIME FOR NONCARCINOGENS	YEAR	RESIDENTIAL 30 INDUS/COMM. 25 CONST WRKR 0.115
ED	EXPOSURE DURATION FOR INHALATION OF NONCARCINOGENS	YEAR	RESIDENTIAL 30 INDUS/COMM. 25 CONST WRKR 1
EF	EXPOSURE FREQUENCY	D/YR	RESIDENTIAL 350 INDUS/COMM. 250 CONST WRKR 30
RfC	INHALATION REFERENCE CONCENTRATION	MG/M^3	RESIDENTIAL 0.1 INDUS/COMM. 0.1 CONST WRKR 0.4
THQ	TARGET HAZARD QUOTIENT	UNITLESS	1
VF_{M-L}	VOLATILIZATION FACTOR	M^3/KG	REFER TO EQ. S26& S27 WITHIN TACO

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
d_s	DEPTH OF SOURCE	m	SITE SPECIFIC
ρ_b	DRY BULK DENSITY	kg/L	1.5, OR GRAVEL=2.0 SAND=1.8 SILT=1.6 CLAY=1.7, OR SITE SPECIFIC
Q/C	INVERSE OF THE MEAN CONCENTRATION AT THE CENTER OF A SQUARE SOURCE	$(g/m^2\text{-}s)/(kg/m^3)$	RESIDENTIAL 68.81 INDUS/COMM. 85.81 CONST WRKR 85.81 OR 742.Appendix C, Table H: Q/C by Source Area
T_{M-L}	EXPOSURE INTERVAL	yr	30

INPUT PARAMETERS FOR VF_{M-L} RES/INDUS/COM PROP

Source Area	0.5	Acre	
ds=	2.4384	m	
Pb=	1.684	kg/L	
Q/C=	97.78	$(g/m^2\text{-}s)/(kg/m^3)$ (Residential)	76.08
Q/C=	97.78	$(g/m^2\text{-}s)/(kg/m^3)$ (Industrial/Commercial)	
T_{M-L}=	30.00	yr	
VF_{M-L}=	22502.71	m^3/kg (Residential)	
VF_{M-L}=	22502.71	m^3/kg (Industrial/Commercial)	17,508.76

INPUT PARAMTERS FOR CONSTRUCTION WORKER

Source Area	0.5	Acre	
ds=	2.4384	m	
Pb=	1.684	kg/L	
Q/C=	97.78	$(g/m^2\text{-}s)/(kg/m^3)$	76.08
T_{M-L}=	30.00	yr	
VF'_{M-L}=	2250.27	m^3/kg	1750.88

INPUT PARAMETER VALUES RES/INDUS/COM PROP

AT=	30	year (Residential)	
AT=	25	year (Industrial/Commercial)	
ED=	30	year (Residential)	
ED=	25	year (Industrial/Commercial)	
EF=	350	d/yr (Residential)	
EF=	250	d/yr (Industrial/Commercial)	
RfC=	0.1	mg/m^3	
THQ	1	unitless	
VF_{M-L}=	22502.71	m^3/kg (Residential)	
VF_{M-L}=	22502.71	m^3/kg (Industrial/Commercial)	17,508.76

INPUT PARAMETER VALUES FOR CONSTRUCTION WORKERS

AT=	0.115	year	
ED=	1	year	
EF=	30	d/yr	
RfC=	0.4	mg/m^3	
THQ	1	unitless	
VF'_{M-L}=	2250.27	m^3/kg	1750.88

Residential Inhalation Remediation Objective (S4) =	**2,346.7 mg/kg**	1,830

Industrial/Commercial Inhalation Remediation Objective (S4) =	**3,285.4 mg/kg**	2,560

Construction Worker Inhalation Remediation Objective (S5) =	**1,259.4 mg/kg**	980

Soil Saturation Limit Exceedence Check (value of SRO will change if soil saturation limit is exceeded for chemical):

Soil Remediation Objective (Residential Inhalation) =	806	**798 mg/kg**	**798,000 µg/kg**	806,000
Soil Remediation Objective (Industrial/Commercial Inhalation) =	806	**798 mg/kg**	**798,000 µg/kg**	806,000
Soil Remediation Objective (Construction Worker Inhalation) =	806	**798 mg/kg**	**798,000 µg/kg**	806,000

Tier 1 Soil Remediation Objective Check (value of SRO will default to Tier 1 if calculated Tier 2 SRO is more stringent for chemical):

Soil Remediation Objective (Residential Inhalation) =	806	**798 mg/kg**	**798,000 µg/kg**	806,000
Soil Remediation Objective (Industrial/Commercial Inhalation) =	806	**798 mg/kg**	**798,000 µg/kg**	806,000
Soil Remediation Objective (Construction Worker Inhalation) =	806	**798 mg/kg**	**798,000 µg/kg**	806,000
		Parts-Per-Million	*Parts-Per-Billion*	

TOTAL XYLENES

EQUATIONS S4 AND S5 FOR INHALATION OF VOLATILES IN SOIL (NONCARCINOGENS)

Illico Independent Oil Co.
Peoria, Illinois

Residential, Industrial/Commercial Remediation Objectives for Noncarcinogenic Contaminants (mg/kg)

$$\frac{THQ \bullet AT \bullet 365 \frac{d}{yr}}{EF \bullet ED \bullet \left(\frac{1}{RfC} \bullet \frac{1}{VF}\right)}$$

Construction Worker Remediation Objectives for Noncarcinogenic Contaminants (mg/kg)

$$\frac{THQ \bullet AT \bullet 365 \frac{d}{yr}}{EF \bullet ED \bullet \left(\frac{1}{RfC} \bullet \frac{1}{VF'}\right)}$$

S26 - Mass-Limit Volatilization Factor for the Inhalation Exposure Route - Residential, Industrial/Commercial (m^3/kg)

$$VF_{M-L} = \frac{Q}{C} \bullet \frac{\left[T_{M-L} \bullet \left(3.15 \bullet 10^7 \frac{s}{yr}\right)\right]}{\rho_b \bullet d_s \bullet 10^6 \frac{cm^3}{m^3}}$$

S27 - Mass-Limit Volatilization Factor for the Inhalation Exposure Route - Construction Worker (m^3/kg)

$$VF'_{M-L} = \frac{VF_{M-L}}{10}$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
AT	AVERAGING TIME FOR NONCARCINOGENS	YEAR	RESIDENTIAL 30 INDUS/COMM. 25 CONST WRKR 0.115
ED	EXPOSURE DURATION FOR INHALATION OF NONCARCINOGENS	YEAR	RESIDENTIAL 30 INDUS/COMM. 25 CONST WRKR 1
EF	EXPOSURE FREQUENCY	D/YR	RESIDENTIAL 350 INDUS/COMM. 250 CONST WRKR 30
RfC	INHALATION REFERENCE CONCENTRATION	MG/M^3	RESIDENTIAL 0.003 INDUS/COMM. 0.003 CONST WRKR 0.003
THQ	TARGET HAZARD QUOTIENT	UNITLESS	1
VF_{M-L}	VOLATILIZATION FACTOR	M^3/KG	REFER TO EQ. S27& S28 WITHIN TACO

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
d_s	DEPTH OF SOURCE	m	SITE SPECIFIC
ρ_b	DRY BULK DENSITY	kg/L	1.5, OR GRAVEL=2.0 SAND=1.8 SILT=1.6 CLAY=1.7, OR SITE SPECIFIC
Q/C	INVERSE OF THE MEAN CONCENTRATION AT THE CENTER OF A SQUARE SOURCE	$(g/m^2\text{-}s)/(kg/m^3)$	RESIDENTIAL 68.81 INDUS/COMM. 85.81 CONST WRKR 85.81 OR 742.Appendix C, Table H: Q/C by Source Area
T_{M-L}	EXPOSURE INTERVAL	yr	30

INPUT PARAMETERS FOR VF_{M-L} RES/INDUS/COM PROP

Source Area	0.5 Acre	2
ds=	2.4384 m	
Pb=	1.684 kg/L	
Q/C=	97.78 $(g/m^2\text{-}s)/(kg/m^3)$ (Residential)	76.08
Q/C=	97.78 $(g/m^2\text{-}s)/(kg/m^3)$ (Industrial/Commercial)	
T_{M-L}=	30.00 yr	
VF_{M-L}=	22502.71 m^3/kg (Residential)	
VF_{M-L}=	22502.71 m^3/kg (Industrial/Commercial)	17,508.76

INPUT PARAMTERS FOR CONSTRUCTION WORKER

Source Area	0.5 Acre	2
ds=	2.4384 m	
Pb=	1.684 kg/L	
Q/C=	97.78 $(g/m^2\text{-}s)/(kg/m^3)$	76.08
T_{M-L}=	30.00 yr	
VF'_{M-L}=	2250.27 m^3/kg	1750.88

INPUT PARAMETER VALUES RES/INDUS/COM PROP

AT=	30 year (Residential)	
AT=	25 year (Industrial/Commercial)	
ED=	30 year (Residential)	
ED=	25 year (Industrial/Commercial)	
EF=	350 d/yr (Residential)	
EF=	250 d/yr (Industrial/Commercial)	
RfC=	0.003 mg/m^3	
THQ	1 unitless	
VF_{M-L}=	22502.71 m^3/kg (Residential)	
VF_{M-L}=	22502.71 m^3/kg (Industrial/Commercial)	17,508.76

INPUT PARAMETER VALUES FOR CONSTRUCTION WORKERS

AT=	0.115 year	
ED=	1 year	
EF=	30 d/yr	
RfC=	0.003 mg/m^3	
THQ	1 unitless	
VF'_{M-L}=	2250.27 m^3/kg	1750.88

Residential Inhalation Remediation Objective (S4) =	**70.4 mg/kg**	54.8
Industrial/Commercial Inhalation Remediation Objective (S4) =	**86.5 mg/kg**	76.7
Construction Worker Inhalation Remediation Objective (S5) =	**9.4 mg/kg**	7.35

Tier 1 Soil Remediation Objective Check (value of SRO will default to Tier 1 if calculated Tier 2 SRO is more stringent for chemical):

Soil Remediation Objective (Residential Inhalation) =	**170 mg/kg**	**170,000 µg/kg**
Soil Remediation Objective (Industrial/Commercial Inhalation) =	**270 mg/kg**	**270,000 µg/kg**
Soil Remediation Objective (Construction Worker Inhalation) =	7.35 **9.4 mg/kg**	**9,400 µg/kg** 7,350
	Parts-Per-Million	*Parts-Per-Billion*

NAPHTHALENE

ATTACHMENT 2

Illinois Environmental Protection Agency

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

General Information for the Budget and Billing Forms

LPC #: 1430655263 County: Peoria

City: Peoria Site Name: Illico Independent Oil Co.

Site Address: 3712 North University Street

IEMA Incident No. 923441

IEMA Notification Date: 12/02/1992

Date this form was prepared: 12/10/2015

This form is being submitted as a (check one, if applicable):

- ☑ Budget Proposal
- ☐ Budget Amendment (Budget amendments must include only the costs over the previous budget.)
- ☐ Billing Package

Please provide the name(s) and date(s) of report(s) documenting the costs requested:

Name(s):

Date(s):

This form is being submitted for the site activities indicted below:

35 Ill. Adm. Code 734:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☐ Site Investigation Stage 1: ☐ Stage 2: ☐ Stage 3: ☐
- ☑ Corrective Action Actual Costs

35 Ill. Adm. Code 732:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☐ Site Classification
- ☐ Low Priority Corrective Action
- ☐ High Priority Corrective Action

35 Ill. Adm. Code 731:

- ☐ Site Investigation
- ☐ Corrective Action

General Information for the Budget and Billing Forms

The following address will be used as the mailing address for checks and any final determination letters regarding payment from the Fund.

Pay to the order of: Illico Independent Oil Co.

Send in care of: Marlin Environmental, Inc.

Address: 3935 Commerce Drive

City: Saint Charles State: Illinois Zip: 60174

Payee is the: Owner ☐ Operator ☐ (Check one or both.)

[signature] President

Signature of the owner or operator of the UST(s) (required)

W-9 must be submitted.
Click here to print off a W-9 Form.

Number of petroleum USTs in Illinois presently owned or operated by the owner or operator; any subsidiary, parent or joint stock company of the owner or operator; and any company owned by any parent, subsidiary or joint stock company of the owner or operator:

Fewer than 101: ☑ 101 or more: ☐

Number of USTs at the site: ________ (Number of USTs includes UST's presently at the site and USTs that have been removed.)

Number of incidents reported to IEMA for this site: 1

Incident Numbers assigned to the site due to releases from USTs: 923441 ________ ________ ________ ________

Please list all tanks that have ever been located at the site and tanks that are presently located at the site.

Product Stored in UST	Size (gallons)	Did UST have a release?	Incident No.	Type of Release Tank Leak / Overfill / Piping Leak
Unleaded Gasoline	12,000	Yes ☑ No ☐	923441	Overfill
Unleaded Gasoline	12,000	Yes ☑ No ☐	923441	Overfill
Unleaded Gasoline	12,000	Yes ☑ No ☐	923441	Overfill
Diesel Fuel	12,000	Yes ☑ No ☐	923441	Overfill
Kerosene	6,000	Yes ☑ No ☐	923441	Overfill
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		

Billing Summary

	$ Amount Approved in the Budget	$ Amount Requested for Payment from the Fund
1. Drilling and Monitoring Wells Costs Form		$2,165.46
2. Analytical Costs Form		$14,539.38
3. Remediation and Disposal Costs Form		$185,626.35
4. UST Removal and Abandonment Costs Form		$19,516.50
5. Paving, Demolition, and Well Abandonment Costs Form		$27,281.14
6. Consulting Personnel Costs Form		$43,476.63
7. Consultant's Materials Costs Form		$4,901.00
Total Amount Approved in the Budget*	$0.00	**NOT APPLICABLE**
Subtotal of lines 1-7:	**NOT APPLICABLE**	$297,506.46
8. Handling Charges Form	**NOT APPLICABLE**	$0.00
TOTAL AMOUNT REQUESTED FOR PAYMENT	**NOT APPLICABLE**	$297,506.46

*Date(s) this Budget(s) was approved: _____

_____

_____

_____

Drilling and Monitoring Well Costs Form

1. Drilling

Number of Borings to Be Drilled	Type HSA/PUSH/ Injection	Depth (feet) of Each Boring	Total Feet Drilled	Reason for Drilling
1	HSA	15	15	MW-4 Replacement
			0	
			0	
			0	
			0	
			0	
			0	
			0	

☑ Subpart H minimum payment amount applies.

	Total Feet	Rate per Foot ($)	Total Cost ($)
Total Feet via HSA:	15	$28.50	$427.50
Total Feet via PUSH:	0	$22.30	$0.00
Total Feet for Injection via PUSH:	0	$18.59	$0.00
		Total Drilling Costs:	**$1,858.71**

adjusted to reflect Subpart H minimum payment amount

2. Monitoring / Recovery Wells

Number of Wells	Type of Well HSA / PUSH / 4" or 6" Recovery / 8" Recovery	Diameter of Well (inches)	Depth of Well (feet)	Total Feet of Wells to Be Installed ($)
1	HSA	2	15	15
				0
				0
				0
				0

Well Installation	Total Feet	Rate per Foot ($)	Total Cost ($)
Total Feet via HSA:	15	$20.45	$306.75
Total Feet via PUSH:	0	$15.49	$0.00
Total Feet of 4" or 6" Recovery:	0	$30.98	$0.00
Total Feet of 8" or Greater Recovery:	0	$50.80	$0.00
		Total Well Costs:	**$306.75**

Total Drilling and Monitoring Well Costs:	**$2,165.46**

Analytical Costs Form

Laboratory Analysis	Number of Samples		Cost ($) per Analysis		Total per Parameter
Chemical Analysis					
BETX Soil with MTBE EPA 8260	35	x	$105.33	=	$3,686.55
BETX Water with MTBE EPA 8260	12	x	$100.37	=	$1,204.44
COD (Chemical Oxygen Demand)		x	$37.17	=	$0.00
Corrosivity		x	$18.59	=	$0.00
Flash Point or Ignitability Analysis EPA 1010	1	x	$40.88	=	$40.88
Fraction Organic Carbon Content (f_{oc}) ASTM-D 2974-00		x	$47.08	=	$0.00
Fat, Oil, & Grease (FOG)		x	$74.34	=	$0.00
LUST Pollutants Soil - analysis must include volatile, base/ neutral, polynuclear aromatics and metals list in Section 732. Appendix B and 734.Appendix B		x	$858.73	=	$0.00
Dissolved Oxygen (DO)		x	$29.74	=	$0.00
Paint Filter (Free Liquids)	1	x	$17.35	=	$17.35
PCB / Pesticides (combination)		x	$275.09	=	$0.00
PCBs		x	$137.54	=	$0.00
Pesticides		x	$173.48	=	$0.00
pH		x	$17.35	=	$0.00
Phenol		x	$42.13	=	$0.00
Polynuclear Aromatics PNA, or PAH SOIL EPA 8270	35	x	$188.36	=	$6,592.60
Polynuclear Aromatics PNA, or PAH WATER EPA 8270	12	x	$188.36	=	$2,260.32
Reactivity		x	$84.26	=	$0.00
SVOC - Soil (Semi-Volatile Organic Compounds)		x	$387.85	=	$0.00
SVOC - Water (Semi-Volatile Organic Compounds)		x	$387.85	=	$0.00
TKN (Total Kjeldahl) "nitrogen"		x	$54.52	=	$0.00
TPH (Total Petroleum Hydrocarbons)		x	$151.18	=	$0.00
VOC (Volatile Organic Compounds) - Soil (Non-Aqueous)		x	$216.85	=	$0.00
VOC (Volatile Organic Compounds) - Water		x	$209.42	=	$0.00
BETX Water with MTBE EPA 8260 (field and trip blank)		x	$100.37	=	$0.00
Soil Vapor Gas Sample		x		=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00
Geo-Technical Analysis					
Soil Bulk Density (p_b) ASTM D2937-94		x	$27.26	=	$0.00
Ex-situ Hydraulic Conductivity / Permeability		x	$315.98	=	$0.00
Moisture Content (w) ASTM D2216-92 / D4643-93		x	$14.87	=	$0.00
Porosity		x	$37.17	=	$0.00
Rock Hydraulic Conductivity Ex-situ		x	$433.70	=	$0.00
Sieve / Particle Size Analysis ASTM D422-63 / D1140-54		x	$179.68	=	$0.00
Soil Classification ASTM D2488-90 / D2487-90		x	$84.26	=	$0.00
Soil Particle Density (ps) ASTM D854-92		x	$90.00	=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00

Analytical Costs Form

Metals Analysis					
Soil preparation fee for Metals TCLP Soil (one fee per soil sample)	1	x	$97.89	=	$97.89
Soil preparation fee for Metals Total Soil (one fee per soil sample)		x	$19.82	=	$0.00
Water preparation fee for Metals Water (one fee per water sample)		x	$13.62	=	$0.00
Arsenic TCLP Soil		x	$19.82	=	$0.00
Arsenic Total Soil		x	$19.82	=	$0.00
Arsenic Water		x	$22.30	=	$0.00
Barium TCLP Soil		x	$12.39	=	$0.00
Barium Total Soil		x	$12.39	=	$0.00
Barium Water		x	$14.87	=	$0.00
Cadmium TCLP Soil		x	$19.82	=	$0.00
Cadmium Total Soil		x	$19.82	=	$0.00
Cadmium Water		x	$22.30	=	$0.00
Chromium TCLP Soil		x	$12.39	=	$0.00
Chromium Total Soil		x	$12.39	=	$0.00
Chromium Water		x	$14.87	=	$0.00
Cyanide TCLP Soil		x	$34.70	=	$0.00
Cyanide Total Soil		x	$42.13	=	$0.00
Cyanide Water		x	$42.13	=	$0.00
Iron TCLP Soil		x	$12.39	=	$0.00
Iron Total Soil		x	$12.39	=	$0.00
Iron Water		x	$14.87	=	$0.00
Lead TCLP Soil	1	x	$19.82	=	$19.82
Lead Total Soil		x	$19.82	=	$0.00
Lead Water		x	$22.30	=	$0.00
Mercury TCLP Soil		x	$23.54	=	$0.00
Mercury Total Soil		x	$12.39	=	$0.00
Mercury Water		x	$32.22	=	$0.00
Selenium TCLP Soil		x	$19.82	=	$0.00
Selenium Total Soil		x	$19.82	=	$0.00
Selenium Water		x	$18.59	=	$0.00
Silver TCLP Soil		x	$12.39	=	$0.00
Silver Total Soil		x	$12.39	=	$0.00
Silver Water		x	$14.87	=	$0.00
Metals TCLP Soil (a combination of all metals) RCRA		x	$127.63	=	$0.00
Metals Total Soil (a combination of all metals) RCRA		x	$116.47	=	$0.00
Metals Water (a combination of all metals) RCRA		x	$147.45	=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00
Other					
EnCore® Sampler, purge-and-trap sampler, or equivalent sampling device	35	x	$12.39	=	$433.65
Sample Shipping per sampling event[1]	3	x	$61.96	=	$185.88

[1]A sampling event, at a minimum, is all samples (soil and groundwater) collected in a calendar day

Total Analytical Costs:	$14,539.38

Remediation & Disposal Costs Form

A. Conventional Technology

Excavation, Transportation, and Disposal of contaminated soil and/or the 4-foot backfill material removal during early action activities:

Number of Cubic Yards	Cost per Cubic Yard ($)	Total Cost
1640	$70.63	$115,833.20

Backfilling the Excavation:

Number of Cubic Yards	Cost per Cubic Yard ($)	Total Cost
1961	$24.78	$48,593.58

Overburden Removal and Return:

Number of Cubic Yards	Cost per Cubic Yard ($)	Total Cost
0	$8.06	$0.00

B. Alternative Technology

Alternative Technology Selected:	
Number of Cubic Yards of Soil to Be Remediated	
Total Non-Consulting Personnel Costs Summary Sheet ($)	
Total Remediation Materials Costs Summary Sheet ($)	
Total Cost of the System	$0.00

Remediation & Disposal Costs Form

C. Groundwater Remediation and/or Free Product Removal System

Total Non-Consulting Personnel Costs Summary Sheet ($)	
Total Remediation Materials Costs Summary Sheet ($)	
Total Cost of the System	$0.00

D. Groundwater and/or Free Product Removal and Disposal

☐ Subpart H minimum payment amount applies.

Number of Gallons	Cost per Gallon ($)	Total Cost
24,500	$0.84	$20,580.00

E. Drum Disposal

☑ Subpart H minimum payment amount applies.

Number of Drums of Solid Waste	Cost per Drum ($)	Total Cost
1	$309.79	$309.79
	$309.79	$0.00
	$309.79	$0.00
Number of Drums of Liquid Waste	Cost per Drum ($)	Total Cost
	$185.88	$0.00
	$185.88	$0.00
	$185.88	$0.00
Total Drum Disposal Costs		$619.57

adjusted to reflect Subpart H minimum payment amount

Total Remediation and Disposal Costs:	**$185,626.35**

UST Removal and Abandonment Costs Form

Product Stored in UST	Size (gallons)	Abandoned or Removed	Cost ($)	Did UST have a release?
Unleaded Gasoline	12,000	Removed	$3,903.30	Yes ☑ No ☐
Unleaded Gasoline	12,000	Removed	$3,903.30	Yes ☑ No ☐
Unleaded Gasoline	12,000	Removed	$3,903.30	Yes ☑ No ☐
Diesel Fuel	12,000	Removed	$3,903.30	Yes ☑ No ☐
Kerosene	6,000	Removed	$3,903.30	Yes ☑ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐

Total UST Removal and Abandonment Costs:	$19,516.50

Paving, Demolition, and Well Abandonment Costs Form

A. Concrete and Asphalt Placement/Replacement

Number of Square Feet	Asphalt or Concrete	Thickness (inches)	Cost ($) per Square Foot	Replacement or Placement for an Engineered Barrier	Total Cost
4,626	Concrete	6	$5.41	Replacement	$25,026.66
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00

Total Concrete and Asphalt Placement/Replacement Costs:	$25,026.66

B. Building Destruction or Dismantling and Canopy Removal

Item to Be Destroyed, Dismantled, or Removed	Unit Cost ($)	Total Cost

Total Building Destruction or Dismantling and Canopy Removal Costs:	$0.00

Paving, Demolition, and Well Abandonment Costs Form

C. Well Abandonment

Monitoring Well ID #	Type of Well (HSA / PUSH / Recovery)	Depth of Well (feet)	Cost ($) per Foot	Total Cost
MW-2	HSA	15.00	$12.39	$185.85
MW-3	HSA	16.00	$12.39	$198.24
MW-4R	HSA	14.00	$12.39	$173.46
MW-5	HSA	15.00	$12.39	$185.85
MW-6	HSA	18.00	$12.39	$223.02
MW-7	HSA	14.00	$12.39	$173.46
MW-9	HSA	12.84	$12.39	$159.09
MW-10	HSA	12.63	$12.39	$156.49
MW-11	HSA	12.89	$12.39	$159.71
MW-12	HSA	12.70	$12.39	$157.35
MW-13	HSA	13.09	$12.39	$162.19
MW-14	HSA	12.92	$12.39	$160.08
MW-15	HSA	12.89	$12.39	$159.71
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00

Total Monitoring Well Abandonment Costs:	**$2,254.48**

Total Paving, Demolition, and Well Abandonment Costs:	**$27,281.14**

Consulting Personnel Costs Form

Employee Name	Personnel Title	Hours	Rate ($)	Total Cost
Remediation Category	**Task**			
	Engineer III	12.5	$123.91	$1,548.88
CCAP	CA Plan- Design, Development & Management			
	Project Manager	15	$111.52	$1,672.80
CCAP	CA Plan - Preparation / Attachments			
	Project Manager	9.25	$111.52	$1,031.56
TACO 2 or 3	Tier 2 SRO Calculation IEPA Input Parameter Sheets			
	Senior Draftsperson/CAD	5	$74.34	$371.70
CCAP	CA Plan - Maps and Map Printing			
	Project Manager	9	$111.52	$1,003.68
CCAP-Budget	CA Budget - Budget Development, Writing			
	Senior Project Manager	8.5	$123.91	$1,053.24
CCAP	CA Plan - Preparation, Management, Review & Comments			
	Senior Prof. Engineer	3	$161.09	$483.27
CCAP	CA Plan - Final Review & Certification			
	Senior Prof. Engineer	3	$161.09	$483.27
CCAP-Budget	CA Budget - Final Review & Certification			
	Senior Admin. Assistant	4	$55.76	$223.04
CCAP	CA Plan & Budget Production: copying, binding, filing and submittal to IEPA and client			
	Senior Project Manager	5	$123.91	$619.55
CCA-Field	Project Coordination - office time, project management, coordination			

Consulting Personnel Costs Form

Employee Name	Personnel Title	Hours	Rate ($)	Total Cost
Remediation Category	**Task**			
	Senior Project Manager	70	$123.91	$8,673.70
CCA-Field	CA field prep and travel, UST removal oversight, remediation,soil sampling, truck coordination			
	Project Manager	70	$111.52	$7,806.40
CCA-Field	CA field prep and travel, soil remediation, PID screening, field coodination, site restoration			
	Project Manager	5	$111.52	$557.60
CCA-Field	Travel, Prep, Reinstall MW-4 oversight, boring log			
	Project Manager	9	$111.52	$1,003.68
CCA-Field	Data interpretation and results, tables			
	Senior Acct. Technician	26	$68.14	$1,771.64
CA-Pay	Billing Package (CAP Remediation) - Preparation & Assembly			
	Senior Prof. Geologist	5	$136.31	$681.55
CA-Pay	Billing Package (CAP Remediation) - Review & Certification			
	Senior Project Manager	7	$123.91	$867.37
CCA-Field	Travel, Prep and groundwater monitoring and sampling entre network			
	Project Manager	7	$111.52	$780.64
CCA-Field	Travel, Prep and groundwater monitoring and sampling entire network			
	Senior Project Manager	2	$123.91	$247.82
CA-Pay	Billing Package (GW Evaluation) - Management			
	Senior Acct. Technician	15	$68.14	$1,022.10
CA-Pay	Billing Package (GW Evaluation) - Preparation & Assembly			

Consulting Personnel Costs Form

Employee Name	Remediation Category	Personnel Title	Task	Hours	Rate ($)	Total Cost
	CA-Pay	Senior Prof. Geologist	Billing Package (GW Evaluation) - Review & Certification	3	$136.31	$408.93
	TACO 2 or 3	Engineer III	Data Analysis - Extents Determination / Modeling	9	$123.91	$1,115.19
	HAA	Project Manager	City and IDOT forms, negotiation, execution	24	$111.52	$2,676.48
	CACR	Senior Project Manager	CACR - Design, Data Review	5	$123.91	$619.55
	CACR	Project Manager	CACR Preparation - tables, writing	30	$111.52	$3,345.60
	CACR	Senior Prof. Engineer	CACR Review and Certification	6	$161.09	$966.54
	CACR	Senior Draftsperson/CAD	CACR & HAA Maps and Printing	8	$74.34	$594.72
	CACR	Senior Admin. Assistant	CACR Printing, Copying & Binding, Project Filing	5	$55.76	$278.80
	CA-Pay	Senior Acct. Technician	CACR and NFR Billing Package - Production	15	$68.14	$1,022.10
	CA-Pay	Senior Prof. Geologist	CACR and NFR Billing Package - Review and Certification	4	$136.31	$545.24

Total of Consulting Personnel Costs:	**$43,476.63**

Consultant's Materials Costs Form

Materials, Equipment or Field Purchase	Time or Amount Used	Rate ($)	Unit	Total Cost
Remediation Category	**Description/Justification**			
Field Vehicle	9	$190.00	Day	$1,710.00
CCA-Field	UST Removal & Soil Remediation (7) Drilling (1) GW Sampling (1)			
Consultant Field & Decon Equipment	7	$32.00	Day	$224.00
CCA-Field	Supplies, Baggies, Sampling, Consultant Non Disposable Field Equipment			
Photoionization Detector	8	$192.00	Day	$1,536.00
CCA-Field	Soil Screening Soil Remediaiton (7), Drilling (1)			
Digital Camera	8	$8.00	Day	$64.00
CCA-Field	UST Removal and Soil Remediaiton Documentation (7), re-installing MW-4 (1)			
Measuring Wheel	7	$42.00	Day	$294.00
CCA-Field	Soil Remediation			
Consultant Latex Gloves	2	$34.00	Box	$68.00
CCA-Field	Soil Remediation / GW Sampling			
Water Level Indicator	1	$87.00	Day	$87.00
CCA-Field	GW Sampling			
Certified Mail	1	$5.00	Each	$5.00
CCA-Field	Certified Mail charges for Mailing City HAA			
NFR Recording Costs	1	$100.00	Each	$100.00
CACR	NFR Recording Costs, includes certified copy (estimated, only actual costs will be requested for reimbursement)			
ELUC Recording Costs	2	$100.00	Each	$200.00
ELUC	ELUC Recording Costs, includes certified copy (estimated, only actual costs will be requested for reimbursement)			

Consultant's Materials Costs Form

Materials, Equipment or Field Purchase	Time or Amount Used	Rate ($)	Unit	Total Cost
Remediation Category	**Description/Justification**			
Metal Detector	2	$40.00	Day	$80.00
CCA-Field	Locating Wells and Utilities			
Disposable Bailers	13	$41.00	Each	$533.00
CCA-Field	Developing MW-4R (1) Water Well Sampling (12)			
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00

Total of Consultant Materials Costs:	**$4,901.00**

Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form

I hereby certify that I intend to seek payment from the UST Fund for costs incurred while performing corrective action activities for Leaking UST incident 923441. I further certify that the costs set forth in this budget are for necessary activities and are reasonable and accurate to the best of my knowledge and belief. I also certify that the costs included in this budget are not for corrective action in excess of the minimum requirements of 415 ILCS 5/57, no costs are included in this budget that are not described in the corrective action plan, and no costs exceed Subpart H: Maximum Payment Amounts, Appendix D Sample Handling and Analysis amounts, and Appendix E Personnel Titles and Rates of 35 Ill. Adm. Code 732 or 734. I further certify that costs ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 732.606 or 734.630 are not included in the budget proposal or amendment. Such ineligible costs include but are not limited to:

Costs associated with ineligible tanks.
Costs associated with site restoration (e.g., pump islands, canopies).
Costs associated with utility replacement (e.g., sewers, electrical, telephone, etc.).
Costs incurred prior to IEMA notification.
Costs associated with planned tank pulls.
Legal fees or costs.
Costs incurred prior to July 28, 1989.
Costs associated with installation of new USTs or the repair of existing USTs.

RECEIVED
DEC 14 2015
IEPA/BOL

Owner/Operator: Illico Independent Oil Co.

Authorized Representative: David Golwitzer Title: Owner

Signature: [signature] President Date: 12-7-15

Subscribed and sworn to before me the 7th day of Dec, 2015

[signature] (Notary Public) Seal: OFFICIAL SEAL JEFF WIENHOFF Notary Public - State of Illinois My Commission Expires 4/29/2018

In addition, I certify under penalty of law that all activities that are the subject of this plan, budget, or report were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan, budget, or report and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in the plan, budget, or report has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 732 or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

L.P.E./L.P.G. Jeff R. Wienhoff L.P.E./L.P.G. Seal: JEFFREY R. WIENHOFF 062-058441 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

L.P.E./L.P.G. Signature: [signature] Date: 12/14/15

Subscribed and sworn to before me the 14th day of December, 2015

[signature] (Notary Public) Seal: D. EGGLESTON OFFICIAL SEAL Notary Public - State of Illinois My Commission Expires December 08, 2017

The Illinois EPA is authorized to require this information under 415 ILCS 5/1. Disclosure of this information is required. Failure to do so may result in the delay or denial of any budget or payment requested hereunder.

Office of the Illinois
State Fire Marshal

General Office
217-785-0969

Divisions
ARSON INVESTIGATION
217-782-6855
BOILER and PRESSURE VESSEL SAFETY
217-782-2696
FIRE PREVENTION
217-785-4714
MANAGEMENT SERVICES
217-782-9889
INFIRS
217-785-1016
PERSONNEL
217-785-1009
PERSONNEL STANDARDS and EDUCATION
217-782-4542
PETROLEUM and CHEMICAL SAFETY
217-785-5878
PUBLIC INFORMATION
217-785-1021

CERTIFIED MAIL - RECEIPT REQUESTED # P 239 741 688

November 15, 1993

David Golwitzer
Illico Independent Oil Company
617 Keokuk
Lincoln, IL 62656

In re: Facility No. 3-007188
IEMA Incident No. 92-3441
Illico Independent Oil Company
3712 N. University St.
Peoria, PEORIA CO., IL

Dear Mr. Golwitzer:

The Reimbursement Eligibility and Deductibility Application, received on 9-20-93 for the above referenced occurrence has been reviewed. The following determinations have been made based upon this review.

It has been determined that you are eligible to seek corrective action costs in excess of $10,000. The costs must be in response to the occurrence referenced above and associated with the following tanks:

Eligible Tanks

Tank #1 - 12,000 gallon gasoline
Tank #2 - 12,000 gallon gasoline
Tank #3 - 12,000 gallon gasoline
Tank #4 - 12,000 gallon diesel
Tank #5 - 6,000 gallon kerosene

This decision constitutes the preliminary determination regarding your deductible. We reserve the right to change the deductible determination should additional information that would change the determination become available.

The Illinois Environmental Protection Agency will send you a packet of Agency billing forms for submitting your request for payment.

An owner or operator is eligible to access the Underground Storage Tank Fund if the eligibility requirements are satisfied:

1. Neither the owner nor the operator is the United States Government;

2. The tank does not contain fuel which is exempt from the Motor Fuel Tax Law;

3. The costs were incurred as a result of a confirmed release of any of the following substances:

   "Fuel", as defined in Section 1.10 of the Motor Fuel Tax Law

   Aviation fuel

   Heating oil

   Kerosene

   Used oil, which has been refined from crude oil used in a motor vehicle, as defined in Section 1.3 of the Motor Fuel Tax Law.

4. The owner or operator registered the tank and paid all fees in accordance with the statutory and regulatory requirements of the Gasoline Storage Act.

5. The owner or operator notified the Illinois Emergency Management Agency of a confirmed release, the costs were incurred after the notification and the costs were a result of a release of a substance listed in this Section. Costs of corrective action or indemnification incurred before providing that notification shall not be eligible for payment.

6. The costs have not already been paid to the owner or operator under a private insurance policy, other written agreement, or court order.

7. The costs were associated with "corrective action".

This constitutes the final decision as it relates to your eligibility and deductibility. An underground storage tank owner or operator may appeal the decision to the Illinois Pollution Control Board (Board), pursuant to Section 57.9 (c) (2). An owner or operator who seeks to appeal the decision shall file a petition for a hearing before the Board within 35 days of the date of mailing of the final decision (35 Illinois Administrative Code 105.102(a) (2)).

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

Dorothy Gunn, Clerk
Illinois Pollution Control Board
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, Illinois 60601
(312)814-3620

If you have any questions regarding the eligibility or deductibility determinations, please contact Pat Flannigan at (217)785-1020 or (217)785-5878 between 3:00 - 4:00 p.m.

Sincerely,

James I. McCaslin --
Director
Division of Petroleum and Chemical Safety

JIM:PF:bc

cc: IEPA
Facility File

#5387

MARLIN Environmental

SITE INVESTIGATION COMPLETION REPORT

ILLICO INDEPENDENT OIL CO.
3712 NORTH UNIVERSITY STREET
PEORIA, PEORIA COUNTY,
ILLINOIS 61614
LUST INCIDENT # 923441
IEPA LPC #1430655263

Prepared for:

Mr. David Golwitzer
ILLICO INDEPENDENT OIL CO.
2201 Woodlawn Rd. Suite 600
Lincoln, Illinois 62656

Prepared by:

MARLIN ENVIRONMENTAL, INC.
3900 Wood Duck Drive Suite F.
Springfield, Illinois 62711

December 14, 2015

Jeff R. Wienhoff, P.E.
Senior Professional Engineer

Mike Bettenhausen
Senior Project Manager

Joe Buhlig
Project Manager

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PAGE NUMBER:

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TABLES SECTION

ATTACHMENTS SECTION

Illinois Environmental Protection Agency

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

LEAKING UNDERGROUND STORAGE TANK PROGRAM
SITE INVESTIGATION COMPLETION REPORT

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC# (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (Not a P.O. Box): 3712 University Street

City: Peoria County: Peoria ZIP Code: 61614

B. Site Information

1. Will the owner/operator seek reimbursement from the Underground Storage Tank Fund? Yes ☒ No ☐

2. Has a Site Investigation Plan been submitted? Yes ☒ No ☐
   Date(s) of approval letter(s): 11/12/2012 (*Stage 1*) 13
   04/9/2013 (*Stage 2*)
   12/23/2013 (*Stage 2*)

C. Site Investigation Results

1. Site history with respect to the release;

The investigation site is the former Premcor station owned by Illico, Inc. and located at 3712 University Street in Peoria, Illinois. **Figure 1** displays the surrounding land usage. **Figure 2** displays the entire subject parcel. The site is currently a gas station property and the surface is made up of concrete and grass.

A release was reported to the Illinois Emergency Management Agency (IEMA) on December 2, 1992 and received Leaking Underground Storage Tank (LUST) incident number 923441 concerning this overfill incident. On July 24, 2015, Illico Incorporated and Premcor reached a settlement on multiple properties the Premcor had previously taken the responsibility of conducting the environmental investigative work. Illico Independent Oil Co. has taken over the control and responsibility of this site's environmental and corrective actions. 3

Early Action

According to the 45 Day Report dated March 2, 1993, Incident #923441 was reported during IDOT construction activities at the intersection of War Memorial Drive and North University Street. The release was related to an overfill of gasoline, kerosene, and diesel fuel.

Historical Investigation

Multiple stages of investigation were performed by Parsons Engineering Science, Inc. and ERS of Illinois, Inc. For information on these investigations please review the previously submitted reports from Parsons and ERS.

Stage 2 Site Investigation

Prior to Marlin Environmental, Inc. involvement with the Illico property, ERS performed a Stage 2 site investigation. The results of the investigation are available in the Stage 2 Site Investigation Results Report that was submitted to the IEPA on October 2, 2015. Received on 10/05.

In August of 2015 Marlin Environmental, Inc. was retained by Illico to address the 923441 incident. Based on the results of the ERS Stage 2 Site Investigation, soil and groundwater contamination lacked delineation off-site. Based upon the results of the Stage 2 Site Investigation, a Stage 3 Site Investigation was proposed to define and properly delineate the extent of soil and groundwater contamination and evaluate potential preferential contaminant migration pathways.

Stage 3 Site Investigation

In order to define the extent of the contamination off-site to the west of N. University Street a *Stage 3 SIP*, dated October 5, 2015, that proposed advancing three (3) soil borings to a depth of fifteen (15) feet bgs was submitted to the IEPA. Each of the three (3) soil borings was to be completed as a monitoring well. The borings and wells were proposed to define the soil and groundwater contamination the west property line of the subject site as well as the contamination found in MW-7. The proposed borings/wells were to be advanced off-site to the west of the Illico property. In addition to the soil borings and monitoring wells, Marlin proposed to collect a foc sample and perform a slug test.

6

Marlin was unable to advance the proposed soil borings / monitoring wells in the right-of-way due to a conflict with utilities. Marlin sent a certified off-site access letter to the commercial property to the west. However, an agreement for access was unable to be attained for the off-site property. An affidavit documenting that the proper protocols were followed is included in **Attachment 6** as required by 35 IAC 734.

On November 24, 2015 Marlin returned to the Illico property to collect a foc sample at the SB-26 location. A hand auger was utilized to auger down to six (6) feet. While on-site Marlin personal performed a slug test on MW-2. Marlin also gauged all existing wells to determine depth to water for the purpose of determining groundwater flow direction.

In order to define soil and groundwater contamination RBCA Equation R26 and SSL Equation S28 were utilized to determine the extent of current groundwater and soil contamination. The maximum predicted extent of soil and groundwater impaction as determined from RBCA Equation R26 is displayed in **Figure 5**. Results indicate that contamination will not migrate further west than the property that denied access.

Site description;

a. Area surrounding the site;

The investigation site is a current station located at 3712 University Street in Peoria, Peoria County, Illinois. **Figure 1** illustrates the surrounding land usage. The surrounding properties are primarily commercial and residential to the north, residential to the east and commercial to the south and west.

b. Local geology, hydrogeology, and hydrology;

According to the Illinois State Geological Survey (ISGS) Circular 532 (Berg, Kempton and Cartwright, 1984), entitled "Potential for Contamination of Shallow Aquifers in Illinois" (Plate 1), the subsurface native soil conditions are typical "A2" or "E". Areas classified as "A2" are described as; "thick, permeable sand and gravel within 20 feet of the land surface." Areas classified as "E" are described as; "uniform, relatively impermeable silty or clayey till at least 50 feet thick with no evidence of interbedded sand and gravel."

The site surface is generally paved. The site subsurface consists generally of silty clay to 9 feet and sand between 9 and 13 feet bgs, the apparent groundwater depth while drilling ranged from approximately 4-8 feet bgs in each of the soil borings.

8.5'

9' SB-101, 102

A rising-head slug test was performed on monitoring well MW-2. The results of the slug test indicated that the hydraulic conductivity of the subsurface soil materials beneath the site is 0.0003667 centimeters per second (cm/sec). The hydraulic gradient of the site was calculated, using the groundwater elevations of the well network during Stage 3 Site Investigation, to be 0.01426 ft/ft,

c. Local geography and topography;

The property is located at 3712 North University Street in Peoria, Peoria County, Illinois. The site is currently an active filling station. Geographically the site is located in the NE 1/4 of Section 29, Township 9 North, Range 8 East in Peoria County.

d. Existing and potential migration pathways and exposure routes; and

Existing and potential migration pathways and exposure routes are noted in **Figure 2** and include the migration of contaminants through the permeable site soils potentially contacting underground utility conduits, storm or sanitary sewers, vaults, basements or other confined spaces.

e. Current and projected post-remediation land use;

The site is an active gas station, and is expected to remain the same as of the time of this report.

3. Site investigation results:

TACO Tier 1 Evaluation: Early Action and Site Investigation Soil

The soil Site Investigation analytical results were compared against the IEPA TACO Tier 1 SROs for each exposure route in an effort to determine the extent and degree of soil contamination associated with the LUST incident at the facility. The laboratory analytical results for the soil samples collected at the site are summarized in **Table 1 and Table 2**.

The laboratory analytical results indicated that after the drilling and sampling of the migration pathway soil borings and through the use of RBCA Equation R26 due to access denial, the lateral and vertical extents of the soil impaction have been defined at this LUST facility. The approximate lateral extent of Tier 1 soil contamination is illustrated in **Figure 5**. The depth of source (d_s) proposed for the purpose of on-site Tier 2 assessment was set to 8 feet (2.4384 meters) as the conservative approximate maximum vertical thickness of impacted soil as contamination was analytically determined to range from the near surface to 8 feet bgs, the maximum depth to the apparent groundwater-bearing zone observed in the boring logs.

8.5' 9' SB-101, 102

Physical parameter soil testing [fraction of organic carbon (f_{oc}), soil bulk density (ρ_b) and moisture content (ω)] was performed during Site Investigation. Laboratory analysis of the TACO physical and chemical parameters sample yielded the following soil parameter results:

Chemical & Physical Soil Parameters				
Sample ID	**Fraction of Organic Carbon** (f_{oc})	**Moisture Content** (ω)	**Soil Dry Bulk Density** (ρ_b)	**Soil Particle Density** (ρ_s)
SB-26 (2'-6')	0.0179 g/g	19 %	1.684 g/cm^3	2.702 g/cm^3

Marlin Environmental, Inc. will utilize this data to calculate the site-specific Tier 2 SROs for each indicator contaminant constituent determined to exhibit a concentration above the IEPA TACO Tier 1 SROs as part of the *CAP*. The laboratory analytical report for the FOC sample collected during Stage 3 is included in **Attachment 1**.

TACO Tier 1 Evaluation: Site Investigation Groundwater

The groundwater analytical results from the site's groundwater monitoring wells were compared against the IEPA TACO Tier 1 GROs for Class I Groundwater in an attempt to define the degree and extent of groundwater contamination associated with the LUST. The laboratory analytical results for the groundwater samples collected at the site are summarized in **Table 3 and Table 4**.

Because the adjacent property has denied access for additional soil borings and wells to the west, RBCA Equation R26 was utilized to determine the extent of current soil and groundwater contamination. Input variables were determined using site-specific testing values including hydraulic conductivity (K) and gradient (i) and conservative values for the source width parameters (S_w and S_d). The remaining input variables were obtained using default parameters obtained from 35 IAC 742 Appendix B, Table E: Tier 1 Groundwater Remediation Objectives for the Groundwater Component of the Groundwater Ingestion Route, Appendix C, Table D: RBCA Parameters and Appendix C, Table E: Default Physical and Chemical Parameters. The predicted extent of potential of future groundwater impact from current levels of impaction does not extend west beyond the commercial property that has denied access. S28 and R-26 calculations are included in **Attachment 3**.

The laboratory analytical results indicated that after sampling the Site Investigation monitoring wells and using R-26 modeling, groundwater contamination associated with LUST incident number 923441 have been delineated laterally and vertically. The groundwater contaminant plume is defined to the north by MW-5 to the east by MW-15, to the south by MW-3 and MW-11 and to the west by MW-7 (modeled). The approximate lateral extent of Tier 1 groundwater contamination is illustrated in **Figure 5**.

a. Map(s) showing locations of all borings and groundwater monitoring wells completed as part of the site investigation and the groundwater flow direction;

   Please refer to **Figures 2** and **4**.

b. Map(s) showing the horizontal extent of soil and groundwater contamination exceeding the most stringent Tier 1 remediation objectives (ROs);

Figures 2 and 5 Please refer to **Figure 4** (lateral extents of soil and groundwater contamination). The depth of source (d_s) proposed for the purpose of on-site Tier 2 assessment was set to 8 feet (2.4384 meters) as the conservative approximate maximum vertical thickness of impacted soil as contamination was analytically determined to range from the near surface to 8 feet bgs, the maximum depth to the apparent groundwater-bearing zone observed while drilling.

8.5'

9' SB-101, 102

c. Map cross-section(s) showing the horizontal and vertical extents of soil and groundwater contamination exceeding the most stringent Tier 1 ROs;

   Figure 3 illustrates the geologic cross section of the site and the horizontal and vertical extents of soil and groundwater contamination.

d. Soil boring logs and monitoring well construction diagrams for all borings drilled and groundwater monitoring wells installed as part of site investigation;

   Please refer to previous reports submitted to the IEPA as well as **Attachment 2**.

e. Analytical results, chain of custody forms, and laboratory certifications;

   Please refer to previous reports submitted to the IEPA as well as **Attachment 1**.

f. Table(s) comparing analytical results to the most stringent Tier 1 ROs (include sample depth, date collected, and detection limits); and

Table 1. Analytical Results – BTEX
Table 2. Soil Analytical Results PNAs
Table 3. Groundwater Analytical and Elevation Summary – BTEX
Table 4. Groundwater Analytical Results – PNAs
Table 5. Summary of Groundwater Monitoring Well Elevation Data

g. Potable water supply well survey;

The potable well search was provided in the February 2012 Site Investigation Plan.

4. **Conclusion that includes an assessment of the sufficiency of the data;**
In summary, the Site Investigation performed at this facility included the advancement of soil borings and groundwater monitoring wells. The purpose of this investigation, which was performed in accordance with the IEPA Site Investigation guidelines, was to determine the nature, degree and extent of soil and groundwater contamination present beneath this LUST facility and surroundings.

- The laboratory analytical results indicated that after the drilling and sampling of migration pathway soil borings along with the use of RBCA Equation R26 modeling due to access denial, the lateral and vertical extents of the soil impaction have been defined at this LUST facility.

- The vertical extent of soil contamination, as based upon laboratory analytical results and site-specific geology, is 8 feet The depth of source (d_s) proposed for the purpose of on-site Tier 2 assessment is 8 feet as contamination was analytically determined to range from the near surface to 8 feet bgs, the maximum depth to the apparent groundwater-bearing zone observed while drilling.

8.5'
9' SB-101, 102.

- The laboratory analytical results indicated that after sampling the Site Investigation monitoring wells, along with the use of RBCA Equation R26 modeling due to access denial, groundwater contamination associated with LUST incident number 923441 have been delineated laterally and vertically

The laboratory analytical results of the Site Investigation combined with the RBCA R-26 modeling have defined the lateral and vertical extents of soil and groundwater impaction associated with this LUST site.

The Illico Independent Oil Co., facility hereby petitions the Agency to agree with the extent findings of this Site Investigation and approve this *Site Investigation Completion Report* (*SICR*). A *CAP* will be forwarded to the Agency for pre-approval to address the soil contamination exceeding the IEPA TACO Tier 2 ROs and the groundwater contamination upon receipt of the approval of this *SICR* by the Agency.

Soil and groundwater analytical data was obtained from suspected exposure routes, migration pathways, and nearby potential sensitive environmental receptors in keeping with the Agency Site Investigation guidelines and approved plans. The data was obtained in an effort to help investigate the physical features of the site that may affect contaminant migration away from the LUST source and produce and increased threat to human health, safety and the environment.

Based upon the soil and groundwater analytical data obtained during the Site Investigation and the RBCA Equation R26 modeling performed at the site, it appears that the data collected in accordance with the Site Investigation guidelines is sufficient to determine the extents of the applicable indicator contaminants exceeding the corresponding Tier 1 remediation objectives of 35 IAC 742.

5. **Site map(s) meeting the requirements of 35 Ill. Adm. Code 734.440; and**

Figures 1 and **2** meet the requirements of 35 IAC 734.440.

6. Budget forms of actual costs (documenting actual work performed during the previous stage)

The IEPA budget forms reporting the actual costs for the Stage 3 Site Investigation and *SICR* are presented in **Attachment 5** for IEPA review and approval.

COMMENT

Marlin Environmental, Inc. has performed this investigation in a professional manner using the degree of skill and care conducted for similar projects, under comparable conditions as those used by other reputable and competent environmental consultants, at the time these services were provided.

The scope and depth of this project was directed by IEPA plan approval and agreed to by the client in our signed contract. The findings are based on documentary review, analytical results, IEPA sanctioned modeling and regulations, conversations, and site observations as noted in this report. Marlin Environmental, Inc. employed experienced and trained professionals in attempting to successfully evaluate the subsurface conditions at this site, in accordance with applicable IEPA regulation and or guidelines. It is possible that some materials containing petroleum hydrocarbon constituents were not visible or accessible to the professionals, and may not have been identified or addressed during this investigation.

This report is not intended to represent an exhaustive research of all potential hazards, which may exist at the site and is not representative of future conditions, previous activities or events that may have taken place prior to or after our demobilization from the site. The owner has relied upon applicable IEPA sanctioned 35 IAC regulations. Activities that transpire prior to or after our demobilization from the site are not considered relevant to this study.

The conclusions or opinions provided by Marlin Environmental, Inc. are based solely on the scope of work conducted, analytical results obtained and limited explorations described within this report. No warranty, expressed or implied, is made concerning the professional opinions or analytical results included in this report.

D. Signatures

Plans, budgets, and reports must be signed by the owner or operator and list the owner's or Operator's full name, address, and telephone number.

UST Owner or Operator

Name: Illico Independent Oil Co.
Contact: David Golwitzer
Address: 2201 Woodlawn Rd. Suite 600
City: Lincoln
State: Illinois
ZIP Code: 62656
Phone: 217-732-4193
Signature: [signature] President
Date: 12-7-15

Consultant

Company: Marlin Environmental, Inc.
Contact: Joe Buhlig
Address: 3900 Wood Duck Drive
City: Springfield
State: Illinois
ZIP Code: 62711
Phone: 217-726-7569 ext 300
Email: joeb@marlinenv.com
Signature: [signature]
Date: 12/14/15

I certify under penalty of law that activities that are the subject of this report were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer of Licensed Professional Geologist and reviewed by me; that this report and attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in this report has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 732, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protections Act [415 ILCS 5/44 and 57.17].

734

Licensed Professional Engineer

Name: Jeff R. Wienhoff
Company: Marlin Environmental, Inc.
Address: 3900 Wood Duck Drive
City: Springfield
State: Illinois
ZIP Code: 62711
Phone: 217-726-7569 ext 250
Email: jeffw@marlinenv.com
Ill. Registration No.: 062-058441
License Expiration Date: 11-30-2015 2017
Signature: [signature]
Date: 12/14/15

L.P.E. Seal

RECEIVED
DEC 14 2015
IEPA/BOL

JEFFREY R. WIENHOFF
062-058441
LICENSED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

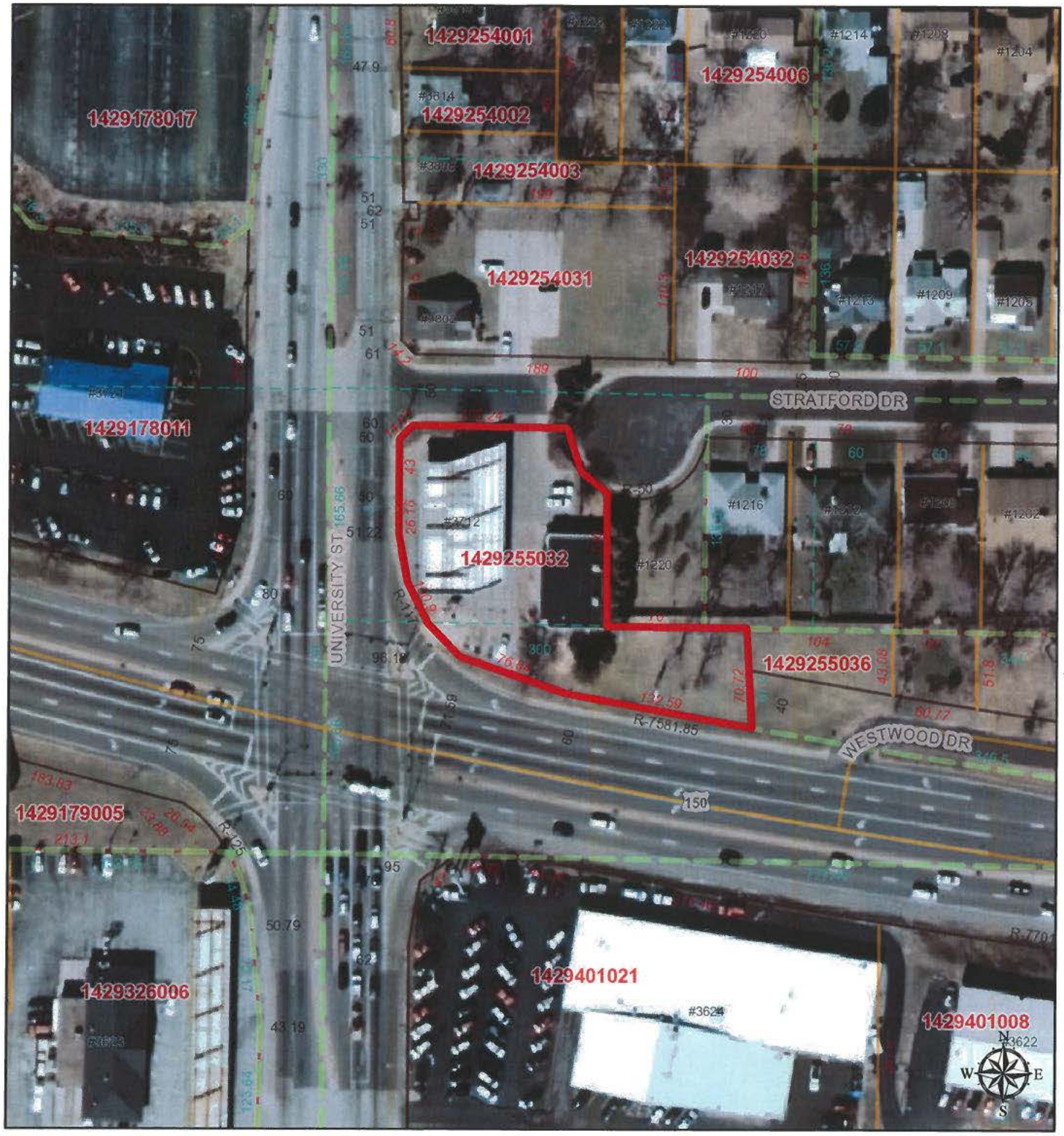
FIGURES

Google, not Peoria County Front Desk - Property boundary lines are a little off. Replace with Front Desk.

MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

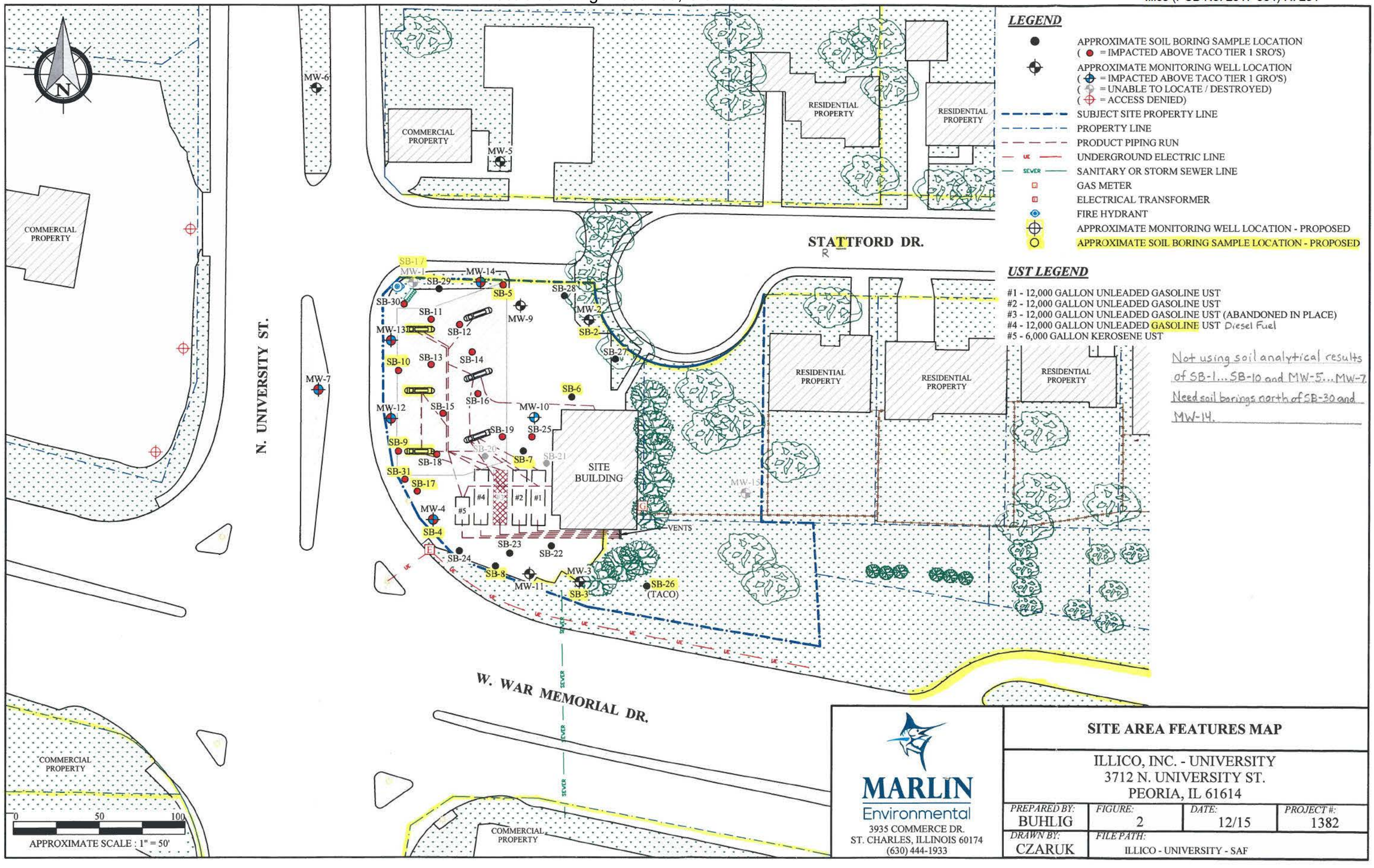
FIGURE: 1	SURROUNDING LAND USAGE MAP
PROJECT NUMBER: 1382	ILLICO, INC. - UNIVERSITY 3712 N. UNIVERSITY ST. PEORIA, IL 61614
DRAWN DATE: 08/15	
PREPARED BY: BUHLIG	
DRAWN BY: CZARUK	FILE NAME: ILLICO - UNIVERSITY - SLUM

Leaking UST Incident #923441



PEORIA COUNTY GOVERNMENT

County of Peoria, IL and Illinois Department of Transportation



LEGEND

- APPROXIMATE SOIL BORING SAMPLE LOCATION (= IMPACTED ABOVE TACO TIER 1 SRO'S)
- APPROXIMATE MONITORING WELL LOCATION (= IMPACTED ABOVE TACO TIER 1 GRO'S) (= UNABLE TO LOCATE / DESTROYED) (= ACCESS DENIED)
- SUBJECT SITE PROPERTY LINE
- PROPERTY LINE
- PRODUCT PIPING RUN
- UE — UNDERGROUND ELECTRIC LINE
- SEWER — SANITARY OR STORM SEWER LINE
- GAS METER
- ELECTRICAL TRANSFORMER
- FIRE HYDRANT
- APPROXIMATE MONITORING WELL LOCATION - PROPOSED
- APPROXIMATE SOIL BORING SAMPLE LOCATION - PROPOSED

UST LEGEND

#1 - 12,000 GALLON UNLEADED GASOLINE UST
#2 - 12,000 GALLON UNLEADED GASOLINE UST
#3 - 12,000 GALLON UNLEADED GASOLINE UST (ABANDONED IN PLACE)
#4 - 12,000 GALLON UNLEADED GASOLINE UST Diesel Fuel
#5 - 6,000 GALLON KEROSENE UST

Not using soil analytical results of SB-1...SB-10 and MW-5...MW-7. Need soil borings north of SB-30 and MW-14.

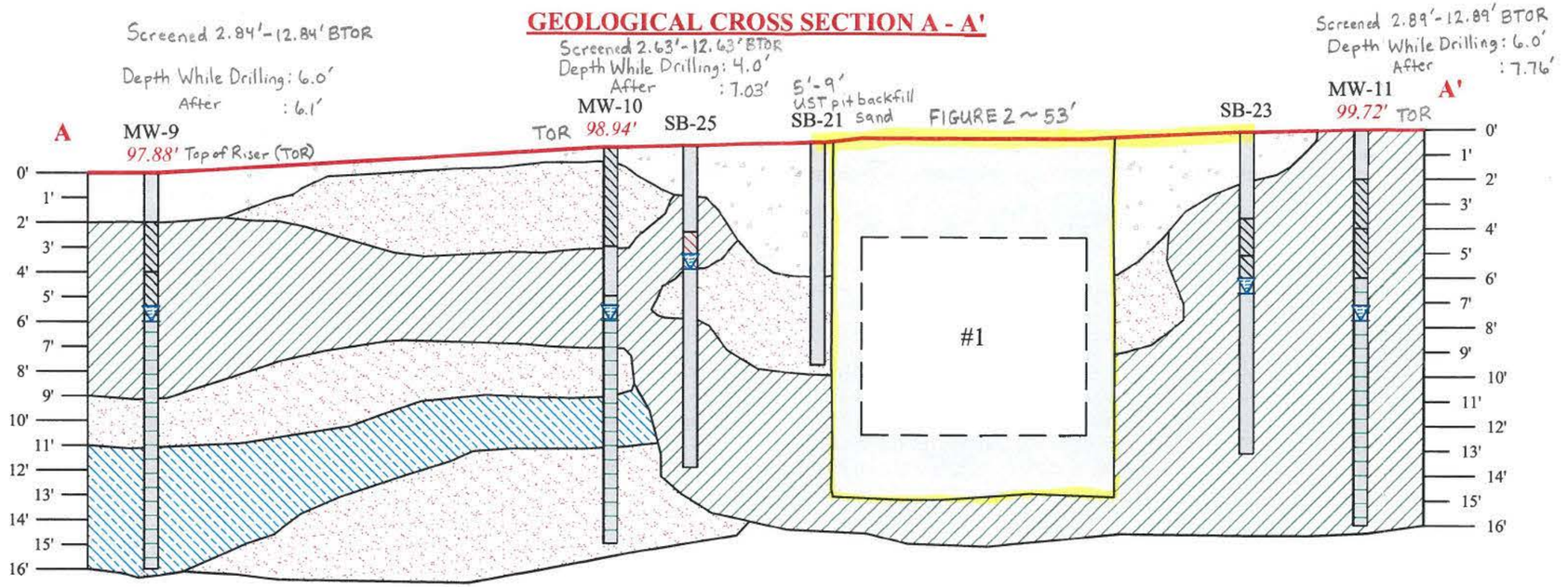
MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

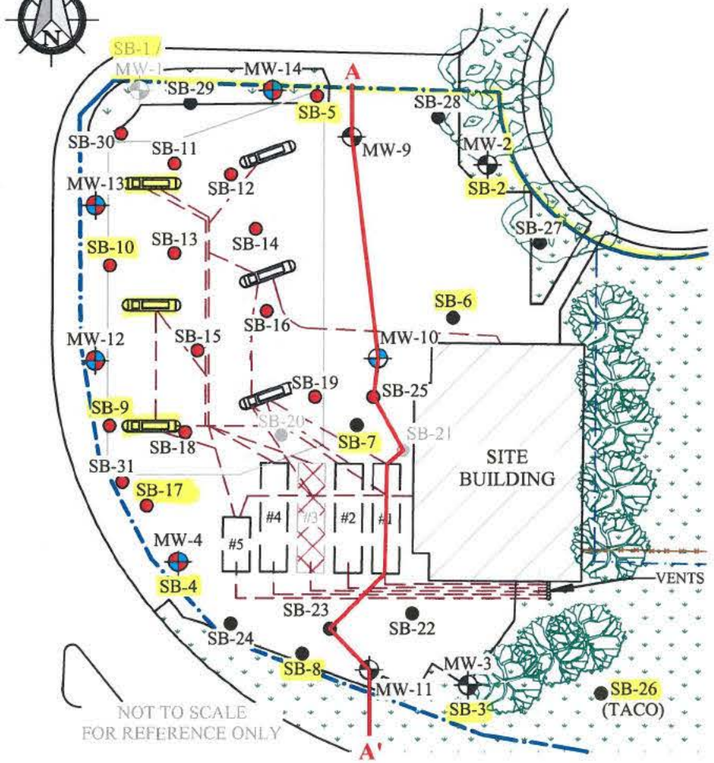
SITE AREA FEATURES MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

PREPARED BY:	FIGURE:	DATE:	PROJECT #:
BUHLIG	2	12/15	1382
DRAWN BY: CZARUK	FILE PATH: ILLICO - UNIVERSITY - SAF		

GEOLOGICAL CROSS SECTION A - A'





LEGEND

- SAND & GRAVEL / CONCRETE
- SILT
- SAND
- SILTY CLAY
- APPROXIMATE UST BASIN
- SOIL SAMPLE INTERVAL - BELOW IEPA TACO TIER 1 SRO'S
- SOIL SAMPLE INTERVAL - ABOVE IEPA TACO TIER 1 SRO'S
- GROUND WATER SCREEN
- DEPTH TO GROUNDWATER WHILE DRILLING

0 20 40

APPROXIMATE HORIZONTAL SCALE : 1" = 20'
VERTICAL SCALE EXAGGERATED

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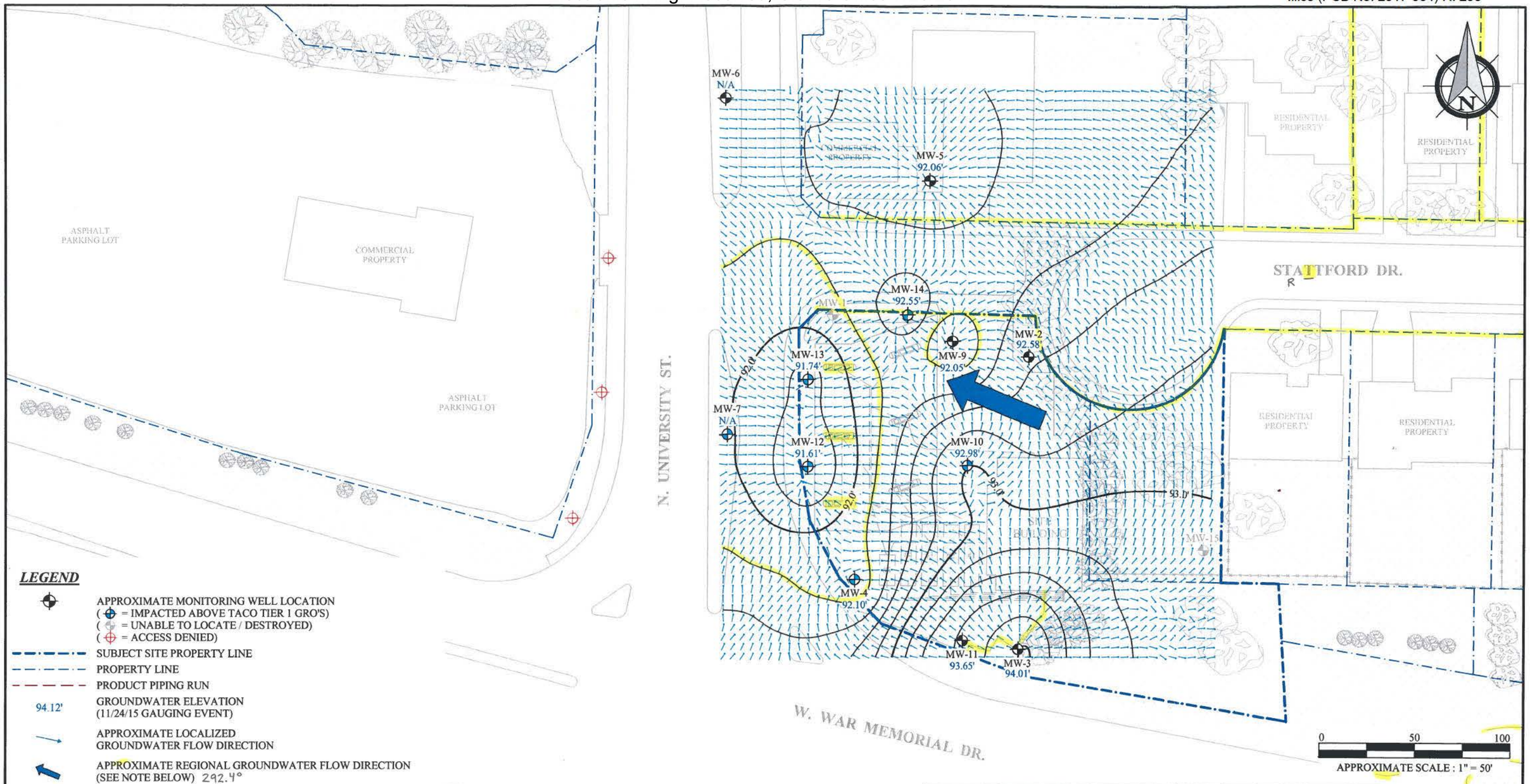
(630) 444-1933

GEOLOGICAL CROSS SECTION MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

PREPARED BY:	FIGURE:	DATE:	PROJECT #:
BUHLIG	3	12/15	1382
DRAWN BY:	FILE NAME:		
CZARUK	ILLICO - UNIVERSITY - 12-15 GEO X SECTION		



LEGEND

- APPROXIMATE MONITORING WELL LOCATION
  (= IMPACTED ABOVE TACO TIER 1 GRO'S)
  (= UNABLE TO LOCATE / DESTROYED)
  (= ACCESS DENIED)
- SUBJECT SITE PROPERTY LINE
- PROPERTY LINE
- PRODUCT PIPING RUN
- 94.12' GROUNDWATER ELEVATION (11/24/15 GAUGING EVENT)
- APPROXIMATE LOCALIZED GROUNDWATER FLOW DIRECTION
- APPROXIMATE REGIONAL GROUNDWATER FLOW DIRECTION (SEE NOTE BELOW) 292.4°
- GROUNDWATER CONTOUR LINE (CONTOUR INTERVAL = 0.20')

NOTE: MONITORING WELL MW-1, MW-6, MW-7, MW-8 & MW-15 NOT INCLUDED IN CONTOUR AND FLOW DETERMINATION.

UST LEGEND

#1 - 12,000 GALLON UNLEADED GASOLINE UST
#2 - 12,000 GALLON UNLEADED GASOLINE UST
#3 - 12,000 GALLON UNLEADED GASOLINE UST (ABANDONED IN PLACE)
#4 - 12,000 GALLON UNLEADED GASOLINE UST Diesel Fuel
#5 - 6,000 GALLON KEROSENE UST

MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

GROUNDWATER CONTOUR & FLOW MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

PREPARED BY:	FIGURE:	DATE:	PROJECT #:
BUHLIG	4	12/15	1382
DRAWN BY:	FILE PATH:		
CZARUK	ILLICO - UNIVERSITY - SAF		

Not using the soil analytical results of SB-1...SB-10 and MW-5...MW-7. Need soil borings north of SB-30 and MW-14.

IEPA SANCTIONED R26 BENZENE GROUNDWATER MODEL FOR MW-7: 398'

IEPA SANCTIONED R26 BENZENE GROUNDWATER MODEL FOR MW-13: 375'

IEPA SANCTIONED R26 BENZENE SOIL LEACHING MODEL FOR SB-10 (0'-4'): 129.5'

IEPA SANCTIONED R26 BENZENE SOIL LEACHING MODEL FOR SB-30 (2'-4'): 13'

IEPA SANCTIONED R26 BENZENE SOIL LEACHING MODEL FOR SB-31 (4'-6'): 166'

IEPA SANCTIONED R26 BENZENE GROUNDWATER MODEL FOR MW-12: 171'

IEPA SANCTIONED R26 BENZENE GROUNDWATER MODEL FOR MW-4: 227'

IEPA SANCTIONED R26 ETHYLBENZENE SOIL LEACHING MODEL FOR SB-9 (4'-8'): 36'

IEPA SANCTIONED R26 BENZENE SOIL LEACHING MODEL FOR SB-17 (6'-7'): 56.5'

IEPA SANCTIONED R26 BENZENE SOIL LEACHING MODEL FOR SB-4 (4'-6'): 53'

Sw = 240 ft 214'
Source Width Perpendicular to Groundwater Flow Direction in the Horizontal Plane (Sw value used in Equation R26)

ASPHALT PARKING LOT

COMMERCIAL PROPERTY

RESIDENTIAL PROPERTY

PROPERTY

N UNIVERSITY ST.

STATTFORD DR.

W. WAR MEMORIAL DR.

SITE BUILDING

VENTS

MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7 MW-9 MW-10 MW-11 MW-12 MW-13 MW-14 MW-15

SB-1 SB-2 SB-3 SB-4 SB-5 SB-6 SB-7 SB-8 SB-9 SB-10 SB-11 SB-12 SB-13 SB-14 SB-15 SB-16 SB-17 SB-18 SB-19 SB-20 SB-21 SB-22 SB-23 SB-24 SB-25 SB-26 (TACO) SB-27 SB-28 SB-29 SB-30 SB-31

#1 #2 #3 #4 #5

0 50 100

APPROXIMATE SCALE : 1" = 50'

LEGEND

- APPROXIMATE SOIL BORING SAMPLE LOCATION (= IMPACTED ABOVE TACO TIER 1 SRO'S)
- APPROXIMATE MONITORING WELL LOCATION (= IMPACTED ABOVE TACO TIER 1 GRO'S) (= UNABLE TO LOCATE / DESTROYED) (= ACCESS DENIED)
- SUBJECT SITE PROPERTY LINE
- PROPERTY LINE
- PRODUCT PIPING RUN
- REGIONAL GROUNDWATER FLOW DIRECTION 292.4°

UST LEGEND

#1 - 12,000 GALLON UNLEADED GASOLINE UST
#2 - 12,000 GALLON UNLEADED GASOLINE UST
#3 - 12,000 GALLON UNLEADED GASOLINE UST (ABANDONED IN PLACE)
#4 - 12,000 GALLON UNLEADED GASOLINE UST Diesel Fuel
#5 - 6,000 GALLON KEROSENE UST

MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

EQUATION R26 MODELED EXTENTS MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

PREPARED BY:	FIGURE:	DATE:	PROJECT #:
BUHLIG	5	12/15	1382
DRAWN BY:	FILE PATH:		
CZARUK	ILLICO - UNIVERSITY - SAF		

TABLES

Not using the analytical results of SB-1...SB-10 and MW-5...MW Therefore, this table was not reviewed.

Table 1
Soil Analytical Results - BTEX

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Benzene	Toluene	Ethylbenzene	Total Xylenes
SB-1	2-4	11/18/1999	ND<6.0	ND<6.0	ND<6.0	ND<18.0
SB-1	6-8	11/18/1999	ND<29	ND<57	1,600	4,180
SB-2	4-6	11/18/1999	ND<5.2	ND<5.2	ND<5.2	ND<15.2
SB-3	2-4	11/18/1999	ND<6.3	ND<6.3	ND<6.3	ND<19.3
SB-3	6-8	11/18/1999	ND<5.4	ND<5.4	ND<5.4	ND<16.4
SB-4	0-2	11/18/1999	ND<5.9	ND<5.9	ND<5.9	ND<17.9
SB-4	4-6	11/18/1999	ND<1,100	11,000	**37,000**	**193,000**
SB-5	2-4	11/18/1999	ND<63	270	400	**7,700**
SB-5	4-6	11/18/1999	ND<65	3,300	3,600	**22,800**
SB-5 Duplicate	4-6	11/18/1999	**1,200**	**23,000**	13,000	**74,000**
SB-6	0-4	11/22/1999	ND<6.0	ND<6.0	ND<6.0	ND<18.0
SB-6	4-8	11/22/1999	ND<5.9	ND<5.9	ND<5.9	ND<17.9
SB-7	0-4	11/22/1999	ND<6.1	ND<6.1	ND<6.1	ND<18.1
SB-7	4-8	11/22/1999	ND<6.4	ND<6.4	ND<6.4	ND<19.4
SB-8	0-4	11/22/1999	ND<6.4	ND<6.4	ND<6.4	ND<19.4
SB-8	4-8	11/22/1999	ND<6.4	ND<6.4	ND<6.4	ND<19.4
SB-9	0-4	11/22/1999	**130**	ND<130	420	2,050
SB-9 Duplicate	0-4	11/22/1999	**230**	ND<65	390	1,780
SB-9	4-8	11/22/1999	**690**	**58,000**	**57,000**	**370,000**
SB-10	0-4	11/22/1999	**7,900**	**83,000**	**42,000**	**182,000**
SB-10	4-8	11/22/1999	**1,400**	**16,000**	7,100	**35,000**
MW-5	2-4	11/16/2000	ND<6.3	ND<6.3	ND<6.3	ND<19.3
MW-5	6-8	11/16/2000	ND<5.8	ND<5.8	ND<5.8	ND<17.8
MW-6	4-6	11/16/2000	ND<6.3	ND<6.3	ND<6.3	ND<19.3
MW-6	8-10	11/16/2000	ND<6.1	ND<6.1	ND<6.1	ND<18.1
MW-7	7-9	11/16/2000	**13,000**	**160,000**	**92,000**	**420,000**
Exposure Route-Specific Values for Soils						
Ingestion - Residential			**12,000**	**16,000,000**	**7,800,000**	**16,000,000**
Inhalation - Residential			**800**	**650,000**	**400,000**	**320,000**
Ingestion - Construction Worker			**2,300,000**	**410,000,000**	**20,000,000**	**41,000,000**
Inhalation - Construction Worker			**2,200**	**42,000**	**58,000**	**5,600**
Ingestion - Industrial/Commercial			**100,000**	**410,000,000**	**200,000,000**	**410,000,000**
Inhalation - Industrial/Commercial			**1,600**	**650,000**	**400,000**	**320,000**
Tier 1 Remediation Objective - Class I Groundwater			**30**	**12,000**	**13,000**	**150,000**
Tier 1 Remediation Objective - Class II Groundwater			**170**	**29,000**	**19,000**	**150,000**

Benzene, Toluene, Ethylbenzene and Total Xylene (BTEX) analysis conducted using United States Environmental Protection Agency (USEPA) Methods.

All results are reported in micrograms per kilogram (ug/kg), dry weight.

Tier 1 Soil Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.

ND = The constituent was not measured above the Method Detection Limit indicated.

NA = Not Applicable

Bold values exceed Tier 1 Remediation Objectives.

Table 1
Soil Analytical Results - BTEX

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Benzene	Toluene	Ethylbenzene	Total Xylenes
SB-11	3.5-5	08/07/2012	288	ND<64.2	58.1	332
SB-11	7-8	08/07/2012	3,980	51,600	31,600	159,000
SB-12	3.5-5	08/07/2012	51.5	ND<64.2	ND<32.1	ND<96.2
SB-12	7-8	08/07/2012	629	ND<62.8	3,940	13,700
SB-13	3.5-5	08/07/2012	2,050	2,720	1,900	8,400
SB-13	6-7	08/07/2012	11,700	92,700	29,700	142,000
SB-14	3.5-5	08/07/2012	669	ND<64.8	213	249
SB-14	6-7	08/07/2012	833	ND<62.0	1,330	2,330
SB-15	3.5-5	08/07/2012	4,210	24,100	9,170	49,900
SB-15	5-6	08/07/2012	41,800	305,000	103,000	568,000
SB-16	3.5-5	08/07/2012	1,010	ND<65.9	164	156
SB-16	6-7	08/07/2012	3,700	ND<613	11,200	36,100
SB-17	3.5-5	08/08/2012	337	ND<126	3,140	7,820
SB-17	6-7	08/08/2012	ND<1,200	3,770	130,000	574,000
SB-18	3.5-5	08/08/2012	1,190	ND<64.6	637	645
SB-18	6-7	08/08/2012	6,790	903	27,000	112,000
SB-19	3.5-5	08/08/2012	40.5	ND<65.0	ND<32.5	ND<97.5
SB-19	6-7	08/08/2012	365	ND<59.5	69.1	ND<89.3
SB-22	3.5-5	08/08/2012	ND<24.8	ND<62.0	ND<31.0	ND<93.0
SB-22	6-7	08/08/2012	ND<24.8	ND<62.0	ND<31.0	ND<93.0
SB-23	3.5-5	08/08/2012	ND<25.5	ND<63.7	ND<31.9	ND<95.6
SB-23	5-6	08/08/2012	ND<24.5	ND<61.2	ND<30.6	ND<91.8
SB-24	3.5-5	08/08/2012	ND<25.6	ND<64.1	ND<32.0	ND<96.1
SB-25	3.5-5	08/08/2012	148	ND<64.1	ND<32.1	321
SB-27	0-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-27	4-7	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-28	0-2	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-28	4-6	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-29	2-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-29	4-6	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
SB-30	0-2	03/10/2015	101	7.5	126	61.6
SB-30	2-4	03/10/2015	402	ND<500	ND<500	ND<500
SB-31	2-4	03/10/2015	1,600	ND<500	9,690	24,200
SB-31	4-6	03/10/2015	16,800	27,100	243,000	1,190,000
MW-9	2-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-9	4-6	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-10	0-4	03/10/2015	ND<5.0	5.7	ND<5.0	ND<5.0
MW-11	2-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-11	4-6	03/10/2015	ND<5.0	7.1	ND<5.0	5.2
MW-12	2-4	03/10/2015	1,660	3,620	42,300	168,000
MW-12	4-6	03/10/2015	4,230	4,660	35,500	178,000
MW-13	2-4	03/10/2015	23.0	ND<5.0	8.4	16.3
MW-13	4-6	03/10/2015	347	ND<500	2,550	6,610
MW-14	2-4	03/10/2015	ND<5.0	5.9	ND<5.0	5.8
MW-14	4-6	03/10/2015	654	ND<500	9,820	44,600
MW-15	2-4	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
MW-15	4-6	03/10/2015	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Exposure Route-Specific Values for Soils						
Ingestion - Residential			12,000	16,000,000	7,800,000	16,000,000
Inhalation - Residential			800	650,000	400,000	320,000
Ingestion - Construction Worker			2,300,000	410,000,000	20,000,000	41,000,000
Inhalation - Construction Worker			2,200	42,000	58,000	5,600
Ingestion - Industrial/Commercial			100,000	410,000,000	200,000,000	410,000,000
Inhalation - Industrial/Commercial			1,600	650,000	400,000	320,000
Tier 1 Remediation Objective - Class I Groundwater			30	12,000	13,000	150,000
Tier 1 Remediation Objective - Class II Groundwater			170	29,000	19,000	150,000

See SB-31

Benzene, Toluene, Ethylbenzene and Total Xylene (BTEX) analysis conducted using United States Environmental Protection Agency (USEPA) Methods.
All results are reported in micrograms per kilogram (ug/kg), dry weight.
Tier 1 Soil Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
ND = The constituent was not measured above the Method Detection Limit indicated.
NA = Not Applicable
Bold values exceed Tier 1 Remediation Objectives.

Not using the analytical results of SB-1, SB-10 and MW-5, MW-7. Therefore, this table was not reviewed.

Table 2
Soil Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
SB-1	2-4	11/18/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
SB-1	6-8	11/18/1999	ND<57	ND<57	ND<57	ND<57	ND<57	ND<57	ND<57	ND<57
SB-2	4-6	11/18/1999	ND<52	ND<52	ND<52	ND<52	ND<52	ND<52	ND<52	ND<52
SB-3	2-4	11/18/1999	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64
SB-3	6-8	11/18/1999	ND<54	ND<54	ND<54	ND<54	ND<54	ND<54	ND<54	ND<54
SB-4	0-2	11/18/1999	ND<59	ND<59	ND<59	ND<59	ND<59	ND<59	ND<59	ND<59
SB-4	4-6	11/18/1999	ND<810	ND<810	ND<810	ND<810	ND<810	ND<810	ND<810	ND<810
SB-5	2-4	11/18/1999	ND<150	ND<150	ND<150	ND<150	ND<150	ND<150	ND<150	ND<150
SB-5	4-6	11/18/1999	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62
SB-5 Duplicate	4-6	11/18/1999	ND<150	ND<150	ND<150	ND<150	ND<150	ND<150	ND<150	ND<150
SB-6	0-4	11/22/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
SB-6	4-8	11/22/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
SB-7	0-4	11/22/1999	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62
SB-7	4-8	11/22/1999	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64
SB-8	0-4	11/22/1999	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64
SB-8	4-8	11/22/1999	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63
SB-9	0-4	11/22/1999	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63
SB-9 Duplicate	0-4	11/22/1999	ND<65	ND<65	ND<65	ND<65	ND<65	ND<65	ND<65	ND<65
SB-9	4-8	11/22/1999	ND<61	ND<61	ND<61	ND<61	ND<61	ND<61	ND<61	ND<61
SB-10	0-4	11/22/1999	ND<270	ND<270	ND<270	ND<270	ND<270	ND<270	ND<270	ND<270
SB-10	4-8	11/22/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
MW-5	2-4	11/16/2000	ND<32	ND<32	ND<32	ND<32	ND<32	ND<32	ND<32	ND<32
MW-5	6-8	11/16/2000	ND<29	ND<29	ND<29	ND<29	ND<29	ND<29	ND<29	ND<29
MW-6	4-6	11/16/2000	ND<130	ND<130	ND<130	ND<130	ND<130	ND<130	ND<130	ND<130
MW-6	8-10	11/16/2000	ND<31	ND<31	ND<31	ND<31	ND<31	ND<31	ND<31	ND<31
MW-7	7-9	11/16/2000	ND<860	ND<860	ND<860	ND<860	ND<860	ND<860	ND<860	ND<860
Exposure Route-Specific Values for Soils										
Ingestion - Residential			**4,700,000**	**2,300,000**	**23,000,000**	**900**	**90**	**900**	**2,300,000**	**9,000**
Inhalation - Residential			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
Ingestion - Construction Worker			**120,000,000**	**61,000,000**	**610,000,000**	**170,000**	**17,000**	**170,000**	**61,000,000**	**1,700,000**
Inhalation - Construction Worker			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
Class I Groundwater			**570,000**	**85,000**	**12,000,000**	**2,000**	**8,000**	**5,000**	**27,000,000**	**49,000**
Class II Groundwater			**2,900,000**	**420,000**	**59,000,000**	**8,000**	**82,000**	**25,000**	**130,000,000**	**250,000**
Concentrations of PNA Chemicals in Background Soils			**130**	**70**	**400**	**1,800**	**2,100**	**2,100**	**1,700**	**1,700**

Table 2
Soil Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
SB-1	2-4	11/18/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
SB-1	6-8	11/18/1999	ND<57	ND<57	ND<57	ND<57	ND<57	300	ND<57	ND<57
SB-2	4-6	11/18/1999	ND<52	ND<52	ND<52	ND<52	ND<52	ND<52	ND<52	ND<52
SB-3	2-4	11/18/1999	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64
SB-3	6-8	11/18/1999	ND<54	ND<54	ND<54	ND<54	ND<54	ND<54	ND<54	ND<54
SB-4	0-2	11/18/1999	ND<59	ND<59	ND<59	ND<59	ND<59	ND<59	ND<59	ND<59
SB-4	4-6	11/18/1999	ND<810	ND<810	ND<810	ND<810	ND<810	**11,000**	ND<810	ND<810
SB-5	2-4	11/18/1999	ND<150	ND<150	ND<150	ND<150	ND<150	**2,100**	ND<150	ND<150
SB-5	4-6	11/18/1999	ND<62	ND<62	ND<62	ND<62	ND<62	1,200	ND<62	ND<62
SB-5 Duplicate	4-6	11/18/1999	ND<150	ND<150	ND<150	ND<150	ND<150	1,400	ND<150	ND<150
SB-6	0-4	11/22/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
SB-6	4-8	11/22/1999	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60	ND<60
SB-7	0-4	11/22/1999	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62	ND<62
SB-7	4-8	11/22/1999	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64
SB-8	0-4	11/22/1999	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64	ND<64
SB-8	4-8	11/22/1999	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63
SB-9	0-4	11/22/1999	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63	ND<63
SB-9 Duplicate	0-4	11/22/1999	ND<65	ND<65	ND<65	ND<65	ND<65	ND<65	ND<65	ND<65
SB-9	4-8	11/22/1999	ND<61	ND<61	ND<61	ND<61	ND<61	880	ND<61	ND<61
SB-10	0-4	11/22/1999	ND<270	ND<270	ND<270	ND<270	ND<270	**3,000**	ND<270	ND<270
SB-10	4-8	11/22/1999	ND<60	ND<60	ND<60	ND<60	ND<60	1,200	ND<60	ND<60
MW-5	2-4	11/16/2000	ND<32	ND<32	ND<32	ND<32	ND<32	ND<32	ND<32	ND<32
MW-5	6-8	11/16/2000	ND<29	ND<29	ND<29	ND<29	ND<29	ND<29	ND<29	ND<29
MW-6	4-6	11/16/2000	ND<130	ND<130	ND<130	ND<130	ND<130	**2,400**	ND<130	ND<130
MW-6	8-10	11/16/2000	ND<31	ND<31	52	ND<31	ND<31	ND<31	ND<31	42
MW-7	7-9	11/16/2000	ND<860	ND<860	ND<860	ND<860	ND<860	**25,000**	ND<860	ND<860
Exposure Route-Specific Values for Soils										
Ingestion - Residential			88,000	90	3,100,000	3,100,000	900	1,600,000	2,300,000	2,300,000
Inhalation - Residential			NE	NE	NE	NE	NE	170,000	NE	NE
Ingestion - Construction Worker			17,000,000	17,000	82,000,000	82,000,000	170,000	4,100,000	61,000,000	61,000,000
Inhalation - Construction Worker			NE	NE	NE	NE	NE	1,800	NE	NE
Class I Groundwater			160,000	2,000	4,300,000	560,000	14,000	12,000	210,000	4,200,000
Class II Groundwater			800,000	7,500	21,000,000	2,800,000	69,000	16,000	1,100,000	21,000,000
Concentrations of PNA Chemicals in Background Soils			2,700	420	4,100	180	1,600	200	2,500	3,000

Notes:
Polynuclear aromatic hydrocarbon (PNAs) analysis conducted using United States Environmental Protection Agency (USEPA) Methods.
All results are reported in micrograms per kilogram (ug/kg), dry weight.
Tier 1 Soil Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
ND = The constituent was not measured above the Method Detection Limit indicated.
NE = Not Established.
NA = Not Applicable
Bold values exceed Tier 1 Remediation Objectives.

Soil Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
SB-11	3.5-5	08/07/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-11	7-8	08/07/2012	ND<271	ND<271	ND<271	ND<271	ND<271	ND<271	ND<271	ND<271
SB-12	3.5-5	08/07/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-12	7-8	08/07/2012	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7
SB-13	3.5-5	08/07/2012	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0
SB-13	6-7	08/07/2012	ND<104	ND<104	ND<104	ND<104	ND<104	ND<104	ND<104	ND<104
SB-14	3.5-5	08/07/2012	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6
SB-14	6-7	08/07/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-15	3.5-5	08/07/2012	ND<168	ND<168	ND<168	ND<168	ND<168	ND<168	ND<168	ND<168
SB-15	5-6	08/07/2012	ND<261	ND<261	ND<261	ND<261	ND<261	ND<261	ND<261	ND<261
SB-16	3.5-5	08/07/2012	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0
SB-16	6-7	08/07/2012	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0
SB-17	3.5-5	08/08/2012	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0
SB-17	6-7	08/08/2012	ND<3,190	ND<3,190	ND<3,190	**ND<3,190**	**ND<3,190**	**ND<3,190**	ND<3,190	ND<3,190
SB-18	3.5-5	08/08/2012	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5
SB-18	6-7	08/08/2012	ND<207	ND<207	ND<207	ND<207	ND<207	ND<207	ND<207	ND<207
SB-19	3.5-5	08/08/2012	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7
SB-19	6-7	08/08/2012	43.7	ND<19.8	34.8	ND<19.8	ND<19.8	ND<19.8	ND<19.8	ND<19.8
SB-22	3.5-5	08/08/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-22	6-7	08/08/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-23	3.5-5	08/08/2012	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2
SB-23	5-6	08/08/2012	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4
SB-24	3.5-5	08/08/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-25	3.5-5	08/08/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-27	0-4	03/10/2015	ND<50	ND<50	ND<50	90.7	69	76	ND<50	65
SB-27	4-7	03/10/2015	ND<50	ND<50	ND<50	15.0	ND<15	17	ND<50	14
SB-28	0-2	03/10/2015	ND<50	ND<50	ND<50	328	297	312	176	271
SB-28	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
SB-29	2-4	03/10/2015	ND<50	ND<50	ND<50	14.7	17	19	ND<50	15
SB-29	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
SB-30	0-2	03/10/2015	ND<50	ND<50	ND<50	43.5	59	71	ND<50	46
SB-30	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
SB-31	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
SB-31	4-6	03/10/2015	393	ND<50	60	21.1	ND<15	ND<11	ND<50	ND<11
MW-9	2-4	03/10/2015	ND<50	ND<50	ND<50	39.4	41	39	ND<50	46
MW-9	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-10	0-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-11	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-11	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-12	2-4	03/10/2015	ND<50	ND<50	ND<50	22.2	15	16	ND<50	14
MW-12	4-6	03/10/2015	ND<50	ND<50	ND<50	10.5	ND<15	ND<11	ND<50	ND<11
MW-13	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-13	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-14	2-4	03/10/2015	ND<50	ND<50	ND<50	32.7	35	38	ND<50	40
MW-14	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-15	2-4	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
MW-15	4-6	03/10/2015	ND<50	ND<50	ND<50	ND<8.7	ND<15	ND<11	ND<50	ND<11
Exposure Route-Specific Values for Soils										
Ingestion - Residential			**4,700,000**	**2,300,000**	**23,000,000**	**900**	**90**	**900**	**2,300,000**	**9,000**
Inhalation - Residential			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
Ingestion - Construction Worker			**120,000,000**	**61,000,000**	**610,000,000**	**170,000**	**17,000**	**170,000**	**61,000,000**	**1,700,000**
Inhalation - Construction Worker			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
Ingestion - Industrial/Commercial			**120,000,000**	**61,000,000**	**610,000,000**	**8,000**	**800**	**8,000**	**61,000,000**	**78,000**
Inhalation - Industrial/Commercial			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
Class I Groundwater			**570,000**	**85,000**	**12,000,000**	**2,000**	**8,000**	**5,000**	**27,000,000**	**49,000**
Class II Groundwater			2,900,000	420,000	59,000,000	8,000	82,000	25,000	130,000,000	250,000
Concentrations of PNA Chemicals in Background Soils			**130**	**70**	**400**	**1,800**	**2,100**	**2,100**	**1,700**	**1,700**

See SB-31

Soil Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Sample ID	Sample Depth (feet)	Sample Date	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
SB-11	3.5-5	08/07/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	89.8	ND<21.4	ND<21.4
SB-11	7-8	08/07/2012	ND<271	ND<271	ND<271	ND<271	ND<271	**4,630**	ND<271	ND<271
SB-12	3.5-5	08/07/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	41.6	ND<21.4	ND<21.4
SB-12	7-8	08/07/2012	ND<69.7	ND<69.7	ND<69.7	ND<69.7	ND<69.7	836	ND<69.7	ND<69.7
SB-13	3.5-5	08/07/2012	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	396	ND<22.0	ND<22.0
SB-13	6-7	08/07/2012	ND<104	ND<104	ND<104	ND<104	ND<104	1,660	ND<104	ND<104
SB-14	3.5-5	08/07/2012	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6	ND<21.6
SB-14	6-7	08/07/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	130	ND<20.7	ND<20.7
SB-15	3.5-5	08/07/2012	ND<168	ND<168	ND<168	ND<168	ND<168	**2,150**	ND<168	ND<168
SB-15	5-6	08/07/2012	ND<261	ND<261	ND<261	ND<261	ND<261	**5,340**	ND<261	ND<261
SB-16	3.5-5	08/07/2012	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0	ND<22.0
SB-16	6-7	08/07/2012	ND<68.0	ND<68.0	ND<68.0	ND<68.0	ND<68.0	791	141	ND<68.0
SB-17	3.5-5	08/08/2012	ND<21.0	ND<21.0	ND<21.0	ND<21.0	ND<21.0	313	39.2	ND<21.0
SB-17	6-7	08/08/2012	ND<3,190	**ND<3,190**	ND<3,190	ND<3,190	**ND<3,190**	**45,300**	ND<3,190	ND<3,190
SB-18	3.5-5	08/08/2012	ND<21.5	ND<21.5	ND<21.5	ND<21.5	ND<21.5	88.9	ND<21.5	ND<21.5
SB-18	6-7	08/08/2012	ND<207	ND<207	ND<207	ND<207	ND<207	**4,160**	ND<207	ND<207
SB-19	3.5-5	08/08/2012	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7	ND<21.7
SB-19	6-7	08/08/2012	ND<19.8	ND<19.8	ND<19.8	92.1	ND<19.8	177	231	ND<19.8
SB-22	3.5-5	08/08/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-22	6-7	08/08/2012	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7	ND<20.7
SB-23	3.5-5	08/08/2012	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2	ND<21.2
SB-23	5-6	08/08/2012	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4	ND<20.4
SB-24	3.5-5	08/08/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-25	3.5-5	08/08/2012	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4	ND<21.4
SB-27	0-4	03/10/2015	77	ND<20	189	ND<50	51	ND<25	135	151
SB-27	4-7	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND50
SB-28	0-2	03/10/2015	253	51	483	ND<50	188	ND<25	180	429
SB-28	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
SB-29	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
SB-29	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
SB-30	0-2	03/10/2015	66	ND<20	87	ND<50	50	423	ND<50	86
SB-30	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
SB-31	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	574	93	ND<50
SB-31	4-6	03/10/2015	ND<50	ND<20	65	432	ND<29	**20,700**	935	149
MW-9	2-4	03/10/2015	ND<50	ND<20	82	ND<50	33	ND<25	ND<50	75
MW-9	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-10	0-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-11	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-11	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-12	2-4	03/10/2015	ND<50	ND<20	70	ND<50	ND<29	**4,200**	88	63
MW-12	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	**1,990**	51	ND<50
MW-13	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-13	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	272	ND<50	ND<50
MW-14	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	33	ND<25	ND<50	ND<50
MW-14	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	288	ND<50	ND<50
MW-15	2-4	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
MW-15	4-6	03/10/2015	ND<50	ND<20	ND<50	ND<50	ND<29	ND<25	ND<50	ND<50
Exposure Route-Specific Values for Soils										
Ingestion - Residential			**88,000**	**90**	**3,100,000**	**3,100,000**	**900**	**1,600,000**	**2,300,000**	**2,300,000**
Inhalation - Residential			**NE**	**NE**	**NE**	**NE**	**NE**	**170,000**	**NE**	**NE**
Ingestion - Construction Worker			**17,000,000**	**17,000**	**82,000,000**	**82,000,000**	**170,000**	**4,100,000**	**61,000,000**	**61,000,000**
Inhalation - Construction Worker			**NE**	**NE**	**NE**	**NE**	**NE**	**1,800**	**NE**	**NE**
Ingestion - Industrial/Commercial			**780,000**	**800**	**82,000,000**	**82,000,000**	**800**	**41,000,000**	**61,000,000**	**61,000,000**
Inhalation - Industrial/Commercial			**NE**	**NE**	**NE**	**NE**	**NE**	**270,000**	**NE**	**NE**
Class I Groundwater			**160,000**	**2,000**	**4,300,000**	**560,000**	**14,000**	**12,000**	**200,000**	**4,200,000**
Class II Groundwater			800,000	7,600	21,000,000	2,800,000	69,000	18,000	1,000,000	21,000,000
Concentrations of PNA Chemicals in Background Soils			**2,700**	**420**	**4,100**	**180**	**1,600**	**200**	**2,500**	**3,000**

See SB-31

210,000
1,100,000

Notes:
Polynuclear aromatic hydrocarbon (PNAs) analysis conducted using United States Environmental Protection Agency (USEPA) Methods.
All results are reported in micrograms per kilogram (ug/kg), dry weight.
Tier 1 Soil Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
ND = The constituent was not measured above the Method Detection Limit indicated.
NE = Not Established.
NA = Not Applicable
Bold values exceed Tier 1 Remediation Objectives.

Table 3
Groundwater Analytical and Elevation Summary - BTEX

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Well ID	Sample Date	Reference Elevation (feet)	Depth to Water (feet)	Free product Thickness (feet)	Equivalent Water Elevation (feet)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Comments
MW-1	11/22/1999	96.00	9.33	-	86.67	**1,700**	140	**1,200**	3,240	
MW-1 (Duplicate)	11/22/1999			-		**1,700**	150	**1,200**	3,350	
MW-1	11/16/2000	96.00	8.04	-	87.96	**2,100**	180	**1,100**	2,650	
	04/24/2001	96.00	6.54	-	89.46	**1,700**	270	**1,500**	2,930	
	10/03/2001	96.00	8.44	-	87.56	**1,900**	110	**1,100**	2,420	
	07/11/2011	96.35	7.20	-	89.15	**664**	55.3	<T1**738**	472	odor/no sheen
	04/23/2015	Unable to Locate Well								
MW-2	11/22/1999	98.29	8.55	-	89.74	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	11/16/2000	98.29	8.59	-	89.70	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	04/24/2001	98.29	6.56	-	91.73	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	10/03/2001	98.29	7.42	-	90.87	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	07/11/2011	98.58	6.41	-	92.17	ND<1.0	ND<1.0	ND<1.0	ND<3.0	no odor/no sheen
	04/23/2015	98.58	6.58	-	92.00	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-3	11/22/1999	99.82	9.59	-	90.23	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	11/16/2000	99.82	7.03	-	92.79	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	04/24/2001	99.82	8.09	-	91.73	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	10/03/2001	99.82	8.78	-	91.04	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	07/11/2011	100.20	7.37	-	92.83	ND<1.0	ND<1.0	ND<1.0	ND<3.0	no odor/no sheen
	04/23/2015	100.20	8.03	-	92.17	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-4	11/22/1999	97.73	8.37	-	89.36	**4,500**	580	**2,500**	4,410	
	11/16/2000	97.73	7.26	-	90.47	**4,000**	1,000	**2,600**	6,400	
MW-4 (Duplicate)	11/16/2000			-		**4,100**	980	**2,700**	6,100	
MW-4	04/24/2001	97.73	6.84	-	90.89	**4,500**	**2,000**	**2,100**	5,500	
	10/03/2001	97.73	7.56	-	90.17	**4,900**	1,000	**2,400**	5,800	
	07/11/2011	98.19	6.46	-	91.73	**1,060**	101	**1,360**	1,780	odor/sheen
	04/23/2015	98.19	7.33	-	90.86	**896**	66.9	**2,240**	1,020	odor/sheen
MW-5	11/16/2000	95.53	10.55	-	84.98	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	04/24/2001	95.53	4.82	-	90.71	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	10/03/2001	95.53	7.53	-	88.00	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	07/11/2011	NA	NS	-	NS	NS	NS	NS	NS	
	04/23/2015	96.00	5.52	-	90.48	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-6	11/16/2000	95.74	10.65	-	85.09	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	04/24/2001	95.74	8.35	-	87.39	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	10/03/2001	95.74	10.74	-	85.00	ND<1.0	ND<1.0	ND<1.0	ND<2.0	
	07/11/2011	96.27	8.71	-	87.56	ND<1.0	ND<1.0	ND<1.0	ND<3.0	no odor/no sheen
	04/23/2015	96.27	9.48	-	86.79	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-7	11/16/2000	97.27	11.73	-	85.54	**39,000**	**140,000**	**37,000**	**170,000**	
	04/24/2001	97.27	9.79	-	87.48	**26,000**	**43,000**	**5,000**	**23,400**	
	10/03/2001	97.27	NA	-	NA	**19,000**	**34,000**	**5,200**	**26,400**	
	07/11/2011	97.62	9.75	0.60	88.32	NS	NS	NS	NS	free product
	04/23/2015	97.62	10.90	-	86.72	**14,500**	**24,300**	**3,680**	**16,700**	odor/sheen
MW-9	04/23/2015	97.88	6.10	-	91.78	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
MW-10	04/23/2015	98.94	7.03	-	91.91	**126**	ND<5.0	ND<5.0	ND<5.0	odor/sheen
MW-11	04/23/2015	99.72	7.76	-	91.96	ND<5.0	ND<5.0	ND<5.0	ND<5.0	odor/no sheen
MW-12	04/23/2015	97.05	6.35	-	90.70	**307**	189	220	977	odor/no sheen
MW-13	04/23/2015	96.73	6.11	-	90.62	**10,200**	**9,900**	**2,530**	**10,200**	odor/no sheen
MW-14	04/23/2015	97.52	5.97	-	91.55	**386**	27.4	315	1,250	odor/no sheen
MW-15	04/23/2015	100.39	6.67	-	93.72	ND<5.0	ND<5.0	ND<5.0	ND<5.0	no odor/no sheen
Tier 1 Remediation Objectives for Groundwater										
Tier 1 Remediation Objectives - Class I Groundwater (ug/l)						5	1,000	700	10,000	
Tier 1 Remediation Objectives - Class II Groundwater (ug/l)						25	2,500	1,000	10,000	

Note:
All results are reported in micrograms per liter (ug/L).
Analyses conducted using United States Environmental Protection Agency (USEPA) Methods.
Reference elevation based on temporary benchmark with an assigned elevation of 100.00 feet.
Equivalent Water elevation = Reference Elevation - Depth to Water + (0.75 X Product Thickness).
ND = Analyte not detected at or above the reporting limit.
NA = Not Available.
Comments based on field observations.
Tier 1 Groundwater Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
Bold values exceed Tier 1 Remediation Objectives.
Samples prior to 2011 collected by Parsons Engineering Science, Inc.

Table 4
Groundwater Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Well ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene
MW-1	11/22/1999	ND<2.0	1.8	ND<0.085	ND<0.061	ND<0.061	ND<0.061	ND<0.085	ND<0.037
MW-1 (Duplicate)	11/22/1999	ND<32	ND<28	ND<1.4	**ND<1.0**	**ND<1.0**	**ND<1.0**	ND<1.4	**ND<0.60**
MW-1	11/16/2000	ND<1.2	ND<1.3	ND<0.067	ND<0.053	ND<0.050	ND<0.047	ND<0.040	ND<0.023
	04/24/2001	0.12	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<2.4	ND<2.4	ND<2.4	**ND<2.4**	**ND<2.4**	**ND<2.4**	ND<2.4	**ND<2.4**
	04/23/2015	NS	NS	NS	NS	NS	NS	NS	NS
MW-2	11/22/1999	ND<2.2	ND<1.9	ND<0.097	ND<0.069	ND<0.069	ND<0.069	ND<0.097	ND<0.042
	11/16/2000	ND<1.2	ND<1.3	ND<0.067	ND<0.053	ND<0.050	ND<0.047	ND<0.040	ND<0.023
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-3	11/22/1999	ND<1.6	ND<1.4	ND<0.070	ND<0.050	ND<0.050	ND<0.050	ND<0.070	ND<0.030
	11/16/2000	ND<1.2	ND<1.3	ND<0.067	ND<0.053	ND<0.050	ND<0.047	ND<0.040	ND<0.023
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-4	11/22/1999	ND<32	ND<28	ND<1.4	**ND<1.0**	**ND<1.0**	**ND<1.0**	ND<1.4	**ND<0.60**
	11/16/2000	ND<24	ND<26	ND<1.3	**ND<1.1**	**ND<1.0**	**ND<0.94**	ND<0.80	**ND<0.46**
MW-4 (Duplicate)	11/16/2000	ND<24	ND<26	ND<1.3	**ND<1.1**	**ND<1.0**	**ND<0.94**	ND<0.80	**ND<0.46**
MW-4	04/24/2001	0.41	0.075	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<47.2	ND<47.2	ND<47.2	**ND<47.2**	**ND<47.2**	**ND<47.2**	ND<47.2	**ND<47.2**
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-5	11/16/2000	ND<1.2	ND<1.3	ND<0.067	ND<0.053	ND<0.050	ND<0.047	ND<0.040	ND<0.023
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	NS	NS	NS	NS	NS	NS	NS	NS
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-6	11/16/2000	ND<1.2	ND<1.3	ND<0.067	0.10	0.17	0.15	0.096	0.052
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	0.063	0.063	**0.31**	**0.33**	**0.35**	0.20	**0.30**
	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-7	11/16/2000	**ND<96,000**	**ND<100,000**	**ND<5,400**	**ND<4,200**	**ND<4,000**	**ND<3,800**	**ND<3,200**	**ND<1,800**
	04/24/2001	7.9	3.6	2.4	**1.2**	**ND<1.0**	**ND<1.0**	ND<1.0	**ND<1.0**
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	NS	NS	NS	NS	NS	NS	NS	NS
	04/23/2015	ND<10	ND<10	ND<5	**0.18**	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-9	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-10	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-11	04/23/2015	33	ND<10	7	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-12	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-13	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-14	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
MW-15	04/23/2015	ND<10	ND<10	ND<5	ND<0.13	ND<0.2	ND<0.18	ND<0.4	ND<0.17
Tier 1 Remediation Objectives for Groundwater									
Class I Groundwater		**420**	**210**	**2,100**	**0.13**	**0.20**	**0.18**	**210**	**0.17**
Class II Groundwater		2,100	1,050	10,500	0.65	2.0	0.90	1,050	0.85

Table 4
Groundwater Analytical Results - PNAs

Former Clark Store #2093
3712 North University Street
Peoria, Illinois 61614

Well ID	Sample Date	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene
MW-1	11/22/1999	ND<0.061	ND<0.085	ND<0.061	ND<2.3	ND<0.098	61	ND<1.8	ND<0.073
MW-1 (Duplicate)	11/22/1999	ND<1.0	ND<1.4	ND<1.0	ND<3.8	ND<1.6	48	ND<3.0	ND<1.2
MW-1	11/16/2000	ND<0.060	ND<0.053	ND<0.053	ND<0.17	ND<0.047	46	ND<1.8	ND<0.053
	04/24/2001	ND<0.050	ND<0.050	ND<0.050	0.17	ND<0.050	120	0.12	ND<0.050
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	**ND<2.4**	**ND<2.4**	ND<2.4	ND<2.4	**ND<2.4**	16.5	ND<2.4	ND<2.4
	04/23/2015	NS	NS	NS	NS	NS	NS	NS	NS
MW-2	11/22/1999	ND<0.069	ND<0.097	ND<0.069	ND<0.26	ND<0.11	ND<1.9	ND<0.21	ND<0.083
	11/16/2000	ND<0.060	ND<0.053	ND<0.053	ND<0.17	ND<0.047	ND<1.1	ND<0.14	ND<0.053
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	0.12	ND<0.047	ND<0.047
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-3	11/22/1999	ND<0.050	ND<0.070	ND<0.50	ND<0.19	ND<0.080	ND<1.4	ND<0.15	ND<0.060
	11/16/2000	ND<0.060	ND<0.053	ND<0.053	ND<0.17	ND<0.047	ND<1.1	ND<0.14	ND<0.053
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047	ND<0.047
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-4	11/22/1999	ND<1.0	**ND<1.4**	ND<1.0	ND<3.8	**ND<1.6**	**150**	ND<3.0	ND<1.2
	11/16/2000	ND<1.2	**ND<1.1**	ND<1.1	ND<3.4	ND<0.94	**160**	ND<2.8	ND<1.1
MW-4 (Duplicate)	11/16/2000	ND<1.2	**ND<1.1**	ND<1.1	ND<3.4	ND<0.94	**200**	3.5	ND<1.1
MW-4	04/24/2001	ND<0.050	ND<0.050	ND<0.050	0.41	ND<0.050	**210**	0.27	ND<0.050
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	**ND<47.2**	**ND<47.2**	ND<47.2	ND<47.2	**ND<47.2**	**296**	ND<47.2	ND<47.2
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	**229**	ND<5	ND<2
MW-5	11/16/2000	ND<0.060	ND<0.053	ND<0.053	ND<0.17	ND<0.047	ND<1.1	ND<0.14	ND<0.053
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	NS	NS	NS	NS	NS	NS	NS	NS
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-6	11/16/2000	0.08	0.068	0.24	ND<0.17	0.24	ND<1.1	0.21	0.21
	04/24/2001	NS	NS	NS	NS	NS	NS	NS	NS
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	0.33	0.078	0.49	ND<0.047	0.19	0.075	0.12	0.44
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-7	11/16/2000	**ND<4,800**	**ND<4,200**	**ND<4,200**	**ND<14,000**	**ND<3,800**	**180,000**	**31,000**	**ND<4,200**
	04/24/2001	ND<1.0	**ND<1.0**	2.6	9.5	**ND<1.0**	**2,000**	**ND<250**	2.6
	10/03/2001	NS	NS	NS	NS	NS	NS	NS	NS
	07/11/2011	NS	NS	NS	NS	NS	NS	NS	NS
	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	**472**	ND<5	ND<2
MW-9	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-10	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-11	04/23/2015	ND<1.5	ND<0.3	ND<2	43	ND<0.3	41	85	ND<2
MW-12	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	13	ND<5	ND<2
MW-13	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	**177**	ND<5	ND<2
MW-14	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
MW-15	04/23/2015	ND<1.5	ND<0.3	ND<2	ND<2	ND<0.3	ND<10	ND<5	ND<2
Tier 1 Remediation Objectives for Groundwater									
Class I Groundwater		**1.5**	**0.30**	**280**	**280**	**0.43**	**140**	**210**	**210**
Class II Groundwater		7.5	1.5	1,400	1,400	2.15	220	1,050	1,050

Note:
All results are reported in micrograms per liter (ug/L).
Polynuclear Aromatic Hydrocarbons (PNA's) analyses conducted using United States Environmental Protection Agency (USEPA) Methods.
ND = Analyte not detected at or above the reporting limit.
NE = Not Established.
NS = Not Sampled.
Tier 1 Groundwater Remediation Objectives per Title 35, Part 742 - Tiered Approach to Corrective Action Objectives.
Bold values exceed Tier 1 Remediation Objectives.

Table 5
Summary of Groundwater Monitoring Well Elevation Data

Well Identification	Date Gauged	Top of Casing (feet) Riser	Depth to Groundwater (feet BTOC) BTOR	Groundwater Elevation (feet)
MW-1	Damanged	96.35		
MW-2	11/24/15	98.58	6.00	92.58
MW-3	11/24/15	100.20	6.19	94.01
MW-4	11/24/15	98.19	6.09	92.10
MW-5	11/24/15	96.00	3.94	92.06
MW-6	Unable to Access	96.27		
MW-7	Unable to Access	97.62		
MW-9	11/24/15	97.88	5.83	92.05
MW-10	11/24/15	98.94	5.96	92.98
MW-11	11/24/15	99.72	6.07	93.65
MW-12	11/24/15	97.05	5.44	91.61
MW-13	11/24/15	96.73	4.99	91.74
MW-14	11/24/15	97.52	4.97	92.55
MW-15	Missing			

BTOC = Below top of casing Riser

ATTACHMENT 1

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

December 03, 2015

Mr. Jeff Wienhoff
MARLIN ENVIRONMENTAL
3935 Commerce Drive
St. Charles, IL 60174

Project ID: Illico Independent Oil Co - 923441
First Environmental File ID: 15-6363
Date Received: November 25, 2015

Dear Mr. Jeff Wienhoff:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 003596: effective 03/24/2015 through 03/28/2016.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Bill Mottashed
Project Manager

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Case Narrative

MARLIN ENVIRONMENTAL

Lab File ID: **15-6363**

Project ID: **Illico Independent Oil Co - 923441**

Date Received: **November 25, 2015**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The results in this report apply to the samples in the following table:

Laboratory Sample ID	Client Sample Identifier	Date/Time Collected
15-6363-001	SB-26 3'	11/24/2015 10:35

Sample Batch Comments:

Sample acceptance criteria were met.

The following is a definition of flags that may be used in this report:

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L	LCS recovery outside control limits.
C	Sample received in an improper container for this test.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	N	Analyte is not part of our NELAC accreditation.
E	Estimated result; concentration exceeds calibration range.	P	Chemical preservation pH adjusted in lab.
G	Surrogate recovery outside control limits.	Q	Result was determined by a GC/MS database search.
H	Analysis or extraction holding time exceeded.	S	Analysis was subcontracted to another laboratory.
J	Estimated result; concentration is less than routine RL but greater than MDL.	W	Reporting limit elevated due to sample matrix.
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.

First
Environmental
Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client:	MARLIN ENVIRONMENTAL	**Date Collected:**	11/24/15
Project ID:	Illico Independent Oil Co - 923441	**Time Collected:**	10:35
Sample ID:	SB-26 3'	**Date Received:**	11/25/15
Sample No:	15-6363-001	**Date Reported:**	12/03/15

Analyte	Result	R.L.	Units	Flags
FOC (0.58 conversion factor) **Method: D2974-14** Analysis Date: 12/02/15				
FOC (0.58 conversion factor)	1.79		%	N
Organic Matter @ 440°C	3.09		%	N

CHAIN OF CUSTODY RECORD

First Environmental Laboratories, Inc.

1600 Shore Road, Suite D
Naperville, IL 60563
Phone: (630)778-1200 * Fax (630)778-1233
E-Mail: info@firstenv.com
IEPA Accreditation #100292

Illico (PCB No. 2017-084) R. 270

Company Name: Marlin Environmental, Inc.			
Street Address: 3935 Commerce Drive			
City: Saint Charles		State: IL	Zip: 60174
Phone: 630-444-1933	Fax: 630-444-1939	e-Mail: on file	
Send Report To: Jeff Wienhoff		Via Fax: ☐	Via e-Mail: ☒
Sampled By: Joe Buhlig / Zach Sutton			

Project I.D.: Illico Independent Oil Co
P.O. #: 923441

Enter analyses required on the lines to the left. Place an "X" in the box below to indicate which samples require what analysis.

Date/Time Taken	Sample Description	Matrix	FOC								Comments	Lab I.D.
11/24/2015 10:35	SB-26 3'	Soil	✓								15-6363-001	

FOR LAB USE ONLY: Cooler Temperature:0.1-6°C Yes ✓ No ___ 2.5 °C
Received within 6 hrs of collection: ___
Ice Present: Yes ✓ No ___

Sample Refrigerated: Yes ___ No ___
Refrigerator Temperature: ___ °C

Containers Received Preserved: Yes ___ No ___
5035 Vials Frozen: Yes ___ No ___
Freezer Temperature: ___ °C

Notes and Special Instructions: Needs to meet IL TACO Objectives.

Relinquished By:	Date/Time: 11/24/15 3:00	Received By:	Date/Time: 11/25/15
Relinquished By:	Date/Time:	Received By:	Date/Time: 1200

Rev 1/07

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
Laboratory Certification for Chemical Analysis

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC# (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (Not a P.O. Box): 3712 University Street

City: Peoria County: Peoria ZIP Code: 61614

Leaking UST Technical File

B. Sample Collector

I certify that:

1. Appropriate sampling equipment/methods were utilized to obtain representative samples. JB (initial)
2. Chain-of-custody procedures were followed in the field. JB (initial)
3. Sample integrity was maintained by proper preservation. JB (initial)
4. All samples were properly labeled. JB (initial)

C. Laboratory Representative

I certify that:

1. Proper chain-of-custody procedures were followed as documented on the chain-of-custody forms (initial)
2. Sample integrity was maintained by proper preservation. (initial)
3. All samples were properly labeled. (initial)
4. Quality assurance/quality control procedures were established and carried out. (initial)

5. Sample holding times were not exceeded. (initial)

6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses. (initial)

7. An accredited lab performed quantitative analysis using test methods identified in 35 IAC 186.180 (for samples collected on or after January 1, 2003). (initial)

D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector

Name: Joe Buhlig
Title: Project Manager
Company: Marlin Environmental
Address: 3901 Wood Duck Drive, Suite F
City: Springfield
State: IL
ZIP Code: 62711
Phone: (217) 726-7569
Signature:
Date: 11/24/15

Laboratory Representative

Name: Bill Mottashed
Title: Project Manager
Company: First Environmental Laboratories
Address: 1600 Shore Road, Suite D
City: Naperville
State: IL
ZIP Code: 60563
Phone: (630) 778-1200
Signature:
Date: 12/3/15

ATTACHMENT 2

LUST Incident No: 923441				**Boring Number:** SB-26		**Page** 1	**of** 1		
Site Name: Illico Independent Oil				**Location:** South side of subject property; See Map		**Date:**	**Start** 11/24/2015		
Address: 3712 N. University St. Peoria, Illinois							**Finish** 11/24/2015		
Sample Number	**Sample Device**	**Sample Recovery**	**Lithology Symbol**	**Depth (feet)**	**Detailed Soil and Rock Description**	**Natural Moisture Content %**	**Hand Penetrometer Qu**	**OVA/PID/FID/OVM**	**Remarks**
					Grass surface				
			Fill	1	topsoil	M		<1	
			CL	2	Black Silty Clay	M			
		100%	CL	3	Sample Taken @ 3' for FOC	M		<1	
			CL	4		M			
1			CL	5		M		<1	
			CL	6		M			
	FIVE FOOT MACROCORE			7	End of Boring @ 6'				
		100%		8					
2				9					
				10					
				11					
				12					
				13					
				14					
				15					
				16					
				17					
				18					
				19					
				20					
				21					
				22					
				23					
				24					
				25					
				26					
				27					

Note: Stratification lines are approximate; in-situ transition between soil types may be gradual.

Groundwater Date

▼ Depth While Drilling NA

▽ Depth After Drilling NA

Auger Depth 6' Rig Hand Auger

Rotary Depth N/A Geologist: Joe Buhlig

Driller/Co: Zach Sutton / Marlin

Note: Boring backfilled with cuttings and bentonite.

Illinois Environmental Protection Agency

IL 532-2275
LPC 501 Dec-96

ATTACHMENT 3

The Agency is authorized to require this information under Section 4(d) of the Environmental Protection Act (415 ILCS 5/4(d)). Failure to do so may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SSL Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Company

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: S12, S17, S28): S28/S18: Soil Leaching to Groundwater - Benzene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: not applicable Soil Type: Silty Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☒ Yes ☐ No If Yes, then Specify Acreage: ☒ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30 NA

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT (ingestion)	=		yr	d_a	=		m
AT (inhalation)	=		yr	d_s	=	2.4384	m
AT_c	=	70	yr	D_A	=		cm^2/s
BW	=		kg	D_i	=		cm^2/s
C_{sat}	=		mg/kg	D_w	=		cm^2/s
C_w	=		mg/L	DF	=	20	unitless
d	=	2	m	ED (ingestion of carcinogens)	=		yr

Incident #: 923441 Chemical: Benzene Illinois EPA No. 2017-084) R 277 Land Use: not applicable

Symbol			Unit
ED (inhalation of carcinogens)	=		yr
ED (ingestion of noncarcinogens)	=		yr
ED (inhalation of noncarcinogens)	=		yr
ED (ingestion of groundwater)	=		yr
ED_{M-L}	=	70	yr
EF	=		d/yr
F(x)	=	0.194	unitless
f_{oc}	=		g/g
GW_{obj}	=		mg/L
H'	=		unitless
DF=20 i	=	0.0131 0.01426	m/m
I	=	0.3	m/yr
I_{M-L}	=	0.18	m/yr
$IF_{soil-adj}$	=	114	(mg-yr)/(kg-d)
IR_{soil}	=		mg/d
IR_w	=		L/d
DF=20 K re-calculate	=	0.46 ≠0.0003667 cm/s	m/yr
K_d (non-ionizing organics)	=		cm^3/g or L/kg
K_d (ionizing organics)	=		cm^3/g or L/kg
K_d (inorganics)	=		cm^3/g or L/kg

Symbol			Unit
K_{oc}	=		cm^3/g or L/kg
K_s	=		m/yr
L Unknown, but >100'	=	39.624	m DF=20
PEF	=		m^3/kg
PEF'	=		m^3/kg
Q/C (VF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
Q/C (PEF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
RfC	=		mg/m^3
RfD_o	=		mg/(kg-d)
S	=		mg/L
SF_o	=		$(mg/kg\text{-}d)^{-1}$
T	=		s
T_{M-L}	=	30	yr
THQ	=	1	unitless
TR	=		unitless
U_m	=	4.69	m/s
URF	=		$(\mu g/m^3)^{-1}$
U_t	=	11.32	kg/m^3
V	=		unitless
VF	=		m^3/kg

Incident #: 923441 Chemical: Benzene Title 35 Rule: (2017-084) R. 278 Land Use: not applicable

Symbol		Unit
VF'	=	m^3/kg
VF_{M-L}	=	m^3/kg
VF'_{M-L}	=	m^3/kg
η	=	L_{pore}/L_{soil}
θ_a	=	L_{air}/L_{soil}

Symbol			Unit
θ_w	=		L_{water}/L_{soil}
ρ_b	=	1.684	kg/L or g/cm^3
ρ_s	=		g/cm^3
ρ_w	=	1	g/cm^3
1/(2b+3)	=		unitless

Equation		Result	Unit(s)
S1	=		mg/kg
S2	=		mg/kg
S3	=		mg/kg
S4	=		mg/kg
S5	=		mg/kg
S6	=		mg/L
S7	=		mg/kg
S17	=		mg/kg
S28	=		mg/kg
S29	=		mg/L

Source Area Concentration Values: (mg/Kg)

SB-18(3.5'-5'): 1.190 SB-18(6'-7'): 6.790
SB-19(3.5'-5'): 0.0405 SB-19(6'-7'): 0.365
SB-25(3.5'-5'): 0.148
MW-14(4'-6'): 0.654

SB-30(0'-2') Benzene: 0.101
SB-30(2'-4') Benzene: 0.402
SB-31(2'-4') Benzene: 1.600
SB-31(4'-6') Benzene: 16.800
MW-12(2'-4') Benzene: 1.660
MW-12(4'-6') Benzene: 4.230
MW-13(4'-6') Benzene: 0.347
SB-4(4'-6') Benzene: 1.100
SB-9(0'-4') Benzene: 0.230
SB-9(4'-8') Benzene: 0.690
SB-10(0'-4') Benzene: 7.900
SB-10(4'-8') Benzene: 1.400
Not using
SB-17(3.5'-5') Benzene: 0.337
SB-17(6'-7') Benzene: 1.200
SB-4(4'-6') Benzene: 1.100 Duplicate
MW-7(7'-9') Benzene: 13.000 Not using

SB-11(3.5'-5'): 0.288 SB-11(7'-8'): 3.980
SB-12(3.5'-5'): 0.0515 SB-12(7'-8'): 0.629
SB-13(3.5'-5'): 2.050 SB-13(6'-7'): 11.700
SB-14(3.5'-5'): 0.669 SB-14(6'-7'): 0.833
SB-15(3.5'-5'): 4.210 SB-15(5'-6'): 41.800
SB-16(3.5'-5'): 1.010 SB-16(6'-7'): 3.700

Soil to Groundwater Leachate Potential (GW_{obj}): (mg/L)

SB-30 (0'-2') Benzene: 0.002
SB-30(2'-4') Benzene: 0.0065
SB-31(2'-4') Benzene: 0.02607
SB-31(4'-6') Benzene: 0.274
MW-12(2'-4') Benzene: 0.02705
MW-12(4'-6') Benzene: 0.06893
MW-13(4'-6') Benzene: 0.006
SB-4(4'-6') Benzene: 0.018
SB-9(0'-4') Benzene: 0.004
Not using
SB-9(4'-8') Benzene: 0.011
SB-10(0'-4') Benzene: 0.129
SB-10(4'-8') Benzene: 0.023
Not using
SB-17(3.5'-5') Benzene: 0.005
SB-17(6'-7') Benzene: 0.020
SB-4(4'-6') Benzene: 0.018 Duplicate
MW-7(7'-9') Benzene: 0.212 Not using

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-30**
		Sample Depth (feet):	**0'-2'**
LUST Incident Number(s):	923441	**Analyte:**	**Benzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**0.101**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	0.101
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.032915304
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.001645765
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Benzene / 0.005 / 0.025	**0.002**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** SB-30 **Sample Depth (feet):** 2'-4'
LUST Incident Number(s):	923441	**Analyte:** Benzene
Exposure Pathway:	Soil Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:** 0.402

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	0.402
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.131009426
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.006550471
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**0.00655**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Benzene	0.005	0.025

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-31**
		Sample Depth (feet):	**2'-4'**
LUST Incident Number(s):	923441	**Analyte:**	**Benzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**1.600**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	1.600
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.521430552
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.026071528
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Benzene / 0.005 / 0.025	**0.02607**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***Yes***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-31**
		Sample Depth (feet):	**4'-6'**
LUST Incident Number(s):	923441	**Analyte:**	**Benzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**16.800**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	16.800
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	5.475020800
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.273751040
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte: Benzene — Class I: 0.005 — Class II: 0.025	**0.274**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***Yes***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**MW-12**
		Sample Depth (feet):	**2'-4'**
LUST Incident Number(s):	923441	**Analyte:**	**Benzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**1.660**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	1.660
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.540984198
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.027049210
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**0.02705**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Benzene	0.005	0.025

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***Yes***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	MW-12
		Sample Depth (feet):	4'-6'
LUST Incident Number(s):	923441	**Analyte:**	Benzene
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	4.230

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	4.230
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	1.378532023
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.068926601
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Benzene / 0.005 / 0.025	**0.06893**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? *Yes*

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? *Yes*

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** MW-13 **Sample Depth (feet):** 4'-6'
LUST Incident Number(s):	923441	**Analyte:** Benzene
Exposure Pathway:	Soil Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:** 0.347

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	0.347
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.113085251
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.005654263
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Benzene / 0.005 / 0.025	**0.006**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-4**
		Sample Depth (feet):	**4'-6'**
LUST Incident Number(s):	923441	**Analyte:**	**Benzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**1.100**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	1.100
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.358483505
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.017924175
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Benzene / 0.005 / 0.025	**0.018**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-4. Therefore, not reviewed

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-9**
		Sample Depth (feet):	**0'-4'**
LUST Incident Number(s):	923441	**Analyte:**	**Benzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**0.230**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	0.230
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.074955642
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.003747782
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Benzene / 0.005 / 0.025	**0.004**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-9. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** **Sample Depth (feet):**	**SB-9** **4'-8'**
LUST Incident Number(s):	923441	**Analyte:**	**Benzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**0.690**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	0.690
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.224866926
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.011243346
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Benzene / 0.005 / 0.025	**0.011**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-9. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-10**
		Sample Depth (feet):	**0'-4'**
LUST Incident Number(s):	923441	**Analyte:**	**Benzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**7.900**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	7.900
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	2.574563352
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.128728168
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**0.129**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Benzene	0.005	0.025

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***Yes***

Not using the analytical results of SB-10. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-10**
		Sample Depth (feet):	**4'-8'**
LUST Incident Number(s):	923441	**Analyte:**	**Benzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**1.400**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	1.400
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.456251733
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.022812587
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Benzene / 0.005 / 0.025	**0.023**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-10. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** SB-17 **Sample Depth (feet):** 3.5'-5'
LUST Incident Number(s):	923441	**Analyte:** Benzene
Exposure Pathway:	Soil Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:** 0.337

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	0.337
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.109826310
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.005491316
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Benzene / 0.005 / 0.025	**0.005**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? *Yes*

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? *No*

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-17**
		Sample Depth (feet):	**6'-7'**
LUST Incident Number(s):	923441	**Analyte:**	**Benzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**1.200**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	1.200
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.391072914
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.019553646
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**0.020**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Benzene	0.005	0.025

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**MW-7**
		Sample Depth (feet):	**7'-9'**
LUST Incident Number(s):	923441	**Analyte:**	**Benzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**13.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	13.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	4.236623238
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.211831162
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Benzene / 0.005 / 0.025	**0.212**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***Yes***

Not using the soil analytical results of MW-7. Therefore, not reviewed.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SSL Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Company

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: S12, S17, S28): S28/S18: Soil Leaching to Groundwater-Total Xylenes

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: not applicable Soil Type: Silty Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☒ Yes ☐ No If Yes, then Specify Acreage: ☒ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30 NA

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT (ingestion)	=		yr	d_a	=		m
AT (inhalation)	=		yr	d_s	=	2.4384	m
AT_c	=	70	yr	D_A	=		cm^2/s
BW	=		kg	D_i	=		cm^2/s
C_{sat}	=		mg/kg	D_w	=		cm^2/s
C_w	=		mg/L	DF	=	20	unitless
d	=	2	m	ED (ingestion of carcinogens)	=		yr

Incident #: 923441 Chemical: Total Xylenes Land Use: not applicable

Symbol			Unit
ED (inhalation of carcinogens)	=		yr
ED (ingestion of noncarcinogens)	=		yr
ED (inhalation of noncarcinogens)	=		yr
ED (ingestion of groundwater)	=		yr
ED_{M-L}	=	70	yr
EF	=		d/yr
F(x)	=	0.194	unitless
f_{oc}	=		g/g
GW_{obj}	=		mg/L
H'	=		unitless
i (DF=20)	=	0.0131 (0.01426)	m/m
I	=	0.3	m/yr
I_{M-L}	=	0.18	m/yr
$IF_{soil-adj}$	=	114	(mg-yr)/(kg-d)
IR_{soil}	=		mg/d
IR_w	=		L/d
K (DF=20) recalculate	=	0.46 ≠ 0.0003667 cm/s	m/yr
K_d (non-ionizing organics)	=		cm³/g or L/kg
K_d (ionizing organics)	=		cm³/g or L/kg
K_d (inorganics)	=		cm³/g or L/kg

Symbol			Unit
K_{oc}	=		cm³/g or L/kg
K_s	=		m/yr
L (Unknown, but > 100')	=	39.624	m (DF=20)
PEF	=		m³/kg
PEF'	=		m³/kg
Q/C (VF equations)	=		(g/m²-s)/(kg/m³)
Q/C (PEF equations)	=		(g/m²-s)/(kg/m³)
RfC	=		mg/m³
RfD_o	=		mg/(kg-d)
S	=		mg/L
SF_o	=		(mg/kg-d)⁻¹
T	=		s
T_{M-L}	=	30	yr
THQ	=	1	unitless
TR	=		unitless
U_m	=	4.69	m/s
URF	=		(μg/m³)⁻¹
U_t	=	11.32	kg/m³
V	=		unitless
VF	=		m³/kg

Incident #: 923441 Chemical: Total Xylenes Land Use: not applicable

Symbol			Unit
VF'	=		m^3/kg
VF_{M-L}	=		m^3/kg
VF'_{M-L}	=		m^3/kg
η	=		L_{pore}/L_{soil}
θ_a	=		L_{air}/L_{soil}

Symbol			Unit
θ_w	=		L_{water}/L_{soil}
ρ_b	=	1.684	kg/L or g/cm^3
ρ_s	=		g/cm^3
ρ_w	=	1	g/cm^3
1/(2b+3)	=		unitless

Equation		Result	Unit(s)
S1	=		mg/kg
S2	=		mg/kg
S3	=		mg/kg
S4	=		mg/kg
S5	=		mg/kg
S6	=		mg/L
S7	=		mg/kg
S17	=		mg/kg
S28	=		mg/kg
S29	=		mg/L

Source Area Concentration Values:
(mg/Kg)

SB-31(2'-4') Total Xylenes: 24.200
SB-31(4'-6') Total Xylenes: 1,190.000
MW-12 (2'-4') Total Xylenes: 168.000
MW-12 (4'-6') Total Xylenes: 178.000
MW-13 (4'-6') Total Xylenes: 6.610
SB-9(4'-8') Total Xylenes: 370.000
SB-10 (0'-4') Total Xylenes: 182.000
SB-10 (4'-8') Total Xylenes: 35.000
Not using
SB-17 (3.5'-5') Total Xylenes: 7.820
SB-17 (6'-7') Total Xylenes: 574.000
SB-4 (4'-6') Total Xylenes: 193.000
MW-7 (7'-9') Total Xylenes: 420.000
Not using
SB-11(7'-8'): 159.000
SB-12(7'-8'): 13.700
SB-13(3.5'-5'): 8.400 SB-13(6'-7'): 142.000
SB-15(3.5'-5'): 49.900 SB-15(5'-6'): 568.000
SB-16(6'-7'): 36.100
SB-18(6'-7'): 112.000
MW-14(4'-6'): 44.600

Soil to Groundwater Leachate Potential (GW_{obj}):
(mg/L)

SB-31(2'-4') Total Xylenes: 0.4
SB-31(4'-6') Total Xylenes: 19.391
MW-12(2'-4') Total Xylenes: 2.73751
MW-12(4'-6') Total Xylenes: 2.900
MW-13 (4'-6') Total Xylenes: 0.108
SB-9(4'-8') Total Xylenes: 6.029
SB-10 (0'-4') Total Xylenes: 2.966
Not using
SB-10 (4'-8') Total Xylenes: 0.570 Not using
SB-17 (3.5'-5') Total Xylenes: 0.127
SB-17 (6'-7') Total Xylenes: 9.353
SB-4 (4'-6') Total Xylenes: 3.145
MW-7 (7'-9') Total Xylenes: 6.84378
Not using

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-31**
		Sample Depth (feet):	**2'-4'**
LUST Incident Number(s):	923441	**Analyte:**	**Total Xylenes**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**24.200**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	24.200
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	7.886637105
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.394331855
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Total Xylenes / 10 / 10	**0.4**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-31
		Sample Depth (feet):	4'-6'
LUST Incident Number(s):	923441	**Analyte:**	Total Xylenes
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	1,190.000

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	1,190.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	387.813973333
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	19.390698667
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**19.391**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Total Xylenes	10	10

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? *Yes*

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? *Yes*

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**MW-12**
		Sample Depth (feet):	**2'-4'**
LUST Incident Number(s):	923441	**Analyte:**	**Total Xylenes**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**168.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	168.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	54.750208000
GW_{obj}	mg/L	Soil to Grcundwater Potential Leachate Concentration	2.737510400
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**2.73751**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Total Xylenes	10	10

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** MW-12 **Sample Depth (feet):** 4'-6'
LUST Incident Number(s):	923441	**Analyte:** Total Xylenes
Exposure Pathway:	Soil Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:** 178.000

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	178.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	58.009148952
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	2.900457448
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**2.900**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Total Xylenes	10	10

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**MW-13**
		Sample Depth (feet):	**4'-6'**
LUST Incident Number(s):	923441	**Analyte:**	**Total Xylenes**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**6.610**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	6.610
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	2.154159970
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.107707998
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**0.108**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Total Xylenes	10	10

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-9**
		Sample Depth (feet):	**4'-8'**
LUST Incident Number(s):	923441	**Analyte:**	**Total Xylenes**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**370.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	370.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	120.580815238
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	6.029040762
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte: Total Xylenes — Class I: 10 — Class II: 10	**6.029**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-9. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-10**
		Sample Depth (feet):	**0'-4'**
LUST Incident Number(s):	923441	**Analyte:**	**Total Xylenes**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**182.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	182.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	59.312725333
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	2.965636267
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Total Xylenes / 10 / 10	**2.966**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-10. Therefore, not reviewed

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-10**
		Sample Depth (feet):	**4'-8'**
LUST Incident Number(s):	923441	**Analyte:**	**Total Xylenes**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**35.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	35.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	11.406293333
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.570314667
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Total Xylenes / 10 / 10	**0.570**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-10. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-17**
		Sample Depth (feet):	**3.5'-5'**
LUST Incident Number(s):	923441	**Analyte:**	**Total Xylenes**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**7.820**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	7.820
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	2.548491825
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.127424591
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**0.127**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Total Xylenes	10	10

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-17
		Sample Depth (feet):	6'-7'
LUST Incident Number(s):	923441	**Analyte:**	Total Xylenes
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	574.000

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	574.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	187.063210667
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	9.353160533
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**9.353**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Total Xylenes	10	10

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-4**
		Sample Depth (feet):	**4'-6'**
LUST Incident Number(s):	923441	**Analyte:**	**Total Xylenes**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**193.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	193.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	62.897560381
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	3.144878019
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte: Total Xylenes — Class I: 10 — Class II: 10	**3.145**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-4. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**MW-7**
		Sample Depth (feet):	**7'-9'**
LUST Incident Number(s):	923441	**Analyte:**	**Total Xylenes**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**420.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	420.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	136.875520000
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	6.843776000
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**6.84378**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Total Xylenes	10	10

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the soil analytical results of MW-7. Therefore, not reviewed.

The Agency is authorized to require this information under Section 4(r) of the Environmental Protection Act (415 ILCS 5/4(r)). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SSL Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Company

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: S12, S17, S28): S28/S18: Soil Leaching to Groundwater-Toluene/Ethylbenzene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: not applicable Soil Type: Silty Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☒ Yes ☐ No If Yes, then Specify Acreage: ☒ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30 NA

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT (ingestion)	=		yr	d_a	=		m
AT (inhalation)	=		yr	d_s	=	2.4384	m
AT_c	=	70	yr	D_A	=		cm^2/s
BW	=		kg	D_i	=		cm^2/s
C_{sat}	=		mg/kg	D_w	=		cm^2/s
C_w	=		mg/L	DF	=	20	unitless
d	=	2	m	ED (ingestion of carcinogens)	=		yr

Incident #: 923441 Chemical: Toluene / Ethy Ethylbenzene (2017-084) R. 310 Land Use: not applicable

Symbol			Unit	Symbol			Unit
ED (inhalation of carcinogens)	=		yr	K_{oc}	=		cm^3/g or L/kg
ED (ingestion of noncarcinogens)	=		yr	K_s	=		m/yr
ED (inhalation of noncarcinogens)	=		yr	L	=	39.624	m
ED (ingestion of groundwater)	=		yr	PEF	=		m^3/kg
ED_{M-L}	=	70	yr	PEF'	=		m^3/kg
EF	=		d/yr	Q/C (VF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
F(x)	=	0.194	unitless	Q/C (PEF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
f_{oc}	=		g/g	RfC	=		mg/m^3
GW_{obj}	=		mg/L	RfD_o	=		mg/(kg-d)
H'	=		unitless	S	=		mg/L
i	=	0.0131 (0.01426)	m/m	SF_o	=		$(mg/kg\text{-}d)^{-1}$
I	=	0.3	m/yr	T	=		s
I_{M-L}	=	0.18	m/yr	T_{M-L}	=	30	yr
$IF_{soil-adj}$	=	114	(mg-yr)/(kg-d)	THQ	=	1	unitless
IR_{soil}	=		mg/d	TR	=		unitless
IR_w	=		L/d	U_m	=	4.69	m/s
K (recalculate)	=	0.46 (≠ 0.00036667 cm/s)	m/yr	URF	=		$(\mu g/m^3)^{-1}$
K_d (non-ionizing organics)	=		cm^3/g or L/kg	U_t	=	11.32	kg/m^3
K_d (ionizing organics)	=		cm^3/g or L/kg	V	=		unitless
K_d (inorganics)	=		cm^3/g or L/kg	VF	=		m^3/kg

DF=20 (i)

DF=20 (K)

DF=20 (L)

Unknown, but > 100'

Incident #: 923441 Chemical: Toluene / Ethy Title 35 Ref.: (2017-084) R. 311 Land Use: not applicable

Symbol		Unit
VF'	=	m^3/kg
VF_{M-L}	=	m^3/kg
VF'_{M-L}	=	m^3/kg
η	=	L_{pore}/L_{soil}
θ_a	=	L_{air}/L_{soil}

Symbol			Unit
θ_w	=		L_{water}/L_{soil}
ρ_b	=	1.68	kg/L or g/cm^3
ρ_s	=		g/cm^3
ρ_w	=	1	g/cm^3
1/(2b+3)	=		unitless

Equation		Result	Unit(s)
S1	=		mg/kg
S2	=		mg/kg
S3	=		mg/kg
S4	=		mg/kg
S5	=		mg/kg
S6	=		mg/L
S7	=		mg/kg
S17	=		mg/kg
S28	=		mg/kg
S29	=		mg/L

Source Area Concentration Values: (mg/Kg)

SB-11(7'-8'): 51.600
SB-13(6'-7'): 92.700
SB-15(3.5'-5'): 24.100
SB-15(5'-6'): 305.000
SB-31(4'-6') Toluene: 27.100
SB-9(4'-8') Toluene: 58.000
SB-10(0'-4') Toluene: 83.000
SB-10(4'-8') Toluene: 16.000
MW-7(7'-9') Toluene: 160.000
Not using

SB-31 4'-6' Ethylbenzene: 243.00
MW-12 2'-4' Ethylbenzene: 42.300
MW-12 4'-6' Ethylbenzene: 35.500
SB-4 4'-6' Ethylbenzene: 37.000
SB-9 4'-8' Ethylbenzene: 57.000
SB-10 0'-4' Ethylbenzene: 42.000
Not using
SB-17 6'-7' Ethylbenzene: 130.000
SB-4 4'-6' Ethylbenzene: 37.000 Duplicate
MW-7 7'-9' Ethylbenzene: 92.000 Not using
SB-11(7'-8'): 31.600
SB-13(6'-7'): 29.700
SB-15(5'-6'): 103.000
SB-18(6'-7'): 27.000

Soil to Groundwater Leachate Potential (GW_{obj}): (mg/L)

SB-31(4'-6') Toluene: 0.442
SB-9(4'-8') Toluene: 0.945
SB-10(0'-4') Toluene: 1.352
SB-10(4'-8') Toluene: 0.261
MW-7(7'-9') Toluene: 2.607
Not using

SB-31 4'-6' Ethylbenzene: 4.0
MW-12 2'-4' Ethylbenzene: 0.6893
MW-12 4'-6' Ethylbenzene: 0.578
SB-4 4'-6' Ethylbenzene: 0.603
SB-9 4'-8' Ethylbenzene: 0.929
SB-10 0'-4' Ethylbenzene: 0.684
Not using
SB-17 6'-7' Ethylbenzene: 2.118
SB-4 4'-6' Ethylbenzene: 0.603 Duplicate

MW-7 7'-9' Ethylbenzene: 1.499

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** **Sample Depth (feet):**	**SB-31** **4'-6'**
LUST Incident Number(s):	923441	**Analyte:**	**Toluene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**27.100**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	27.100
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	8.831729981
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.441586499
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte: Toluene — Class I: 1 — Class II: 2.5	**0.442**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-9**
		Sample Depth (feet):	**4'-8'**
LUST Incident Number(s):	923441	**Analyte:**	**Toluene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**58.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	58.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	18.901857524
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.945092876
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Toluene / 1 / 2.5	**0.945**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-9. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-10**
		Sample Depth (feet):	**0'-4'**
LUST Incident Number(s):	923441	**Analyte:**	**Toluene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**83.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	83.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	27.049209905
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	1.352460495
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**1.352**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Toluene	1	2.5

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-10. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** SB-10 **Sample Depth (feet):** 4'-8'
LUST Incident Number(s):	923441	**Analyte:** Toluene
Exposure Pathway:	Soil Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:** 16.000

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	16.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	5.214305524
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.260715276
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Toluene / 1 / 2.5	**0.261**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-10. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** MW-7 **Sample Depth (feet):** 7'-9'
LUST Incident Number(s):	923441	**Analyte:** Toluene
Exposure Pathway:	Soil Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:** 160.000

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	160.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	52.143055238
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	2.607152762
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**2.607**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Toluene	1	2.5

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***Yes***

Not using the soil analytical results of MW-7. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-31**
		Sample Depth (feet):	**4'-6'**
LUST Incident Number(s):	923441	**Analyte:**	**Ethylbenzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**243.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	243.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	79.192265143
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	3.959613257
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Ethylbenzene / 0.7 / 1	**4.0**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***Yes***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**MW-12**
		Sample Depth (feet):	**2'-4'**
LUST Incident Number(s):	923441	**Analyte:**	**Ethylbenzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**42.300**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	42.300
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	13.785320229
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.689266011
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Ethylbenzene / 0.7 / 1	**0.6893**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**MW-12**
		Sample Depth (feet):	**4'-6'**
LUST Incident Number(s):	923441	**Analyte:**	**Ethylbenzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**35.500**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	35.500
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	11.569240381
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.578462019
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Ethylbenzene / 0.7 / 1	**0.578**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** **Sample Depth (feet):**	**SB-4** **4'-6'**
LUST Incident Number(s):	923441	**Analyte:**	**Ethylbenzene**
Exposure Pathway: **Groundwater Classification:**	Soil Component of Groundwater Ingestion Class I	**Soil Concentration in mg/kg:**	**37.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	37.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	12.058081524
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.602904076
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Ethylbenzene / 0.7 / 1	**0.603**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-9**
		Sample Depth (feet):	**4'-8'**
LUST Incident Number(s):	923441	**Analyte:**	**Ethylbenzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**57.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	57.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	18.575963429
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.928798171
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Ethylbenzene / 0.7 / 1	**0.929**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results for SB-9. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** SB-10 **Sample Depth (feet):** 0'-4'
LUST Incident Number(s):	923441	**Analyte:** Ethylbenzene
Exposure Pathway:	Soil Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:** 42.000

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	42.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	13.687552000
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.684377600
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Ethylbenzene / 0.7 / 1	**0.684**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results for SB-10. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-17**
		Sample Depth (feet):	**6'-7'**
LUST Incident Number(s):	923441	**Analyte:**	**Ethylbenzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**130.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	130.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	42.366232381
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	2.118311619
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Ethylbenzene / 0.7 / 1	**2.118**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***Yes***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**MW-7**
		Sample Depth (feet):	**7'-9'**
LUST Incident Number(s):	923441	**Analyte:**	**Ethylbenzene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**92.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	92.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	29.982256762
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	1.499112838
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte: Ethylbenzene — Class I: 0.7 — Class II: 1	**1.499**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***Yes***

Not using the soil analytical results for MW-7. Therefore, not reviewed.

The Agency is authorized to require this information under Section 4(d) of the Illinois Environmental Protection Act (415 ILCS 5/4(d)). Failure to do so may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SSL Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Company

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: S12, S17, S28): S28/S18: Soil Leaching to Groundwater - Naphthalene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: not applicable Soil Type: Silty Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☒ Yes ☐ No If Yes, then Specify Acreage: ☒ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30 NA

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT (ingestion)	=		yr	d_a	=		m
AT (inhalation)	=		yr	d_s	=	2.4384	m
AT_c	=	70	yr	D_A	=		cm^2/s
BW	=		kg	D_i	=		cm^2/s
C_{sat}	=		mg/kg	D_w	=		cm^2/s
C_w	=		mg/L	DF	=	20	unitless
d	=	2	m	ED (ingestion of carcinogens)	=		yr

Incident #: 923441 Chemical: Naphthalene Title 35 Rule: (2017-084) R 326 Land Use: not applicable

Symbol			Unit
ED (inhalation of carcinogens)	=		yr
ED (ingestion of noncarcinogens)	=		yr
ED (inhalation of noncarcinogens)	=		yr
ED (ingestion of groundwater)	=		yr
ED_{M-L}	=	70	yr
EF	=		d/yr
F(x)	=	0.194	unitless
f_{oc}	=		g/g
GW_{obj}	=		mg/L
H'	=		unitless
DF=20 i	=	0.0131 0.01426	m/m
I	=	0.3	m/yr
I_{M-L}	=	0.18	m/yr
$IF_{soil-adj}$	=	114	(mg-yr)/(kg-d)
IR_{soil}	=		mg/d
IR_w	=		L/d
DF=20 K recalculate	=	0.46 ≠ 0.0003667	m/yr
K_d (non-ionizing organics)	=		cm^3/g or L/kg
K_d (ionizing organics)	=		cm^3/g or L/kg
K_d (inorganics)	=		cm^3/g or L/kg

Symbol			Unit
K_{oc}	=		cm^3/g or L/kg
K_s	=		m/yr
L Unknown, but > 100'	=	39.624	m DF=20
PEF	=		m^3/kg
PEF'	=		m^3/kg
Q/C (VF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
Q/C (PEF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
RfC	=		mg/m^3
RfD_o	=		mg/(kg-d)
S	=		mg/L
SF_o	=		$(mg/kg\text{-}d)^{-1}$
T	=		s
T_{M-L}	=	30	yr
THQ	=	1	unitless
TR	=		unitless
U_m	=	4.69	m/s
URF	=		$(\mu g/m^3)^{-1}$
U_t	=	11.32	kg/m^3
V	=		unitless
VF	=		m^3/kg

Incident #: 923441 Chemical: Naphthalene Title 35 (35 Ill. Adm. Code 2017-084) R 327 Land Use: not applicable

Symbol		Unit
VF'	=	m^3/kg
VF_{M-L}	=	m^3/kg
VF'_{M-L}	=	m^3/kg
η	=	L_{pore}/L_{soil}
θ_a	=	L_{air}/L_{soil}

Symbol			Unit
θ_w	=		L_{water}/L_{soil}
ρ_b	=	1.684	kg/L or g/cm^3
ρ_s	=		g/cm^3
ρ_w	=	1	g/cm^3
1/(2b+3)	=		unitless

Equation		Result	Unit(s)
S1	=		mg/kg
S2	=		mg/kg
S3	=		mg/kg
S4	=		mg/kg
S5	=		mg/kg
S6	=		mg/L
S7	=		mg/kg
S17	=		mg/kg
S28	=		mg/kg
S29	=		mg/L

Source Area Concentration Values: (mg/Kg)

SB-31 (4'-6') Naphthalene: 20.700
MW-12 (2'-4') Naphthalene: 4.200
MW-12 (4'-6') Naphthalene: 1.990
SB-4 (4'-6') Naphthalene: 11.00
SB-10 (0'-4') Naphthalene: 3.00
SB-10 (4'-8') Naphthalene: 1.200
Not using
SB-17 (6'-7') Naphthalene: 45.300
SB-4 (4'-6') Naphthalene: 11.000
MW-7 (7'-9') Naphthalene: 25.00
Duplicate Not using
SB-11(7'-8'): 4.630
SB-15(3.5'-5'): 2.150
SB-15(5'-6'): 5.340
SB-18(6'-7'): 4.160

Soil to Groundwater Leachate Potential (GW_{obj}): (mg/L)

SB-31(4'-6') Naphthalene: 0.3
MW-12(2'-4') Naphthalene: 0.0684
MW-12(4'-6') Naphthalene: 0.032
SB-4(4'-6') Naphthalene: 0.179
SB-10 (0'-4') Naphthalene: 0.049
SB-10 (4'-8') Naphthalene: 0.020
Not using
SB-17 (6'-7') Naphthalene: 0.738
SB-4 (4'-6') Naphthalene: 0.179
MW-7 (7'-9') Naphthalene: 0.40737
Duplicate Not using

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-31**
		Sample Depth (feet):	**4'-6'**
LUST Incident Number(s):	923441	**Analyte:**	**Naphthalene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**20.700**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	20.700
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	6.746007771
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.337300389
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte: Naphthalene — Class I: 0.14 — Class II: 0.22	**0.3**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***Yes***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**MW-12**
		Sample Depth (feet):	**2'-4'**
LUST Incident Number(s):	923441	**Analyte:**	**Naphthalene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**4.200**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	4.200
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	1.368755200
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.068437760
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Naphthalene / 0.14 / 0.22	**0.0684**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**MW-12**
		Sample Depth (feet):	**4'-6'**
LUST Incident Number(s):	923441	**Analyte:**	**Naphthalene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**1.990**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	1.990
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.684
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.648529250
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.032426462
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**0.032**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Naphthalene	0.14	0.22

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-4
		Sample Depth (feet):	4'-6'
LUST Incident Number(s):	923441	**Analyte:**	Naphthalene
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	11.000

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	11.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	3.584835048
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.179241752
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**0.179**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Naphthalene	0.14	0.22

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***Yes***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-4. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-10**
		Sample Depth (feet):	**0'-4'**
LUST Incident Number(s):	923441	**Analyte:**	**Naphthalene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**3.000**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	3.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.977682286
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.048884114
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**0.049**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Naphthalene	0.14	0.22

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-10. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE

SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-10**
		Sample Depth (feet):	**4'-8'**
LUST Incident Number(s):	923441	**Analyte:**	**Naphthalene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**1.200**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	1.200
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	0.391072914
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.019553646
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Naphthalene / 0.14 / 0.22	**0.020**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? ***No***

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? ***No***

Not using the analytical results of SB-10. Therefore, not reviewed.

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	**SB-17**
		Sample Depth (feet):	**6'-7'**
LUST Incident Number(s):	923441	**Analyte:**	**Naphthalene**
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Soil Concentration in mg/kg:**	**45.300**

SSL Equation S28

Remediation Objective (RO) = $\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$

(milligrams per kilogram, mg/kg)

SSL Equation S18

Target Soil Leachate Concentration C_w = $DF \bullet GW_{obj}$

(milligrams per liter, mg/L)

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	45.300
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	14.763002514
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.738150126
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration** **IEPA TACO Tier 1 Groundwater Remediation Objectives** Analyte / Class I / Class II Naphthalene / 0.14 / 0.22	**0.738**

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater? *Yes*

Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater? *Yes*

SOIL TO GROUNDWATER POTENTIAL LEACHATE CONCENTRATION
MASS-LIMIT REMEDIATION OBJECTIVE FOR SOIL COMPONENT OF THE GROUNDWATER INGESTION EXPOSURE ROUTE
SSL EQUATIONS S28 & S18

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	Sample Location: Sample Depth (feet):	MW-7 7'-9'
LUST Incident Number(s):	923441	Analyte:	Naphthalene
Exposure Pathway: Groundwater Classification:	Soil Component of Groundwater Ingestion Class I	Soil Concentration in mg/kg:	25.000

SSL Equation S28

Remediation Objective (RO) = (milligrams per kilogram, mg/kg)

$$\frac{(C_w \bullet I_{M-L} \bullet ED_{M-L})}{(\rho_b \bullet d_s)}$$

SSL Equation S18

Target Soil Leachate Concentration C_w = (milligrams per liter, mg/L)

$$DF \bullet GW_{obj}$$

Model Parameters Inputs:

Symbol	Unit	Parameter	Values
R.O.	mg/kg	Soil Concentration at Point Source	25.000
I_{M-L}	m/yr	Infiltration Rate	0.18
ED_{M-L}	year	Exposure Duration for Eq S28	70
ρ_b	g/cm^3	Dry Soil Bulk Density	1.68
d_s	m	Depth of Source	2.4384
DF	unitless	Dilution Factor	20

Model Calculated Outputs:

C_w	mg//L	Target Soil Leachate Concentration	8.147352381
GW_{obj}	mg/L	Soil to Groundwater Potential Leachate Concentration	0.407367619
GW_{obj}	**mg/L**	**Soil to Groundwater Potential Leachate Concentration**	**0.40737**

IEPA TACO Tier 1 Groundwater Remediation Objectives

Analyte	Class I	Class II
Naphthalene	0.14	0.22

Soil to Groundwater Potential Leachate Concentration vs. IEPA TACO Tier 1 Groundwater Remediation Objective

Will leach above IEPA TACO Tier 1 GRO for Class I Groundwater?	*Yes*
Will leach above IEPA TACO Tier 1 GRO for Class II Groundwater?	*Yes*

Not using the soil analytical results of MW-7. Therefore, not reviewed.

The Agency is authorized to require this information under Section 22.54 of the Environmental Protection Act (415 ILCS 5/22.54). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
RBCA Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: R12, R14, R26): R26: Benzene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: Not Applicable Soil Type: Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☐ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

Result from S18/S28 used in R26? ☒ Yes ☐ No Specify C_{source} from S18/S28 see page 3 mg/L

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit
AT_c	=	70	yr
AT_n	=		yr
BW	=	70	kg
C_{source}	=	see page 3	mg/L
$C_{(x)}$	=		mg/L
$C_{(x)}/C_{source}$	=		unitless

Symbol		Unit
d	=	cm
D^{air}	=	cm^2/s
D^{water}	=	cm^2/s
D_s^{eff}	=	cm^2/s
ED	=	yr
EF	=	d/yr

Incident #: [illegible] Chemical: Benzene Land Use: Not Applicable

Symbol			Unit
erf	=		unitless
f_{oc}	=		g/g
GW_{comp}	=		mg/L
GW_{source}	=		mg/L
H'	=		cm^3_{water}/cm^3_{air}
i	=	0.0273 (0.01426 used)	cm/cm
I	=	30	cm/yr
IR_{air}	=	20	m^3/d
IR_{soil}	=		mg/d
IR_w	=		L/d
K	=	31.683	cm/d for R15, R19, R26; cm/yr for R24
K_{oc}	=		cm^3/g or L/kg
k_s (non-ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (inorganics)	=		cm^3_{water}/g_{soil}
L_s	=	100	cm
LF_{sw}	=		$(mg/L_{water})/(mg/kg_{soil})$
M	=	0.5	mg/cm^2
Pe	=	$6.9 \cdot 10^{-14}$	g/cm^2-s
RAF_d	=	0.5	unitless

Symbol			Unit
RAF_d (PNAs)	=	0.05	unitless
RAF_d (inorganics)	=	0	unitless
RAF_o	=	1.0	unitless
$RBSL_{air}$ (carcinogenic)	=		$\mu g/m^3$
$RBSL_{air}$ (noncarcinogenic)	=		$\mu g/m^3$
RfD_i	=		mg/kg-d
RfD_o	=		mg/kg-d
SA	=	3,160	cm^2/d
S_d	=	200	cm
S_w	=	7,315.2 (< 240', but not sensitive)	cm
SF_i	=		$(mg/kg\text{-}d)^{-1}$
SF_o	=		$(mg/kg\text{-}d)^{-1}$
THQ	=	1	unitless
TR	=		unitless
U	=		cm/d
U_{air}	=	225	cm/s
U_{gw}	=		cm/yr
VF_p	=		kg/m^3
VF_{samb}	=		$(mg/m^3_{air})/mg/kg_{soil})$ or kg/m^3
VF_{ss}	=		kg/m^3

Incident #: 923441 Chemical: Benzene Title 35/Part 742 (2017.084) R. 338 Land Use: Not Applicable

Symbol			Unit
W	=		cm
w	=		g_{water}/g_{soil}
X	=	see below	cm
α_x	=		cm
α_y	=		cm
α_z	=		cm
δ_{air}	=	200	cm
δ_{gw}	=	200	cm

Symbol			Unit
θ_{as}	=		cm^3_{air}/cm^3_{soil}
θ_{ws}	=		cm^3_{water}/cm^3_{soil}
θ_T	=	0.36	cm^3/cm^3_{soil}
λ	=	0.0009	d^{-1}
π	=	3.1416	
ρ_b	=		g/cm^3
ρ_w	=	1	g/cm^3
τ	=	$9.46 \cdot 10^8$	s

Equation		Result	Unit(s)
R1	=		mg/kg
R2	=		mg/kg
R7	=		mg/kg
R8	=		mg/kg
R12	=		mg/kg
R25	=		mg/L

Csource Values: (mg/L)

Groundwater
MW-1: 0.664
MW-4: 0.896
MW-7: 14.5
MW-10: 0.126
MW-12: 0.307
MW-13: 10.2
MW-14: 0.386

Soil Leaching
SB-11 (7'-8')
SB-12 (7'-8')
SB-13 (6'-7')
SB-14 (6'-7')
SB-15 (5'-6')
SB-16 (6'-7')
SB-30 2'-4': 0.00655
SB-31 2'-4': 0.02607 Unnecessary < 0.274
SB-31 4'-6': 0.274
MW-12 2'-4': 0.02705 Unnecessary < 0.06893
MW-12 4'-6': 0.06893 Unnecessary < 0.307
MW-13 4'-6': 0.006 Unnecessary < 10.2
SB-4 4'-6': 0.018
SB-9 4'-8': 0.011
SB-10 0'-4': 0.129
SB-10 4'-8': 0.023
Not using
SB-17 6'-7': 0.02
SB-4 4'-6': 0.018 Duplicate
MW-7 7'-9': 0.212 Not using

Maximum Predicted Extent of Groundwater Impact (X):
(feet from point source)

Groundwater
MW-4: 227'
MW-7: 398'
MW-12: 171'
MW-13: 375'

Soil Leaching
SB-30 2'-4': 13'
SB-31 2'-4': 66' Unnecessary
SB-31 4'-6': 166'
MW-12 2'-4': 67'
MW-12 4'-6': 103'
MW-13 4'-6': 8.5'
Unnecessary

Soil Leaching
SB-4 4'-6': 53'
SB-9 4'-8': 35.5'
SB-10 0'-4': 129.5'
SB-10 4'-8': 61.5'
Not using
SB-17 6'-7': 56.5'
SB-4 4'-6': 53' Duplicate
MW-7 7'-9': 153' Not using

MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Company Peoria, Illinois	**Sample Location:** MW-4 **Sample Date:** 04/23/2015
LUST Incident Number(s):	923441	
Exposure Pathway:	Groundwater Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Analyte:** Benzene

Concentration at the source (C_{source})=	0.90	mg/L		
Distance along centerline of the plume coming from the source (X)=	227.00	ft	= 6,918.96	cm
First order degradation constant (λ)=	0.0009	/day	if benzene, lambda=0.0009/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	= 31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m		
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}		
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	= 7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	= 200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	691.896	cm
Transverse dispersivity	Ay=	230.632	cm
Vertical dispersivity	Az=	34.5948	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	1.447724822	
Sd/(2*SQRT(Az*X))	C=	0.204344515	
Error function	erf(B)=	0.95938053	To determine error function values,
Error function	erf(C)=	0.227408375	see F46 & K46 in the linear interpolation section.

Actual B value=	1.447724822	Actual C value=	0.204344515
Automatic calculations : Actual erf(B)	0.95938053	Actual erf(C)=	0.227408375

Solutions

$C_{(x)}$ = **0.005** mg/l

C_{source} = **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	1.447724822	0.204344515
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.678305592	0.937258558
erf(x)=	0.95938053	0.227408375

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONTAMINATION GUIDANCE
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Company Peoria, Illinois	**Sample Location:** MW-7 **Sample Date:** 04/23/2015
LUST Incident Number(s):	923441	
Exposure Pathway:	Groundwater Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Analyte:** Benzene

Concentration at the source (C_{source})=	14.5000	mg/L		
Distance along centerline of the plume coming from the source (X)=	398.00	ft =	12,131.04	cm
First order degradation constant (λ)=	0.0009	/day	if benzene, lambda=0.0009/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec =	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m		
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}		
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft =	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft =	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	1213.104	cm
Transverse dispersivity	Ay=	404.368	cm
Vertical dispersivity	Az=	60.6552	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	0.825712398	
Sd/(2*SQRT(Az*X))	C=	0.116548253	
Error function	erf(B)=	0.75708567	To determine error function values,
Error function	erf(C)=	0.13091759	see F46 & K46 in the linear interpolation section.

Actual B value=	0.825712398	Actual C value=	0.116548253
Automatic calculations : Actual erf(B)	0.75708567	Actual erf(C)=	0.13091759

Solutions

$C_{(x)}$ **0.005** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	0.825712398	0.116548253
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.787094154	0.963223946
erf(x)=	0.75708567	0.13091759

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION ALONG CENTERLINE
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Company Peoria, Illinois	**Sample Location:**	MW-12
		Sample Date:	04/23/2015
LUST Incident Number(s):	923441		
Exposure Pathway:	Groundwater Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Benzene

Concentration at the source (C_{source})=	0.3070 mg/L			
Distance along centerline of the plume coming from the source (X)=	171.00 ft	=	5,212.08 cm	
First order degradation constant (λ)=	0.0009 /day			if benzene, lambda=0.0009/day
Aquifer hydraulic conductivity (K)=	3.667E-04 cm/sec	=	31.683 cm/day	
Hydraulic gradient (i)=	0.0143 m/m			
Total soil porosity (θ_T)=	0.36 cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240 ft	=	7,315.20 cm	
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56 ft	=	200 cm	(assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	521.208	cm
Transverse dispersivity	Ay=	173.736	cm
Vertical dispersivity	Az=	26.0604	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	1.921833535	
Sd/(2*SQRT(Az*X))	C=	0.271264356	
Error function	erf(B)=	0.993429791	To determine error function values,
Error function	erf(C)=	0.298744023	see F46 & K46 in the linear interpolation section.

Actual B value=	1.921833535	Actual C value=	0.271264356
Automatic calculations : Actual erf(B)	0.993429791	Actual erf(C)=	0.298744023

Solutions

$C_{(x)}$

0.00502 mg/l

C_{source}

0.00 mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	1.921833535	0.271264356
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.613656724	0.918388517
erf(x)=	0.993429791	0.298744023

MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Company Peoria, Illinois	**Sample Location:**	MW-13
		Sample Date:	04/23/2015
LUST Incident Number(s):	923441		
Exposure Pathway:	Groundwater Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Benzene

Concentration at the source (C_{source})=	10.2000	mg/L			
Distance along centerline of the plume coming from the source (X)=	**375.00**	ft	=	11,430.00	cm
First order degradation constant (λ)=	0.0009	/day		if benzene, lambda=0.0009/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	1143	cm
Transverse dispersivity	Ay=	381	cm
Vertical dispersivity	Az=	57.15	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	0.876356092	
Sd/(2*SQRT(Az*X))	C=	0.123696546	
Error function	erf(B)=	0.784785683	To determine error function values,
Error function	erf(C)=	0.138867973	see F46 & K46 in the linear interpolation section.

Actual B value=	0.876356092	Actual C value=	0.123696546
Automatic calculations : Actual erf(B)	0.784785683	Actual erf(C)=	0.138867973

Solutions

$C_{(x)}$

0.00532 mg/l

C_{source}

0.00 mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	0.876356092	0.123696546
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.776948584	0.961056189
erf(x)=	0.784785683	0.138867973

DISSOLVED HYDROCARBON CONTAMINATION CONCENTRATION AT THE MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-30
LUST Incident Number(s):	923441	**Sample Depth (feet):**	2'-4'
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Benzene

Concentration at the source (C_{source})=	0.0066	mg/L			
Distance along centerline of the plume coming from the source (X)=	13.00	ft	=	396.24	cm
First order degradation constant (λ)=	0.0009	/day		if benzene, lambda=0.0009/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	39.624	cm
Transverse dispersivity	Ay=	13.208	cm
Vertical dispersivity	Az=	1.9812	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	25.27950265	
Sd/(2*SQRT(Az*X))	C=	3.568169604	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.999999548	see F46 & K46 in the linear interpolation section.

Actual B value=	25.27950265	Actual C value=	3.568169604
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.999999548

Solutions

$C_{(x)}$ = **0.005** mg/l

C_{source} = **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	25.27950265	3.568169604
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.107743062	0.461063083
erf(x)=	1	0.999999548

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION ALONG CENTERLINE
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-31
		Sample Depth (feet):	2'-4'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Benzene

Concentration at the source (C_{source})=	0.0261 mg/L		
Distance along centerline of the plume coming from the source (X)=	**66.00** ft	=	2,011.68 cm
First order degradation constant (λ)=	0.0009 /day		if benzene, lambda=0.0009/day
Aquifer hydraulic conductivity (K)=	3.667E-04 cm/sec	=	31.683 cm/day
Hydraulic gradient (i)=	0.0143 m/m		
Total soil porosity (θ_T)=	0.36 cm^3/cm^3_{soil}		
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240 ft	=	7,315.20 cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56 ft	=	200 cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	201.168	cm
Transverse dispersivity	Ay=	67.056	cm
Vertical dispersivity	Az=	10.0584	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	4.979295977	
Sd/(2*SQRT(Az*X))	C=	0.702821286	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.679747611	see F46 & K46 in the linear interpolation section.

Actual B value=	4.979295977	Actual C value=	0.702821286
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.679747611

Solutions

$C_{(x)}$ **0.005** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	4.979295977	0.702821286
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.380058621	0.812850848
erf(x)=	1	0.679747611

Unnecessary. Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONTENT CALCULATIONS

MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-31
		Sample Depth (feet):	4'-6'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Benzene

Concentration at the source (C_{source})=	0.2740	mg/L			
Distance along centerline of the plume coming from the source (X)=	**166.00**	ft	=	5,059.68	cm
First order degradation constant (λ)=	0.0009	/day	if benzene, lambda=0.0009/day		
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	505.968	cm
Transverse dispersivity	Ay=	168.656	cm
Vertical dispersivity	Az=	25.2984	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	1.979720087	
Sd/(2*SQRT(Az*X))	C=	0.279434969	
Error function	erf(B)=	0.994885612	To determine error function values,
Error function	erf(C)=	0.307290379	see F46 & K46 in the linear interpolation section.

Actual B value=	1.979720087	Actual C value=	0.279434969
Automatic calculations : Actual erf(B)	0.994885612	Actual erf(C)=	0.307290379

Solutions

$C_{(x)}$ **0.005** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26

Maximum error in computation = 1.5 x 10^-7

x=	1.979720087	0.279434969
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.606597838	0.916136491
erf(x)=	0.994885612	0.307290379

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION MODELING SPREADSHEET
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	MW-12
		Sample Depth (feet):	2'-4'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Benzene

Concentration at the source (C_{source})=		0.0271	mg/L		
Distance along centerline of the plume coming from the source (X)=		67.00	ft	= 2,042.16	cm
First order degradation constant (λ)=		0.0009	/day	if benzene, lambda=0.0009/day	
Aquifer hydraulic conductivity (K)=		3.667E-04	cm/sec	= 31.683	cm/day
Hydraulic gradient (i)=		0.0143	m/m		
Total soil porosity (θ_T)=		0.36	cm^3/cm^3_{soil}		
Source width perpendicular to GW flow direction in horizontal plane (S_w)=		240	ft	= 7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=		6.56	ft	= 200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	204.216	cm
Transverse dispersivity	Ay=	68.072	cm
Vertical dispersivity	Az=	10.2108	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	4.904978127	
Sd/(2*SQRT(Az*X))	C=	0.692331416	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.672471637	see F46 & K46 in the linear interpolation section.

Actual B value=	4.904978127	Actual C value=	0.692331416
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.672471637

Solutions

$C_{(x)}$ = **0.005** mg/l

C_{source} = **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	4.904978127	0.692331416
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.383608092	0.815127721
erf(x)=	1	0.672471637

Unnecessary Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION AT THE SOURCE
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	MW-12
		Sample Depth (feet):	4'-6'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Benzene

Concentration at the source (C_{source})=	0.0689	mg/L		
Distance along centerline of the plume coming from the source (X)=	**103.00**	ft	= 3,139.44	cm
First order degradation constant (λ)=	0.0009	/day	if benzene, lambda=0.0009/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	= 31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m		
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}		
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	= 7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	= 200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	313.944	cm
Transverse dispersivity	Ay=	104.648	cm
Vertical dispersivity	Az=	15.6972	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	3.19061684	
Sd/(2*SQRT(Az*X))	C=	0.450351503	
Error function	erf(B)=	0.999993579	To determine error function values,
Error function	erf(C)=	0.475805709	see F46 & K46 in the linear interpolation section.

Actual B value=	3.19061684	Actual C value=	0.450351503
Automatic calculations : Actual erf(B)	0.999993579	Actual erf(C)=	0.475805709

Solutions

$C_{(x)}$ **0.0** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	3.19061684	0.450351503
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.488945509	0.871436043
erf(x)=	0.999993579	0.475805709

Unnecessary. Therefore, not reviewed

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION MODELING SCENARIO
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** MW-13 **Sample Depth (feet):** 4'-6'
LUST Incident Number(s):	923441	
Exposure Pathway:	Soil Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Analyte:** Benzene

Concentration at the source (C_{source})=	0.0060	mg/L			
Distance along centerline of the plume coming from the source (X)=	**8.50**	ft	=	259.08	cm
First order degradation constant (λ)=	0.0009	/day	if benzene, lambda=0.0009/day		
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	25.908	cm
Transverse dispersivity	Ay=	8.636	cm
Vertical dispersivity	Az=	1.2954	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	38.66276877	
Sd/(2*SQRT(Az*X))	C=	5.45720057	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	1	see F46 & K46 in the linear interpolation section.

Actual B value=	38.66276877	Actual C value=	5.45720057
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	1

Solutions

$C_{(x)}$ = **0.0** mg/l

C_{source} = **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	38.66276877	5.45720057
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.073176556	0.358714753
erf(x)=	1	1

Unnecessary. Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION ALONG CENTERLINE
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** SB-4 **Sample Depth (feet):** 4'-6'
LUST Incident Number(s):	923441	
Exposure Pathway:	Soil Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Analyte:** Benzene

Concentration at the source (C_{source})=	0.0180 mg/L			
Distance along centerline of the plume coming from the source (X)=	**53.00** ft	=	1,615.44 cm	
First order degradation constant (λ)=	0.0009 /day			if benzene, lambda=0.0009/day
Aquifer hydraulic conductivity (K)=	3.667E-04 cm/sec	=	31.683 cm/day	
Hydraulic gradient (i)=	0.0143 m/m			
Total soil porosity (θ_T)=	0.36 cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240 ft	=	7,315.20 cm	
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56 ft	=	200 cm	(assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	161.544	cm
Transverse dispersivity	Ay=	53.848	cm
Vertical dispersivity	Az=	8.0772	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	6.200632726	
Sd/(2*SQRT(Az*X))	C=	0.875211412	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.784185842	see F46 & K46 in the linear interpolation section.

Actual B value=	6.200632726	Actual C value=	0.875211412
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.784185842

Solutions

$C_{(x)}$ **0.0** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	6.200632726	0.875211412
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.329894503	0.777175011
erf(x)=	1	0.784185842

Not using. Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION ALONG CENTERLINE
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** SB-9 **Sample Depth (feet):** 4'-8'
LUST Incident Number(s):	923441	
Exposure Pathway:	Soil Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Analyte:** Benzene

Concentration at the source (C_{source})=	0.0110	mg/L		
Distance along centerline of the plume coming from the source (X)=	35.50	ft	= 1,082.04	cm
First order degradation constant (λ)=	0.0009	/day	if benzene, lambda=0.0009/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	= 31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m		
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}		
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	= 7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	= 200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	108.204	cm
Transverse dispersivity	Ay=	36.068	cm
Vertical dispersivity	Az=	5.4102	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	9.257282662	
Sd/(2*SQRT(Az*X))	C=	1.306653658	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.935381476	see F46 & K46 in the linear interpolation section.

Actual B value=	9.257282662	Actual C value=	1.306653658
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.935381476

Solutions

$C_{(x)}$ **0.00499** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	9.257282662	1.306653658
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.247978762	0.700256521
erf(x)=	1	0.935381476

Not using. Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION ALONG CENTERLINE
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** SB-10 **Sample Depth (feet):** 0'-4'
LUST Incident Number(s):	923441	
Exposure Pathway:	Soil Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Analyte:** Benzene

Parameter	Value	Unit		Converted	Unit	Note
Concentration at the source (C_{source})=	0.1290	mg/L				
Distance along centerline of the plume coming from the source (X)=	**129.50**	ft	=	3,947.16	cm	
First order degradation constant (λ)=	0.0009	/day				if benzene, lambda=0.0009/day
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day	
Hydraulic gradient (i)=	0.0143	m/m				
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}				
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm	
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm	(assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Parameter	Symbol	Value	Unit
Longitudinal dispersivity	Ax=	394.716	cm
Transverse dispersivity	Ay=	131.572	cm
Vertical dispersivity	Az=	19.7358	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	2.537710691	
Sd/(2*SQRT(Az*X))	C=	0.358194632	
Error function	erf(B)=	0.999667803	To determine error function values,
Error function	erf(C)=	0.387539031	see F46 & K46 in the linear interpolation section.

Actual B value=	2.537710691	Actual C value=	0.358194632
Automatic calculations : Actual erf(B)	0.999667803	Actual erf(C)=	0.387539031

Solutions

$C_{(x)}$ **0.00500** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	2.537710691	0.358194632
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.546050802	0.894981627
erf(x)=	0.999667803	0.387539031

Not using. Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION ALONG CENTERLINE
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-10
LUST Incident Number(s):	923441	**Sample Depth (feet):**	4'-8'
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Benzene

Concentration at the source (C_{source})=	0.0230	mg/L			
Distance along centerline of the plume coming from the source (X)=	**61.50**	ft	=	1,874.52	cm
First order degradation constant (λ)=	0.0009	/day		if benzene, lambda=0.0009/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	187.452	cm
Transverse dispersivity	Ay=	62.484	cm
Vertical dispersivity	Az=	9.3726	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	5.343634707	
Sd/(2*SQRT(Az*X))	C=	0.754247233	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.713877548	see F46 & K46 in the linear interpolation section.

Actual B value=	5.343634707	Actual C value=	0.754247233
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.713877548

Solutions

$C_{(x)}$ **0.00494** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	5.343634707	0.754247233
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.363566668	0.801870166
erf(x)=	1	0.713877548

Not using. Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:** SB-17 **Sample Depth (feet):** 6'-7'
LUST Incident Number(s):	923441	
Exposure Pathway:	Soil Component of Groundwater Ingestion	
Groundwater Classification:	Class I	**Analyte:** Benzene

Concentration at the source (C_{source})=	0.0200	mg/L			
Distance along centerline of the plume coming from the source (X)=	**56.50**	ft	=	1,722.12	cm
First order degradation constant (λ)=	0.0009	/day		if benzene, lambda=0.0009/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	172.212	cm
Transverse dispersivity	Ay=	57.404	cm
Vertical dispersivity	Az=	8.6106	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	5.816522735	
Sd/(2*SQRT(Az*X))	C=	0.820994776	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.754383174	see F46 & K46 in the linear interpolation section.

Actual B value=	5.816522735	Actual C value=	0.820994776
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.754383174

Solutions

$C_{(x)}$

0.0050 mg/l

C_{source}

0.00 mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	5.816522735	0.820994776
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.34418182	0.788052753
erf(x)=	1	0.754383174

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION ALONG CENTERLINE OF MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	MW-7
		Sample Depth (feet):	7'-9'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Benzene

Concentration at the source (C_{source})=	0.2120	mg/L		
Distance along centerline of the plume coming from the source (X)=	153.00	ft	= 4,663.44	cm
First order degradation constant (λ)=	0.0009	/day	if benzene, lambda=0.0009/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	= 31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m		
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}		
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	= 7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	= 200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	466.344	cm
Transverse dispersivity	Ay=	155.448	cm
Vertical dispersivity	Az=	23.3172	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	2.147931598	
Sd/(2*SQRT(Az*X))	C=	0.303177809	
Error function	erf(B)=	0.997615428	To determine error function values,
Error function	erf(C)=	0.331900704	see F46 & K46 in the linear interpolation section.

Actual B value=	2.147931598	Actual C value=	0.303177809
Automatic calculations : Actual erf(B)	0.997615428	Actual erf(C)=	0.331900704

Solutions

$C_{(x)}$ = **0.0050** mg/l

C_{source} = **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	2.147931598	0.303177809
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.586977341	0.909654604
erf(x)=	0.997615428	0.331900704

Not using. Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

The Agency is authorized to require this information under Section 22.54 of the Environmental Protection Act (415 ILCS 5/22.54). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
RBCA Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: R12, R14, R26): R26: Toluene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: Not Applicable Soil Type: Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☐ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

Result from S18/S28 used in R26? ☒ Yes ☐ No Specify C_{source} from S18/S28 see page 3 mg/L

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit
AT_c	=	70	yr
AT_n	=		yr
BW	=	70	kg
C_{source}	=	see page 3	mg/L
$C_{(x)}$	=		mg/L
$C_{(x)}/C_{source}$	=		unitless

Symbol		Unit
d	=	cm
D^{air}	=	cm^2/s
D^{water}	=	cm^2/s
D_s^{eff}	=	cm^2/s
ED	=	yr
EF	=	d/yr

Incident #: 929441 Chemical: Toluene Land Use: Not Applicable

Symbol			Unit
erf	=		unitless
f_{oc}	=		g/g
GW_{comp}	=		mg/L
GW_{source}	=		mg/L
H'	=		cm^3_{water}/cm^3_{air}
i	=	0.0273 (0.01426 used)	cm/cm
I	=	30	cm/yr
IR_{air}	=	20	m^3/d
IR_{soil}	=		mg/d
IR_w	=		L/d
K	=	31.683	(cm/d) for R15, R19, R26; cm/yr for R24
K_{oc}	=		cm^3/g or L/kg
k_s (non-ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (inorganics)	=		cm^3_{water}/g_{soil}
L_s	=	100	cm
LF_{sw}	=		$(mg/L_{water})/(mg/kg_{soil})$
M	=	0.5	mg/cm^2
Pe	=	$6.9 \cdot 10^{-14}$	g/cm^2-s
RAF_d	=	0.5	unitless

Symbol			Unit
RAF_d (PNAs)	=	0.05	unitless
RAF_d (inorganics)	=	0	unitless
RAF_0	=	1.0	unitless
$RBSL_{air}$ (carcinogenic)	=		$\mu g/m^3$
$RBSL_{air}$ (noncarcinogenic)	=		$\mu g/m^3$
RfD_i	=		mg/kg-d
RfD_o	=		mg/kg-d
SA	=	3,160	cm^2/d
S_d	=	200	cm
S_w	=	7,315.2 (< 240', but not sensitive.)	cm
SF_i	=		$(mg/kg\text{-}d)^{-1}$
SF_o	=		$(mg/kg\text{-}d)^{-1}$
THQ	=	1	unitless
TR	=		unitless
U	=		cm/d
U_{air}	=	225	cm/s
U_{gw}	=		cm/yr
VF_p	=		kg/m^3
VF_{samb}	=		$(mg/m^3_{air})/mg/kg_{soil}$ or kg/m^3
VF_{ss}	=		kg/m^3

Incident #: 923441 Chemical: Toluene Land Use: Not Applicable

Symbol			Unit
W	=		cm
w	=		g_{water}/g_{soil}
X	=	see below	cm
α_x	=		cm
α_y	=		cm
α_z	=		cm
δ_{air}	=	200	cm
δ_{gw}	=	200	cm

Symbol			Unit
θ_{as}	=		cm^3_{air}/cm^3_{soil}
θ_{ws}	=		cm^3_{water}/cm^3_{soil}
θ_T	=	0.36	cm^3/cm^3_{soil}
λ	=	0.011	d^{-1}
π	=	3.1416	
ρ_b	=		g/cm^3
ρ_w	=	1	g/cm^3
τ	=	$9.46 \cdot 10^8$	s

Equation		Result	Unit(s)
R1	=		mg/kg
R2	=		mg/kg
R7	=		mg/kg
R8	=		mg/kg
R12	=		mg/kg
R25	=		mg/L

C_{source} Values: (mg/L)

Groundwater
MW-7: 24.3
MW-13: 9.9

Soil Leaching
SB-10 0'-4': 1.352
MW-7 7'-9': 2.607
Not using

SB-13 (6'-7')
SB-15 (5'-6')

Maximum Predicted Extent of Groundwater Impact (X):
(feet from point source)

Groundwater
MW-7: 16'
MW-13: 10.5'

Soil Leaching
SB-10 0'-4': 1.21'
MW-7 7'-9': 3.95'
Not using

MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Company Peoria, Illinois	**Sample Location:**	MW-7
LUST Incident Number(s):	923441	**Sample Date:**	04/23/2015
Exposure Pathway:	Groundwater Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Toluene

Parameter	Value	Unit		Converted	Unit
Concentration at the source (C_{source})=	24.3000	mg/L			
Distance along centerline of the plume coming from the source (X)=	**16.00**	ft	=	487.68	cm
First order degradation constant (λ)=	0.011	/day		if toluene, lambda=0.011/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Parameter	Symbol	Value	Unit
Longitudinal dispersivity	Ax=	48.768	cm
Transverse dispersivity	Ay=	16.256	cm
Vertical dispersivity	Az=	2.4384	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	20.53959591	
Sd/(2*SQRT(Az*X))	C=	2.899137803	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.999958663	see F46 & K46 in the linear interpolation section.

Actual B value=	20.53959591	Actual C value=	2.899137803
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.999958663

Solutions

$C_{(x)}$ **0.960** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26

Maximum error in computation = 1.5 x 10^-7

x=	20.53959591	2.899137803
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.129389727	0.51289107
erf(x)=	1	0.999958663

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Company Peoria, Illinois	**Sample Location:**	MW-13
		Sample Date:	04/23/2015
LUST Incident Number(s):	923441		
Exposure Pathway:	Groundwater Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Toluene

Concentration at the source (C_{source})=	9.9000	mg/L			
Distance along centerline of the plume coming from the source (X)=	**10.50**	ft	=	320.04	cm
First order degradation constant (λ)=	0.011	/day		if toluene, lambda=0.011/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	32.004	cm
Transverse dispersivity	Ay=	10.668	cm
Vertical dispersivity	Az=	1.6002	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	31.29843186	
Sd/(2*SQRT(Az*X))	C=	4.417733795	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	1	see F46 & K46 in the linear interpolation section.

Actual B value=	31.29843186	Actual C value=	4.417733795
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	1

Solutions

$C_{(x)}$ **1.0089** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	31.29843186	4.417733795
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.088864499	0.408628556
erf(x)=	1	1

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-10
		Sample Depth (feet):	0'-4'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Toluene

Concentration at the source (C_{source})=	1.3520	mg/L			
Distance along centerline of the plume coming from the source (X)=	**1.21**	ft	=	36.88	cm
First order degradation constant (λ)=	0.011	/day		if toluene, lambda=0.011/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	3.68808	cm
Transverse dispersivity	Ay=	1.22936	cm
Vertical dispersivity	Az=	0.184404	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	271.5979624	
Sd/(2*SQRT(Az*X))	C=	38.33570648	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	1	see F46 & K46 in the linear interpolation section.

Actual B value=	271.5979624	Actual C value=	38.33570648
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	1

Solutions

$C_{(x)}$ **0.98822** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	271.5979624	38.33570648
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.011114436	0.073754818
erf(x)=	1	1

Not using. Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION CONTOUR MAP
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	MW-7
		Sample Depth (feet):	7'-9'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Toluene

Concentration at the source (C_{source})=	2.6070	mg/L			
Distance along centerline of the plume coming from the source (X)=	**3.95**	ft	=	120.40	cm
First order degradation constant (λ)=	0.011	/day		if toluene, lambda=0.011/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	12.0396	cm
Transverse dispersivity	Ay=	4.0132	cm
Vertical dispersivity	Az=	0.60198	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	83.19836317	
Sd/(2*SQRT(Az*X))	C=	11.743343	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	1	see F46 & K46 in the linear interpolation section.

Actual B value=	83.19836317	Actual C value=	11.743343
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	1

Solutions

$C_{(x)}$ **0.996** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	83.19836317	11.743343
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.035391912	0.20631256
erf(x)=	1	1

Not using. Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

The Agency is authorized to require this information under Section 4(r) of the Environmental Protection Act (415 ILCS 5/4(r)). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
RBCA Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: R12, R14, R26): R26: Ethylbenzene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: Not Applicable Soil Type: Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☐ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

Result from S18/S28 used in R26? ☒ Yes ☐ No Specify C_{source} from S18/S28 see page 3 mg/L

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT_c	=	70	yr	d	=		cm
AT_n	=		yr	D^{air}	=		cm^2/s
BW	=	70	kg	D^{water}	=		cm^2/s
C_{source}	=	see page 3	mg/L	D_s^{eff}	=		cm^2/s
$C_{(x)}$	=		mg/L	ED	=		yr
$C_{(x)}/C_{source}$	=		unitless	EF	=		d/yr

Incident #: 923441 Chemical: Ethylbenzene Tier 2 Land Use: Not Applicable

Symbol			Unit
erf	=		unitless
f_{oc}	=		g/g
GW_{comp}	=		mg/L
GW_{source}	=		mg/L
H'	=		cm^3_{water}/cm^3_{air}
i	=	0.0273 0.01426 used	cm/cm
I	=	30	cm/yr
IR_{air}	=	20	m^3/d
IR_{soil}	=		mg/d
IR_w	=		L/d
K	=	31.683	(cm/d) for R15, R19, R26; cm/yr for R24
K_{oc}	=		cm^3/g or L/kg
k_s (non-ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (inorganics)	=		cm^3_{water}/g_{soil}
L_s	=	100	cm
LF_{sw}	=		$(mg/L_{water})/(mg/kg_{soil})$
M	=	0.5	mg/cm^2
Pe	=	$6.9 \cdot 10^{-14}$	g/cm^2-s
RAF_d	=	0.5	unitless

Symbol			Unit
RAF_d (PNAs)	=	0.05	unitless
RAF_d (inorganics)	=	0	unitless
RAF_0	=	1.0	unitless
$RBSL_{air}$ (carcinogenic)	=		$\mu g/m^3$
$RBSL_{air}$ (noncarcinogenic)	=		$\mu g/m^3$
RfD_i	=		mg/kg-d
RfD_o	=		mg/kg-d
SA	=	3,160	cm^2/d
S_d	=	200	cm
S_w	=	7,315.2 < 240', but not sensitive	cm
SF_i	=		$(mg/kg\text{-}d)^{-1}$
SF_o	=		$(mg/kg\text{-}d)^{-1}$
THQ	=	1	unitless
TR	=		unitless
U	=		cm/d
U_{air}	=	225	cm/s
U_{gw}	=		cm/yr
VF_p	=		kg/m^3
VF_{samb}	=		$(mg/m^3_{air})/mg/kg_{soil})$ or kg/m^3
VF_{ss}	=		kg/m^3

Incident #: 923441 Chemical: Ethylbenzene Title 35 Ref.: (2017-084) R. 364 Land Use: Not Applicable

Symbol			Unit
W	=		cm
w	=		g_{water}/g_{soil}
X	=	see below	cm
α_x	=		cm
α_y	=		cm
α_z	=		cm
δ_{air}	=	200	cm
δ_{gw}	=	200	cm

Symbol			Unit
θ_{as}	=		cm^3_{air}/cm^3_{soil}
θ_{ws}	=		cm^3_{water}/cm^3_{soil}
θ_T	=	0.36	cm^3/cm^3_{soil}
λ	=	0.003	d^{-1}
π	=	3.1416	
ρ_b	=		g/cm^3
ρ_w	=	1	g/cm^3
τ	=	$9.46 \cdot 10^8$	s

Equation		Result	Unit(s)
R1	=		mg/kg
R2	=		mg/kg
R7	=		mg/kg
R8	=		mg/kg
R12	=		mg/kg
R25	=		mg/L

C_{source} Values: (mg/L)

Groundwater
MW-4: 2.24
MW-7: 3.68
MW-13: 2.53

SB-15(5'-6')

Soil Leaching
SB-31 4'-6': 4.0
SB-6 4'-8': 0.9290 Not using
SB-17 6'-7': 2.1180
MW-7 7'-9': 1.4990 Not using

Maximum Predicted Extent of Groundwater Impact (X):
(feet from point source)

Groundwater
MW-4: 19'
MW-7: 26'
MW-13: 20'

Soil Leaching
SB-31 4'-6': 27.8'
SB-6 4'-8': 4' Not using
SB-17 6'-7': 17'
MW-7 7'-9': 11.5' Not using

MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Company Peoria, Illinois	**Sample Location:**	MW-4
		Sample Date:	04/23/2015
LUST Incident Number(s):	923441		
Exposure Pathway:	Groundwater Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Ethylbenzene

Concentration at the source (C_{source})=	2.24	mg/L			
Distance along centerline of the plume coming from the source (X)=	19.00	ft	=	579.12	cm
First order degradation constant (λ)=	0.003	/day		if ethylbenzene, lambda=0.003/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	57.912	cm
Transverse dispersivity	Ay=	19.304	cm
Vertical dispersivity	Az=	2.8956	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	17.29650182	
Sd/(2*SQRT(Az*X))	C=	2.441379202	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.999444758	see F46 & K46 in the linear interpolation section.

Actual B value=	17.29650182	Actual C value=	2.441379202
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.999444758

Solutions

$C_{(x)}$ = **0.7** mg/l

C_{source} = **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	17.29650182	2.441379202
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.15001095	0.555625287
erf(x)=	1	0.999444758

DISSOLVED HYDROCARBON CONCENTRATION ... GEOMETRIC
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Company Peoria, Illinois	**Sample Location:**	MW-7
		Sample Date:	04/23/2015
LUST Incident Number(s):	923441		
Exposure Pathway:	Groundwater Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Ethylbenzene

Concentration at the source (C_{source})=	3.6800 mg/L			
Distance along centerline of the plume coming from the source (X)=	**26.00** ft	=	792.48 cm	
First order degradation constant (λ)=	0.003 /day		if ethylbenzene, lambda=0.003/day	
Aquifer hydraulic conductivity (K)=	3.667E-04 cm/sec	=	31.683 cm/day	
Hydraulic gradient (i)=	0.0143 m/m			
Total soil porosity (θ_T)=	0.36 cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240 ft	=	7,315.20 cm	
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56 ft	=	200 cm	(assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	79.248	cm
Transverse dispersivity	Ay=	26.416	cm
Vertical dispersivity	Az=	3.9624	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	12.63975133	
Sd/(2*SQRT(Az*X))	C=	1.784084802	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.988366666	see F46 & K46 in the linear interpolation section.

Actual B value=	12.63975133	Actual C value=	1.784084802
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.988366666

Solutions

$C_{(x)}$ **0.7** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26

Maximum error in computation = 1.5 x 10^-7

x=	12.63975133	1.784084802
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.194527171	0.631133711
erf(x)=	1	0.988366666

MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Company Peoria, Illinois	**Sample Location:**	MW-13
		Sample Date:	04/23/2015
LUST Incident Number(s):	923441		
Exposure Pathway:	Groundwater Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Ethylbenzene

Concentration at the source (C_{source})=	2.5300	mg/L			
Distance along centerline of the plume coming from the source (X)=	**20.00**	ft	=	609.60	cm
First order degradation constant (λ)=	0.003	/day		if ethylbenzene, lambda=0.003/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	60.96	cm
Transverse dispersivity	Ay=	20.32	cm
Vertical dispersivity	Az=	3.048	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	16.43167673	
Sd/(2*SQRT(Az*X))	C=	2.319310242	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.99896181	see F46 & K46 in the linear interpolation section.

Actual B value=	16.43167673	Actual C value=	2.319310242
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.99896181

Solutions

$C_{(x)}$ = **0.69527** mg/l

C_{source} = **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	16.43167673	2.319310242
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.156669309	0.568251108
erf(x)=	1	0.99896181

DISSOLVED HYDROCARBON CONCENTRATION ALONG CENTERLINE
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-31
		Sample Depth (feet):	4'-6'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Ethylbenzene

Concentration at the source (C_{source})=	4.0000 mg/L			
Distance along centerline of the plume coming from the source (X)=	**27.80** ft	=	847.34 cm	
First order degradation constant (λ)=	0.003 /day		if ethylbenzene, lambda=0.003/day	
Aquifer hydraulic conductivity (K)=	3.667E-04 cm/sec	=	31.683 cm/day	
Hydraulic gradient (i)=	0.0143 m/m			
Total soil porosity (θ_T)=	0.36 cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240 ft	=	7,315.20 cm	
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56 ft	=	200 cm	(assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	84.7344	cm
Transverse dispersivity	Ay=	28.2448	cm
Vertical dispersivity	Az=	4.23672	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	11.82135016	
Sd/(2*SQRT(Az*X))	C=	1.66856852	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.981710915	see F46 & K46 in the linear interpolation section.

Actual B value=	11.82135016	Actual C value=	1.66856852
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.981710915

Solutions

$C_{(x)}$ **0.698** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	11.82135016	1.66856852
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.205230542	0.646576167
erf(x)=	1	0.981710915

MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-9
		Sample Depth (feet):	4'-8'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Ethylbenzene

Concentration at the source (C_{source})=	0.9290 mg/L			
Distance along centerline of the plume coming from the source (X)=	4.00 ft	=	121.92 cm	
First order degradation constant (λ)=	0.003 /day			if ethylbenzene, lambda=0.003/day
Aquifer hydraulic conductivity (K)=	3.667E-04 cm/sec	=	31.683 cm/day	
Hydraulic gradient (i)=	0.0143 m/m			
Total soil porosity (θ_T)=	0.36 cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240 ft	=	7,315.20 cm	
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56 ft	=	200 cm	(assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	12.192	cm
Transverse dispersivity	Ay=	4.064	cm
Vertical dispersivity	Az=	0.6096	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	82.15838363	
Sd/(2*SQRT(Az*X))	C=	11.59655121	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	1	see F46 & K46 in the linear interpolation section.

Actual B value=	82.15838363	Actual C value=	11.59655121
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	1

Solutions

$C_{(x)}$ **0.700** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	82.15838363	11.59655121
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.035823862	0.208379916
erf(x)=	1	1

Not using. Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-17
		Sample Depth (feet):	6'-7'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Ethylbenzene

Concentration at the source (C_{source})=	2.1180	mg/L			
Distance along centerline of the plume coming from the source (X)=	**17.00**	ft	=	518.16	cm
First order degradation constant (λ)=	0.003	/day		if ethylbenzene, lambda=0.003/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	51.816	cm
Transverse dispersivity	Ay=	17.272	cm
Vertical dispersivity	Az=	2.5908	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	19.33138438	
Sd/(2*SQRT(Az*X))	C=	2.728600285	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.999886023	see F46 & K46 in the linear interpolation section.

Actual B value=	19.33138438	Actual C value=	2.728600285
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.999886023

Solutions

$C_{(x)}$ **0.695** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26

Maximum error in computation = 1.5 x 10^-7

x=	19.33138438	2.728600285
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.13637375	0.528020694
erf(x)=	1	0.999886023

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	MW-7
		Sample Depth (feet):	7'-9'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Ethylbenzene

Concentration at the source (C_{source})=	1.4990	mg/L		
Distance along centerline of the plume coming from the source (X)=	**11.50**	ft =	350.52	cm
First order degradation constant (λ)=	0.003	/day	if ethylbenzene, lambda=0.003/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec =	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m		
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}		
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft =	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft =	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	35.052	cm
Transverse dispersivity	Ay=	11.684	cm
Vertical dispersivity	Az=	1.7526	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	28.57682909	
Sd/(2*SQRT(Az*X))	C=	4.03358303	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.999999988	see F46 & K46 in the linear interpolation section.

Actual B value=	28.57682909	Actual C value=	4.03358303
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.999999988

Solutions

$C_{(x)}$ **0.689** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26

Maximum error in computation = 1.5 x 10^-7

x=	28.57682909	4.03358303
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.096510984	0.43078086
erf(x)=	1	0.999999988

Not using. Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
RBCA Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: R12, R14, R26): R26: Total Xylenes

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: Not Applicable Soil Type: Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☐ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

Result from S18/S28 used in R26? ☒ Yes ☐ No Specify C_{source} from S18/S28 see page 3 mg/L

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT_c	=	70	yr	d	=		cm
AT_n	=		yr	D^{air}	=		cm^2/s
BW	=	70	kg	D^{water}	=		cm^2/s
C_{source}	=	see page 3	mg/L	D_s^{eff}	=		cm^2/s
$C_{(x)}$	=		mg/L	ED	=		yr
$C_{(x)}/C_{source}$	=		unitless	EF	=		d/yr

Incident #: 923441 Chemical: Total Xylenes Tier 2 Land Use: Not Applicable

Symbol			Unit
erf	=		unitless
f_{oc}	=		g/g
GW_{comp}	=		mg/L
GW_{source}	=		mg/L
H'	=		cm^3_{water}/cm^3_{air}
i	=	0.0273 (0.01426 used)	cm/cm
I	=	30	cm/yr
IR_{air}	=	20	m^3/d
IR_{soil}	=		mg/d
IR_w	=		L/d
K	=	31.683	cm/d for R15, R19, R26; cm/yr for R24
K_{oc}	=		cm^3/g or L/kg
k_s (non-ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (inorganics)	=		cm^3_{water}/g_{soil}
L_s	=	100	cm
LF_{sw}	=		$(mg/L_{water})/(mg/kg_{soil})$
M	=	0.5	mg/cm^2
Pe	=	$6.9 \cdot 10^{-14}$	g/cm^2-s
RAF_d	=	0.5	unitless

Symbol			Unit
RAF_d (PNAs)	=	0.05	unitless
RAF_d (inorganics)	=	0	unitless
RAF_o	=	1.0	unitless
$RBSL_{air}$ (carcinogenic)	=		$\mu g/m^3$
$RBSL_{air}$ (noncarcinogenic)	=		$\mu g/m^3$
RfD_i	=		mg/kg-d
RfD_o	=		mg/kg-d
SA	=	3,160	cm^2/d
S_d	=	200	cm
S_w	=	7,315.2 (< 240', but not sensitive)	cm
SF_i	=		$(mg/kg\text{-}d)^{-1}$
SF_o	=		$(mg/kg\text{-}d)^{-1}$
THQ	=	1	unitless
TR	=		unitless
U	=		cm/d
U_{air}	=	225	cm/s
U_{gw}	=		cm/yr
VF_p	=		kg/m^3
VF_{samb}	=		$(mg/m^3_{air})/mg/kg_{soil})$ or kg/m^3
VF_{ss}	=		kg/m^3

Incident #: 923441 Chemical: Total Xylenes Land Use: Not Applicable

Symbol			Unit
W	=		cm
w	=		g_{water}/g_{soil}
X	=	see below	cm
α_x	=		cm
α_y	=		cm
α_z	=		cm
δ_{air}	=	200	cm
δ_{gw}	=	200	cm

Symbol			Unit
θ_{as}	=		cm^3_{air}/cm^3_{soil}
θ_{ws}	=		cm^3_{water}/cm^3_{soil}
θ_T	=	0.36	cm^3/cm^3_{soil}
λ	=	0.0019	d^{-1}
π	=	3.1416	
ρ_b	=		g/cm^3
ρ_w	=	1	g/cm^3
τ	=	$9.46 \cdot 10^8$	s

Equation		Result	Unit(s)
R1	=		mg/kg
R2	=		mg/kg
R7	=		mg/kg
R8	=		mg/kg
R12	=		mg/kg
R25	=		mg/L

C_{source} Values: (mg/L)

Groundwater
MW-7: 16.7
MW-13: 10.2

Soil Leaching
SB-31 4'-6': 19.3910

Maximum Predicted Extent of Groundwater Impact (X):
(feet from point source)

Groundwater
MW-7: 11.8'
MW-13: 0.5'

Soil Leaching
SB-31 4'-6': 15'.5

DISSOLVED PETROLEUM HYDROCARBON CONCENTRATION CONTOUR
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Company Peoria, Illinois	**Sample Location:**	MW-7
		Sample Date:	04/23/2015
LUST Incident Number(s):	923441		
Exposure Pathway:	Groundwater Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Total Xylenes

Concentration at the source (C_{source})=	16.7000	mg/L		
Distance along centerline of the plume coming from the source (X)=	**11.80**	ft =	359.66	cm
First order degradation constant (λ)=	0.0019	/day	if total xylenes, lambda=0.0019/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec =	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m		
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}		
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft =	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft =	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	35.9664	cm
Transverse dispersivity	Ay=	11.9888	cm
Vertical dispersivity	Az=	1.79832	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	27.85029953	
Sd/(2*SQRT(Az*X))	C=	3.931034309	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.999999973	see F46 & K46 in the linear interpolation section.

Actual B value=	27.85029953	Actual C value=	3.931034309
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.999999973

Solutions

$C_{(x)}$ = **10.0** mg/l

C_{source} = **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	27.85029953	3.931034309
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.098779966	0.437106523
erf(x)=	1	0.999999973

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION ALONG CENTERLINE

MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Company Peoria, Illinois	**Sample Location:**	MW-13
		Sample Date:	04/23/2015
LUST Incident Number(s):	923441		
Exposure Pathway:	Groundwater Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Total Xylenes

Concentration at the source (C_{source})=	10.2000	mg/L			
Distance along centerline of the plume coming from the source (X)=	**0.50**	ft	=	15.24	cm
First order degradation constant (λ)=	0.0019	/day		if total xylenes, lambda=0.0019/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	1.524	cm
Transverse dispersivity	Ay=	0.508	cm
Vertical dispersivity	Az=	0.0762	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	657.267069	
Sd/(2*SQRT(Az*X))	C=	92.77240969	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	1	see F46 & K46 in the linear interpolation section.

Actual B value=	657.267069	Actual C value=	92.77240969
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	1

Solutions

$C_{(x)}$ **9.9679** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26

Maximum error in computation = 1.5 x 10^-7

x=	657.267069	92.77240969
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.004622891	0.031855843
erf(x)=	1	1

MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-31
		Sample Depth (feet):	4'-6'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Total Xylenes

Concentration at the source (C_{source})=	19.3910	mg/L		
Distance along centerline of the plume coming from the source (X)=	**15.50**	ft	= 472.44	cm
First order degradation constant (λ)=	0.0019	/day	if total xylenes, lambda=0.0019/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	= 31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m		
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}		
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	= 7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	= 200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	47.244	cm
Transverse dispersivity	Ay=	15.748	cm
Vertical dispersivity	Az=	2.3622	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	21.20216352	
Sd/(2*SQRT(Az*X))	C=	2.992658377	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.999976849	see F46 & K46 in the linear interpolation section.

Actual B value=	21.20216352	Actual C value=	2.992658377
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.999976849

Solutions

$C_{(x)}$ **9.919** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	21.20216352	2.992658377
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.125855185	0.504956591
erf(x)=	1	0.999976849

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

The Agency is authorized to require this information under Illinois Section 4(d) Title XVI of the Environmental Protection Act (415 ILCS 5/4(d)). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/57.17). This form has been approved by the Forms Management Center.

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
RBCA Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: R12, R14, R26): R26: Naphthalene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: Not Applicable Soil Type: Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☐ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

Result from S18/S28 used in R26? ☒ Yes ☐ No Specify C_{source} from S18/S28 see page 3 mg/L

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT_c	=	70	yr	d	=		cm
AT_n	=		yr	D^{air}	=		cm^2/s
BW	=	70	kg	D^{water}	=		cm^2/s
C_{source}	=	see page 3	mg/L	D_s^{eff}	=		cm^2/s
$C_{(x)}$	=		mg/L	ED	=		yr
$C_{(x)}/C_{source}$	=		unitless	EF	=		d/yr

Incident #: 923441 Chemical: Naphthalene Title/Land Use: Not Applicable

Symbol			Unit
erf	=		unitless
f_{oc}	=		g/g
GW_{comp}	=		mg/L
GW_{source}	=		mg/L
H'	=		cm^3_{water}/cm^3_{air}
i	=	0.0273 (0.01426 used)	cm/cm
I	=	30	cm/yr
IR_{air}	=	20	m^3/d
IR_{soil}	=		mg/d
IR_w	=		L/d
K	=	31.683	cm/d for R15, R19, R26; cm/yr for R24
K_{oc}	=		cm^3/g or L/kg
k_s (non-ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (inorganics)	=		cm^3_{water}/g_{soil}
L_s	=	100	cm
LF_{sw}	=		$(mg/L_{water})/(mg/kg_{soil})$
M	=	0.5	mg/cm^2
Pe	=	$6.9 \cdot 10^{-14}$	g/cm^2-s
RAF_d	=	0.5	unitless

Symbol			Unit
RAF_d (PNAs)	=	0.05	unitless
RAF_d (inorganics)	=	0	unitless
RAF_0	=	1.0	unitless
$RBSL_{air}$ (carcinogenic)	=		$\mu g/m^3$
$RBSL_{air}$ (noncarcinogenic)	=		$\mu g/m^3$
RfD_i	=		mg/kg-d
RfD_o	=		mg/kg-d
SA	=	3,160	cm^2/d
S_d	=	200	cm
S_w	=	7,315.2 (< 240', but not sensitive)	cm
SF_i	=		$(mg/kg-d)^{-1}$
SF_o	=		$(mg/kg-d)^{-1}$
THQ	=	1	unitless
TR	=		unitless
U	=		cm/d
U_{air}	=	225	cm/s
U_{gw}	=		cm/yr
VF_p	=		kg/m^3
VF_{samb}	=		$(mg/m^3_{air})/mg/kg_{soil})$ or kg/m^3
VF_{ss}	=		kg/m^3

Incident #: 923441 Chemical: Naphthalene Title 35: (2017.084) R. 380 Land Use: Not Applicable

Symbol			Unit
W	=		cm
w	=		g_{water}/g_{soil}
X	=	see below	cm
α_x	=		cm
α_y	=		cm
α_z	=		cm
δ_{air}	=	200	cm
δ_{gw}	=	200	cm

Symbol			Unit
θ_{as}	=		cm^3_{air}/cm^3_{soil}
θ_{ws}	=		cm^3_{water}/cm^3_{soil}
θ_T	=	0.36	cm^3/cm^3_{soil}
λ	=	0.0027	d^{-1}
π	=	3.1416	
ρ_b	=		g/cm^3
ρ_w	=	1	g/cm^3
τ	=	$9.46 \cdot 10^8$	s

Equation		Result	Unit(s)
R1	=		mg/kg
R2	=		mg/kg
R7	=		mg/kg
R8	=		mg/kg
R12	=		mg/kg
R25	=		mg/L

Csource Values: (mg/L)

MW-4: 0.229

Groundwater
MW-7: 0.472
MW-13: 0.177

Soil Leaching
SB-31 4'-6': 0.300
SB-4 4'-6': 0.1790 Not using
SB-17 6'-7': 0.7380
MW-7 7'-9': 0.4074 Not using

Maximum Predicted Extent of Groundwater Impact (X):
(feet from point source)

Groundwater
MW-7: 21'
MW-13: 4'

Soil Leaching
SB-31 4'-6': 12.5'
SB-4 4'-6': 3.80' Not using
SB-17 6'-7': 29.10'
MW-7 7'-9': 18' Not using

TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Company Peoria, Illinois	**Sample Location:**	MW-7
		Sample Date:	04/23/2015
LUST Incident Number(s):	923441		
Exposure Pathway:	Groundwater Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Naphthalene

Concentration at the source (C_{source})=	0.4720	mg/L		
Distance along centerline of the plume coming from the source (X)=	21.00	ft =	640.08	cm
First order degradation constant (λ)=	0.0027	/day	if naphthalene, lambda=0.0027/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec =	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m		
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}		
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft =	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft =	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	64.008	cm
Transverse dispersivity	Ay=	21.336	cm
Vertical dispersivity	Az=	3.2004	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	15.64921593	
Sd/(2*SQRT(Az*X))	C=	2.208866897	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.998214605	see F46 & K46 in the linear interpolation section.

Actual B value=	15.64921593	Actual C value=	2.208866897
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.998214605

Solutions

$C_{(x)}$ = **0.13818** mg/l

C_{source} = **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	15.64921593	2.208866897
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.163224164	0.580179287
erf(x)=	1	0.998214605

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Company Peoria, Illinois	**Sample Location:**	MW-13
		Sample Date:	04/23/2015
LUST Incident Number(s):	923441		
Exposure Pathway:	Groundwater Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Naphthalene

Concentration at the source (C_{source})=	0.1770	mg/L		
Distance along centerline of the plume coming from the source (X)=	**4.00**	ft =	121.92	cm
First order degradation constant (λ)=	0.0027	/day	if naphthalene, lambda=0.0027/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec =	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m		
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}		
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft =	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft =	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	12.192	cm
Transverse dispersivity	Ay=	4.064	cm
Vertical dispersivity	Az=	0.6096	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	82.15838363	
Sd/(2*SQRT(Az*X))	C=	11.59655121	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	1	see F46 & K46 in the linear interpolation section.

Actual B value=	82.15838363	Actual C value=	11.59655121
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	1

Solutions

$C_{(x)}$ = **0.13706** mg/l

C_{source} = **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	82.15838363	11.59655121
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.035823862	0.208379916
erf(x)=	1	1

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATIONS
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-31
		Sample Depth (feet):	4'-6'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Naphthalene

Concentration at the source (C_{source})=	0.3000	mg/L			
Distance along centerline of the plume coming from the source (X)=	**12.50**	ft	=	381.00	cm
First order degradation constant (λ)=	0.0027	/day		if naphthalene, lambda=0.0027/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	38.1	cm
Transverse dispersivity	Ay=	12.7	cm
Vertical dispersivity	Az=	1.905	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	26.29068276	
Sd/(2*SQRT(Az*X))	C=	3.710896388	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.999999846	see F46 & K46 in the linear interpolation section.

Actual B value=	26.29068276	Actual C value=	3.710896388
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.999999846

Solutions

$C_{(x)}$ = **0.140** mg/l

C_{source} = **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	26.29068276	3.710896388
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.104030195	0.451333472
erf(x)=	1	0.999999846

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION ALONG CENTERLINE
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-4
		Sample Depth (feet):	4'-6'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Naphthalene

Concentration at the source (C_{source})=	0.1790	mg/L			
Distance along centerline of the plume coming from the source (X)=	**3.80**	ft	=	115.82	cm
First order degradation constant (λ)=	0.0027	/day		if naphthalene, lambda=0.0027/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	11.5824	cm
Transverse dispersivity	Ay=	3.8608	cm
Vertical dispersivity	Az=	0.57912	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	86.48250908	
Sd/(2*SQRT(Az*X))	C=	12.20689601	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	1	see F46 & K46 in the linear interpolation section.

Actual B value=	86.48250908	Actual C value=	12.20689601
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	1

Solutions

$C_{(x)}$ **0.140** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	86.48250908	12.20689601
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.034093737	0.200045191
erf(x)=	1	1

Not using. Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONTAMINATION ZONE
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING
RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	SB-17
		Sample Depth (feet):	6'-7'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Naphthalene

Concentration at the source (C_{source})=	0.7380	mg/L			
Distance along centerline of the plume coming from the source (X)=	**29.10**	ft	=	886.97	cm
First order degradation constant (λ)=	0.0027	/day		if naphthalene, lambda=0.0027/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	88.6968	cm
Transverse dispersivity	Ay=	29.5656	cm
Vertical dispersivity	Az=	4.43484	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	11.29324861	
Sd/(2*SQRT(Az*X))	C=	1.594027658	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.975822494	see F46 & K46 in the linear interpolation section.

Actual B value=	11.29324861	Actual C value=	1.594027658
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.975822494

Solutions

$C_{(x)}$ **0.140** mg/l

C_{source} **0.00** mg/l

Computation of erf(x)

Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	11.29324861	1.594027658
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.212785528	0.656948526
erf(x)=	1	0.975822494

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

DISSOLVED HYDROCARBON CONCENTRATION AT THE
MAXIMUM PREDICTED EXTENT OF GROUNDWATER IMPACT MODELING

RBCA EQUATION R26

Site Details		Sample Details	
Site Name & Location:	Illico Independent Oil Co. Peoria, Illinois	**Sample Location:**	MW-7
		Sample Depth (feet):	7'-9'
LUST Incident Number(s):	923441		
Exposure Pathway:	Soil Component of Groundwater Ingestion		
Groundwater Classification:	Class I	**Analyte:**	Naphthalene

Concentration at the source (C_{source})=	0.4074	mg/L			
Distance along centerline of the plume coming from the source (X)=	18.00	ft	=	548.64	cm
First order degradation constant (λ)=	0.0027	/day		if naphthalene, lambda=0.0027/day	
Aquifer hydraulic conductivity (K)=	3.667E-04	cm/sec	=	31.683	cm/day
Hydraulic gradient (i)=	0.0143	m/m			
Total soil porosity (θ_T)=	0.36	cm^3/cm^3_{soil}			
Source width perpendicular to GW flow direction in horizontal plane (S_w)=	240	ft	=	7,315.20	cm
Source width perpendicular to GW flow direction in vertical plane (S_d)=	6.56	ft	=	200	cm (assuming complete mixing)

Porosity
Gravel=0.25
Sand=0.32
Silt=0.40
Clay=0.36
Default=0.43

Calculated Parameters — **DO NOT ENTER VALUES HERE!**

Longitudinal dispersivity	Ax=	54.864	cm
Transverse dispersivity	Ay=	18.288	cm
Vertical dispersivity	Az=	2.7432	cm
Specific discharge	U=	1.25499408	cm/day
Sw/(4*SQRT(Ay*X))	B=	18.25741858	
Sd/(2*SQRT(Az*X))	C=	2.57701138	
Error function	erf(B)=	1	To determine error function values,
Error function	erf(C)=	0.999731962	see F46 & K46 in the linear interpolation section.

Actual B value=	18.25741858	Actual C value=	2.57701138
Automatic calculations : Actual erf(B)	1	Actual erf(C)=	0.999731962

Solutions

$C_{(x)}$ = **0.140** mg/l

C_{source} = **0.00** mg/l

Computation of erf(x)

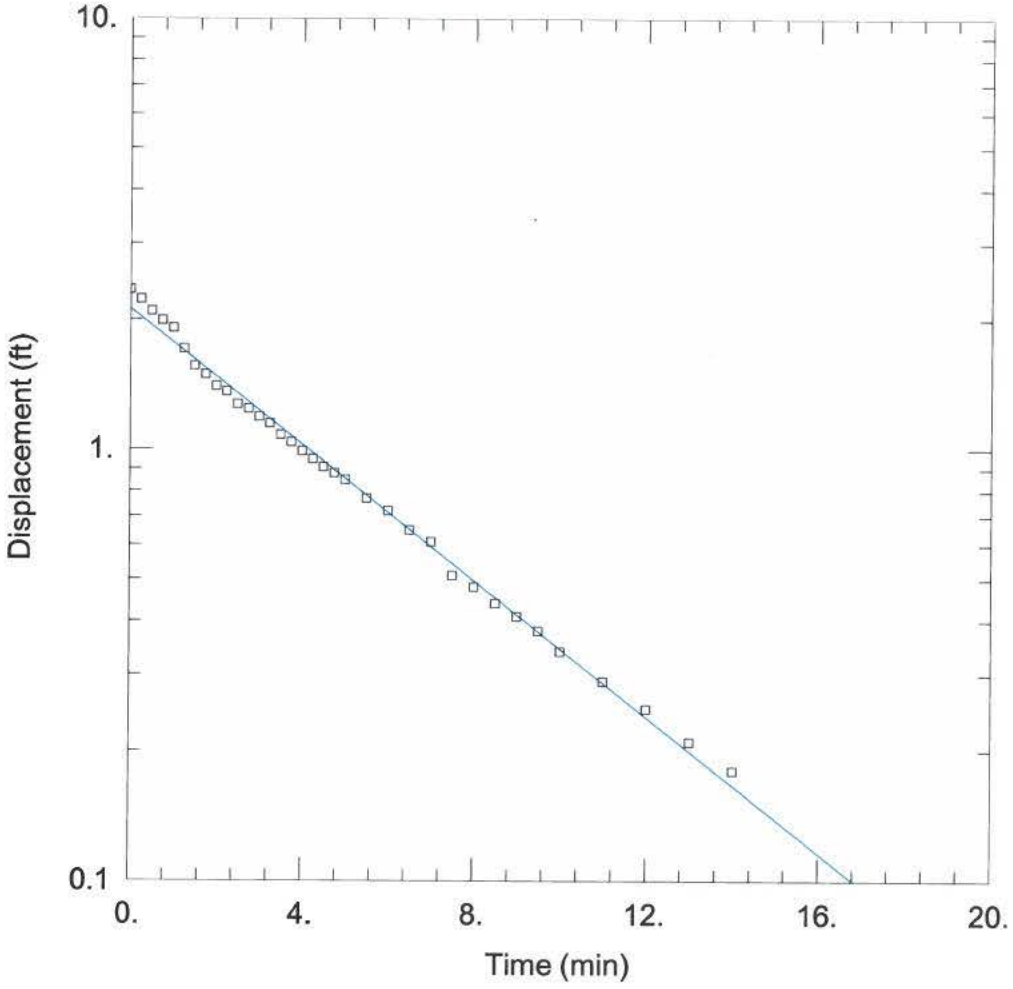
Source: Abramowitz, M. and I. A. Stegun, 1972, Handbook of Mathematical Functions, Dover Publications, New York, page 299, formula 7.1.26
Maximum error in computation = 1.5 x 10^-7

x=	18.25741858	2.57701138
p=	0.3275911	0.3275911
a1=	0.254829592	0.254829592
a2=	-0.284496736	-0.284496736
a3=	1.421413741	1.421413741
a4=	-1.453152027	-1.453152027
a5=	1.061405429	1.061405429
t=	0.143246613	0.542238776
erf(x)=	1	0.999731962

Not using. Therefore, not reviewed.

DOMENICO SOLUTE TRANSPORT MODEL CALCULATION

ATTACHMENT 4



WELL TEST ANALYSIS

Data Set:
Date: 11/25/15 Time: 10:07:43

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico Independent Oil Co.
Project: 1382
Location: Peoria
Test Well: MW-2
Test Date: 11/24/15

AQUIFER DATA

Saturated Thickness: 20. ft Unknown
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 2.35 ft
Total Well Penetration Depth: 10. ft Unconfined - Static Water Column Height
Casing Radius: 0.08333 ft
Static Water Column Height: 8.8 ft (14.8' - 6.0')
Screen Length: 10. ft d=0, L=8.8'
Well Radius: 0.3542 ft (8.25"/2 = 4.125" = 0.34375')
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0003667 cm/sec
y0 = 2.119 ft

AQTESOLV for Windows

Data Set:
Date: 11/25/15
Time: 10:07:19

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico Independent Oil Co.
Project: 1382
Location: Peoria
Test Date: 11/24/15
Test Well: MW-2

AQUIFER DATA

Saturated Thickness: 20. ft Unknown
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-2

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 2.35 ft
Static Water Column Height: 8.8 ft
Casing Radius: 0.08333 ft
Well Radius: 0.3542 ft 0.34375'
Well Skin Radius: 0.3542 ft
Screen Length: 10. ft d=0, L=8.8'
Total Well Penetration Depth: 10. ft 8.8'
Corrected Casing Radius (Bouwer-Rice Method): 0.1912 ft
Gravel Pack Porosity: 0.25

No. of Observations: 35

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.	2.35	4.5	0.91
0.25	2.23	4.75	0.88
0.5	2.09	5.	0.85
0.75	1.99	5.5	0.77
1.	1.91	6.	0.72
1.25	1.71	6.5	0.65
1.5	1.56	7.	0.61
1.75	1.49	7.5	0.51
2.	1.4	8.	0.48
2.25	1.36	8.5	0.44
2.5	1.27	9.	0.41
2.75	1.24	9.5	0.38
3.	1.19	10.	0.34
3.25	1.15	11.	0.29
3.5	1.08	12.	0.25
3.75	1.04	13.	0.21
4.	0.99	14.	0.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
4.25	0.95		

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 2.175

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0003667	cm/sec
y0	2.119	ft

T = K*b = 0.2235 cm²/sec

EPA On-line Tools for Site Assessment Calculation

Hydraulic Gradient -- Magnitude and Direction

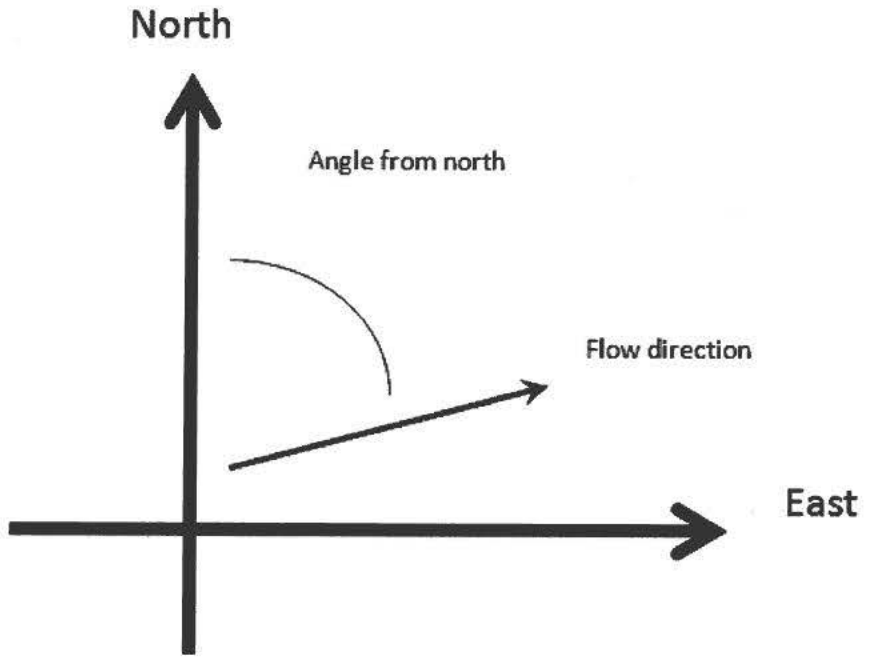
Gradient Calculation from fitting a plane to as many as thirty points

$$a x_1 + b y_1 + c = h_1$$
$$a x_2 + b y_2 + c = h_2$$
$$a x_3 + b y_3 + c = h_3$$
$$\ldots$$
$$a x_{30} + b y_{30} + c = h_{30}$$

where (x_i,y_i) are the coordinates of the well and
h_i is the head

$i = 1,2,3, \ldots , 30$
The coefficients a, b, and c are calculated by a least-squares fitting of the the data to a plane

The gradient is calculated from the square root of $(a^2 + b^2)$ and the angle from the arctangent of a/b or b/a depending on the quadrant



Inputs

Example Data Set 1 | Example Data Set 2 | Calculate | Clear
Save Data | Recall Data | Go Back

Site Name: Illico Independent Oil
Date: 11/24/2015 Current Date
Calculation basis: Head
Coordinates: ft

I.D.	x-coordinate	y-coordinate	head ft
1) MW-2	339.602	311.1162	92.58

2)	MW-3	334.1549	159.0299	94.01
3)	MW-4	248.8599	195.0918	92.10
4)	MW-5	287.8843	403.0015	92.06
5)	MW-9	299.6859	319.2726	92.05
6)	MW-10	307.4868	254.4922	92.98
7)	MW-11	305.055	163.4879	93.65
8)	MW-12	224.3695	253.8544	91.61
9)	MW-13	224.3759	299.2368	91.74
10)	MW-14	276.4118	332.9889	92.55
11)				
12)				
13)				
14)				
15)				
16)				
17)				
18)				
19)				
20)				
21)				
22)				
23)				
24)				
25)				
26)				
27)				
28)				
29)				
30)				

Results

Number of Points Used in Calculation	10
Max. Difference Between Head Values	0.7315
Gradient Magnitude (i)	0.01426
Flow direction as degrees from North (positive y axis)	292.4
Coefficient of Determination (R^2)	0.831

WCMS
Last updated on 9/6/2015

ATTACHMENT 5

Illinois Environmental Protection Agency

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

General Information for the Budget and Billing Forms

LPC #: 1430655263 County: Peoria

City: Peoria Site Name: Illico Independent Oil Co.

Site Address: 3712 University Street

IEMA Incident No. 923441

IEMA Notification Date: 12/02/1992
03

Date this form was prepared: 12/14/2015

This form is being submitted as a (check one, if applicable):

- ☑ Budget Proposal
- ☐ Budget Amendment (Budget amendments must include only the costs over the previous budget.)
- ☐ Billing Package

Please provide the name(s) and date(s) of report(s) documenting the costs requested:

Name(s): Stage 3 P&B SICR

Date(s): 10/6/2015 12/14/2015

This form is being submitted for the site activities indicted below:

35 Ill. Adm. Code 734:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☑ Site Investigation — Stage 1: ☐ Stage 2: ☐ Stage 3: ☑
- ☐ Corrective Action — Actual Costs [ ] [Actual]

35 Ill. Adm. Code 732:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☐ Site Classification
- ☐ Low Priority Corrective Action
- ☐ High Priority Corrective Action

35 Ill. Adm. Code 731:

- ☐ Site Investigation
- ☐ Corrective Action

RECEIVED
DEC 14 2015
IEPA/BOL

General Information for the Budget and Billing Forms

The following address will be used as the mailing address for checks and any final determination letters regarding payment from the Fund.

Pay to the order of: Illico Inc.

Send in care of: Marlin Environmental, Inc.

Address: 3935 Commerce Drive

City: Saint Charles State: Illinois Zip: 60174

Payee is the: Owner ☐ Operator ☐ (Check one or both.)

M President

Signature of the owner or operator of the UST(s) (required)

W-9 must be submitted.
Click here to print off a W-9 Form.

Number of petroleum USTs in Illinois presently owned or operated by the owner or operator; any subsidiary, parent or joint stock company of the owner or operator; and any company owned by any parent, subsidiary or joint stock company of the owner or operator:

Fewer than 101: ☑ 101 or more: ☐

Number of USTs at the site: 5 (Number of USTs includes UST's presently at the site and USTs that have been removed.)

Number of incidents reported to IEMA for this site: 1

Incident Numbers assigned to the site due to releases from USTs: 923441

Please list all tanks that have ever been located at the site and tanks that are presently located at the site.

Product Stored in UST	Size (gallons)	Did UST have a release?	Incident No.	Type of Release Tank Leak / Overfill / Piping Leak
Unleaded Gasoline	12,000	Yes ☑ No ☐	923441	Overfill
Unleaded Gasoline	12,000	Yes ☑ No ☐	923441	Overfill
Unleaded Gasoline	12,000	Yes ☑ No ☐	923441	Overfill
Diesel Fuel	12,000	Yes ☑ No ☐	923441	Overfill
Kerosene	6,000	Yes ☑ No ☐	923441	Overfill
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		
		Yes ☐ No ☐		

Budget Summary

Choose the applicable regulations: ◉ 734 ○ 732

734	Free Product	Stage 1 Site Investigation	Stage 2 Site Investigation	Stage 3 Site Investigation	Corrective Action
Drilling and Monitoring Wells Costs Form				$0.00	
Analytical Costs Form				$109.04	
Remediation and Disposal Costs Form				$0.00	
UST Removal and Abandonment Costs Form				$0.00	
Paving, Demolition, and Well Abandonment Costs Form				$0.00	
Consulting Personnel Costs Form				$15,511.96	
Consultant's Materials Costs Form				$604.80	
Handling Charges Form	Handling charges will be determined at the time a billing package is submitted to the Illinois EPA. The amount of allowable handling charges will be determined in accordance with the Handling Charges Form.				
Total	$0.00	$0.00	$0.00	$16,225.80	$0.00

Analytical Costs Form

Laboratory Analysis	Number of Samples		Cost ($) per Analysis		Total per Parameter
Chemical Analysis					
BETX Soil with MTBE EPA 8260		x	$105.33	=	$0.00
BETX Water with MTBE EPA 8260		x	$100.37	=	$0.00
COD (Chemical Oxygen Demand)		x	$37.17	=	$0.00
Corrosivity		x	$18.59	=	$0.00
Flash Point or Ignitability Analysis EPA 1010		x	$40.88	=	$0.00
Fraction Organic Carbon Content (f_{oc}) ASTM-D 2974-00	1	x	$47.08	=	$47.08
Fat, Oil, & Grease (FOG)		x	$74.34	=	$0.00
LUST Pollutants Soil - analysis must include volatile, base/ neutral, polynuclear aromatics and metals list in Section 732. Appendix B and 734.Appendix B		x	$858.73	=	$0.00
Dissolved Oxygen (DO)		x	$29.74	=	$0.00
Paint Filter (Free Liquids)		x	$17.35	=	$0.00
PCB / Pesticides (combination)		x	$275.09	=	$0.00
PCBs		x	$137.54	=	$0.00
Pesticides		x	$173.48	=	$0.00
pH		x	$17.35	=	$0.00
Phenol		x	$42.13	=	$0.00
Polynuclear Aromatics PNA, or PAH SOIL EPA 8270		x	$188.36	=	$0.00
Polynuclear Aromatics PNA, or PAH WATER EPA 8270		x	$188.36	=	$0.00
Reactivity		x	$84.26	=	$0.00
SVOC - Soil (Semi-Volatile Organic Compounds)		x	$387.85	=	$0.00
SVOC - Water (Semi-Volatile Organic Compounds)		x	$387.85	=	$0.00
TKN (Total Kjeldahl) "nitrogen"		x	$54.52	=	$0.00
TPH (Total Petroleum Hydrocarbons)		x	$151.18	=	$0.00
VOC (Volatile Organic Compounds) - Soil (Non-Aqueous)		x	$216.85	=	$0.00
VOC (Volatile Organic Compounds) - Water		x	$209.42	=	$0.00
Field Blank BTEX		x	$100.37	=	$0.00
Trip Blank BTEX		x	$100.37	=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00
Geo-Technical Analysis					
Soil Bulk Density (ρ_b) ASTM D2937-94		x	$27.26	=	$0.00
Ex-situ Hydraulic Conductivity / Permeability		x	$315.98	=	$0.00
Moisture Content (w) ASTM D2216-92 / D4643-93		x	$14.87	=	$0.00
Porosity		x	$37.17	=	$0.00
Rock Hydraulic Conductivity Ex-situ		x	$433.70	=	$0.00
Sieve / Particle Size Analysis ASTM D422-63 / D1140-54		x	$179.68	=	$0.00
Soil Classification ASTM D2488-90 / D2487-90		x	$84.26	=	$0.00
Soil Particle Density (ps) ASTM D854-92		x	$90.00	=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00

Analytical Costs Form

Metals Analysis					
Soil preparation fee for Metals TCLP Soil(one fee per soil sample)		x	$97.89	=	$0.00
Soil preparation fee for Metals Total Soil(one fee per soil sample)		x	$19.82	=	$0.00
Water preparation fee for Metals Water(one fee per water sample)		x	$13.62	=	$0.00
Arsenic TCLP Soil		x	$19.82	=	$0.00
Arsenic Total Soil		x	$19.82	=	$0.00
Arsenic Water		x	$22.30	=	$0.00
Barium TCLP Soil		x	$12.39	=	$0.00
Barium Total Soil		x	$12.39	=	$0.00
Barium Water		x	$14.87	=	$0.00
Cadmium TCLP Soil		x	$19.82	=	$0.00
Cadmium Total Soil		x	$19.82	=	$0.00
Cadmium Water		x	$22.30	=	$0.00
Chromium TCLP Soil		x	$12.39	=	$0.00
Chromium Total Soil		x	$12.39	=	$0.00
Chromium Water		x	$14.87	=	$0.00
Cyanide TCLP Soil		x	$34.70	=	$0.00
Cyanide Total Soil		x	$42.13	=	$0.00
Cyanide Water		x	$42.13	=	$0.00
Iron TCLP Soil		x	$12.39	=	$0.00
Iron Total Soil		x	$12.39	=	$0.00
Iron Water		x	$14.87	=	$0.00
Lead TCLP Soil		x	$19.82	=	$0.00
Lead Total Soil		x	$19.82	=	$0.00
Lead Water		x	$22.30	=	$0.00
Mercury TCLP Soil		x	$23.54	=	$0.00
Mercury Total Soil		x	$12.39	=	$0.00
Mercury Water		x	$32.22	=	$0.00
Selenium TCLP Soil		x	$19.82	=	$0.00
Selenium Total Soil		x	$19.82	=	$0.00
Selenium Water		x	$18.59	=	$0.00
Silver TCLP Soil		x	$12.39	=	$0.00
Silver Total Soil		x	$12.39	=	$0.00
Silver Water		x	$14.87	=	$0.00
Metals TCLP Soil (a combination of all metals) RCRA		x	$127.63	=	$0.00
Metals Total Soil (a combination of all metals) RCRA		x	$116.47	=	$0.00
Metals Water (a combination of all metals) RCRA		x	$147.45	=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00
Other					
EnCore® Sampler, purge-and-trap sampler, or equivalent sampling device		x	$12.39	=	$0.00
Sample Shipping per sampling event[1]	1	x	$61.96	=	$61.96

[1]A sampling event, at a minimum, is all samples (soil and groundwater) collected in a calendar day

Total Analytical Costs:	**$109.04**

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 · Phone (630) 778-1200 • Fax (630) 778-1233

Invoice

Invoice Number: 125417

Tax I.D. No. 36-3925322

Invoice Date: Dec 3, 2015

Page: 1

Sold To:
MARLIN ENVIRONMENTAL
3935 Commerce Drive
St. Charles, IL 60174

Remit To:
FIRST ENVIRONMENTAL LABORATORIES, INC.
1600 Shore Road Suite D
Naperville, IL 60563

Customer ID: MARLIN01

Customer PO	Payment Terms	Due Date	Sales Rep ID
	Net 240 Days	7/30/16	

Quantity	Item	Description	Unit Price	Extension
		Project ID: Illico Independent Oil Co - 923441		
1.00		FOC	47.08	47.08
1.00		Date Collected 11/24/15		
		First Environmental File ID: 15-6363		
		THANK YOU!		

Project Number 1382
Project Name Illico University
Project Phase Stage 3
Approved by JB
Date Approved 12/8/15

TOTAL AMOUNT DUE **$** **47.08**

Consulting Personnel Costs Form

Employee Name	Personnel Title	Hours	Rate ($)	Total Cost
Remediation Category	**Task**			
Wienhoff	Engineer III	7.75	$123.91	$960.30
Stage 3-Plan	Determine where to drill and sample, setup and consulting, review stage 2 results			
Wolfe/Bettenhausen	Senior Project Manager	8	$123.91	$991.28
Stage 3-Plan	Stage 3 plan design, writing attachments			
Buhlig	Project Manager	20	$111.52	$2,230.40
Stage 3-Plan	Stage 3 plan preparation			
Buhlig	Project Manager	5	$111.52	$557.60
Stage 3-Budget	Stage 3 budget preparation			
Wolfe	Senior Project Manager	5	$123.91	$619.55
Stage 3-Plan	Stage 3 plan and budget review and comment			
Wienhoff	Senior Prof. Engineer	3	$161.09	$483.27
Stage 3-Plan	Stage 3 plan final review and certification			
Renguso	Senior Prof. Geologist	3	$136.31	$408.93
Stage 3-Budget	Stage 3 budget final review and certification			
Czaruk	Senior Draftsperson/CAD	3.25	$74.34	$241.61
Stage 3-Plan	Stage 3 plan drafting, maps and printing			
Eggleston	Senior Admin. Assistant	5	$55.76	$278.80
Stage 3-Plan	Stage 3 plan and budget attachments, copying, binding and submittal			
Eggleston	Senior Admin. Assistant	10	$55.76	$557.60
Stage 3-Field	coordinate off-site access,office time, subcontractor coordination			

Consulting Personnel Costs Form

Employee Name	Personnel Title	Hours	Rate ($)	Total Cost
Remediation Category	**Task**			
Wienhoff	Engineer III	0.5	$123.91	$61.96
Stage 3-Field	Coordinate off-site access			
Sutton	Senior Project Manager	6	$123.91	$743.46
Stage 3-Field	Field prep, travel to and from the site, Hand Auger, Sampling			
Buhlig	Project Manager	6.75	$111.52	$752.76
Stage 3-Field	Field prep, travel to and from the site, Hand Auger, Sampling, SLUG			
Buhlig	Project Manager	30	$111.52	$3,345.60
SICR	Results evaluation, Modeling, report preparation, writing, attachments			
Czaruk	Senior Draftsperson/CAD	5.5	$74.34	$408.87
SICR	Maps, Edits, Updates, Printing			
Wienhoff	Engineer III	3.75	$123.91	$464.66
SICR	Writing, Review and Edits			
Wienhoff	Senior Prof. Engineer	4	$161.09	$644.36
SICR	PE review and certification			
Eggleston	Senior Admin. Assistant	3	$55.76	$167.28
SICR	Printing, Copying, Scanning, Binding and Submittal			
Wolfe	Senior Project Manager	2	$123.91	$247.82
Stage 3-Pay	Reimbursement-management and review			
Altman	Senior Acct. Technician	1	$68.14	$68.14
Stage 3-Pay	Reimbursement-supporting data review and processing			

Consulting Personnel Costs Form

Employee Name	Personnel Title	Hours	Rate ($)	Total Cost
Remediation Category	**Task**			
Eggleston	Senior Acct. Technician	2	$68.14	$136.28
Stage 3-Pay	Reimbursement-supporting data review and processing			
K. Renguso	Senior Acct. Technician	2.25	$68.14	$153.32
Stage 3-Pay	Reimbursement-supporting data review and processing			
LoPiccolo	Senior Acct. Technician	8.5	$68.14	$579.19
Stage 3-Pay	Reimbursement-production, attachments and assembly			
Renguso	Senior Prof. Geologist	3	$136.31	$408.93
Stage 3-Pay	Reimbursement-final review and certification			
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00

Total of Consulting Personnel Costs:	**$15,511.96**

Personnel Stage Work Sheet - Stage 3 Plan & Budget

Company: Marlin Environmental, Inc. | Billing Period: ________ to ________

Job Name: Illico Independent Oil Co. - University (Peoria) | Incident Number: 923441

Employee	Personnel Title	Description	Date	Time In	Time Out	Total Hours
Stage 3 - Plan	*Stage 3 Site Investigation Work Plan*					
Wienhoff	Engineer III	Plan forward for more drilling	7/27/15	12:00	14:00	2.00
Wolfe	Sr. Proj. Manager	Stage 3 design	7/27/15	13:00	14:00	1.00
Wienhoff	Engineer III	Plan forward for more drilling	7/28/15	9:45	10:15	0.50
Wolfe	Sr. Proj. Manager	Stage 3 design	7/28/15	15:15	16:30	1.25
Wolfe	Sr. Proj. Manager	Stage 3 design, data/FOIA review	9/17/15	7:15	9:45	2.50
Buhlig	Project Manager	Review results prep for Stage 3 Plan	9/24/15	7:45	10:00	2.25
Buhlig	Project Manager	Stage 3 Plan	9/24/15	14:00	16:45	2.75
Wolfe	Sr. Proj. Manager	Stage 3 design, writing	9/24/15	9:00	10:00	1.00
Buhlig	Project Manager	Stage 3 Plan	9/25/15	7:45	9:45	2.00
Buhlig	Project Manager	Stage 3 Plan	9/25/15	10:45	12:00	1.25
Buhlig	Project Manager	Stage 3 Plan	9/25/15	12:30	15:30	3.00
Wienhoff	Engineer III	Stage 3 Plan	9/28/15	9:30	11:30	2.00
Wienhoff	Engineer III	Stage 3 Plan	9/28/15	12:00	13:15	1.25
Wolfe	Sr. Proj. Manager	Stage 3 design, writing	9/28/15	9:15	11:00	1.75
Buhlig	Project Manager	Stage 3 Plan	9/29/15	8:00	9:00	1.00
Buhlig	Project Manager	Stage 3 Plan	9/29/15	9:45	10:30	0.75
Buhlig	Project Manager	Stage 3 Plan	9/29/15	12:00	16:45	4.75
Czaruk	Sr. Draft./CAD	Figure Edits	10/1/15	7:00	8:00	1.00
Czaruk	Sr. Draft./CAD	Figure Edits	10/1/15	11:00	11:30	0.50
Czaruk	Sr. Draft./CAD	Figure Edits	10/2/15	13:30	15:00	1.50
Wienhoff	Engineer III	Stage 3 Plan	10/5/15	9:45	11:45	2.00
Wolfe	Sr. Proj. Manager	plan and budget review & comment	10/5/15	12:15	13:00	0.75
Wolfe	Sr. Proj. Manager	plan and budget review & comment	10/5/15	13:30	17:00	3.50
Buhlig	Project Manager	Plan and Budget Edits and printing	10/6/15	7:45	10:00	2.25
Eggleston	Sr. Admin. Assistant	Report Production	10/6/15	10:30	13:30	3.00
Wienhoff	Sr. Prof Engineer	Review & Cert	10/6/15	7:15	10:15	3.00
Wolfe	Sr. Proj. Manager	plan and budget review & comment	10/6/15	8:30	9:15	0.75
Bettenhausen	Sr. Proj. Manager	Site planning	10/8/15	13:00	13:30	0.50
Czaruk	Sr. Draft./CAD	Edits	10/16/15	14:00	14:15	0.25
						0.00
Stage 3 - Budget	*Stage 3 Budget*					
Buhlig	Project Manager	Stage 3 Budget	9/30/15	7:45	9:00	1.25
Buhlig	Project Manager	Stage 3 Budget	9/30/15	15:30	16:45	1.25
Eggleston	Sr. Admin. Assistant	Report Production	10/1/15	7:30	9:30	2.00
Buhlig	Project Manager	Stage 3 Budget	10/2/15	13:00	15:30	2.50
Renguso, Robert	Sr. Prof. Geologist	Stage 3 Budget	10/5/15	16:00	16:30	0.50
Renguso, Robert	Sr. Prof. Geologist	Stage 3 Budget	10/5/15	18:00	20:00	2.00
Renguso, Robert	Sr. Prof. Geologist	Stage 3 Budget	10/6/15	8:00	8:30	0.50
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Company: Marlin Environmental, Inc. Billing Period: ________ to ________

Job Name: Illico Independent Oil Co. - University (Peoria) Incident Number: 923441

Employee	Personnel Title	Description	Date	Time In	Time Out	Total Hours
Stage 3 -Field	*Stage 3 Site Investigation Field Work and Oversight*					
Eggleston	Sr. Admin. Assistant	Off-Site Access	9/28/15	8:30	11:30	3.00
Eggleston	Sr. Admin. Assistant	Off-Site Access	9/29/15	13:00	14:30	1.50
Eggleston	Sr. Admin. Assistant	Subcontractor Coordination	10/5/15	13:30	14:00	0.50
Eggleston	Sr. Admin. Assistant	Off-Site Access	10/7/15	10:30	13:15	2.75
Eggleston	Sr. Admin. Assistant	Off-Site Access	10/9/15	11:45	13:30	1.75
Wienhoff	Engineer III	Deal w/ off-site owner	10/26/15	12:30	13:00	0.50
Eggleston	Sr. Admin. Assistant	Off-Site Access	10/29/15	7:30	8:00	0.50
Buhlig	Project Manager	Stage 3 Field	11/24/15	7:45	12:00	4.25
Buhlig	Project Manager	Stage 3 Field	11/24/15	13:00	15:30	2.50
Sutton	Sr. Proj. Manager	Field Prep, Travel & GW Depths	11/24/15	8:00	12:00	4.00
Sutton	Sr. Proj. Manager	Travel & Sample handling	11/24/15	13:00	15:00	2.00
						0.00
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Personnel Stage Work Sheet - Stage 3 SICR

Company: Marlin Environmental, Inc. Billing Period: ________ to ________

Job Name: Illico Independent Oil Co. - University (Peoria) Incident Number: 923441

Employee	Personnel Title	Description	Date	Time In	Time Out	Total Hours
SICR	*Site Investigation Completion Report*					
Buhlig	Project Manager	SICR	11/19/15	14:45	16:45	2.00
Buhlig	Project Manager	SICR	11/20/15	7:45	10:00	2.25
Buhlig	Project Manager	SICR	11/20/15	10:45	12:00	1.25
Buhlig	Project Manager	SICR	11/20/15	12:45	16:15	3.50
Buhlig	Project Manager	SICR	11/23/15	7:45	12:00	4.25
Buhlig	Project Manager	SICR	11/23/15	12:30	15:30	3.00
Buhlig	Project Manager	SICR	11/23/15	15:45	16:45	1.00
Buhlig	Project Manager	Stage 3 Results	11/24/15	15:30	17:00	1.50
Buhlig	Project Manager	R-26 Modeling	11/25/15	12:30	16:30	4.00
Czaruk	Sr. Draft./CAD	Create / Edit Figures & Printing	11/30/15	7:00	11:30	4.50
Buhlig	Project Manager	R-26 Modeling	12/1/15	7:45	10:00	2.25
Buhlig	Project Manager	SICR	12/1/15	10:00	12:00	2.00
Buhlig	Project Manager	SICR	12/1/15	12:30	15:30	3.00
Czaruk	Sr. Draft./CAD	Figure Edits & Printing	12/1/15	13:30	14:30	1.00
Wienhoff	Engineer III	SICR	12/2/15	15:30	17:00	1.50
Wienhoff	Engineer III	SICR	12/3/15	7:15	9:30	2.25
Wienhoff	Sr. Prof Engineer	PE Review & Cert	12/9/15	12:15	16:15	4.00
Eggleston	Sr. Admin. Assistant	Report Production	12/14/15	8:00	11:00	3.00
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Personnel Stage Work Sheet - Stage 3 - Reimbursement

Company: Marlin Environmental, Inc. Billing Period: ________ to ________

Job Name: Illico Independent Oil Co. - University (Peoria) Incident Number: 923441

Employee	Personnel Title	Description	Date	Time In	Time Out	Total Hours
Stage 3 - Pay	*Stage 3 Application for Payment*					
Altman	Sr. Acct. Technician	reimbursement	10/19/15	14:00	15:00	1.00
Eggleston	Sr. Acct. Technician	reimbursement	9/28/15	11:30	13:30	2.00
Renguso, Kim	Sr. Acct. Technician	reimbursement	11/2/15	11:30	12:15	0.75
Renguso, Kim	Sr. Acct. Technician	reimbursement	11/6/15	17:15	17:30	0.25
Renguso, Kim	Sr. Acct. Technician	reimbursement	11/10/15	15:30	16:00	0.50
Renguso, Kim	Sr. Acct. Technician	reimbursement	11/19/15	16:00	16:45	0.75
LoPiccolo	Sr. Acct. Technician	reimbursement	12/10/15	7:30	15:30	8.00
Wolfe	Sr. Proj. Manager	reimbursement	12/10/15	15:15	17:15	2.00
Renguso, Robert	Sr. Prof. Geologist	reimbursement	12/11/15	7:45	10:45	3.00
LoPiccolo	Sr. Acct. Technician	reimbursement	12/11/15	11:30	12:00	0.50
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Consultant's Materials Costs Form

Employee Name		Time or Amount Used	Rate ($)	Unit	Total Cost
Remediation Category	**Description/Justification**				
Field Vehicle		1	$190.00	Day	$190.00
Stage 3-Field	Hand Auger at Site and SLUG test				
Consultant Latex Gloves		0.5	$34.00	Box	$17.00
Stage 3-Field	Sampling Activities				
Photoionization Detector		1	$192.00	Day	$192.00
Stage 3-Field	Soil screening during hand augering				
Water Level Indicator		1	$87.00	Day	$87.00
Stage 3-Field	Hand Augering and SLUG test				
Bailers		1	$41.00	Each	$41.00
Stage 3-Field	1 SLUG test				
Nylon Rope		15	$0.52	Foot	$7.80
Stage 3-Field	Sampling for SLUG test				
Metal Detector		1	$40.00	Day	$40.00
Stage 3-Field	Locate utilities and buried infrastructure during hand augering				
Hand Auger		1	$30.00	Day	$30.00
Stage 3-Field	Hand auger tool for foc sample colction				
					$0.00
					$0.00
	Total of Consultant Materials Costs:				**$604.80**

Form **W-9**
(Rev. August 2013)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Give Form to the requester. Do not send to the IRS.

Print or type
See Specific Instructions on page 2.

Name (as shown on your income tax return)
ILLICO Incorporated

Business name/disregarded entity name, if different from above

Check appropriate box for federal tax classification:
☐ Individual/sole proprietor ☐ C Corporation ☑ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____

☐ Other (see instructions) ▶

Exemptions (see instructions):
Exempt payee code (if any) _____
Exemption from FATCA reporting code (if any) _____

Address (number, street, and apt. or suite no.)
P.O. Box 280, 2201 Woodlawn Rd., Suite 600

Requester's name and address (optional)

City, state, and ZIP code
Lincoln, IL 62656

List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number
___ - ___ - ____

Employer identification number
3 6 - 2 7 8 6 1 0 1

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. citizen or other U.S. person (defined below), and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 3.

Sign Here Signature of U.S. person ▶ Illico Incorporated Ruth Green, Asst. Secretary Date ▶ 4/22/14

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. The IRS has created a page on IRS.gov for information about Form W-9, at *www.irs.gov/w9*. Information about any future developments affecting Form W-9 (such as legislation enacted after we release it) will be posted on that page.

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, payments made to you in settlement of payment card and third party network transactions, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct.

Note. If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

Women and Minority Business Enterprise Form

Illico (4/02 Rev. 2017-084) R. 409

The Illinois EPA is required to report State and federal funds paid to Women Business Enterprises (WBE) and Minority Business Enterprises (MBE). Therefore, please provide the required information for all Prime Consultants/Contractors and Subcontractors used to perform the work for this billing:

Name of Leaking UST site: Illico Co. Incident No. 923441

This work for this billing was performed from 7/27/2015 to 12/11/2015

Prime Consultant: Marlin Environmental, Inc.

FIRM'S NAME, ADDRESS, AND TELEPHONE NUMBER	IS THIS FIRM A WBE OR MBE?	IF WBE OR MBE, WHAT IS ITS STATE OF ILLINOIS VENDOR NUMBER?	AMOUNT PAID OR DUE THIS BILLING ($)
Marlin Environmental, Inc. 3935 Commerce Drive Saint Charles, IL 60174 (630) 444-1933	No		$16,178.72
First Environmental Labs 1600 Shore Road Naperville, IL	No		$47.08

Billing Total $16,225.80

This Illinois EPA is authorized to request this information under the Environmental Protection Act, 415 ILCS 5/1 et seq. (formerly Ill. Rev. Stat. Ch 111-1/2, 1001 et seq.). Disclosure of this information is required. Failure to properly complete this form in its entirety may result in the delay or denial of any payment requested hereunder. This form has been approved by the Forms Management Center.

Office of the Illinois
State Fire Marshal

General Office
217-785-0969

Divisions
ARSON INVESTIGATION
217-782-6855
BOILER and PRESSURE VESSEL SAFETY
217-782-2696
FIRE PREVENTION
217-785-4714
MANAGEMENT SERVICES
217-782-9889
INFIRS
217-785-1016
PERSONNEL
217-785-1009
PERSONNEL STANDARDS and EDUCATION
217-782-4542
PETROLEUM and CHEMICAL SAFETY
217-785-5878
PUBLIC INFORMATION
217-785-1021

CERTIFIED MAIL - RECEIPT REQUESTED # P 239 741 688

November 15, 1993

David Golwitzer
Illico Independent Oil Company
617 Keokuk
Lincoln, IL 62656

In re: Facility No. 3-007188
IEMA Incident No. 92-3441
Illico Independent Oil Company
3712 N. University St.
Peoria, PEORIA CO., IL

Dear Mr. Golwitzer:

The Reimbursement Eligibility and Deductibility Application, received on 9-20-93 for the above referenced occurrence has been reviewed. The following determinations have been made based upon this review.

It has been determined that you are eligible to seek corrective action costs in excess of $10,000. The costs must be in response to the occurrence referenced above and associated with the following tanks:

Eligible Tanks

Tank #1 - 12,000 gallon gasoline
Tank #2 - 12,000 gallon gasoline
Tank #3 - 12,000 gallon gasoline
Tank #4 - 12,000 gallon diesel
Tank #5 - 6,000 gallon kerosene

This decision constitutes the preliminary determination regarding your deductible. We reserve the right to change the deductible determination should additional information that would change the determination become available.

The Illinois Environmental Protection Agency will send you a packet of Agency billing forms for submitting your request for payment.

An owner or operator is eligible to access the Underground Storage Tank Fund if the eligibility requirements are satisfied:

1. Neither the owner nor the operator is the United States Government;

2. The tank does not contain fuel which is exempt from the Motor Fuel Tax Law;

3. The costs were incurred as a result of a confirmed release of any of the following substances:

   "Fuel", as defined in Section 1.10 of the Motor Fuel Tax Law

   Aviation fuel

   Heating oil

   Kerosene

   Used oil, which has been refined from crude oil used in a motor vehicle, as defined in Section 1.3 of the Motor Fuel Tax Law.

4. The owner or operator registered the tank and paid all fees in accordance with the statutory and regulatory requirements of the Gasoline Storage Act.

5. The owner or operator notified the Illinois Emergency Management Agency of a confirmed release, the costs were incurred after the notification and the costs were a result of a release of a substance listed in this Section. Costs of corrective action or indemnification incurred before providing that notification shall not be eligible for payment.

6. The costs have not already been paid to the owner or operator under a private insurance policy, other written agreement, or court order.

7. The costs were associated with "corrective action".

This constitutes the final decision as it relates to your eligibility and deductibility. An underground storage tank owner or operator may appeal the decision to the Illinois Pollution Control Board (Board), pursuant to Section 57.9 (c)(2). An owner or operator who seeks to appeal the decision shall file a petition for a hearing before the Board within 35 days of the date of mailing of the final decision (35 Illinois Administrative Code 105.102(a)(2)).

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

Dorothy Gunn, Clerk
Illinois Pollution Control Board
State of Illinois Center
100 West Randolph, Suite 11-500
Chicago, Illinois 60601
(312)814-3620

If you have any questions regarding the eligibility or deductibility determinations, please contact Pat Flannigan at (217)785-1020 or (217)785-5878 between 3:00 - 4:00 p.m.

Sincerely,

James I. McCaslin
Director
Division of Petroleum and Chemical Safety

JIM:PF:bc

cc: IEPA
Facility File

#5387

MARLIN Environmental

INVOICE

December 11, 2015

Illico, Inc.
Dave Golwitzer
2201 Woodlawn Road
Suite 600
Lincoln, IL 62656

RE: STAGE 3 HAND AUGERING, SAMPLING, AND SITE INVESTIGATION COMPLETION REPORT WRITING FOR 3712 N. UNIVERSITY STREET IN PEORIA

Invoice No: 1382-121115

ENVIRONMENTAL SERVICES

1. Drilling and Monitoring Well Costs	**$**	**0.00**
2. Analytical Costs	**$**	**109.04**
3. Remediation and Disposal Costs	**$**	**0.00**
4. UST Removal and Abandonment Costs	**$**	**0.00**
5. Paving, Demolition, and Well Abandonment Costs	**$**	**0.00**
6. Consulting Fees - Personnel	**$**	**15,511.96**
7. Consulting Fees – Materials	**$**	**604.80**
8. Handling Charges	**$**	**0.00**
TOTAL	**$**	**16,225.80**

INVOICE PAYABLE UPON RECEIPT OF LUST FUND REIMBURSEMENT

Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form

I hereby certify that I intend to seek payment from the UST Fund for costs incurred while performing corrective action activities for Leaking UST incident 923441. I further certify that the costs set forth in this budget are for necessary activities and are reasonable and accurate to the best of my knowledge and belief. I also certify that the costs included in this budget are not for corrective action in excess of the minimum requirements of 415 ILCS 5/57, no costs are included in this budget that are not described in the corrective action plan, and no costs exceed Subpart H: Maximum Payment Amounts, Appendix D Sample Handling and Analysis amounts, and Appendix E Personnel Titles and Rates of 35 Ill. Adm. Code 732 or 734. I further certify that costs ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 732.606 or 734.630 are not included in the budget proposal or amendment. Such ineligible costs include but are not limited to:

Costs associated with ineligible tanks.
Costs associated with site restoration (e.g., pump islands, canopies).
Costs associated with utility replacement (e.g., sewers, electrical, telephone, etc.).
Costs incurred prior to IEMA notification.
Costs associated with planned tank pulls.
Legal fees or costs.
Costs incurred prior to July 28, 1989.
Costs associated with installation of new USTs or the repair of existing USTs.

Owner/Operator: Illico Co.

Authorized Representative: David Golwitzer Title: President

Signature: [signature] Date: 12/7/15

Subscribed and sworn to before me the 7th day of December, 2015

[signature] (Notary Public) Seal: OFFICIAL SEAL JEFF WIENHOFF Notary Public - State of Illinois My Commission Expires 4/29/2018

In addition, I certify under penalty of law that all activities that are the subject of this plan, budget, or report were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan, budget, or report and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in the plan, budget, or report has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 732 or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

RECEIVED
DEC 14 2015
IEPA/BOL

L.P.E./L.P.G. Robert E. Renguso L.P.E./L.P.G. Seal: LICENSED PROFESSIONAL GEOLOGIST ROBERT ELLIOTT RENGUSO 196-000350 ILLINOIS

L.P.E./L.P.G. Signature: [signature] Date: 12/11/15

Subscribed and sworn to before me the 11th day of December, 2015

[signature] (Notary Public) Seal: D. EGGLESTON OFFICIAL SEAL Notary Public - State of Illinois My Commission Expires December 08, 2017

The Illinois EPA is authorized to require this information under 415 ILCS 5/1. Disclosure of this information is required. Failure to do so may result in the delay or denial of any budget or payment requested hereunder.

ATTACHMENT 6

Off-Site Access Affidavit

- It has been determined that obtaining an Environmental Land Use Control between Illico Oil Co. and Virginia McNear was not an attainable goal.
- A request was sent to Virginia McNear on October 19, 2015 via certified mail requesting access to their property to advance soil borings and monitoring wells.
- The recipient of the correspondence was notified of all the required information located within Ill. Adm. Code 734 for off-site access.
- The recipient did not respond to the access request.
- A copy of this correspondence is attached.

I affirm that the above information is, to the best of my knowledge and belief, true, accurate and complete.

Owner / Operator: Illico Oil Co.

Authorized Representative: David Golwitzer Title: President

Signature: [signature] Date: 12/7/15

Subscribed and Sworn to before me the 7th day of December 2015

[signature] Seal:

OFFICIAL SEAL
JEFF WIENHOFF
Notary Public - State of Illinois
My Commission Expires 4/29/2018

MARLIN Environmental

October 19, 2015

CERTIFIED MAIL

7011 2000 0001 6011 8156

Ms. McNear
4307 N Grandview Drive
Peoria Heights, Illinois 61616

Re: **Property Access Request**
For 3721 North University Street
West of Service Station Located at
3712 North University Street
Peoria, Illinois
LUST Incident No. 923441

To Whom It May Concern:

On behalf of Illico Oil Company, owner of the underground storage tanks at the service station located to the east of your property 3721 North University Street, Peoria, Illinois, Marlin Environmental, Inc. (Marlin) respectfully requests your approval to allow access to this property as part of an environmental response action being conducted at the service station property located at 3712 North University Street, Peoria, Illinois. The environmental response action is being performed to investigate the release of petroleum from formerly active underground storage tanks (USTs) located on the above-referenced property. The response action, to date, consists of the investigation of the degree and extent of petroleum contamination through sampling of the subsurface soil and groundwater.

Illinois petroleum UST regulations require that the UST owner or operator determine the extent of petroleum contamination caused by a UST system release. Information currently in our possession indicates that petroleum contamination may have migrated onto your property.

Illinois petroleum UST regulations state, in part, that:

1) According to Section 57 of the Environmental Protection Act (Act), the UST owner or operator is legally responsible to remediate the contamination caused by the UST system release;
2) If the property owner denies access to the UST owner or operator, the UST owner or operator may seek to gain entry by a court order pursuant to Section 22.2c of the Act;
3) In performing the requested investigation, the UST owner or operator will work so as to minimize and disruption on the property, will maintain, or its environmental consultant

will maintain, appropriate insurance and will repair any damage caused by the investigation;

4) If contamination results from a UST release by the UST owner or operator, the UST owner or operator will conduct all associate remediation at its own expense; and
5) Threats to human health and the environment and diminished property value may results from failure to remediate contamination from the UST release.

Therefore, Marlin, on behalf of Illico Oil Company, requests that access to your property be granted for the purpose of conducting an investigation to comply with Illinois petroleum UST regulations. Said investigation will, at a minimum, require the collection of soil and groundwater samples. Marlin will install a minimum of three (3) 2"-diameter monitoring wells for the express purpose of collecting soil and groundwater samples. The monitoring wells will be constructed inside an approximate 8.5"-diameter hollow-stem augered boring to a depth of approximately 15 feet below ground surface. The monitoring wells will be completed with a flush-mounted bolt-down steel well box. Prior to drilling, JULIE services will be contacted to mark any underground utilities. Extreme caution shall be taken if any additional utilities are identified. Maintenance, checking groundwater levels and/or collection of groundwater samples from the monitoring wells will occur on a periodic basis. Upon completion of all off-site activities, the monitoring wells will be abandoned in accordance with applicable Public Health regulations and the ground surface will be patched to its original condition.

We have attached two copies of an access agreement for your property in the event that you will allow us access. Please review, complete and return the agreements in the attached envelope. If within 30 days no response has been received to this request, Illico Oil Company will consider this request denied and will proceed with requesting Site Investigation Completion of the incident with the Illinois Environmental Protection Agency.

Thank you for your attention to this matter. If you have any questions regarding this access request or project please contact Marlin at (630) 444-1933.

Sincerely,

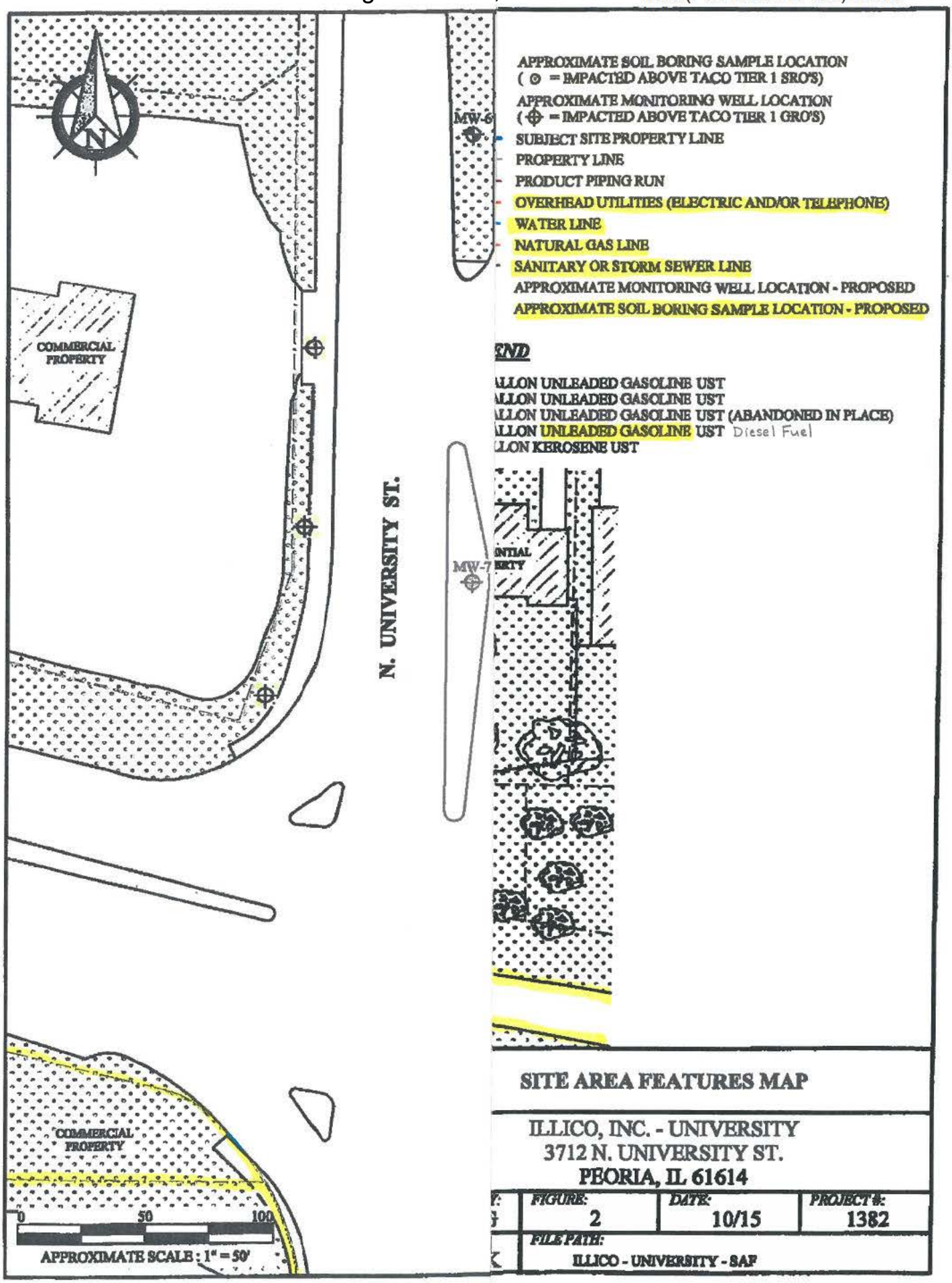
MARLIN ENVIRONMENTAL, INC.

Joe Buhlig
Project Manager

Jeff Wienhoff
Sr. Environmental Engineer

Attachments: Proposed Monitoring Well Location Map
Access Agreements

CC: Project File


APPROXIMATE SOIL BORING SAMPLE LOCATION
(⊙ = IMPACTED ABOVE TACO TIER 1 SRO'S)
APPROXIMATE MONITORING WELL LOCATION
(⊕ = IMPACTED ABOVE TACO TIER 1 GRO'S)
SUBJECT SITE PROPERTY LINE
PROPERTY LINE
PRODUCT PIPING RUN
OVERHEAD UTILITIES (ELECTRIC AND/OR TELEPHONE)
WATER LINE
NATURAL GAS LINE
SANITARY OR STORM SEWER LINE
APPROXIMATE MONITORING WELL LOCATION - PROPOSED
APPROXIMATE SOIL BORING SAMPLE LOCATION - PROPOSED
END
LLON UNLEADED GASOLINE UST
LLON UNLEADED GASOLINE UST
LLON UNLEADED GASOLINE UST (ABANDONED IN PLACE)
LLON UNLEADED GASOLINE UST Diesel Fuel
LON KEROSENE UST
MW-6
MW-7
N. UNIVERSITY ST.
COMMERCIAL PROPERTY
COMMERCIAL PROPERTY
0
50
100
APPROXIMATE SCALE : 1" = 50'
SITE AREA FEATURES MAP
ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614
FIGURE: 2
DATE: 10/15
PROJECT #: 1382
FILE PATH: ILLICO - UNIVERSITY - SAP

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USPS Tracking®

Tracking Number: 70112000000160118156

On Time
Expected Delivery Day: Wednesday, October 21, 2015

Product & Tracking Information

Avai

Postal Product:
First-Class Mail®

Features:
Certified Mail™

Return F

DATE & TIME	STATUS OF ITEM	LOCATION
October 21, 2015 , 5:22 pm	**Delivered**	**PEORIA, IL 61614**
Your item was delivered at 5:22 pm on October 21, 2015 in PEORIA, IL 61614.		
October 21, 2015 , 1:15 pm	Notice Left (No Authorized Recipient Available)	PEORIA HEIGHTS, IL 61616
October 21, 2015 , 7:20 am	Out for Delivery	PEORIA HEIGHTS, IL 61616
October 21, 2015 , 7:10 am	Sorting Complete	PEORIA HEIGHTS, IL 61616
October 21, 2015 , 6:36 am	Arrived at Unit	PEORIA, IL 61614
October 20, 2015 , 8:13 pm	Departed USPS Facility	PEORIA, IL 61601
October 20, 2015 , 6:35 am	Arrived at USPS Destination Facility	PEORIA, IL 61601

DATE & TIME	STATUS OF ITEM	LOCATION
October 19, 2015 , 10:43 pm	Departed USPS Facility	SPRINGFIELD, IL 62703
October 19, 2015 , 9:30 pm	Arrived at USPS Facility	SPRINGFIELD, IL 62703
October 19, 2015 , 5:33 pm	Departed Post Office	SPRINGFIELD, IL 62701
October 19, 2015 , 4:13 pm	Acceptance	SPRINGFIELD, IL 62701

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Resources for Developers

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Search or Enter a Tracking Number

Benanti, Trent

From: Jeff Wienhoff <jeffw@marlinenv.com>
Sent: Friday, December 18, 2015 3:30 PM
To: Benanti, Trent
Subject: Illico - IEMA 923441

Trent,

Hope everything is going well and your enjoying the holiday season. I have a request to make and I'm not sure if it's possible. Due to OSFM issues and ownership issues, the Illico Oil site in Peoria at 3712 North University has a tight timeline to perform remediation activities at their site. They are required to be completed by the end of February 2016. Illico just recently retained ownership of this incident from Premcor and is stuck with trying to complete these activities following a larger lawsuit.

Currently you have four documents that have been submitted for your review:

Stage 2 Results and Budget submitted 10/5/15 (Premcor)
Stage 3 Plan & Budget submitted 10/6/15 (Illico)
Site Investigation Completion Report submitted 12/14/15 (Illico)
Corrective Action Plan and Budget submitted 12/14/15 (Illico)

We know you have full boat of project reports to review, but we wanted to request if it is possible to review all four reports together and issue letters responding to them by the February 2nd deadline for the first submitted report. Marlin rarely makes these requests because we understand the time demands and workloads of the project managers. However, this is an extraordinary circumstance and wanted to find out if it is possible. Illico is trying to budgetarily plan for the work and would like some level of certainty with regards to what costs will be reimbursable if at all possible. If it means granting you a review extension on other Illico sites under your review currently (IEMA 931898 or 921237) if it would help on your end.

Thank you for your consideration. It is much appreciated.

Jeff Wienhoff, P.E.
Marlin Environmental, Inc.
3900 Wood Duck Drive, Suite F
Springfield, IL 62711
Office: (217) 726-7569 x250
Cell: (217) 899-5486

OSFM (PCB No. 2017-084) R. 423

Office of the Illinois State Fire Marshal
Division of Petroleum and Chemical Safety
1035 Stevenson Drive
Springfield IL 62703
2177851020

FOR OFFICE USE ONLY
Facility # 3007188
Permit # 00032-2016INS
Request Rec'd 01/06/2016
Amended Date
Approval Date 1/11/2016 DS
Permit Expires 7/12/2016

Permit for INSTALLATION of Underground Storage Tank(s) and Piping for Petroleum and Hazardous Substances.

Permission to install underground storage tank(s) or piping is hereby granted. Such installation must be in complete accordance with acceptable materials as specified in the Federal Register, Part II Environmental Protection Agency, 40 CFR Parts 280 and 281, and also with all sections of 41 Illinois Administrative Code, Parts 174, 175 and 176. The contractor the permit was issued to or an employee of that contractor (this does not include a subcontractor) shall submit a required job schedule for installation of underground storage tank(s) to the Office of the State Fire Marshal, Division of Petroleum and Chemical Safety. **THIS PERMIT IS VALID FOR SIX MONTHS FROM THE APPROVAL DATE.**

(1) OWNER OF TANKS - Corporation, partnership, or other business entity:	(2) FACILITY - name and address where tanks are located:
Illico Incorporated P.O. Box 280 Lincoln, IL 62656 Contact: Jeff Cruise (217) 732-4193 Ext. 240	Road Ranger #234 3712 N. University Peoria, IL 61614 Contact: Jay Ahmed (630) 972-5363

(3) INSTALLATION OF TANKS:

(a) Number and size of tanks being installed: (TK # 6) - 12,000, (TK # 7) - 6,000, (TK # 8) - 4,000

(b) Type of tank(s): (TK # 6, 7, 8) Tank - Fiberglass Brine Filled Double Wall XERXES

(c) Type of piping: (TK # 6, 7, 8) Piping - Flexible Double Wall A.P.T. Poly Tech P175SC , (TK # 6, 7, 8) Piping - Shear Valves , (TK # 6, 7, 8) Piping - Valves Ball Valve, (TK # 6, 7, 8) Piping - Dispenser Sumps A.P.T. Poly Tech Polyethylene LM Series , (TK # 6, 7, 8) Piping - Submersible Sumps containment FRP, (TK # 6, 7, 8) Piping - Flex Connector Steel, (TK # 7, 8) Piping - Other submersible pump

(d) Product to be stored in each tank: (TK # 6, 7) - Gasoline, (TK # 8) - Diesel Fuel

(e) Type of leak detection being used:

Tank: (TK # 6, 7, 8) Leak Detect - Tank - Automatic Tank Gauging Veeder Root TLS 350 , (TK # 6, 7, 8) Leak Detect - Tank - Hydrostatic Reservoir Sensors Interstitial Monitoring Veeder Root TLS 350

Piping: (TK # 6, 7) Leak Detect - Piping - Mechanical Pressurized Line Leak Detection Red Jacket FX1V , (TK # 8) Leak Detect - Piping - Mechanical Pressurized Line Leak Detection Red Jacket FX1DV

(f) Corrosion Protection being used:

Tank: (TK # 6, 7, 8) Corrosion Prot - Tank - Fiberglass Non-Corrosive

Piping: (TK # 6, 7, 8) Corrosion Prot - Piping - Flexible Non-Corrosive

(g) Spill containment devices, piping and dispenser containment devices: (TK # 6, 7, 8) Spill Contain Device - Pre-manufactured EBW 705 C1GKT Defender spill containment

(h) Overfill prevention devices: (TK # 6, 7, 8) Overfill Prev Device - Overfill Drop Tube Valve OPW 71SO-400C

(4) The owner must notify this Office when completion of tank installation has occurred, on the Notification for Underground Storage Tank Form and the licensed contractor must submit the required job schedule for installation to the OSFM prior to the work being performed. Both forms can be obtained at www.sfm.illinois.govor by calling (217)785-1020.

(5) GENERAL REQUIREMENTS : There shall be a minimum of two manufactured slotted or perforated observation wells of at lease 4 inches in diameter, installed in each new tank field of tanks larger than 1000 gallons and one well for tanks less than 1000 gallons. A water tight containment shall be installed under all dispensers and at submersible pumps. A hydrostatic test must be performed on all containments. All steel piping for vents, risers, and fills in contact with the ground, backfill, or water shall be dielectrically wrapped or coated. A positive shut off valve shall be installed on pressurized product lines, at the submersibles, or installed at the tank for all suction piping systems. Vent piping

is required to be tested from tank to grade level. All steel flex connectors in contact with ground, backfill or water shall have corrosion protection.

(6) SPECIAL CONTINGENCIES :

Reconstructing fuel islands to incorporate sumps, sensors, and collision protection. Islands will be in same location as existing.

Removing South half of canopy to facillitate removal of existing tanks, environmental work, and installation of new tanks.

Installing new fuel dispensers as furnished by operator

Installing two monitoring wells, one at each opposite corner of tank excavation.

Installing OPW 71SO overfill drop tubes for overfill protection

Upgrading existing V/R TLS 350 to incorporate necessary sensors

Installing new submersible pumps and R/J mechanical leak detectors for line leak detection.

Tank is pending recertification from manufacturer Installing Xerxes water tight FRP STP sump 42" x 36" SMP30WT Installing V/R 794380-301 SP Hydrostatic sensor for interstitial monitoring Installing V/R 794380-208 sump sensors all sumps.

(6) PERSON, FIRM OR COMPANY PERFORMING WORK:

Pemco Service Company, Inc.
1040 East Second Street
Gilman, IL 60938

Contact Person: William "Butch" VonDrehle
Phone: (815) 265-7364
Contractor Registration # IL1224 Exp. 2/23/2016

Sincerely,

Daniel S. Starks

Daniel Starks

cc: Storage Tank Safety Specialist
Division File

Illico (PCB No. 2017-084) R. 425

Office of the Illinois State Fire Marshal
Division of Petroleum and Chemical Safety
1035 Stevenson Drive
Springfield IL 62703
2177851020

FOR OFFICE USE ONLY
Facility # 3007188
Permit # 00042-2016REM
Request Rec'd 01/12/2016
Amended Date
Approval Date 1/12/2016 DS
Permit Expires 7/12/2016

Permit for REMOVAL of Underground Storage Tank(s) and Piping for Petroleum and Hazardous Substances.

Permission to remove underground storage tank(s) or piping is hereby granted. Such removal shall not commence until the contractor the permit was issued to or an employee of that contractor (this does not include a subcontractor) shall establish a date certain to perform the UST activity by contacting the Office of the State Fire Marshal, Division of Petroleum and Chemical Safety, at which time the UST activity shall be scheduled. **THIS PERMIT IS VALID FOR SIX MONTHS FROM THE APPROVAL DATE.**

(1) **OWNER OF TANKS** - Corporation, partnership, or other business entity:	(2) **FACILITY** - name and address where tanks are located:
Illico Incorporated P.O. Box 280 Lincoln, IL 62656 Contact: Jeff Cruise (217) 732-4193 Ext. 240	Road Ranger #234 3712 N. University Peoria, IL 61614 Contact: Jay Ahmed (630) 972-5363

(3) REMOVAL OF TANKS:

(a) Number and size of tanks being removed: (TK # 1, 2, 3, 4) - 12,000, (TK # 5) - 6,000

(b) Description/location of piping being removed:

(c) Product to be stored in each tank: (TK # 1, 2, 3) - Gasoline, (TK # 4) - Diesel Fuel, (TK # 5) - Kerosene

(d) Reason of tanks being removed:

(e) If tank(s) is leaking, indicate IEMA incident number: 1992-3441

(f) Date each tank was last used: (TK # 1, 2, 3, 4, 5) - Unknown

(4) The owner must notify this Office when completion of tank removal has occurred, on the Notification for Underground Storage Tank Form. This form can be obtained at www.sfm.illinois.gov or by calling (217)785-1020. After removal is completed, the owner/operator shall perform a site assessment by measuring for the presence of a release where contamination is most likely to be present at the UST site. This is in accordance with the Illinois Administrative Code 176.360 (a) regulations and 40 CFR Part 280.72 (a) Federal Register Requirement.

(5) SPECIAL CONTINGENCIES : remove entire ust system, tanks and piping

(6) PERSON, FIRM OR COMPANY PERFORMING WORK:

RCRA, Inc. d/b/a Earth Services
10903 Prestwick Drive
Benton, IL 62812

Contact Person: Josh Appleton
Phone: (618) 218-4958
Contractor Registration # IL002364 Exp. 8/7/2017

Sincerely,

Daniel S. Starks

Daniel Starks

cc: Storage Tank Safety Specialist
Division File

Budget Summary

Choose the applicable regulations: ◉ 734 ○ 732

734	Free Product	Stage 1 Site Investigation	Stage 2 Site Investigation	Stage 3 Site Investigation	Corrective Action
					Proposed
Drilling and Monitoring Wells Costs Form					$2,165.46
Analytical Costs Form					$14,539.38
Remediation and Disposal Costs Form					$185,626.35
UST Removal and Abandonment Costs Form					$19,516.50
Paving, Demolition, and Well Abandonment Costs Form					$37,281.14
Consulting Personnel Costs Form					$43,476.63
Consultant's Materials Costs Form					$4,901.00
Handling Charges Form	Handling charges will be determined at the time a billing package is submitted to the Illinois EPA. The amount of allowable handling charges will be determined in accordance with the Handling Charges Form.				
Total	$0.00	$0.00	$0.00	$0.00	$307,506.46

Paving, Demolition, and Well Abandonment Costs Form

A. Concrete and Asphalt Placement/Replacement

Number of Square Feet	Asphalt or Concrete	Thickness (inches)	Cost ($) per Square Foot	Replacement or Placement for an Engineered Barrier	Total Cost
4,626	Concrete	6	$5.41	Replacement	$25,026.66
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00

Total Concrete and Asphalt Placement/Replacement Costs:	**$25,026.66**

B. Building Destruction or Dismantling and Canopy Removal

Item to Be Destroyed, Dismantled, or Removed	Unit Cost ($)	Total Cost
Canopy	10,000.00	10,000.00

Total Building Destruction or Dismantling and Canopy Removal Costs:	**$10,000.00**

Paving, Demolition, and Well Abandonment Costs Form

C. Well Abandonment

Monitoring Well ID #	Type of Well (HSA / PUSH / Recovery)	Depth of Well (feet)	Cost ($) per Foot	Total Cost
MW-2	HSA	15.00	$12.39	$185.85
MW-3	HSA	16.00	$12.39	$198.24
MW-4R	HSA	14.00	$12.39	$173.46
MW-5	HSA	15.00	$12.39	$185.85
MW-6	HSA	18.00	$12.39	$223.02
MW-7	HSA	14.00	$12.39	$173.46
MW-9	HSA	12.84	$12.39	$159.09
MW-10	HSA	12.63	$12.39	$156.49
MW-11	HSA	12.89	$12.39	$159.71
MW-12	HSA	12.70	$12.39	$157.35
MW-13	HSA	13.09	$12.39	$162.19
MW-14	HSA	12.92	$12.39	$160.08
MW-15	HSA	12.89	$12.39	$159.71
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00

Total Monitoring Well Abandonment Costs:	**$2,254.48**

Total Paving, Demolition, and Well Abandonment Costs:	**$37,281.14**

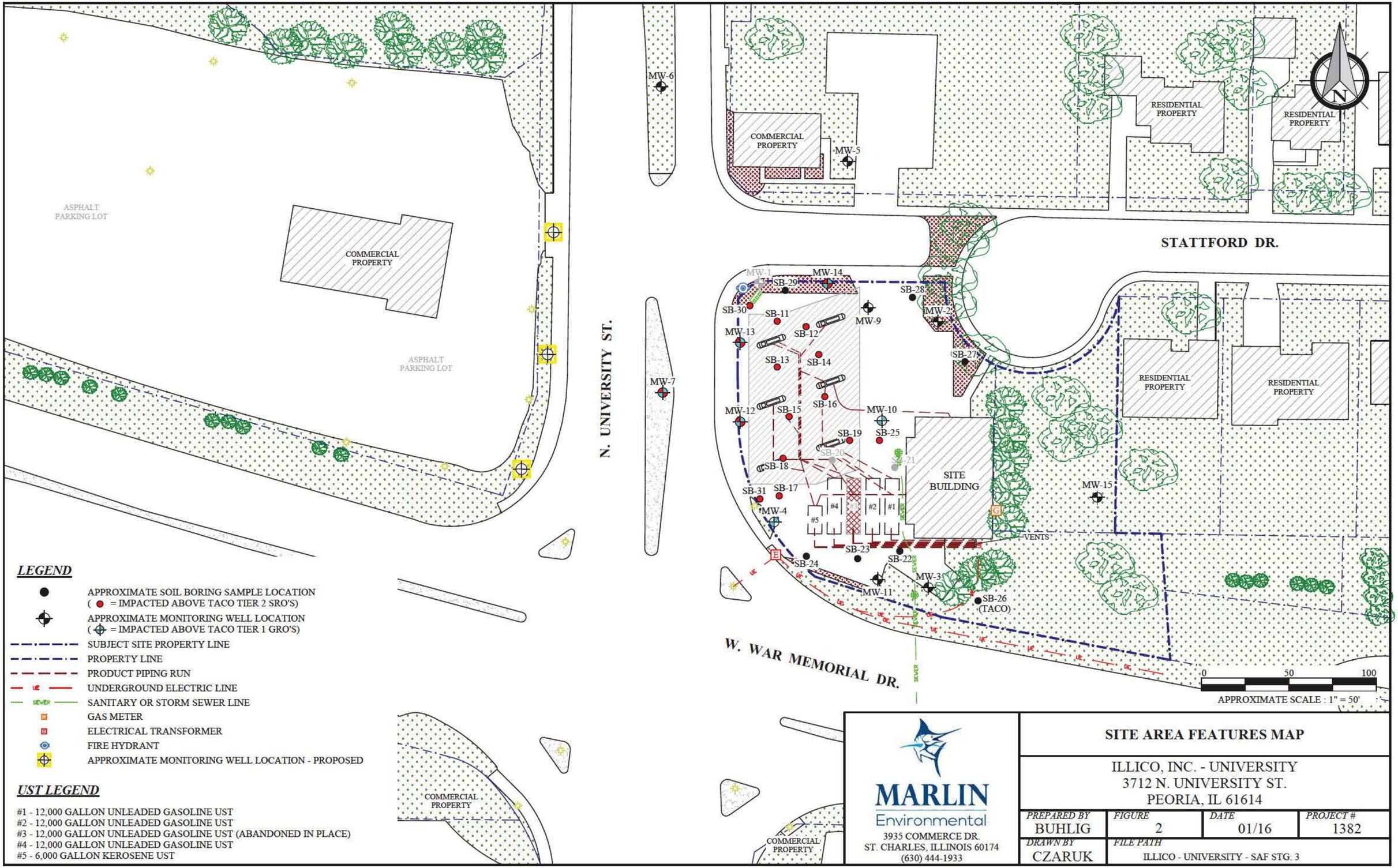
Benanti, Trent

From: Joe Buhlig <joeb@marlinenv.com>
Sent: Wednesday, January 20, 2016 9:08 AM
To: Benanti, Trent
Cc: Jeff Wienhoff
Subject: Illico University #923441
Attachments: Illico University Budget Summary & Demolition.pdf

Trent,
Attached please find a revised paving, demolition and well abandonment costs form as well as a revised budget summary page for the Illico University CAP dated 12/14/15. In the original forms submitted to the IEPA the costs for the canopy demolition was inadvertently left off. The removal of the canopy will be necessary to complete the activities proposed in the corrective action plan dated 12/14/15. Thank you for your assistance with this matter.

Sincerely,

Joe Buhlig
Marlin Environmental, Inc.
3900 Wood Duck Drive, Suite F
Springfield, IL. 62711
217-726-7569 Ext. 300



LEGEND

- APPROXIMATE SOIL BORING SAMPLE LOCATION (● = IMPACTED ABOVE TACO TIER 2 SRO'S)
- APPROXIMATE MONITORING WELL LOCATION (⊕ = IMPACTED ABOVE TACO TIER 1 GRO'S)
- SUBJECT SITE PROPERTY LINE
- PROPERTY LINE
- PRODUCT PIPING RUN
- UNDERGROUND ELECTRIC LINE
- SANITARY OR STORM SEWER LINE
- GAS METER
- ELECTRICAL TRANSFORMER
- FIRE HYDRANT
- APPROXIMATE MONITORING WELL LOCATION - PROPOSED

UST LEGEND

#1 - 12,000 GALLON UNLEADED GASOLINE UST
#2 - 12,000 GALLON UNLEADED GASOLINE UST
#3 - 12,000 GALLON UNLEADED GASOLINE UST (ABANDONED IN PLACE)
#4 - 12,000 GALLON UNLEADED GASOLINE UST
#5 - 6,000 GALLON KEROSENE UST

MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

SITE AREA FEATURES MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

PREPARED BY	FIGURE	DATE	PROJECT #
BUHLIG	2	01/16	1382
DRAWN BY	FILE PATH		
CZARUK	ILLICO - UNIVERSITY - SAF STG. 3		

Benanti, Trent

From: Joe Buhlig <joeb@marlinenv.com>
Sent: Thursday, January 28, 2016 9:56 AM
To: Benanti, Trent
Subject: Illico University
Attachments: Illico - University - SAF revised Stg 3.pdf

Trent,
Attached please find the revised Stage 3 SAF map.

Sincerely,

Joe Buhlig
Marlin Environmental, Inc.
3900 Wood Duck Drive, Suite F
Springfield, IL. 62711
217-726-7569 Ext. 300

Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form

I hereby certify that I intend to seek payment from the UST Fund for costs incurred while performing corrective action activities for Leaking UST incident 923441. I further certify that the costs set forth in this budget are for necessary activities and are reasonable and accurate to the best of my knowledge and belief. I also certify that the costs included in this budget are not for corrective action in excess of the minimum requirements of 415 ILCS 5/57, no costs are included in this budget that are not described in the corrective action plan, and no costs exceed Subpart H: Maximum Payment Amounts, Appendix D Sample Handling and Analysis amounts, and Appendix E Personnel Titles and Rates of 35 Ill. Adm. Code 732 or 734. I further certify that costs ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 732.606 or 734.630 are not included in the budget proposal or amendment. Such ineligible costs include but are not limited to:

Costs associated with ineligible tanks.
Costs associated with site restoration (e.g., pump islands, canopies).
Costs associated with utility replacement (e.g., sewers, electrical, telephone, etc.).
Costs incurred prior to IEMA notification.
Costs associated with planned tank pulls.
Legal fees or costs.
Costs incurred prior to July 28, 1989.
Costs associated with installation of new USTs or the repair of existing USTs.

Owner/Operator: Illico Independent Oil Co.

Authorized Representative: David Golwitzer Title: Owner

Signature: [signature] President Date: 1/27/16

Subscribed and sworn to before me the 27th day of Jan, 2016

[signature] (Notary Public) Seal: OFFICIAL SEAL JEFF WIENHOFF Notary Public - State of Illinois My Commission Expires 4/29/2018

In addition, I certify under penalty of law that all activities that are the subject of this plan, budget, or report were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan, budget, or report and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in the plan, budget, or report has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 732 or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

L.P.E./L.P.G. Jeff R. Wienhoff L.P.E./L.P.G. Seal: JEFFREY R. WIENHOFF 062-058441 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

L.P.E./L.P.G. Signature: [signature] Date: 1/28/16

Subscribed and sworn to before me the 28th day of January, 2016

[signature] (Notary Public) Seal: D. EGGLESTON OFFICIAL SEAL Notary Public - State of Illinois My Commission Expires December 08, 2017

The Illinois EPA is authorized to require this information under 415 ILCS 5/1. Disclosure of this information is required. Failure to do so may result in the delay or denial of any budget or payment requested hereunder.

Benanti, Trent

From: Joe Buhlig <joeb@marlinenv.com>
Sent: Thursday, January 28, 2016 2:32 PM
To: Benanti, Trent
Subject: Illico University
Attachments: Illico University Revised Budget Cert.pdf

Trent,
Attached please find the new budget cert for the Stage 3 budget. The original will be delivered to the IEPA tomorrow.

Sincerely,

Joe Buhlig
Marlin Environmental, Inc.
3900 Wood Duck Drive, Suite F
Springfield, IL. 62711
217-726-7569 Ext. 300

Hazardous Materials Incident Report

14306552 63- Peoria Illico, Inc LeaKing UST Tech

Incident #: H-2016-0095
Entered By: Kattner, Paul (IEMA) **on** 2016-01-28 13:14:18
Data Input Status: Closed
Leaking Underground Storage Tank (LUST): No

Caller:	Jeff Weinhoff
Call Back #:	217/899-5486
Caller Represents:	Marlin Environmental
Hazmat Incident Type:	Leak or spill

INCIDENT LOCATION

Incident Location:	3712 N. University St		
County:	Peoria 61614	City:	Peoria
Primary IEMA Region:	6	Secondary IEMA Region:	Not Applicable
Full Address:	3712 N. University St, Peoria, IL		
Latitude:	40.733045	Longitude:	-89.612568
Milepost:	N/A	Sec:	N/A
Twp.:	N/A	Range:	N/A
Area Involved:	Fixed Facility		
Media or medium into which the release occurred:	Ground		

WEATHER INFORMATION

Temp (deg F):	40 Degrees	Wind Dir/Speed m.p.h:	W 10 MPH

MATERIALS INVOLVED

Material Name:	Gasoline, Diesel & Kerosene	Material Type:	Liquid
CHRIS Code:	Unknown	CAS #:	Unknown
UN/NA #:	Unknown		
Is this a 302(a) Extremely Hazardous Substance?	Unknown		
Is this a RCRA Hazardous Waste?	Unknown		
Is this a RCRA regulated facility?	Unknown		
Container Type:	Under ground storage tank	Container Size:	3 X 12,000 Gallons (Gasoline), 1 X 12,000 Gallons (Diesel), & 1 X 6,000 Gallons (Kerosene)
Amount Released:	Unknown	Rate of Release/min:	Unknown
Duration of Release:	Unknown		
Cause of Release:	Unknown		
Estimated Spill Extent:	Unknown	Spill Extent Units:	

Date/Time Occured:	(Date/Time Unknown)
Date/Time Discovered:	2016-01-28 11:00

Number Injured:	0	Where Taken:	N/A
Number Killed:	0	# Evacuated:	0
On Scene Contact:	#1	On Scene Phone #:	#2

Proper safety precautions to take as a result of the release, including evacuation:
None

Assistance needed from State Agencies:
None

Containment/Cleanup actions and plans:
Tanks will be removed and soil remediated.

Responsible Party:	ILLICO Incorporated
Contact Person:	Dave Golwitzer
Callback Phone Number:	217/732-4193
Facility Manager:	Dave Golwitzer
Facility Manager Phone #:	217/732-4193
Street Address:	P.O. Box #280
City:	Lincoln State: IL Zip Code: 62656

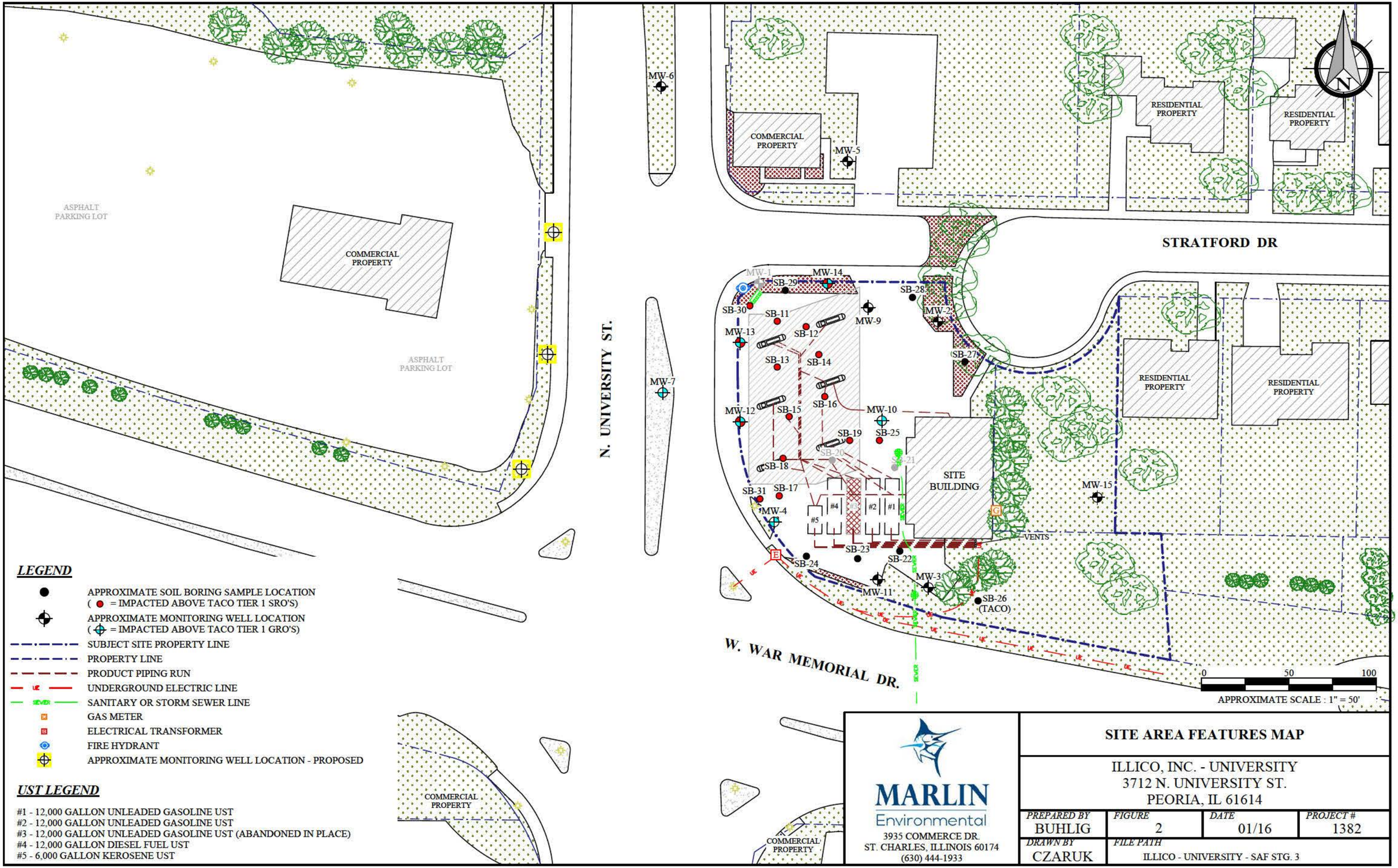
Emergency Units Contacted	Contacted	On Scene	Agencies Contacted
ESDA			None
Fire			None
Police			None
Sheriff			None
Other			None

AGENCIES OR PERSONS NOTIFIED			
Agency	Date/Time	Name of Person	Notification Action
IEPA, OSFM, NRTP, & IEMA Region #7	2016-01-28 13:20	E-mailed	Report Sent

Narrative:

REVIEWER: JKS

Follow-Up Information:



LEGEND

- APPROXIMATE SOIL BORING SAMPLE LOCATION (= IMPACTED ABOVE TACO TIER 1 SRO'S)
- APPROXIMATE MONITORING WELL LOCATION (= IMPACTED ABOVE TACO TIER 1 GRO'S)
- SUBJECT SITE PROPERTY LINE
- PROPERTY LINE
- PRODUCT PIPING RUN
- UNDERGROUND ELECTRIC LINE
- SANITARY OR STORM SEWER LINE
- GAS METER
- ELECTRICAL TRANSFORMER
- FIRE HYDRANT
- APPROXIMATE MONITORING WELL LOCATION - PROPOSED

UST LEGEND

#1 - 12,000 GALLON UNLEADED GASOLINE UST
#2 - 12,000 GALLON UNLEADED GASOLINE UST
#3 - 12,000 GALLON UNLEADED GASOLINE UST (ABANDONED IN PLACE)
#4 - 12,000 GALLON DIESEL FUEL UST
#5 - 6,000 GALLON KEROSENE UST

MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

SITE AREA FEATURES MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

PREPARED BY	FIGURE	DATE	PROJECT #
BUHLIG	2	01/16	1382
DRAWN BY	FILE PATH		
CZARUK	ILLICO - UNIVERSITY - SAF STG. 3		

Benanti, Trent

From: Joe Buhlig <joeb@marlinenv.com>
Sent: Friday, January 29, 2016 1:35 PM
To: Benanti, Trent
Subject: Illico University Map
Attachments: Illico - University - SAF Stg 3.pdf

Trent,
Attached please find the Stage 3 map for Illico University with the corrections you requested.

Sincerely,

Joe Buhlig
Marlin Environmental, Inc.
3900 Wood Duck Drive, Suite F
Springfield, IL. 62711
217-726-7569 Ext. 300

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829
BRUCE RAUNER, GOVERNOR LISA BONNETT, DIRECTOR

(217) 524-3300

CERTIFIED MAIL
7012 0470 0001 2971 2357

FEB 01 2016

Mr. Timothy J. Mauntel
The Premcor Refining Group Inc.
201 E. Hawthorne St.
Hartford, IL 62048

Re: LPC #1430655263 – Peoria County
Peoria/Illico, Inc.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Dear Mr. Mauntel:

The Illinois Environmental Protection Agency (Illinois EPA) has reviewed the Stage 2 Site Investigation Results Report and the actual costs budget for the Stage 2 site investigation. The Stage 2 Site Investigation Results Report dated 10/02/2015 was received by the Illinois EPA on 10/05/2015. The actual costs budget for the Stage 2 site investigation is located in Attachment G for the Stage 2 Site Investigation Results Report.

Pursuant to Sections 57.7(a)(2) and 57.7(c) of the Environmental Protection Act (415 ILCS 5) (Act) and 35 Illinois Administrative Code (35 Ill. Adm. Code) 734.505(b) and 734.510(b), the actual costs budget for the Stage 2 site investigation is approved for the amounts listed in Attachment A. However, it should be noted that the amount of payment from the Underground Storage Tank Fund may be limited by Sections 57.8(d), 57.8(e), and 57.8(g) of the Act, as well as 35 Ill. Adm. Code 734.630 and 734.655.

An underground storage tank system owner or operator may appeal this decision to the Illinois Pollution Control Board. Appeal rights are attached.

If you have any questions or need assistance, please contact Trent Benanti at (217) 524-4649.

Sincerely,

Michael T. Lowder
Unit Manager
Leaking Underground Storage Tank Section
Division of Remediation Management
Bureau of Land

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE
MAR 02 2016
REVIEWER JRM

Attachments: Attachment A
Appeal Rights

c: Karen Dixon (ERS of Illinois, Inc.)
BOL File

Attachment A

Re: LPC #1430655263 – Peoria County
Peoria/Illico, Inc.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Stage 2 Actual Costs

The actual costs budget for the Stage 2 site investigation is approved for the following amounts:

$ 5,783.38	Drilling and Monitoring Well Costs
$ 5,426.10	Analytical Costs
$ 1,504.60	Remediation and Disposal Costs
$ 0.00	UST Removal and Abandonment Costs
$ 0.00	Paving, Demolition, and Well Abandonment Costs
$18,978.20	Consulting Personnel Costs
$ 1,122.98	Consultant's Materials Costs

Handling charges will be determined at the time a billing package is reviewed by the Illinois EPA. The amount of allowable handling charges will be determined in accordance with Section 57.1(a) of the Environmental Protection Act (Act) and 35 Illinois Administrative Code (35 Ill. Adm. Code) 734.635.

Appeal Rights

An underground storage tank owner/operator may appeal this final decision to the Illinois Pollution Control Board pursuant to Sections 40 and 57.7(c)(4) 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 owner/operator and the Illinois EPA within the initial 35-day appeal period. If the owner/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 filing of an appeal, please contact:

John Therriault, Assistant Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph, Suite 11-500
Chicago, IL 60601
312/814-3620

For information regarding the filing of 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

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829

BRUCE RAUNER, GOVERNOR LISA BONNETT, DIRECTOR

(217) 524-3300

CERTIFIED MAIL

7012 0470 0001 2971 2357

FEB 01 2016

Mr. Timothy J. Mauntel
The Premcor Refining Group Inc.
201 E. Hawthorne St.
Hartford, IL 62048

Re: LPC #1430655263 – Peoria County
Peoria/Illico, Inc.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

EPA - DIVISION OF RECORDS MANAGEMENT
RELEASABLE

MAR 02 2016

REVIEWER JRM

Dear Mr. Mauntel:

The Illinois Environmental Protection Agency (Illinois EPA) has reviewed the Stage 2 Site Investigation Results Report and the actual costs budget for the Stage 2 site investigation. The Stage 2 Site Investigation Results Report dated 10/02/2015 was received by the Illinois EPA on 10/05/2015. The actual costs budget for the Stage 2 site investigation is located in Attachment G for the Stage 2 Site Investigation Results Report.

Pursuant to Sections 57.7(a)(2) and 57.7(c) of the Environmental Protection Act (415 ILCS 5) (Act) and 35 Illinois Administrative Code (35 Ill. Adm. Code) 734.505(b) and 734.510(b), the actual costs budget for the Stage 2 site investigation is approved for the amounts listed in Attachment A. However, it should be noted that the amount of payment from the Underground Storage Tank Fund may be limited by Sections 57.8(d), 57.8(e), and 57.8(g) of the Act, as well as 35 Ill. Adm. Code 734.630 and 734.655.

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Timothy J. Mauntel
The Premcor Refining Roup, Inc.
201 East Hawthorne Stteet
Hartford, IL 62048

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Janice Wells ☐ Agent ☐ Addressee

B. Received by (Printed Name) Jerica Willis C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

MR/TB 923441

3. Service Type
☒ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7012 0470 0001 2971 2357

PS Form 3811, July 2013 Domestic Return Receipt

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For delivery information visit our website at www.usps.com®

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Return Receipt Fee (Endorsement Required)
Restricted Delivery Fee (Endorsement Required)
Total

SPRINGFIELD IL 62703 MPO FEB 2 2016 Postmark Here USPS

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Street, Apt. No., or PO Box No.
City, State, ZIP+4

Mr. Timothy J. Mauntel
The Premcor Refining Roup, Inc.
201 East Hawthorne Stteet
Hartford, IL 62048

7012 0470 0001 2971 2357

PS Form 3800, August 2006 See Reverse for Instructions

UNITED STATES POSTAL SERVICE
04 FEB '16

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Illinois Environmental
Protection Agency
P.O. BOX 19276 MAIL CODE # 24
SPRINGFIELD, IL 62794-9276

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829
BRUCE RAUNER, GOVERNOR LISA BONNETT, DIRECTOR

(217) 524-3300

CERTIFIED MAIL

FEB 01 2016

7012 0470 0001 2971 2395

Mr. David Golwitzer
Illico Independent Oil Co.
2201 Woodlawn Rd., Suite 600
Lincoln, IL 62656

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Dear Mr. Golwitzer:

The Illinois Environmental Protection Agency (Illinois EPA) has reviewed the Stage 3 Site Investigation Plan and the proposed budget for the Stage 3 site investigation. The Stage 3 Site Investigation Plan dated 10/06/2015 was received by the Illinois EPA on 10/06/2015. The proposed budget for the Stage 3 site investigation is located in Attachment 1 of the Stage 3 Site Investigation Plan.

The Illinois EPA has determined that the modification listed in Attachment A is necessary to demonstrate compliance with Title XVI of the Environmental Protection Act (415 ILCS 5) (Act) and 35 Illinois Administrative Code (35 Ill. Adm. Code) 734. Therefore, pursuant to Sections 57.7(a)(1) and 57.7(c) of the Act and 35 Ill. Adm. Code 734.505(b) and 734.510(a), the Stage 3 Site Investigation Plan is conditionally approved with the Illinois EPA's modification.

The proposed budget for the Stage 3 site investigation is approved for amounts determined in accordance with Subpart H. Please be advised that, pursuant to Section 57.7(c) of the Act and 35 Ill. Adm. Code 734.310(b) and 734.510(b), costs associated with materials, activities, and services must be reasonable, must be consistent with the associated technical plan, must be incurred in the performance of corrective action activities, must not be used for corrective action activities in excess of those necessary to meet the minimum requirements of the Act and regulations, and must not exceed the maximum payment amounts set forth in 35 Ill. Adm. Code 734.Subpart H. Handling charges will be determined at the time a billing package is reviewed by the Illinois EPA. The amount of allowable handling charges will be determined in accordance with Section 57.1(a) of Act and 35 Ill. Adm. Code 734.635.

An underground storage tank system owner or operator may appeal this decision to the Illinois Pollution Control Board. Appeal rights are attached.

If you have any questions or need assistance, please contact Trent Benanti at (217) 524-4649.

Sincerely,

Michael T. Lowder
Unit Manager
Leaking Underground Storage Tank Section
Division of Remediation Management
Bureau of Land

Attachments: Attachment A
Appeal Rights

c: Joe Buhlig (Marlin Environmental, Inc.)
BOL File

Attachment A

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

1) ERS of Illinois, Inc., The Premcor Refining Group Inc., and the Illinois EPA previously agreed that the analytical results of the soil samples collected by Parsons Engineering Science, Inc. should not be used to define the extent of the soil contamination. As such, the extent of the soil contamination north of soil boring SB-30 and monitoring well MW-14 has not been defined. The owner or operator must define the extent of the soil contamination north of soil boring SB-30 and monitoring well MW-14.

Appeal Rights

An underground storage tank owner/operator may appeal this final decision to the Illinois Pollution Control Board pursuant to Sections 40 and 57.7(c)(4) 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 owner/operator and the Illinois EPA within the initial 35-day appeal period. If the owner/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 filing of an appeal, please contact:

John Therriault, Assistant Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph, Suite 11-500
Chicago, IL 60601
312/814-3620

For information regarding the filing of 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

Illico (PCB No. 2017-084) R. 447

Summary of Analytical Results - Additional Stage 3 Soil Borings

MARLIN ENVIRONMENTAL							
Illico - University 923441				**SB-101 2-4**	**SB-101 6-8**	**SB-102 2-4**	**SB-102 6-8**
Date of Sample Collection:			Most Stringent	2/4/2016	2/4/2016	2/4/2016	2/4/2016
Time of Sample Collection:				10:30 AM	10:45 AM	11:05 AM	11:15 AM
First Environmental Lab. Numbers:				16-0564-001	16-0564-002	16-0564-003	16-0564-004
Contaminants of Concern:							
BTEX Organic Compounds (5035A/8260B)							
Date Analyzed:	**Units**	**RDL**		**2/11/2016**	**2/11/2016**	**2/11/2016**	**2/11/2016**
Benzene	ug/kg	5	30	<5.0	<5.0	<5.0	<5.0
Toluene	ug/kg	5	12000	<5.0	<5.0	<5.0	<5.0
Ethylbenzene	ug/kg	5	13000	<5.0	<5.0	<5.0	<5.0
Xylene, Total	ug/kg	5	5600	<5.0	<5.0	<5.0	<5.0
Polynuclear Aromatic Hydrocarbons (8270C)							
Date Analyzed:	**Units**	**RDL**		**2/9/2016**	**2/9/2016**	**2/9/2016**	**2/9/2016**
Acenaphthene	ug/kg	50	570000	<50	<50	<50	<50
Acenaphthylene	ug/kg	50		<50	<50	<50	<50
Anthracene	ug/kg	50	12000000	<50	<50	<50	<50
Benzo(a)anthracene	ug/kg	8.7	900	<8.7	<8.7	<8.7	<8.7
Benzo(a)pyrene	ug/kg	15	90	<15	<15	<15	<15
Benzo(b)fluoranthene	ug/kg	11	900	<11	<11	<11	<11
Benzo(k)fluoranthene	ug/kg	11	9000	<11	<11	<11	<11
Benzo(ghi)perylene	ug/kg	50		<50	<50	<50	<50
Chrysene	ug/kg	50	88000	<50	<50	<50	<50
Dibenzo(a,h)anthracene	ug/kg	20	90	<20	<20	<20	<20
Fluoranthene	ug/kg	50	3100000	<50	<50	<50	<50
Fluorene	ug/kg	50	560000	<50	<50	<50	<50
Indeno(1,2,3-cd)pyrene	ug/kg	29	900	<29	<29	<29	<29
Naphthalene	ug/kg	25	1800	<25	<25	<25	<25
Phenanthrene	ug/kg	50		<50	<50	<50	<50
Pyrene	ug/kg	50	2300000	<50	<50	<50	<50

Note: Analytical testing results are expressed in parts-per-billion (ppb) concentrations.
Bold areas exceed the most stringent IEPA TACO Tier 1 SROs.

First
Environmental
Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

February 12, 2016

Mr. Joe Buhlig
MARLIN ENVIRONMENTAL
3935 Commerce Drive
St. Charles, IL 60174

Project ID: Illico - University 923441
First Environmental File ID: 16-0564
Date Received: February 05, 2016

Dear Mr. Joe Buhlig:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 003762: effective 12/07/2015 through 02/28/2016.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Bill Mottashed
Project Manager

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Case Narrative

MARLIN ENVIRONMENTAL

Lab File ID: **16-0564**

Project ID: **Illico - University 923441**

Date Received: **February 05, 2016**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The results in this report apply to the samples in the following table:

Laboratory Sample ID	Client Sample Identifier	Date/Time Collected	
16-0564-001	SB-101 2-4	2/4/2016	10:30
16-0564-002	SB-101 6-8	2/4/2016	10:45
16-0564-003	SB-102 2-4	2/4/2016	11:05
16-0564-004	SB-102 6-8	2/4/2016	11:15

Sample Batch Comments:

Sample acceptance criteria were met.

The following is a definition of flags that may be used in this report:

Flag	Description	Flag	Description
<	Analyte not detected at or above the reporting limit.	L	LCS recovery outside control limits.
C	Sample received in an improper container for this test.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	P	Chemical preservation pH adjusted in lab.
E	Estimated result; concentration exceeds calibration range.	Q	Result was determined by a GC/MS database search.
G	Surrogate recovery outside control limits.	S	Analysis was subcontracted to another laboratory.
H	Analysis or extraction holding time exceeded.	W	Reporting limit elevated due to sample matrix.
J	Estimated result; concentration is less than routine RL but greater than MDL.	N	Analyte is not part of our NELAC accreditation or accreditation may not be available for this parameter.
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client: MARLIN ENVIRONMENTAL
Project ID: Illico - University 923441
Sample ID: SB-101 2-4
Sample No: 16-0564-001

Date Collected: 02/04/16
Time Collected: 10:30
Date Received: 02/05/16
Date Reported: 02/12/16

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 02/05/16				
Total Solids	78.51		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 02/11/16				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 02/09/16		Preparation Date: 02/08/16		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client: MARLIN ENVIRONMENTAL
Project ID: Illico - University 923441
Sample ID: SB-101 6-8
Sample No: 16-0564-002

Date Collected: 02/04/16
Time Collected: 10:45
Date Received: 02/05/16
Date Reported: 02/12/16

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 02/05/16				
Total Solids	86.56		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 02/11/16				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 02/09/16		Preparation Date: 02/08/16		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: MARLIN ENVIRONMENTAL
Project ID: Illico - University 923441
Sample ID: SB-102 2-4
Sample No: 16-0564-003

Date Collected: 02/04/16
Time Collected: 11:05
Date Received: 02/05/16
Date Reported: 02/12/16

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 02/05/16				
Total Solids	76.55		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 02/11/16				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 02/09/16		Preparation Date: 02/08/16		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

First Environmental Laboratories, Inc.
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Analytical Report

Client: MARLIN ENVIRONMENTAL
Project ID: Illico - University 923441
Sample ID: SB-102 6-8
Sample No: 16-0564-004

Date Collected: 02/04/16
Time Collected: 11:15
Date Received: 02/05/16
Date Reported: 02/12/16

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 02/05/16				
Total Solids	80.53		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 02/11/16				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 02/09/16		Preparation Date: 02/08/16		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

Illinois Environmental Protection Agency

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

The Agency is authorized to require this information under Section 4 and Title XVI of the Environmental Protection Act (415 ILCS 5/4, 5/57 – 57.17). Failure to disclose this information may result in a civil penalty of not to exceed $50,000.00 for the violation and an additional civil penalty of not to exceed $10,000.00 for each day during which the violation continues (415 ILCS 5/42). Any person who knowingly makes a false material statement or representation, orally or in writing, in any label, manifest, record, report, permit, or license, or other document filed, maintained or used for the purpose of compliance with Title XVI commits a Class 4 felony. Any second or subsequent offense after conviction hereunder is a Class 3 felony (415 ILCS 5/44 and 57.17). This form has been approved by the Forms Management Center.

Leaking Underground Storage Tank Program
Laboratory Certification for Chemical Analysis

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC# (10-digit): 1430655263

Site Name: Illico Oil Company

Site Address (Not a P.O. Box): 3712 University Street

City: Peoria County: Peoria ZIP Code: 61614

Leaking UST Technical File

B. Sample Collector

I certify that:

1. Appropriate sampling equipment/methods were utilized to obtain representative samples. MAB (Initial)
2. Chain-of-custody procedures were followed in the field. MAB (Initial)
3. Sample integrity was maintained by proper preservation. MAB (Initial)
4. All samples were properly labeled. MAB (Initial)

C. Laboratory Representative

I certify that:

1. Proper chain-of-custody procedures were followed as documented on the chain-of-custody forms (Initial)
2. Sample integrity was maintained by proper preservation. (Initial)
3. All samples were properly labeled. (Initial)
4. Quality assurance/quality control procedures were established and carried out. (Initial)
5. Sample holding times were not exceeded. (Initial)

6. SW-846 Analytical Laboratory Procedure (USEPA) methods were used for the analyses. (Initial)

7. An accredited lab performed quantitative analysis using test methods identified in 35 IAC 186.180 (for samples collected on or after January 1, 2003). (Initial)

D. Signatures

I hereby affirm that all information contained in this form is true and accurate to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sample Collector

Name Mike Bettenhausen
Title Senior Project Manager
Company Marlin Environmental, Inc.
Address 3900 Wood Duck Drive, Suite F
City Springfield
State Illinois
Zip Code 62711
Phone 217-726-7569
Signature
Date 2/4/16

Laboratory Representative

Name Bill Mottashed
Title Project Manager
Company First Environmental Laboratories, Inc.
Address 1600 Shore Road
City Naperville
State Illinois
Zip Code 60563
Phone 630-778-1200
Signature
Date 2/12/16

First Environmental Laboratories, Inc.
1600 Shore Road, Suite D
Naperville, IL 60563
Phone: (630)778-1200 * Fax (630)778-1233
E-Mail: info@firstenv.com
IEPA Accreditation #100292

CHAIN OF CUSTODY RECORD

Company Name: Marlin Environmental, Inc.			
Street Address: 3935 Commerce Drive			
City: Saint Charles		State: IL	Zip: 60174
Phone: 630-444-1933	Fax: 630-444-1939	e-Mail: on file	
Send Report To: Joe Buhlig		Via Fax: ☐	Via e-Mail: ☒
Sampled By: Mike B			

Project I.D.: Illico - University
P.O. #: 923441

Enter analyses required on the lines to the left. Place an "X" in the box below to indicate which samples require what analysis.

Date/Time Taken	Sample Description	Matrix	BTEX/MTBE	PNA							Comments	Lab I.D.
2/4/16 10:30	SB-101 2-4	S	X	X							16-0564-001	
10:45	SB-101 6-8	S	X	X								002
11:05	SB-102 2-4	S	X	X								003
11:15	SB-102 6-8	S	X	X								004

FOR LAB USE ONLY: Cooler Temperature:0.1-6°C Yes✓ No___ 3.2°C
Received within 6 hrs of collection:_____
Ice Present: Yes✓ No___
Sample Refrigerated: Yes___ No___
Refrigerator Temperature:_____°C
Containers Received Preserved: Yes✓ No___
5035 Vials Frozen: Yes___ No___
Freezer Temperature:_____°C

Notes and Special Instructions: Needs to meet IL TACO Objectives.

Relinquished By: [signature]	Date/Time: 2/4/16 · 4:00	Received By: [signature]	Date/Time: 2/5/16 1200
Relinquished By:	Date/Time:	Received By:	Date/Time:

Rev 1/07

Benanti, Trent

From: Joe Buhlig <joeb@marlinenv.com>
Sent: Thursday, February 18, 2016 3:18 PM
To: Benanti, Trent
Subject: Illico University
Attachments: Illico University Boring Logs.pdf; Illico University Soil Table and Lab Report.pdf; Illico University Stage 3 Actual Costs Ammendement.pdf

Trent,
Sorry I missed you call yesterday. I appreciate the update. I wanted to send you some information so you could continue your review of the SICR. On February 4, 2016 Marlin advanced two soil borings SB-101 and SB-102 . The borings were advanced to delineate soil contamination to the north of SB-30 and MW-14. I have attached the soil boring logs, analytical table and laboratory report for SB-101 and SB-102. Also attached please find the revised soil boring monitoring well costs form, analytical costs form and budget summary sheet for the Stage 3 actual costs. The revised forms reflect the cost for advancing SB-101 and SB-102. Our CAD tech is currently revising the SICR maps. Once these are complete I will forward them to you for your review. I am hoping he will have the maps done early next week. Thank you for your assistance in this matter.

Sincerely,

Joe Buhlig
Marlin Environmental Consulting, LLC.
3900 Wood Duck Drive, Suite F
Springfield, IL. 62711
217-726-7569 Ext. 300

Budget Summary

Choose the applicable regulations: ◉ 734 ○ 732

734	Free Product	Stage 1 Site Investigation	Stage 2 Site Investigation	Stage 3 Site Investigation	Corrective Action
Drilling and Monitoring Wells Costs Form				$1,486.97	
Analytical Costs Form				$1,395.32	
Remediation and Disposal Costs Form				$0.00	
UST Removal and Abandonment Costs Form				$0.00	
Paving, Demolition, and Well Abandonment Costs Form				$0.00	
Consulting Personnel Costs Form				$15,511.96	
Consultant's Materials Costs Form				$604.80	
Handling Charges Form	Handling charges will be determined at the time a billing package is submitted to the Illinois EPA. The amount of allowable handling charges will be determined in accordance with the Handling Charges Form.				
Total	$0.00	$0.00	$0.00	$18,999.05	$0.00

Drilling and Monitoring Well Costs Form

1. Drilling

Number of Borings to Be Drilled	Type HSA/PUSH/ Injection	Depth (feet) of Each Boring	Total Feet Drilled	Reason for Drilling
2	PUSH	10	20	Migration Pathway
			0	
			0	
			0	
			0	
			0	
			0	
			0	

☑ Subpart H minimum payment amount applies.

	Total Feet	Rate per Foot ($)	Total Cost ($)
Total Feet via HSA:	0	$28.50	$0.00
Total Feet via PUSH:	20	$22.30	$446.00
Total Feet for Injection via PUSH:	0	$18.59	$0.00
		Total Drilling Costs:	**$1,486.97**

adjusted to reflect Subpart H minimum payment amount

2. Monitoring / Recovery Wells

Number of Wells	Type of Well HSA / PUSH / 4" or 6" Recovery / 8" Recovery	Diameter of Well (inches)	Depth of Well (feet)	Total Feet of Wells to Be Installed ($)
				0
				0
				0
				0
				0

Well Installation	Total Feet	Rate per Foot ($)	Total Cost ($)
Total Feet via HSA:	0	$20.45	$0.00
Total Feet via PUSH:	0	$15.49	$0.00
Total Feet of 4" or 6" Recovery:	0	$30.98	$0.00
Total Feet of 8" or Greater Recovery:	0	$50.80	$0.00
		Total Well Costs:	**$0.00**

Total Drilling and Monitoring Well Costs:	**$1,486.97**

MARLIN Environmental
DRILLING DIVISION

INVOICE

BILL TO
Illico, Inc. 2201 Woodlawn Road, Suite 600 Lincoln, IL 62656
SERVICE ADDRESS
Illico - University 3712 North University Drive Peoria, IL 61614 Stage 3 Drilling

DATE
2/4/16

INVOICE #
1382-020416

Description	Quantity	Rate	Amount
Feet: Hollow Stem Auger Drilling	0	$ 27.94	$ -
Feet: Direct Push Platform for Sampling	20	$ 21.87	$ 1,486.97
Feet: 2" Monitoring Well Installation via HSA	0	$ 20.05	$ -
Personnel: Roth 02/04/16			
	TOTAL		$ 1,486.97

Analytical Costs Form

Laboratory Analysis	Number of Samples		Cost ($) per Analysis		Total per Parameter
Chemical Analysis					
BETX Soil with MTBE EPA 8260	4	x	$105.33	=	$421.32
BETX Water with MTBE EPA 8260		x	$100.37	=	$0.00
COD (Chemical Oxygen Demand)		x	$37.17	=	$0.00
Corrosivity		x	$18.59	=	$0.00
Flash Point or Ignitability Analysis EPA 1010		x	$40.88	=	$0.00
Fraction Organic Carbon Content (f_{oc}) ASTM-D 2974-00	1	x	$47.08	=	$47.08
Fat, Oil, & Grease (FOG)		x	$74.34	=	$0.00
LUST Pollutants Soil - analysis must include volatile, base/ neutral, polynuclear aromatics and metals list in Section 732. Appendix B and 734.Appendix B		x	$858.73	=	$0.00
Dissolved Oxygen (DO)		x	$29.74	=	$0.00
Paint Filter (Free Liquids)		x	$17.35	=	$0.00
PCB / Pesticides (combination)		x	$275.09	=	$0.00
PCBs		x	$137.54	=	$0.00
Pesticides		x	$173.48	=	$0.00
pH		x	$17.35	=	$0.00
Phenol		x	$42.13	=	$0.00
Polynuclear Aromatics PNA, or PAH SOIL EPA 8270	4	x	$188.36	=	$753.44
Polynuclear Aromatics PNA, or PAH WATER EPA 8270		x	$188.36	=	$0.00
Reactivity		x	$84.26	=	$0.00
SVOC - Soil (Semi-Volatile Organic Compounds)		x	$387.85	=	$0.00
SVOC - Water (Semi-Volatile Organic Compounds)		x	$387.85	=	$0.00
TKN (Total Kjeldahl) "nitrogen"		x	$54.52	=	$0.00
TPH (Total Petroleum Hydrocarbons)		x	$151.18	=	$0.00
VOC (Volatile Organic Compounds) - Soil (Non-Aqueous)		x	$216.85	=	$0.00
VOC (Volatile Organic Compounds) - Water		x	$209.42	=	$0.00
Field Blank BTEX		x	$100.37	=	$0.00
Trip Blank BTEX		x	$100.37	=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00
Geo-Technical Analysis					
Soil Bulk Density (p_b) ASTM D2937-94		x	$27.26	=	$0.00
Ex-situ Hydraulic Conductivity / Permeability		x	$315.98	=	$0.00
Moisture Content (w) ASTM D2216-92 / D4643-93		x	$14.87	=	$0.00
Porosity		x	$37.17	=	$0.00
Rock Hydraulic Conductivity Ex-situ		x	$433.70	=	$0.00
Sieve / Particle Size Analysis ASTM D422-63 / D1140-54		x	$179.68	=	$0.00
Soil Classification ASTM D2488-90 / D2487-90		x	$84.26	=	$0.00
Soil Particle Density (ps) ASTM D854-92		x	$90.00	=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00

Analytical Costs Form

Metals Analysis					
Soil preparation fee for Metals TCLP Soil (one fee per soil sample)		x	$97.89	=	$0.00
Soil preparation fee for Metals Total Soil (one fee per soil sample)		x	$19.82	=	$0.00
Water preparation fee for Metals Water (one fee per water sample)		x	$13.62	=	$0.00
Arsenic TCLP Soil		x	$19.82	=	$0.00
Arsenic Total Soil		x	$19.82	=	$0.00
Arsenic Water		x	$22.30	=	$0.00
Barium TCLP Soil		x	$12.39	=	$0.00
Barium Total Soil		x	$12.39	=	$0.00
Barium Water		x	$14.87	=	$0.00
Cadmium TCLP Soil		x	$19.82	=	$0.00
Cadmium Total Soil		x	$19.82	=	$0.00
Cadmium Water		x	$22.30	=	$0.00
Chromium TCLP Soil		x	$12.39	=	$0.00
Chromium Total Soil		x	$12.39	=	$0.00
Chromium Water		x	$14.87	=	$0.00
Cyanide TCLP Soil		x	$34.70	=	$0.00
Cyanide Total Soil		x	$42.13	=	$0.00
Cyanide Water		x	$42.13	=	$0.00
Iron TCLP Soil		x	$12.39	=	$0.00
Iron Total Soil		x	$12.39	=	$0.00
Iron Water		x	$14.87	=	$0.00
Lead TCLP Soil		x	$19.82	=	$0.00
Lead Total Soil		x	$19.82	=	$0.00
Lead Water		x	$22.30	=	$0.00
Mercury TCLP Soil		x	$23.54	=	$0.00
Mercury Total Soil		x	$12.39	=	$0.00
Mercury Water		x	$32.22	=	$0.00
Selenium TCLP Soil		x	$19.82	=	$0.00
Selenium Total Soil		x	$19.82	=	$0.00
Selenium Water		x	$18.59	=	$0.00
Silver TCLP Soil		x	$12.39	=	$0.00
Silver Total Soil		x	$12.39	=	$0.00
Silver Water		x	$14.87	=	$0.00
Metals TCLP Soil (a combination of all metals) RCRA		x	$127.63	=	$0.00
Metals Total Soil (a combination of all metals) RCRA		x	$116.47	=	$0.00
Metals Water (a combination of all metals) RCRA		x	$147.45	=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00
		x		=	$0.00
Other					
EnCore® Sampler, purge-and-trap sampler, or equivalent sampling device	4	x	$12.39	=	$49.56
Sample Shipping per sampling event[1]	2	x	$61.96	=	$123.92

[1] A sampling event, at a minimum, is all samples (soil and groundwater) collected in a calendar day

Total Analytical Costs:	**$1,395.32**

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Invoice

Invoice Number: 126503

Tax I.D. No. 36-3925322

Invoice Date: Feb 12, 2016

Page: 1

Sold To:
MARLIN ENVIRONMENTAL
3935 Commerce Drive
St. Charles, IL 60174

Remit To:
FIRST ENVIRONMENTAL LABORATORIES, INC.
1600 Shore Road Suite D
Naperville, IL 60563

Customer ID: MARLIN01

Customer PO	Payment Terms	Due Date	Sales Rep ID
	Net 240 Days	10/9/16	

Quantity	Item	Description	Unit Price	Extension
		Project ID: Illico - University 923441		
4.00		BTEX/MTBE	105.33	421.32
4.00		PNAs	188.36	753.44
1.00		Date Collected 2/4/16		
		First Environmental File ID: 16-0564		
		THANK YOU!		

TOTAL AMOUNT DUE $ 1,174.76

LUST Incident No: 923441	Boring Number: SB-102	Page 1 of 1
Site Name: Illico Independent Oil	Location: North of subject property; See Map	Date: Start 2/4/2016
Address: 3712 N. University St. Peoria, Illinois		Finish 2/4/2016

Sample Number	Sample Device	Sample Recovery	Lithology Symbol	Depth (feet)	Detailed Soil and Rock Description	Natural Moisture Content %	Hand Penetrometer Qu	OVA/PID/FID/OVM	Remarks
					Grass surface				
			Fill	1	topsoil	M		<1	
			CL	2	Brown Silty Clay	M			Sample
		100%	CL	3		M		<1	Interval
			CL	4		M			
1			CL	5		M		<1	
			CL	6		M			Sample
			CL	7		M		<1	Interval
		100%	CL	8	soft, brown/gray mottled silty clay	M			
			CL	9	Saturation	W		<1	
2			CL	10		W			
				11	End of Boring @ 10'				
				12					
				13					
				14					
3				15					
				16					
				17					
				18					
				19					
				20					
				21					
				22					
				23					
				24					
				25					
				26					
				27					

FIVE FOOT MACROCORE

Note: Stratification lines are approximate; in-situ transition between soil types may be gradual.

Groundwater Date

Depth While Drilling 9'

Depth After Drilling NA

Auger Depth 10' Rig Hand Auger

Rotary Depth N/A Geologist: Brandon Maus

Driller/Co: Stevie / Marlin

Note: Boring backfilled with cuttings and bentonite.

Illinois Environmental Protection Agency

IL 532-2275
LPC 501 Dec-96

LUST Incident No: 923441				**Boring Number:** SB-101		**Page** 1		**of** 1	
Site Name: Illico Independent Oil **Address:** 3712 N. University St. Peoria, Illinois				**Location:** North of subject property; See Map		**Date:**		**Start** 2/4/2016 **Finish** 2/4/2016	
Sample Number	**Sample Device**	**Sample Recovery**	**Lithology Symbol**	**Depth (feet)**	**Detailed Soil and Rock Description** Grass surface	**Natural Moisture Content %**	**Hand Penetrometer Qu**	**OVA/PID/FID/OVM**	**Remarks**
			Fill	1	topsoil	M		<1	
			CL	2	Brown Silty Clay	M			Sample
		100%	CL	3		M		<1	Interval
			CL	4		M			
1			CL	5		M		<1	
			CL	6		M			Sample
			CL	7		M		<1	Interval
		100%	CL	8	soft, brown/gray mottled silty clay	M			
			CL	9	Saturation	W		<1	
2			CL	10		W			
	FIVE FOOT MACROCORE			11	End of Boring @ 10'				
				12					
				13					
				14					
3				15					
				16					
				17					
				18					
				19					
				20					
				21					
				22					
				23					
				24					
				25					
				26					
				27					

Note: Stratification lines are approximate; in-situ transition between soil types may be gradual.

Groundwater Date

▼ Depth While Drilling 9'

▽ Depth After Drilling NA

Auger Depth 10' Rig Hand Auger

Rotary Depth N/A Geologist: Brandon Maus

Driller/Co: Stevie / Marlin

Note: Boring backfilled with cuttings and bentonite.

Illinois Environmental Protection Agency

IL 532-2275
LPC 501 Dec-96

Benanti, Trent

From: Benanti, Trent
Sent: Thursday, March 31, 2016 2:41 PM
To: Joe Buhlig (joeb@marlinenv.com)
Cc: Jeff Wienhoff (jeffw@marlinenv.com)
Subject: Leaking UST Incident #923441

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Joe:

I will be sending a series of emails regarding the Site Investigation Completion Report dated 12/14/2015. The emails will have the following titles (subjects):

1) Leaking UST Incident #923441 – Site Investigation Completion Report;

2) Leaking UST Incident #923441 – Site Investigation Completion Report – FIGURES 1, 2, 3, and 4;

3) Leaking UST Incident #923441 – Site Investigation Completion Report – TABLES;

4) Leaking UST Incident #923441 – Site Investigation Completion Report – ATTACHMENT 4;

5) Leaking UST Incident #923441 – Site Investigation Completion Report – ATTACHMENT 3; and

6) Leaking UST Incident #923441 – Site Investigation Completion Report – FIGURE 5.

Please respond to the emails in the order in which they are received. Please note that some of the emails will not require a response. Also note that the Illinois EPA must notify the owner/operator in writing of its final action by 04/12/2016.

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Benanti, Trent
Sent: Thursday, March 31, 2016 3:25 PM
To: Joe Buhlig (joeb@marlinenv.com)
Cc: Jeff Wienhoff (jeffw@marlinenv.com)
Subject: Leaking UST Incident #923441 – Site Investigation Completion Report

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Joe Buhlig:

This email is the first email in a series of emails regarding the Site Investigation Completion Report dated 12/14/2015. I have reviewed said Site Investigation Completion Report and have the following comments regarding the body of the report:

1) The analytical results of the soil samples collected as part of site investigation were compared to the Tier 1 soil remediation objectives. The Tier 1 evaluation is discussed on page 3 of the Site Investigation Completion Report. However, the TABLE OF CONTENTS states that the Tier 1 evaluation is discussed on page 4. In addition, the TABLE OF CONTENTS and page 3 state that the analytical results of the soil samples collected as part of early action and site investigation were compared to the Tier 1 soil remediation objectives (TACO Tier 1 Evaluation: Early Action and Site Investigation Soil).

   Please note that soil samples were not collected as part of early action;

2) The TABLE OF CONTENTS states that Special Resource Groundwater (Class III) and surface water are discussed on page 5 of the Site Investigation Completion Report. However, the Site Investigation Completion Report does not discuss Special Resource Groundwater (Class III) and surface water;

3) The Illinois EPA approved the Stage 1 Site Investigation Plan on 11/13/2012. However, the Site Investigation Completion Report states that the approval letter is dated 11/12/2012;

4) Leaking UST Incident #923441 was reported to the Illinois Emergency Management Agency (IEMA) on 12/03/1992. However, the Site Investigation Completion Report states that Leaking UST Incident #923441 was reported to IEMA on 12/02/1992;

5) The Stage 3 Site Investigation Plan is dated 10/06/2015. However, the Site Investigation Completion Report states that the Stage 3 Site Investigation Plan is dated 10/05/2015;

6) The site surface is a mix of concrete and grass areas. However, the Site Investigation Completion Report states that the site surface is generally paved;

7) The subsurface generally consists of silty clay. However, the Site Investigation Completion Report states that the subsurface generally consists of silty clay to 9' below ground surface (bgs) and sand from 9' bgs to 13' bgs;

8) The groundwater levels while drilling range from 4' bgs to 9' bgs. However, the Site Investigation Completion Report states that the groundwater levels while drilling range from 4' bgs to 8' bgs;

9) FIGURE 2 and FIGURE 5 show the horizontal extent of the soil contamination. However, the Site Investigation Completion Report states that FIGURE 4 shows the horizontal extent of the soil contamination;

10) The Licensed Professional Engineer's certification states that the work described in the Site Investigation Completion Report has been completed in accordance with 35 Illinois Administrative Code (35 Ill. Adm. Code) 732. However, the Licensed Professional Engineer's certification should state that the work described in the Site Investigation Completion Report has been completed in accordance with 35 Ill. Adm. Code 734; and

11) Mr. Jeffrey R. Wienhoff's license expires on 11/30/2017. However, the Licensed Professional Engineer's certification states that Mr. Wienhoff's license expires on 11/30/2015.

Please note that this email does not require a response.

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Benanti, Trent
Sent: Thursday, March 31, 2016 4:42 PM
To: Joe Buhlig (joeb@marlinenv.com)
Cc: Jeff Wienhoff (jeffw@marlinenv.com)
Subject: Leaking UST Incident #923441 – Site Investigation Completion Report – FIGURES 1, 2, 3, and 4
Attachments: Area Map (100').pdf

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Joe Buhlig:

This email is the second email in a series of emails regarding the Site Investigation Completion Report dated 12/14/2015. I have reviewed said Site Investigation Completion Report and have the following comments regarding the site maps:

1) The property boundary lines shown on FIGURE 1 (SURROUNDING LAND USAGE MAP) do not match the property boundary lines shown on the map generated by Peoria County Front Desk. Please replace FIGURE 1 (SURROUNDING LAND USAGE MAP) with the map generated by Peoria County Front Desk. A copy of the map generated by Peoria County Front Desk is attached;

2) FIGURE 2 (SITE AREA FEATURES MAP) shows the horizontal extents of the soil and the groundwater contamination. The Illinois EPA requests that the consultant replace FIGURE 2 (SITE AREA FEATURES MAP) with FIGURE 2A (SITE AREA FEATURES MAP - SOIL) and FIGURE 2B (SITE AREA FEATURES MAP - GROUNDWATER). The basis for FIGURE 2A (SITE AREA FEATURES MAP - SOIL) and FIGURE 2B (SITE AREA FEATURES MAP - GROUNDWATER) must be the site map titled "FIGURE 2 (SITE AREA FEATURES MAP)," which was attached to the email dated 01/29/2016. FIGURE 2A (SITE AREA FEATURES MAP - SOIL) must show soil borings SB-101 and SB-102. FIGURE 2A (SITE AREA FEATURES MAP - SOIL) must not show monitoring wells from which no soil sample was selected for chemical analysis. FIGURE 2A (SITE AREA FEATURES MAP - SOIL) must not identify those monitoring wells for which the concentrations of contaminants in the groundwater exceed the Tier 1 remediation objectives. FIGURE 2B (SITE AREA FEATURES MAP - GROUNDWATER) must not show soil borings from which no groundwater sample was selected for chemical analysis. The locations of the proposed monitoring wells and the proposed soil borings must be removed from the legends of FIGURE 2A (SITE AREA FEATURES MAP - SOIL) and FIGURE 2B (SITE AREA FEATURES MAP - GROUNDWATER);

3) The elevations of the tops of the risers of monitoring wells MW-9, MW-10, and MW-11 are 97.88', 98.94', and 99.72'. However, FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) implies that the ground surface elevations are 97.88', 98.94', and 99.72';

4) FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) shows the groundwater levels while drilling. However, FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) does not show the correct groundwater levels while drilling for monitoring wells MW-9, MW-10, and MW-11;

5) FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) shows the well screens for monitoring wells MW-9, MW-10, and MW-11. However, FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) does not show the correct well screens for monitoring wells MW-9, MW-10, and MW-11;

6) According to FIGURE 2 (SITE AREA FEATURES MAP), the underground storage tank (UST) basin measures approximately 53' north to south. However, according to FIGURE 3 (GEOLOGICAL CROSS SECTION MAP), the UST basin measures approximately 40' north to south. Please correct FIGURE 3 (GEOLOGICAL CROSS SECTION MAP);

7) The basis for the reference map in the lower left corner of FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) must be the site map titled "FIGURE 2 (SITE AREA FEATURES MAP)," which was attached to the email dated 01/29/2016;

8) The basis for FIGURE 4 (GROUNDWATER CONTOUR & FLOW MAP) must be the site map titled "FIGURE 2 (SITE AREA FEATURES MAP)," which was attached to the email dated 01/29/2016; and

9) At least a couple of the groundwater contour lines shown on FIGURE 4 (GROUNDWATER CONTOUR & FLOW MAP) are incorrect. Therefore, the Illinois EPA requests that the consultant remove the groundwater contour lines and the approximate localized groundwater flow directions from FIGURE 4 (GROUNDWATER CONTOUR & FLOW MAP).

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Benanti, Trent
Sent: Monday, April 04, 2016 7:57 AM
To: Joe Buhlig (joeb@marlinenv.com)
Cc: Jeff Wienhoff (jeffw@marlinenv.com)
Subject: Leaking UST Incident #923441 - Site Investigation Completion Report - TABLES

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Joe Buhlig:

This email is the third email in a series of emails regarding the Site Investigation Completion Report dated 12/14/2015. I have reviewed said Site Investigation Completion Report and have the following comments regarding the tables:

1) The analytical results of soil samples collected from soil borings SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, SB-7, SB-8, SB-9, and SB-10 and monitoring well installation boreholes MW-5, MW-6, and MW-7 are not being used. Therefore, Table 1 and Table 2 do not need to list said analytical results;

2) According to a footnote below Table 1, concentrations that exceed a Tier 1 remediation objective are printed in bold font. The method detection limit for benzene for soil sample SB-17 (6'-7') exceeds a Tier 1 remediation objective. However, said method detection limit is not printed in bold font;

3) Table 1 and Table 2 do not indicate that soil samples SB-17 (3.5'-5') and SB-17 (6'-7') were replaced by SB-31 (2'-4') and SB-31 (4'-6');

4) The Tier 1 remediation objectives for phenanthrene for the soil component of the groundwater ingestion exposure route are 210,000 ug/kg (Class I) and 1,100,000 (Class II). However, Table 2 states that the Tier 1 remediation objectives for phenanthrene for the soil component of the groundwater ingestion exposure route are 200,000 ug/kg (Class I) and 1,000,000 ug/kg (Class II);

5) According to a footnote below Table 4, concentrations that exceed a Tier 1 remediation objective are printed in bold font. The method detection limit for dibenzo(a,h)anthracene for groundwater sample MW-1 (11/22/1999) exceeds a Tier 1 remediation objective. In addition, the method detection limits for indeno(1,2,3-cd)pyrene for groundwater samples MW-1 (11/22/1999), MW-4 (11/16/2000), and MW-4 (Duplicate) exceed a Tier 1 remediation objective. However, said method detection limits are not printed in bold font; and

6) Table 5 lists the top of the riser (TOR) elevations and the depth to groundwater below the top of the riser (BTOR). However, Table 5 states that the elevations are the top of the casing (TOC) elevations. In addition, Table 5 states that the depth to groundwater is the depth to groundwater below the top of the casing (BTOC).

Please note that this email does not require a response.

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Benanti, Trent
Sent: Monday, April 04, 2016 8:21 AM
To: Joe Buhlig (joeb@marlinenv.com)
Cc: Jeff Wienhoff (jeffw@marlinenv.com)
Subject: Leaking UST Incident #923441 - Site Investigation Completion Report - ATTACHMENT 4

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Joe Buhlig:

This email is the fourth email in a series of emails regarding the Site Investigation Completion Report dated 12/14/2015. I have reviewed said Site Investigation Completion Report and have the following comments regarding ATTACHMENT 4:

1) The Illinois EPA does not believe that the saturated thickness is known. Therefore, Marlin Environmental, Inc. has two options;

   a) Estimate the saturated thickness from well logs for potable water supply wells in the area; or

   b) Determine the sensitivity of the hydraulic conductivity to a greater saturated thickness and a lesser saturated thickness.

2) For monitoring wells screened across the water table, the total well penetration depth and screen length are equal to the static water column height (8.8'); and

3) Monitoring well MW-2 was drilled with an auger with an outside diameter of 8.25". Therefore, the well radius and the well skin radius are 4.125" (0.34375').

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Benanti, Trent
Sent: Monday, April 04, 2016 10:01 AM
To: Joe Buhlig (joeb@marlinenv.com)
Cc: Jeff Wienhoff (jeffw@marlinenv.com)
Subject: Leaking UST Incident #923441 - Site Investigation Completion Report - ATTACHMENT 3

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Joe Buhlig:

This email is the fifth email in a series of emails regarding the Site Investigation Completion Report dated 12/14/2015. I have reviewed said Site Investigation Completion Report and have the following comments regarding ATTACHMENT 3:

1) The mass-limit acreage is either 1 acre or 2 acres. However, the SSL Input Parameters for Use with Tier 2 Calculations state that the mass-limit acreage is 0.5 acre.

   Please note that the mass-limit acreage is not a parameter in equation S18 and equation S28;

2) The hydraulic gradient (i) is 0.1426 ft/ft (m/m). However, the forms titled "SSL Input Parameters for Use with Tier 2 Calculations" state that the hydraulic gradient (i) is 0.0131 m/m.

   Please note that a dilution factor (DF) of 20 was used in equation S18. Therefore, the hydraulic gradient (i) will not affect the result of said equation;

3) According to ATTACHMENT 4, the hydraulic conductivity (K) is 0.0003667 cm/s (115.6 m/yr). However, the forms titled "SSL Input Parameters for Use with Tier 2 Calculations" state that the hydraulic conductivity (K) is 0.46 m/yr.

   Please note that a dilution factor (DF) of 20 was used in equation S18. Therefore, the hydraulic conductivity (K) will not affect the result of said equation. Also note that the hydraulic conductivity (K) may not be 0.0003667 cm/s;

4) The Illinois EPA does not believe that the source length parallel to groundwater flow (L) is known. However, the Illinois EPA knows that the source length parallel to groundwater flow (L) is greater than the 39.624 m (100') listed on the form titled "SSL Input Parameters for Use with Tier 2 Calculations."

   Please note that a dilution factor (DF) of 20 was used in equation S18. Therefore, the source length parallel to groundwater flow (L) will not affect the result of said equation;

5) The analytical results of the soil samples collected from soil borings SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, SB-7, SB-8, SB-9, and SB-10 and monitoring well installation boreholes MW-5, MW-6, and MW-7 are not being used. Therefore, Marlin Environmental, Inc. does not need to calculate the potential concentrations of contaminants migrating from said soil samples or the X distances for said soil samples;

6) Marlin Environmental, Inc. needs to calculate the potential concentrations of benzene migrating from soil samples SB-11 (7'-8'SB-12 (7'-8'), SB-13 (6'-7'), SB-14 (6'-7'), SB-15 (5'-6'), SB-16 (6'-7'), SB-18 (6'-7'), SB-19 (6'-7'), SB-25 (3.5'-5'), and MW-14 (4'-6');

7) Marlin Environmental, Inc. needs to calculate the potential concentrations of total xylenes migrating from soil samples SB-11 (7'-8'), SB-12 (7'-8'), SB-13 (6'-7'), SB-15 (5'-6'), SB-16 (6'-7'), SB-18 (6'-7'), and MW-14 (4'-6');

8) Marlin Environmental, Inc. needs to calculate the potential concentrations of toluene migrating from soil samples SB-11 (7'-8'), SB-13 (6'-7'), and SB-15 (5'-6');

9) Marlin Environmental, Inc. needs to calculate the potential concentrations of ethylbenzene migrating from soil samples SB-11 (7'-8'), SB-13 (6'-7'), SB-15 (5'-6'), and SB-18 (6'-7');

10) Marlin Environmental, Inc. needs to calculate the potential concentrations of naphthalene migrating from soil samples SB-11 (7'-8'), SB-15 (5'-6'), and SB-18 (6'-7');

11) Marlin Environmental, Inc. used a hydraulic gradient (i) of 0.1426 ft/ft (m/m) (cm/cm) in equation R19. However, the forms titled "RBCA Input Parameters for Use with Tier 2 Calculations" state that the hydraulic gradient (i) is 0.0273 cm/cm;

12) According to FIGURE 5, the source width perpendicular to the groundwater flow direction in the horizontal plane (S_w) is 214'. However, the forms titled "RBCA Input Parameters for Use with Tier 2 Calculations" state that the source width perpendicular to the groundwater flow direction in the horizontal plane (S_w) is 240'.

    Please note that equation R26 is not sensitive to the source width perpendicular to the groundwater flow direction in the horizontal plane (S_w);

13) The potential concentration of benzene migrating from soil sample SB-31 (2'-4') is less than the potential concentration of benzene migrating from soil sample SB-31 (4'-6'). Therefore, Marlin Environmental, Inc. does not need to calculate the distance X for soil sample SB-31 (2'-4');

14) The potential concentration of benzene migrating from soil sample MW-12 (2'-4') is less than the potential concentration of benzene migrating from soil sample MW-12 (4'-6'). In addition, the potential concentration of benzene migrating from soil sample MW-12 (4'-6') is less than the concentration of benzene in groundwater sample MW-12. Therefore, Marlin Environmental, Inc. does not need to calculate the X distances for soil samples MW-12 (2'-4') and MW-12 (4'-6');

15) The potential concentration of benzene migrating from soil sample MW-13 (4'-6') is less than the concentration of benzene in groundwater sample MW-13. Therefore, Marlin Environmental, Inc. does not need to calculate the X distance for soil sample MW-13 (4'-6');

16) Marlin Environmental, Inc. needs to calculate the X distances for benzene for groundwater samples MW-1, MW-10, and MW-14 and soil samples SB-11 (7'-8'), SB-12 (7'-8'), SB-13 (6'-7'), SB-14 (6'-7'), SB-15 (5'-6'), and SB-16 (6'-7');

17) Marlin Environmental, Inc. needs to calculate the X distances for toluene for soil samples SB-13 (6'-7') and SB-15 (5'-6');

18) Marlin Environmental, Inc. needs to calculate the X distance for ethylbenzene for soil sample SB-15 (5'-6');

19) Marlin Environmental, Inc. needs to calculate the X distance for naphthalene for groundwater sample MW-4; and

20) Marlin Environmental, Inc. needs to calculate the X distance for benzo(a)anthracene for groundwater sample MW-7.

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Jeff Wienhoff <jeffw@marlinenv.com>
Sent: Monday, April 04, 2016 10:02 AM
To: Benanti, Trent; Joe Buhlig
Subject: RE: Leaking UST Incident #923441 – Site Investigation Completion Report – FIGURES 1, 2, 3, and 4
Attachments: Illico - University - 12-15 Geo EDITED 4-16.pdf; Illico - University - GWCF EDIT 4-16.pdf; Illico - University - SAF - GW EDIT 4-16 .pdf; Illico - University - SAF -Soil EDITED 4-16.pdf; Illico - University - SLUM edit 4-16.pdf

Trent,

Attached please find the revised maps per the directions below. One change was not made to the cross section per item #6. The SAF measures tank #1 at 32' north to south. With an estimated 4' cavity on both sides. That makes a total cavity width of 40' that matches the cross section. We are unclear how you are measuring 53' north to south, but 40' is correct and depicted on both maps in our opinion. The vent lines are shown on the SAF would only be a couple feet deep and are not shown the cross section because they are insiginifcant to its purpose.

Jeff

From: Benanti, Trent [mailto:Trent.Benanti@Illinois.gov]
Sent: Thursday, March 31, 2016 4:42 PM
To: Joe Buhlig <joeb@marlinenv.com>
Cc: Jeff Wienhoff <jeffw@marlinenv.com>
Subject: Leaking UST Incident #923441 – Site Investigation Completion Report – FIGURES 1, 2, 3, and 4

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Joe Buhlig:

This email is the second email in a series of emails regarding the Site Investigation Completion Report dated 12/14/2015. I have reviewed said Site Investigation Completion Report and have the following comments regarding the site maps:

1) The property boundary lines shown on FIGURE 1 (SURROUNDING LAND USAGE MAP) do not match the property boundary lines shown on the map generated by Peoria County Front Desk. Please replace FIGURE 1 (SURROUNDING LAND USAGE MAP) with the map generated by Peoria County Front Desk. A copy of the map generated by Peoria County Front Desk is attached;

2) FIGURE 2 (SITE AREA FEATURES MAP) shows the horizontal extents of the soil and the groundwater contamination. The Illinois EPA requests that the consultant replace FIGURE 2 (SITE AREA FEATURES MAP) with FIGURE 2A (SITE AREA FEATURES MAP - SOIL) and FIGURE 2B (SITE AREA FEATURES MAP - GROUNDWATER). The basis for FIGURE 2A (SITE AREA FEATURES MAP - SOIL) and FIGURE 2B (SITE AREA FEATURES MAP - GROUNDWATER) must be the site map titled "FIGURE 2 (SITE AREA FEATURES MAP)," which was attached to the email dated 01/29/2016. FIGURE 2A (SITE AREA FEATURES MAP - SOIL) must show soil borings SB-101 and SB-102. FIGURE 2A (SITE AREA FEATURES MAP - SOIL) must not show monitoring wells from which no

soil sample was selected for chemical analysis. FIGURE 2A (SITE AREA FEATURES MAP - SOIL) must not identify those monitoring wells for which the concentrations of contaminants in the groundwater exceed the Tier 1 remediation objectives. FIGURE 2B (SITE AREA FEATURES MAP - GROUNDWATER) must not show soil borings from which no groundwater sample was selected for chemical analysis. The locations of the proposed monitoring wells and the proposed soil borings must be removed from the legends of FIGURE 2A (SITE AREA FEATURES MAP - SOIL) and FIGURE 2B (SITE AREA FEATURES MAP - GROUNDWATER);

3) The elevations of the tops of the risers of monitoring wells MW-9, MW-10, and MW-11 are 97.88', 98.94', and 99.72'. However, FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) implies that the ground surface elevations are 97.88', 98.94', and 99.72';

4) FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) shows the groundwater levels while drilling. However, FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) does not show the correct groundwater levels while drilling for monitoring wells MW-9, MW-10, and MW-11;

5) FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) shows the well screens for monitoring wells MW-9, MW-10, and MW-11. However, FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) does not show the correct well screens for monitoring wells MW-9, MW-10, and MW-11;

6) According to FIGURE 2 (SITE AREA FEATURES MAP), the underground storage tank (UST) basin measures approximately 53' north to south. However, according to FIGURE 3 (GEOLOGICAL CROSS SECTION MAP), the UST basin measures approximately 40' north to south. Please correct FIGURE 3 (GEOLOGICAL CROSS SECTION MAP);

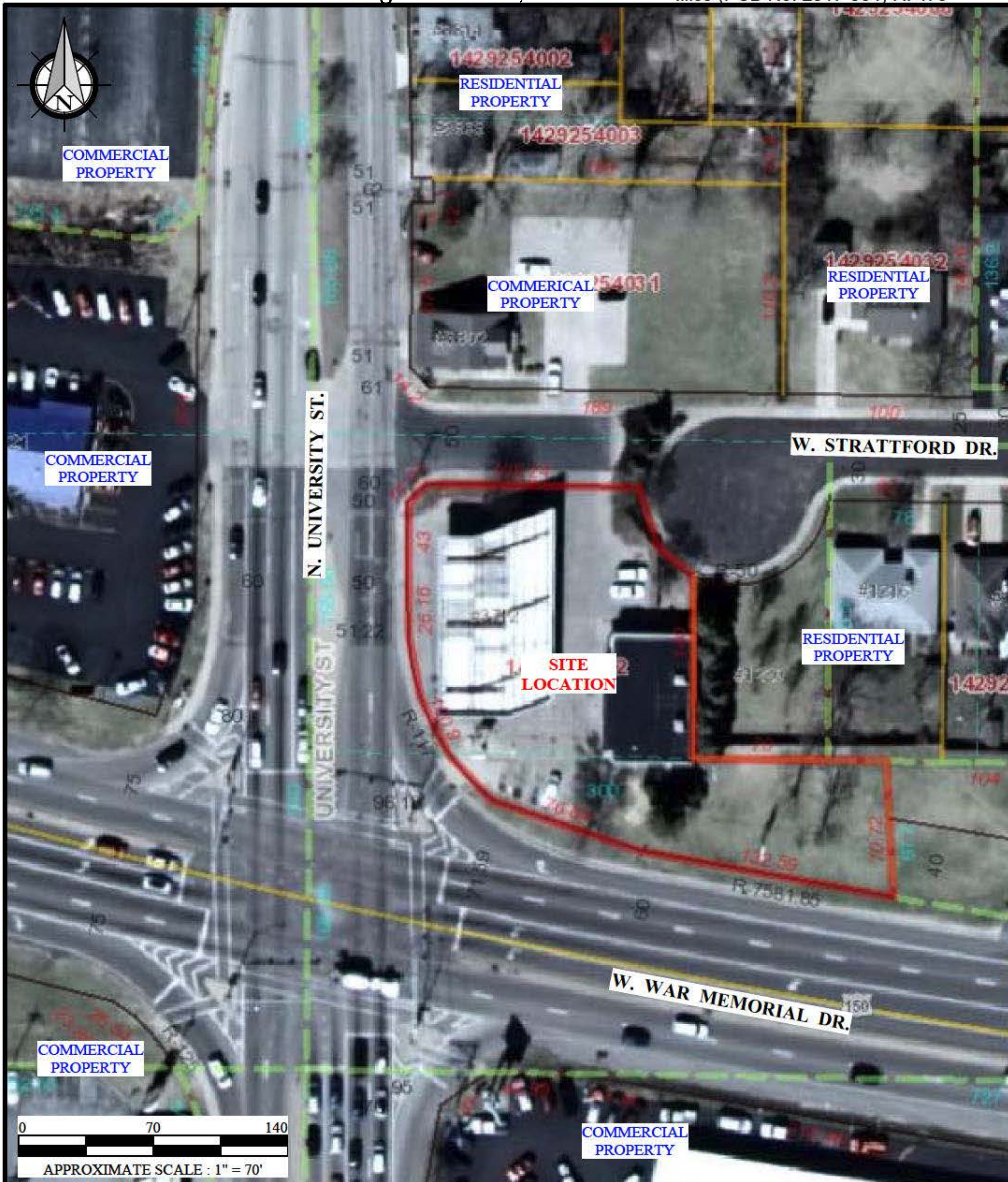
7) The basis for the reference map in the lower left corner of FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) must be the site map titled "FIGURE 2 (SITE AREA FEATURES MAP)," which was attached to the email dated 01/29/2016;

8) The basis for FIGURE 4 (GROUNDWATER CONTOUR & FLOW MAP) must be the site map titled "FIGURE 2 (SITE AREA FEATURES MAP)," which was attached to the email dated 01/29/2016; and

9) At least a couple of the groundwater contour lines shown on FIGURE 4 (GROUNDWATER CONTOUR & FLOW MAP) are incorrect. Therefore, the Illinois EPA requests that the consultant remove the groundwater contour lines and the approximate localized groundwater flow directions from FIGURE 4 (GROUNDWATER CONTOUR & FLOW MAP).

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov



MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

FIGURE: 1	**SURROUNDING LAND USAGE MAP**
PROJECT NUMBER: 1382	ILLICO, INC. - UNIVERSITY 3712 N. UNIVERSITY ST. PEORIA, IL 61614
DRAWN DATE: 04/16	
PREPARED BY: BUHLIG	
DRAWN BY: BETTENHAUSEN	*FILE NAME:* ILLICO - UNIVERSITY - SLUM

LEGEND

- APPROXIMATE SOIL BORING SAMPLE LOCATION (= IMPACTED ABOVE TACO TIER 1 SRO'S)
- APPROXIMATE MONITORING WELL LOCATION (= IMPACTED ABOVE TACO TIER 1 SRO'S)
- SUBJECT SITE PROPERTY LINE
- PROPERTY LINE
- PRODUCT PIPING RUN
- UNDERGROUND ELECTRIC LINE
- SANITARY OR STORM SEWER LINE
- GAS METER
- ELECTRICAL TRANSFORMER
- FIRE HYDRANT

UST LEGEND

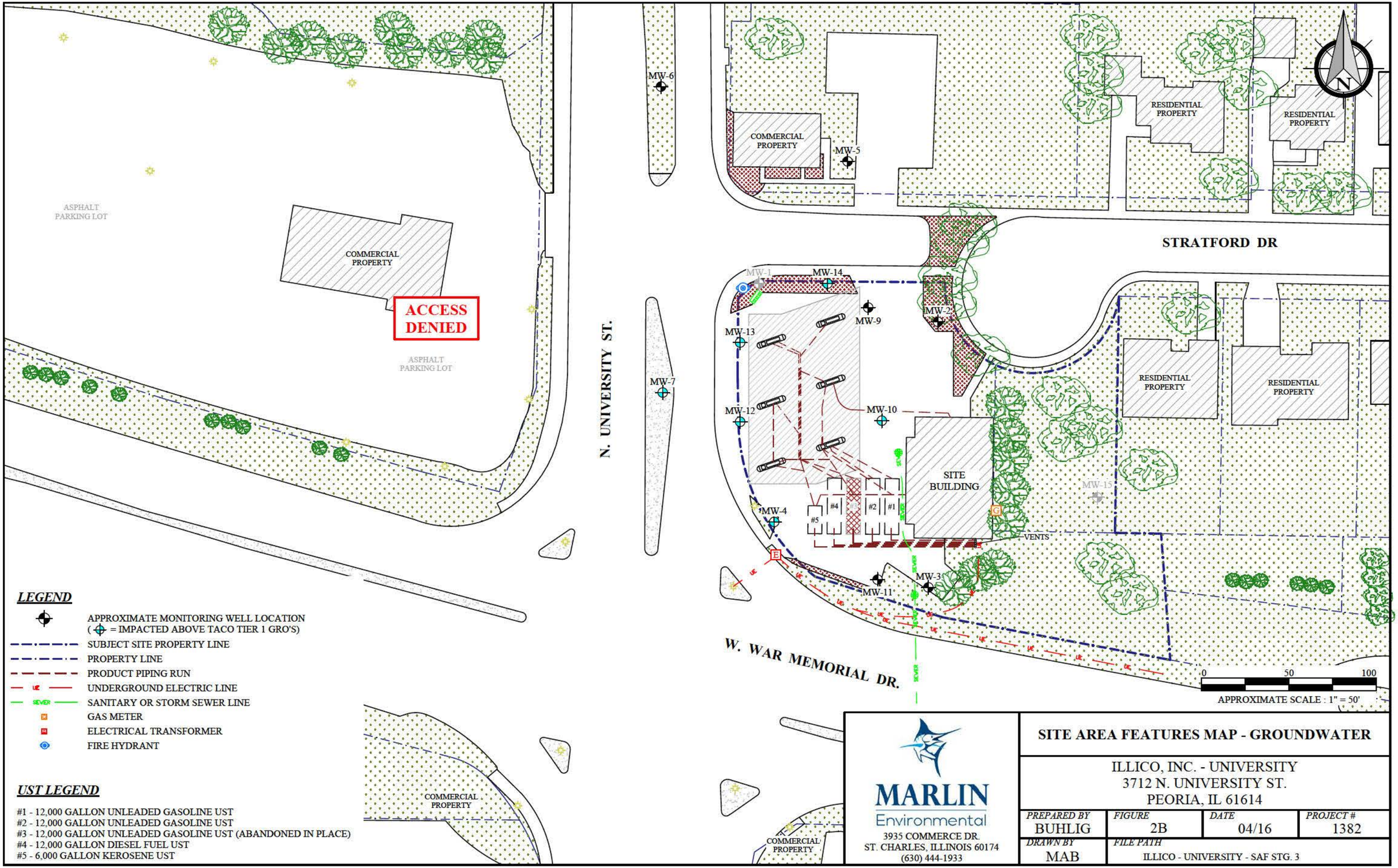
#1 - 12,000 GALLON UNLEADED GASOLINE UST
#2 - 12,000 GALLON UNLEADED GASOLINE UST
#3 - 12,000 GALLON UNLEADED GASOLINE UST (ABANDONED IN PLACE)
#4 - 12,000 GALLON DIESEL FUEL UST
#5 - 6,000 GALLON KEROSENE UST

MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

SITE AREA FEATURES MAP - SOIL

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

PREPARED BY	*FIGURE*	*DATE*	*PROJECT #*
BUHLIG	2A	04/16	1382
DRAWN BY	*FILE PATH*		
MAB	ILLICO - UNIVERSITY - SAF - SOIL		



LEGEND

- APPROXIMATE MONITORING WELL LOCATION (= IMPACTED ABOVE TACO TIER 1 GRO'S)
- SUBJECT SITE PROPERTY LINE
- PROPERTY LINE
- PRODUCT PIPING RUN
- UNDERGROUND ELECTRIC LINE
- SANITARY OR STORM SEWER LINE
- GAS METER
- ELECTRICAL TRANSFORMER
- FIRE HYDRANT

UST LEGEND

#1 - 12,000 GALLON UNLEADED GASOLINE UST
#2 - 12,000 GALLON UNLEADED GASOLINE UST
#3 - 12,000 GALLON UNLEADED GASOLINE UST (ABANDONED IN PLACE)
#4 - 12,000 GALLON DIESEL FUEL UST
#5 - 6,000 GALLON KEROSENE UST

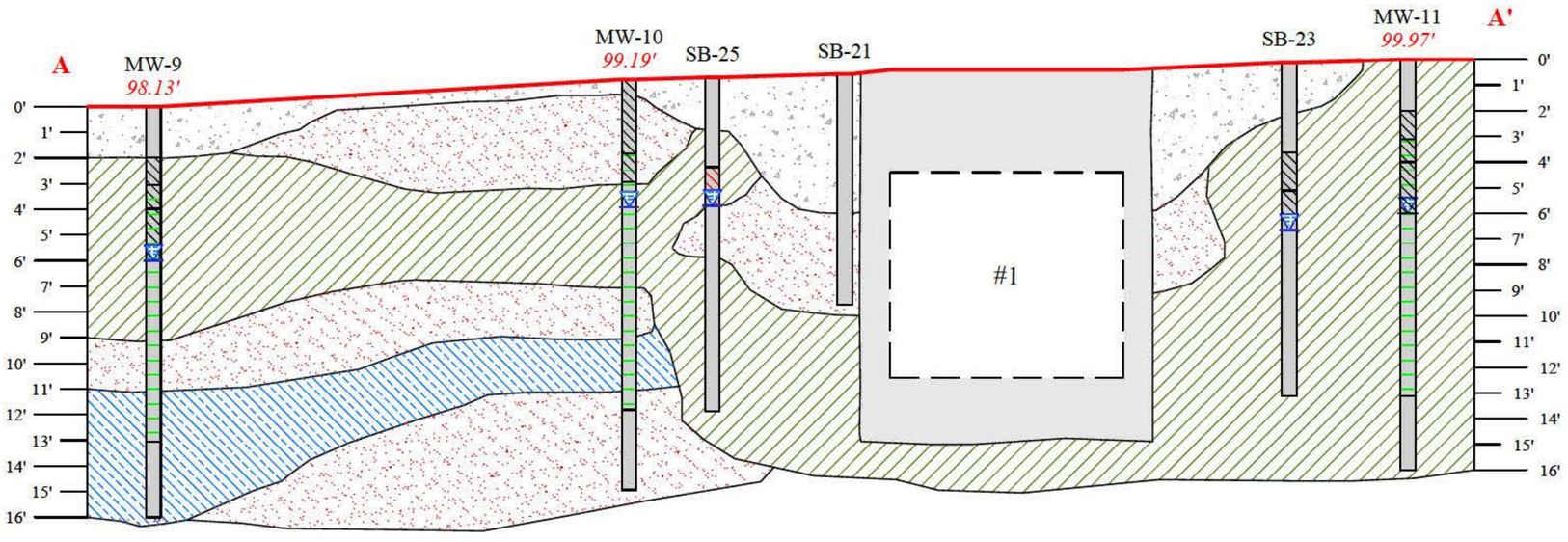
MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

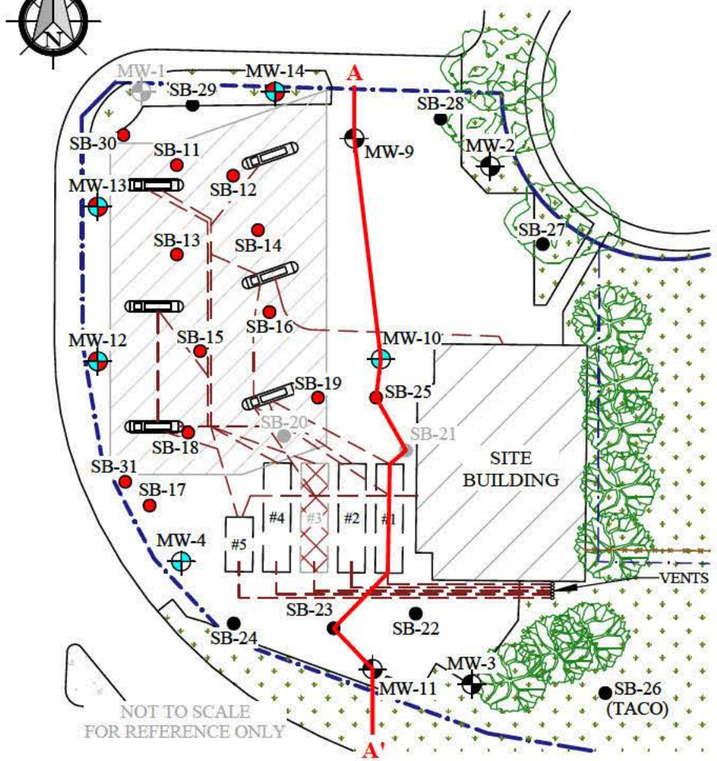
SITE AREA FEATURES MAP - GROUNDWATER

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

PREPARED BY	*FIGURE*	*DATE*	*PROJECT #*
BUHLIG	2B	04/16	1382
DRAWN BY	*FILE PATH*		
MAB	ILLICO - UNIVERSITY - SAF STG. 3		

GEOLOGICAL CROSS SECTION A - A'





LEGEND

- SAND & GRAVEL / CONCRETE
- SILT
- SAND
- SILTY CLAY
- APPROXIMATE UST BASIN
- SOIL SAMPLE INTERVAL - BELOW IEPA TACO TIER 1 SRO'S
- SOIL SAMPLE INTERVAL - ABOVE IEPA TACO TIER 1 SRO'S
- GROUND WATER SCREEN
- DEPTH TO GROUNDWATER WHILE DRILLING

0 20 40

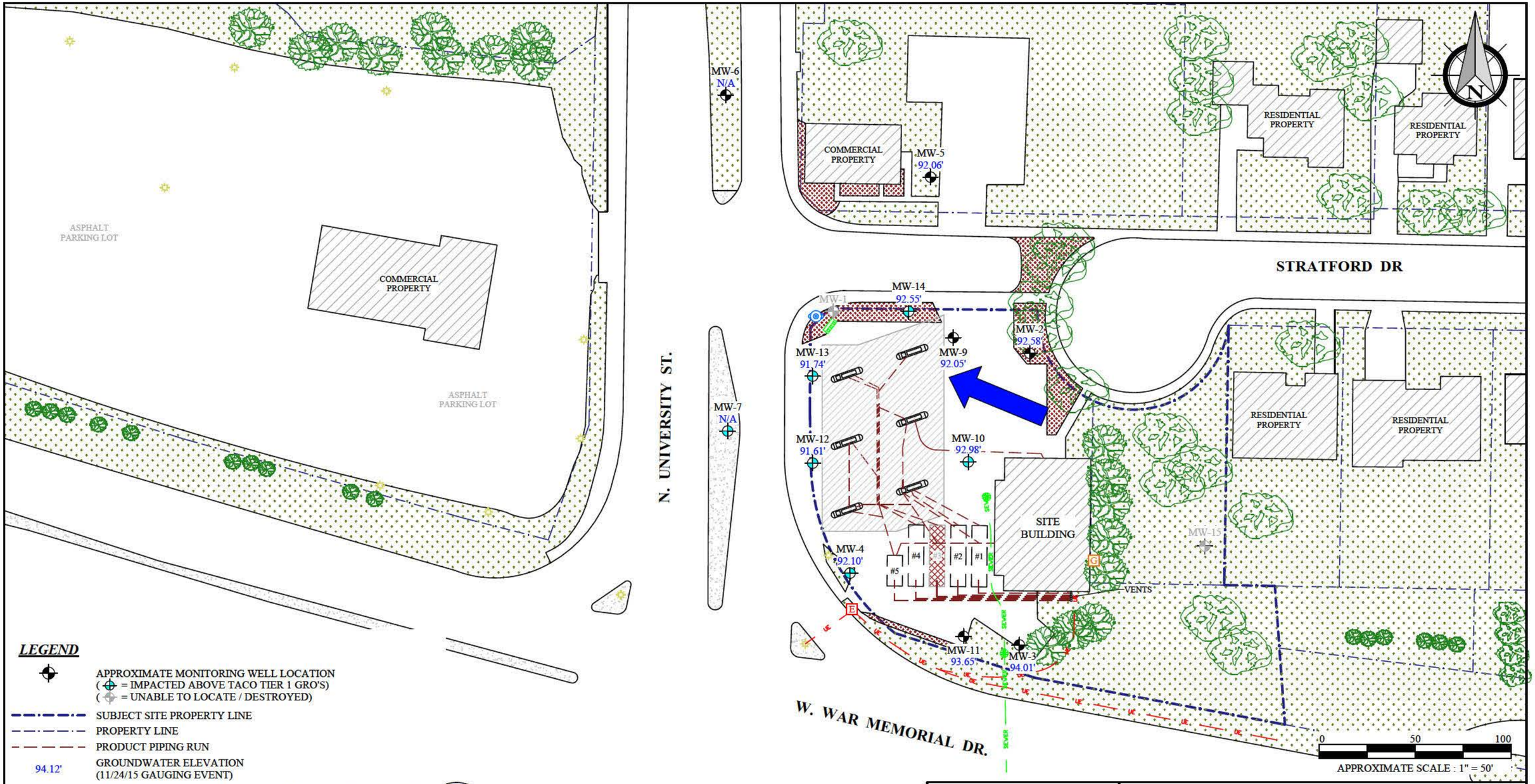
APPROXIMATE HORIZONTAL SCALE : 1" = 20'
VERTICAL SCALE EXAGGERATED

MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

GEOLOGICAL CROSS SECTION MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

PREPARED BY	FIGURE	DATE	PROJECT #
BUHLIG	3	04/16	1382
DRAWN BY	FILE NAME		
BETTENHAUSEN	ILLICO - UNIVERSITY - 12-15 GEO X SECTION		



LEGEND

- APPROXIMATE MONITORING WELL LOCATION
  (= IMPACTED ABOVE TACO TIER 1 GRO'S)
  (= UNABLE TO LOCATE / DESTROYED)
- SUBJECT SITE PROPERTY LINE
- PROPERTY LINE
- PRODUCT PIPING RUN
- 94.12' GROUNDWATER ELEVATION (11/24/15 GAUGING EVENT)
- APPROXIMATE REGIONAL GROUNDWATER FLOW DIRECTION (SEE NOTE BELOW)

NOTE: MONITORING WELL MW-1, MW-6, MW-7, MW-8 & MW-15 NOT INCLUDED IN CONTOUR AND FLOW DETERMINATION.

UST LEGEND

#1 - 12,000 GALLON UNLEADED GASOLINE UST
#2 - 12,000 GALLON UNLEADED GASOLINE UST
#3 - 12,000 GALLON UNLEADED GASOLINE UST (ABANDONED IN PLACE)
#4 - 12,000 GALLON UNLEADED GASOLINE UST
#5 - 6,000 GALLON KEROSENE UST

MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

GROUNDWATER CONTOUR & FLOW MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

PREPARED BY	FIGURE	DATE	PROJECT #
BUHLIG	4	04/16	1382
DRAWN BY	FILE PATH		
MAB	ILLICO - UNIVERSITY - GWCF		

Benanti, Trent

From: Benanti, Trent
Sent: Monday, April 04, 2016 10:08 AM
To: 'Jeff Wienhoff'
Subject: RE: Leaking UST Incident #923441 – Site Investigation Completion Report – FIGURES 1, 2, 3, and 4

Jeff, I measured the distance from SB-21 to SB-23. SB-21 is clearly within the limits of the UST excavation. See the soil boring log.

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

From: Jeff Wienhoff [mailto:jeffw@marlinenv.com]
Sent: Monday, April 04, 2016 10:02 AM
To: Benanti, Trent; Joe Buhlig
Subject: RE: Leaking UST Incident #923441 – Site Investigation Completion Report – FIGURES 1, 2, 3, and 4

Trent,

Attached please find the revised maps per the directions below. One change was not made to the cross section per item #6. The SAF measures tank #1 at 32' north to south. With an estimated 4' cavity on both sides. That makes a total cavity width of 40' that matches the cross section. We are unclear how you are measuring 53' north to south, but 40' is correct and depicted on both maps in our opinion. The vent lines are shown on the SAF would only be a couple feet deep and are not shown the cross section because they are insiginifcant to its purpose.

Jeff

From: Benanti, Trent [mailto:Trent.Benanti@Illinois.gov]
Sent: Thursday, March 31, 2016 4:42 PM
To: Joe Buhlig <joeb@marlinenv.com>
Cc: Jeff Wienhoff <jeffw@marlinenv.com>
Subject: Leaking UST Incident #923441 – Site Investigation Completion Report – FIGURES 1, 2, 3, and 4

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Joe Buhlig:

This email is the second email in a series of emails regarding the Site Investigation Completion Report dated 12/14/2015. I have reviewed said Site Investigation Completion Report and have the following comments regarding the site maps:

1) The property boundary lines shown on FIGURE 1 (SURROUNDING LAND USAGE MAP) do not match the property boundary lines shown on the map generated by Peoria County Front Desk. Please replace

FIGURE 1 (SURROUNDING LAND USAGE MAP) with the map generated by Peoria County Front Desk. A copy of the map generated by Peoria County Front Desk is attached;

2) FIGURE 2 (SITE AREA FEATURES MAP) shows the horizontal extents of the soil and the groundwater contamination. The Illinois EPA requests that the consultant replace FIGURE 2 (SITE AREA FEATURES MAP) with FIGURE 2A (SITE AREA FEATURES MAP - SOIL) and FIGURE 2B (SITE AREA FEATURES MAP - GROUNDWATER). The basis for FIGURE 2A (SITE AREA FEATURES MAP - SOIL) and FIGURE 2B (SITE AREA FEATURES MAP - GROUNDWATER) must be the site map titled "FIGURE 2 (SITE AREA FEATURES MAP)," which was attached to the email dated 01/29/2016. FIGURE 2A (SITE AREA FEATURES MAP - SOIL) must show soil borings SB-101 and SB-102. FIGURE 2A (SITE AREA FEATURES MAP - SOIL) must not show monitoring wells from which no soil sample was selected for chemical analysis. FIGURE 2A (SITE AREA FEATURES MAP - SOIL) must not identify those monitoring wells for which the concentrations of contaminants in the groundwater exceed the Tier 1 remediation objectives. FIGURE 2B (SITE AREA FEATURES MAP - GROUNDWATER) must not show soil borings from which no groundwater sample was selected for chemical analysis. The locations of the proposed monitoring wells and the proposed soil borings must be removed from the legends of FIGURE 2A (SITE AREA FEATURES MAP - SOIL) and FIGURE 2B (SITE AREA FEATURES MAP - GROUNDWATER);

3) The elevations of the tops of the risers of monitoring wells MW-9, MW-10, and MW-11 are 97.88', 98.94', and 99.72'. However, FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) implies that the ground surface elevations are 97.88', 98.94', and 99.72';

4) FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) shows the groundwater levels while drilling. However, FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) does not show the correct groundwater levels while drilling for monitoring wells MW-9, MW-10, and MW-11;

5) FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) shows the well screens for monitoring wells MW-9, MW-10, and MW-11. However, FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) does not show the correct well screens for monitoring wells MW-9, MW-10, and MW-11;

6) According to FIGURE 2 (SITE AREA FEATURES MAP), the underground storage tank (UST) basin measures approximately 53' north to south. However, according to FIGURE 3 (GEOLOGICAL CROSS SECTION MAP), the UST basin measures approximately 40' north to south. Please correct FIGURE 3 (GEOLOGICAL CROSS SECTION MAP);

7) The basis for the reference map in the lower left corner of FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) must be the site map titled "FIGURE 2 (SITE AREA FEATURES MAP)," which was attached to the email dated 01/29/2016;

8) The basis for FIGURE 4 (GROUNDWATER CONTOUR & FLOW MAP) must be the site map titled "FIGURE 2 (SITE AREA FEATURES MAP)," which was attached to the email dated 01/29/2016; and

9) At least a couple of the groundwater contour lines shown on FIGURE 4 (GROUNDWATER CONTOUR & FLOW MAP) are incorrect. Therefore, the Illinois EPA requests that the consultant remove the groundwater contour lines and the approximate localized groundwater flow directions from FIGURE 4 (GROUNDWATER CONTOUR & FLOW MAP).

Sincerely,

Trent Benanti

Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Benanti, Trent
Sent: Monday, April 04, 2016 10:27 AM
To: Joe Buhlig (joeb@marlinenv.com)
Cc: Jeff Wienhoff (jeffw@marlinenv.com)
Subject: Leaking UST Incident #923441 - Site Investigation Completion Report - FIGURE 5

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Joe Buhlig:

This email is the fifth email in a series of emails regarding the Site Investigation Completion Report dated 12/14/2015. I have reviewed said Site Investigation Completion Report and have the following comments regarding FIGURE 5:

1) The Illinois EPA requests that the consultant replace FIGURE 5 (EQUATION R26 MODELED EXTENTS MAP) with FIGURE 5A (EQUATION R26 MODELED EXTENTS MAP - SOIL) and FIGURE 5B (EQUATION R26 MODELED EXTENTS MAP - GROUNDWATER). The basis for FIGURE 5A (EQUATION R26 MODELED EXTENTS MAP - SOIL) and FIGURE 5B (EQUATION R26 MODELED EXTENTS MAP - GROUNDWATER) must be the site map titled "FIGURE 2 (SITE AREA FEATURES MAP)," which was attached to the email dated 01/29/2016. FIGURE 5A (EQUATION R26 MODELED EXTENTS MAP - SOIL) must show soil borings SB-101 and SB-102. FIGURE 5A (EQUATION R26 MODELED EXTENTS MAP - SOIL) must not show monitoring wells from which no soil sample was selected for chemical analysis. FIGURE 5A (EQUATION R26 MODELED EXTENTS MAP - SOIL) must not identify those monitoring wells for which the concentrations of contaminants in the groundwater exceed the Tier 1 remediation objectives. FIGURE 5B (EQUATION R26 MODELED EXTENTS MAP - GROUNDWATER) must not show soil borings from which no groundwater sample was selected for chemical analysis;

2) According to the scale, the source width perpendicular to the groundwater flow direction in the horizontal plane (S_w) is 214'. However, FIGURE 5 states that the source width perpendicular to the groundwater flow direction in the horizontal plane (S_w) is 240'; and

3) FIGURE 5 shows the modeled extents as ellipses. The Illinois EPA requests that the modeled extents be shown as semicircles.

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Benanti, Trent
Sent: Monday, April 04, 2016 12:26 PM
To: Jeff Wienhoff (jeffw@marlinenv.com)
Cc: Joe Buhlig (joeb@marlinenv.com)
Subject: Leaking UST Incident #923441 - Email dated 04/04/2016

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Jeff Wienhoff:

I have reviewed the site maps attached to the email dated 04/04/2016 and have the following comments:

1) You forgot to remove monitoring wells MW-5, MW-6, and MW-7 from FIGURE 2A (SITE AREA FEATURES MAP – SOIL);

2) The groundwater level while drilling the monitoring well installation borehole for MW-10 was 4.0'. However, FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) shows a groundwater level while drilling of 5';

3) As stated in my last email, soil boring SB-21 was drilled within the limits of the UST excavation. Therefore, at a minimum, the north wall of the UST excavation as shown on FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) is incorrect;

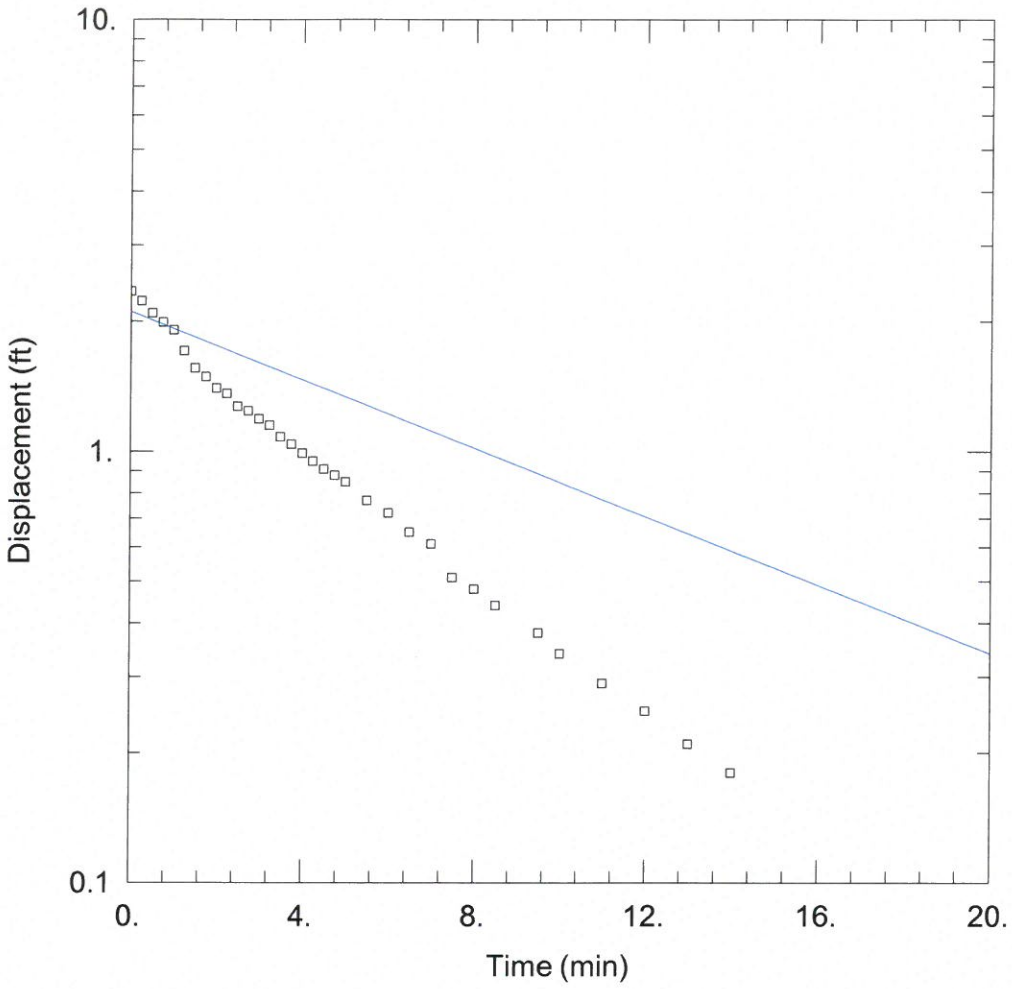
4) The basis for the reference map in the lower left corner of FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) is not the site map titled "FIGURE 2 (SITE AREA FEATURES MAP). Marlin Environmental, Inc. simply removed soil borings SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, SB-7, SB-8, SB-9, and SB-10 from the previous reference map; and

5) UST #4 stored diesel fuel. However, the legend for FIGURE 4 (GROUNDWATER CONTOUR & FLOW MAP) states that UST #4 stored gasoline.

Please correct the site maps and email a corrected FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) to me.

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov



WELL TEST ANALYSIS

Data Set: N:\Marlin\REPORTS ILLICO\Illico - University\Stage 3\MW-2.aqt
Date: 04/04/16 Time: 15:36:33

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico Independent Oil Co.
Project: 1382
Location: Peoria
Test Well: MW-2
Test Date: 11/24/15

AQUIFER DATA

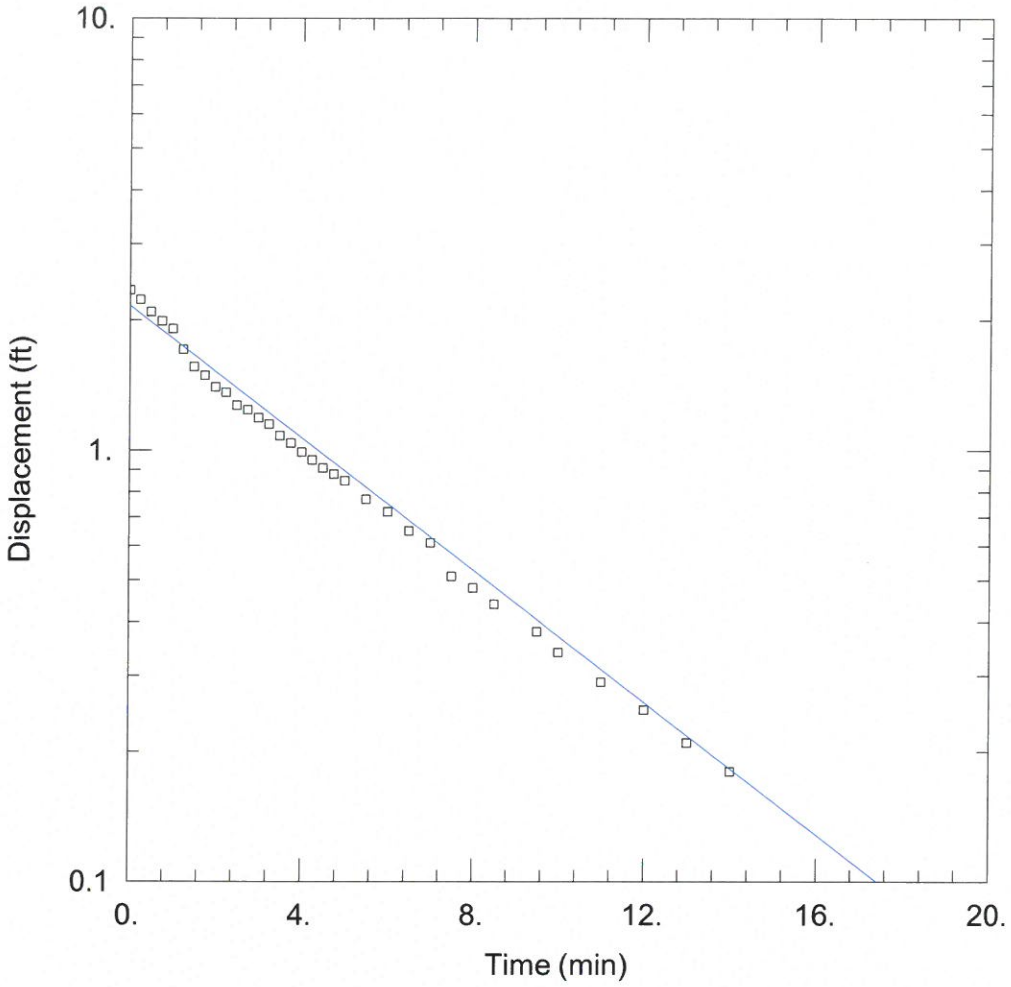
Saturated Thickness: 5. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 2.35 ft
Total Well Penetration Depth: 8.8 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.8 ft
Screen Length: 8.8 ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0003649 cm/sec
y0 = 2.107 ft



WELL TEST ANALYSIS

Data Set: N:\Marlin\REPORTS ILLICO\Illico - University\Stage 3\MW-2.aqt
Date: 04/04/16 Time: 15:37:48

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico Independent Oil Co.
Project: 1382
Location: Peoria
Test Well: MW-2
Test Date: 11/24/15

AQUIFER DATA

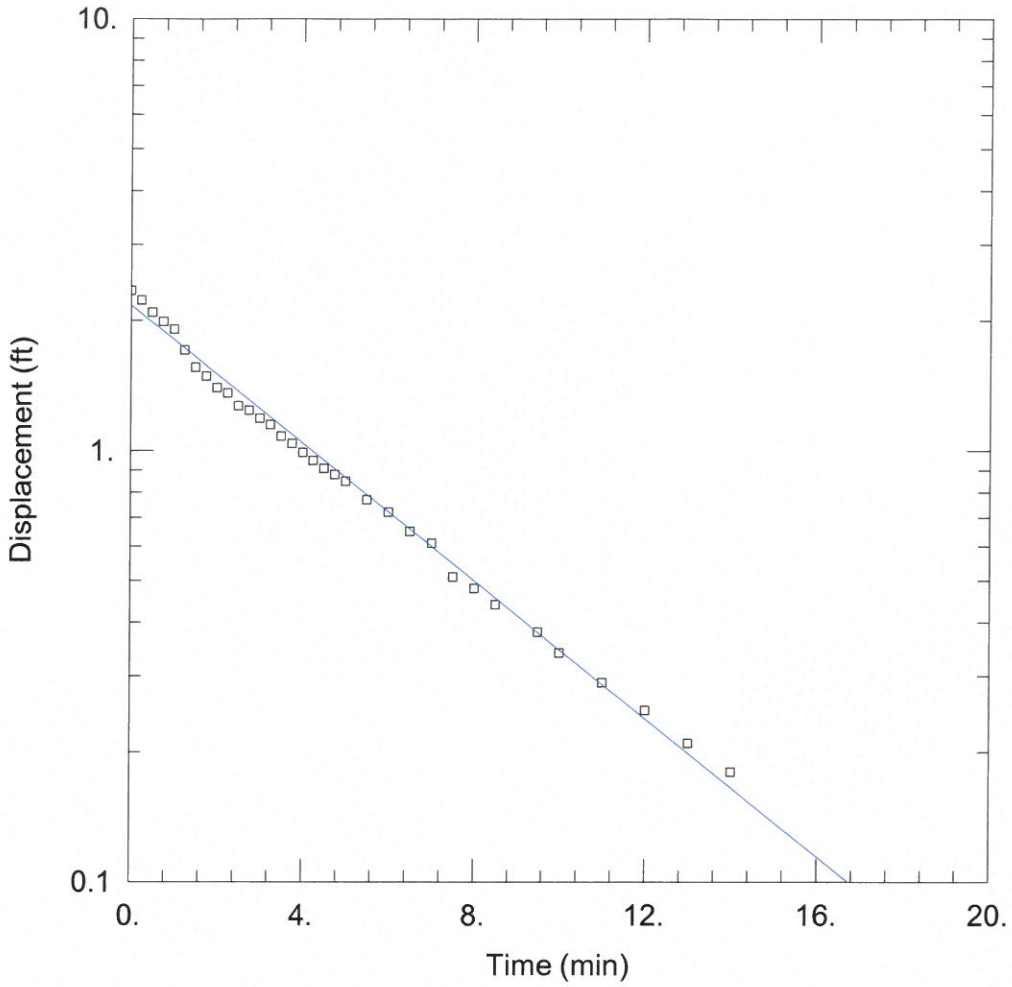
Saturated Thickness: 20. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 2.35 ft
Total Well Penetration Depth: 8.8 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.8 ft
Screen Length: 8.8 ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0003685 cm/sec
y0 = 2.164 ft



WELL TEST ANALYSIS

Data Set: N:\Marlin\REPORTS ILLICO\Illico - University\Stage 3\MW-2.aqt
Date: 04/04/16 Time: 15:46:45

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico Independent Oil Co.
Project: 1382
Location: Peoria
Test Well: MW-2
Test Date: 11/24/15

AQUIFER DATA

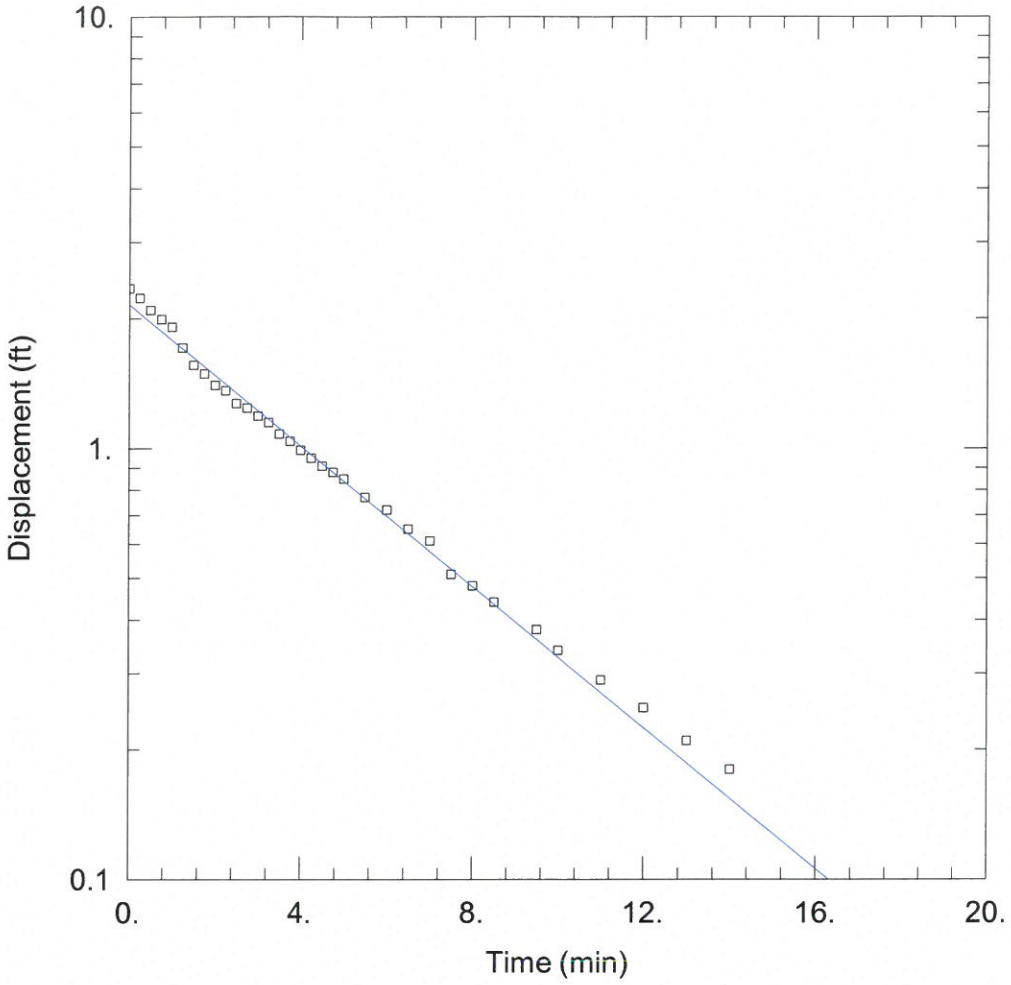
Saturated Thickness: 50. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 2.35 ft
Total Well Penetration Depth: 8.8 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.8 ft
Screen Length: 8.8 ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0003694 cm/sec
y0 = 2.173 ft



WELL TEST ANALYSIS

Data Set: N:\Marlin\REPORTS ILLICO\Illico - University\Stage 3\MW-2.aqt
Date: 04/04/16 Time: 15:48:40

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico Independent Oil Co.
Project: 1382
Location: Peoria
Test Well: MW-2
Test Date: 11/24/15

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 2.35 ft
Total Well Penetration Depth: 8.8 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.8 ft
Screen Length: 8.8 ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0003695 cm/sec
y0 = 2.151 ft

Benanti, Trent

From: Jeff Wienhoff <jeffw@marlinenv.com>
Sent: Monday, April 04, 2016 3:53 PM
To: Benanti, Trent
Subject: RE: Leaking UST Incident #923441 - Site Investigation Completion Report - ATTACHMENT 4
Attachments: Illico Peoria Hyd Cond.pdf

Trent,

Attached, please find revised hydraulic conductivity calculations as described below.

#2 & #3 were implemented. Then 1b was tried.

A saturated thickness of 5' resulted in 3.649 * 10^{-4} cm/s
A saturated thickness of 20' resulted in 3.685 * 10^{-4} cm/s
A saturated thickness of 50' resulted in 3.694 * 10^{-4} cm/s
A saturated thickness of 100' resulted in 3.695 * 10^{-4} cm/s

The difference appears to be minimal and approaching an asymptotic maximum. Therefore, 3.700 is proposed to be utilized in all future modeling to be appropriately conservative. Please confirm this to be acceptable so that the changes to attachment 3 and figure 5 can be made.

Thanks.

Jeff

From: Benanti, Trent [mailto:Trent.Benanti@Illinois.gov]
Sent: Monday, April 04, 2016 8:21 AM
To: Joe Buhlig <joeb@marlinenv.com>
Cc: Jeff Wienhoff <jeffw@marlinenv.com>
Subject: Leaking UST Incident #923441 - Site Investigation Completion Report - ATTACHMENT 4

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Joe Buhlig:

This email is the fourth email in a series of emails regarding the Site Investigation Completion Report dated 12/14/2015. I have reviewed said Site Investigation Completion Report and have the following comments regarding ATTACHMENT 4:

1) The Illinois EPA does not believe that the saturated thickness is known. Therefore, Marlin Environmental, Inc. has two options;

   a) Estimate the saturated thickness from well logs for potable water supply wells in the area; or

   b) Determine the sensitivity of the hydraulic conductivity to a greater saturated thickness and a lesser saturated thickness.

2) For monitoring wells screened across the water table, the total well penetration depth and screen length are equal to the static water column height (8.8'); and

3) Monitoring well MW-2 was drilled with an auger with an outside diameter of 8.25". Therefore, the well radius and the well skin radius are 4.125" (0.34375').

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Benanti, Trent
Sent: Monday, April 04, 2016 4:32 PM
To: Jeff Wienhoff (jeffw@marlinenv.com)
Cc: Joe Buhlig (joeb@marlinenv.com)
Subject: Leaking UST Incident #923441 - Email dated 04/04/2016

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Jeff Wienhoff:

I have reviewed the hydraulic conductivity calculations attached to the email dated 04/04/2016 and have the following comments:

1) The curve for a saturated thickness of 5' does not match the data;

2) The data has not changed. However, the curve for a saturated thickness of 20' does not match the curve for a saturated thickness of 50'. In addition, the curve for a saturated thickness of 50' does not match the curve for a saturated thickness of 100'; and

3) The saturated thickness should not be less than the total well penetration depth. What is the hydraulic conductivity when the saturated thickness is 8.8'?

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Jeff Wienhoff <jeffw@marlinenv.com>
Sent: Monday, April 04, 2016 4:42 PM
To: Benanti, Trent
Cc: Joe Buhlig
Subject: RE: Leaking UST Incident #923441 - Email dated 04/04/2016

Trent,

I agree that the curve does not match the data, but when I change the specifications per your changes, the program re-estimates the curve.

I agree that the saturated thickness cannot be less than 8.8, I was simply varying the numbers to show the impact various depths per your suggestion.

At 8.8 being the lowest saturated thickness utilized, a resulting conductivity of $3.679 * 10^{-4}$ is determined. Very close to that at the other thicknesses. I was simply suggesting $3.7 * 10^{-4}$ as an appropriate conservative estimate. In the end, the difference in these numbers will make a negligible change in the modeled extents with many of the x distances not changing at all. If they do change, it won't be by more than 1 foot.

Jeff

From: Benanti, Trent [mailto:Trent.Benanti@Illinois.gov]
Sent: Monday, April 04, 2016 4:32 PM
To: Jeff Wienhoff <jeffw@marlinenv.com>
Cc: Joe Buhlig <joeb@marlinenv.com>
Subject: Leaking UST Incident #923441 - Email dated 04/04/2016

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Jeff Wienhoff:

I have reviewed the hydraulic conductivity calculations attached to the email dated 04/04/2016 and have the following comments:

1) The curve for a saturated thickness of 5' does not match the data;

2) The data has not changed. However, the curve for a saturated thickness of 20' does not match the curve for a saturated thickness of 50'. In addition, the curve for a saturated thickness of 50' does not match the curve for a saturated thickness of 100'; and

3) The saturated thickness should not be less than the total well penetration depth. What is the hydraulic conductivity when the saturated thickness is 8.8'?

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Benanti, Trent
Sent: Monday, April 04, 2016 4:50 PM
To: 'Jeff Wienhoff'
Subject: RE: Leaking UST Incident #923441 - Email dated 04/04/2016

The program does have a visual curve matching option. I suggest that you use that and email me a the calculations for a saturated thicknesses of 8.8', 20', 50', and 100'.

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

From: Jeff Wienhoff [mailto:jeffw@marlinenv.com]
Sent: Monday, April 04, 2016 4:42 PM
To: Benanti, Trent
Cc: Joe Buhlig
Subject: RE: Leaking UST Incident #923441 - Email dated 04/04/2016

Trent,

I agree that the curve does not match the data, but when I change the specifications per your changes, the program re-estimates the curve.

I agree that the saturated thickness cannot be less than 8.8, I was simply varying the numbers to show the impact various depths per your suggestion.

At 8.8 being the lowest saturated thickness utilized, a resulting conductivity of $3.679 * 10^{-4}$ is determined. Very close to that at the other thicknesses. I was simply suggesting $3.7 * 10^{-4}$ as an appropriate conservative estimate. In the end, the difference in these numbers will make a negligible change in the modeled extents with many of the x distances not changing at all. If they do change, it won't be by more than 1 foot.

Jeff

From: Benanti, Trent [mailto:Trent.Benanti@Illinois.gov]
Sent: Monday, April 04, 2016 4:32 PM
To: Jeff Wienhoff <jeffw@marlinenv.com>
Cc: Joe Buhlig <joeb@marlinenv.com>
Subject: Leaking UST Incident #923441 - Email dated 04/04/2016

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Jeff Wienhoff:

I have reviewed the hydraulic conductivity calculations attached to the email dated 04/04/2016 and have the following comments:

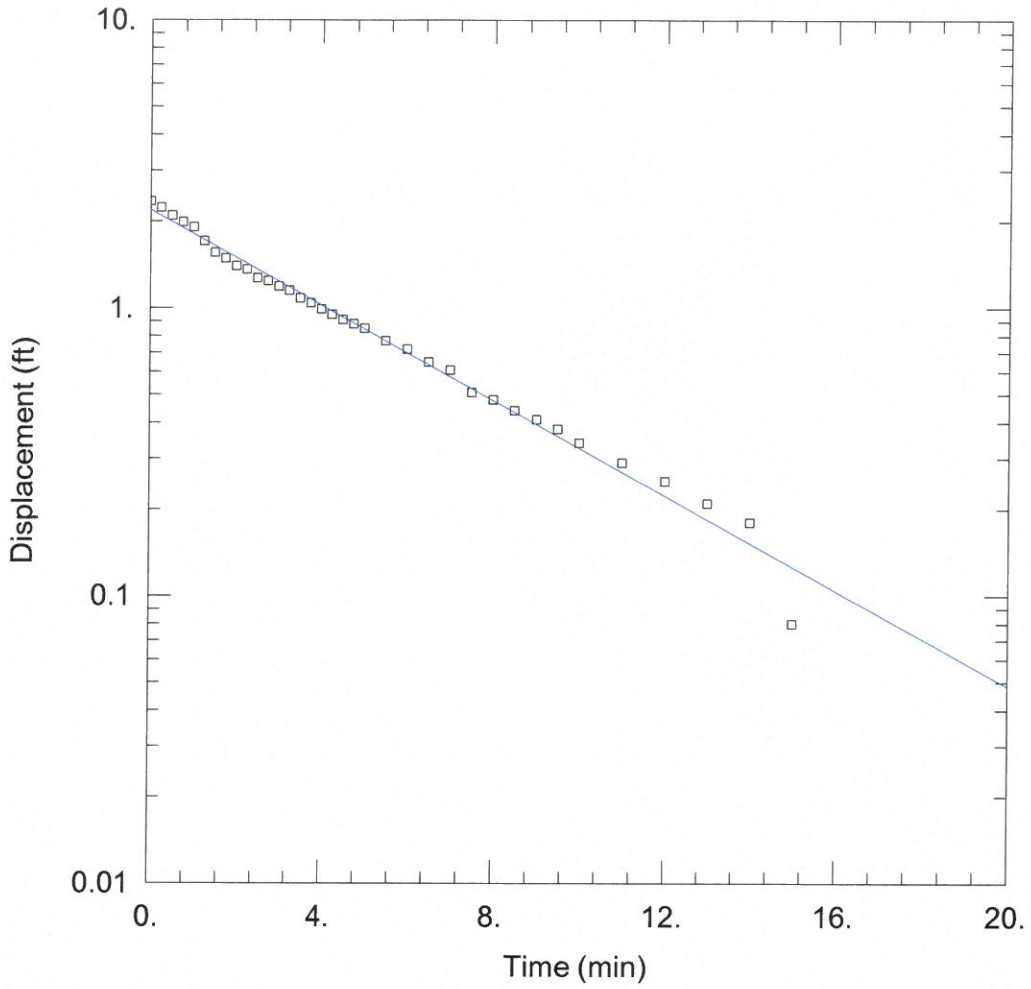
1) The curve for a saturated thickness of 5' does not match the data;

2) The data has not changed. However, the curve for a saturated thickness of 20' does not match the curve for a saturated thickness of 50'. In addition, the curve for a saturated thickness of 50' does not match the curve for a saturated thickness of 100'; and

3) The saturated thickness should not be less than the total well penetration depth. What is the hydraulic conductivity when the saturated thickness is 8.8'?

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov



WELL TEST ANALYSIS

Data Set: C:\DATA\Desktop\MW-2 8.8'.aqt
Date: 04/04/16 Time: 17:27:03

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico, Inc.
Project: 1382
Location: Peoria
Test Well: MW-2
Test Date: 11/24/15

AQUIFER DATA

Saturated Thickness: 8.8 ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 2.35 ft
Total Well Penetration Depth: 8.8 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.8 ft
Screen Length: 8.8 ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0004648 cm/sec
y0 = 2.189 ft

AQTESOLV for Windows

Data Set: C:\DATA\Desktop\MW-2 8.8'.aqt
Date: 04/04/16
Time: 17:27:22

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico, Inc.
Project: 1382
Location: Peoria
Test Date: 11/24/15
Test Well: MW-2

AQUIFER DATA

Saturated Thickness: 8.8 ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-2

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 2.35 ft
Static Water Column Height: 8.8 ft
Casing Radius: 0.08333 ft
Well Radius: 0.3438 ft
Well Skin Radius: 0.3438 ft
Screen Length: 8.8 ft
Total Well Penetration Depth: 8.8 ft
Corrected Casing Radius (Bouwer-Rice Method): 0.1864 ft
Gravel Pack Porosity: 0.25

No. of Observations: 36

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.	2.35	4.5	0.91
0.25	2.23	4.75	0.88
0.5	2.09	5.	0.85
0.75	1.99	5.5	0.77
1.	1.91	6.	0.72
1.25	1.71	6.5	0.65
1.5	1.56	7.	0.61
1.75	1.49	7.5	0.51
2.	1.4	8.	0.48
2.25	1.36	8.5	0.44
2.5	1.27	9.	0.41
2.75	1.24	9.5	0.38
3.	1.19	10.	0.34
3.25	1.15	11.	0.29
3.5	1.08	12.	0.25
3.75	1.04	13.	0.21
4.	0.99	14.	0.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
4.25	0.95	15.	0.08

SOLUTION

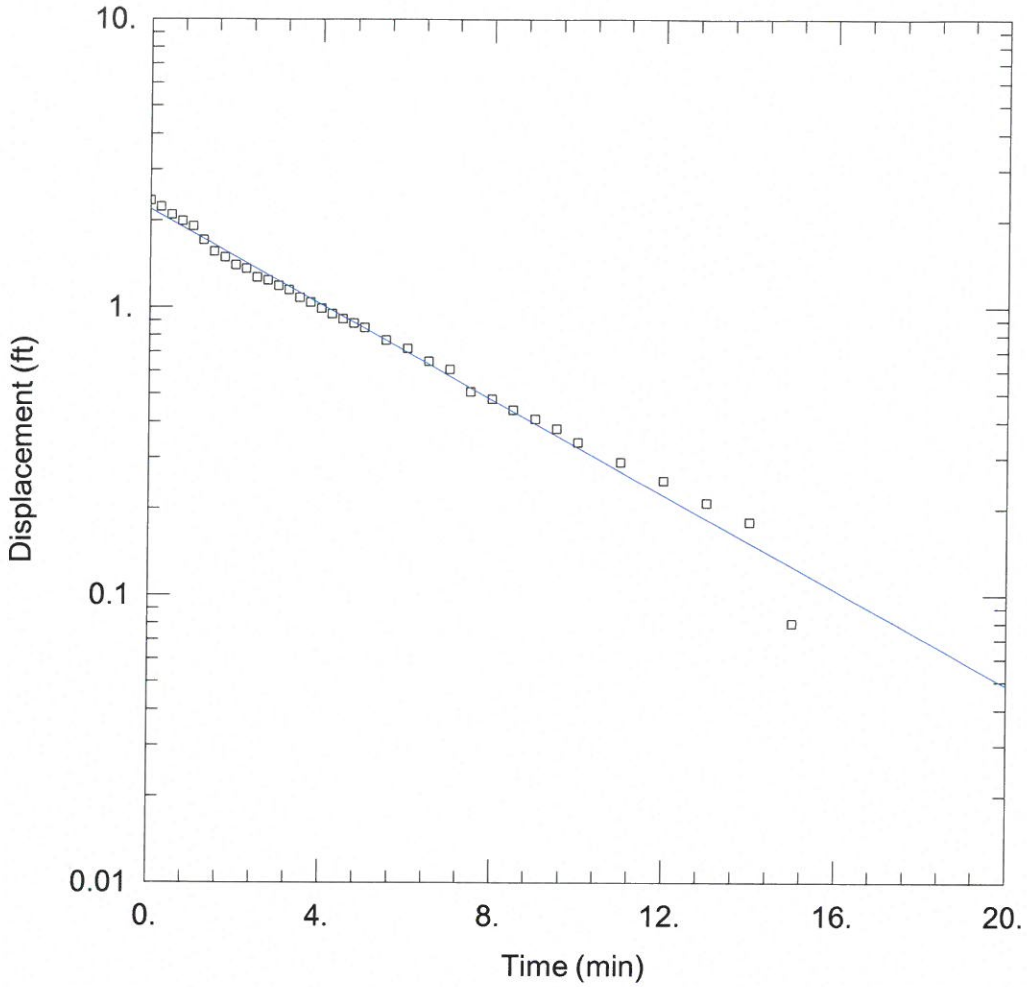
Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 2.434

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0004648	cm/sec
y0	2.189	ft

$T = K*b = 0.1247$ cm²/sec



WELL TEST ANALYSIS

Data Set: C:\DATA\Desktop\MW-2 20'.aqt
Date: 04/04/16 Time: 17:53:05

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico, Inc.
Project: 1382
Location: Peoria
Test Well: MW-2
Test Date: 11/24/15

AQUIFER DATA

Saturated Thickness: 20. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 2.35 ft
Total Well Penetration Depth: 8.8 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.8 ft
Screen Length: 8.8 ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0003976 cm/sec
y0 = 2.189 ft

Data Set:
Date: 04/04/16
Time: 17:22:44

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico, Inc.
Project: 1382
Location: Peoria
Test Date: 11/24/15
Test Well: MW-2

AQUIFER DATA

Saturated Thickness: 20. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-2

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 2.35 ft
Static Water Column Height: 8.8 ft
Casing Radius: 0.08333 ft
Well Radius: 0.3438 ft
Well Skin Radius: 0.3438 ft
Screen Length: 8.8 ft
Total Well Penetration Depth: 8.8 ft
Corrected Casing Radius (Bouwer-Rice Method): 0.1864 ft
Gravel Pack Porosity: 0.25

No. of Observations: 36

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.	2.35	4.5	0.91
0.25	2.23	4.75	0.88
0.5	2.09	5.	0.85
0.75	1.99	5.5	0.77
1.	1.91	6.	0.72
1.25	1.71	6.5	0.65
1.5	1.56	7.	0.61
1.75	1.49	7.5	0.51
2.	1.4	8.	0.48
2.25	1.36	8.5	0.44
2.5	1.27	9.	0.41
2.75	1.24	9.5	0.38
3.	1.19	10.	0.34
3.25	1.15	11.	0.29
3.5	1.08	12.	0.25
3.75	1.04	13.	0.21
4.	0.99	14.	0.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
4.25	0.95	15.	0.08

SOLUTION

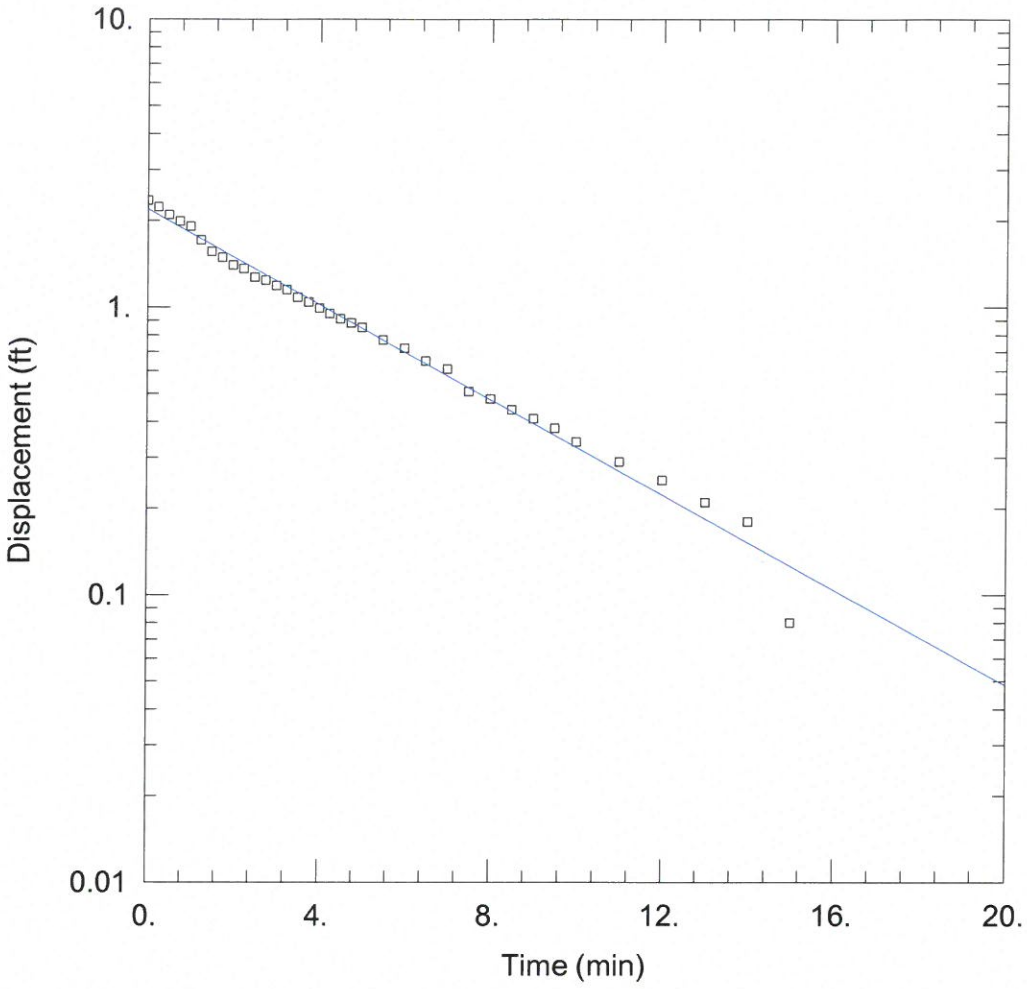
Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 2.083

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0003976	cm/sec
y0	2.189	ft

$T = K*b = 0.2424$ cm²/sec



WELL TEST ANALYSIS

Data Set: C:\DATA\Desktop\MW-2 50'.aqt
Date: 04/04/16 Time: 17:36:52

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico, Inc.
Project: 1382
Location: Peoria
Test Well: MW-2
Test Date: 11/24/15

AQUIFER DATA

Saturated Thickness: 50. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 2.35 ft
Total Well Penetration Depth: 8.8 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.8 ft
Screen Length: 8.8 ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.0003825 cm/sec y0 = 2.189 ft

AQTESOLV for Windows

Data Set: C:\DATA\Desktop\MW-2 50'.aqt
Date: 04/04/16
Time: 17:36:58

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico, Inc.
Project: 1382
Location: Peoria
Test Date: 11/24/15
Test Well: MW-2

AQUIFER DATA

Saturated Thickness: 50. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-2

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 2.35 ft
Static Water Column Height: 8.8 ft
Casing Radius: 0.08333 ft
Well Radius: 0.3438 ft
Well Skin Radius: 0.3438 ft
Screen Length: 8.8 ft
Total Well Penetration Depth: 8.8 ft
Corrected Casing Radius (Bouwer-Rice Method): 0.1864 ft
Gravel Pack Porosity: 0.25

No. of Observations: 36

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.	2.35	4.5	0.91
0.25	2.23	4.75	0.88
0.5	2.09	5.	0.85
0.75	1.99	5.5	0.77
1.	1.91	6.	0.72
1.25	1.71	6.5	0.65
1.5	1.56	7.	0.61
1.75	1.49	7.5	0.51
2.	1.4	8.	0.48
2.25	1.36	8.5	0.44
2.5	1.27	9.	0.41
2.75	1.24	9.5	0.38
3.	1.19	10.	0.34
3.25	1.15	11.	0.29
3.5	1.08	12.	0.25
3.75	1.04	13.	0.21
4.	0.99	14.	0.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
4.25	0.95	15.	0.08

SOLUTION

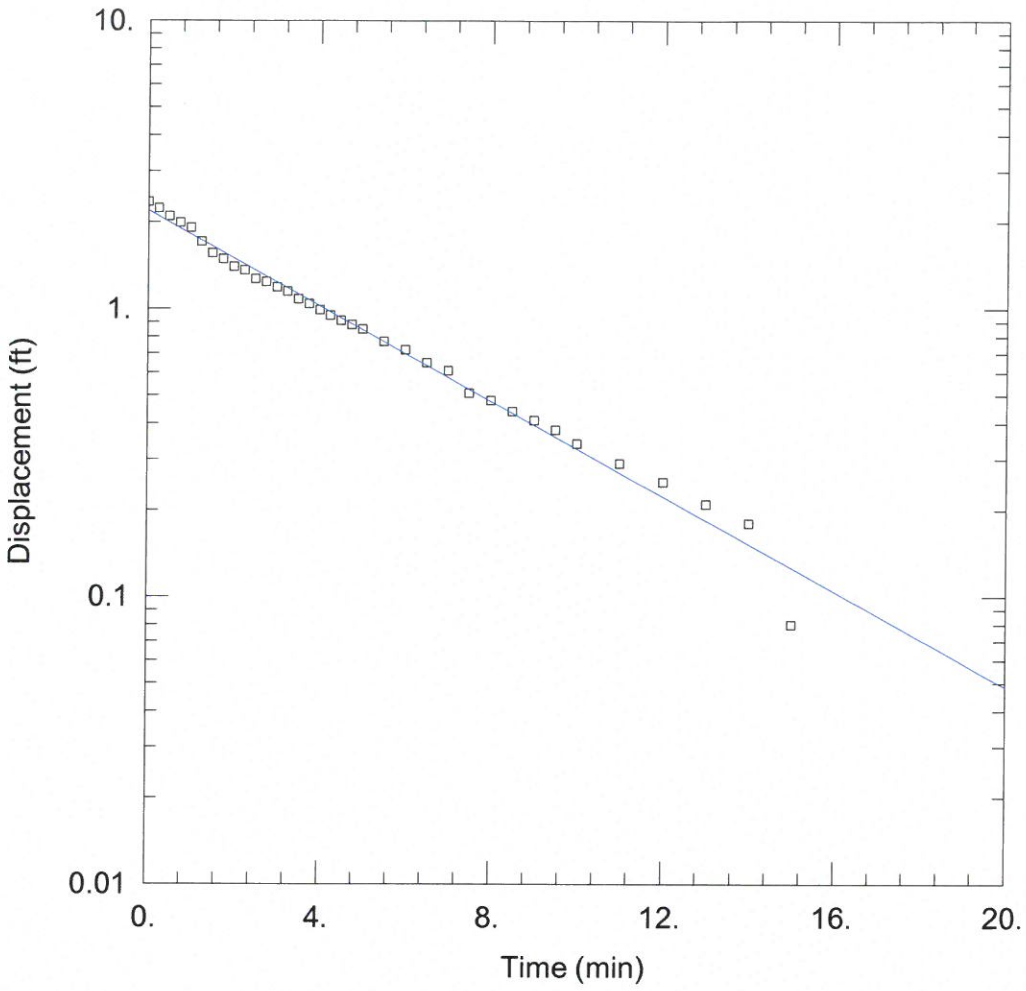
Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 2.004

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0003825	cm/sec
y0	2.189	ft

$T = K*b = 0.583$ cm²/sec



WELL TEST ANALYSIS

Data Set: C:\DATA\Desktop\MW-2 100'.aqt
Date: 04/04/16 Time: 17:39:10

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico, Inc.
Project: 1382
Location: Peoria
Test Well: MW-2
Test Date: 11/24/15

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 2.35 ft
Total Well Penetration Depth: 8.8 ft
Casing Radius: 0.08333 ft
Static Water Column Height: 8.8 ft
Screen Length: 8.8 ft
Well Radius: 0.3438 ft
Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0003739 cm/sec
y0 = 2.189 ft

AQTESOLV for Windows

Data Set: C:\DATA\Desktop\MW-2 100'.aqt
Date: 04/04/16
Time: 17:39:29

PROJECT INFORMATION

Company: Marlin Environmental
Client: Illico, Inc.
Project: 1382
Location: Peoria
Test Date: 11/24/15
Test Well: MW-2

AQUIFER DATA

Saturated Thickness: 100. ft
Anisotropy Ratio (Kz/Kr): 1.

SLUG TEST WELL DATA

Test Well: MW-2

X Location: 0. ft
Y Location: 0. ft

Initial Displacement: 2.35 ft
Static Water Column Height: 8.8 ft
Casing Radius: 0.08333 ft
Well Radius: 0.3438 ft
Well Skin Radius: 0.3438 ft
Screen Length: 8.8 ft
Total Well Penetration Depth: 8.8 ft
Corrected Casing Radius (Bouwer-Rice Method): 0.1864 ft
Gravel Pack Porosity: 0.25

No. of Observations: 36

Observation Data

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.	2.35	4.5	0.91
0.25	2.23	4.75	0.88
0.5	2.09	5.	0.85
0.75	1.99	5.5	0.77
1.	1.91	6.	0.72
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1.75	1.49	7.5	0.51
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3.5	1.08	12.	0.25
3.75	1.04	13.	0.21
4.	0.99	14.	0.18

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
4.25	0.95	15.	0.08

SOLUTION

Slug Test
Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
ln(Re/rw): 1.958

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	0.0003739	cm/sec
y0	2.189	ft

$T = K*b = 1.14$ cm²/sec

Benanti, Trent

From: Jeff Wienhoff <jeffw@marlinenv.com>
Sent: Monday, April 04, 2016 5:56 PM
To: Benanti, Trent
Subject: RE: Leaking UST Incident #923441 - Email dated 04/04/2016
Attachments: Illico Peoria Hyd Cond.pdf

Trent,

Here is the best I can do with a report for each. Please let me know what you think is appropriate to use for the modeling.

Jeff

From: Benanti, Trent [mailto:Trent.Benanti@Illinois.gov]
Sent: Monday, April 04, 2016 4:50 PM
To: Jeff Wienhoff <jeffw@marlinenv.com>
Subject: RE: Leaking UST Incident #923441 - Email dated 04/04/2016

The program does have a visual curve matching option. I suggest that you use that and email me a the calculations for a saturated thicknesses of 8.8', 20', 50', and 100'.

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

From: Jeff Wienhoff [mailto:jeffw@marlinenv.com]
Sent: Monday, April 04, 2016 4:42 PM
To: Benanti, Trent
Cc: Joe Buhlig
Subject: RE: Leaking UST Incident #923441 - Email dated 04/04/2016

Trent,

I agree that the curve does not match the data, but when I change the specifications per your changes, the program re-estimates the curve.

I agree that the saturated thickness cannot be less than 8.8, I was simply varying the numbers to show the impact various depths per your suggestion.

At 8.8 being the lowest saturated thickness utilized, a resulting conductivity of $3.679 * 10^{-4}$ is determined. Very close to that at the other thicknesses. I was simply suggesting $3.7 * 10^{-4}$ as an appropriate conservative estimate. In the end, the difference in these numbers will make a negligible change in the modeled extents with many of the x distances not changing at all. If they do change, it won't be by more than 1 foot.

Jeff

From: Benanti, Trent [mailto:Trent.Benanti@Illinois.gov]
Sent: Monday, April 04, 2016 4:32 PM

To: Jeff Wienhoff <jeffw@marlinenv.com>
Cc: Joe Buhlig <joeb@marlinenv.com>
Subject: Leaking UST Incident #923441 - Email dated 04/04/2016

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Jeff Wienhoff:

I have reviewed the hydraulic conductivity calculations attached to the email dated 04/04/2016 and have the following comments:

1) The curve for a saturated thickness of 5' does not match the data;

2) The data has not changed. However, the curve for a saturated thickness of 20' does not match the curve for a saturated thickness of 50'. In addition, the curve for a saturated thickness of 50' does not match the curve for a saturated thickness of 100'; and

3) The saturated thickness should not be less than the total well penetration depth. What is the hydraulic conductivity when the saturated thickness is 8.8'?

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Jeff Wienhoff <jeffw@marlinenv.com>
Sent: Monday, April 04, 2016 5:58 PM
To: Benanti, Trent
Subject: RE: Leaking UST Incident #923441 - Email dated 04/04/2016
Attachments: Illico - University - 12-15 Geo.pdf

Here is the corrected Figure 3.

Jeff

From: Benanti, Trent [mailto:Trent.Benanti@Illinois.gov]
Sent: Monday, April 04, 2016 12:26 PM
To: Jeff Wienhoff <jeffw@marlinenv.com>
Cc: Joe Buhlig <joeb@marlinenv.com>
Subject: Leaking UST Incident #923441 - Email dated 04/04/2016

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Jeff Wienhoff:

I have reviewed the site maps attached to the email dated 04/04/2016 and have the following comments:

1) You forgot to remove monitoring wells MW-5, MW-6, and MW-7 from FIGURE 2A (SITE AREA FEATURES MAP – SOIL);

2) The groundwater level while drilling the monitoring well installation borehole for MW-10 was 4.0'. However, FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) shows a groundwater level while drilling of 5';

3) As stated in my last email, soil boring SB-21 was drilled within the limits of the UST excavation. Therefore, at a minimum, the north wall of the UST excavation as shown on FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) is incorrect;

4) The basis for the reference map in the lower left corner of FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) is not the site map titled "FIGURE 2 (SITE AREA FEATURES MAP). Marlin Environmental, Inc. simply removed soil borings SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, SB-7, SB-8, SB-9, and SB-10 from the previous reference map; and

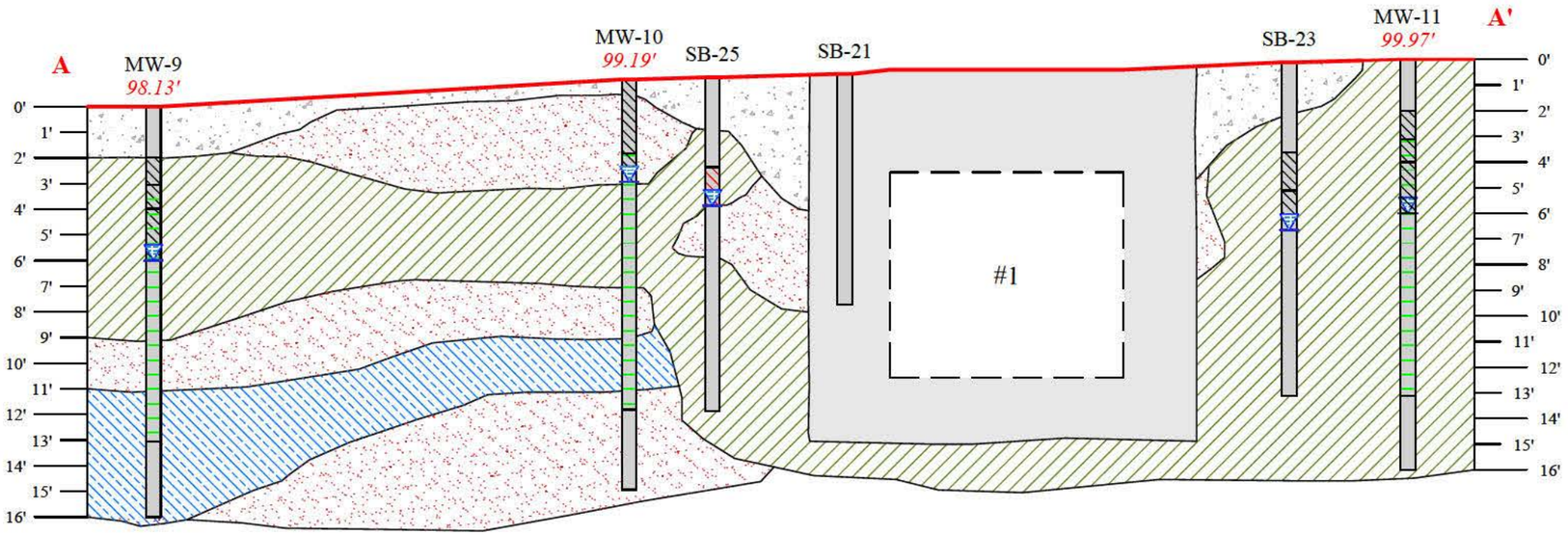
5) UST #4 stored diesel fuel. However, the legend for FIGURE 4 (GROUNDWATER CONTOUR & FLOW MAP) states that UST #4 stored gasoline.

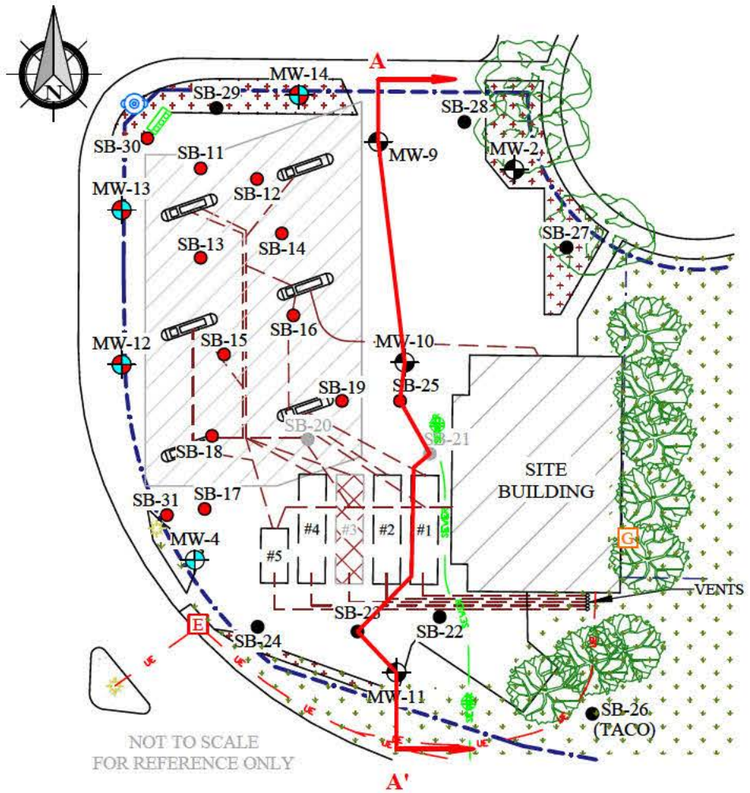
Please correct the site maps and email a corrected FIGURE 3 (GEOLOGICAL CROSS SECTION MAP) to me.

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

GEOLOGICAL CROSS SECTION A - A'





LEGEND

- SAND & GRAVEL / CONCRETE
- SILT
- SAND
- SILTY CLAY
- APPROXIMATE UST BASIN
- SOIL SAMPLE INTERVAL - BELOW IEPA TACO TIER 1 SRO'S
- SOIL SAMPLE INTERVAL - ABOVE IEPA TACO TIER 1 SRO'S
- GROUND WATER SCREEN
- DEPTH TO GROUNDWATER WHILE DRILLING

0 20 40

APPROXIMATE HORIZONTAL SCALE : 1" = 20'
VERTICAL SCALE EXAGGERATED

MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

GEOLOGICAL CROSS SECTION MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614

PREPARED BY	FIGURE	DATE	PROJECT #
BUHLIG	3	04/16	1382
DRAWN BY	FILE NAME		
MAB	ILLICO - UNIVERSITY - 12-15 GEO X SECTION		

Benanti, Trent

From: Benanti, Trent
Sent: Tuesday, April 05, 2016 8:34 AM
To: Jeff Wienhoff (jeffw@marlinenv.com)
Cc: Joe Buhlig (joeb@marlinenv.com)
Subject: Leaking UST Incident #923441 - Email dated 04/04/2016

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Jeff Wienhoff:

I have reviewed the hydraulic conductivity calculations attached to the email dated 04/04/2016 and believe that you should use a hydraulic conductivity of 4.648×10^{-4} cm/s in equation R19. Before you revise the Tier 2 calculations, please read the following comments:

SSL:

1) The mass-limit acreage, mixing zone depth (d), hydraulic gradient (i), hydraulic conductivity (K), and source length parallel to groundwater flow (L) do not need to be listed on the forms titled "SSL Input Parameters for Use with Tier 2 Calculations;"

2) Example:

   If the concentration of benzene in soil sample SB-31 (2'-4') is less than the concentration of benzene in soil sample SB-31 (4'-6'), then you only need to calculate the potential concentration of benzene migrating from soil sample SB-31 (4'-6');

3) I don't need the calculation sheets titled "SOIL TO GROUNDATER POTENTIAL LEACHATE CONCENTRATION" because the information that I need appears to be listed on the forms titled "SSL Input Parameters for Use with Tier 2 Calculations;" and

4) The dry soil bulk density is 1.684 g/cm^3.

RBCA:

1) I don't need the calculation sheets titled "DISSOLVED HYDROCARBON CONCENTRATION ALONG CENTERLINE" because the information that I need appears to be listed on the forms titled "RBCA Input Parameters for Use with Tier 2 Calculations."

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649

E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Jeff Wienhoff <jeffw@marlinenv.com>
Sent: Tuesday, April 05, 2016 5:28 PM
To: Benanti, Trent
Cc: Joe Buhlig
Subject: RE: Leaking UST Incident #923441 - Email dated 04/04/2016
Attachments: Illico Peoria R26 Forms.pdf; Illico Peoria S28 Forms.pdf

Please find attached the updated modeling per the comments below and your email regarding attachment 3. I will have our draftsman start working on the changes to figure 5 but please confirm to me that theses modeled distances are appropriate once you've had a chance to review.

Thanks.

Jeff

From: Benanti, Trent [mailto:Trent.Benanti@Illinois.gov]
Sent: Tuesday, April 05, 2016 8:34 AM
To: Jeff Wienhoff <jeffw@marlinenv.com>
Cc: Joe Buhlig <joeb@marlinenv.com>
Subject: Leaking UST Incident #923441 - Email dated 04/04/2016

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Jeff Wienhoff:

I have reviewed the hydraulic conductivity calculations attached to the email dated 04/04/2016 and believe that you should use a hydraulic conductivity of 4.648×10^{-4} cm/s in equation R19. Before you revise the Tier 2 calculations, please read the following comments:

SSL:

1) The mass-limit acreage, mixing zone depth (d), hydraulic gradient (i), hydraulic conductivity (K), and source length parallel to groundwater flow (L) do not need to be listed on the forms titled "SSL Input Parameters for Use with Tier 2 Calculations;"

2) Example:

   If the concentration of benzene in soil sample SB-31 (2'-4') is less than the concentration of benzene in soil sample SB-31 (4'-6'), then you only need to calculate the potential concentration of benzene migrating from soil sample SB-31 (4'-6');

3) I don't need the calculation sheets titled "SOIL TO GROUNDATER POTENTIAL LEACHATE CONCENTRATION" because the information that I need appears to be listed on the forms titled "SSL Input Parameters for Use with Tier 2 Calculations;" and

4) The dry soil bulk density is 1.684 g/cm^3.

RBCA:

1) I don't need the calculation sheets titled "DISSOLVED HYDROCARBON CONCENTRATION ALONG CENTERLINE" because the information that I need appears to be listed on the forms titled "RBCA Input Parameters for Use with Tier 2 Calculations."

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
RBCA Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: R12, R14, R26): R26: Benzene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: Not Applicable Soil Type: Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☐ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

Result from S18/S28 used in R26? ☒ Yes ☐ No Specify C_{source} from S18/S28 see page 3 mg/L

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT_c	=	70	yr	d	=		cm
AT_n	=		yr	D^{air}	=		cm^2/s
BW	=	70	kg	D^{water}	=		cm^2/s
C_{source}	=	see page 3	mg/L	D_s^{eff}	=		cm^2/s
$C_{(x)}$	=		mg/L	ED	=		yr
$C_{(x)}/C_{source}$	=		unitless	EF	=		d/yr

Incident #: 923441 Chemical: Benzene Land Use: Not Applicable

Symbol			Unit
erf	=		unitless
f_{oc}	=		g/g
GW_{comp}	=		mg/L
GW_{source}	=		mg/L
H'	=		cm^3_{water}/cm^3_{air}
i	=	0.01426	cm/cm
I	=	30	cm/yr
IR_{air}	=	20	m^3/d
IR_{soil}	=		mg/d
IR_w	=		L/d
K	=	40.15872	cm/d for R15, R19, R26; cm/yr for R24
K_{oc}	=		cm^3/g or L/kg
k_s (non-ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (inorganics)	=		cm^3_{water}/g_{soil}
L_s	=	100	cm
LF_{sw}	=		$(mg/L_{water})/(mg/kg_{soil})$
M	=	0.5	mg/cm^2
Pe	=	$6.9 \cdot 10^{-14}$	g/cm^2-s
RAF_d	=	0.5	unitless

Symbol			Unit
RAF_d (PNAs)	=	0.05	unitless
RAF_d (inorganics)	=	0	unitless
RAF_0	=	1.0	unitless
$RBSL_{air}$ (carcinogenic)	=		$\mu g/m^3$
$RBSL_{air}$ (noncarcinogenic)	=		$\mu g/m^3$
RfD_i	=		mg/kg-d
RfD_o	=		mg/kg-d
SA	=	3,160	cm^2/d
S_d	=	200	cm
S_w	=	6,523	cm
SF_i	=		$(mg/kg\text{-}d)^{-1}$
SF_o	=		$(mg/kg\text{-}d)^{-1}$
THQ	=	1	unitless
TR	=		unitless
U	=		cm/d
U_{air}	=	225	cm/s
U_{gw}	=		cm/yr
VF_p	=		kg/m^3
VF_{samb}	=		$(mg/m^3_{air})/mg/kg_{soil})$ or kg/m^3
VF_{ss}	=		kg/m^3

Incident #: 923441 Chemical: Benzene Land Use: Not Applicable

Symbol			Unit
W	=		cm
w	=		g_{water}/g_{soil}
X	=	see below	cm
α_x	=		cm
α_y	=		cm
α_z	=		cm
δ_{air}	=	200	cm
δ_{gw}	=	200	cm

Symbol			Unit
θ_{as}	=		cm^3_{air}/cm^3_{soil}
θ_{ws}	=		cm^3_{water}/cm^3_{soil}
θ_T	=	0.36	cm^3/cm^3_{soil}
λ	=	0.0009	d^{-1}
π	=	3.1416	
ρ_b	=		g/cm^3
ρ_w	=	1	g/cm^3
τ	=	$9.46 \cdot 10^8$	s

Equation		Result	Unit(s)
R1	=		mg/kg
R2	=		mg/kg
R7	=		mg/kg
R8	=		mg/kg
R12	=		mg/kg
R25	=		mg/L

C_{source} Values: (mg/L)

Groundwater
MW-1: 0.664
MW-4: 0.896
MW-7: 14.5
MW-10: 0.125
MW-12: 0.307
MW-13: 10.2
MW-14: 0.386

Soil Leaching
SB-11: 0.047
SB-12: 0.010
SB-13: 0.191
SB-14: 0.014
SB-15: 0.981
SB-16: 0.060
SB-17: 0.020
SB-18: 0.111
SB-19: 0.006
SB-30: 0.007
SB-31: 0.274

Maximum Predicted Extent of Groundwater Impact (X):
(feet from point source)

MW-1: 242'
MW-4: 261'
MW-7: 463'
MW-10: 145'
MW-12: 195'
MW-13: 434'
MW-14: 209'

SB-11: 101'
SB-12: 37.5'
SB-13: 173'
SB-14: 51'
SB-15: 272'
SB-16: 113'
SB-17: 65'
SB-18: 143'
SB-19: 11'
SB-30: 16'
SB-31: 194'

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
RBCA Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: R12, R14, R26): R26: Toluene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: Not Applicable Soil Type: Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☐ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

Result from S18/S28 used in R26? ☒ Yes ☐ No Specify C_{source} from S18/S28 see page 3 mg/L

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT_c	=	70	yr	d	=		cm
AT_n	=		yr	D^{air}	=		cm^2/s
BW	=	70	kg	D^{water}	=		cm^2/s
C_{source}	=	see page 3	mg/L	D_s^{eff}	=		cm^2/s
$C_{(x)}$	=		mg/L	ED	=		yr
$C_{(x)}/C_{source}$	=		unitless	EF	=		d/yr

Incident #: 923441 Chemical: Toluene Land Use: Not Applicable

Symbol			Unit	Symbol			Unit
erf	=		unitless	RAF_d (PNAs)	=	0.05	unitless
f_{oc}	=		g/g	RAF_d (inorganics)	=	0	unitless
GW_{comp}	=		mg/L	RAF_0	=	1.0	unitless
GW_{source}	=		mg/L	$RBSL_{air}$ (carcinogenic)	=		μg/m^3
H'	=		cm^3_{water}/cm^3_{air}	$RBSL_{air}$ (noncarcinogenic)	=		μg/m^3
i	=	0.01426	cm/cm	RfD_i	=		mg/kg-d
I	=	30	cm/yr	RfD_o	=		mg/kg-d
IR_{air}	=	20	m^3/d	SA	=	3,160	cm^2/d
IR_{soil}	=		mg/d	S_d	=	200	cm
IR_w	=		L/d	S_w	=	6,523	cm
K	=	40.15872	cm/d for R15, R19, R26; cm/yr for R24	SF_i	=		(mg/kg-d)$^{-1}$
K_{oc}	=		cm^3/g or L/kg	SF_o	=		(mg/kg-d)$^{-1}$
k_s (non-ionizing organics)	=		cm^3_{water}/g_{soil}	THQ	=	1	unitless
k_s (ionizing organics)	=		cm^3_{water}/g_{soil}	TR	=		unitless
k_s (inorganics)	=		cm^3_{water}/g_{soil}	U	=		cm/d
L_s	=	100	cm	U_{air}	=	225	cm/s
LF_{sw}	=		$(mg/L_{water})/(mg/kg_{soil})$	U_{gw}	=		cm/yr
M	=	0.5	mg/cm^2	VF_p	=		kg/m^3
Pe	=	$6.9 \cdot 10^{-14}$	g/cm^2-s	VF_{samb}	=		$(mg/m^3_{air})/mg/kg_{soil})$ or kg/m^3
RAF_d	=	0.5	unitless	VF_{ss}	=		kg/m^3

Incident #: 923441 Chemical: Toluene Land Use: Not Applicable

Symbol			Unit
W	=		cm
w	=		g_{water}/g_{soil}
X	=	see below	cm
α_x	=		cm
α_y	=		cm
α_z	=		cm
δ_{air}	=	200	cm
δ_{gw}	=	200	cm

Symbol			Unit
θ_{as}	=		cm^3_{air}/cm^3_{soil}
θ_{ws}	=		cm^3_{water}/cm^3_{soil}
θ_T	=	0.36	cm^3/cm^3_{soil}
λ	=	0.011	d^{-1}
π	=	3.1416	
ρ_b	=		g/cm^3
ρ_w	=	1	g/cm^3
τ	=	$9.46 \cdot 10^8$	s

Equation		Result	Unit(s)
R1	=		mg/kg
R2	=		mg/kg
R7	=		mg/kg
R8	=		mg/kg
R12	=		mg/kg
R25	=		mg/L

C_{source} Values: (mg/L)

Groundwater
MW-7: 24.3
MW-13: 9.9

Soil Leaching
SB-13: 1.511
SB-15: 4.97

Maximum Predicted Extent of Groundwater Impact (X):
(feet from point source)

MW-7:19.96'
MW-13: 13.37'

SB-13: 2.02'
SB-15: 8.8'

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
RBCA Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: R12, R14, R26): R26: Ethylbenzene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: Not Applicable Soil Type: Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☐ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

Result from S18/S28 used in R26? ☒ Yes ☐ No Specify C_{source} from S18/S28 see page 3 mg/L

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT_c	=	70	yr	d	=		cm
AT_n	=		yr	D^{air}	=		cm^2/s
BW	=	70	kg	D^{water}	=		cm^2/s
C_{source}	=	see page 3	mg/L	D_s^{eff}	=		cm^2/s
$C_{(x)}$	=		mg/L	ED	=		yr
$C_{(x)}/C_{source}$	=		unitless	EF	=		d/yr

Incident #: 923441 Chemical: Ethylbenzene Land Use: Not Applicable

Symbol			Unit
erf	=		unitless
f_{oc}	=		g/g
GW_{comp}	=		mg/L
GW_{source}	=		mg/L
H'	=		cm^3_{water}/cm^3_{air}
i	=	0.01426	cm/cm
I	=	30	cm/yr
IR_{air}	=	20	m^3/d
IR_{soil}	=		mg/d
IR_w	=		L/d
K	=	40.15872	cm/d for R15, R19, R26; cm/yr for R24
K_{oc}	=		cm^3/g or L/kg
k_s (non-ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (inorganics)	=		cm^3_{water}/g_{soil}
L_s	=	100	cm
LF_{sw}	=		$(mg/L_{water})/(mg/kg_{soil})$
M	=	0.5	mg/cm^2
Pe	=	$6.9 \cdot 10^{-14}$	g/cm^2-s
RAF_d	=	0.5	unitless

Symbol			Unit
RAF_d (PNAs)	=	0.05	unitless
RAF_d (inorganics)	=	0	unitless
RAF_0	=	1.0	unitless
$RBSL_{air}$ (carcinogenic)	=		$\mu g/m^3$
$RBSL_{air}$ (noncarcinogenic)	=		$\mu g/m^3$
RfD_i	=		mg/kg-d
RfD_o	=		mg/kg-d
SA	=	3,160	cm^2/d
S_d	=	200	cm
S_w	=	6,523	cm
SF_i	=		$(mg/kg\text{-}d)^{-1}$
SF_o	=		$(mg/kg\text{-}d)^{-1}$
THQ	=	1	unitless
TR	=		unitless
U	=		cm/d
U_{air}	=	225	cm/s
U_{gw}	=		cm/yr
VF_p	=		kg/m^3
VF_{samb}	=		$(mg/m^3_{air})/mg/kg_{soil})$ or kg/m^3
VF_{ss}	=		kg/m^3

Incident #: 923441 Chemical: Ethylbenzene Land Use: Not Applicable

Symbol			Unit
W	=		cm
w	=		g_{water}/g_{soil}
X	=	see below	cm
α_x	=		cm
α_y	=		cm
α_z	=		cm
δ_{air}	=	200	cm
δ_{gw}	=	200	cm

Symbol			Unit
θ_{as}	=		cm^3_{air}/cm^3_{soil}
θ_{ws}	=		cm^3_{water}/cm^3_{soil}
θ_T	=	0.36	cm^3/cm^3_{soil}
λ	=	0.003	d^{-1}
π	=	3.1416	
ρ_b	=		g/cm^3
ρ_w	=	1	g/cm^3
τ	=	$9.46 \cdot 10^8$	s

Equation		Result	Unit(s)
R1	=		mg/kg
R2	=		mg/kg
R7	=		mg/kg
R8	=		mg/kg
R12	=		mg/kg
R25	=		mg/L

C_{source} Values: (mg/L)

Groundwater
MW-4: 2.24
MW-7: 3.66
MW-13: 2.53

Soil Leaching
SB-15: 1.678
SB-17: 2.118
SB-31: 3.96

Maximum Predicted Extent of Groundwater Impact (X):
(feet from point source)

MW-4: 22.5'
MW-7: 32.5'
MW-13: 25.02'

SB-15: 16.6'
SB-17: 21.3'
SB-31: 34'

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
RBCA Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: R12, R14, R26): R26: Total Xylenes

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: Not Applicable Soil Type: Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☐ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

Result from S18/S28 used in R26? ☒ Yes ☐ No Specify C_{source} from S18/S28 see page 3 mg/L

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT_c	=	70	yr	d	=		cm
AT_n	=		yr	D^{air}	=		cm^2/s
BW	=	70	kg	D^{water}	=		cm^2/s
C_{source}	=	see page 3	mg/L	D_s^{eff}	=		cm^2/s
$C_{(x)}$	=		mg/L	ED	=		yr
$C_{(x)}/C_{source}$	=		unitless	EF	=		d/yr

Incident #: 923441 Chemical: Total Xylenes Land Use: Not Applicable

Symbol			Unit	Symbol			Unit
erf	=		unitless	RAF_d (PNAs)	=	0.05	unitless
f_{oc}	=		g/g	RAF_d (inorganics)	=	0	unitless
GW_{comp}	=		mg/L	RAF_0	=	1.0	unitless
GW_{source}	=		mg/L	$RBSL_{air}$ (carcinogenic)	=		$\mu g/m^3$
H'	=		cm^3_{water}/cm^3_{air}	$RBSL_{air}$ (noncarcinogenic)	=		$\mu g/m^3$
i	=	0.01426	cm/cm	RfD_i	=		mg/kg-d
I	=	30	cm/yr	RfD_o	=		mg/kg-d
IR_{air}	=	20	m^3/d	SA	=	3,160	cm^2/d
IR_{soil}	=		mg/d	S_d	=	200	cm
IR_w	=		L/d	S_w	=	6,523	cm
K	=	40.15872	cm/d for R15, R19, R26; cm/yr for R24	SF_i	=		$(mg/kg-d)^{-1}$
K_{oc}	=		cm^3/g or L/kg	SF_o	=		$(mg/kg-d)^{-1}$
k_s (non-ionizing organics)	=		cm^3_{water}/g_{soil}	THQ	=	1	unitless
k_s (ionizing organics)	=		cm^3_{water}/g_{soil}	TR	=		unitless
k_s (inorganics)	=		cm^3_{water}/g_{soil}	U	=		cm/d
L_s	=	100	cm	U_{air}	=	225	cm/s
LF_{sw}	=		$(mg/L_{water})/(mg/kg_{soil})$	U_{gw}	=		cm/yr
M	=	0.5	mg/cm^2	VF_p	=		kg/m^3
Pe	=	$6.9 \cdot 10^{-14}$	g/cm^2-s	VF_{samb}	=		$(mg/m^3_{air})/mg/kg_{soil})$ or kg/m^3
RAF_d	=	0.5	unitless	VF_{ss}	=		kg/m^3

Incident #: 923441 Chemical: Total Xylenes Land Use: Not Applicable

Symbol			Unit
W	=		cm
w	=		g_{water}/g_{soil}
X	=	see below	cm
α_x	=		cm
α_y	=		cm
α_z	=		cm
δ_{air}	=	200	cm
δ_{gw}	=	200	cm

Symbol			Unit
θ_{as}	=		cm^3_{air}/cm^3_{soil}
θ_{ws}	=		cm^3_{water}/cm^3_{soil}
θ_T	=	0.36	cm^3/cm^3_{soil}
λ	=	0.0019	d^{-1}
π	=	3.1416	
ρ_b	=		g/cm^3
ρ_w	=	1	g/cm^3
τ	=	$9.46 \cdot 10^8$	s

Equation		Result	Unit(s)
R1	=		mg/kg
R2	=		mg/kg
R7	=		mg/kg
R8	=		mg/kg
R12	=		mg/kg
R25	=		mg/L

C_{source} Values: (mg/L)

Groundwater
MW-7: 18.7
MW-13: 10.2

Soil Leaching
SB-31: 19.391

Maximum Predicted Extent of Groundwater Impact (X):
(feet from point source)

MW-7:18.27'
MW-13: 0.545'

SB-31: 19.3'

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
RBCA Input Parameters for Use with Tier 2 Calculations

A. Site Identification

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Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: R12, R14, R26): R26: Naphthalene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: Not Applicable Soil Type: Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☐ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

Result from S18/S28 used in R26? ☒ Yes ☐ No Specify C_{source} from S18/S28 see page 3 mg/L

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT_c	=	70	yr	d	=		cm
AT_n	=		yr	D^{air}	=		cm^2/s
BW	=	70	kg	D^{water}	=		cm^2/s
C_{source}	=	see page 3	mg/L	D_s^{eff}	=		cm^2/s
$C_{(x)}$	=		mg/L	ED	=		yr
$C_{(x)}/C_{source}$	=		unitless	EF	=		d/yr

Incident #: 923441 Chemical: Naphthalene Land Use: Not Applicable

Symbol			Unit
erf	=		unitless
f_{oc}	=		g/g
GW_{comp}	=		mg/L
GW_{source}	=		mg/L
H'	=		cm^3_{water}/cm^3_{air}
i	=	0.01426	cm/cm
I	=	30	cm/yr
IR_{air}	=	20	m^3/d
IR_{soil}	=		mg/d
IR_w	=		L/d
K	=	40.15872	cm/d for R15, R19, R26; cm/yr for R24
K_{oc}	=		cm^3/g or L/kg
k_s (non-ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (inorganics)	=		cm^3_{water}/g_{soil}
L_s	=	100	cm
LF_{sw}	=		$(mg/L_{water})/(mg/kg_{soil})$
M	=	0.5	mg/cm^2
Pe	=	$6.9 \cdot 10^{-14}$	g/cm^2-s
RAF_d	=	0.5	unitless

Symbol			Unit
RAF_d (PNAs)	=	0.05	unitless
RAF_d (inorganics)	=	0	unitless
RAF_0	=	1.0	unitless
$RBSL_{air}$ (carcinogenic)	=		$\mu g/m^3$
$RBSL_{air}$ (noncarcinogenic)	=		$\mu g/m^3$
RfD_i	=		mg/kg-d
RfD_o	=		mg/kg-d
SA	=	3,160	cm^2/d
S_d	=	200	cm
S_w	=	6,523	cm
SF_i	=		$(mg/kg\text{-}d)^{-1}$
SF_o	=		$(mg/kg\text{-}d)^{-1}$
THQ	=	1	unitless
TR	=		unitless
U	=		cm/d
U_{air}	=	225	cm/s
U_{gw}	=		cm/yr
VF_p	=		kg/m^3
VF_{samb}	=		$(mg/m^3_{air})/mg/kg_{soil})$ or kg/m^3
VF_{ss}	=		kg/m^3

Incident #: 923441 Chemical: Naphthalene Land Use: Not Applicable

Symbol			Unit
W	=		cm
w	=		g_{water}/g_{soil}
X	=	see below	cm
α_x	=		cm
α_y	=		cm
α_z	=		cm
δ_{air}	=	200	cm
δ_{gw}	=	200	cm

Symbol			Unit
θ_{as}	=		cm^3_{air}/cm^3_{soil}
θ_{ws}	=		cm^3_{water}/cm^3_{soil}
θ_T	=	0.36	cm^3/cm^3_{soil}
λ	=	0.0027	d^{-1}
π	=	3.1416	
ρ_b	=		g/cm^3
ρ_w	=	1	g/cm^3
τ	=	$9.46 \cdot 10^8$	s

Equation		Result	Unit(s)
R1	=		mg/kg
R2	=		mg/kg
R7	=		mg/kg
R8	=		mg/kg
R12	=		mg/kg
R25	=		mg/L

C_{source} Values: (mg/L)

Groundwater
MW-4: 0.229
MW-7: 0.472
MW-13: 0.177

Soil Leaching
SB-17: 0.738
SB-31: 0.300

Maximum Predicted Extent of Groundwater Impact (X):
(feet from point source)

MW-4: 10'
MW-7: 26'
MW-13: 4.6'

Soil Leaching
SB-17: 35.7'
SB-31: 15.8'

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
RBCA Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: R12, R14, R26): R26: Benzo(a)anthracene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: Not Applicable Soil Type: Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☐ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

Result from S18/S28 used in R26? ☒ Yes ☐ No Specify C_{source} from S18/S28 see page 3 mg/L

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT_c	=	70	yr	d	=		cm
AT_n	=		yr	D^{air}	=		cm^2/s
BW	=	70	kg	D^{water}	=		cm^2/s
C_{source}	=	see page 3	mg/L	D_s^{eff}	=		cm^2/s
$C_{(x)}$	=		mg/L	ED	=		yr
$C_{(x)}/C_{source}$	=		unitless	EF	=		d/yr

Incident #: 923441 Chemical: Benzo(a)anthracene Land Use: Not Applicable

Symbol			Unit
erf	=		unitless
f_{oc}	=		g/g
GW_{comp}	=		mg/L
GW_{source}	=		mg/L
H'	=		cm^3_{water}/cm^3_{air}
i	=	0.01426	cm/cm
I	=	30	cm/yr
IR_{air}	=	20	m^3/d
IR_{soil}	=		mg/d
IR_w	=		L/d
K	=	40.15872	cm/d for R15, R19, R26; cm/yr for R24
K_{oc}	=		cm^3/g or L/kg
k_s (non-ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (ionizing organics)	=		cm^3_{water}/g_{soil}
k_s (inorganics)	=		cm^3_{water}/g_{soil}
L_s	=	100	cm
LF_{sw}	=		$(mg/L_{water})/(mg/kg_{soil})$
M	=	0.5	mg/cm^2
Pe	=	$6.9 \cdot 10^{-14}$	g/cm^2-s
RAF_d	=	0.5	unitless

Symbol			Unit
RAF_d (PNAs)	=	0.05	unitless
RAF_d (inorganics)	=	0	unitless
RAF_0	=	1.0	unitless
$RBSL_{air}$ (carcinogenic)	=		$\mu g/m^3$
$RBSL_{air}$ (noncarcinogenic)	=		$\mu g/m^3$
RfD_i	=		mg/kg-d
RfD_o	=		mg/kg-d
SA	=	3,160	cm^2/d
S_d	=	200	cm
S_w	=	6,523	cm
SF_i	=		$(mg/kg\text{-}d)^{-1}$
SF_o	=		$(mg/kg\text{-}d)^{-1}$
THQ	=	1	unitless
TR	=		unitless
U	=		cm/d
U_{air}	=	225	cm/s
U_{gw}	=		cm/yr
VF_p	=		kg/m^3
VF_{samb}	=		$(mg/m^3_{air})/mg/kg_{soil})$ or kg/m^3
VF_{ss}	=		kg/m^3

Incident #: 923441 Chemical: Benzo(a)anthracene Land Use: Not Applicable

Symbol			Unit
W	=		cm
w	=		g_{water}/g_{soil}
X	=	see below	cm
α_x	=		cm
α_y	=		cm
α_z	=		cm
δ_{air}	=	200	cm
δ_{gw}	=	200	cm

Symbol			Unit
θ_{as}	=		cm^3_{air}/cm^3_{soil}
θ_{ws}	=		cm^3_{water}/cm^3_{soil}
θ_T	=	0.36	cm^3/cm^3_{soil}
λ	=	0.00051	d^{-1}
π	=	3.1416	
ρ_b	=		g/cm^3
ρ_w	=	1	g/cm^3
τ	=	$9.46 \cdot 10^8$	s

Equation		Result	Unit(s)
R1	=		mg/kg
R2	=		mg/kg
R7	=		mg/kg
R8	=		mg/kg
R12	=		mg/kg
R25	=		mg/L

C_{source} Values: (mg/L)

Groundwater
MW-7: 0.00818

Maximum Predicted Extent of Groundwater Impact (X):
(feet from point source)

MW-7: 260'

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SSL Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Company

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: S12, S17, S28): S28/S18: Soil Leaching to Groundwater - Benzene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: not applicable Soil Type: Silty Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☒ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT (ingestion)	=		yr	d_a	=		m
AT (inhalation)	=		yr	d_s	=	2.4384	m
AT_c	=	70	yr	D_A	=		cm^2/s
BW	=		kg	D_i	=		cm^2/s
C_{sat}	=		mg/kg	D_w	=		cm^2/s
C_w	=		mg/L	DF	=	20	unitless
d	=		m	ED (ingestion of carcinogens)	=		yr

Incident #: 923441 Chemical: Benzene Land Use: not applicable

Symbol			Unit	Symbol			Unit
ED (inhalation of carcinogens)	=		yr	K_{oc}	=		cm^3/g or L/kg
ED (ingestion of noncarcinogens)	=		yr	K_s	=		m/yr
ED (inhalation of noncarcinogens)	=		yr	L	=		m
ED (ingestion of groundwater)	=		yr	PEF	=		m^3/kg
ED_{M-L}	=	70	yr	PEF'	=		m^3/kg
EF	=		d/yr	Q/C (VF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
F(x)	=	0.194	unitless	Q/C (PEF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
f_{oc}	=		g/g	RfC	=		mg/m^3
GW_{obj}	=		mg/L	RfD_o	=		mg/(kg-d)
H'	=		unitless	S	=		mg/L
i	=		m/m	SF_o	=		$(mg/kg\text{-}d)^{-1}$
I	=	0.3	m/yr	T	=		s
I_{M-L}	=	0.18	m/yr	T_{M-L}	=	30	yr
$IF_{soil\text{-}adj}$	=	114	(mg-yr)/(kg-d)	THQ	=	1	unitless
IR_{soil}	=		mg/d	TR	=		unitless
IR_w	=		L/d	U_m	=	4.69	m/s
K	=		m/yr	URF	=		$(\mu g/m^3)^{-1}$
K_d (non-ionizing organics)	=		cm^3/g or L/kg	U_t	=	11.32	kg/m^3
K_d (ionizing organics)	=		cm^3/g or L/kg	V	=		unitless
K_d (inorganics)	=		cm^3/g or L/kg	VF	=		m^3/kg

Incident #: 923441 Chemical: Benzene Land Use: not applicable

Symbol		Unit	Symbol			Unit
VF'	=	m^3/kg	θ_w	=		L_{water}/L_{soil}
VF_{M-L}	=	m^3/kg	ρ_b	=	1.684	kg/L or g/cm^3
VF'_{M-L}	=	m^3/kg	ρ_s	=		g/cm^3
η	=	L_{pore}/L_{soil}	ρ_w	=	1	g/cm^3
θ_a	=	L_{air}/L_{soil}	1/(2b+3)	=		unitless

Equation		Result	Unit(s)
S1	=		mg/kg
S2	=		mg/kg
S3	=		mg/kg
S4	=		mg/kg
S5	=		mg/kg
S6	=		mg/L
S7	=		mg/kg
S17	=		mg/kg
S28	=		mg/kg
S29	=		mg/L

Source Area Concentration Values: (mg/Kg)

SB-11(7'-8') Benzene: 2.9
SB-12(7'-8') Benzene: 0.629
SB-13(6'-7') Benzene: 11.7
SB-14(6'-7') Benzene: 0.833
SB-15(5'-6') Benzene: 41.8
SB-16(6'-7') Benzene: 3.7
SB-17(6'-7') Benzene: 1.200
SB-18(6'-7') Benzene: 6.79
SB-19(6'-7') Benzene: 0.365
SB-25(3.5'-5') Benzene: 0.148
SB-30(2'-4') Benzene: 0.402
SB-31(4'-6') Benzene: 16.800
MW-12(4'-6') Benzene: 4.230
MW-13(4'-6') Benzene: 0.347
MW-14(4'-6') Benzene: 0.654

Soil to Groundwater Leachate Potential (GW_{obj}): (mg/L)

SB-11(7'-8') Benzene: 0.047
SB-12(7'-8') Benzene: 0.010
SB-13(6'-7') Benzene: 0.191
SB-14(6'-7') Benzene: 0.014
SB-15(5'-6') Benzene: 0.981
SB-16(6'-7') Benzene: 0.060
SB-17(6'-7') Benzene: 0.020
SB-18(6'-7') Benzene: 0.111
SB-19(6'-7') Benzene: 0.0.006
SB-25(3.5'-5') Benzene: 0.002
SB-30(2'-4') Benzene: 0.402
SB-31(4'-6') Benzene: 16.800
MW-12(4'-6') Benzene: 0.069
MW-13(4'-6') Benzene: 0.006
MW-14(4'-6') Benzene: 0.011

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SSL Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Company

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: S12, S17, S28): S28/S18: Soil Leaching to Groundwater-Toluene/Ethylbenzene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: not applicable Soil Type: Silty Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☒ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT (ingestion)	=		yr	d_a	=		m
AT (inhalation)	=		yr	d_s	=	2.4384	m
AT_c	=	70	yr	D_A	=		cm^2/s
BW	=		kg	D_i	=		cm^2/s
C_{sat}	=		mg/kg	D_w	=		cm^2/s
C_w	=		mg/L	DF	=	20	unitless
d	=		m	ED (ingestion of carcinogens)	=		yr

Incident #: 923441 Chemical: Toluene / Ethy Land Use: not applicable

Symbol			Unit	Symbol			Unit
ED (inhalation of carcinogens)	=		yr	K_{oc}	=		cm^3/g or L/kg
ED (ingestion of noncarcinogens)	=		yr	K_s	=		m/yr
ED (inhalation of noncarcinogens)	=		yr	L	=		m
ED (ingestion of groundwater)	=		yr	PEF	=		m^3/kg
ED_{M-L}	=	70	yr	PEF'	=		m^3/kg
EF	=		d/yr	Q/C (VF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
F(x)	=	0.194	unitless	Q/C (PEF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
f_{oc}	=		g/g	RfC	=		mg/m^3
GW_{obj}	=		mg/L	RfD_o	=		mg/(kg-d)
H'	=		unitless	S	=		mg/L
i	=		m/m	SF_o	=		$(mg/kg\text{-}d)^{-1}$
I	=	0.3	m/yr	T	=		s
I_{M-L}	=	0.18	m/yr	T_{M-L}	=	30	yr
$IF_{soil\text{-}adj}$	=	114	(mg-yr)/(kg-d)	THQ	=	1	unitless
IR_{soil}	=		mg/d	TR	=		unitless
IR_w	=		L/d	U_m	=	4.69	m/s
K	=		m/yr	URF	=		$(\mu g/m^3)^{-1}$
K_d (non-ionizing organics)	=		cm^3/g or L/kg	U_t	=	11.32	kg/m^3
K_d (ionizing organics)	=		cm^3/g or L/kg	V	=		unitless
K_d (inorganics)	=		cm^3/g or L/kg	VF	=		m^3/kg

Incident #: 923441 Chemical: Toluene / Ethy Land Use: not applicable

Symbol		Unit	Symbol			Unit
VF'	=	m^3/kg	θ_w	=		L_{water}/L_{soil}
VF_{M-L}	=	m^3/kg	ρ_b	=	1.684	kg/L or g/cm^3
VF'_{M-L}	=	m^3/kg	ρ_s	=		g/cm^3
η	=	L_{pore}/L_{soil}	ρ_w	=	1	g/cm^3
θ_a	=	L_{air}/L_{soil}	1/(2b+3)	=		unitless

Equation		Result	Unit(s)
S1	=		mg/kg
S2	=		mg/kg
S3	=		mg/kg
S4	=		mg/kg
S5	=		mg/kg
S6	=		mg/L
S7	=		mg/kg
S17	=		mg/kg
S28	=		mg/kg
S29	=		mg/L

Source Area Concentration Values: (mg/Kg)

SB-11(7'-8') Toluene: 51.6
SB-13(6'-7') Toluene: 92.7
SB-15(5'-6') Toluene: 305.0
SB-31(4'-6') Toluene: 27.1

SB-11 (7'-8') Ethylbenzene: 31.6
SB-13 (6'-7') Ethylbenzene: 29.7
SB-15 (5'-6') Ethylbenzene: 103.0
SB-17 (6'-7') Ethylbenzene: 130.0
SB-18 (6'-7') Ethylbenzene: 27.0
SB-31 (4'-6') Ethylbenzene: 243.0
MW-12 (2'-4') Ethylbenzene: 42.3

Soil to Groundwater Leachate Potential (GW_{obj}): (mg/L)

SB-11(7'-8') Toluene: 0.841
SB-13(6'-7') Toluene: 1.511
SB-15(5'-6') Toluene: 4.970
SB-31(4'-6') Toluene: 0.442

SB-11 (7'-8') Ethylbenzene: 0.515
SB-13 (6'-7') Ethylbenzene: 0.484
SB-15 (5'-6') Ethylbenzene: 1.678
SB-17 (6'-7') Ethylbenzene: 2.118
SB-18 (6'-7') Ethylbenzene: 0.440
SB-31 (4'-6') Ethylbenzene: 3.960
MW-12 (2'-4') Ethylbenzene: 0.689

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SSL Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Company

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: S12, S17, S28): S28/S18: Soil Leaching to Groundwater-Total Xylenes

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: not applicable Soil Type: Silty Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☒ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT (ingestion)	=		yr	d_a	=		m
AT (inhalation)	=		yr	d_s	=	2.4384	m
AT_c	=	70	yr	D_A	=		cm^2/s
BW	=		kg	D_i	=		cm^2/s
C_{sat}	=		mg/kg	D_w	=		cm^2/s
C_w	=		mg/L	DF	=	20	unitless
d	=		m	ED (ingestion of carcinogens)	=		yr

Incident #: 923441 Chemical: Total Xylenes Land Use: not applicable

Symbol			Unit	Symbol			Unit
ED (inhalation of carcinogens)	=		yr	K_{oc}	=		cm^3/g or L/kg
ED (ingestion of noncarcinogens)	=		yr	K_s	=		m/yr
ED (inhalation of noncarcinogens)	=		yr	L	=		m
ED (ingestion of groundwater)	=		yr	PEF	=		m^3/kg
ED_{M-L}	=	70	yr	PEF'	=		m^3/kg
EF	=		d/yr	Q/C (VF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
F(x)	=	0.194	unitless	Q/C (PEF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
f_{oc}	=		g/g	RfC	=		mg/m^3
GW_{obj}	=		mg/L	RfD_o	=		mg/(kg-d)
H'	=		unitless	S	=		mg/L
i	=		m/m	SF_o	=		$(mg/kg\text{-}d)^{-1}$
I	=	0.3	m/yr	T	=		s
I_{M-L}	=	0.18	m/yr	T_{M-L}	=	30	yr
$IF_{soil\text{-}adj}$	=	114	(mg-yr)/(kg-d)	THQ	=	1	unitless
IR_{soil}	=		mg/d	TR	=		unitless
IR_w	=		L/d	U_m	=	4.69	m/s
K	=		m/yr	URF	=		$(\mu g/m^3)^{-1}$
K_d (non-ionizing organics)	=		cm^3/g or L/kg	U_t	=	11.32	kg/m^3
K_d (ionizing organics)	=		cm^3/g or L/kg	V	=		unitless
K_d (inorganics)	=		cm^3/g or L/kg	VF	=		m^3/kg

Incident #: 923441 Chemical: Total Xylenes Land Use: not applicable

Symbol		Unit	Symbol			Unit
VF'	=	m^3/kg	θ_w	=		L_{water}/L_{soil}
VF_{M-L}	=	m^3/kg	ρ_b	=	1.684	kg/L or g/cm^3
VF'_{M-L}	=	m^3/kg	ρ_s	=		g/cm^3
η	=	L_{pore}/L_{soil}	ρ_w	=	1	g/cm^3
θ_a	=	L_{air}/L_{soil}	1/(2b+3)	=		unitless

Equation		Result	Unit(s)
S1	=		mg/kg
S2	=		mg/kg
S3	=		mg/kg
S4	=		mg/kg
S5	=		mg/kg
S6	=		mg/L
S7	=		mg/kg
S17	=		mg/kg
S28	=		mg/kg
S29	=		mg/L

Source Area Concentration Values: (mg/Kg)

SB-11 (7'-8') Total Xylenes: 159.0
SB-12 (7'-8') Total Xylenes: 13.7
SB-13 (6'-7') Total Xylenes: 142.0
SB-15 (5'-6') Total Xylenes: 568.0
SB-16 (6'-7') Total Xylenes: 36.1
SB-17 (6'-7') Total Xylenes: 574.0
SB-18 (6'-7') Total Xylenes: 112.0
SB-31(4'-6') Total Xylenes: 1,190.0
MW-12 (4'-6') Total Xylenes: 178.0
MW-13 (4'-6') Total Xylenes: 6.61
MW-14 (4'-6') Total Xylenes: 44.6

Soil to Groundwater Leachate Potential (GW_{obj}): (mg/L)

B-11 (7'-8') Total Xylenes: 2.591
SB-12 (7'-8') Total Xylenes: 0.223
SB-13 (6'-7') Total Xylenes: 2.314
SB-15 (5'-6') Total Xylenes: 9.255
SB-16 (6'-7') Total Xylenes: 0.588
SB-17 (6'-7') Total Xylenes: 9.353
SB-18 (6'-7') Total Xylenes: 1.825
SB-31(4'-6') Total Xylenes: 19.391
MW-12 (4'-6') Total Xylenes: 2.90
MW-13 (4'-6') Total Xylenes: 0.108
MW-14 (4'-6') Total Xylenes: 0.727

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SSL Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Company

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: S12, S17, S28): S28/S18: Soil Leaching to Groundwater - Naphthalene

Contact Information for Individual Who Performed Calculations: Joe Buhlig - Project Manager

Marlin Environmental, Inc. Phone: (217) 726-7569

Land Use: not applicable Soil Type: Silty Clay

Groundwater: ☒ Class I ☐ Class II

Mass Limit: ☐ Yes ☒ No If Yes, then Specify Acreage: ☒ 0.5 ☐ 1 ☐ 2 ☐ 5 ☐ 10 ☐ 30

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit	Symbol			Unit
AT (ingestion)	=		yr	d_a	=		m
AT (inhalation)	=		yr	d_s	=	2.4384	m
AT_c	=	70	yr	D_A	=		cm^2/s
BW	=		kg	D_i	=		cm^2/s
C_{sat}	=		mg/kg	D_w	=		cm^2/s
C_w	=		mg/L	DF	=	20	unitless
d	=		m	ED (ingestion of carcinogens)	=		yr

Incident #: 923441 Chemical: Naphthalene Land Use: not applicable

Symbol			Unit	Symbol			Unit
ED (inhalation of carcinogens)	=		yr	K_{oc}	=		cm^3/g or L/kg
ED (ingestion of noncarcinogens)	=		yr	K_s	=		m/yr
ED (inhalation of noncarcinogens)	=		yr	L	=		m
ED (ingestion of groundwater)	=		yr	PEF	=		m^3/kg
ED_{M-L}	=	70	yr	PEF'	=		m^3/kg
EF	=		d/yr	Q/C (VF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
F(x)	=	0.194	unitless	Q/C (PEF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
f_{oc}	=		g/g	RfC	=		mg/m^3
GW_{obj}	=		mg/L	RfD_o	=		mg/(kg-d)
H'	=		unitless	S	=		mg/L
i	=		m/m	SF_o	=		$(mg/kg\text{-}d)^{-1}$
I	=	0.3	m/yr	T	=		s
I_{M-L}	=	0.18	m/yr	T_{M-L}	=	30	yr
$IF_{soil\text{-}adj}$	=	114	(mg-yr)/(kg-d)	THQ	=	1	unitless
IR_{soil}	=		mg/d	TR	=		unitless
IR_w	=		L/d	U_m	=	4.69	m/s
K	=		m/yr	URF	=		$(\mu g/m^3)^{-1}$
K_d (non-ionizing organics)	=		cm^3/g or L/kg	U_t	=	11.32	kg/m^3
K_d (ionizing organics)	=		cm^3/g or L/kg	V	=		unitless
K_d (inorganics)	=		cm^3/g or L/kg	VF	=		m^3/kg

Incident #: 923441 Chemical: Naphthalene Land Use: not applicable

Symbol		Unit	Symbol			Unit
VF'	=	m^3/kg	θ_w	=		L_{water}/L_{soil}
VF_{M-L}	=	m^3/kg	ρ_b	=	1.684	kg/L or g/cm^3
VF'_{M-L}	=	m^3/kg	ρ_s	=		g/cm^3
η	=	L_{pore}/L_{soil}	ρ_w	=	1	g/cm^3
θ_a	=	L_{air}/L_{soil}	1/(2b+3)	=		unitless

Equation		Result	Unit(s)
S1	=		mg/kg
S2	=		mg/kg
S3	=		mg/kg
S4	=		mg/kg
S5	=		mg/kg
S6	=		mg/L
S7	=		mg/kg
S17	=		mg/kg
S28	=		mg/kg
S29	=		mg/L

Source Area Concentration Values: (mg/Kg)

SB-11 (7'-8') Naphthalene: 4.83
SB-15 (5'-6') Naphthalene: 5.34
SB-17 (6'-7') Naphthalene: 45.3
SB-18 (6'-7') Naphthalene: 4.18
SB-31 (4'-6') Naphthalene: 20.7
MW-12 (2'-4') Naphthalene: 4.2

Soil to Groundwater Leachate Potential (GW_{obj}): (mg/L)

SB-11 (7'-8') Naphthalene: 0.079
SB-15 (5'-6') Naphthalene: 0.087
SB-17 (6'-7') Naphthalene: 0.738
SB-18 (6'-7') Naphthalene: 0.068
SB-31 (4'-6') Naphthalene: 0.337
MW-12 (2'-4') Naphthalene: 0.068

Benanti, Trent

From: Benanti, Trent
Sent: Wednesday, April 06, 2016 4:33 PM
To: Jeff Wienhoff (jeffw@marlinenv.com)
Cc: Joe Buhlig (joeb@marlinenv.com)
Subject: Leaking UST Incident #923441 - Email dated 04/05/2016 - SSL and RBCA

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Jeff Wienhoff:

I have reviewed the forms attached to the email dated 04/05/2016 and have the following comments:

1) The mass-limit acreage is either 1 acre or 2 acres. However, the forms titled "SSL Input Parameters for Use with Tier 2 Calculations" state that the mass-limit acreage is 0.5 acre.

   Please note that mass-limit acreage is not a parameter in equation S18 or equation S28. Therefore, the forms do not need to be corrected at this time;

2) The benzene concentration in soil sample SB-11 (7'-8') is 3.980 mg/kg. Therefore, the potential concentration of benzene migrating from said soil sample is 0.065 mg/L. However, the form titled "SSL Input Parameters for Use with Tier 2 Calculations" states that the benzene concentration in soil sample SB-11 (7'-8') is 2.9 mg/kg and that the potential concentration of benzene migrating from said soil sample is 0.047 mg/L.

   Please see comment #9 for further information;

3) The potential concentration of benzene migrating from soil sample SB-15 (5'-6') is 0.681 mg/L. However, the form titled "SSL Input Parameters for Use with Tier 2 Calculations" states that the potential concentration of benzene migrating from said soil sample is 0.981 mg/L.

   Please see comment #10 for further information;

4) The potential concentration of benzene migrating from soil sample SB-30 (2'-4') is 0.007 mg/L. However, the form titled "SSL Input Parameters for Use with Tier 2 Calculations" states that the potential concentration of benzene migrating from said soil sample is 0.402 mg/L.

   Please note that the form titled "RBCA Input Parameters for Use with Tier 2 Calculations" correctly states that the potential concentration of benzene migrating from soil sample SB-30 is 0.007 mg/L. Therefore, the error does not affect the X distance;

5) The potential concentration of benzene migrating from soil sample SB-31 (4'-6') is 0.274 mg/L. However, the form titled "SSL Input Parameters for Use with Tier 2 Calculations" states that the potential concentration of benzene migrating from said soil sample is 16.800 mg/L.

Please note that the form titled "RBCA Input Parameters for Use with Tier 2 Calculations" correctly states that the potential concentration of benzene migrating from soil sample SB-31 is 0.274 mg/L. Therefore, the error does not affect the X distance;

6) The naphthalene concentration in soil sample SB-11 (7'-8') is 4.63 mg/kg. Therefore, the potential concentration of naphthalene migrating from said soil sample is 0.075 mg/L. However, the form titled "SSL Input Parameters for Use with Tier 2 Calculations" states that the naphthalene concentration in soil sample SB-11 (7'-8') is 4.83 mg/kg and that the potential concentration of naphthalene migrating from said soil sample is 0.079 mg/L.

   Please note that neither potential concentration of naphthalene exceeds the Tier 1 remediation objective. Therefore, the error does not affect the X distance;

7) The naphthalene concentration in soil sample SB-18 (6'-7') is 4.16 mg/kg. However, the form titled "SSL Input Parameters for Use with Tier 2 Calculations" states that the naphthalene concentration in said soil sample is 4.18 mg/kg.

   Please note that, regardless of the whether the naphthalene concentration is 4.16 mg/kg or 4.18 mg/kg, the potential concentration of naphthalene is 0.068 mg/L. Also note that, regardless of the whether the naphthalene concentration is 4.16 mg/kg or 4.18 mg/kg, the potential concentration of naphthalene does not exceed the Tier 1 remediation objective. Therefore, the error does not affect the X distance;

8) The benzene concentration in groundwater sample MW-10 is 0.126 mg/L. Therefore, the X distance is 146'. However, the form titled "RBCA Input Parameters for Use with Tier 2 Calculations" states that the benzene concentration in groundwater sample MW-10 is 0.125 mg/L and that the X distance is 145';

9) The potential concentration of benzene migrating from soil sample SB-11 is 0.065 mg/L. Therefore, the X distance is 112'. However, the form titled "RBCA Input Parameters for Use with Tier 2 Calculations" states that the potential concentration of benzene migrating from soil sample SB-11 is 0.047 mg/L and that the X distance is 101';

10) The potential concentration of benzene migrating from soil sample SB-15 is 0.681 mg/L. Therefore, the X distance is 243'. However, the form titled "RBCA Input Parameters for Use with Tier 2 Calculations" states that the potential concentration of benzene migrating from soil sample SB-15 is 0.981 mg/L and that the X distance is 272';

11) The ethylbenzene concentration in groundwater sample MW-7 is 3.68 mg/L. However, the form titled "RBCA Input Parameters for Use with Tier 2 Calculations" states that the ethylbenzene concentration in groundwater sample MW-7 is 3.66 mg/L.

   Please note that, regardless of the whether the ethylbenzene concentration is 3.66 mg/L or 3.68 mg/L, the X distance is 32.5';

12) The total xylenes concentration in groundwater sample MW-7 is 16.7 mg/L. Therefore, the X distance is 14.66'. However, the form titled "RBCA Input Parameters for Use with Tier 2 Calculations" states that the total xylenes concentration in groundwater sample MW-7 is 18.7 mg/L and that the X distance is 18.27';

13) The potential concentration of naphthalene migrating from soil sample SB-31 is 0.337 mg/L. Therefore, the X distance is 18.5'. However, the form titled "RBCA Input Parameters for Use with Tier 2 Calculations" states that the potential concentration of naphthalene migrating from soil sample SB-31 is 0.300 mg/L and that the X distance is 15.8';

14) The benzo(a)anthracene concentrations in the soil do not exceed the Tier 1 remediation objective for the soil component of the groundwater ingestion exposure route for sites with Class I groundwater. Therefore, the benzo(a)anthracene result from equation S18 was not used in equation R26. However, the form titled "RBCA Input Parameters for Use with Tier 2 Calculations" states that the benzo(a)anthracene result from equation S18 was used in equation R26.

    Please note that the form does not need to be corrected at this time;

15) The benzo(a)anthracene concentration in groundwater sample MW-7 is 0.00018 mg/L. Therefore, the X distance is 31'. However, the form titled "RBCA Input Parameters for Use with Tier 2 Calculations" states that the benzo(a)anthracene concentration in groundwater sample MW-7 is 0.00818 mg/L and that the X distance is 260'.

Please proceed with the preparation of FIGURE 5A (EQUATION R26 MODELED EXTENTS MAP – SOIL) and FIGURE 5B (EQUATION R26 MODELED EXTENTS MAP – GROUNDWATER). I believe that FIGURE 5A (EQUATION R26 MODELED EXTENTS MAP – SOIL) should show the following X distances:

SB-11	Benzene	112'
SB-12	Benzene	37.5'
SB-13	Benzene	173'
SB-14	Benzene	51'
SB-15	Benzene	243'
SB-16	Benzene	113'
SB-17	Benzene	65'
SB-18	Benzene	143'
SB-19	Benzene	11'
SB-30	Benzene	16'
SB-31	Benzene	194'

I believe that FIGURE 5B (EQUATION R26 MODELED EXTENTS MAP – GROUNDWATER) should show the following X distances:

MW-1	Benzene	242'
MW-4	Benzene	261'
MW-7	Benzene	463'
MW-10	Benzene	146'
MW-12	Benzene	195'
MW-13	Benzene	434'
MW-14	Benzene	209'

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Benanti, Trent
Sent: Friday, April 08, 2016 3:16 PM
To: Jeff Wienhoff (jeffw@marlinenv.com)
Cc: Joe Buhlig (joeb@marlinenv.com)
Subject: Leaking UST Incident #923441 - Email dated 04/08/2016

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Jeff Wienhoff:

I have received your email dated 04/08/2016. Could you email me a waiver pursuant to 35 Ill. Adm. Code 734.505(d)? I will need time to review the site maps titled "FIGURE 5A (EQUATION R26 MODELED EXTENTS MAP – SOIL) and FIGURE 5B (SITE AREA FEATURES MAP – GROUNDWATER). I will also need time to determine how the corrections to the Site Investigation Completion Report will affect the Corrective Action Plan and Budget.

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Benanti, Trent

From: Jeff Wienhoff <jeffw@marlinenv.com>
Sent: Friday, April 08, 2016 3:42 PM
To: Benanti, Trent
Cc: Joe Buhlig
Subject: RE: Leaking UST Incident #923441

Trent,

Per our client, Illico, Inc., we would like to provide this letter to waive our right to a final decision with 120 days after submittal of the Site Investigation Completion Report dated December 14, 2015 and the Corrective Action Plan and Budget submitted December 14, 2015. This waiver is for an additional 60 days to complete your review and provide a final decision.

Should you have any questions or need additional information, please let me know.

Jeff Wienhoff, P.E.
Green Wave Consulting, LLC
3900 Wood Duck Drive, Suite F
Springfield, IL 62711
Office: (217) 726-7569 x250
Cell: (217) 899-5486
www.greenwavecon.com

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
BRUCE RAUNER, GOVERNOR ALEC MESSINA, ACTING DIRECTOR

217/524-3300

CERTIFIED MAIL

AUG 25 2016

7014 2120 0002 3289 6852

Mr. David Golwitzer
Illico Independent Oil Co.
2201 Woodlawn Rd., Suite 600
Lincoln, IL 62656

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Dear Mr. Golwitzer:

The Illinois Environmental Protection Agency (Illinois EPA) has reviewed the Site Investigation Completion Report and the actual costs budget for the Stage 3 site investigation submitted for the above-referenced incident. The Site Investigation Completion Report dated 12/14/2015 was received by the Illinois EPA on 12/14/2015. The actual costs budget for the Stage 3 site investigation is located in ATTACHMENT 5 of the Site Investigation Completion Report.

Pursuant to Subsections 57.7(a)(5) and 57.7(c) of the Environmental Protection Act (415 ILCS 5) (Act) and 35 Illinois Administrative Code (35 Ill. Adm. Code) 734.505(b) and 734.510(a), the Illinois EPA has determined that the requirements of Title XVI of the Act have been satisfied. Therefore, the Site Investigation Completion Report is approved. Please note that this approval was made possible by the subsequent submittal of additional information by Marlin Environmental, Inc. via email on various dates.

Pursuant to Subsections 57.7(a)(2) and 57.7(c) of the Act and 35 Ill. Adm. Code 734.505(b) and 734.510(b), the actual costs budget for the Stage 3 site investigation is approved for the amounts listed in Section 1 of Attachment A of this letter. However, the amount of payment from the Underground Storage Tank Fund may be limited by Subsections 57.8(d), 57.8(e), and 57.8(g) of the Act, as well as 35 Ill. Adm. Code 734.630 and 734.655. Please note that this approval was made possible by the subsequent submittal of amended Budget and Billing Forms by Marlin Environmental, Inc. via mail on 02/02/2016 and via email on 02/18/2016. Also note that the Illinois EPA is approving unit rates that lack supporting documentation (e.g., field vehicle, consultant latex gloves, photoionization detector, water level indicator, bailers, nylon rope, and metal detector) because the unit rates in question were previously approved as part of the proposed budget for the Stage 3 site investigation.

If you have any questions or need assistance, please contact Trent Benanti at (217) 524-4649.

Sincerely,

Michael T. Lowder
Unit Manager
Leaking Underground Storage Tank Section
Division of Remediation Management
Bureau of Land

Attachment (1): Attachment A

c: Mr. Joe Buhlig (Green Wave Consulting, LLC)
BOL File

Attachment A

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

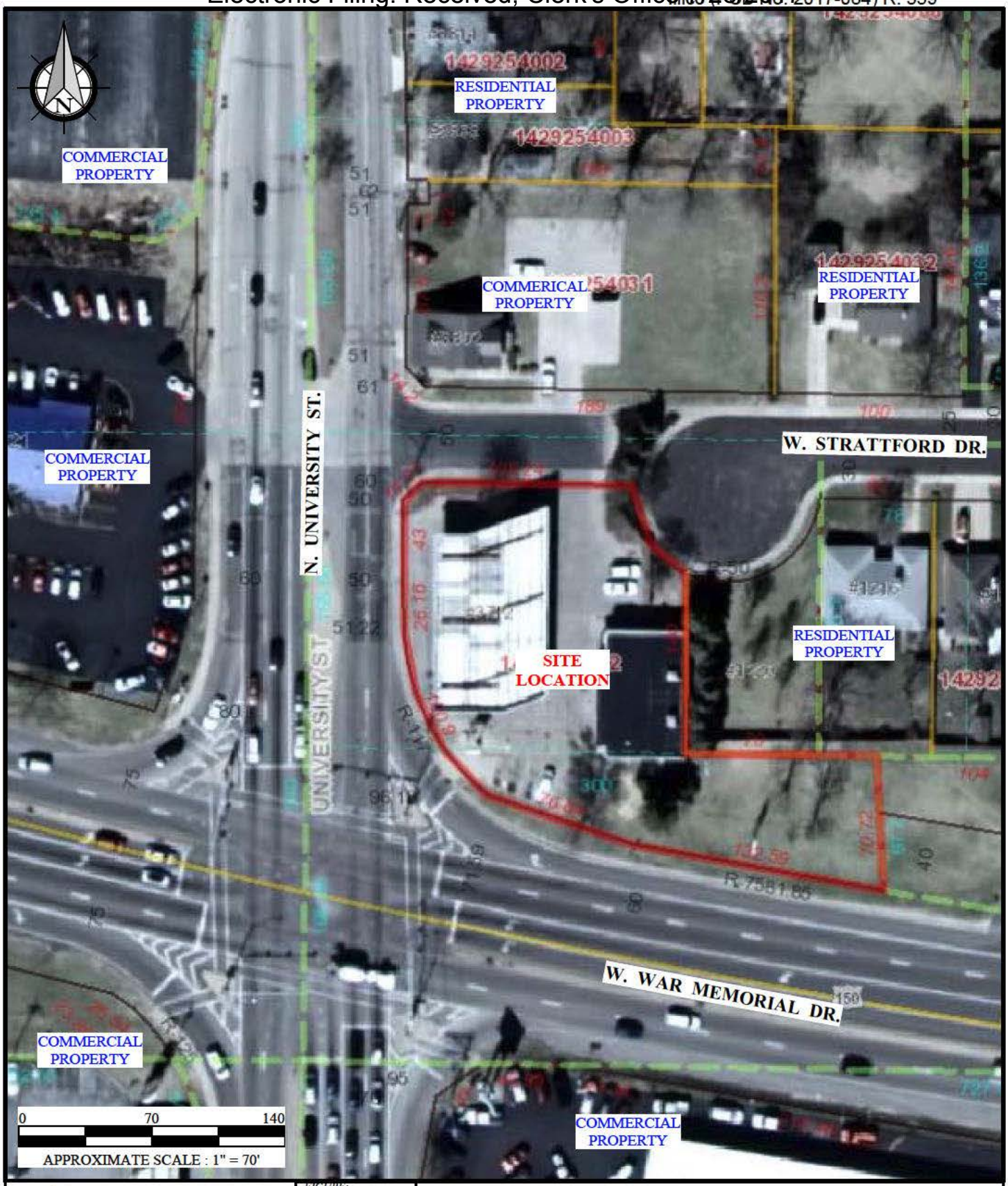
Section 1

Actual Costs Budget for the Stage 3 Site Investigation

The following amounts are approved:

$ 1,486.97	Drilling and Monitoring Well Costs
$ 1,395.32	Analytical Costs
$ 0.00	Remediation and Disposal Costs
$ 0.00	UST Removal and Abandonment Costs
$ 0.00	Paving, Demolition, and Well Abandonment Costs
$15,511.96	Consulting Personnel Costs
$ 604.80	Consultant's Materials Costs

Handling charges will be determined at the time a billing package is reviewed by the Illinois EPA. The amount of allowable handling charges will be determined in accordance with Subsection 57.1(a) of the Environmental Protection Act (415 ILCS 5) (Act) and 35 Illinois Administrative Code (35 Ill. Adm. Code) 734.635.



MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

FIGURE: 1	SURROUNDING LAND USAGE MAP
PROJECT NUMBER: 1382	ILLICO, INC. - UNIVERSITY 3712 N. UNIVERSITY ST. PEORIA, IL 61614
DRAWN DATE: 04/16	
PREPARED BY: BUHLIG	
DRAWN BY: BETTENHAUSEN	FILE NAME: ILLICO - UNIVERSITY - SLUM

Benanti, Trent

From: Benanti, Trent
Sent: Wednesday, September 28, 2016 2:41 PM
To: jeffw@greenwavecon.com
Subject: Leaking UST Incident #923441 - Corrective Action Plan - FIGURE 1 (SURROUNDING LAND USAGE MAP)
Attachments: FIGURE 1 (SURROUNDING LAND USAGE MAP).pdf

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Mr. Wienhoff:

On 04/04/2016, you emailed a new FIGURE 1 (SURROUNDING LAND USAGE MAP) to me. Please note that the new FIGURE 1 dated 04/2016 replaces the old FIGURE 1 dated 12/2015. Also note that the Site Investigation Completion Report dated 12/14/2015 and the Corrective Action Plan dated 12/14/2015 contain the old FIGURE 1 dated 12/2015. Please make sure that future plans and reports contain the new FIGURE 1 dated 04/2016. A copy of the new FIGURE 1 dated 04/2016 is attached.

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

LUST TECHNICAL REVIEW NOTES

Reviewed by: Melinda Friedel
Date: 18 November 2016

LPC #1430655263 -- Peoria Co.
Peoria / Illico Independent Oil Company
3712 University Street
LUST Incident #923441 & 20160095
LUST Technical Review Notes

Document(s) Reviewed:

12/14/15 *CAP & Budget* received 12/14/15 (prepared by Marlin Environmental, Inc.)

General Site Information:

IEMA date(s): 12/3/92 & 1/28/16
Size & Product of Tanks: (1) 12,000 gal gasoline, (1) 6,000 gal gasoline & (1) 4,000 gal diesel fuel UST currently located on-site
UST System Removed (Y/N): Y -- (3) 12,000 gal gasoline, (1) 12,000 gal diesel fuel & (1) 6,000 gal kerosene UST removed 1/28-29/16
Encountered Groundwater (Y/N): Y
Free Product (Y/N): N
Current/Past Land Use: active gasoline service station
Reimbursement (Y/N/unknown): Y
OSFM Fac. ID #3-007188
SWAP Eval Completed: Y -- 11/18/16
Site located in an EJ area: Y
Investigation of indoor inhalation exposure route required: Y
MTBE >40 ppb in GW: n/a

Review Note Comments:

3/1/16 *Misc. Corres. for 20160095* received 3/4/16 (prepared by Marlin)
- notice of release letter sent 2/29/16 regarding this incident; release reported at the request of an OSFM representative present during removal of 5 USTs from the subject site based on his observation of petroleum contamination around the USTs & associated piping; USTs were being removed as part of a previously submitted CAP for 923441; "The subject USTs were previously determined to have released during that incident. Therefore, it is appropriate to determine IEMA 20160095 as a re-reporting of EIMA #923441 as no release has occurred."

8/25/16 *Agency Review Letter* approving SICR; Stage 3 actual costs approved for the following: $1,486.97 for drilling/MW costs, $1,395.32 for analytical costs, $15,511.96 for consulting personnel costs & $604.80 for consultant's materials costs

12/14/15 *CAP & Budget* received 12/14/15 (prepared by Marlin)
- material released was gasoline, diesel & kerosene
- proposed on-site soil remediation includes removal of 5 USTs & piping to eliminate the contaminated source soils; conventional technology remediation of contaminant plume in excess of calculated Tier 2 SROs, taking into account an on-site potable well restriction & indus/comm land use limitation; soils defined as impacted in excess of the Tier 1 SROs, but below calculated Tier 2 SROs, will remain in-place on-site; soil contamination that has migrated beneath the adjacent ROW of North University St & W. War Memorial Drive will be addressed with a HAA with the City of Peoria & IDOT; commercial property to the W of N. University St. will be addressed by access denial
- GW... shortly after soil excavation activities have been completed, MW-4 will be reinstalled; approx. 2 weeks following completion of backfilling activities, each existing well will be resampled to update modeling data; GW contamination will be addressed through ICs; water surrounding the USTs & throughout the excavation have the potential to exhibit free product conditions due to saturated soil contamination levels; free product conditions will be removed from the base of the excavation during excavation activities; HAA will be sought for GW contamination beneath the ROW of North University St. & West War Memorial Dr.; contamination that has the potential to affect the commercial property to the W will be addressed through access denial
- areas of the site to be remediated include surrounding the USTs & associated piping will be removed to a depth of 8 & 13' below grade (excavation depicted on map)
- USTs & contaminated backfill to be removed to access soils contaminated above Tier 2 SROs & remove the source of contamination; currently (4) 10,000 gal (NOTE: should be 12,000 gal) & (1) 6,000 gal USTs at the subject site

- entire excavation to be to an approx. depth of 8' bgl; if saturated zone is contacted, excavation of impacted soils will be halted at that depth; due to the size of the USTs (12,000 & 6,000 gal), tank pit area will be excavated to 13' bgl to remove the tanks & contaminated backfill surrounding them
- soil confirmation samples for BTEX & PNA analysis to be collected at 20' intervals; TACO eqn. S28 to be used to assess soil migration to GW
- residual highly contaminated GW & GW exhibiting a sheen encountered in the excavation cavity will be recovered with a vacuum tanker truck & transported for proper off-site disposal
- once soil remediation has concluded, excavation cavity will be backfilled with suitable clean materials; on-site areas to be restored to pre-excavation conditions with concrete pavement replaced in areas where it currently exists; after site has been returned to pre-excavation conditions, consultant will reinstall MW-4
- 1 final round of GW confirmation samples to be collected to measure the effect the soil remediation has had on GW; remaining soil & GW contamination will be modeled using eqns. S28 & R26 to determine potential long-term extents of GW contamination; anticipate a significant amount of source removal will result in reduction of GW contaminant levels
- HAA will be sought & executed for the ROW of West War Memorial Drive with IDOT & North University Street with the City of Peoria; access denial affidavit will be submitted with the CACR for commercial property to the W
- approx. 1,640 yds^3 of contaminated soil will be excavated & properly disposed (along with removing the USTs)
- approx. 2 weeks following completion of backfill activities, Marlin will return to the site & collect a final round of GW samples
- proposed CAP will address soil contamination above Tier 2 objs. along with highly contaminated GW at the site & address other remaining contamination through an on-site potable well restriction, indus/comm land use restriction, CWCS, HAA & access denial affidavit
- process of obtaining HAAs will be initiated after MW network is sampled approx. 14 days following backfilling activities; following receipt of executed HAAs, CACR will be prepared & MWs will be abandoned after issuance of the NFR letter
- subject site is currently an active gasoline service station; neighboring properties consist of commercial & residential properties; site & surrounding area likely to retain similar usage post-remediation
- water supply well survey provided in previously submitted reports
- total CAP budget of $297,506.46 includes $2,165.46 for drilling/MW costs, $14,539.38 for analytical costs, $185,626.35 for remediation/disposal costs, $19,516.50 for UST removal/abandonment costs, $27,281.14 for paving/demo/well abandonment costs, $43,476.63 for consulting personnel costs & $4,901.00 for consultant's materials costs

PM Recommendation/Comments: CAP & budget denied -- proposing remediation of soils already shown to meet Tier 2 objs.; need to calculate remediation objs. based on mass-limit eqns. and non-M-L in order to determine the most restrictive objs. for a site; since both of these scenarios would be equally protective, the larger value would become the site-specific remediation obj.; based on info provided, the only reported sample locations at the subject site that exceed Tier 2 indus/comm remediation objs. would be SB-4, 17 & 31; proposed removal of the UST system along with 1,640 yds^3 of contaminated soil exceeds the min. reqs.; budget rejected since the associated plan has not been approved; need to provide additional details regarding incident #20160095 (including soil sample results collected from the excavation at the time of UST removal)

Response due: 90 days

LPC 1430655263 - Peoria County
Peoria / Illico Independent Oil Company
3712 University Street
Leaking UST Incident No. 923441 & 20160095
Leaking UST Technical File

Right-to-Know Evaluation

The Bureau of Land site identified above has been reviewed. A check mark next to any one of the following criteria indicates further evaluation of the site is necessary.

CRITERIA:

☐ Groundwater contamination is measured or modeled to exceed, within the setback zone or regulated recharge area of a potable Community Water Supply (CWS) well, or setback zone of a private well or non-CWS well, either TACO Tier 1 groundwater remediation objectives under Part 742, Appendix B, Table E or Class I groundwater standards under Part 620; or ☐ Five or fewer properties ☐ More than five properties

☐ Measured off-site groundwater contamination from volatile chemicals from the site where a release occurred poses a threat of indoor inhalation exposure above appropriate Tier 1 remediation objectives for the current use of the site; or
☐ Five or fewer properties ☐ More than five properties

☐ Soil contamination exceeding applicable remediation objectives for the soil component of the groundwater ingestion route is modeled to exceed, within the setback zone or regulated recharge area of a potable Community Water Supply (CWS) well, or setback zone of a private well or non-CWS well, either TACO Tier 1 groundwater remediation objectives under Part 742, Appendix B, Table E or Class I groundwater standards under Part 620; or
☐ Five or fewer properties ☐ More than five properties

☐ Contaminated soil is measured off-site to exceed the appropriate Tier 1 remediation objectives based on the current use of the off-site property; or ☐ Five or fewer properties ☐ More than five properties

☐ Measured off-site soil gas contamination from the site where the release occurred poses a threat of exposure above the appropriate Tier 1 remediation objectives for the current use of the site: or
☐ Five or fewer properties ☐ More than five properties

☐ BOL refers a matter to the Division of Legal Counsel for enforcement under Section 43(a) of the Act; or

☐ BOL refers a site to the Division of Legal Counsel for issuance of a seal order under Section 34(a) of the Act.

Comments:

☐ At least one of the above criteria is met and the above-identified site must be further evaluated.

☐ Insufficient information submitted to make an adequate RTK decision.

☑ None of the above criteria are met and the above-identified site does not warrant any further evaluation.

Project Manager Signature: Melinda Friedel Date: 11/22/16

VI Incomplete Pathway Checklist

Reviewed by: Melinda Friedel
Date Reviewed: November 22, 2016

File Heading: LPC #1430655263 -- Peoria County
Peoria / Illico Independent Oil Company
3712 University Street
Leaking UST Incident No. 923441
Leaking UST Technical File

SECTION 1

☐ Yes x No ☐ N/A — Is there free product exceeding one-eighth of an inch in depth as measured in a groundwater monitoring well?

x Yes ☐ No ☐ N/A — Do laboratory analytical results indicate concentrations of indicator contaminants as a result of the release from the UST that exceed the soil saturation (C_{sat}) limit as determined at 35 Ill. Adm. Code 742.220?

x Yes ☐ No ☐ N/A — Is there contaminated groundwater (i.e., based upon laboratory analytical results [actual measured concentrations], levels of indicator contaminants as a result of the release from the UST that exceed Tier 1, Class I groundwater remediation objectives for the groundwater component of the groundwater ingestion route at 35 Ill. Adm. Code 742.Appendix B.Table E)?

If "No" or "N/A" is checked for all three of the above questions, continue with the final question (in Section 4) of this checklist.

If "Yes" is checked for any one or more of the three questions above, continue with the questions in Section 2 to assess the potential for PVI.

SECTION 2

☐ Yes x No ☐ N/A — Is there an interval of at least five feet of uncontaminated soil between contaminated groundwater and the lowest point of an overlying receptor (building basement, foundation, slab, or crawl space) or ground surface if there is no overlying receptor?

☐ Yes ☐ No x N/A — Is there an interval of at least 15 feet of uncontaminated soil between C_{sat} soil or free product in a groundwater monitoring well and the lowest point of an overlying receptor (building basement, foundation, slab, or crawl space) or ground surface if there is no overlying receptor?

If "No" is checked for either or both of the above two questions, investigation of PVI (via the indoor inhalation exposure route in accordance with Part 742) is required. Continue with

Sections 3 and 4 for informational purposes only, then go to the Conclusion section and **check the box indicating that investigation of PVI is required.**

If "Yes" is checked for either or both of the above two questions, continue with the question(s) in Section 3 to assess the potential for PVI.

SECTION 3

☐ Yes x No Are there natural or man-made pathways that may allow migration of vapors to indoor receptors?

If "No" is checked, continue with the question in Section 4 to assess the potential for PVI.

If "Yes" is checked, continue with the following question.

☐ Yes x No Has the UST owner or operator provided a 20-Day Certification?

Continue with the question in Section 4 to assess the potential for PVI.

SECTION 4

☐ Yes x No Are there petroleum vapors in buildings as a result of the release from the UST?

If "No" is checked, soil gas sampling is not required. Investigation of PVI (via the indoor inhalation exposure route in accordance with Part 742) is not required.

If "Yes" is checked, investigation of PVI (via the indoor inhalation exposure route in accordance with Part 742) is required.

CONCLUSION

Based upon the results of the current review and the Illinois EPA site-specific Tier 3 evaluation:

x Investigation of PVI (via the indoor inhalation exposure route in accordance with Part 742) is required.

☐ Investigation of PVI is not required.

Friedel, Melinda

From: Jeff Wienhoff <jeffw@greenwavecon.com>
Sent: Tuesday, November 22, 2016 3:55 PM
To: Friedel, Melinda
Subject: [External] RE: Leaking UST Incident #923441 -- Illico in Peoria

I apologize for the inconsistency. The owner wants to limit the institutional controls to the use of industrial/commercial restrictions and a potable well restriction on-site. The inclusion of construction worker caution is section 1b. of the CAP was incorrect.

Thank you very much for picking this plan up and helping to move this site forward.

Jeff

From: Friedel, Melinda [mailto:Melinda.Friedel@Illinois.gov]
Sent: Tuesday, November 22, 2016 1:57 PM
To: Jeff Wienhoff <jeffw@greenwavecon.com>
Subject: RE: Leaking UST Incident #923441 -- Illico in Peoria

One last thing. Portions of the report reference a construction worker caution for the site and others leave that out. Please clarify exactly which institutional controls/land use limitations will be agreed upon by the property owner for use in the NFR letter. Thanks!!

From: Jeff Wienhoff [mailto:jeffw@greenwavecon.com]
Sent: Tuesday, November 22, 2016 11:01 AM
To: Friedel, Melinda
Subject: [External] RE: Leaking UST Incident #923441 -- Illico in Peoria

The entirety of the tank removal and soil excavation activities in the proposed CAP have been implemented. This includes the collection of the soil confirmation samples as proposed. It was completed prior to the installation of the new USTs. The owner decided to go ahead with the work in advance of the approval based on his needs for the property.

No we have not done additional checks on MW-7 since the CAP submittal and one gauging event where it was no longer present.

Jeff

From: Friedel, Melinda [mailto:Melinda.Friedel@Illinois.gov]
Sent: Tuesday, November 22, 2016 10:48 AM
To: Jeff Wienhoff <jeffw@greenwavecon.com>
Subject: RE: Leaking UST Incident #923441 -- Illico in Peoria

Sorry. More questions.

When the 5 tanks were removed in January 2016, were there any soil confirmation samples taken from the excavation limits at that time? It also looks like the new tanks went in at approximately the same location. Are you just looking at digging around the new tanks for removal of additional soils as proposed in the CAP? Has there been any re-occurrence of free product in MW-7? I only saw one gauging event after reporting 0.06 feet of measurable product in 2011.

Thanks for all your help.

Melinda

From: Jeff Wienhoff [mailto:jeffw@greenwavecon.com]
Sent: Friday, November 18, 2016 9:29 AM
To: Friedel, Melinda
Subject: [External] RE: Leaking UST Incident #923441 -- Illico in Peoria

Sure, I'll have to work with marlin a little today on it to get you updated info and support. Should be able to get it to you today.

Jeff

From: Friedel, Melinda [mailto:Melinda.Friedel@Illinois.gov]
Sent: Friday, November 18, 2016 9:22 AM
To: Jeff Wienhoff <jeffw@greenwavecon.com>; Joe Buhlig <joeb@greenwavecon.com>
Subject: Leaking UST Incident #923441 -- Illico in Peoria

Good morning. I was hoping you could provide justification/documentation for the requested Consultant's Materials Costs included in the CAP budget. Your help is greatly appreciated! Thanks!!

Melinda

Friedel, Melinda

From: Shawn Wolfe <shawnw@marlinenv.com>
Sent: Friday, November 18, 2016 1:10 PM
To: Friedel, Melinda
Cc: 'Jeff Wienhoff'; Mel @ Marlin; Bob @ Marlin
Subject: [External] RE: Leaking UST Incident #923441 -- Illico in Peoria
Attachments: Illico University CAB Revised Consultants Materials.pdf; 01 Mileage Springfield Office to Site.pdf; 02 BAGGIES.PDF; 03 ALCONOX.PDF; 04 DISTILLED WATER.PDF; 05 PID - MINIRAE 2000 10point6eV.PDF; 06a Digital Camera -1.pdf; 06b Digital Camera -2.pdf; 07 Measuring Wheel - ROLATAPE.PDF; 08 GLOVES.PDF; 09 Water Level - SOLINST WATER LEVEL METER.PDF; 10 Mag Locator - SCHONSTEDT GA52CX.PDF; 11 BAILERS.PDF; 12 ROPE.PDF

Hi Melinda,

Jeff asked me to forward the requested justification/documentation for the Consultant's Materials Costs. I have attached "Illico University CAB Revised Consultant's Materials" along with the justification pages for the consumable and non-consumable materials.

A few notes:

- I have added the costs to copy the CAP and ship to the owner/operator (I believe the report was hand-delivered to the IEPA)
- The field vehicle has been converted from a unit day rate to mileage
- I have removed the Consulting Field Sampling Equipment line item and replaced with some of the consumable materials that were part of that line item, since that entry has long been denied due to lack of justification.
- I have also included costs for the digital camera and measuring wheel, which have been denied as so-called "indirect" costs. Please note that the Illinois Pollution Control Board has recently ruled on a case (PCB 2016-103) determining that charging for the use of a digital camera to document field activities is not an indirect Corrective Action cost for equipment. I believe the same decision will be made in regards to the measuring wheel when those cases are ruled upon.

Please let me know if you have any questions specific to the consultant's materials.

Thanks and have a great weekend,
Shawn

Shawn D. Wolfe
Senior Project Manager
Marlin Environmental Consulting, LLC

From: Jeff Wienhoff [mailto:jeffw@greenwavecon.com]
Sent: Friday, November 18, 2016 10:30 AM
To: Shawn Wolfe
Subject: FW: Leaking UST Incident #923441 -- Illico in Peoria

Jeff

From: Friedel, Melinda [mailto:Melinda.Friedel@Illinois.gov]
Sent: Friday, November 18, 2016 9:22 AM
To: Jeff Wienhoff <jeffw@greenwavecon.com>; Joe Buhlig <joeb@greenwavecon.com>
Subject: Leaking UST Incident #923441 -- Illico in Peoria

Good morning. I was hoping you could provide justification/documentation for the requested Consultant's Materials Costs included in the CAP budget. Your help is greatly appreciated! Thanks!!

Melinda

Consultant's Materials Costs Form

Materials, Equipment or Field Purchase	Time or Amount Used	Rate ($)	Unit	Total Cost
Remediation Category	**Description/Justification**			
Copies - Corrective Action Plan & Budget	264	$0.10	Per Page	$26.40
CCAP	Copies of CAP/B (66 pages/copy: 2x for IEPA + 1x for Owner/Operator + 1x for Consultant)			
Shipping - Corrective Action Plan & Budget	1	$8.00	Per Shipment	$8.00
CCAP	UPS Shipping of CAP/B to Owner/Operator (estimated, only actual costs will be requested for reimbursement)			
Field Vehicle	2,352	$0.54	Miles	$1,270.08
CCA-Field	168 miles/round trip: UST Removal & Soil Remediation (12 trips), Drilling (1 trip) & GW Sampling (1 trip)			
Baggies	46	$0.08	Each	$3.68
CCA-Field	Soil Remediation Event (x38), Replacement MW Install Event (x8) - Soil Screening			
Alconox	9	$0.90	Per Packet	$8.10
CCA-Field	Non-Phosphate Detergent for Decontamination of Consultant's Non-Disposable Sampling Equip. and Water Level Indicator			
Distilled Water	9	$2.08	Per Gallon	$18.72
CCA-Field	Decon Water for Consultant's Non-Disposable Sampling Equipment and Water Level Indicator			
Photoionization Detector "MiniRAE 2000 10.6eV"	8	$88.00	Day	$704.00
CCA-Field	Soil Remediation Event (x8), Replacement MW Install Event (x1) - Soil Screening			
Digital Camera	9	$8.00	Day	$72.00
CCA-Field	UST Removal and Soil Remediation Documentation (8), Re-installing MW-4 (1)			
Measuring Wheel	7	$10.00	Event	$70.00
CCA-Field	UST Removal and Soil Remediation Measurement (1), Re-installing MW-4 measurement (1)			
Consultant Latex Gloves	2.25	$7.94	Box	$17.87
CCA-Field	UST Removal and Soil Remediation Measurement (~1.5 boxes), Re-installing MW-4 measurement (~0.25 box); Groundwater Sampling (~0.5 box)			

Consultant's Materials Costs Form

Materials, Equipment or Field Purchase	Time or Amount Used	Rate ($)	Unit	Total Cost
Remediation Category	**Description/Justification**			
Water Level Indicator "Solinist Model 101 P2"	1	$30.00	Day	$30.00
CCA-Field	Re-installing MW-4 measurement (x1); Groundwater Sampling (x1)			
Certified Mail	1	$5.00	Each	$5.00
CCA-Field	Certified Mail charges for Mailing City HAA			
NFR Recording Costs	1	$100.00	Each	$100.00
CACR	NFR Recording Costs, includes certified copy (estimated, only actual costs will be requested for reimbursement)			
ELUC Recording Costs	2	$100.00	Each	$200.00
ELUC	ELUC Recording Costs, includes certified copy (estimated, only actual costs will be requested for reimbursement)			
Magnetic Locator "Schonstedt GA-52CX"	2	$40.00	Day	$80.00
CCA-Field	Locating Wells and Utilities			
Disposable Bailers	13	$4.77	Each	$62.01
CCA-Field	Developing MW-4R (x1); Water Well Sampling (x12)			
Nylon Rope	234	$0.18	Foot	$42.12
CCA-Field	Developing MW-4R (1x18'); Water Well Sampling (12x18')			
				$0.00
				$0.00
				$0.00
Total of Consultant Materials Costs:				**$2,717.98**

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Saint Charles, IL 60174

Billing method
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AMEX - ending in 1136

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3935 Commerce Drive
Saint Charles, IL 60174

Delivery method
UPS Ground

Order details

Order number: E431749
Purchase order: LOPICCOLO 1/21-
Order date: Wednesday, January 21, 2015

Item Description	Unit Price	Quantity	Total Price
6" x 9" Our Own Brand Write-on® Zipper Bag with Hang Hole (2 mil) Item Number: 277-4-06W Add to Cart	$64.048	3000 1000	$192.14
		Subtotal:	$192.14
If you are tax exempt, please e-mail accounting@associatedbag.com or call 800-926-4613 and we will deduct tax from your order.		Shipping:	$13.78
		Sales Tax (IL):	$12.01
		Order Total:	$217.93

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DATE	REFERENCE #	QTY	DESCRIPTION	AMOUNT
			PREVIOUS BALANCE	90.14
10/03	590033		PAYMENT-THANK YOU	-90.14
10/29	0959064189	12	5 GAL ICE MOUNTAIN DRK W/HANDLE	106.56
		12	5 GALLON ICE MOUNTAIN BOTTLE DEPOSIT	.00
		2	1 GAL ICE MT DIST W/FRONT HANDLE	23.98
		12	5 GALLON ICE MOUNTAIN DEPOSIT RETURN	-72.00
10/31	0966565533	1	DELIVERY FEE	3.95
			SALES TAX	2.59
			TOTAL	65.08

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$82.78

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PREVIOUS BALANCE		PAYMENT / ADJUSTMENT		CURRENT ACTIVITY		PAY THIS AMOUNT
90.14	-	90.14	+	65.08	=	65.08 Auto-Pay

Detach this stub and return with your payment

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Louisville, KY 40285-6680

ACCOUNT NUMBER	PAY BY	PAY THIS AMOUNT
8105845997	11/22/15	AUTO-PAY
INVOICE NUMBER	BILLING DATE	AMT. ENCLOSED
15J8105845997	11/04/15	

408981058459974 0006508 00065080 5

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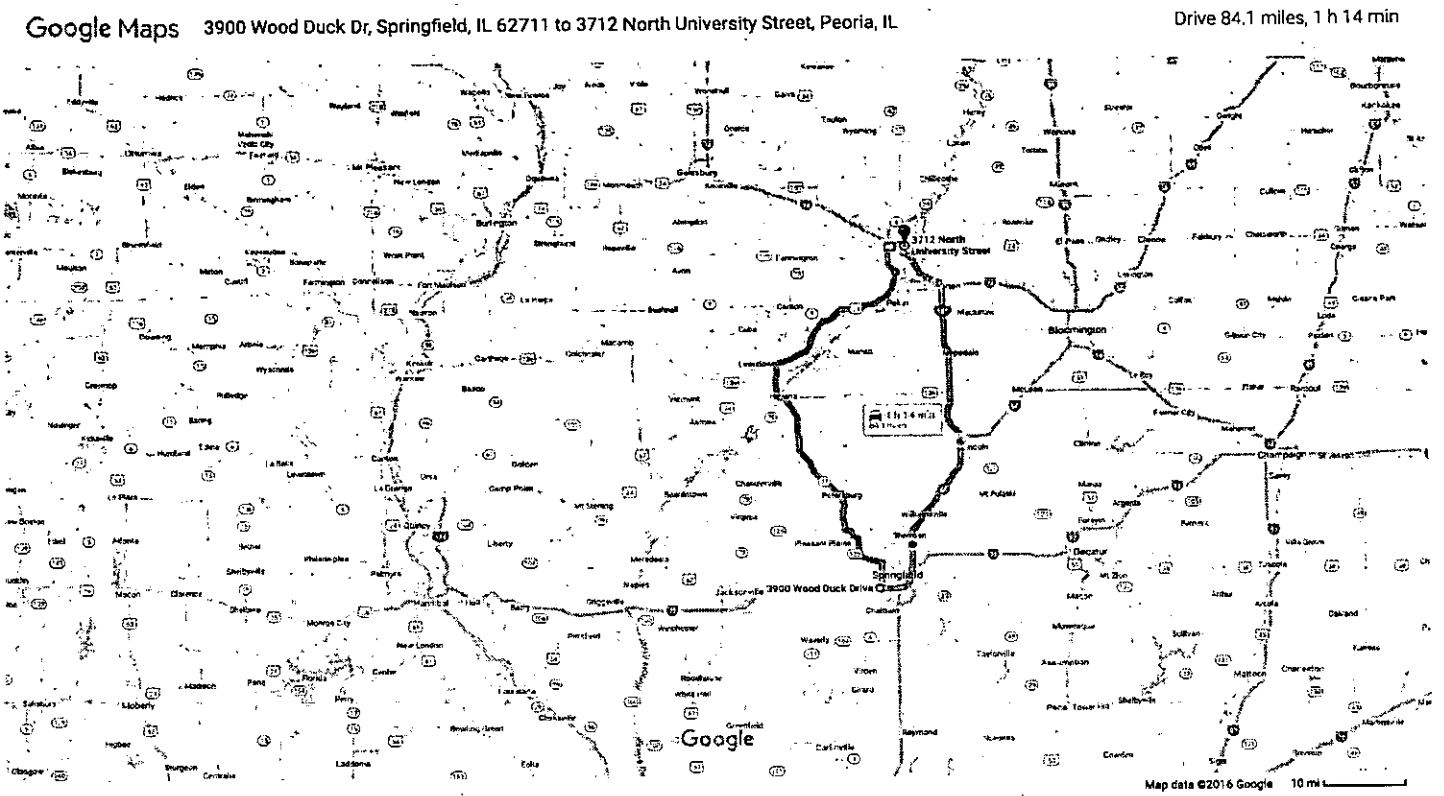


Alconox

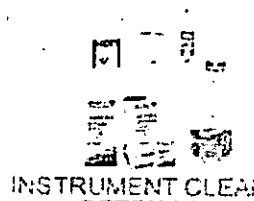
Melanie LoPiccolo

From: Unimax West <unimaxwestorder@gmail.com>
Sent: Wednesday, July 16, 2014 12:10 PM
To: Melanie Lo Piccolo
Subject: Order #116481 from Unimax West shipped on 7/16/2014.

Dear Melanie Lo Piccolo,

Thank you for shopping at Unimax West! We are happy to report that your order, number 116481, shipped on **7/16/2014**. To view further details regarding this order, please visit your order status page.

Invoice

Product		Qty	Unit Price	Ext Price
	Detergents for Cleaning Instruments # MC-1118 Alconox 50 Packettes $ 39.95	3	$39.95	$119.85

Ship To: Melanie Lo Piccolo
3935 Commerce Driv
Saint Charles, IL 601
630-444-1933 x 10
Ship Via: **UPS Ground**
Tracking Number:
1z60117x0340200

Subtotal	**$119.85**
Sales Tax	$0.00
Shipping	$13.00
Order Total	**$132.85**

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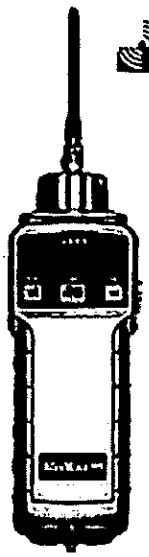
Photoionization Detectors (PID) - RAE Legacy Instruments



RAE Systems MiniRAE 2000 Photoionization Detector (PID)

RAE Systems' MiniRAE 2000 is a programmable personal volatile organic compound (VOC) detector that provides individualized protection when working in hazardous environments that require continuous monitoring of exposure to organic vapors.

Rental Information:

Part Number	Unit Description		Daily	Weekly	Monthly
405-0062	MiniRAE 2000 PID, 10.6 eV Lamp		$88.00	$264.00	$792.00
405-1000	MiniRAE 2000 PID, 10.6 eV Lamp, Wireless		$88.00	$264.00	$792.00
405-0014	MiniRAE Dilution Probe		$14.00	$42.00	$126.00
455-1003	RAELink2 Remote Wireless Receiver		$47.00	$141.00	$423.00
455-1004	RAELink2 Remote Wireless Transmitter		$47.00	$141.00	$423.00
405-0002	11.7 eV Lamp (MiniRAE 2000 PID)	Add on:	$25.00	$75.00	$225.00
402-0001	Regulator, Demand Flow			No Charge with Rental	

Rental Includes: MiniRAE 2000, Probe, External Filter, Strap, Battery Adapter, 4-Piece Tool Kit, RAE Suite Software, Regulator, User Manual, and Carrying Case.

RAE Systems ppbRAE Photoionization Detector (PID)

A sensitive hand-held volatile organic compound (VOC) monitor with true parts per billion (ppb) detection of extremely low level, low vapor pressure and highly toxic VOCs such as nerve agent, pesticide residues and low level permeation breakthrough detection.

Rental Information:

Part Number	Unit Description		Daily	Weekly	Monthly
405-1001	ppbRAE, NiMH, 10.6 eV Lamp		$140.00	$420.00	$1,260.00
402-0001	Regulator, Demand Flow	No Charge with Rental			

Rental Includes: ppbRAE, Probe, External Filter, Strap, Battery Adapter, 4-piece Tool Kit, Software, Cable, Regulator, User Manual, and Carry Case.

RAE Systems Ultra RAE Photoionization Detector (PID) & Benzene Monitor

The UltraRAE monitor, displays and datalogs toxic vapors in the workplace and potentially hazardous environments. UltraRAE combines both a patented photo-ionization detector (PID) and a vapor specific separation tube (RAE-SEP™ tube). The first of a series of field-replaceable, bar coded RAE-SEP tubes analyzes specifically benzene. An improved PID design, with new 9.8 eV lamp detects benzene down to sub ppm levels.

Rental Information:

Part Number	Unit Description	Daily	Weekly	Monthly
405-0012	Ultra RAE PID/Benzene Monitor	$105.00	$315.00	$945.00
402-0001	Regulator, Demand Flow		No Charge with Rental	

Rental Includes: UltraRAE PID / Benzene Monitor, Philips Screwdriver, Datalogging Cable, Charger/AC Adapter, Benzene Tubes Set, Top Cap, Tubing (0.118" I.D. X 0.158" O.D.), Yellow Rubber Boot, RAESuite, Regulator, User Manual, and Carrying Case.

Purchase Support Accessories:

Part Number	Unit Description
RAE012-3022-010	Benzene Separation Tubes for UltraRAE Series Monitor (10 tubes/box)

FREE Calibration Gas Offer

Receive one free 17L cylinder of Isobutylene calibration gas with rental of the RAE Legacy PID units for one week or more. Customer is responsible for Hazardous Shipment costs.

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NOV 29 2016

7014 2120 0002 3292 0854

Illico Independent Oil Co.
Attention: David Golwitzer
2201 Woodlawn Rd., Suite 600
Lincoln, Illinois 62656

Re: LPC #1430655263 -- Peoria County
Peoria / Illico Independent Oil Company
3712 University Street
Leaking UST Incident No. 923441
Leaking UST Technical File

Dear Mr. Golwitzer:

The Illinois Environmental Protection Agency (Illinois EPA) has reviewed the Corrective Action Plan (plan) submitted for the above-referenced incident. This plan, dated December 14, 2015, was received by the Illinois EPA on December 14, 2015. Citations in this letter are from the Environmental Protection Act (415 ILCS 5) (Act) and Title 35 of the Illinois Administrative Code (35 Ill. Adm. Code).

The plan and the associated budget are rejected for the reason(s) listed below (Sections 57.7(b) and 57.7(c) of the Act and 35 Ill. Adm. Code 734.505(b), 734.510(a) and 734.510(b)).

The plan is rejected for the following reason(s):

1. In approving any plan submitted pursuant to Section 57.7(a) or (b) of the Act, the Illinois EPA shall determine, by a procedure promulgated by the Illinois Pollution Control Board (Board) under Section 57.14 of the Act, that the costs associated with the plan are reasonable, will be incurred in the performance of site investigation or corrective action, and will not be used for site investigation or corrective action activities in excess of those required to meet the minimum requirements of Title XVI of the Act.

   For purposes of payment from the Fund, corrective action activities required to meet the minimum requirements of Title XVI of the Act shall include, but not be limited to, the following use of the Board's Tiered Approach to Corrective Action Objectives rules adopted under Title XVII of the Act:

   a. For the site where the release occurred, the use of Tier 2 remediation objectives that are no more stringent than Tier 1 remediation objectives.

   b. The use of industrial/commercial property remediation objectives, unless the owner or operator demonstrates that the property being remediated is residential property or being developed into residential property.

c. The use of groundwater ordinances as institutional controls in accordance with Board rules.

d. The use of on-site groundwater use restrictions as institutional controls in accordance with Board rules.

(Section 57.7(c)(3)(A) of the Act)

The proposed corrective action strategy consists of removing soils already shown to meet applicable Tier 2 remediation objectives. The owner/operator must calculate Tier 2 remediation objectives based on the mass-limit equations and non-mass-limit equations in order to determine the most restrictive objectives for a site. Since both scenarios would be equally protective of human health and the environment, the larger value would become the site-specific remediation objective. Based on the information provided, the only reported sample locations at the subject site that exceed Tier 2 industrial/commercial remediation objectives and/or site-specific soil saturation limits would be SB-4/MW-4, SB-17 and SB-31.

The plan budget is rejected for the following reason(s):

1. The Illinois EPA has not approved the plan with which the budget is associated. Until such time as the plan is approved, a determination regarding the associated budget— i.e., a determination as to whether costs associated with materials, activities, and services are reasonable; whether costs are consistent with the associated technical plan; whether costs will be incurred in the performance of corrective action activities; whether costs will not be used for corrective action activities in excess of those necessary to meet the minimum requirements of the Act and regulations, and whether costs exceed the maximum payment amounts set forth in Subpart H of 35 Ill. Adm. Code 734—cannot be made (Section 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b)).

2. The budget includes costs for UST removal and soil excavation activities, which exceed the minimum requirements necessary to comply with the Act. Costs associated with site investigation and corrective action activities and associated materials or services exceeding the minimum requirements necessary to comply with the Act are not eligible for payment from the Fund pursuant to Section 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.630(o).

3. The budget includes costs associated with on-site corrective action to achieve remediation objectives that are more stringent than the Tier 2 remediation objectives developed in accordance with 35 Ill. Adm. Code 742. Such costs are ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 734.630(aaa). In addition, such costs are not approved pursuant to Section 57.7(c)(3) of the Act because they will be used for site investigation or corrective action activities in excess of those required to meet the minimum requirements of Title XVI of the Act.

4. The budget includes costs that lack supporting documentation. Such costs are ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 734.630(cc). Since there is no supporting documentation of costs, the Illinois EPA cannot determine that costs will not be used for activities in excess of those necessary to meet the minimum requirements of Title XVI of the Act therefore, such costs are not approved pursuant to Section 57.7(c)(3) of the Act because they may be used for site investigation or corrective action activities in excess of those required to meet the minimum requirements of Title XVI of the Act. The budget includes site investigation or corrective action costs for use of a digital camera and measuring wheel that are not reasonable as submitted. Such costs are ineligible for payment from the Fund pursuant to Section 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.630(dd). *Additional information regarding justification for the proposed charges for use of a digital camera and measuring wheel was requested via e-mail and has not been received. An explanation should also be submitted concerning Environmental Land Use Control (ELUC) recording costs included in the proposed budget even though there was no ELUC proposed in the corrective action strategy for the subject site.*

The Illinois EPA has the following additional comment at this time:

1. Additional information is necessary regarding Leaking UST Incident #20160095 prior to demonstrating that this release is a re-reporting of incident #923441. Analytical results should be provided for soil confirmation samples collected in accordance with 35 Ill. Adm. Code 734.200(h) for comparison with previously obtained sample results from similar locations.

Pursuant to Sections 57.7(b) and 57.12(c) and (d) of the Act and 35 Ill. Adm. Code 734.100 and 734.125, a plan and/or budget must be submitted within 90 days of the date of this letter to:

Illinois Environmental Protection Agency
Bureau of Land - #24
Leaking Underground Storage Tank Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276

Please submit all correspondence in duplicate and include the Re: block shown at the beginning of this letter.

An underground storage tank system owner or operator may appeal this decision to the Illinois Pollution Control Board. Appeal rights are attached.

If you have any questions or need further assistance, please contact Melinda Friedel, P.E. at 217/785-5736 or melinda.friedel@illinois.gov.

Sincerely,

Michael T. Lowder
Unit Manager
Leaking Underground Storage Tank Section
Division of Remediation Management
Bureau of Land

Attachment: Appeal Rights

c: Jeff Wienhoff / Green Wave Consulting, LLC (electronic copy),
jeffw@greenwavecon.com
BOL File

Appeal Rights

An underground storage tank owner or operator may appeal this final decision to the Illinois Pollution Control Board pursuant to Sections 40 and 57.7(c)(4) 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 owner or operator 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 filing of an appeal, please contact:

John Therriault, Assistant Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph, Suite 11-500
Chicago, IL 60601
312/814-3620

For information regarding the filing of 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

Benanti, Trent

From: Friedel, Melinda
Sent: Tuesday, December 20, 2016 11:12 AM
To: Jeff Wienhoff
Cc: Benanti, Trent; Lowder, Mike
Subject: RE: Leaking UST Incident #923441 -- Illico site on Univerity St. in Peoria

Good morning. Looks like I missed that there was a Tier 2 exceedence at SB-15 (5-6'); thank you for bringing that to my attention. Please note that this does not change the overall review decision since the December 2015 CAP still proposed removal of soils that meet the applicable Tier 2 objectives. The November 2016 review letter constitutes the final decision by the Illinois EPA on that CAP, so you would need to appeal the decision if you are in disagreement.

There is also the option of submitting a CAP Addendum that addresses a more refined scope of work that only includes areas with identified Tier 2 exceedences. The originally proposed excavation area includes removal of soils at SB-15 (3.5-5') and SB-18, which are already below Tier 2 objectives. That submittal would be considered a separate report and subject to the review timeframes for any newly submitted report.

Please let me know if there are any additional questions. Happy Holidays!!

Melinda

-----Original Message-----
From: Jeff Wienhoff [mailto:jeffw@greenwavecon.com]
Sent: Friday, December 16, 2016 1:09 PM
To: Friedel, Melinda
Subject: [External] RE: Leaking UST Incident #923441 -- Illico site on Univerity St. in Peoria

Melinda,

I do appreciate you picking this up and moving it forward and I'm replying to you since I know you've already put the effort into reviewing this CAP thoroughly. With regards to you technical comment, running the Tier 2 inhalation for the non-mass limit method for benzene (the exceeded contaminant at SB-15), SB-15 still remains above Tier 2 objectives and requires remediation. I have attached the calculation and revised tables. It was the only sample location that your letter indicated would change from above objectives to below objectives. With this being the case, is it possible for you to complete the review that you started, since a re-submitted CAP wouldn't have any changes?

As for the reimbursement questions, the digital camera and measuring wheel are no longer being requested and should be cut from the budget. The ELUC costs were submitted in error and should be cut from the budget.

My client had to wait a year for the initial review for nearly a year (I know this wasn't in any way your responsibility), if there's any way to avoid another complete review period, it would be much appreciated.

Thanks and Happy Holidays.

Jeff

-----Original Message-----
From: Friedel, Melinda [mailto:Melinda.Friedel@Illinois.gov]

Sent: Wednesday, November 30, 2016 2:10 PM
To: Jeff Wienhoff <jeffw@greenwavecon.com>
Subject: Leaking UST Incident #923441 -- Illico site on Univerity St. in Peoria

Please find attached the review letter for the above-referenced site. Just let me know if there are any questions. Also, my guess is you should expect some follow-up comments/questions regarding this CAP from Trent Benanti since he is still the project manager for the Illinois EPA assigned to this site. Thanks!

Melinda

1430655263 – Peoria County
Illico Independent Oil Company
Incident # 923441
Leaking UST Technical File

GREEN WAVE CONSULTING, LLC

CORRECTIVE ACTION PLAN
SOIL REMEDIATION AND TACO CLOSURE

ILLICO INDEPENDENT OIL CO.
3712 NORTH UNIVERSITY STREET
PEORIA, ILLINOIS ~~6164~~ 61614
LUST INCIDENT #923441
IEPA LPC #1430655263

Prepared for:

Illico Independent Oil Co.
Mr. David Golwitzer
2201 Woodlawn Road, Suite 600
Lincoln, Illinois 62656

Prepared by:

Green Wave Consulting, LLC
3900 Wood Duck Drive, Suite F
Springfield, Illinois 62711

January 16, 2017

Jeff Wienhoff, P.E.
Senior Professional Engineer

Mike Bettenhausen
Senior Project Manager

TABLE OF CONTENTS

orally or in writing

↑ 5/44 and

~~Illinois Environmental Protection Agency~~

Leaking Underground Storage Tank Program

Corrective Action Plan

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Company

Site Address (Not a P.O. Box): 3712 University Street

City: Peoria County: Peoria ZIP Code: 61614

~~Leaking UST Technical File~~

B. Site Information

1. Will the owner or operator seek reimbursement from the Underground Storage Tank Fund? Yes ☒ No ☐
2. If yes, is the budget attached? Yes ☒ No ☐
3. Is this an amended plan? Yes ☐ No ☒
4. Identify the material(s) released: Gasoline, Diesel & Kerosene
5. This Corrective Action Plan is being submitted pursuant to:

   a. 35 Ill. Adm. Code Section 731.166: ☐

   ~~The material released was:~~

   ~~- petroleum~~ ☐

   ~~- hazardous substance (see Environmental Protection Act Section 3.215)~~ ☐

   b. 35 Ill. Adm. Code Section 732.404 ☐

   c. 35 Ill. Adm. Code Section 734.335 ~~(pursuant to P.A. 96-0908)~~ ☒

RECEIVED
JAN 17 2017
IEPA/BOL

C. Proposed Methods of Remediation

1. Soil *On-site:* Removal of the four (4) 12,000-gallon capacity and one (1) 6,000-gallon capacity underground storage tanks (USTs) and related integral product piping to eliminate the source of the contaminated soils and provide the ability to access the worst soils. Conventional technology remediation of the contaminant plume in excess of the calculated site-specific Tier 2 Soil Remediation Objectives (SROs), taking into account an on-site potable well restriction and the industrial/commercial use of the property, will be excavated for transport and proper disposal. Those soils defined as impacted in excess of the Tier 1 SROs, but below the calculated Tier 2 SROs, will be left to remain in-place on-site.

Soil that contains contaminants at concentrations greater than the Tier I ROs but less than the Tier 2 ROs may be used as backfill per Greg Dunn (05/16/17)

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JAN 17 2017
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Off-site: The soil contamination that has migrated beneath the adjacent Right-of-Way of North University Street and W. War Memorial Dr. will be addressed with a Highway Authority Agreement through the City of Peoria and the Illinois Department of Transportation (IDOT). The commercial property to the West of N. University Street will be addressed with access denial.

2. Groundwater Shortly after approval of this Corrective Action Plan, monitoring well MW-4 will be reinstalled. Approximately two weeks following its installation, each existing well will be resampled to update modeling data. The groundwater contamination that exists at the site will be addressed through institutional controls. Water surrounding the USTs and throughout the excavation exhibited free product conditions due to saturated soil contamination levels. These free product conditions were removed from the base of the excavation during the excavation activities. A Highway Authority Agreement will be sought for the groundwater contamination beneath the Right-of-Way of North University St. and West War Memorial Dr. Contamination that has the potential to affect the commercial property to the west will be addressed through access denial.

The modeled extent of the groundwater contamination includes more than N. University, W. War Memorial, and the property to the west See the 04/08/2016 Email.

3. Soil Gas A soil gas investigation will need to be completed in accordance with the Illinois EPA guidelines; however, it should not be completed prior to the active remediation. A single soil gas sample will be collected during the reinstallation of MW-4. At a minimum, future construction will be limited to slab-on-grade building with no sumps. The final determination of required institutional controls will be made following the collection of a soil gas sample.

D. Soil and Groundwater Investigation Results (for incidents subject to 35 Ill. Adm. Code 731 only or 732 that were classified using Method One or Two, if not previously provided)
Provide the following:

1. Description of investigation activities performed to define the extent of soil and/or groundwater contamination;

Please refer to the IEPA approved *Site Investigation Completion Report* (*SICR*) dated December 14, 2015. The site location and site features are presented as **Figure 1, 2** and **3,** respectively.

Indoor Inhalation Exposure Route
Green Wave Consulting, LLC (GWC) evaluated the soil and groundwater analytical results and completed an evaluation of the IEPA "VI Incomplete Pathway Checklist." Based on the current contaminant loading analytical results, it was determined that investigation of Petroleum Vapor Intrusion (PVI) via the Indoor Inhalation Exposure Route *is* required:

- ✓ free product exceeding one-eighth of an inch (⅛") in depth as measured in a groundwater monitoring well is not present at the site,
- ✓ the laboratory analytical results for the soil samples collected at the site above the groundwater table while drilling will not exceed the Soil Saturation Limits (C_{sat}) as determined by 35 IAC 742.220(c) (please note these are the Tier 2 C_{sat} values calculated as part of this plan) and therefore the interval test is not required;
- ✓ the groundwater beneath the site does exceed the most stringent IEPA TACO Tier 1 GROs, and, there is not an interval of at least five (5) feet of uncontaminated soil between the contaminated groundwater and the lowest point of an overlying receptor or ground surface,
- ✓ there are not natural or man-made pathways that may allow migration of vapors to indoor receptors ~~and the UST owner or operator has provided a *20-Day Certification*~~,
- ✓ petroleum vapors are not present in buildings as a result of the release from the UST.

Based on the lack of an interval of at least five (5) feet of uncontaminated soil between the contaminated groundwater and the surface, it is determined that a soil gas sample needs to be collected. This will be discussed in proposed Section of this CAP.

2. **Analytical results, chain-of-custody forms, and laboratory certifications;**

   Please refer to the previously submitted reports approved by the IEPA.

3. **Tables comparing analytical results to applicable remediation objectives;**

   Please refer to the previously submitted reports approved by the IEPA along with Table I.

4. **Boring logs;**

   Please refer to the previously submitted reports approved by the IEPA.

5. **Monitoring well logs; and**

   Please refer to the previously submitted reports approved by the IEPA.

6. **Site maps meeting the requirements of 35 Ill. Adm. Code 732.110(a) or 734.440 and showing:**
   a. Soil sample locations; please refer to **~~Figure 3~~**. FIGURE 2
   b. Monitoring well locations; please refer to **Figure 3**. FIGURE 2 and FIGURE 3 only show wells from which soil samples were collected
   c. The plume of soil ~~and groundwater~~ contamination based on analytical results; please refer to **~~Figure 3~~**. FIGURE 2

Technical Information - Corrective Action Plan
Provide the following:

1. **Executive summary identifying the objectives of the corrective action plan and the technical approach to be utilized to meet such objectives;**

   a. The major components (e.g., treatment, containment, removal) of the corrective action plan;
   b. The scope of the problems to be addressed by the proposed corrective action; and

   This *Corrective Action Plan* (*CAP*) has been designed to remove on-site soil in excess of the calculated Tier 2 SROs while taking into account an on-site potable well restriction and the industrial/commercial use of the property. Site-specific physical data collected during Site Investigation activities was utilized to calculate appropriate Tier 2 SROs. **Table I** compares the results above Tier 1 SROs to appropriate Tier 2 SROs to demonstrate compliance with TACO. The remediation areas of the site including areas surrounding the USTs and their associated piping will be removed to a depth of 8 and 13 feet below grade. The proposed areas of excavation are delineated in **Figure 3**.

   In order to access the soils contaminated above the Tier 2 SROs and remove the source of the contamination, the UST systems at the site along with the contaminated backfill material needed to be removed. There were previously four (4) ~~10,000~~-gallon and one (1) 6,000-gallon USTs at the Illico facility. These USTs, along with the dispensers and integral product piping, are illustrated on **Figure 3**. Appropriate Office of the Illinois State Fire Marshal (OSFM) UST Removal Permits were obtained prior to the removal of the tanks. The USTs, pump islands and associated integral piping were decommissioned and removed as part of the necessary Corrective Actions for the facility. The USTs were pumped of any remaining residual free product associated with the USTs by a Licensed Special Waste vacuum truck and disposed off-site at a wastewater treatment facility, if/as applicable. The UST removals were supervised by a Licensed UST Decommissioner and the OSFM

12,000

representative and will follow the procedures set forth in 41 Illinois Administrative Code (IAC) Part 170.670 – Removal or Abandonment-in-Place of Underground Storage Tanks.

The proposed on-site excavation at approximate depths of eight (8) feet was maintained across the entire proposed excavation without significant contact with the fully present saturated zone. Due to the size of the USTs (12,000 & 6,000) the tank pit area will be excavated to thirteen (13) feet in order to remove the tanks and the contaminated backfill surrounding them.

Soil confirmation samples were collected at 20-foot intervals, per IEPA protocols. The soil confirmation sample results will be compared to the calculated Tier 2 SROs. Confirmation samples will also be modeled using the S28 equation as promulgated in 35 IAC 742, to determine the potential leaching capacity of the soil and whether or not the soil samples pose a potential future leaching threat to the shallow groundwater regime. The soil confirmation samples will be analyzed for BTEX/PNA constituents.

If not a re-reporting, then need to include MTBE.

Residual highly contaminated groundwater and groundwater exhibiting a sheen encountered within the excavation cavity was recovered utilizing a vacuum tanker truck and transported for proper disposal at a licensed TSD facility. The recovery of highly contaminated groundwater exhibiting a sheen associated with the release was required.

Once the soil remediation actions had concluded, the excavation cavity will be backfilled to grade with suitable clean materials. The on-site areas will be restored to pre-excavation conditions with the concrete pavement also being replaced in the areas where it had existed.

Once the CAP is approved, it is proposed to re-install MW-4 which was lost during excavation activities. GWC will then mobilize to the facility to collect one (1) final round of groundwater confirmation samples and measure the effect the soil remediation has on the groundwater regime. The remaining soil and groundwater contaminant levels will be modeled using Equations S28 (soil leaching) and R26 in order to determine the potential long-term extents of groundwater contamination. It is anticipated that the significant amount of source removal will result in a reduction of groundwater contaminant levels.

The modeled extent of the groundwater contamination includes more than N. University, W. War Memorial, and the property to the west. See the 04/08/2016 Email.

A Highway Authority Agreement will be sought and executed for the Right-of-Way of West War Memorial Drive with IDOT and North University Street with the City of Peoria. This agreement will address the contamination that has already migrated and has the potential to migrate into the Right-of-Way. An access denial affidavit will be submitted with the CACR for the commercial property to the west.

Following the receipt of an executed Highway Authority, a *Corrective Action Completion Report* (*CACR*) will be submitted to the IEPA with, requesting issuance of a No Further Remediation letter for the incident. Upon issuance of the NFR designation from the IEPA, the owner shall record the NFR document to the title of the site with the County Recorder of Peoria County. The groundwater monitoring wells shall be properly abandoned, in accordance with 77 IAC 920.120, following the receipt of the NFR designation from the IEPA.

The budget for the work associated with this *CAP* proposal is included as **Attachment 2.**

RESPONSE TO IEPA CONCERNS

SB-4/MW-4 is not being used. SB-4/MW-4 is < Tier 2, except SCG-1ER. SB-31 replaces SB-17.

This CAP is very similar to the IEPA CAP submitted in December 2015 and rejected in November 2016. The IEPA lone rejection point for that CAP was that only 3 samples samples (SB-4/MW-4, SB-17 and SB-31) remained above Tier 2 objectives if both mass limit and non-mass limit calculations were provided. This CAP shows that the only sample outside of those locations above Tier 2 in the original CAP (SB-15 (6-8²) still remains above

Excavate SB-15(5'-6') SB-31(4'-6')

Tier 2 objectives when both calculation methods are considered. In a follow-up email, the IEPA indicated that it believed SB-18 was also proposed to be excavated in the original plan, however, that was not the case. It was not indicated in Table I as being above Tier 2 industrial/commercial Objectives and the excavation was stopped at its location.

The other IEPA concern was that the top 5' at the SB-15 location was below clean-up objectives and therefore should not be disposed off-site. ~~While the discrete sample at SB-15 (3.5-5') was slightly below Tier 2 SROs~~, the release was from piping at that location and soils were disposed. It remains technically acceptable to dispose of those soils at a landfill, however, for the purposes of the attached CAP budget, the soils are only being budgeted as overburden to be replaced. >SCGIER

c. A schedule for implementation and completion of the plan;

Due to the needs of the current property owner, the on-site excavation and UST system removal has already been completed. The excavation has been backfilled, and surface restored. Within one month of the approval of this CAP, MW-4 will be reinstalled, the soil gas sample will be collected and the groundwater monitoring well network will then be sampled for dissolved BTEX/PNA constituents. The process of obtaining the required Highway Authority Agreement with IDOT and the City of Peoria will then be initiated.

Following receipt of the executed Highway Authority Agreement, the *CACR* will be prepared and submitted. Following issuance of the No Further Remediation letter, the monitoring wells at the site will be abandoned.

2. Identification of the remediation objectives proposed for this site;

The indicator contaminants for the unleaded gasoline and diesel fuel release associated with this facility are BTEX/~~MTBE~~ and PNA constituents. Soil and groundwater analytical results were compared against the most stringent appropriate 35 IAC 742 SRO and/or GRO. On-site soils were compared against the calculated site-specific Tier 2 objectives. ~~These~~ objectives are listed in **Table I**, ~~**Table II and Table III**~~. Tier 2

3. A description of the remedial technologies selected:

a. The feasibility of implementing the remedial technologies;
b. Whether the remedial technologies will perform satisfactorily and reliably until the remediation objectives are achieved; and
c. A schedule of when the technologies are expected to achieve the applicable remediation objectives;

Conventional soil excavation and disposal is known and immediate technology that immediately achieves remediation objectives. Institutional controls are being proposed to address any remaining contamination beyond the excavation.

4. A confirmation sampling plan that describes how the effectiveness of the corrective action activities will be monitored during their implementation and after their completion;

Floor samples where 8' deep? Page 4 says no significant contact with the saturated zone.

The walls of the excavation were sampled on 20-foot intervals with 38 samples being collected during excavation activities. One (1) final event of groundwater monitoring and sampling will be conducted with each monitoring well being tested for dissolved BTEX/PNA LUST site indicators to determine the long-term migration potential of the remaining contaminants.

12 MW

MW-2, MW-3, MW-4R, MW-5, MW-6, MW-7, MW-9, MW-10, MW-11, MW-12, MW-13, and MW-14.
MW-1 and MW-15: Unable to be located / destroyed.
MW-8: No boring log or diagram.

5. A description of the current and projected future uses of the site;

Groundwater levels while drilling: 4'-9' BGS

The current use of the site is as an active gasoline service station. Neighboring properties consist solely of commercial and residential properties. The site and surrounding area are likely to retain similar usage post-remediation, as of the time of this report.

6. **A description of engineered barriers or institutional controls that will be relied upon to achieve remediation objectives;**

   a. An assessment of their long-term reliability;
   b. Operating and maintenance plans; and
   c. Maps showing area covered by barriers and institutional controls;

   The NFR Letter shall be recorded as a permanent part of the chain of title for the subject property and shall serve as an appropriate institutional control. At a minimum, the NFR letter shall stipulate the following access controls for the remediation site:

   - An Industrial/Commercial restriction;
   - An on-site potable well restrictions;
   - An HAA with IDOT; and
   - An HAA with the City of Peoria.

7. **The water supply well survey:**
   a. Map(s) showing the locations of community water supply wells and other potable wells and the setback zone for each well;
   b. Map(s) showing regulated recharge areas and wellhead protection areas;
   c. Map(s) showing the current extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives;
   d. Map(s) showing the modeled extent of groundwater contamination exceeding the most stringent Tier 1 remediation objectives;
   e. Tables listing the setback zone for each community water supply well and other potable water supply wells;
   f. A narrative identifying each entity contacted to identify potable water supply wells, the name and title of each person contacted, and any other field observations associated with any wells identified; and
   g. A certification from a licensed Professional Engineer or Licensed Professional Geologist that the survey was conducted in accordance with the requirements and that documentation submitted includes information obtained as a result of the survey (certification of this plan satisfies this requirement);

   Please refer to the previously submitted reports.

8. **Appendices;**

   a. References and data sources report that are organized; and
   b. Field logs, well logs, and reports of laboratory analyses;

   Please refer to **the previously submitted reports**.

9. **Site map(s) meeting the requirements of 35 Ill. Adm. Code 732.110(a) or 734.440;**

   Please refer to **Figures 1, 2 and 3**.

10. **Engineering design specifications, diagrams, schematics, calculations, manufacturer's specifications, etc.;**

	Excavation Area (ft^2)	Overburden Depth (ft)	Excavation Depth (ft)	Overburden Volume (yd^3)	Excavation Volume (yd^3)
Green	616	5	3	114	72
Blue	1,340	~~0~~ 4	~~8~~ 4	199 ~~0~~	~~417~~ 208
~~Orange~~	~~2,670~~	~~0~~	~~13~~	~~0~~	~~1,350~~
			~~Minus UST Volume~~		~~-321~~
					~~1,518~~

1,956 ft²

280 yd³

Landfill Volume (yd^3) = [(Area x Landfill Depth)/27] x 1.05 bulking factor

11. A description of bench/pilot studies;

Not applicable for this LUST facility at this time.

12. Cost comparison between proposed method of remediation and other methods of remediation;

This CAP proposed conventional technology and institutional controls. Due to contaminant levels, alternative technology does not have a substantial likelihood of success. Therefore, a cost comparison is not required nor applicable for this CAP.

13. For the proposed Tier 2 or 3 remediation objectives, provide the following:

a. The equations used;
b. A discussion of how input variables were determined;
c. Map(s) depicting distances used in equations; and
d. Calculations;

The original TACO Calculations were performed by Marlin Environmental in the CAP dated December of 2015. In accordance with the IEPA comments in its letter dated November 29, 2016, it indicated a belief that non-mass limit considerations would lead to SB-15 ~~(6'-8')~~ also being considered below Tier 2 Objectives. The non-mass limit calculations are provided herein to demonstrate sample SB-15 ~~(6'-8')~~ in fact remains above Tier 2 SROs.

5'-6'

Please refer to **Attachment 1** for the additional IEPA TACO Tier 2 calculation spreadsheets and the IEPA-prescribed input parameter sheets.

14. Provide documentation to demonstrate the following for alternative technologies:

a. The proposed alternative technology has a substantial likelihood of successfully achieving compliance with all applicable regulations and remediation objectives;
b. The proposed alternative technology will not adversely affect human health and safety or the environment;
c. The owner or operator will obtain all Illinois EPA permits necessary to legally authorize use of alternative technology;
d. The owner or operator will implement a program to monitor whether the requirements of subsection (14)(a) have been met;
e. Within one year from the date of Illinois EPA approval, the owner or operator will provide to the Illinois EPA monitoring program results establishing whether the proposed alternative technology will successfully achieve compliance with the requirements of subsection (14)(a); and
f. Demonstration that the cost of alternative technology will not exceed the cost of conventional technology and is not substantially higher than at least two other alternative technologies, if available and technically feasible.

Not applicable for this CAP.

~~**15. Property Owner Summary Form**~~

~~This will be provided within the CACR for this facility.~~

F. Exposure Pathway Exclusion
Provide the following:

1. A description of the tests to be performed in determining whether the following requirements will be met:

a. Attenuation capacity of the soil will not be exceeded for any of the organic contaminants;
b. Soil saturation limit will not be exceeded for any of the organic contaminants;
c. Contaminated soils do not exhibit any of the reactivity characteristics of hazardous waste per 35 Ill. Adm. Code 721.123;
d. Contaminated soils do not exhibit a pH <2.0 or >12.5; and
e. Contaminated soils which contain arsenic, barium, cadmium, chromium, lead, mercury, or selenium (or their associated salts) do not exhibit any of the toxicity characteristics of hazardous waste per 35 Ill. Adm. Code 721.124.

~~Not applicable for this CAP~~. a and b always apply

2. A discussion of how any exposure pathways are to be excluded.

Not applicable for this CAP.

G. Signatures

All plans, budgets, and reports must be signed by the owner or operator and list the owner's or operator's full name, address, and telephone number.

UST Owner or Operator

Name: Illico, Inc.
Contact: David Golwitzer
Address: 2201 Woodlawn Road, Suite 600
City: Lincoln
State: Illinois
ZIP Code: 62656
Phone: 217-732-4193
Signature: [signature]
Date: 1/12/17

Consultant

Company: Green Wave Consulting, LLC
Contact: Joe Buhlig
Address: 3900 Wood Duck Dr., Suite F
City: Springfield
State: Illinois
ZIP Code: 62711
Phone: 217-726-7569
Email: joeb@greenwavecon.com
Signature: [signature]
Date: 1/16/17

I certify under penalty of law that all activities that are the subject of this plan were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in this plan has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 731, 732, or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

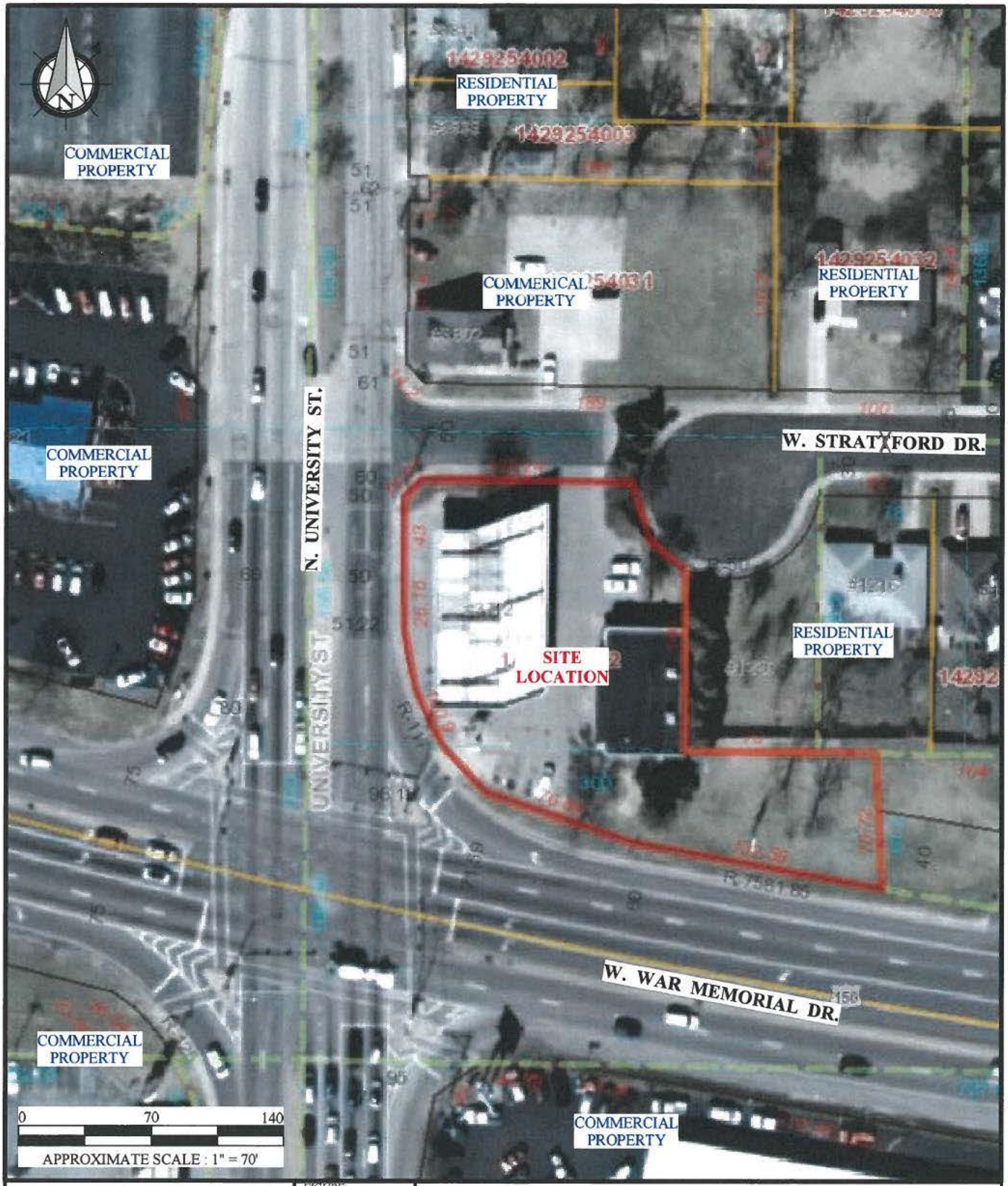
Licensed Professional Engineer

Name: Jeff Wienhoff
Company: Green Wave Consulting, LLC
Address: 3900 Wood Duck Dr., Suite F
City: Springfield
State: Illinois
ZIP Code: 62711
Phone: 217-726-7569
Ill. Registration No.: 062-058441
License Expiration Date: 11-30-17
Signature: [signature]
Date: 1/14/17

L. P.E. Seal

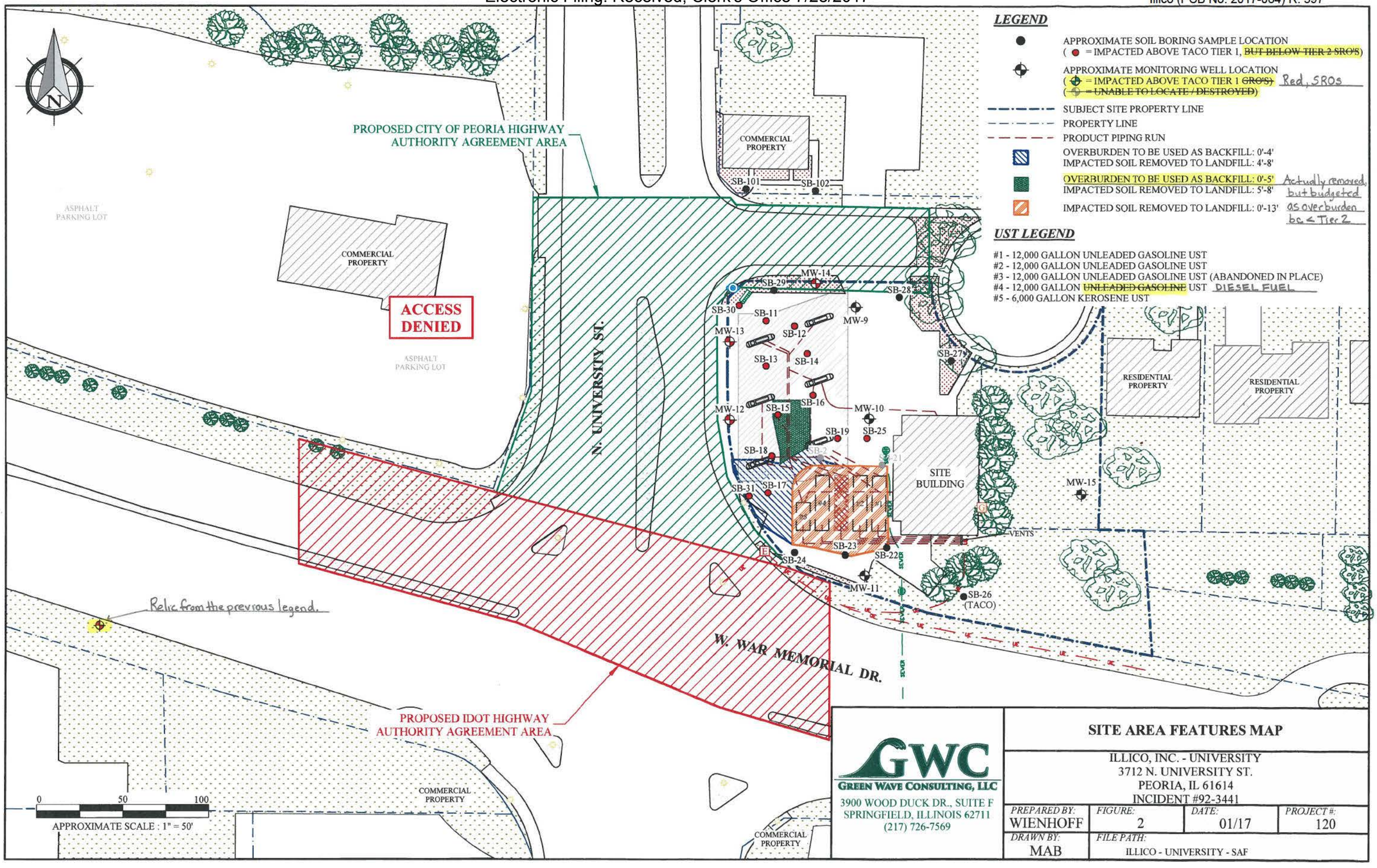
JEFFREY R. WIENHOFF
062-058441
LICENSED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

FIGURES



MARLIN Environmental
3935 COMMERCE DR.
ST. CHARLES, ILLINOIS 60174
(630) 444-1933

FIGURE: 1	SURROUNDING LAND USAGE MAP
PROJECT NUMBER: 1382	ILLICO, INC. - UNIVERSITY 3712 N. UNIVERSITY ST. PEORIA, IL 61614
DRAWN DATE: 04/16	
PREPARED BY: BUHLIG	
DRAWN BY: BETTENHAUSEN	FILE NAME: ILLICO - UNIVERSITY - SLUM



LEGEND

- APPROXIMATE SOIL BORING SAMPLE LOCATION
  (= IMPACTED ABOVE TACO TIER 1, ~~BUT BELOW TIER 2 SRO'S~~)
- APPROXIMATE MONITORING WELL LOCATION
  (= IMPACTED ABOVE TACO TIER 1 ~~SRO'S~~) Red, SROs
  (= ~~UNABLE TO LOCATE / DESTROYED~~)
- SUBJECT SITE PROPERTY LINE
- PROPERTY LINE
- PRODUCT PIPING RUN
- OVERBURDEN TO BE USED AS BACKFILL: 0'-4'
  IMPACTED SOIL REMOVED TO LANDFILL: 4'-8'
- OVERBURDEN TO BE USED AS BACKFILL: 0'-5' Actually removed, but budgeted as overburden bc < Tier 2
  IMPACTED SOIL REMOVED TO LANDFILL: 5'-8'
- IMPACTED SOIL REMOVED TO LANDFILL: 0'-13'

UST LEGEND

#1 - 12,000 GALLON UNLEADED GASOLINE UST
#2 - 12,000 GALLON UNLEADED GASOLINE UST
#3 - 12,000 GALLON UNLEADED GASOLINE UST (ABANDONED IN PLACE)
#4 - 12,000 GALLON ~~UNLEADED GASOLINE~~ UST DIESEL FUEL
#5 - 6,000 GALLON KEROSENE UST

GWC
GREEN WAVE CONSULTING, LLC
3900 WOOD DUCK DR., SUITE F
SPRINGFIELD, ILLINOIS 62711
(217) 726-7569

SITE AREA FEATURES MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614
INCIDENT #92-3441

PREPARED BY:	FIGURE:	DATE:	PROJECT #:
WIENHOFF	2	01/17	120
DRAWN BY:	FILE PATH:		
MAB	ILLICO - UNIVERSITY - SAF		

N

N. UNIVERSITY ST.

STRATFORD DR

W. WAR MEMORIAL DR.

MW-14 SB-29 SB-30 SB-11 SB-12 MW-13 SB-13 SB-14 SB-16 SB-15 MW-12 SB-18 SB-31 SB-17 SB-19 SB-20 SB-21 MW-9 SB-28 SB-27 MW-10 SB-25 MW-15 SB-23 SB-22 SB-24 MW-11 SB-26 (TACO)

SITE BUILDING

#1 #2 #3 #4 #5

VENTS

RESIDEN PROPER

LEGEND

- APPROXIMATE SOIL BORING SAMPLE LOCATION
  (= IMPACTED ABOVE TACO TIER 1, ~~BUT BELOW TIER 2 SRO'S~~)
- APPROXIMATE MONITORING WELL LOCATION
  (= IMPACTED ABOVE TACO TIER 1 ~~GRO'S~~) Red, SROs
  (= ~~UNABLE TO LOCATE / DESTROYED~~)
- SUBJECT SITE PROPERTY LINE
- PROPERTY LINE
- PRODUCT PIPING RUN
- OVERBURDEN TO BE USED AS BACKFILL: 0'-4'
  IMPACTED SOIL REMOVED TO LANDFILL: 4'-8'
- OVERBURDEN TO BE USED AS BACKFILL: 0'-5' See FIGURE 2
  IMPACTED SOIL REMOVED TO LANDFILL: 5'-8'
- IMPACTED SOIL REMOVED TO LANDFILL: 0'-13'

UST LEGEND

#1 - 12,000 GALLON UNLEADED GASOLINE UST
#2 - 12,000 GALLON UNLEADED GASOLINE UST
#3 - 12,000 GALLON UNLEADED GASOLINE UST (ABANDONED IN PLACE)
#4 - 12,000 GALLON ~~UNLEADED GASOLINE~~ UST DIESEL FUEL
#5 - 6,000 GALLON KEROSENE UST

0 30 60
APPROXIMATE SCALE : 1" = 30'

GWC
GREEN WAVE CONSULTING, LLC
3900 WOOD DUCK DR., SUITE F
SPRINGFIELD, ILLINOIS 62711
(217) 726-7569

PROPOSED EXCAVATION AREA MAP

ILLICO, INC. - UNIVERSITY
3712 N. UNIVERSITY ST.
PEORIA, IL 61614
INCIDENT #92-3441

PREPARED BY:	FIGURE:	DATE:	PROJECT #:
WIENHOFF	3	01/17	120
DRAWN BY:	FILE PATH:		
MAB	ILLICO - UNIVERSITY - SAF		

TABLES

TABLE I

Comparison of Tier 1 SRO Exceedences On-Site to Applicable Tier 2 SROs

Sample ID	Depth	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	
TACO Tier 2 Soil Component of Groundwater Ingestion SROs for Class I Groundwater			310	61,400	~~43,000~~ 83,000	~~614,000~~ 806,000#	~~12,000~~ 26,000	
TACO Tier 2 Residential Inhalation SROs			~~17,000~~ 16,400	N/E	N/E	~~798,000~~ 806,000 #	N/E	
TACO Tier 2 Industrial / Commercial Inhalation SROs			~~32,400~~ 31,400	N/E	N/E	~~798,000~~ 806,000 #	N/E	
TACO Tier 2 Construction Worker Inhalation SROs			~~246,000~~ 44,200	580,000 #	350,000 #	~~798,000~~ 600,000	~~9,400~~ 11,000	
TACO Tier 2 Soil Saturation Limit			N/E	~~1,569,000~~ 1,607,000	~~997,000~~ 1,009,000	~~798,000~~ 806,000	N/E	04/04/201 Email
SB-4	4'-6'	11/18/1999	**<1,100**	11,000	37,000	193,000	11,000	
SB-5	2'-4'	11/18/1999	<63	*	*	7,700	2,100	
	4'-6'		**1,200**	23,000	*	74,000	*	
SB-9	0'-4'	11/22/2015	230	*	*	8,100	*	Remove
	4'-8'		**690**	58,000	**57,000**	370,000	*	
SB-10	0'-4'	11/22/1999	**7,900**	**83,000**	42,000	182,000	3,000	
	4'-8'		**1,400**	16,000	*	35,000	*	
MW-6	4'-6'	11/16/2000	*	*	*	*	2,400	
MW-7	7'-9'	11/16/2000	**13,000**	**160,000**	**92,000**	420,000	**25,000**	
SB-11	3.5'-5'	08/07/2012	288	*	*	*	*	
	7'-8'		**3,980**	51,600	31,600	159,000	4,630	
SB-12	3.5'-5'	08/07/2012	51.5	*	*	*	*	
	7'-8'		**629.0**	*	*	13,700	*	
SB-13	3.5'-5'	08/07/2012	**2,050**	*	*	8,400	*	
	6'-7'		**11,700**	**92,700**	29,700	142,000	*	
SB-14	3.5'-5'	08/07/2012	**669**	*	*	*	*	
	6'-7'		**833**	*	*	*	*	
SB-15	3.5'-5'	08/07/2012	**4,210**	24,100	*	49,900	2,150	
	5'-6'		**41,800**	**305,000**	**103,000**	568,000	5,340	
SB-16	3.5'-5'	08/07/2012	**1,010**	*	*	*	*	
	6'-7'		**3,700**	*	*	36,100	*	
SB-17	3.5'-5'	08/08/2012	**337**	*	*	7,820	*	See SB-31
	6'-7'		<1,200 * Bold	*	**130,000**	574,000	**45,300**	
3.5-5 SB-18	~~3-5'~~	08/08/2012	**1,190**	*	*	*	*	
	6'-7'		**6,790**	*	27,000	112,000	4,160	
SB-19	3.5'-5'	08/08/2012	40.5	*	*	*	*	
	6'-7'		**365**	*	*	*	*	
SB-25	3.5'-5'	08/08/2012	148	*	*	*	*	
SB-30	0'-2'	03/10/2015	101	*	*	*	*	
	2'-4'		**402**	*	*	*	*	
SB-31	2'-4'	03/10/2015	**1,600**	*	*	24,200	*	
	4'-6'		**16,800** Red	27,100	**243,000**	**1,190,000**	**20,700**	N<SCGIE
MW-12	2'-4'	3/10/2015	**1,660**	*	42,300	168,000	4,200	
	4'-6'		**4,230**	*	35,500	178,000	1,990	
MW-13	4'-6'	03/10/2015	**347**	*	*	6,610	*	
MW-14	4'-6'	03/10/2015	**654**	*	*	44,600	*	

Notes:

Only samples above Tier 1 objectives collected on-site listed in the table.

Analytical testing resultsfor BTEX and PNAs are expressed in parts-per-billion (ppb) concentrations.

Key:

Bold	Indicates Exceeds TACO Tier 2 Soil Comp. of Groundwater Ingestion SRO for Class I GW.
Red	Indicates Exceeds TACO Tier 2 Residential Soil Inhalation SRO.
Underlined	Indicates Exceeds TACO Tier 2 Industrial / Commercial Soil Inhalation SRO.
Shaded	Indicates Exceeds TACO Tier 2 Construction Worker Soil Inhalation SRO.
*	Sample below Tier 1 SROs for specified contaminant
^	Calculated Tier 2 Objective was more restrictive than Tier 1, therefore Tier 1 objective was utilized
#	Calculated Tier 2 Objective exceeded soil saturation limit (SSL), therefore appropriate SSL was utilized
N/E	Specified Exposure Route SRO not exceeded at Tier 1 for on-site samples.

SB-17 (6'-7'): MDL > Tier 1 Benzo(a)a, Benzo(a)p, Benzo(b)f, Dibenzo, and Indeno

SB-31 replaces SB-17. See page 4 of the Stage 2 Site Investigation Results Report dated 10/02/2015 and 04/04/16 Email.

Excavate SB-15 (5'-6'): Benzene > Tier 2 I-C Inh.

Excavate SB-31 (4'-6'): Xylenes > Tier 2 Inh. (all)

Xylenes > Tier 2 Csat

Naphthalene > Tier 2 CW Inh.

ATTACHMENT 1

Illinois Environmental Protection Agency
Leaking Underground Storage Tank Program
SSL Input Parameters for Use with Tier 2 Calculations

A. Site Identification

IEMA Incident # (6- or 8-digit): 923441 IEPA LPC # (10-digit): 1430655263

Site Name: Illico Independent Oil Co.

Site Address (not a P.O. Box): 3712 University Street

City: Peoria County: Peoria Zip Code: ~~61604~~ 61614

Leaking UST Technical File

B. Tier 2 Calculation Information

Equation(s) Used (ex: S12, S17, S28): S6, S7 ~~and S26/S27~~ S8, S9, S10, S19, S20, S21, and S24: Inhalation of Carcinogens SROs

Contact Information for Individual Who Performed Calculations: Jeff Wienhoff (217) 726-7569 x~

Land Use: Res., Ind./Com. & Const. Worker Soil Type: Silt Clay

Groundwater: [X] Class I [ ] Class II

Mass Limit: [ ] Yes [X] No If Yes, then Specify Acreage: [X] 0.5 [ ] 1 [ ] 2 [ ] 5 [ ] 10 [ ] 30 2 acres See 04/04/11 Email #3 and 04/06/11 Email.

- **Mass Limit Acreage other than defaults must always be rounded up.**
- **Failure to use site-specific parameters where allowed could affect payment from the Underground Storage Tank Fund.**
- **Maps depicting source width, plume dimensions, distance, etc. must also be submitted.**
- **Inputs must be submitted in the designated unit.**

Symbol			Unit
AT (ingestion)	=		yr
AT (inhalation)	=		yr
AT_c	=	70	yr
BW	=		kg
C_{sat}	=		mg/kg
C_w	=		mg/L
d	=		m

Symbol			Unit
d_a	=		m
d_s	=		m
D_A	=	~~0.0000042~~ 4.48E-06	cm^2/s
D_i	=	0.088	cm^2/s
D_w	=	0.0000102	cm^2/s
DF	=		unitless
ED (ingestion of carcinogens)	=		yr

Incident #: 923441 Chemical: Benzene Land Use: Res., Ind./Com., CW

Symbol			Unit
ED (inhalation of carcinogens)	=	see page 3	yr
ED (ingestion of noncarcinogens)	=		yr
ED (inhalation of noncarcinogens)	=		yr
ED (ingestion of groundwater)	=		yr
ED_{M-L}	=	70	yr
EF	=	see page 3	d/yr
F(x)	=	0.194	unitless
f_{oc}	=	0.0179	g/g
GW_{obj}	=		mg/L
H'	=	0.23	unitless
i	=		m/m
I	=	0.3	m/yr
I_{M-L}	=	0.18	m/yr
$IF_{soil-adj}$	=	114	(mg-yr)/(kg-d)
IR_{soil}	=		mg/d
IR_w	=		L/d
K	=		m/yr
K_d (non-ionizing organics)	=	~~0.9~~ 0.895	cm^3/g or L/kg
K_d (ionizing organics)	=		cm^3/g or L/kg
K_d (inorganics)	=		cm^3/g or L/kg

Symbol			Unit
K_{oc}	=	50	cm^3/g or L/kg
K_s	=	8	m/yr
L	=		m
PEF	=		m^3/kg
PEF'	=		m^3/kg
Q/C (VF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
Q/C (PEF equations)	=		$(g/m^2\text{-}s)/(kg/m^3)$
RfC	=		mg/m^3
RfD_o	=		mg/(kg-d)
S	=		mg/L
SF_o	=		$(mg/kg\text{-}d)^{-1}$
T	=		s
T_{M-L}	=	30 residential	yr
THQ	=	1	unitless
TR	=	0.000001	unitless
U_m	=	4.69	m/s
URF	=	see page 3	$(\mu g/m^3)^{-1}$
U_t	=	11.32	kg/m^3
V	=		unitless
VF	=	52,725 / 59,959	m^3/kg

25: I-C
1: CW

Incident #: 923441 Chemical: Benzene Land Use: Res., Ind./Com., CW

Symbol			Unit
VF'	=		m³/kg
VF_{M-L}	=	~~9,569.33~~	m³/kg
VF'_{M-L}	=	~~956.93~~	m³/kg
η	=	0.38	L_{pore}/L_{soil}
θ_a	=	0.05	L_{air}/L_{soil}

Symbol			Unit
θ_w	=	0.33	L_{water}/L_{soil}
ρ_b	=	~~1.685~~	kg/L or g/cm³
ρ_s	=	2.702	g/cm³
ρ_w	=	1	g/cm³
1/(2b+3)	=	0.042	unitless

1.684 See page 4 of the Stage 3 SIP dated 10/06/15, page 3 of the SICR dated 12/14, 04/05/16 Email and 04/05/16 Email #2.

Equation		Result	Unit(s)
S1	=		mg/kg
S2	=		mg/kg
S3	=		mg/kg
S4	=		mg/kg
S5	=		mg/kg
S6	=	See Boxes Below	mg/L
S7	=	See Box Below	mg/kg
S17	=		mg/kg
S28	=		mg/kg
S29	=		mg/L

Exposure Frequency (EF): (days/year)

Residential = 350
Industrial/Commercial = 250
Construction Worker = 30

Exposure Duration (ED): (years)

Residential = 30
Industrial/Commercial = 25
Construction Worker = 1

Inhalation Unit Risk Factor (URF): $[(ug/m^3)^{-1}]$

Benzene = 0.0000078

Solution to Equation S6: (mg/kg) Residential	Solution to Equation S6: (mg/kg) Industrial/Commercial	Solution to Equation S7: (mg/kg) Construction Worker
Benzene = ~~17.0~~ 16.4	**Benzene = ~~32.4~~** 31.4	**Benzene = ~~45.6~~** 44.2

EQUATIONS S20, S21 & S24 FOR DERIVATION OF TOTAL SOIL POROSITY, WATER-FILLED SOIL POROSITY & AIR-FILLED SOIL POROSITY

Illico - University Ave.
Peoria, IL

S24 - Equation for Derivation of Total Soil Porosity, η (L_{pore}/L_{soil})

$$\eta = 1 - \frac{\rho_b}{\rho_s}$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
ρ_b	Dry Soil Bulk Density	g/cm^3	Site-Specific Value
ρ_s	Soil Particle Density	g/cm^3	Site-Specific Value

INPUT PARAMETERS FOR η

ρ_b= ~~1.685~~ g/cm^3 1.684
ρ_s= 2.702 g/cm^3

η= 0.38 L_{pore}/L_{soil}

S20 - Equation for Derivation of Water-Filled Soil Porosity, θ_w (L_{water}/L_{soil})

$$\theta_w = \eta \cdot \left(\frac{I}{K_s}\right)^{1/(2b+3)}$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
η	Total Soil Porosity	L_{pore}/L_{soil}	Calculated Value Equation S24 in TACO
I	Infiltration Rate	m/yr	0.3
Soil Texture	USDA Soil Texture Classification	----	Site-Specific Value Appendix C, Illust. C
K_s	Saturated Hydraulic Conductivity	m/yr	Site-Specific Value Appendix C, Table K
1/(2b+3)	Exponential in Equation S20	unitless	Site-Specific Value Appendix C, Table K

Ks Values	
Sand	1,830
Loamy Sand	540
Sandy Loam	230
Loam	60
Sandy Loam Clay	40
Silt Clay Loam	13
Clay Loam	20
Sandy Clay	10
Silt Clay	8
Clay	5

1/(2b+3) Values	
Sand	0.090
Loamy Sand	0.085
Sandy Loam	0.080
Loam	~~0.074~~ 0.073
Sandy Loam Clay	0.058
Silt Clay Loam	0.054
Clay Loam	0.050
Sandy Clay	0.042
Silt Clay	0.042

INPUT PARAMETERS FOR θ_w

η= 0.38 L_{pore}/L_{soil}
I= 0.3 m/yr
Soil Texture= Silt Clay
K_s= 8 m/yr
1/(2b+3)= 0.042

θ_w= 0.33 L_{water}/L_{soil}

S21 - Equation for Derivation of Air-Filled Soil Porosity, θ_a (L_{air}/L_{soil})

$$\theta_a = \eta - \theta_w$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
η	Total Soil Porosity	L_{pore}/L_{soil}	Calculated Value Equation S24 in TACO
θ_w	Water-Filled Soil Porosity	L_{water}/L_{soil}	Calculated Value Equation S20 in TACO

INPUT PARAMETERS FOR θ_a

η= 0.38 g/cm^3
θ_w= 0.33 g/cm^3

θ_a= 0.05 L_{air}/L_{soil}

EQUATION S10 FOR DERIVATION OF APPARENT DIFFUSIVITY (D_A)

Illico - University Ave.
Peoria, IL

S10 - Equation for Derivation of Apparent Diffusivity, D_A (cm^2/s)

$$D_A = \frac{(\theta_a^{3.33} \cdot D_i \cdot H') + (\theta_w^{3.33}) \cdot D_w)}{\eta^2} \cdot \frac{1}{(\rho_b \cdot K_d) + \theta_w + (\theta_a \cdot H')}$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
θ_a	Air-Filled Soil Porosity	L_{air}/L_{soil}	Gravel = 0.05 Sand = 0.14 Silt - 0.24 Clay = 0.19, or Calculated Value
θ_w	Water-Filled Soil Porosity	L_{water}/L_{soil}	Gravel = 0.20 Sand = 0.18 Silt = 0.16 Clay = 0.17, or Calculated Value
D_i	Diffusivity in Air	cm^2/s	Chemical-Specific Benzene = 0.0880
D_w	Diffusivity in Water	cm^2/s	Chemical-Specific Benzene = 0.0000102
H'	Henry's Law Constant	unitless	Chemical-Specific Benzene = 0.230
η	Total Soil Porosity	L_{pore}/L_{soil}	Calculated Value Equation S24 in TACO
ρ_b	Dry Soil Bulk Density	g/cm^3	Site-Specific Value
K_d	Soil-Water Partition Coefficient	cm^3/g	Calculated Value Equation S19 in TACO

S24 - Total Soil Porosity (L_{pore}/L_{soil}) $\eta = 1 - \frac{\rho_b}{\rho_s}$

S19 - Soil Water Partition Coefficient (cm^3/g) $K_d = K_{oc} \cdot f_{oc}$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
ρ_b	Dry Soil Bulk Density	g/cm^3	Site-Specific Value
ρ_s	Soil Particle Density	g/cm^3	Site-Specific Value
K_{oc}	Organic Carbon Partition Coefficient	cm^3/g	Chemical-Specific Benzene = 50.0
f_{oc}	Organic Carbon Content of Soil	g/g	Site-Specific Value

INPUT PARAMETERS FOR η

ρ_b= ~~1.685~~ g/cm³ 1.684
ρ_s= 2.702 g/cm³

η= 0.38 L_{pore}/L_{soil}

INPUT PARAMTERS FOR K_d

K_{oc}= 50.0 cm³/g
f_{oc}= 0.0179 g/g

K_d= ~~0.90~~ cm³/g 0.895

INPUT PARAMETER VALUES FOR DERIVATION OF APPARENT DIFFUSIVITY, D_A (cm^2/s)

θ_a= 0.05 L_{air}/L_{soil}
θ_w= 0.33 L_{water}/L_{soil}
D_i= 0.0880 cm^2/s
D_w= 0.0000102 cm^2/s
H'= 0.230

η= 0.38 g/cm³
ρ_b= ~~1.685~~ g/cm³ 1.684
K_d= ~~0.90~~ m³/kg 0.895

D_A= ~~4.20E-06~~ cm^2/s 4.48E-06

BENZENE

EQUATIONS S6 AND S7 FOR INHALATION OF VOLATILE CONTAMINANTS IN SOIL (CARCINOGENS)

Illico University Ave.
Peoria, IL

Residential, Industrial/Commercial Remediation Objectives for Carcinogenic Contaminants (mg/kg)

$$\frac{TR \cdot AT_c \cdot 365\frac{d}{yr}}{URF \cdot 1000\frac{\mu g}{mg} \cdot EF \cdot ED \cdot \frac{1}{VF}}$$

Construction Worker Remediation Objectives for Carcinogenic Contaminants (mg/kg)

$$\frac{TR \cdot AT_c \cdot 365\frac{d}{yr}}{URF \cdot 1000\frac{\mu g}{mg} \cdot EF \cdot ED \cdot \frac{1}{VF'}}$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
AT_c	AVERAGING TIME FOR CARCINOGENS	year	70
ED	EXPOSURE DURATION FOR INHALATION OF CARCINOGEN	year	RESIDENTIAL 30 INDUS/COMM. 25 CONST WRKR 1
EF	EXPOSURE FREQUENCY	d/yr	RESIDENTIAL 350 INDUS/COMM. 250 CONST WRKR 30
TR	TARGET CANCER RISK	unitless	RESIDENTIAL 10^{-6} INDUS/COMM. 10^{-6} CONST WRKR 10^{-6}
URF	INHALATION UNIT RISK FACTOR	$(\mu g/m^3)^{-1}$	7.8×10^{-6} benzene
VF	VOLATILIZATION FACTOR	m^3/kg	REFER TO EQ S8& S9 WITHIN TACO

S8- Volatilization Factor for the Inhalation Exposure Route - Residential, Industrial/Commercial (m^3/kg)

$$VF = \frac{Q}{C} \cdot \frac{(3.14 \cdot D_A \cdot T)^{1/2}}{2 \cdot \rho_b \cdot D_A} \cdot 10^{-4}$$

S9 - Volatilization Factor for the Inhalation Exposure Route - Construction Worker (m^3/kg)

$$VF' = \frac{VF}{10}$$

SYMBOL	PARAMETER	UNITS	PARAMETER VALUES
D_A	APPARENT DIFFUSIVITY	cm^2/s	CALCULATED VALUE
Pb	DRY BULK DENSITY	g/cm^3	1.5, OR GRAVEL=2.0 SAND=1.8 SILT=1.6 CLAY=1.7, OR SITE SPECIFIC
Q/C	INVERSE OF THE MEAN CONCENTRATION AT THE CENTER OF A SQUARE SOURCE	$(g/m^2\text{-}s)/(kg/m^3)$	RESIDENTIAL 68.81 INDUS/COMM. 85.81 CONST WRKR 85.81 OR 742.Appendix C, Table H: Q/C by Source Area
T	EXPOSURE INTERVAL	S	RESIDENTIAL $9.5*10^8$ INDUS/COMM. $7.9*10^8$ CONST WRKR $3.6*10^6$

INPUT PARAMETERS FOR VF RES/INDUS/COM PROP

D_A=	~~4.20E-06~~	cm^2/s 4.48E-06
Pb=	~~1.685~~	g/cm^3 1.684
Q/C=	68.81	$(g/m^2\text{-}s)/(kg/m^3)$ (Residential)
Q/C=	85.81	$(g/m^2\text{-}s)/(kg/m^3)$ (Industrial/Commercial)
T =	9.5E+08	s (Residential)
T =	7.9E+08	s (Industrial / Commercial)
VF=	~~54,416~~	m^3/kg (Residential) 52,725
VF=	~~61,882~~	m^3/kg (Industrial/Commercial) 59,959

INPUT PARAMTERS FOR VF' CONSTRUCTION WORKER

D_A=	~~4.20E-06~~	cm^2/s
Pb=	~~1.685~~	g/cm^3
Q/C=	85.81	$(g/m^2\text{-}s)/(kg/m^3)$
T=	3.6E+06	s
VF'=	~~418~~	m^3/kg 405

INPUT PARAMETER VALUES RES/INDUS/COM PROP

AT_c=	70	year
ED=	30	year (Residential)
ED=	25	year (Industrial/Commercial)
EF=	350	d/yr (Residential)
EF=	250	d/yr (Industrial/Commercial)
TR=	1.00E-06	unitless
URF=	7.80E-06	$(\mu g/m^3)^{-1}$
VF=	~~54415.63~~	m^3/kg (Residential) 52,725
VF=	~~61881.63~~	m^3/kg (Industrial/Commercial) 59,959

INPUT PARAMETER VALUES FOR CONSTRUCTION WORKERS

AT_c=	70	year
ED=	1	year
EF=	30	d/yr
TR=	1.00E-06	unitless
URF=	7.80E-06	$(\mu g/m^3)^{-1}$
VF'=	~~417.73~~	m^3/kg 404.8

Residential Inhalation Remediation Objective (S6) = 16.4 ~~17.0~~ mg/kg

Construction Worker Inhalation Remediation Objective (S7) = 44.2 ~~45.6~~ mg/kg

Industrial/Commercial Inhalation Remediation Objective (S6) = 31.4 ~~32.4~~ mg/kg

Tier 1 Non-Exceedence Check (value of SRO will change if Tier 2 SRO is less than Tier 1 SRO):

Soil Remediation Objective (Residential Inhalation) =	~~17.0~~ **mg/kg**
Soil Remediation Objective (Industrial/Commercial Inhalation) =	~~32.4~~ **mg/kg**
Soil Remediation Objective (Construction Worker Inhalation) =	~~45.6~~ **mg/kg**

BENZENE

ATTACHMENT 2

Illinois Environmental Protection Agency

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

General Information for the Budget and Billing Forms

LPC #: 1430655263 County: Peoria

City: Peoria Site Name: Illico Independent Oil Co.

Site Address: 3712 North University St

IEMA Incident No. 923441

IEMA Notification Date: 12/~~02~~03/1992

Date this form was prepared: 01/10/2017

This form is being submitted as a (check one, if applicable):

- ☑ Budget Proposal
- ☐ Budget Amendment (Budget amendments must include only the costs over the previous budget.)
- ☐ Billing Package

Please provide the name(s) and date(s) of report(s) documenting the costs requested:

Name(s): _____

Date(s): _____

This form is being submitted for the site activities indicted below:

35 Ill. Adm. Code 734:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☐ Site Investigation Stage 1: ☐ Stage 2: ☐ Stage 3: ☐
- ☑ Corrective Action Actual Costs

35 Ill. Adm. Code 732:

- ☐ Early Action
- ☐ Free Product Removal after Early Action
- ☐ Site Classification
- ☐ Low Priority Corrective Action
- ☐ High Priority Corrective Action

35 Ill. Adm. Code 731:

- ☐ Site Investigation
- ☐ Corrective Action

General Information for the Budget and Billing Forms

The following address will be used as the mailing address for checks and any final determination letters regarding payment from the Fund.

Pay to the order of: Illico Independent Oil Co.

Send in care of: Green Wave Consulting, LLC

Address: 3900 Wood Duck Drive, Suite F

City: Springfield State: Illinois Zip: 62711

Payee is the: Owner ☐ Operator ☐ (Check one or both.)

M Prescott

Signature of the owner or operator of the UST(s) (required)

W-9 must be submitted.
Click here to print off a W-9 Form.

Number of petroleum USTs in Illinois presently owned or operated by the owner or operator; any subsidiary, parent or joint stock company of the owner or operator; and any company owned by any parent, subsidiary or joint stock company of the owner or operator:

Fewer than 101: ☑ 101 or more: ☐

Number of USTs at the site: 8 (Number of USTs includes UST's presently at the site and USTs that have been removed.)

Number of incidents reported to IEMA for this site: 2

Incident Numbers assigned to the site due to releases from USTs: 923441 20160095

Please list all tanks that have ever been located at the site and tanks that are presently located at the site.

	Product Stored in UST	Size (gallons)	Did UST have a release?	Incident No.	Type of Release Tank Leak / Overfill / Piping Leak
12K	Unleaded Gasoline	~~10,000~~	Yes ☑ No ☐	923441	Overfill
12K	Unleaded Gasoline	~~10,000~~	Yes ☑ No ☐	923441	Overfill
12K	Unleaded Gasoline	~~10,000~~	Yes ☑ No ☐	923441	Overfill
12K	Diesel Fuel	~~10,000~~	Yes ☑ No ☐	923441	Overfill
6K	Kerosene	~~10,000~~	Yes ☑ No ☐	923441	Overfill
12K	Unleaded Gasoline	~~10,000~~	Yes ☐ No ☑		
6K	Unleaded Gasoline	~~12,000~~	Yes ☐ No ☑		
4K	Diesel Fuel	~~12,000~~	Yes ☐ No ☑		
			Yes ☐ No ☐		
			Yes ☐ No ☐		
			Yes ☐ No ☐		
			Yes ☐ No ☐		

Budget Summary

Choose the applicable regulations: ◉ 734 ○ 732

734	Free Product	Stage 1 Site Investigation	Stage 2 Site Investigation	Stage 3 Site Investigation	Corrective Action	
Drilling and Monitoring Wells Costs Form					$2,187.20	
Analytical Costs Form					~~$15,862.39~~	3,737.84
Remediation and Disposal Costs Form					~~$178,573.02~~	29,237.5
UST Removal and Abandonment Costs Form					~~$19,711.65~~	0.00
Paving, Demolition, and Well Abandonment Costs Form					~~$27,958.59~~	12,730.0
Consulting Personnel Costs Form					~~$52,074.26~~	29,922.3
Consultant's Materials Costs Form					~~$2,078.20~~	401.90
Handling Charges Form	Handling charges will be determined at the time a billing package is submitted to the Illinois EPA. The amount of allowable handling charges will be determined in accordance with the Handling Charges Form.					
Total	$0.00	$0.00	$0.00	$0.00	~~$298,445.31~~	78,216.8

Drilling and Monitoring Well Costs Form

1. Drilling

Number of Borings to Be Drilled	Type HSA/PUSH/ Injection	Depth (feet) of Each Boring	Total Feet Drilled	Reason for Drilling
1	HSA	15	15	MW-4 Replacement
			0	
			0	
			0	
			0	
			0	
			0	
			0	

☑ Subpart H minimum payment amount applies.

	Total Feet	Rate per Foot ($)	Total Cost ($)
Total Feet via HSA:	15	$28.79	$431.85
Total Feet via PUSH:	0	$22.53	$0.00
Total Feet for Injection via PUSH:	0	$18.77	$0.00
		Total Drilling Costs:	**$1,877.30**

adjusted to reflect Subpart H minimum payment amount

2. Monitoring / Recovery Wells

Number of Wells	Type of Well HSA / PUSH / 4" or 6" Recovery / 8" Recovery	Diameter of Well (inches)	Depth of Well (feet)	Total Feet of Wells to Be Installed ($)
1	HSA	2	15	15
				0
				0
				0
				0

Well Installation	Total Feet	Rate per Foot ($)	Total Cost ($)
Total Feet via HSA:	15	$20.66	$309.90
Total Feet via PUSH:	0	$15.64	$0.00
Total Feet of 4" or 6" Recovery:	0	$31.29	$0.00
Total Feet of 8" or Greater Recovery:	0	$51.31	$0.00
		Total Well Costs:	**$309.90**

Total Drilling and Monitoring Well Costs:	**$2,187.20**

Soil samples collected after UST removal (01/28-29/2016) and ETD Groundwater samples will be collected (1 event).

Analytical Costs Form

Laboratory Analysis	Number of Samples		Cost ($) per Analysis		Total per Parameter	
Chemical Analysis						
BETX Soil with MTBE EPA 8260	38	x	~~$106.38~~	=	~~$4,042.44~~	105.33,
BETX Water with MTBE EPA 8260	12	x	$101.37	=	$1,216.44	4,002.54
COD (Chemical Oxygen Demand)		x	$37.55	=	$0.00	
Corrosivity		x	$18.77	=	$0.00	
Flash Point or Ignitability Analysis EPA 1010	1	x	~~$41.29~~	=	~~$41.29~~	40.88
Fraction Organic Carbon Content (f_{oc}) ASTM-D 2974-00		x	$47.55	=	$0.00	
Fat, Oil, & Grease (FOG)		x	$75.08	=	$0.00	
LUST Pollutants Soil - analysis must include volatile, base/ neutral, polynuclear aromatics and metals list in Section 732. Appendix B and 734.Appendix B		x	$867.31	=	$0.00	
Dissolved Oxygen (DO)		x	$41.29	=	$0.00	
Paint Filter (Free Liquids)	1	x	~~$17.52~~	=	~~$17.52~~	17.35
PCB / Pesticides (combination)		x	$277.84	=	$0.00	
PCBs		x	$138.91	=	$0.00	
Pesticides		x	$175.21	=	$0.00	
pH		x	$17.52	=	$0.00	
Phenol		x	$42.55	=	$0.00	
Polynuclear Aromatics PNA, or PAH SOIL EPA 8270	38	x	~~$190.24~~	=	~~$7,229.12~~	188.36,
Polynuclear Aromatics PNA, or PAH WATER EPA 8270	12	x	$190.24	=	$2,282.88	7,157.68
Reactivity		x	$85.10	=	$0.00	
SVOC - Soil (Semi-Volatile Organic Compounds)		x	$391.73	=	$0.00	
SVOC - Water (Semi-Volatile Organic Compounds)		x	$391.73	=	$0.00	
TKN (Total Kjeldahl) "nitrogen"		x	$55.07	=	$0.00	
TPH (Total Petroleum Hydrocarbons)		x	$452.69	=	$0.00	
VOC (Volatile Organic Compounds) - Soil (Non-Aqueous)		x	$219.02	=	$0.00	
VOC (Volatile Organic Compounds) - Water		x	$211.52	=	$0.00	
BETX Water with MTBE EPA 8260 (field and trip blank)		x	$101.37	=	$0.00	
		x		=	$0.00	
		x		=	$0.00	
		x		=	$0.00	
		x		=	$0.00	
Geo-Technical Analysis						
Soil Bulk Density (p_b) ASTM D2937-94		x	$27.53	=	$0.00	
Ex-situ Hydraulic Conductivity / Permeability		x	$319.14	=	$0.00	
Moisture Content (w) ASTM D2216-92 / D4643-93		x	$15.02	=	$0.00	
Porosity		x	$37.55	=	$0.00	
Rock Hydraulic Conductivity Ex-situ		x	$438.04	=	$0.00	
Sieve / Particle Size Analysis ASTM D422-63 / D1140-54		x	$181.48	=	$0.00	
Soil Classification ASTM D2488-90 / D2487-90		x	$85.10	=	$0.00	
Soil Particle Density (ps) ASTM D854-92		x	$110.00	=	$0.00	
		x		=	$0.00	
		x		=	$0.00	
		x		=	$0.00	

Unknown how many soil samples are associated with the UST rem val. Deduct all except waste characterization.

Analytical Costs Form

Metals Analysis						
Soil preparation fee for Metals TCLP Soil (one fee per soil sample)	1	x	~~$98.87~~	=	~~$98.87~~	97.89
Soil preparation fee for Metals Total Soil (one fee per soil sample)		x	$20.01	=	$0.00	
Water preparation fee for Metals Water (one fee per water sample)		x	$13.76	=	$0.00	
Arsenic TCLP Soil		x	$20.01	=	$0.00	
Arsenic Total Soil		x	$20.01	=	$0.00	
Arsenic Water		x	$22.53	=	$0.00	
Barium TCLP Soil		x	$12.52	=	$0.00	
Barium Total Soil		x	$12.52	=	$0.00	
Barium Water		x	$15.02	=	$0.00	
Cadmium TCLP Soil		x	$20.01	=	$0.00	
Cadmium Total Soil		x	$20.01	=	$0.00	
Cadmium Water		x	$22.53	=	$0.00	
Chromium TCLP Soil		x	$12.52	=	$0.00	
Chromium Total Soil		x	$12.52	=	$0.00	
Chromium Water		x	$15.02	=	$0.00	
Cyanide TCLP Soil		x	$35.04	=	$0.00	
Cyanide Total Soil		x	$42.55	=	$0.00	
Cyanide Water		x	$42.55	=	$0.00	
Iron TCLP Soil		x	$12.52	=	$0.00	
Iron Total Soil		x	$12.52	=	$0.00	
Iron Water		x	$15.02	=	$0.00	
Lead TCLP Soil	1	x	~~$20.01~~	=	~~$20.01~~	19.82
Lead Total Soil		x	$20.01	=	$0.00	
Lead Water		x	$22.53	=	$0.00	
Mercury TCLP Soil		x	$23.78	=	$0.00	
Mercury Total Soil		x	$12.52	=	$0.00	
Mercury Water		x	$32.54	=	$0.00	
Selenium TCLP Soil		x	$20.01	=	$0.00	
Selenium Total Soil		x	$20.01	=	$0.00	
Selenium Water		x	$18.77	=	$0.00	
Silver TCLP Soil		x	$12.52	=	$0.00	
Silver Total Soil		x	$12.52	=	$0.00	
Silver Water		x	$15.02	=	$0.00	
Metals TCLP Soil (a combination of all metals) RCRA		x	$128.91	=	$0.00	
Metals Total Soil (a combination of all metals) RCRA		x	$117.64	=	$0.00	
Metals Water (a combination of all metals) RCRA		x	$148.93	=	$0.00	
		x		=	$0.00	
		x		=	$0.00	
		x		=	$0.00	
		x		=	$0.00	
Other						
EnCore® Sampler, purge-and-trap sampler, or equivalent sampling device	38	x	~~$12.52~~	=	~~$475.76~~	12.39, 470.8
Sample Shipping per sampling event[1]	7	x	~~$62.58~~	=	~~$438.06~~	6 x 61.96 1 x 62.58

[1]A sampling event, at a minimum, is all samples (soil and groundwater) collected in a calendar day

Total Analytical Costs:	~~$15,862.39~~	3,737.84

Remediation & Disposal Costs Form

UST removal (01/28-29/2016)

A. Conventional Technology

Excavation, Transportation, and Disposal of contaminated soil and/or the 4-foot backfill material removal during early action activities:

Number of Cubic Yards	Cost per Cubic Yard ($)	Total Cost
~~1518~~ 1280	~~$71.34~~ 70.63	~~$108,294.12~~ 19,776.40

Backfilling the Excavation:

Number of Cubic Yards	Cost per Cubic Yard ($)	Total Cost
~~1839~~ 280	~~$25.03~~ 24.78	~~$46,030.17~~ 6,938.40

Overburden Removal and Return:

Number of Cubic Yards	Cost per Cubic Yard ($)	Total Cost
~~114~~ 313	~~$8.14~~ 8.06	~~$927.96~~ 2,522.78

B. Alternative Technology

Alternative Technology Selected:	
Number of Cubic Yards of Soil to Be Remediated	
Total Non-Consulting Personnel Costs Summary Sheet ($)	
Total Remediation Materials Costs Summary Sheet ($)	
Total Cost of the System	$0.00

Remediation & Disposal Costs Form

C. Groundwater Remediation and/or Free Product Removal System

Total Non-Consulting Personnel Costs Summary Sheet ($)	
Total Remediation Materials Costs Summary Sheet ($)	
Total Cost of the System	$0.00

D. Groundwater and/or Free Product Removal and Disposal UST removal (01/28-29/2016)

☐ Subpart H minimum payment amount applies.

Number of Gallons	Cost per Gallon ($)	Total Cost
~~26,700~~ 0	~~$0.85~~ 0.84	~~$22,695.00~~ 0.00

E. Drum Disposal MW-4R

☑ Subpart H minimum payment amount applies.

Number of Drums of Solid Waste	Cost per Drum ($)	Total Cost
1	$312.88	$312.88
	$312.88	$0.00
	$312.88	$0.00
Number of Drums of Liquid Waste	**Cost per Drum ($)**	**Total Cost**
	$187.74	$0.00
	$187.74	$0.00
	$187.74	$0.00
Total Drum Disposal Costs		$625.77

adjusted to reflect Subpart H minimum payment amount

Total Remediation and Disposal Costs:	~~**$178,573.02**~~ 29,237.58

UST Removal and Abandonment Costs Form 01/28-29/2016

Product Stored in UST	Size (gallons)	Abandoned or Removed	Cost ($)	Did UST have a release?
Unleaded Gasoline	12,000	Removed	~~$3,942.33~~	Yes ☑ No ☐
Unleaded Gasoline	12,000	Removed	~~$3,942.33~~	Yes ☑ No ☐
Unleaded Gasoline	12,000	Removed	~~$3,942.33~~	Yes ☑ No ☐
Diesel Fuel	12,000	Removed	~~$3,942.33~~	Yes ☑ No ☐
Kerosene	6,000	Removed	~~$3,942.33~~	Yes ☑ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
			$0.00	Yes ☐ No ☐
Total UST Removal and Abandonment Costs:				~~**$19,711.65**~~

3,903.3

0.00

Paving, Demolition, and Well Abandonment Costs Form

A. Concrete and Asphalt Placement/Replacement UST removal (01/28-29/2016)

Number of Square Feet	Asphalt or Concrete	Thickness (inches)	Cost ($) per Square Foot	Replacement or Placement for an Engineered Barrier	Total Cost
~~4,626~~ 1,956	Concrete	6	~~$5.47~~ 5.41	Replacement	~~$25,304.22~~ 10,581.9
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00
			$0.00		$0.00

Total Concrete and Asphalt Placement/Replacement Costs:	~~$25,304.22~~ 10,581.96

B. Building Destruction or Dismantling and Canopy Removal

Item to Be Destroyed, Dismantled, or Removed	Unit Cost ($)	Total Cost

Total Building Destruction or Dismantling and Canopy Removal Costs:	$0.00

Paving, Demolition, and Well Abandonment Costs Form

C. Well Abandonment MW-1 and MW-15: Unable to be located/destroyed.
MW-8: No boring log or construction diagram.

Monitoring Well ID #	Type of Well (HSA / PUSH / Recovery)	Depth of Well (feet)	Cost ($) per Foot	Total Cost	
~~MW-1~~	~~HSA~~	~~15.00~~	~~$12.52~~	~~$187.80~~	
MW-2	HSA	15.00	$12.52	$187.80	
MW-3	HSA	~~15.00~~	$12.52	~~$187.80~~	16,200.3
MW-4R	HSA	15.00	$12.52	$187.80	
MW-5	HSA	15.00	$12.52	$187.80	
MW-6	HSA	~~15.00~~	$12.52	~~$187.80~~	18,225.3
MW-7	HSA	~~15.00~~	$12.52	~~$187.80~~	14,175.2
~~MW-8~~	~~HSA~~	~~15.00~~	~~$12.52~~	~~$187.80~~	
MW-9	HSA	13.09	$12.52	$163.89	
MW-10	HSA	12.88	$12.52	$161.26	
MW-11	HSA	~~13.44~~	$12.52	~~$168.27~~	13.14,164.5
MW-12	HSA	12.95	$12.52	$162.13	
MW-13	HSA	13.34	$12.52	$167.02	
MW-14	HSA	13.17	$12.52	$164.89	
~~MW-15~~	~~HSA~~	~~13.14~~	~~$12.52~~	~~$164.51~~	
			$0.00	$0.00	
			$0.00	$0.00	
			$0.00	$0.00	
			$0.00	$0.00	
			$0.00	$0.00	
			$0.00	$0.00	
			$0.00	$0.00	
			$0.00	$0.00	
			$0.00	$0.00	

Total Monitoring Well Abandonment Costs:	~~$2,654.37~~	2,148.06
Total Paving, Demolition, and Well Abandonment Costs:	~~$27,958.59~~	12,730.02

Consulting Personnel Costs Form

Employee Name	Personnel Title	Hours	Rate ($)	Total Cost
Remediation Category	**Task**			
	Engineer III	25	$125.15	$3,128.75
CCAP	CA Plan- Design, Development & Management / Additional Info			
	Project Manager	30	$112.64	$3,379.20
CCAP	CA Plan - Preparation / Attachments			
	Project Manager	15	$112.64	$1,689.60
TACO 2 or 3	Tier 2 SRO Calculation IEPA Input Parameter Sheets / Additional Calculations			
	Senior Draftsperson/CAD	10	$75.08	$750.80
CCAP	CA Plan - Maps and Map Printing / Revised Maps Per IEPA PM			
	Project Manager	9	$112.64	$1,013.76
CCAP-Budget	CA Budget - Budget Development, Writing			
	Senior Project Manager	8.5	$125.15	$1,063.78
CCAP	CA Plan - Preparation, Management, Review & Comments			
	Senior Prof. Engineer	5	$162.70	$813.50
CCAP	CA Plan - Final Review & Certification			
	Senior Prof. Engineer	5	$162.70	$813.50
CCAP-Budget	CA Budget - Final Review & Certification			
	Senior Admin. Assistant	6	$56.32	$337.92
CCAP	CA Plan & Budget Production: copying, binding, filing and submittal to IEPA and client			
	Senior Project Manager	5	$125.15	$625.75
CCA-Field	Project Coordination - office time, project management, coordination			

13,616.56

Consulting Personnel Costs Form

UST Removal (01-20-21-2016), No CA claim yet

Employee Name	Personnel Title	Hours	Rate ($)	Total Cost
Remediation Category	**Task**			
	Senior Project Manager	105	123.91 ~~$125.15~~	~~$13,140.75~~ 13,010.55
CCA-Field	CA field prep and travel, UST removal oversight, remediation,soil sampling, truck coordination			0.00
	Project Manager	80	111.52 ~~$112.64~~	~~$9,011.20~~ 8,921.60
CCA-Field	CA field prep and travel, soil remediation, PID screening, field coodination, site restoration			0.00
	Project Manager	5	$112.64	$563.20
CCA-Field	Travel, Prep, Reinstall MW-4 oversight, boring log			
	Project Manager	9	$112.64	$1,013.76
CCA-Field	Data interpretation and results, tables			
	Senior Acct. Technician	40.25	$68.83	$2,770.41
CA-Pay	Billing Package (CAP Remediation) - Preparation & Assembly			
	Senior Prof. Geologist	5	$137.67	$688.35
CA-Pay	Billing Package (CAP Remediation) - Review & Certification			
	Senior Project Manager	7	$125.15	$876.05
CCA-Field	Travel, Prep and groundwater monitoring and sampling entre network			
	Project Manager	7	$112.64	$788.48
CCA-Field	Travel, Prep and groundwater monitoring and sampling entire network			
	Senior Project Manager	2	$125.15	$250.30
CA-Pay	Billing Package (GW Evaluation) - Management			

6,950.55

Unsure how many hours are associated with the USTremoval. Deduct all

Consulting Personnel Costs Form

Employee Name	Personnel Title	Hours	Rate ($)	Total Cost
Remediation Category	**Task**			
	Senior Acct. Technician	15	$68.83	$1,032.45
CA-Pay	Billing Package (GW Evaluation) - Preparation & Assembly			
	Senior Prof. Engineer	3	$162.70	$488.10
CA-Pay	Billing Package (GW Evaluation) - Review & Certification			
	Engineer III	9	$125.15	$1,126.35
TACO 2 or 3	Data Analysis - Extents Determination / Modeling			
	Project Manager	24	$112.64	$2,703.36
HAA	City and IDOT forms, negotiation, execution			
	Senior Project Manager	5	$125.15	$625.75
CACR	CACR - Design, Data Review			
	Project Manager	30	$112.64	$3,379.20
CACR	CACR Preparation - tables, writing			
		6	$0.00	$0.00
CACR	CACR Review and Certification			
		8	$0.00	$0.00
CACR	CACR & HAA Maps and Printing			

9,355.21

Consulting Personnel Costs Form

Employee Name	Personnel Title	Hours	Rate ($)	Total Cost
Remediation Category	**Task**			
		5	$0.00	$0.00
CACR	CACR Printing, Copying & Binding, Project Filing			
		15	$0.00	$0.00
CA-Pay	CACR and NFR Billing Package - Production			
		4	$0.00	$0.00
CA-Pay	CACR and NFR Billing Package - Review and Certification			
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00
			$0.00	$0.00

Total of Consulting Personnel Costs:	~~$52,074.26~~

29,922.32

Consultant's Materials Costs Form

UST Removal (01/28-29/2016)

Materials, Equipment or Field Purchase		Time or Amount Used	Rate ($)	Unit	Total Cost	
Remediation Category	**Description/Justification**					
Field Vehicle		~~1530~~	~~$0.54~~	Mile	~~$826.20~~	181.90
CCA-Field	UST Removal / Excavation (7 @ 170 RT) / Drilling (1 @ 170 RT / GW Sample 1 @ 170RT 1190 @ 0.54 340 @ 0.535					
Consultant Field & Decon Equip		~~7~~	~~$32.00~~	Day	~~$224.00~~	lack of do
CCA-Field	Supplies / Baggies / Sampling / Consultant Non Disposable Field Equipment					
PID		~~8~~	$85.00	Day	~~$680.00~~	0.00
CCA-Field	Soil Excavation (7) / Drilling (1)					
Consultant Latex Gloves		~~2~~	~~$12.00~~	Box	~~$24.00~~	lack of doc.
CCA-Field	Soil Remediation Sampling / GW Sampling					
Water Level Indicator		1	$30.00	Day	$30.00	
CCA-Field	GW Sampling					
NFR Recording Costs		1	$100.00	Each	$100.00	
CACR	Costs for recording NFR					
Magnetic Locator		2	$45.00	Day	$90.00	
CCA-Field	Locating Wells & Utilities					
Disposable Bailers & String		13	~~$8.00~~	Each	~~$104.00~~	lack of doc.
CCA-Field	Developing MW-4R (1) / Groudnwater Sampling (12)					
					$0.00	
					$0.00	

Consultant's Materials Costs Form

Materials, Equipment or Field Purchase	Time or Amount Used	Rate ($)	Unit	Total Cost
Remediation Category	**Description/Justification**			
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00

Total of Consultant Materials Costs:	~~$2,078.20~~ 401.90

Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form

I hereby certify that I intend to seek payment from the UST Fund for costs incurred while performing corrective action activities for Leaking UST incident 923441. I further certify that the costs set forth in this budget are for necessary activities and are reasonable and accurate to the best of my knowledge and belief. I also certify that the costs included in this budget are not for corrective action in excess of the minimum requirements of 415 ILCS 5/57, no costs are included in this budget that are not described in the corrective action plan, and no costs exceed Subpart H: Maximum Payment Amounts, Appendix D Sample Handling and Analysis amounts, and Appendix E Personnel Titles and Rates of 35 Ill. Adm. Code 732 or 734. I further certify that costs ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 732.606 or 734.630 are not included in the budget proposal or amendment. Such ineligible costs include but are not limited to:

Costs associated with ineligible tanks.
Costs associated with site restoration (e.g., pump islands, canopies).
Costs associated with utility replacement (e.g., sewers, electrical, telephone, etc.).
Costs incurred prior to IEMA notification.
Costs associated with planned tank pulls.
Legal fees or costs.
Costs incurred prior to July 28, 1989.
Costs associated with installation of new USTs or the repair of existing USTs.

RECEIVED
JAN 17 2017
IEPA/BOL

Owner/Operator: Illico Independent Oil Co.

Authorized Representative: David Golwitzer Title: President

Signature: Pres. Date: 1-12-17

Subscribed and sworn to before me the 12th day of January, 2017

(Notary Public) Seal:

OFFICIAL SEAL
JEFF WIENHOFF
Notary Public - State of Illinois
My Commission Expires 4/29/2018

In addition, I certify under penalty of law that all activities that are the subject of this plan, budget, or report were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan, budget, or report and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in the plan, budget, or report has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 732 or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

L.P.E./L.P.G. Jeff R. Wienhoff L.P.E./L.P.G. Seal:

L.P.E./L.P.G. Signature: Date: 1/16/17

Subscribed and sworn to before me the 16th day of January, 2017

(Notary Public) Seal:

D. EGGLESTON
OFFICIAL SEAL
Notary Public - State of Illinois
My Commission Expires
December 06, 2017

The Illinois EPA is authorized to require this information under 415 ILCS 5/1. Disclosure of this information is required. Failure to do so may result in the delay or denial of any budget or payment requested hereunder.

Office of the Illinois
State Fire Marshal
"Partnering With the Fire Service to Protect Illinois"

December 30, 2015

Illico, Incorporated
P.O. Box 280
Lincoln, IL 62656
Attn: Mr. Dave Golwitzer

In Re: Facility No. 3-007188
IEMA Incident No. 92-3441
Road Ranger #234
3712 N. University
Peoria, Peoria Co., IL

Dear Applicant:

The Reimbursement Eligibility and Deductible Application received on December 16, 2015 for the above referenced occurrence has been reviewed. The following determinations have been made based upon this review.

It has been determined that you are eligible to seek payment of costs in excess of $10,000. The costs must be in response to the occurrence referenced above and associated with the following tanks:

Eligible Tanks

Tank 1 12,000 gallon Gasoline
Tank 2 12,000 gallon Gasoline
Tank 3 12,000 gallon Gasoline
Tank 4 12,000 gallon Diesel Fuel
Tank 5 6,000 gallon Kerosene

You must contact the Illinois Environmental Protection Agency to receive a packet of Agency billing forms for submitting your request for payment.

An owner or operator is eligible to access the Underground Storage Tank Fund if the eligibility requirements are satisfied:

1. Neither the owner nor the operator is the United States Government,

2. The tank does not contain fuel which is exempt from the Motor Fuel Tax Law,

3. The costs were incurred as a result of a confirmed release of any of the following substances:

   "Fuel", as defined in Section 1.19 of the Motor Fuel Tax Law

   Aviation fuel

   Heating oil

Kerosene

Used oil, which has been refined from crude oil used in a motor vehicle, as defined in Section 1.3 of the Motor Fuel Tax Law.

4. The owner or operator registered the tank and paid all fees in accordance with the statutory and regulatory requirements of the Gasoline Storage Act.

5. The owner or operator notified the Illinois Emergency Management Agency of a confirmed release, the costs were incurred after the notification and the costs were a result of a release of a substance listed in this Section. Costs of corrective action or indemnification incurred before providing that notification shall not be eligible for payment.

6. The costs have not already been paid to the owner or operator under a private insurance policy, other written agreement, or court order.

7. The costs were associated with "corrective action".

This constitutes the final decision as it relates to your eligibility and deductibility. We reserve the right to change the deductible determination should additional information that would change the determination become available. An underground storage tank owner or operator may appeal the decision to the Illinois Pollution Control Board (Board), pursuant to Section 57.9 (c) (2). An owner or operator who seeks to appeal the decision shall file a petition for a hearing before the Board within 35 days of the date of mailing of the final decision, (35 Illinois Administrative Code 105.504(b)).

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

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

If you have any questions, please contact our Office at (217) 785-1020 or (217) 785-5878.

Sincerely,

Deanne Lock
Administrative Assistant
Division of Petroleum and Chemical Safety

cc: IEPA
Marlin Environmental, Inc.

Benanti, Trent

From: Jeff Wienhoff <jeffw@greenwavecon.com>
Sent: Tuesday, May 16, 2017 6:36 AM
To: Benanti, Trent
Cc: Joe Buhlig
Subject: [External] IEMA 923441

Trent,

Just a quick follow-up note prior to your manager's meeting today, as I was thinking more about our conversation overnight. The removal of the USTs was not only due to their previous history of leaking but additionally to access and remove highly contaminated soils including those in excess of Tier 2 Soil Saturation limits. Not sure if that is clearly spelled out in the CAP, but wanted to clarify it was necessary to complete soil remediaiton.

Thanks.

Jeff Wienhoff, P.E.
Green Wave Consulting, LLC
3900 Wood Duck Drive, Suite F
Springfield, IL 62711
Office: (217) 726-7569 x250
Cell: (217) 899-5486
www.greenwavecon.com

Benanti, Trent

From: Benanti, Trent
Sent: Tuesday, May 16, 2017 7:41 AM
To: jeffw@greenwavecon.com
Subject: Leaking UST Incident #923441

Mr. Wienhoff:

You sealed the Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form with your notary public seal, not your Licensed Professional Engineer seal. Please email a corrected Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form to me and place a hard copy in the mail.

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form

I hereby certify that I intend to seek payment from the UST Fund for costs incurred while performing corrective action activities for Leaking UST incident 923441. I further certify that the costs set forth in this budget are for necessary activities and are reasonable and accurate to the best of my knowledge and belief. I also certify that the costs included in this budget are not for corrective action in excess of the minimum requirements of 415 ILCS 5/57, no costs are included in this budget that are not described in the corrective action plan, and no costs exceed Subpart H: Maximum Payment Amounts, Appendix D Sample Handling and Analysis amounts, and Appendix E Personnel Titles and Rates of 35 Ill. Adm. Code 732 or 734. I further certify that costs ineligible for payment from the Fund pursuant to 35 Ill. Adm. Code 732.606 or 734.630 are not included in the budget proposal or amendment. Such ineligible costs include but are not limited to:

Costs associated with ineligible tanks.
Costs associated with site restoration (e.g., pump islands, canopies).
Costs associated with utility replacement (e.g., sewers, electrical, telephone, etc.).
Costs incurred prior to IEMA notification.
Costs associated with planned tank pulls.
Legal fees or costs.
Costs incurred prior to July 28, 1989.
Costs associated with installation of new USTs or the repair of existing USTs.

Owner/Operator: Illico Independent Oil Co.

Authorized Representative: David Golwitzer Title: President

Signature: [signature] Pres. Date: 1-12-17

Subscribed and sworn to before me the 12th day of Jan, 2017

[signature] (Notary Public) Seal: OFFICIAL SEAL JEFF WIENHOFF Notary Public - State of Illinois My Commission Expires 4/29/2018

In addition, I certify under penalty of law that all activities that are the subject of this plan, budget, or report were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan, budget, or report and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in the plan, budget, or report has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 732 or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

L.P.E./L.P.G. Jeff R. Wienhoff L.P.E./L.P.G. Seal: JEFFREY R. WIENHOFF 062-058441 LICENSED PROFESSIONAL ENGINEER OF ILLINOIS

L.P.E./L.P.G. Signature: [signature] Date:

Subscribed and sworn to before me the 16th day of January, 2017

[signature] (Notary Public) Seal: D. EGGLESTON OFFICIAL SEAL Notary Public - State of Illinois My Commission Expires December 06, 2017

The Illinois EPA is authorized to require this information under 415 ILCS 5/1. Disclosure of this information is required. Failure to do so may result in the delay or denial of any budget or payment requested hereunder.

Benanti, Trent

From: Jeff Wienhoff <jeffw@greenwavecon.com>
Sent: Tuesday, May 16, 2017 7:45 AM
To: Benanti, Trent
Subject: [External] RE: Leaking UST Incident #923441
Attachments: PE Cert w Stamp.pdf

Sorry about that. It is attached.

We will be dropping other things off today, so it will be delivered this afternoon.

Jeff Wienhoff, P.E.
Green Wave Consulting, LLC
3900 Wood Duck Drive, Suite F
Springfield, IL 62711
Office: (217) 726-7569 x250
Cell: (217) 899-5486
www.greenwavecon.com

From: Benanti, Trent [mailto:Trent.Benanti@Illinois.gov]
Sent: Tuesday, May 16, 2017 7:41 AM
To: Jeff Wienhoff <jeffw@greenwavecon.com>
Subject: Leaking UST Incident #923441

Mr. Wienhoff:

You sealed the Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form with your notary public seal, not your Licensed Professional Engineer seal. Please email a corrected Owner/Operator and Licensed Professional Engineer/Geologist Budget Certification Form to me and place a hard copy in the mail.

Sincerely,

Trent Benanti
Project Manager/Environmental Protection Engineer III
Illinois EPA – Leaking UST Section
Phone: (217) 524-4649
E-mail: trent.benanti@illinois.gov

Environmental Justice (EJ) Area Reporting Form for Leaking UST Program Sites

Reviewed By: Trent Benanti
Date Reviewed: 05/17/2017

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

For a site located in an **EJ area**, as defined on the EJ GIS map, the information listed below will be provided by the Leaking UST Section's assigned project manager to the EJ Officer as soon as possible ***upon receipt*** of all Corrective Action Plans (CAPs) and Completion Reports (CACRs). For subsequent amended CAPs, if no substantial change in remedial effort is proposed then an additional memo is not necessary.

Request for Review of Leaking UST Program Site Located in EJ Area	
Project Manager Name	Trent Benanti
BOL ID#	1430655263
Site Name	Illico Independent Oil Co.
Site Address (Street Address)	3712 N. University St.
Site City	Peoria
Site County	Peoria
UST Owner/Operator Name	Illico Independent Oil Co.
UST Owner/Operator Contact	Mr. David Golwitzer
UST Owner/Operator Phone	(217) 732-4193
Previous Use of Site	Industrial-commercial
Current/Proposed Use of Site	Industrial-commercial
Corrective Action	Tier 2 evaluation and excavation
Land Use after Corrective Action	Industrial-commercial
Engineered Barriers Used	N/A
Institutional Controls Used	Industrial-commercial land use limitation On-site groundwater use restriction Highway Authority Agreements
Contaminants of Concern	BTEX and PNAs
Is there off-site contamination as a result of the release?	Yes
Was site referred to CEG for Right-to-Know notifications? If yes, then have notifications been sent, and who is the assigned Community Relations Coordinator?	No
Other Relevant Information: Enforcement, citizen complaint, public interest, etc.	
Date Corrective Action Plan Received	01/17/2017
Date Request for Review Sent to EJ Officer	05/17/2017

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-3397
BRUCE RAUNER, GOVERNOR ALEC MESSINA, DIRECTOR

(217) 524-3300

CERTIFIED MAIL

7014 2120 0002 3286 8729

MAY 17 2017

Mr. David Golwitzer
Illico Independent Oil Co.
2201 Woodlawn Rd., Suite 600
Lincoln, IL 62656

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Dear Mr. Golwitzer:

The Illinois Environmental Protection Agency (Illinois EPA) has reviewed the Corrective Action Plan and Corrective Action Plan Budget submitted for the above-referenced incident. The Corrective Action Plan dated 01/16/2017 was received by the Illinois EPA on 01/17/2017. The Corrective Action Plan Budget is located in ATTACHMENT 2 of the Corrective Action Plan.

Pursuant to Subsections 57.7(b)(2) and 57.7(c) of the Environmental Protection Act [(415 ILCS 5) (Act)] and 35 Illinois Administrative Code (35 Ill. Adm. Code) 734.505(b) and 734.510(a), the Corrective Action Plan is modified. The Illinois EPA has determined that the modifications listed in Attachment A of this letter are necessary to demonstrate compliance.

Pursuant to Subsections 57.7(b)(3) and 57.7(c) of the Act and 35 Ill. Adm. Code 734.505(b) and 734.510(b), the Corrective Action Plan Budget is modified. Based on the modifications listed in Section 2 of Attachment B of this letter, the Corrective Action Plan Budget is approved for the amounts listed in Section 1 of Attachment B of this letter. However, it should be noted that the amount of payment from the Underground Storage Tank Fund (Fund) may be limited by Subsections 57.7(c), 57.8(d), 57.8(e), and 57.8(g) of the Act, as well as 35 Ill. Adm. Code 734.630 and 734.655.

Pursuant to Subsection 57.8(a)(5) of the Act, if payment from the Fund will be sought for any additional costs that may be incurred as a result of the Illinois EPA's modifications, an amended Corrective Action Plan Budget must be submitted and approved prior to the issuance of a No Further Remediation (NFR) Letter. Costs that have not been approved prior to the issuance of an NFR Letter will not be paid from the Fund.

Pursuant to 35 Ill. Adm. Code 734.145, the owner/operator must notify the Illinois EPA of the corrective action field activities prior to the date the field activities take place. This notification must include a description of the field activities to be conducted; the name of the person

conducting the field activities; and the date, time, and place the field activities will be conducted. This notification may be done by facsimile or electronic mail and must be provided at least two weeks prior to the scheduled field activities.

Pursuant to Subsections 57.7(b), 57.12(c), and 57.12(d) of the Act and 35 Ill. Adm. Code 734.100 and 734.125, the Illinois EPA requires that a Corrective Action Completion Report be submitted within 30 days after completion of the Corrective Action Plan to:

Illinois Environmental Protection Agency
Bureau of Land - #24
Leaking Underground Storage Tank Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276

Please submit all correspondence in duplicate and include the Re: block shown at the beginning of this letter.

An underground storage tank system owner/operator may appeal this decision to the Illinois Pollution Control Board. Appeal rights are attached.

If you have any questions or need assistance, please contact Trent Benanti at (217) 524-4649.

Sincerely,

Michael T. Lowder
Unit Manager
Leaking Underground Storage Tank Section
Division of Remediation Management
Bureau of Land

Attachments (3): Attachment A
Attachment B
Appeal Rights

c: BOL File

Attachment A

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

The modifications listed below are necessary to demonstrate compliance.

1) The Corrective Action Plan contains errors. Please contact Trent Benanti at (217) 524-4649 for more details, and correct the errors.

2) The indicator contaminants for Leaking UST Incident #923441 shall be benzene, toluene, ethylbenzene, and total xylenes (collectively referred to as BTEX) and polynuclear aromatic hydrocarbons (PNAs).

3) The mass-limit acreage shall be 2 acres.

4) The exposure interval for the mass-limit volatization factor (T_{M-L}) for the industrial-commercial population shall be 25 yr. The exposure interval for the mass-limit volatization factor (T_{M-L}) for the construction worker population shall be 1 yr.

5) The dry soil bulk density (ρ_b) shall be 1.684 g/cm^3.

6) The Tier 2 remediation objectives for benzene for the outdoor inhalation exposure route for the residential, industrial-commercial, and construction worker populations shall be 16,400 µg/kg, 31,400 µg/kg, and 44,200 µg/kg, respectively.

7) The calculated soil saturation limits for toluene, ethylbenzene, and total xylenes shall be 1,607,000 µg/kg, 1,009,000 µg/kg, and 806,000 µg/kg, respectively.

8) The Tier 2 remediation objectives for ethylbenzene, total xylenes, and naphthalene for the soil component of the groundwater ingestion exposure route shall be 83,000 µg/kg, 806,000 µg/kg, and 26,000 µg/kg, respectively.

9) The Tier 2 remediation objectives for total xylenes for the outdoor inhalation exposure route for the residential, industrial-commercial, and construction worker populations shall be 806,000 µg/kg, 806,000 µg/kg, and 600,000 µg/kg.

10) The Tier 2 remediation objective for naphthalene for the outdoor inhalation exposure route for the construction worker population shall be 11,000 µg/kg.

11) The owner/operator shall remove the soil samples collected from SB-4, SB-5, SB-9, SB-10, MW-6, and MW-7 from TABLE I.

12) The owner/operator shall not remove the underground storage tanks (USTs), piping, and pump islands because the owner/operator has not demonstrated that the USTs, piping, and pump islands must be removed to access backfill/soil that contains contaminants at concentrations greater than the Tier 2 remediation objectives.

13) The owner/operator may excavate, transport, and dispose of 280 yd^3 of soil.

a) The owner/operator may excavate, transport, and dispose of the bottom 3' of soil in the green zone. See FIGURE 2 and FIGURE 3.

b) The owner/operator shall return the top 5' of soil in the green zone to the excavation. See FIGURE 2 and FIGURE 3.

c) The owner/operator may excavate, transport, and dispose of the bottom 4' of soil in the blue zone. See FIGURE 2 and FIGURE 3.

d) The owner/operator shall return the top 4' of soil in the blue zone to the excavation. See FIGURE 2 and FIGURE 3.

e) The owner/operator shall not excavate, transport, and dispose of the backfill/soil in the orange zone because the owner/operator has not demonstrated that the backfill/soil in the orange zone contains contaminants at concentrations greater than the Tier 2 remediation objectives. See FIGURE 2 and FIGURE 3.

14) Where the excavation is 8' deep, the owner/operator shall collect samples from the excavation floor.

a) The Corrective Action Plan states that the contractor was able to excavate to 8' below ground surface (BGS) without making significant contact with the saturated zone.

15) The owner/operator shall return 313 yd^3 of soil to the excavation.

a) The owner/operator shall return the top 5' of soil in the green zone to the excavation. See FIGURE 2 and FIGURE 3.

b) The owner/operator shall return the top 4' of soil in the blue zone to the excavation. See FIGURE 2 and FIGURE 3.

16) The owner/operator may purchase, transport, and place 280 yd^3 of clean backfill. See items #12, #13, and #15 above.

17) The owner/operator may replace 1,956 ft^2 of concrete.

a) The owner/operator may replace 616 ft^2 of concrete over the green zone. See FIGURE 2 and FIGURE 3.

b) The owner/operator may replace 1,340 ft^2 of concrete over the blue zone. See FIGURE 2 and FIGURE 3.

c) The owner/operator shall not replace 2,670 ft^2 of concrete over the orange zone because the owner/operator has not demonstrated that the USTs, piping, and pump islands must be removed to access backfill/soil that contains contaminants at concentrations greater than the Tier 2 remediation objectives. See FIGURE 2 and FIGURE 3.

18) The owner/operator shall demonstrate that the concentrations of the organic contaminants of concern remaining in the soil will not exceed the attenuation capacity of the soil.

19) The proposed institutional controls shall cover the modeled extent of the groundwater contamination.

a) FIGURE 5A and FIGURE 5B, which were attached to the email dated 04/08/2016, show the modeled extent of the groundwater contamination. According to said site maps, the modeled extent of the groundwater contamination includes more than N. University St., W. War Memorial Dr., and 3721 N. University St. However, the Corrective Action Plan states that the owner/operator will pursue Highway Authority Agreements (HAAs) with the City of Peoria and the Illinois Department of Transportation (IDOT) for N. University St. and W. War Memorial Dr. In addition, the owner/operator will demonstrate an inability to obtain access to 3721 N. University St. despite best efforts.

b) The proposed institutional controls shown on FIGURE 2 do not cover the modeled extent of the groundwater contamination.

20) The owner/operator shall submit the Corrective Action Completion Report to the Illinois Environmental Protection Agency (Illinois EPA) on a current version of the technical form. The owner/operator shall fill out the technical form, save the technical form to his/her local drive, print the technical form, and sign the technical form. The owner/operator shall not retype the technical form.

a) The owner/operator submitted the Corrective Action Plan to the Illinois EPA on an outdated version of the technical form.

b) The owner/operator retyped the technical form.

21) The owner/operator may abandon the following monitoring wells after receipt of the No Further Remediation (NFR) Letter: MW-2, MW-3, MW-4R, MW-5, MW-6, MW-7, MW-9, MW-10, MW-11, MW-12, MW-13, and MW-14.

a) Monitoring wells MW-1 and MW-15 cannot be located or have been destroyed.

b) The Illinois EPA does not have a soil boring log or monitoring well construction diagram for MW-8. Therefore, said monitoring well has not been used to investigate Leaking UST Incident #923441.

Attachment B

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Section 1

Based on the modifications listed in Section 2 of this Attachment B, the Corrective Action Plan Budget is approved for the following amounts:

$ 2,187.20	Drilling and Monitoring Well Costs
$ 3,737.84	Analytical Costs
$29,237.58	Remediation and Disposal Costs
$ 0.00	UST Removal and Abandonment Costs
$12,730.02	Paving, Demolition, and Well Abandonment Costs
$29,922.32	Consulting Personnel Costs
$ 401.90	Consultant's Materials Costs

Handling charges will be determined at the time a billing package is reviewed by the Illinois Environmental Protection Agency (Illinois EPA). The amount of allowable handling charges will be determined in accordance with Subsection 57.1(a) of the Environmental Protection Act [(415 ILCS 5) (Act)] and 35 Illinois Administrative Code (35 Ill. Adm. Code) 734.635.

Section 2

1) The approved corrective action does not include removal of the underground storage tanks (USTs), piping, pump islands, or backfill/soil in the orange zone, and the Illinois EPA is unable to determine how many of the thirty-eighty budgeted soil samples are associated with removal of the USTs, piping, pump islands, and backfill/soil in the orange zone. Therefore, the Illinois EPA deducted all of the budgeted soil samples. Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Underground Storage Tank Fund (Fund).

2) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The soil samples were collected between 07/01/2015 and 06/30/2016. Therefore, the applicable maximum payment amount for BTEX analysis shall be $105.33/analysis.

3) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The soil samples were collected between 07/01/2015 and 06/30/2016. Therefore, the applicable maximum payment amount for PNA analysis shall be $188.36/analysis.

4) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The soil samples were collected between 07/01/2015 and 06/30/2016. Therefore, the applicable maximum payment amount for an Encore® Sampler, purge-and-trap sampler, or equivalent sampling device shall be $12.39/sampler.

5) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The waste characterization sample was collected between 07/01/2015 and 06/30/2016. Therefore, the applicable maximum payment amount for flash point or ignitability analysis shall be $40.88/analysis.

   The Illinois EPA reduced the unit rate for flash point or ignitability analysis to $40.88/analysis. Pursuant to 35 Ill. Adm. Code 734.630(zz), costs that exceed the maximum payment amounts set forth in 35 Ill. Adm. Code 734.Subpart H are ineligible for payment from the Fund. In addition, such costs are not approved because they are not reasonable (Subsection 57.7(c)(3) of the Act).

6) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The waste characterization sample was collected between 07/01/2015 and 06/30/2016. Therefore, the applicable maximum payment amount for paint filter (free liquids) analysis shall be $17.35/analysis.

   The Illinois EPA reduced the unit rate for paint filter (free liquids) analysis to $17.35/analysis. Pursuant to 35 Ill. Adm. Code 734.630(zz), costs that exceed the maximum payment amounts set forth in 35 Ill. Adm. Code 734.Subpart H are ineligible for payment from the Fund. In addition, such costs are not approved because they are not reasonable (Subsection 57.7(c)(3) of the Act).

7) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The waste characterization sample was collected between 07/01/2015 and 06/30/2016. Therefore, the applicable maximum payment amount for soil preparation for TCLP metals analysis shall be $97.89/sample.

   The Illinois EPA reduced the unit rate for soil preparation for TCLP metals analysis to $97.89/sample. Pursuant to 35 Ill. Adm. Code 734.630(zz), costs that exceed the maximum payment amounts set forth in 35 Ill. Adm. Code 734.Subpart H are ineligible for payment from the Fund. In addition, such costs are not approved because they are not reasonable (Subsection 57.7(c)(3) of the Act).

8) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The waste characterization sample was collected between 07/01/2015 and 06/30/2016. Therefore, the applicable maximum payment amount for TCLP lead analysis shall be $19.82/analysis.

   The Illinois EPA reduced the unit rate for TCLP lead analysis to $19.82/analysis. Pursuant to 35 Ill. Adm. Code 734.630(zz), costs that exceed the maximum payment amounts set forth in 35 Ill. Adm. Code 734.Subpart H are ineligible for payment from the Fund. In addition, such costs are not approved because they are not reasonable (Subsection 57.7(c)(3) of the Act).

9) The approved corrective action does not include removal of the USTs, piping, pump islands, or backfill/soil in the orange zone, and the Illinois EPA is unable to determine how many of the six budgeted soil sampling events are associated with removal of the USTs, piping, pump islands, and backfill/soil in the orange zone. Therefore, the Illinois EPA deducted the sample shipping costs associated with all of the budgeted soil sampling events. Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Fund.

10) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The soil samples were collected between 07/01/2015 and 06/30/2016. Therefore, the applicable maximum payment amount for sample shipping shall be $61.96/soil sampling event.

11) The approved corrective action includes excavation, transportation, and disposal of 280 yd^3 of soil. However, the Remediation & Disposal Costs Form includes costs associated with excavation, transportation, and disposal of 1,518 yd^3 of soil. Therefore, the Illinois EPA deducted costs associated with excavation, transportation, and disposal of 1,238 yd^3 of soil. Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Fund.

12) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The excavation, transportation, and disposal of soil were completed between 07/01/2015 and 06/30/2016. Therefore, the applicable maximum payment amount for excavation, transportation, and disposal of soil shall be $70.63/yd^3$.

The Illinois EPA reduced the unit rate for excavation, transportation, and disposal of soil to $70.63/yd^3$. Pursuant to 35 Ill. Adm. Code 734.630(zz), costs that exceed the maximum payment amounts set forth in 35 Ill. Adm. Code 734.Subpart H are ineligible for payment from the Fund. In addition, such costs are not approved because they are not reasonable (Subsection 57.7(c)(3) of the Act).

13) The approved corrective action includes the purchase, transportation, and placement of 280 yd^3 of clean backfill. However, the Remediation & Disposal Costs Form includes costs associated with the purchase, transportation, and placement of 1,839 yd^3 of soil. Therefore, the Illinois EPA deducted costs associated with the purchase, transportation, and placement of 1,559 yd^3 of clean backfill. Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Fund.

14) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The purchase, transportation, and placement of clean backfill were completed between 07/01/2015 and 06/30/2016. Therefore, the applicable maximum payment amount for the purchase, transportation, and placement of clean backfill shall be $24.78/yd^3$.

The Illinois EPA reduced the unit rate for the purchase, transportation, and placement of clean backfill to $24.78/yd^3$. Pursuant to 35 Ill. Adm. Code 734.630(zz), costs that exceed the maximum payment amounts set forth in 35 Ill. Adm. Code 734.Subpart H are ineligible for payment from the Fund. In addition, such costs are not approved because they are not reasonable (Subsection 57.7(c)(3) of the Act).

15) The approved corrective action includes the return of 313 yd^3 of soil to the excavation. However, the Remediation & Disposal Costs Form includes costs associated with the return of 114 yd^3 of soil to the excavation. Therefore, the Illinois EPA added costs associated with the return of 199 yd^3 of soil to the excavation.

16) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The overburden was returned to the excavation between 07/01/2015 and 06/30/2016. Therefore, the applicable maximum payment amount for the return of overburden to the excavation shall be $8.06/yd^3$.

The Illinois EPA reduced the unit rate for the return of overburden to the excavation to $8.06/yd^3$. Pursuant to 35 Ill. Adm. Code 734.630(zz), costs that exceed the maximum payment amounts set forth in 35 Ill. Adm. Code 734.Subpart H are ineligible for payment from the Fund. In addition, such costs are not approved because they are not reasonable (Subsection 57.7(c)(3) of the Act).

17) According to the Corrective Action Plan, the contractor was able to excavate to 8' below ground surface (BGS) without making significant contact with the saturated zone. Therefore, all of the budgeted groundwater removal and disposal costs are associated with removal of the USTs, piping, pump islands, and backfill/soil in the orange zone. The approved corrective action does not include removal of the USTs, piping, pump islands, or backfill/soil in the orange zone. Therefore, the Illinois EPA deducted all of the budgeted groundwater removal and disposal costs. Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Fund.

18) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The groundwater was removed and disposed of between 07/01/2015 and 06/30/2016. Therefore, the applicable maximum payment amount for removal and disposal of groundwater shall be $0.84/gal.

19) The approved corrective action does not include removal of the USTs, piping, pump islands, or backfill/soil in the orange zone. Therefore, the Illinois EPA deducted the costs associated with removal of the USTs. Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Fund.

20) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The USTs were removed on 01/28/2016 and 01/29/2016. Therefore, the applicable maximum payment amount for UST removal shall be $3,903.30/UST.

21) The approved corrective action includes replacement of 1, 956 ft^2 of concrete. However, the Paving, Demolition, and Well Abandonment Costs Form includes costs associated with replacement of 4,626 ft^2 of concrete. Therefore, the Illinois EPA deducted costs associated with replacement of 2,670 ft^2 of concrete. Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Fund.

22) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The concrete was replaced between 07/01/2015 and 06/30/2016. Therefore, the applicable maximum payment amount for replacement of concrete shall be $5.41/ft^2$.

The Illinois EPA reduced the unit rate for replacement of concrete to $5.41/ft^2$. Pursuant to 35 Ill. Adm. Code 734.630(zz), costs that exceed the maximum payment amounts set forth in 35 Ill. Adm. Code 734.Subpart H are ineligible for payment from the Fund. In addition, such costs are not approved because they are not reasonable (Subsection 57.7(c)(3) of the Act).

23) The Illinois EPA approved well abandonment costs associated with the following wells:

Monitoring Well ID	Depth (ft)
MW-2	15.00
MW-3	16.00
MW-4R	15.00
MW-5	15.00
MW-6	18.00
MW-7	14.00
MW-9	13.09
MW-10	12.88
MW-11	13.14
MW-12	12.95
MW-13	13.34
MW-14	13.17

Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Fund. In addition, pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.630(cc), costs that lack supporting documentation are ineligible for payment from the Fund.

24) The approved corrective action does not include removal of the USTs, piping, pump islands, or backfill/soil in the orange zone, and the Illinois EPA is unable to determine how many of the one hundred five budgeted senior project manager hours are associated with removal of the USTs, piping, pump islands, and backfill/soil in the orange zone. Therefore, the Illinois EPA deducted all one hundred five budgeted senior project manager hours. Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Fund.

25) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The USTs were removed on 01/28/2016 and 01/29/2016. Therefore, the applicable maximum payment amount for a senior project manager shall be $123.91/hr.

26) The approved corrective action does not include removal of the USTs, piping, pump islands, or backfill/soil in the orange zone, and the Illinois EPA is unable to determine how many of the eighty budgeted project manager hours are associated with removal of the USTs, piping, pump islands, and backfill/soil in the orange zone. Therefore, the Illinois EPA deducted all eighty budgeted project manager hours. Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Fund.

27) Pursuant to 35 Ill. Adm. Code 734.870(d)(2), for costs not approved by the Illinois EPA in writing prior to the date the costs are incurred, the applicable maximum payment amounts must be the amounts in effect on the date the costs were incurred. The USTs were removed on 01/28/2016 and 01/29/2016. Therefore, the applicable maximum payment amount for a project manager shall be $111.52/hr.

28) The Consultant's Materials Costs Form contains costs associated with the following materials, activities, and services that do not have maximum payment amounts set forth in 35 Ill. Adm. Code 734.Subpart H: mileage, field and decon equipment, photoionization detector (PID), latex gloves, water level indicator, No Further Remediation (NFR) Letter recording costs, magnetic locator, and disposable bailers and string. Pursuant to 35 Ill. Adm. Code 734.850(b), the maximum payment amounts for materials, activities, and services that do not have maximum payment amounts set forth in other Sections of 35 Ill. Adm. Code 734.Subpart H must be determined by the Illinois EPA on a site-specific basis, and the owner/operator must demonstrate to the Illinois EPA that the costs being sought are reasonable.

When the owner/operator has not provided supporting documentation to justify the unit rate for the mileage, the Illinois EPA will reduce the unit rate for the mileage to $0.535/mi. The owner/operator has not provided supporting documentation to justify the unit rate for the mileage. Therefore, the Illinois EPA reduced the unit rate for the mileage to $0.535/mi.

When the owner/operator has not provided supporting documentation to justify the unit rates for the field and decon equipment, PID, latex gloves, water level indicator, magnetic locator, and disposable bailers and string, the Illinois EPA may deduct the costs. The owner/operator has not provided supporting documentation to justify the unit rates for the field and decon equipment, PID, latex gloves, water level indicator, magnetic locator, and disposable bailers and string. Therefore, the Illinois EPA deducted the costs associated with the field and decon equipment, latex gloves, and disposable bailers and string. The Illinois EPA did not deduct the costs associated with the water level indicator and magnetic locator because the Illinois EPA determined that the costs being sought are reasonable. Please note that the Illinois EPA determined that the unit rate for the PID is reasonable. However, the Illinois EPA deducted the costs associated with the PID for the reason listed in item #31 below.

The Illinois EPA did not deduct the NFR Letter recording costs because the owner/operator will have to provide receipts as part of the billing package.

29) The approved corrective action does not include removal of the USTs, piping, pump islands, or backfill/soil in the orange zone, and the Illinois EPA is unable to determine how many of the seven budgeted round trips are associated with removal of the USTs, piping, pump islands, and backfill/soil in the orange zone. Therefore, the Illinois EPA deducted all seven budgeted round trips. Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Fund.

30) The approved corrective action does not include removal of the USTs, piping, pump islands, or backfill/soil in the orange zone., and the Illinois EPA is unable to determine how many of the budgeted field and decon equipment days are associated with removal of the USTs, piping, pump islands, and backfill/soil in the orange zone. Therefore, the Illinois EPA deducted all of the budgeted field and decon equipment days. Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Fund.

31) The approved corrective action does not include removal of the USTs, piping, pump islands, or backfill/soil in the orange zone, and the Illinois EPA is unable to determine how much of the budgeted PID costs are associated with removal of the USTs, piping, pump islands, and backfill/soil in the orange zone. Therefore, the Illinois EPA deducted all of the budgeted PID costs. Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Fund.

32) The approved corrective action does not include removal of the USTs, piping, pump islands, or backfill/soil in the orange zone, and the Illinois EPA is unable to determine how many of the budgeted latex gloves are associated with removal of the USTs, piping, pump islands, and backfill/soil in the orange zone. Therefore, the Illinois EPA deducted all of the budgeted latex gloves. Pursuant to Subsection 57.7(c)(3) of the Act and 35 Ill. Adm. Code 734.510(b), costs that are inconsistent with the associated technical plan are ineligible for payment from the Fund.

Appeal Rights

Pursuant to Section 40 and Subsection 57.7(c)(4) of the Environmental Protection Act [(415 ILCS 5) (Act)], an underground storage tank owner/operator may appeal this final decision to the Illinois Pollution Control Board 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 owner/operator and the Illinois EPA within the initial 35-day appeal period. If the owner/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 filing of an appeal, please contact:

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

For information regarding the filing of 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

2016/01/29 Email

- FIGURE 2 (SITE AREA FEATURES MAP)

2016/04/04 Email #4

- FIGURE 1 (SURROUNDING LAND USAGE MAP)
- FIGURE 2A (SITE AREA FEATURES MAP – SOIL): Did not remove monitoring wells MW-5, MW-6, and MW-7.
- FIGURE 2B (SITE AREA FEATURES MAP – GROUNDWATER)
- FIGURE 4 (GROUNDWATER CONTOUR & FLOW MAP)

2016/04/04 Email #14

- FIGURE 3 (GEOLOGICAL CROSS SECTION MAP)

2016/04/05 Email

- Use a hydraulic conductivity of 4.64×10^{-4} cm/s in the Tier 2 calculations.
- The dry soil bulk density is 1.684 g/cm^3.

2016/04/05 Email #2

- SSL Input Parameters for Use with Tier 2 Calculations
- RBCA Input Parameters for Use with Tier 2 Calculations

2016/04/06 Email

- Comments regarding the SSL Input Parameters for Use with Tier 2 Calculations and RBCA Input Parameters for Use with Tier 2 Calculations

2016/04/08 Email

- FIGURE 5A (EQUATION R26 MODELED EXTENTS MAP – SOIL)
- FIGURE 5B (SITE AREA FEATURES MAP – GROUNDWATER): EQUATION R26 MODELED EXTENTS MAP – GROUNDWATER

PROJECT LABOR AGREEMENT DETERMINATION

Reviewed By: Trent Benanti
Date Reviewed: 05/17/2017

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

Documents Reviewed:

The Corrective Action Plan dated 01/16/2017 was received by the Illinois EPA on 01/17/2017. The Corrective Action Plan Budget is located in ATTACHMENT 2 of the Corrective Action Plan.

Corrective Action Plan Information (Field Work):

1) Excavate and return 313 yd^3 of overburden.

2) Excavate, transport, and dispose of 280 yd^3 of soil.

3) Purchase, transport, and place 280 yd^3 of clean backfill.

4) Replace 1,956 ft^2 of 6" concrete.

5) Install replacement monitoring well MW-4R to 15' below ground surface (BGS).

6) Collect groundwater samples from replacement monitoring well MW-4R and eleven existing monitoring wells.

7) Abandon replacement monitoring well MW-4R and eleven existing monitoring wells after receipt of the No Further Remediation (NFR) Letter.

Payment from the Underground Storage Tank Fund (Fund) will be requested. Pursuant to Subsection 57.7(c)(3) of the Environmental Protection Act [(415 ILCS 5) (Act)], the following considerations are made in determining whether the corrective action shall include a project labor agreement (PLA):

☐ 1) The use of a PLA will advance the State's interest in reducing costs paid from the Fund.

☐ 2) The use of a PLA will advance the State's interest in efficiency, timeliness, and quality of work.

☐ 3) The use of a PLA will advance the State's interest in promoting safety.

☐ 4) The use of a PLA will advance the State's interest in labor continuity and stability.

☐ 5) The use of a PLA will advance the State's interest in work performed by a skilled labor force.

☐ 6) The use of a PLA will provide for timely completion of the work, thereby reducing the threat to human health and the environment that would result from delays.

☐ 7) The use of a PLA will advance the State's interest in women and minority-owned business enterprises and female and minority employment.

COMMENTS :

The Illinois EPA has determined that the corrective action:

☐ shall include a PLA.

☐ shall not include a PLA.

Greg Dunn

Right-to-Know Evaluation

Re: LPC #1430655263 – Peoria County
Peoria/Illico Independent Oil Co.
3712 N. University St.
Leaking UST Incident #923441
Leaking UST Technical File

The above-referenced Bureau of Land site has been evaluated. A check mark next to any one of the criteria listed below indicates that further evaluation of the site is necessary.

☐ The measured or modeled concentration of a contaminant of concern in groundwater within the setback zone or regulated recharge area of a community water supply (CWS) well or setback zone of a potable water supply well other than a CWS well exceeds the applicable Tier 1 remediation objective under 35 Ill. Adm. Code 742.APPENDIX B. TABLE E or the applicable groundwater quality standard under 35 Ill. Adm. Code 620; or

☐ Five or fewer properties ☐ More than five properties

☐ The concentration of a contaminant of concern in soil within the setback zone or regulated recharge area of a community water supply (CWS) well or setback zone of a potable water supply well other than a CWS well exceeds the applicable Tier 1 remediation objective under 35 Ill. Adm. Code 742.APPENDIX B. TABLE A or 35 Ill. Adm. Code 742.APPENDIX B. TABLE B for the soil component of the groundwater ingestion exposure route, and the projected concentration of the contaminant of concern migrating from the soil to the groundwater exceeds the applicable Tier 1 remediation objective under 35 Ill. Adm. Code 742.APPENDIX B. TABLE E or the applicable groundwater quality standard under 35 Ill. Adm. Code 620; or

☐ Five or fewer properties ☐ More than five properties

☐ The concentration of a contaminant of concern in soil outside of the setback zone or regulated recharge area of a community water supply (CWS) well or setback zone of a potable water supply well other than a CWS well exceeds the applicable Tier 1 remediation objective under 35 Ill. Adm. Code 742.APPENDIX B. TABLE A or 35 Ill. Adm. Code 742.APPENDIX B. TABLE B for the soil component of the groundwater ingestion exposure route, and the projected concentration of the contaminant of concern migrating from the soil to the groundwater is modeled to exceed the applicable Tier 1 remediation objective under 35 Ill. Adm. Code 742.APPENDIX B. TABLE E or the applicable groundwater quality standard under 35 Ill. Adm. Code 620 within the setback zone or regulated recharge area of a CWS well or setback zone of a potable water supply well other than a CWS well; or

☐ Five or fewer properties ☐ More than five properties

☐ The concentration of a contaminant of concern in soil beyond the boundary of the site where the release occurred exceeds the applicable Tier 1 remediation objectives under 35 Ill. Adm. Code 742.APPENDIX B. TABLE A or 35 Ill. Adm. Code 742.APPENDIX B. TABLE B, based on the current use of the off-site property; or

☐ Five or fewer properties ☐ More than five properties

☐ The measured concentration of a volatile contaminant of concern in groundwater beyond the boundary of the site where the release occurred exceeds the applicable Tier 1 remediation objective under 35 Ill. Adm. Code 742.APPENDIX B. TABLE H, based on the current use of the off-site property; or

☐ Five or fewer properties ☐ More than five properties

☐ The measured concentration of a volatile contaminant of concern in soil gas beyond the boundary of the site where the release occurred exceeds the applicable Tier 1 remediation objective under 35 Ill. Adm. Code 742.APPENDIX B. TABLE H, based on the current use of the off-site property; or

☐ Five or fewer properties ☐ More than five properties

☐ The Bureau of Land has referred the site to the Division of Legal Counsel for enforcement under Subsection 43(a) of the Act; or

☐ The Bureau of Land has referred the site to the Division of Legal Counsel for issuance of a seal order Subsection 34(a) of the Act.

Right-to-Know Status

☐ One or more of the above criteria is met; therefore, further evaluation of the site is necessary.

☐ The Illinois EPA does not have sufficient information to complete the initial RTK evaluation.

☑ None of the above criteria are met; therefore, further evaluation of the site is unnecessary.

Project Manager Signature:________________________ **Date:____________________**

IEMA date: 12/03/1992
Tank #3 abandoned: 05/09/2012
Tank Numbers 1, 2, 3, 4, 5, ~~and 6~~ removed: 01/28-29/2016
Tank Numbers 6, 7, and 8 installed 02/10/2016
- Same location as previous USTs

41' from USTs
SB-15 (5'-6')
SB-17 (6'-7') / SB-31 (4'-6')
17' from USTs 26' from USTs

?

Remove 5 USTs
+ 1309 yd^3 ETD
+ 313 yd^3 Overburden
+ 1630 yd^3 Backfill

Would've requested that O/O fine-tune the extent of soil > Tier 2.

CAP dated 12/14/2015 proposed a construction worker caution. If CAP dated 01/16/2017 proposed, SB-17 (6'-7') would not need to be excavated. Benzene < 1,200 ppb.

If USTs were leaking, would you wait 23+ years to remove them?

May remove USTs, piping, visibly contaminated fill material w/in 4', and groundwater in the excavation that exhibits a sheen. May also abandon USTs as part of early action. After early action, must demonstrate that removal is necessary and get removal approved as part of a CAP.

- Need 45-Day Report for 20160095.
- Determine if 20160095 is a re-reporting.
- May pay for ~~backfill~~ removal w/in 4' if 20160095 is not a re-reporting, i.e., there is reason to believe that a new release occurred.
- Wouldn't pay for UST removal bc it was a planned removal.
- 20160095 reported in response to UST removal.

Division of Petroleum & Chemical Safety

Facility Details

Facility

Facility Number:	3007188
Facility Name:	Marathon
Address:	3712 N. Uniuversity Street Peoria, IL 61614
County:	Peoria
Status:	Active

Owners for this Facility

Owner Number	Owner Name	Owner Status	Purchase Date
U0038432	HD Properties of Peoria, Inc.	Current Owner	8/12/2016
U0035623	Paras Gasoline, Inc.	Former Owner	7/15/2009
U0024842	First Ranger Petroleum, L.L.C.	Former Owner	8/28/2003
U0007457	Illico Incorporated	Former Owner	1/1/1981
U0033990	Road Ranger, LLC	Former Owner	
U0003073	Clark Retail Enterprises, Inc.	Former Owner / Operator	11/22/1988
U0029789	Clark Retail Enterprises, Inc.	Former Owner / Operator	
U0028787	Clark Retail Enterprises, Inc.,	Former Owner / Operator	

Owners for Tanks at this Facility

Owner Number	Owner Name	Tank Nbr	Capacity	Product	Tank Status	Owner Status	Date
U0038432	HD Properties of Peoria, Inc.	6	12000	Gasoline	Currently in use	Current Owner	8/16/2016
U0038432	HD Properties of Peoria, Inc.	7	6000	Gasoline	Currently in use	Current Owner	8/16/2016
U0038432	HD Properties of Peoria, Inc.	8	4000	Diesel Fuel	Currently in use	Current Owner	8/16/2016
U0007457	Illico Incorporated	1	12000	Gasoline	Removed	Current Owner	3/17/2011
U0007457	Illico Incorporated	2	12000	Gasoline	Removed	Current Owner	3/17/2011
U0007457	Illico Incorporated	3	12000	Gasoline	Removed	Current Owner	3/17/2011
U0007457	Illico Incorporated	4	12000	Diesel Fuel	Removed	Current Owner	3/17/2011
U0007457	Illico Incorporated	5	6000	Kerosene	Removed	Current Owner	3/17/2011
U0007457	Illico Incorporated	8	4000	Diesel Fuel	Currently in use	Prior Owner	1/6/2016
U0007457	Illico Incorporated	7	6000	Gasoline	Currently in use	Prior Owner	1/6/2016
U0007457	Illico Incorporated	6	12000	Gasoline	Currently in use	Prior Owner	1/6/2016
U0035623	Paras Gasoline, Inc.	1	12000	Gasoline	Removed	Prior Owner	11/18/2009
U0035623	Paras Gasoline, Inc.	2	12000	Gasoline	Removed	Prior Owner	11/18/2009
U0035623	Paras Gasoline, Inc.	3	12000	Gasoline	Removed	Prior Owner	11/18/2009
U0035623	Paras Gasoline, Inc.	4	12000		Removed	Prior Owner	11/18/2009

Owner Number	Owner Name	Tank Nbr	Capacity	Product	Tank Status	Owner Status	Date
				Diesel Fuel			
U0035623	Paras Gasoline, Inc.	5	6000	Kerosene	Removed	Prior Owner	11/18/2009
U0033990	Road Ranger, LLC	1	12000	Gasoline	Removed	Prior Owner	6/11/2007
U0033990	Road Ranger, LLC	2	12000	Gasoline	Removed	Prior Owner	6/11/2007
U0033990	Road Ranger, LLC	3	12000	Gasoline	Removed	Prior Owner	6/11/2007
U0033990	Road Ranger, LLC	4	12000	Diesel Fuel	Removed	Prior Owner	6/11/2007
U0033990	Road Ranger, LLC	5	6000	Kerosene	Removed	Prior Owner	6/11/2007
U0024842	First Ranger Petroleum, L.L.C.	1	12000	Gasoline	Removed	Prior Owner	10/28/2003
U0024842	First Ranger Petroleum, L.L.C.	2	12000	Gasoline	Removed	Prior Owner	10/28/2003
U0024842	First Ranger Petroleum, L.L.C.	3	12000	Gasoline	Removed	Prior Owner	10/28/2003
U0024842	First Ranger Petroleum, L.L.C.	4	12000	Diesel Fuel	Removed	Prior Owner	10/28/2003
U0024842	First Ranger Petroleum, L.L.C.	5	6000	Kerosene	Removed	Prior Owner	10/28/2003
U0029789	Clark Retail Enterprises, Inc.	1	12000	Gasoline	Removed	Prior Owner	11/20/2000
U0029789	Clark Retail Enterprises, Inc.	2	12000	Gasoline	Removed	Prior Owner	11/20/2000
U0029789	Clark Retail Enterprises, Inc.	3	12000	Gasoline	Removed	Prior Owner	11/20/2000
U0029789	Clark Retail Enterprises, Inc.	4	12000	Diesel Fuel	Removed	Prior Owner	11/20/2000
U0029789	Clark Retail Enterprises, Inc.	5	6000	Kerosene	Removed	Prior Owner	11/20/2000
U0028787	Clark Retail Enterprises, Inc.,	1	12000	Gasoline	Removed	Prior Owner	7/14/1999
U0028787	Clark Retail Enterprises, Inc.,	2	12000	Gasoline	Removed	Prior Owner	7/14/1999
U0028787	Clark Retail Enterprises, Inc.,	3	12000	Gasoline	Removed	Prior Owner	7/14/1999
U0028787	Clark Retail Enterprises, Inc.,	4	12000	Diesel Fuel	Removed	Prior Owner	7/14/1999
U0028787	Clark Retail Enterprises, Inc.,	5	6000	Kerosene	Removed	Prior Owner	7/14/1999
U0003073	Clark Retail Enterprises, Inc.	1	12000	Gasoline	Removed	Prior Owner	1/1/1998
U0003073	Clark Retail Enterprises, Inc.	2	12000	Gasoline	Removed	Prior Owner	1/1/1998
U0003073	Clark Retail Enterprises, Inc.	3	12000	Gasoline	Removed	Prior Owner	1/1/1998
U0003073	Clark Retail Enterprises, Inc.	4	12000	Diesel Fuel	Removed	Prior Owner	1/1/1998
U0003073	Clark Retail Enterprises, Inc.	5	6000	Kerosene	Removed	Prior Owner	1/1/1998

Division of Petroleum & Chemical Safety

Facility: 3007188 Tank: 1

Click for Facility/Tank Ownership history

Capacity:	12000
Product:	Gasoline
Status:	Removed
OSFM First Notify Date:	4/7/1986
Current Age:	35
Install Date:	1/1/1981
Last Used Date:	
Product Date:	
Petroleum Use:	
CERCLA Substance:	
CAS Code:	
Removed Date:	1/29/2016
Abandoned Material:	
Abandoned Date:	
Red Tag Issue Date:	
Fee Due:	$0.00

Equipment Information

Equipment Type	Equipment	Last Passing Date	Test Expire Date
Corrosion Prot - Piping	Impressed Current Cathodic Protection	11/17/2014	N/A
Corrosion Prot - Piping	Fiberglass Non-Corrosive	N/A	N/A
Corrosion Prot - Tank	Impressed Current Cathodic Protection	10/16/2015	N/A
Corrosion Prot - Tank	Lining Materials Internal Armor Shield TL 300	10/23/2014	N/A
Leak Detect - Piping	Mechanical Pressurized Line Leak Detection Red Jacket FX1V	11/17/2014	N/A
Leak Detect - Tank	Automatic Tank Gauging Veeder Root TLS 350 with CSLD	N/A	N/A
Manway At Grade	Accessible Manway Accessible at Grade	N/A	N/A
Overfill Prev Device	Overfill Drop Tube Valve	N/A	N/A
Piping	Fiberglass Single Wall Piping Ameron	N/A	N/A
Spill Contain Device	Manhole Pre-manufactured EBW 705	N/A	N/A
Tank	Steel Single Wall Tank	N/A	N/A

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Division of Petroleum & Chemical Safety

Facility: 3007188 Tank: 2

Click for Facility/Tank Ownership history

Capacity:	12000
Product:	Gasoline
Status:	Removed
OSFM First Notify Date:	4/7/1986
Current Age:	35
Install Date:	1/1/1981
Last Used Date:	1/24/2016
Product Date:	
Petroleum Use:	
CERCLA Substance:	
CAS Code:	
Removed Date:	1/29/2016
Abandoned Material:	
Abandoned Date:	
Red Tag Issue Date:	
Fee Due:	$0.00

Equipment Information

Equipment Type	Equipment	Last Passing Date	Test Expire Date
Corrosion Prot - Piping	Impressed Current Cathodic Protection	11/17/2014	N/A
Corrosion Prot - Piping	Fiberglass Non-Corrosive	N/A	N/A
Corrosion Prot - Tank	Impressed Current Cathodic Protection	11/17/2014	N/A
Corrosion Prot - Tank	Lining Materials Internal Armor Shield TL 300	10/23/2014	N/A
Leak Detect - Piping	Mechanical Pressurized Line Leak Detection Red Jacket FX1V	11/11/2015	N/A
Leak Detect - Tank	Automatic Tank Gauging Veeder Root TLS 350 with CSLD	N/A	N/A
Manway At Grade	Accessible Manway Accessible at Grade	N/A	N/A
Overfill Prev Device	Overfill Drop Tube Valve	N/A	N/A
Piping	Fiberglass Single Wall Piping Ameron	N/A	N/A
Spill Contain Device	Manhole Pre-manufactured EBW 705	N/A	N/A
Tank	Steel Single Wall Tank	N/A	N/A

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Facility: 3007188 Tank: 3

Click for Facility/Tank Ownership history

Capacity:	12000
Product:	Gasoline
Status:	Removed
OSFM First Notify Date:	4/7/1986
Current Age:	35
Install Date:	1/1/1981
Last Used Date:	5/9/2012
Product Date:	1/1/1981
Petroleum Use:	
CERCLA Substance:	
CAS Code:	
Removed Date:	1/28/2016
Abandoned Material:	Inert Materials
Abandoned Date:	5/9/2012
Red Tag Issue Date:	
Fee Due:	$0.00

Equipment Information

Equipment Type	Equipment	Last Passing Date	Test Expire Date
Corrosion Prot - Piping	Impressed Current Cathodic Protection	11/10/2011	N/A
Corrosion Prot - Piping	Fiberglass Non-Corrosive	N/A	N/A
Corrosion Prot - Tank	Impressed Current Cathodic Protection	11/10/2011	N/A
Corrosion Prot - Tank	Lining Materials Internal Armor Shield TL 300	6/4/2009	N/A
Leak Detect - Piping	Mechanical Pressurized Line Leak Detection Red Jacket FX1V	11/22/2011	N/A
Leak Detect - Tank	Automatic Tank Gauging Veeder Root TLS 350 with CSLD	N/A	N/A
Manway At Grade	Accessible Manway Accessible at Grade	N/A	N/A
Overfill Prev Device	Overfill Drop Tube Valve	N/A	N/A
Piping	Fiberglass Single Wall Piping Ameron	N/A	N/A
Spill Contain Device	Manhole Pre-manufactured EBW 705	N/A	N/A
Tank	Steel Single Wall Tank	N/A	N/A

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Facility: 3007188 Tank: 4

Click for Facility/Tank Ownership history

Capacity:	12000
Product:	Diesel Fuel
Status:	Removed
OSFM First Notify Date:	4/7/1986
Current Age:	35
Install Date:	1/1/1981
Last Used Date:	1/24/2016
Product Date:	
Petroleum Use:	
CERCLA Substance:	
CAS Code:	
Removed Date:	1/28/2016
Abandoned Material:	
Abandoned Date:	
Red Tag Issue Date:	
Fee Due:	$0.00

Equipment Information

Equipment Type	Equipment	Last Passing Date	Test Expire Date
Corrosion Prot - Piping	Impressed Current Cathodic Protection	11/17/2014	N/A
Corrosion Prot - Piping	Fiberglass Non-Corrosive	N/A	N/A
Corrosion Prot - Tank	Impressed Current Cathodic Protection	11/17/2014	N/A
Corrosion Prot - Tank	Lining Materials Internal Armor Shield TL 300	7/3/2012	N/A
Leak Detect - Piping	Mechanical Pressurized Line Leak Detection Red Jacket FX1DV	11/17/2014	N/A
Leak Detect - Tank	Automatic Tank Gauging Veeder Root TLS 350 with CSLD	N/A	N/A
Manway At Grade	Accessible Manway Accessible at Grade	N/A	N/A
Overfill Prev Device	Overfill Drop Tube Valve	N/A	N/A
Piping	Fiberglass Single Wall Piping Ameron	N/A	N/A
Spill Contain Device	Manhole Pre-manufactured EBW 705	N/A	N/A
Tank	Steel Single Wall Tank	N/A	N/A

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Facility: 3007188 Tank: 5

Click for Facility/Tank Ownership history

Capacity:	6000
Product:	Kerosene
Status:	Removed
OSFM First Notify Date:	4/7/1986
Current Age:	35
Install Date:	1/1/1981
Last Used Date:	1/24/2016
Product Date:	
Petroleum Use:	
CERCLA Substance:	
CAS Code:	
Removed Date:	1/28/2016
Abandoned Material:	
Abandoned Date:	
Red Tag Issue Date:	
Fee Due:	$0.00

Equipment Information

Equipment Type	Equipment	Last Passing Date	Test Expire Date
Corrosion Prot - Piping	Impressed Current Cathodic Protection	11/17/2014	N/A
Corrosion Prot - Piping	Fiberglass Non-Corrosive	N/A	N/A
Corrosion Prot - Tank	Impressed Current Cathodic Protection	10/16/2015	N/A
Corrosion Prot - Tank	Lining Materials Internal Armor Shield TL 300	10/23/2014	N/A
Leak Detect - Piping	Mechanical Pressurized Line Leak Detection Red Jacket FX1DV	11/17/2014	N/A
Leak Detect - Tank	Automatic Tank Gauging Veeder Root TLS 350 with CSLD	N/A	N/A
Manway At Grade	Accessible Manway Accessible at Grade	N/A	N/A
Overfill Prev Device	Overfill Drop Tube Valve	N/A	N/A
Piping	Fiberglass Single Wall Piping Ameron	N/A	N/A
Spill Contain Device	Manhole Pre-manufactured EBW 705	N/A	N/A
Tank	Steel Single Wall Tank	N/A	N/A

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Facility: 3007188 Tank: 6

Click for Facility/Tank Ownership history

Capacity:	12000
Product:	Gasoline
Status:	Currently in use
OSFM First Notify Date:	7/5/2016
Current Age:	1
Install Date:	2/10/2016
Last Used Date:	
Product Date:	
Petroleum Use:	
CERCLA Substance:	
CAS Code:	
Removed Date:	
Abandoned Material:	
Abandoned Date:	
Red Tag Issue Date:	
Fee Due:	$0.00

Equipment Information

Equipment Type	Equipment	Last Passing Date	Test Expire Date
Corrosion Prot - Piping	Flexible Non-Corrosive	N/A	N/A
Corrosion Prot - Tank	Fiberglass Non-Corrosive	N/A	N/A
Leak Detect - Piping	Mechanical Pressurized Line Leak Detection Red Jacket FX1V	6/13/2016	6/13/2017
Leak Detect - Piping	Piping Sump Sensors Interstitial Monitoring Veeder Root TLS 350	6/13/2016	6/13/2017
Leak Detect - Tank	Hydrostatic Reservoir Sensors Interstitial Monitoring Veeder Root TLS 350	6/13/2016	6/13/2017
Leak Detect - Tank	Automatic Tank Gauging Veeder Root TLS 350 with CSLD	N/A	N/A
Overfill Prev Device	Overfill Drop Tube Valve OPW 71SO-400C	N/A	N/A
Piping	Flexible Double Wall A.P.T. Poly Tech S175SC	N/A	N/A
Spill Contain Device	Pre-manufactured EBW 705 C1GKT Defender spill containment	N/A	N/A
Tank	Fiberglass Brine Filled Double Wall XERXES	N/A	N/A

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Division of Petroleum & Chemical Safety

Facility: 3007188 Tank: 7

Click for Facility/Tank Ownership history

Capacity:	6000
Product:	Gasoline
Status:	Currently in use
OSFM First Notify Date:	7/5/2016
Current Age:	1
Install Date:	2/10/2016
Last Used Date:	
Product Date:	
Petroleum Use:	
CERCLA Substance:	
CAS Code:	
Removed Date:	
Abandoned Material:	
Abandoned Date:	
Red Tag Issue Date:	
Fee Due:	$0.00

Equipment Information

Equipment Type	Equipment	Last Passing Date	Test Expire Date
Corrosion Prot - Piping	Flexible Non-Corrosive	N/A	N/A
Corrosion Prot - Tank	Fiberglass Non-Corrosive	N/A	N/A
Leak Detect - Piping	Mechanical Pressurized Line Leak Detection Red Jacket FX1V	6/13/2016	6/13/2017
Leak Detect - Piping	Piping Sump Sensors Interstitial Monitoring Veeder Root TLS 350	6/13/2016	6/13/2017
Leak Detect - Tank	Hydrostatic Reservoir Sensors Interstitial Monitoring Veeder Root TLS 350	6/13/2016	6/13/2017
Leak Detect - Tank	Automatic Tank Gauging Veeder Root TLS 350 with CSLD	N/A	N/A
Overfill Prev Device	Overfill Drop Tube Valve OPW 71SO-400C	N/A	N/A
Piping	Flexible Double Wall A.P.T. Poly Tech S175SC	N/A	N/A
Spill Contain Device	Pre-manufactured EBW 705 C1GKT Defender spill containment	N/A	N/A
Tank	Fiberglass Brine Filled Double Wall XERXES	N/A	N/A

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Facility: 3007188 Tank: 8

Click for Facility/Tank Ownership history

Capacity:	4000
Product:	Diesel Fuel
Status:	Currently in use
OSFM First Notify Date:	7/5/2016
Current Age:	1
Install Date:	2/10/2016
Last Used Date:	
Product Date:	
Petroleum Use:	
CERCLA Substance:	
CAS Code:	
Removed Date:	
Abandoned Material:	
Abandoned Date:	
Red Tag Issue Date:	
Fee Due:	$0.00

Equipment Information

Equipment Type	Equipment	Last Passing Date	Test Expire Date
Corrosion Prot - Piping	Flexible Non-Corrosive	N/A	N/A
Corrosion Prot - Tank	Fiberglass Non-Corrosive	N/A	N/A
Leak Detect - Piping	Mechanical Pressurized Line Leak Detection Red Jacket FX1DV	6/13/2016	6/13/2017
Leak Detect - Piping	Piping Sump Sensors Interstitial Monitoring Veeder Root TLS 350	6/13/2016	6/13/2017
Leak Detect - Tank	Hydrostatic Reservoir Sensors Interstitial Monitoring Veeder Root TLS 350	6/13/2016	6/13/2017
Leak Detect - Tank	Automatic Tank Gauging Veeder Root TLS 350 with CSLD	N/A	N/A
Overfill Prev Device	Overfill Drop Tube Valve OPW 71SO-400C	N/A	N/A
Piping	Flexible Double Wall A.P.T. Poly Tech S175SC	N/A	N/A
Spill Contain Device	Pre-manufactured EBW 705 C1GKT Defender spill containment	N/A	N/A
Tank	Fiberglass Brine Filled Double Wall XERXES	N/A	N/A

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CERTIFICATE OF SERVICE

I, the undersigned, on affirmation state the following:

That I have served the attached **MOTION FOR LEAVE TO FILE RECORD *INSTANTER* AND CERTIFICATE OF RECORD ON APPEAL and the accompanying documents comprising the entire record of the Respondent's decision** by e-mail upon Patrick D. Shaw at the e-mail address of pdshaw1law@gmail.com and upon Hearing Officer Carol Webb at the e-mail address of Carol.Webb@Illinois.gov.

That my e-mail address is Scott.Sievers@Illinois.gov.

That the number of pages in the e-mail transmission is six hundred and seventy-three (673).

That the e-mail transmission took place before 4:30 p.m. on the date of July 28, 2017.

/s/Scott B. Sievers
July 28, 2017