

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

EQUILON ENTERPRISES LLC,	)	
d/b/a SHELL OIL PRODUCTS US,	)	
Petitioners,	)	
	)	
v.	)	PCB 26-
	)	(RCRA – Ninety Day
ILLINOIS ENVIRONMENTAL PROTECTION	)	Extension)
AGENCY,	)	
Respondent.	)	

NOTICE

Don Brown, Clerk
Illinois Pollution Control Board
60 East Van Buren St., Suite 630
Chicago, IL 60605
don.brown@illinois.gov

Wood River Refinery
Attn: Megan Lipscomb, Environmental Director
900 South Central Avenue
P.O. Box 76
Roxana, IL 62084

Equilon Enterprises LLC d/b/a Shell
Attn: Leroy Bealer, Principal Program Manager
128 East Center Street
Nazareth, PA 18064-2145

PLEASE TAKE NOTICE that I have today caused to be filed a **REQUEST FOR NINETY DAY EXTENSION OF APPEAL PERIOD** with the Illinois Pollution Control Board, copies of which are served upon you.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY



Melanie A. Jarvis
Deputy Chief Counsel – Land Enforcement
P.O. Box 19276
Springfield, Illinois 62794-9276
217/782-5544
melanie.jarvis@illinois.gov
Dated September 10, 2025

THIS FILING IS SUBMITTED ON RECYCLED PAPER

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

EQUILON ENTERPRISES LLC,	)	
d/b/a SHELL OIL PRODUCTS US,	)	
Petitioners,	)	
	)	
v.	)	PCB 26-
	)	(RCRA – Ninety Day
ILLINOIS ENVIRONMENTAL PROTECTION	)	Extension)
AGENCY,	)	
Respondent.	)	

REQUEST FOR NINETY DAY EXTENSION
OF APPEAL PERIOD

NOW COMES the Respondent, the Illinois Environmental Protection Agency (“Illinois EPA”), by one of its attorneys, Melanie A. Jarvis, Assistant Counsel, and, pursuant to Section 40(a)(1) of the Illinois Environmental Protection Act (415 ILCS 5/40(a)(1)) and 35 Ill. Adm. Code 105.208, hereby requests that the Illinois Pollution Control Board (“Board”) grant an extension of the thirty-five (35) day period for petitioning for a hearing to December 29, 2025, or any other date not more than a total of one hundred twenty-five (125) days from the date of receipt of the Illinois EPA’s final decision. In support thereof, the Illinois EPA respectfully states as follows:

1. On or about August 20, 2025, the Illinois EPA issued a final decision to the Petitioner.
2. On September 2, 2025, the Petitioner made a request to the Illinois EPA for an extension of time by which to file a petition for review, asking the Illinois EPA to join in requesting that the Board extend the thirty-five-day period for filing a petition by ninety days. Upon information and belief, Petitioner received the final decision on or about August 26, 2025.

3. The additional time requested by the parties may eliminate the need for a hearing in this matter or, in the alternative, allow the parties to identify issues and limit the scope of any hearing that may be necessary to resolve this matter.

WHEREFORE, for the reasons stated above, the parties request that the Board, in the interest of administrative and judicial economy, grant this request for a ninety-day extension of the thirty-five-day period for petitioning for a hearing.

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY



Melanie A Jarvis
Deputy Chief Counsel – Land Enforcement
P.O. Box 19276
Springfield, Illinois 62794-9276
217/782-5544
866/273-5488 (TDD)
melanie.jarvis@illinois.gov
Dated: September 10, 2025

THIS FILING IS SUBMITTED ON RECYCLED PAPER

CERTIFICATE OF SERVICE

I, the undersigned attorney at law, hereby certify that on September 10, 2025, I served true and correct copies of a **REQUEST FOR NINETY DAY EXTENSION OF APPEAL PERIOD** by the method(s) and to the persons identified below:

Electronic Service

Don Brown, Clerk
Illinois Pollution Control Board
60 East Van Buren St., Suite 630
Chicago, IL 60605
don.brown@illinois.gov

US Postal Service

Wood River Refinery
Attn: Megan Lipscomb, Environmental Director
900 South Central Avenue
P.O. Box 76
Roxana, IL 62084

Equilon Enterprises LLC d/b/a Shell
Attn: Leroy Bealer, Principal Program Manager
128 East Center Street
Nazareth, PA 18064-2145

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY



Melanie A. Jarvis
Deputy Chief Counsel – Land Enforcement
Division of Legal Counsel
P.O. Box 19276
Springfield, Illinois 62794-9276
217/782-5544
866/273-5488 (TDD)
melanie.jarvis@illinois.gov

217/524-3301

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

AUG 20 2025

9589 0710 5270 0389 7048 93

Wood River Refinery
Attn: Megan Lipscomb, Environmental Dir.
900 South Central Avenue
P.O. Box 76
Roxana, Illinois 62084

Equilon Enterprises LLC d/b/a Shell
Attn: Leroy Bealer, Principal Program Mngr.
128 East Center Street
Nazareth, PA 18064-2145

Re: 1191150002 -- Madison County
Equilon Enterprises LLC d/b/a Shell Oil Products US
ILD080012305
Log No: B-43R-M-32, B-43R-M-44, B-43R-M-53, B-43R-CA-93 (Reissued)
RCRA Permits - 24A
Permit Approval

Dear Mr. Bealer:

This letter is in response to eight permit modification submittals described below and a July 14, 2025 email which were submitted by AECOM Technical Services, Inc. (AECOM), on behalf of Equilon Enterprises LLC d/b/a Shell Oil Products US (SOPUS).

The following submittals are associated with Log No. B-43R-M-32.

Submittal No. 1 – A document entitled “Proposed Groundwater Management Zone,” dated May 19, 2016, and received by Illinois EPA on May 20, 2016. The request was submitted as a Class 1* modification to the Permit. The Groundwater Management Zone (GMZ) proposal was developed in accordance with Condition IV.F.7 of the Permit, and the Illinois EPA guidance document entitled, “Establishing a Groundwater Management Zone at RCRA Facilities” (2001).

Submittal No. 2 – A document was entitled “Submittal of Additional Information: Corrected Information for Proposed Groundwater Management Zone” dated May 30, 2017, and received by the Illinois EPA on May 31, 2017, which revised laboratory analytical information based on the laboratory’s internal evaluation and reporting to SOPUS of the GMZ equipment. The updated results involved updating footnotes and the numeric reporting remains unchanged. The document was reviewed as additional information to Submittal No. 1 identified above.

1191150002 – Equilon Enterprises LLC d/b/a Shell Oil Products US

Log Nos. B-43R-M-32, B-43R-M-44, B-43R-M-53, B-43R-CA-93 (Reissued)

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Submittal No. 3 – A document entitled “Groundwater Management Zone” dated January 16, 2018, received by Illinois EPA on January 17, 2018, which responded to multiple concerns over the proposed method and statistical analysis compiled from the Monitoring and Remediation Optimization System (MAROS) as a response to an email correspondence dated January 2, 2018. The document was reviewed as additional information to Submittal No. 1 identified above.

Submittal No. 4 – A document entitled “Groundwater Monitoring Zone – Additional Information” dated September 26, 2018, and received by Illinois EPA on September 27, 2018, which revised GMZ boundaries, identified subsurface vertical extent of contamination, the addition of the P-93 well nest, and groundwater trend information as requested in an Illinois EPA meeting on April 5, 2018. The document was reviewed as additional information to Submittal No. 1 identified above.

Submittal No. 5 – A document entitled “Additional Information Supplemental to the Proposed Groundwater Monitoring Zone” dated March 18, 2022, and received by Illinois EPA on March 21, 2022, which detailed more recent groundwater program analytics and revised GMZ well list to support prior submittals to the proposed GMZ.

The following submittal is associated with Log No. B-43R-M-44.

Submittal No. 6 – A document entitled “Response to Condition 4.b. in Attachment A and Condition V.D.3. of the 12/20/2019 IEPA Letter with Modified Permit”, dated October 12, 2020, and received by Illinois EPA on October 13, 2020, which details a demonstration that an Illinois EPA proposed additional well used for interception of additional potential groundwater contamination from an area around B-level well P-93B is unnecessary.

The following submittal is associated with Log No. B-43R-M-53.

Submittal No. 7 – A document entitled “Change in WRB Refining LP Contact Personnel”, dated May 23, 2024, and received by Illinois EPA on May 28, 2024, which notifies the change in WRB contact personnel from Environmental Director Thomas Morgan to Environmental Director Megan Lipscomb.

The following submittal is associated with Log No. B-43R-CA-93.

Submittal No. 8 – A document entitled “Response to IEPA Letter dated July 27, 2016 – Groundwater Conditions near East 3rd and Chaffer Streets”, dated October 14, 2016 and received by the Illinois EPA on October 17, 2016. A new Corrective Action Certification form with wet signatures was received on March 13, 2024. The submittal demonstrates the status of groundwater near East 3rd and Chaffer Streets by groundwater wells.

The Illinois EPA’s initial response, a Class 1* permit modification, was issued to Shell and WRB Refining, LP on July 8, 2025 (Log Nos. B-43R-M-32; B-43R-M-44; B-43R-M-53; B-43R-

1191150002 – Equilon Enterprises LLC d/b/a Shell Oil Products US

Log Nos. B-43R-M-32, B-43R-M-44, B-43R-M-53, B-43R-CA-93 (Reissued)

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CA-93). The submittal inadvertently contained typographical errors, as indicated in a July 14, 2025 email submitted by Wendy Pennington of AECOM.

The Illinois EPA has reviewed the information in Wendy Pennington's July 14, 2025 email and concurs with the corrections requested in Wendy Pennington's email in addition to other typographical errors. Therefore, the Illinois EPA is reissuing a corrected permit modification Log Nos. B-43R-M-32, B-43R-M-44, B-43R-M-53, B-43R-CA-93 (Reissued), attached to this letter.

Two corrective action groundwater monitoring programs are being implemented by SOPUS: (1) the Groundwater Corrective Action Program required by Section IV of the RCRA Permit, to meet the requirements of 35 IAC 724.200; and (2) the Interim Groundwater Monitoring Program required by Section V of the Permit, to meet the requirements of 35 IAC 724.201, which includes the release area in the vicinity of well P-60 and the portion of the Village of Roxana impacted by the 1986 benzene release (collectively known as the Study Area). Given the exceedances above 35 IAC Part 620, Class I Groundwater Quality Standards (GQSs) in both programs, a GMZ was required to be established by the Illinois EPA. To meet this requirement, a proposal has been submitted for a GMZ which encompasses both the on-site and off-site contamination being measured between the two groundwater monitoring programs.

The Illinois EPA has completed a technical review of Submittals Nos. 1 through 8. Submittals Nos. 1 through 5, Submittal No. 7 and Submittal No. 8 are conditionally approved, while additional actions are necessary to finalize approval of the off-site portion of the GMZ. Submittal No. 6 cannot be approved.

Those portions which cannot be approved, either entirely or in part, are summarized in the following comments:

1. The following comments address the request for reduction in contaminants of concern (COC):
 - a. The WRR Program COCs cannot be reduced. A demonstration must be made that leachate from the former SWDB does not contain those parameters requested to be removed from the sampling list at the WRR, as the hazardous constituents required to be sampled are associated with the post-closure groundwater monitoring program. Therefore, wells at the WRR must continue to be sampled for all constituents listed in Condition IV.E.1 of the Permit. In addition, all wells must be sampled for inorganics.
 - b. The reduction in COCs for off-site wells cannot be approved at this time. The source of groundwater contamination is associated with the following releases: (1) a benzene pipeline release that occurred in 1986 near the intersection of Rand Avenue and S. Central Avenue; and (2) an unknown historical release(s) in the vicinity of the Refinery's groundwater monitoring well named P-60. If the facility wishes to pursue the reduction in COCs for the Groundwater Monitoring

Interim Program, submit a corrective action modification request for Illinois EPA review and approval in accordance with Section V of the Permit.

- c. Wells monitored in both programs must meet program-specific requirements unless specifically modified herein.
2. Based on current conditions, a reduction in sampling frequencies is not appropriate at this time.
3. For simplicity, the facility has requested reporting for the WRR and Groundwater Monitoring Interim Program monitoring, COCs, and reporting be combined and/or combined as much as possible. While the COC lists cannot be aligned, the reporting aspects in Section V of the Permit have been revised to indicate routine reports for the Interim Groundwater Monitoring Program may be combined with the WRR reports required in Section IV of the Permit and corresponding reference in Section V.
4. The Illinois EPA considers the use of the most current version of MAROS software approvable for the purpose of statistical review of groundwater monitoring data; however, the evaluations may only be used as one of multiple lines of evidence for any demonstration. The Illinois EPA does not agree with the statement that the Air Force Center for Environmental Excellence (AFCEE) Monitoring and Remediation Optimization System (MAROS) Technical Manual considers a 90% confidence in trend as increasing or decreasing, rather, the confidence in trends would be considered probably increasing or probably decreasing. Therefore, SOPUS must present the trends accordingly when making any demonstration. Attachment A summarizes the requirement incorporated into Condition IV.E.2.
5. The Illinois EPA cannot approve changes proposed in Section 5.5 of Submittal No. 1 to revise how the groundwater will be monitored following the future completion of remedies. Such activities must be completed first and then a proposal could be considered.
6. The Illinois EPA cannot approve a table note in Appendix D of Submittal No. 1, which contains a list of volatile organic constituents (VOCs), semi-volatile constituents (SVOCs), and inorganics required to be analyzed. The note to the table states, "Laboratory method detection limits (MDLs) for constituents with MDLs above screening levels for constituents that have not been detected above the MDL in the past 3 years will be re-checked against screening levels in 5 years and those constituents re-evaluated." It is assumed the reference to standards is the Class I GQSs. Dilutions or other reasons that cause the MDL to exceed the standards are not considered adequate to demonstrate the concentration is below the standard. Conversely, a request to remove a parameter which exceeds the applicable standards will not be approved, and monitoring and analysis must continue for those parameters.

1191150002 – Equilon Enterprises LLC d/b/a Shell Oil Products US

Log Nos. B-43R-M-32, B-43R-M-44, B-43R-M-53, B-43R-CA-93 (Reissued)

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7. While the cross-section figures provided in Attachment 2 of Submittal No. 4 are helpful in depicting the vertical extent of contamination based on PID readings, this information cannot be considered a substitute for groundwater analytical data. Groundwater data is required to monitor the groundwater plume.
8. Submittal No. 6 (Log No. B-43R-M-44) cannot be approved. Investigative work was required in the Illinois EPA letter dated January 18, 2017 (Log No. B-43R-CA-59, 60 and 69) for further delineation of soil and groundwater. Specific to groundwater, the Illinois EPA did not concur that further delineation beyond step-out locations GWP-29 and GWP-32 was impractical and further investigation was required to be proposed. Submittal No. 6 is presented to address this requirement and concludes an additional well is not required. A new well 293B continues to be necessary. It should also be noted Condition 10 of the Illinois EPA letter approving the Steam Enhanced Extraction (SEE) workplan (Log Nos. B-43R-CA-113, 114 and 115) requires delineation to the southwest, south, and southeast of the area based on information presented in the SEE workplan, which further supports the need for the additional well 293B. Satisfying Condition 10 of the letter dated January 26, 2024 (Log No. B-43R-CA-113, 114, and 115) has the potential to satisfy Condition V.D.3 of the Permit. Condition V.D.3 has been revised to further clarify its purpose. Agency-initiated changes to text in the conditions were also made to better describe the conditions and requirements based on the most current information.

The changes made to the Permit in response to the subject permit modification requests are identified in Attachment A to this cover letter. Note there are additional requirements identified for evaluation of light non-aqueous phase liquid (LNAPL), the indoor inhalation pathway, and similar-acting substances, and a requirement for 35 IAC Part 620 parameters to be revised based on revisions effective March 28, 2025. Review the changes to the Permit carefully as failure to meet any portion of the Permit could result in civil and/or criminal penalties.

Under 35 IAC 703.281(a)(2), a notice of this modification must be sent to all persons on the facility mailing list, maintained by Illinois EPA in accordance with 35 IAC 705.163(a)(4), and the appropriate units of state and local government as specified in 35 IAC 705.163(a)(5). For a Class 1* modification, the notice must be made within 90 days after Illinois EPA approves the request. In addition, due to the change of WRB contact personnel, under 35 IAC 703.281(a)(2), the modification notice must be sent within 90 days to all persons on the facility mailing list in accordance with 35 IAC 705.163(a)(4), and to the appropriate units of state and local government including the Illinois EPA as specified in 35 IAC 705.163(a)(5).

This letter shall constitute Illinois EPA's final decision on the subject submittal. The applicant may appeal this final decision to the Illinois Pollution Control Board pursuant to Section 40 of the Act by filing a petition for a hearing within 35 days after the date of issuance of the final decision. However, the 35-day period may be extended for a period of time not to exceed 90 days by written notice from the applicant and the Illinois EPA within the initial 35-day appeal period. If the owner or operator wishes to receive a 90-day extension, a written request that

1191150002 – Equilon Enterprises LLC d/b/a Shell Oil Products US
Log Nos. B-43R-M-32, B-43R-M-44, B-43R-M-53, B-43R-CA-93 (Reissued)
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includes a statement of the date the final decision was received, along with a copy of this decision, must be sent to the Illinois EPA as soon as possible.

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

Illinois Environmental Protection Agency
Division of Legal Counsel
2520 West Iles Avenue
Post Office Box 19276
Springfield, IL 62794-9276
217/782-5544

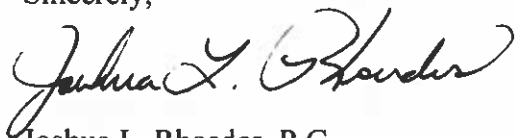
For information regarding the filing of an appeal, please contact:

Illinois Pollution Control Board
60 East Van Buren Street, Suite 630
Chicago, IL 60605-1241
312/814-3620

Work required by this letter, your submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

For questions regarding for the groundwater aspects of this project, please contact Dana Austin at 217/785-7427 or dana.austin@illinois.gov. For all other questions, please contact Gary Ko at 217/557-1434 or gary.ko@illinois.gov.

Sincerely,



Joshua L. Rhoades, P.G.
Permit Section Manager
Bureau of Land

JLR: GBK:1191150002-RCRA-B43RM32-B43RM44-B43RM53-B43RCA93-Reissue.docx

GBK gmb TNH DMK TNH
Attachment A: Summary of Changes to the Permit
Modified RCRA Post-Closure Permit

Cc: Brett Howell, P.G., AECOM
Wendy Pennington, P.E., AECOM
Samuel Fisher, CHMM, AECOM

Attachment A

Summary of Changes to the Permit

1191150002 -- Madison County
Equilon d/b/a Shell Oil Products
ILD080012305

Illinois EPA Log No.: Log Nos. B-43R-M-32, B-43R-M-44, B-43R-M-53, B-43R-CA-93
(Reissued)

Based on an email sent from AECOM Technical Services, Inc. (AECOM) on behalf of SOPUS on July 14, 2025, the following revisions have been made to the Permit. Underlined text has been added and strike-through text has been removed:

1. The following changes have been made to the table in RCRA Post-Closure Hazardous Waste Permit's cover letter:

1191150002 -- Madison County
Equilon d/b/a Shell Oil Products, US
ILD080012305
Permit Log No. ~~B-43R2~~
Log Nos. B-43R-M-32, B-
43R-M-44, B-43R-M-53, B-
43R-CA-93 (Reissued)

Issue Date: September 23, 2010
Effective Date: October 28, 2010
Expiration Date: October 28, 2020
Modification Date:

RCRA Administrative Record – 24A

2. Condition IV.C.1.a has been revised as follows:

The Perimeter Monitoring Wells associated with Condition IV.C.1.a has been revised to update the table to reflect a current list of wells to include MW-6(A-D) and MW-14:

<u>MW6A</u>	<u>MW-6A^{GMZ}</u>	<u>44.81</u>	<u>388.15</u>	<u>398.48 - 388.48</u>
<u>MW6B</u>	<u>MW-6B^{GMZ}</u>	<u>69.87</u>	<u>362.99</u>	<u>368.32 - 363.32</u>
<u>MW6C</u>	<u>MW-6C^{GMZ}</u>	<u>90.93</u>	<u>341.90</u>	<u>347.23 - 342.23</u>
<u>MW6D</u>	<u>MW-6D^{GMZ}</u>	<u>110.58</u>	<u>322.01</u>	<u>327.34 - 322.34</u>
<u>MW14</u>	<u>MW-14^{GMZ}</u>	<u>44.53</u>	<u>390.61</u>	<u>401.19 - 391.19</u>

3. Condition V.D.3.a has been revised as follows:

- a. Approval of Log No. B-43R-M-29 required a new groundwater monitoring well, ~~239-93B~~, must be installed and added to the network with a 10-foot

screen to intercept potential groundwater contamination observed in the B-level well, P-93B. This new well will also be used to delineate the vertical and horizontal extent of contamination required to be defined for the GMZ.

4. A new Attachment B.A.49 through B.A.52 has been added:

49. Modification Log No. B-43R-M-32 – A May 19, 2016 submittal entitled “Proposed Groundwater Management Zone,” received by Illinois EPA on May 20, 2016. The submittal proposed the construction of a Groundwater Management Zone (GMZ) was developed in accordance with the Illinois EPA guidance document entitled, “Establishing a Groundwater Management Zone at RCRA Facilities” (2001).
- a. Additional Information for Log No. B-43R-M-32 – A May 30, 2017 submittal entitled “Submittal of Additional Information: Corrected Information for Proposed Groundwater Management Zone” and received by the Illinois EPA on May 31, 2017. The submittal revised laboratory analytical information based on the laboratory’s internal evaluation and reporting to SOPUS of the GMZ equipment. The updated results involved updating footnotes of the application identified in Item 49 above.
 - b. Additional Information for Log No. B-43R-M-32 – A January 16, 2018 submittal entitled “Groundwater Management Zone” received by Illinois EPA on January 17, 2018. The submittal responded to multiple concerns over the proposed method and statistical analysis compiled from the Monitoring and Remediation Optimization System (MAROS) as a response to an email correspondence dated January 2, 2018.
 - c. Additional Information for Log No. B-43R-M-32 – A September 26, 2018 submittal entitled “Groundwater Monitoring Zone – Additional Information” received by Illinois EPA on September 27, 2018. In response to an Illinois EPA meeting on April 5, 2018, the submittal revised GMZ boundaries, identified subsurface vertical extent of contamination, the addition of the P-93 well nest, and groundwater trend information.
 - d. Additional Information for Log No. B-43R-M-32 – A March 18, 2022 submittal entitled “Additional Information Supplemental to the Proposed Groundwater Monitoring Zone” and received by Illinois EPA on March 21, 2022, which detailed more recent groundwater program analytics and a revised GMZ well list.
50. Modification Log No. B-43R-M-44 – An October 12, 2020 submittal entitled “Response to Condition 4.b. in Attachment A and Condition V.D.3. of the 12/20/2019 IEPA Letter with Modified Permit”, received by Illinois EPA on October 13, 2020. The submittal proposes that the Illinois EPA requirement for the installation of an additional well to intercept potential groundwater contamination observed in well P-

93B is not necessary. The request was submitted as a Class 1* modification to the Permit.

51. Modification Log No. B-43R-M-53 – A May 23, 2024 submittal entitled “Change in WRB Refining LP Contact Personnel” and received by Illinois EPA on May 28, 2024. The submittal revised the WRB contact personnel.
 52. Corrective Action Log No. B-43R-CA-94 – A October 14, 2016 submittal entitled “Response to IEPA Letter dated July 27, 2016 – Groundwater Conditions near East 3rd and Chaffer Streets”, and received by the Illinois EPA on October 17, 2016. The submittal included new Corrective Action Certification forms with wet signatures previously received on March 13, 2024. The submittal demonstrates the status of groundwater near East 3rd and Chaffer Streets by groundwater wells. This submittal was included with Modification Log Nos. B-43R-M-32, B-43R-M-44, and B-43R-M-53 as an additional groundwater document detailing the subsurface groundwater potentiometric data for northeastern portions of the proposed GMZ area.
5. A new Condition B.3 in Attachment B has been added:
3. Regarding B-43R-M-44: Regarding B-43R-M-44: Illinois EPA cannot approve the request to not install an additional well. Illinois EPA has determined new well 293B continues to be necessary. A letter dated January 26, 2024 (Log No. B-43R-CA-113, 114, and 115) which approved the Steam Enhanced Extraction (SEE) system requires delineation to the southwest, south, and southeast of the area based on information presented in the SEE workplan, supporting the necessity for additional well 293B.

RCRA POST-CLOSURE HAZARDOUS WASTE PERMIT

1191150002 -- Madison County
Equilon d/b/a Shell Oil Products, US
ILD080012305
Permit Log No. Log Nos. B-43R-M-32, B-
43R-M-44, B-43R-M-53, B-
43R-CA-93 (Reissued)

Issue Date: September 23, 2010
Effective Date: October 28, 2010
Expiration Date: October 28, 2020
Modification Date: **AUG 20 2025**

RCRA Administrative Record – 24A

OWNER

WRB Refining LP
Attn: Megan Lipscomb
900 South Central Avenue
Roxana, Illinois 62084-1337

OPERATOR

Equilon Enterprises LLC d/b/a Shell US
Attn: Leroy Bealer
128 East Center Street
Nazareth, PA 18064-2145

A Resource Conservation Recovery Act (RCRA) Post-Closure hazardous waste permit is hereby issued to WRB Refining, LP as Owner, and Equilon d/b/a Shell Oil Products, US as Operator and Permittee pursuant to Section 39(d) of the Illinois Environmental Protection Act and Title 35 Illinois Administrative Code (IAC) Subtitle G.

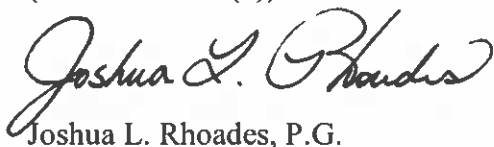
PERMITTED HAZARDOUS WASTE ACTIVITY

This permit requires Equilon Enterprises, Inc. to conduct the following hazardous waste activities in accordance with the approved permit application and the conditions in this permit:

- **Post-Closure Care** of the closed Solid Waste Disposal Basin (Site 15)
- **Groundwater Monitoring:** Corrective Action Program
- **Corrective Action**

This permit consists of the conditions contained herein and those in the sections and attachments in this permit. The Permittee must comply with all terms and conditions of this permit and the applicable regulations contained in 35 IAC Parts 702, 703, 705 and 720 through 729 in effect on the effective date of this permit.

This permit is issued based on the information submitted in the approved permit application identified in Section II of this permit and any subsequent amendments. Any inaccuracies found in the information provided in the permit application may be grounds for the termination or modification of this permit (see 35 IAC 702.187 and 702.186) and potential enforcement action (415 ILCS 5/44(h)).



Joshua L. Rhoades, P.G.
Permit Section Manager
Bureau of Land

JLR: GBK; 1191150002-RCRA-B43RM32-B43RM44-B43RM53-B43RCA93-Reissue.docx

2125 S. First Street, Champaign, IL 61820 (217) 278-5800
115 S. LaSalle Street, Suite 2203, Chicago, IL 60603
1101 Eastport Plaza Dr., Suite 100, Collinsville, IL 62234 (618) 346-5120
9511 Harrison Street, Des Plaines, IL 60016 (847) 294-4000

595 S. State Street, Elgin, IL 60123 (847) 608-3131
2309 W. Main Street, Suite 116, Marion, IL 62959 (618) 993-7200
412 SW Washington Street, Suite D, Peoria, IL 61602 (309) 671-3022
4302 N. Main Street, Rockford, IL 61103 (815) 987-7760

HAZARDOUS WASTE MANAGEMENT

RCRA POST-CLOSURE PERMIT

Equilon Enterprises

1191150002 – Madison County

USEPA ID NO. IL080012305

Log Nos. B-43R-M-32, B-43R-M-44, B-43R-M-53, B-43R-CA-93 (Reissued)

RCRA POST-CLOSURE PERMIT

Equilon Enterprises
1191150002 – Madison County
USEPA ID No. ILD080012305

Log Nos. Log Nos. B-43R-M-32, B-43R-M-44, B-43R-M-53, B-43R-CA-93 (Reissued)

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SECTION I: GENERAL FACILITY DESCRIPTION

A. INTRODUCTION

Equilon Enterprises is contractually bound to, among other things, address certain environmental liabilities at the WRB Refining LP Wood River facility located at 900 South Central Avenue in Roxana, Illinois. This permit contains all the requirements for Equilon Enterprises to carry out the following activities at the WRB Refining LP Wood River facility: (1) provide post-closure care of a hazardous waste surface impoundment closed as a landfill; (2) conduct a groundwater monitoring/remediation program; and (3) conduct corrective action, as necessary, at several solid waste management units.

B. DESCRIPTION OF FACILITY

The WRB Refining Wood River Refinery is a petroleum refinery approximately 1800 acres in size located at 900 South Central Avenue, Roxana, Illinois. The refinery covers portions of Section 33, 34, 35 and 36 of Township 5N, Range 9W (Wood River Township) and Sections 2 and 3 of Township 4N, Range 9W (Couteau Township) in Madison County, Illinois. Shell Oil Company, a predecessor of Equilon Enterprises, operated this refinery for many years and transferred ownership of the refinery to Equilon Enterprises on July 1, 1998. Equilon then sold the refinery to Toscopetro in June 2000 but contractually retained responsibility for certain environmental liabilities at the facility. Operation and ownership has changed several times since 2000. The current operator of the refinery is Phillips 66 while it is owned by WRB Refining, LP.

The responsibilities for certain environmental liabilities at this facility have remained with Equilon since the facility was first sold to Toscopetro in June 2000.

The WRB Refining Wood River Refinery is composed of five areas.

- North Property – This area contains storage tanks and most of the current and past waste management areas. The northern, undeveloped acreage of this property is leased out as farmland. A process water well field, called the “North Property Wells,” is also located in this area.
- Main Property – This area contains the main refinery process units, maintenance shops and administration buildings.
- Southwest Property – This area contains the crude oil storage tanks and a stormwater pond. A small portion of this property is leased out as farmland.
- West Property – This area contains the Wastewater Treatment Plant (WWTP), sulfur recovery units and storage tanks.

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- Riverfront Property – This area contains the effluent polishing lagoons and barge loading facilities. A process water well field, called the “River Wells,” is also located on this property.

Crude oil is supplied from fields in various states, as well as from Canada, Middle Eastern and other foreign countries. Refined oil products are principally propane, motor gasolines, aviation fuels, diesel and heating oils, asphalt, petroleum coke, and heavy fuel oil. The refinery, as a consequence of its operations, produces both hazardous and nonhazardous wastes; these wastes are managed by Phillips 66 under Illinois EPA Identification Number 1190905013 and USEPA Identification Number ILR000077115.

C. RCRA PERMITTING HISTORY OF FACILITY

A RCRA permit was issued to Shell Oil Company for this facility on September 29, 1989 (Log No. B-43) allowing for operation of a container storage area (the CATCO Building) and required post-closure care, including a groundwater remediation program, for a surface impoundment (the Solid Waste Disposal Basin). This permit also contained requirements that SOPUS conduct corrective action at twenty-two solid waste management units under the oversight of USEPA.

1. Illinois EPA approved certification of clean closure of the CATCO building on July 3, 2007 (IEPA Log No. B-43-CA-3 and 4).
2. Illinois EPA approved certification of closure of the SWDB as a landfill on August 24, 2005 (IEPA Log No. C-426 and associated modifications); the 30-year post-closure care period for the unit began at that time.

In addition to the permitted RCRA units described above, the units listed below became RCRA regulated interim status storage/treatment units since the permit was issued, due to the fact that the definition of hazardous waste was expanded in 1990 to include, among other things, benzene under the toxicity characteristic (It must be noted that none of these units have been formally incorporated into the facility's RCRA permit, rather they remain interim status hazardous waste management units being closed or have been closed in accordance with plans approved by Illinois EPA.

1. Tank CH-290—IEPA approved certification of clean closure of this unit on July 3, 2007.
2. Tanks D-27, D-30, B-58 and L-143. Illinois EPA approved certification of closure of these units on May 19, 2010. An ELUC has been established restricting future use of the area where the tanks are located to industrial/commercial activities.

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3. Pond 1— a surface impoundment associated with the facility's wastewater treatment system. Illinois EPA approved certification of closure of this unit on August 19, 2010. An ELUC has been established which restricts: (1) further usage of the facility to industrial/commercial activities; (2) exposure to and management of the soils remaining at the units; and (3) groundwater usage at the facility.
4. Pond 2—a surface impoundment associated with the facility's wastewater treatment system. A plan to complete closure of this unit was approved by Illinois EPA on December 2, 2009; a modification request was approved on April 26, 2010.

D. OVERVIEW OF RENEWED RCRA PERMIT

The renewed RCRA permit for this facility focuses on three areas: (1) post-closure care of the Solid Waste Disposal Basin; (2) conducting a groundwater corrective action program to address contaminated groundwater at the facility; and (3) providing corrective action as appropriate on several solid waste management units at this facility. Each of these areas is discussed below.

D.1 POST-CLOSURE CARE OF THE SOLID WASTE DISPOSAL BASIN

Illinois EPA approved certification of closure of the Solid Waste Disposal Basin (a former hazardous waste surface impoundment) as a landfill on August 24, 2005 (IEPA Log No. C-426 and associated modifications); the 30-year post-closure care period for the unit began at this time. This permit contains requirements for post-closure care of the closed Solid Waste Disposal Basin; the main focus of the physical post-closure care of the SWDB is to maintain the final cover present over it.

D.2 GROUNDWATER CORRECTIVE ACTION

Contaminants have been detected above the applicable standards in the groundwater downgradient of the Solid Waste Disposal Basin. Therefore, this permit includes a groundwater corrective program which requires:

1. Control of the horizontal and vertical flow in the uppermost aquifer such that the groundwater flow is towards the interior of these portions of the facility beneath the combined boundaries of the North and Main Properties. This control of groundwater flow will be accomplished by withdrawing sufficient quantities of groundwater and contaminants from the uppermost aquifer.
2. Verification that the flow of groundwater is adequately controlled as required by Item 1 above.

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3. Treatment of the groundwater withdrawn from the uppermost aquifer to control groundwater flow as required by Item 1 above.
4. Removal of a hydrocarbon layer present on the top of the water table beneath portions of the North and Main Properties.
5. Monitoring the quality of the groundwater in the uppermost aquifer beneath the north and main properties of the facility on a semi-annual basis to determine the effectiveness of the corrective action program.

D.3 CORRECTIVE ACTION PROVISIONS OF PERMIT

When the original RCRA permit was issued to this facility, Illinois EPA did not have the authority to implement the corrective action requirements of RCRA. As such, the original RCRA permit contained two portions, one issued by Illinois EPA and one issued by USEPA. Among other things, the USEPA portion of the original RCRA permit for this facility contained the corrective action requirements for this facility. The permit required that corrective action be conducted at twenty-two solid waste management units. During the course of operations of the facility under the RCRA permit, six additional solid waste management units were discovered and addressed in some fashion.

Corrective action efforts have been completed at eight solid waste management units; this permit identifies the corrective action efforts which must still be completed at the remaining twenty solid waste management units required to be addressed by USEPA. In addition, this permit contains requirements for addressing contamination associated with a 1986 benzene release near the corner of Rand Avenue and Route 111 in Roxana, Illinois.

SECTION II: APPROVED PERMIT APPLICATION

A. APPROVED PERMIT APPLICATION

The approved application associated with this RCRA permit issued for the Equilon Enterprises facility in Roxana Illinois (Log No. B-43R and associated modifications) consists to two components: (1) the permit application approved on September 23, 2010, when a renewed RCRA permit was issued for this facility; and (2) applications to modify the facility's RCRA permit which were approved by Illinois EPA.

1. The approved permit application associated with the renewed RCRA permit for this facility issued on September 23, 2010, is identified in Attachment A.
2. The applications to modify the facility's RCRA permit which have been approved by Illinois EPA are identified in Attachment B.

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SECTION III: POST-CLOSURE

A. SUMMARY

The Solid Waste Disposal Basin (SWDB), a former surface impoundment at the subject facility, received hazardous waste until 1988; from 1988 to 2001 the unit only received non-hazardous waste. The unit has been closed as a landfill in accordance with an Agency approved interim status closure plan. Since hazardous waste was left in place at the SWDB, the unit must receive at least thirty (30) years of post-closure care after the date the closure certification was approved by the Agency (this certification was approved on August 24, 2006). The requirements for post-closure care of the SWDB include, but are not limited to:

1. Inspecting and maintaining the final cover, berms and drainage structures associated with the SWDB;
2. Complying with the terms and conditions of Section IV (Groundwater Corrective Action Program) of this permit.
3. Providing financial assurance for the post-closure activities described herein, including any associated operation and maintenance costs, as required by Title 35 Illinois Administrative Code Subtitle G (35 Ill. Adm. Code) 724, Subpart H.

B. UNIT IDENTIFICATION

SWDB was an above-ground surface impoundment with thirty-foot dikes and covered an area of approximately 20 acres located in the eastern portion of the facility (a drawing showing the location of the SWDB is provided in Attachment III-A of this permit). This unit was closed as a landfill in accordance with a plan approved by Illinois EPA on December 20, 1999. Illinois EPA approved certification of closure of this unit as a landfill on August 24, 2006 (which includes listed hazardous wastes).

From 1973 to 1988, the wastewater treatment sludge from refinery operations and water treatment sludge from a lime-softening process at the facility was discharged to the SWDB during this time period. From 1988 until 2001, the SWDB only received the lime sludge. Closure of the SWDB as a landfill began in 2001 and was completed in 2006. The final cover system over this unit includes (from bottom to top): (1) a one foot (minimum compacted soil layer; (2) a 0.04 inch polyethylene geomembrane; (3) a one foot thick granular layer, with a geotextile above and below the layer; (4) a six inch protective soil cover; and (5) six inch topsoil layer.

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C. MAINTENANCE AND RECORDKEEPING

1. Upon the effective date of this permit, the post-closure care procedures set forth in this permit shall supersede those post-closure care procedures established in the Agency's interim status closure/post-closure care plans approval letter dated December 30, 1988 (Log No. C-426) and associated modifications.
2. The Permittee began providing post-closure care of the SWDB on August 24, 2006 (the date Illinois EPA approved certification of closure of the SWDB). Post-closure care for the SWDB must continue for at least thirty (30) years after this date.
3. Any time during the post-closure care period for these units, the Board may, in accordance with the permit modification procedures of 35 Ill. Adm. Code Parts 702, 703, and 705, do either of the following:
 - a. Shorten the post-closure care period applicable to the hazardous waste management unit or facility if all disposal units have been closed and the Board has found by an adjusted standard issued pursuant to Section 28.1 of the Act [415 ILCS 5.28.1] and 35 Ill. Adm. Code Parts 101 and 104 that the reduced period is sufficient to protect human health and the environment (e.g., leachate or groundwater monitoring results, characteristics of the waste, application of advanced technology or alternative disposal, treatment, or re-use techniques indicate that the hazardous waste management unit or facility is secure); or
 - b. Extend the post-closure care period applicable to the hazardous waste management unit or facility if the Board has found by an adjusted standard issue pursuant to Section 28.1 of the Act [415 ILCS 5/28.1] and 35 Ill. Adm. Code Parts 101 and 104 that the extended period is necessary to protect human health and the environment (e.g., leachate or groundwater monitoring results indicate a potential for migration of hazardous wastes at levels that may be harmful to human health and the environment).
 - c. At a minimum, it will be necessary to complete the groundwater corrective action program set forth in Section IV of this permit before the required post-closure care efforts for these units can be terminated.
4. The Agency may restrict the future use of the SWDB if it is necessary to protect human health and the environment. This includes permanent prohibition of the use of the site for purposes which create an unreasonable risk to human health or

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the environment. The Agency shall file such restrictions of record in the Office of the Madison County Recorder.

5. Post-closure use of the SWDB must never be allowed to disturb the integrity of the final cover, berms or any other components associated with the SWDB or the function of the facility's monitoring system, unless the Agency determines, by way of a permit modification, that the disturbance:
 - a. Is necessary for the proposed use of the property and will not increase the potential hazard to human health or the environment, or
 - b. Is necessary to reduce a threat to human health or the environment.
6. The Permittee must submit a request for permit modification to change any aspect of the approved post-closure care plan, as modified by the conditions of this permit. This request must be in accordance with the applicable requirements of 35 Ill. Adm. Code Parts 702, 703, 705 and 724 and must include a copy of the amended post-closure plan. The request must be submitted at least 180 days prior to the date that the change is needed. Post-closure care of the impoundment must be in accordance with the conditions of this permit until such time as the proposed modification is properly incorporated into the facility's RCRA permit.
7. The Permittee shall maintain the integrity and effectiveness of the final cover, berms and drainage structures. This includes making repairs as necessary to correct the effects of settling, subsidence, erosion, etc. Corrective action shall be taken if any problem listed below is encountered when inspecting the final cover, berms and drainage structures at the SWDB.
 - a. Rills, gullies and crevices greater than six inches wide in the final cover or berms,
 - b. Depressions (ponds) and holes in the final cover;
 - c. Erosion problems;
 - d. Areas with failed or eroded vegetation in excess of 100 square feet, cumulatively;
 - e. Gas and/or odor problems;
 - f. Growth of vegetation with taproots;
 - g. Vectors;
 - h. Leachate popouts or seeps.

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8. The Permittee shall protect and maintain the surveyed benchmarks present at or near the SWDB.
9. All active portions of the Wood River Refinery; including the SWDB, are surrounded by a fence. The Permittee shall maintain warning signs (DANGER - UNAUTHORIZED PERSONNEL KEEP OUT) at the two roadway entrances to the SWDB.

D. INSPECTIONS

The Permittee shall inspect the components, structures and equipment associated with post-closure care in accordance with Sections D and E of the approved permit application, except as modified below:

1. The final cover, berms and drainage structures shall be inspected on a quarterly basis for the problems identified in Condition III.C.10 above. Appropriate corrective action shall be taken if any problem is discovered.
2. Documentation must be placed in the operating record for this facility of the (1) inspection date, (2) observations made during each inspection and (3) any corrective action taken as a result of the inspection.

E. FINANCIAL ASSURANCE FOR POST-CLOSURE CARE

1. The Permittee shall maintain financial assurance for post-closure care of the SWDB listed in Condition I.D.1 of this permit and the Groundwater Corrective Action Program of at least \$44,094,864 in 2021 dollars. The financial assurance maintained by the facility shall be sufficient to meet the requirements at 35 Ill. Adm. Code 724 Subpart H.
2. Post-closure care costs are determined by multiplying annual costs by either the full 30-year post-closure care period, or the post-closure care period remaining at the time the estimate is prepared. However, financial assurance for a minimum of ten (10) years of post-closure care costs shall be maintained at all times.
3. Financial assurance for the operating cost of the Groundwater Corrective Action Program shall be maintained for a minimum of thirty (30) years.

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F. CONTACT INFORMATION/REQUIREMENTS

1. This permit sets forth requirements which Equilon Enterprises must conduct at the facility whose address is:

WRB Refining LP
900 South Central Avenue
Roxana, Illinois 62084

2. The contact person for Equilon Enterprises is:

Leroy Bealer, Principal Program Manager
Shell Oil Products US
128 East Center Street
Nazareth, PA 18064
Telephone No.: (484) 632-7955
Email: Leroy.Bealer@shell.com

3. The contact person for WRB Refining LP is:

Megan Lipscomb, Environmental Director
WRB Refining, LP - Wood River Refinery
900 South Central Avenue
Roxana, Illinois 62084
Telephone No.: (618) 255-2142
Email: megan.l.lipscomb@p66.com

4. A copy of this permit and associated approved permit application must be maintained: (1) at the WRB Refining LP Facility; and (2) by Mr. Bealer.
5. Requests to change the contact person identified in Condition III.E.2 above shall be submitted as Class 1* permit modification requests.

G. NOTICES AND CERTIFICATION

1. A Restrictive Covenant and associated survey plat identifying the SWDB as a unit where hazardous waste has been disposed at this facility was filed with the Madison County Recorder on January 28, 2005 as Document No. 2005R05087. This filing was made in accordance with 35 Ill. Adm. Code 725.216.
2. If the Permittee or any subsequent owner or operator of the land upon which a hazardous waste disposal unit is located wishes to remove hazardous wastes and

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hazardous waste residues, the liner, if any, or contaminated soils, he must request first a modification to this post closure permit in accordance with the applicable requirements in 35 Ill. Adm. Code Parts 703, 705 and 724. The owner or operator must, at a minimum, demonstrate that the removal of hazardous wastes will satisfy the criteria of 35 Ill. Adm. Code 724.217(c).

3. No later than sixty (60) days after completion of the established post-closure care period for SWDB the Permittee shall submit to the Agency, by registered mail, a certification that the post-closure care for the hazardous waste disposal unit was performed in accordance with the specifications in the approved post-closure plan. The certification must be signed by the owner or operator and a qualified registered professional engineer. Documentation supporting the engineer's certification must be furnished to the Agency of the completion of the post-closure care activities required to be carried out during the post-closure period must accompany this certification.

Electronic Filing: Received, Clerk's Office 09/10/2025 **PCB 2026-019**
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Attachment III-A-1 of III-2

**HAZARDOUS WASTE MANAGEMENT
RCRA POST-CLOSURE PERMIT**

1191150002 – Madison County
USEPA ID No. ILD080012305
Equilon Enterprises

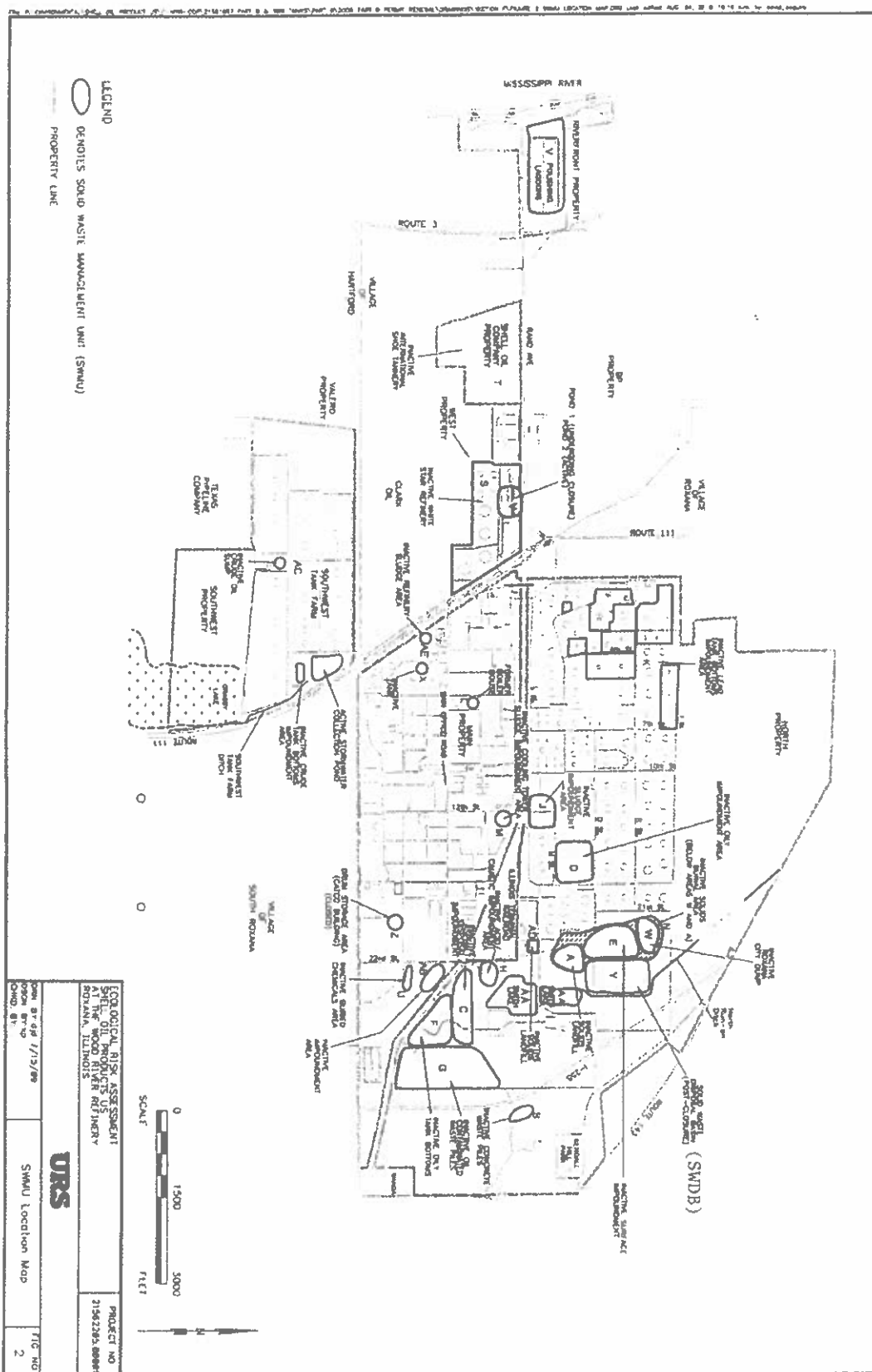
Log Nos. B-43R-M-32, B-43R-M-44, B-43R-M-53, B-43R-CA-93 (Reissued)

Attachment III-A – Site Layout Map

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Attachment III-A-2 of III-2



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Attachment III-A
Site Layout Map

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SECTION IV: GROUNDWATER CORRECTIVE ACTION PROGRAM

A. SUMMARY

Hazardous constituents released from the Solid Waste Disposal Basin (SWDB) have been detected in the groundwater at the point of compliance at concentrations above background values, as well as, groundwater quality standards established by Title 35 Illinois Administrative Code Subtitle G (35 Ill. Adm. Code) 724.192. Therefore, a Corrective Action Program meeting the requirements of 35 Ill. Adm. Code 724.200 must be implemented at the facility.

The Corrective Action Program required by this permit includes:

1. Control of horizontal and vertical groundwater flow in the uppermost aquifer such that groundwater flow is towards the interior of the facility along the combined boundaries of the North and Main properties. This control of groundwater flow will be accomplished by withdrawing sufficient quantities of groundwater from the uppermost aquifer. Such flow control is necessary as a corrective action to prevent contaminant migration of on-site releases of product or waste.
2. Verification that the flow of groundwater is adequately controlled as required by Condition IV.A.1 above.
3. Treatment of the groundwater withdrawn from the uppermost aquifer to control groundwater flow as required by Condition IV.A.1 above.
4. Removal of a hydrocarbon layer present on top of the water table beneath portions of the North and Main Properties.
5. Operation of the Soil Vapor Extraction (SVE) system, as required by Section V, to control vapors associated with the dissolved groundwater plume, Light Non-Aqueous Phase Liquid (LNAPL), and/or residual product.
6. Operation of the Steam Enhanced Extraction (SEE) system, as required by Section V, to address LNAPL and residual product at the Public Works Yard (PWY) area and capture and treatment of associated vapors.
7. Corrective Actions described in Conditions IV.A.1 through IV.A.6 must form the basis of the Groundwater Management Zone (GMZ). The GMZ is a three-dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site. Approval of the GMZ is based on the extent of effectiveness of those corrective actions.

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8. Monitoring the quality and movement of the groundwater in the uppermost aquifer beneath the facility to determine the effectiveness of the Corrective Action Program, as well as verify compliance with the GMZ.
9. The requirements listed in Conditions IV.A.1 through IV.A.8 are necessary to prevent contaminant migration. The GMZ requirements in Section IV must be conducted in conjunction with the corrective action and GMZ requirements in Condition V.D.3 until such time that contamination off-site has been fully addressed.

B. IMPLEMENTATION

1. The Permittee shall implement the Corrective Action Program established in this Permit upon the effective date of this Permit. On that date, the corrective action and groundwater monitoring requirements set forth in this Permit shall supersede those previously established.
2. The Permittee shall carry out the corrective actions specified in this Permit on the groundwater beneath the facility. The uppermost aquifer at this facility is a sand and gravel aquifer located approximately 30 feet below the ground surface and extending to a depth of about 120 to 180 feet below ground surface to the top of the bedrock surface. This aquifer is commonly referred to as the "American Bottoms." The "uppermost aquifer" refers to the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically connected with this aquifer in the vicinity of the facility.
3. For the purposes of this Permit and in accordance with 35 Ill. Adm. Code Part 620 regulations, the sand and gravel aquifer has been designated Class I: Potable Resource Groundwater. The analytical results obtained from these groundwater monitoring wells shall be compared to the appropriate Class I concentration limits that comprise the groundwater protection standard found in Condition IV.D.1 or to established background values as appropriate.
4. At this time, the point of compliance for the Solid Waste Disposal Basin will be postponed until such time that the monitoring wells at the facility have attained the applicable concentration limits that comprise the groundwater protection standard found in Condition IV.D.1 and the GMZ expires. At that time, facility must submit a proposal for the establishment of a point of compliance which satisfies the regulatory requirements found in 35 Ill. Adm. Code 724, Subpart F and reflects the current conditions at the facility.

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C. WELL LOCATIONS AND CONSTRUCTION

1. The Permittee shall maintain the groundwater monitoring wells identified in the tables below to allow for the collection of groundwater samples from the uppermost aquifer. The location of these wells is specified in Figure C-21 of the approved permit application.

a.	IEPA Well No.	Facility Well No.	Well Depth (Ft-bgs)	Well Depth Elevation (Ft MSL)	Well Screen Interval (Ft MSL)
<u>Observation Monitoring Wells (sampled semi-annually)</u>					
	G04S	P-4U	81.41	359.39	361.39 - 359.39
	G06S	P-6U	80.05	360.95	362.95 - 360.95
	G07S	P-7U	60.87	380.83	382.83 - 380.83
	G08D	P-8U	60.77	380.33	382.33 - 380.33
	G09S	P-01	63.72	375.78	380.78 - 375.78
	G14S	P-014	54.19	385.41	395.41 - 385.41
	G115	P-15	52.96	388.24	398.24 - 388.24
	G116	P-16	54.46	386.94	396.94 - 386.94
	G119	P-43	69.72	370.88	380.88 - 370.88
	IEPA Well No.	Facility Well No.	Well Depth (Ft-bgs)	Well Depth Elevation (Ft MSL)	Well Screen Interval (Ft MSL)
<u>Perimeter Monitoring Wells (sampled semi-annually)</u>					
	G117	P-17 ^{GMZ}	38.67	390.23	410.23 - 390.23
	R155	P-55R	51.09	393.11	403.36 - 393.36
	G156	P-56	63.98	380.32	405.32 - 380.32
	G159	P-59	69.95	373.95	398.95 - 373.95
	G160	P-60	60.46	383.24	403.24 - 383.24
	R182	P-93A	52.45	392.05	402.05 - 392.05
	G183	P-93B	74.38	369.92	371.92 - 369.92
	R184	P-93C	95.69	348.81	353.81 - 348.81
	G185	P-93D	125.67	318.98	320.98 - 318.98
	G194	P-83A ^{GMZ}	59.49	383.71	398.71 - 383.71
	G195	P-83B ^{GMZ}	69.50	373.90	375.90 - 373.90
	G196	P-83C ^{GMZ}	91.91	351.39	353.39 - 351.39
	G197	P-83D ^{GMZ}	133.21	309.99	311.99 - 309.99
	G202	P-86A ^{GMZ}	34.64	395.86	410.86 - 395.86
	G203	P-86B ^{GMZ}	60.36	370.24	372.24 - 370.24
	G204	P-86C ^{GMZ}	79.96	349.74	351.74 - 349.74

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IEPA Well No.	Facility Well No.	Well Depth (Ft-bgs)	Well Depth Elevation (Ft MSL)	Well Screen Interval (Ft MSL)
G205	P-86D ^{GMZ}	99.62	330.08	332.08 - 330.08
G210	P-88A ^{GMZ}	51.61	389.69	404.69 - 389.69
G211	P-88B ^{GMZ}	72.24	369.16	371.16 – 369.16
G212	P-88C ^{GMZ}	92.57	348.83	350.83 - 348.83
G213	P-88D ^{GMZ}	113.80	327.50	329.50 - 327.50
G222	P-82A ^{GMZ}	46.19	386.81	401.81 - 386.81
G223	P-82B ^{GMZ}	63.92	368.88	370.88 - 368.88
G224	P-82C ^{GMZ}	83.06	349.44	351.44 - 349.44
G225	P-82D ^{GMZ}	111.93	321.47	323.47 - 321.47
P85S	T-41 ^{GMZ}	36.95	391.46	411.46 - 391.46
P87U	P-87B ^{GMZ}	59.44	369.76	371.76 - 369.76
P87L	P-87C ^{GMZ}	79.48	349.63	351.63 - 349.63
P87D	P-87D ^{GMZ}	92.57	336.44	338.44 - 336.44
P85U	P-85B ^{GMZ}	57.95	370.45	372.45 - 370.45
P85L	P-85C ^{GMZ}	77.98	350.22	352.22 - 350.22
P85D	P-85D ^{GMZ}	99.06	329.24	331.24 - 329.24
G226	P-84A ^{GMZ}	61.21	382.99	397.99 – 382.99
G227	P-84B ^{GMZ}	73.29	370.71	372.71 - 370.71
G228	P-84C ^{GMZ}	93.83	350.17	352.17 - 350.17
G229	P-84D ^{GMZ}	120.81	323.09	325.09 – 323.09
G230	P-81A ^{GMZ}	37.36	395.94	410.94 - 395.94
G231	P-81B ^{GMZ}	62.56	370.74	372.74 - 370.74
G232	P-81C ^{GMZ}	82.55	350.25	352.25 – 350.25
G233	P-81D ^{GMZ}	90.83	341.97	343.97 - 341.97
G234	P-94 ^{GMZ}	57.71	384.29	399.29 – 384.29
G235	P-95 ^{GMZ}	49.10	391.90	406.90 - 391.90
G236	T-1* ^{GMZ}	54.23	388.07	398.40 - 388.40
G237	T-12*	70.63	371.97	397.97 – 371.97
G238	T-13* ^{GMZ}	72.34	370.46	396.46 - 370.46
MW6A	MW-6A ^{GMZ}	44.81	388.15	398.48 - 388.48
MW6B	MW-6B ^{GMZ}	69.87	362.99	368.32 - 363.32
MW6C	MW-6C ^{GMZ}	90.93	341.90	347.23 - 342.23
MW6D	MW-6D ^{GMZ}	110.58	322.01	327.34 - 322.34
MW14	MW-14 ^{GMZ}	44.53	390.61	401.19 - 391.19

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b.

IEPA Well No.	Facility Well No.	Well Depth (Ft-bgs)	Well Depth Elevation (Ft MSL)	Well Screen Interval (Ft MSL)
Observation Monitoring Wells (gauged only)				
P05D	P-5L	140.46	301.44	303.44 – 301.44
P05S	P-5U	130.29	311.61	313.61 - 311.61
P09U	P-9U	98.95	342.45	344.45 - 342.45
P11L	P-11L	110.86	330.34	332.34 - 330.34
P11U	P-11U	99.95	341.25	343.25 - 341.25
P12L	P-12L	82.29	349.61	351.61 - 349.61
P12U	P-12U	68.49	363.41	365.41 - 363.41
P113	P-13	37.19	394.11	414.25 - 394.25
P89S	T-37	67.81	378.40	398.40 - 378.40
P89U	P-89B	77.72	368.08	370.08 - 368.08
P89L	P-89C	97.77	348.13	350.13 - 348.13
P89D	P-89D	140.51	305.29	307.29 - 305.29
P91S	P-91A	64.08	380.73	395.73 - 380.73
P91U	P-91B	74.61	370.59	372.59 - 370.59
P91L	P-91C	94.56	350.34	352.34 - 350.34
P91D	P-91D	167.96	276.74	278.74 - 276.74
P92S	P-92A	60.43	383.67	398.67 - 383.67
P92U	P-92B	73.77	370.53	372.53 - 370.53
P92L	P-92C	95.79	348.21	353.21 - 348.21
P92D	P-92D	141.20	303.00	305.00 - 303.00
P102	P-102	60.18	382.22	402.22 - 382.22
P115	P-115	49.14	381.06	401.06 - 381.06
P116	P-116	54.41	379.19	399.19 - 379.19
P117	P-117	50.02	379.78	399.78 - 379.78
P118	P-118	45.04	384.26	400.19 - 384.19
P119	P-119	44.90	385.30	401.23 - 385.30
P120	P-120	45.19	385.51	401.44 - 385.51
P129	P-129	46.47	384.53	400.46 - 384.53
P130	S-1*+	56.50	385.60	
P131	T-2*	68.14	372.57	392.72 - 372.57
P132	T-3*	57.19	388.81	403.81 - 388.81
P133	T-4*	60.18	383.32	398.32 - 383.32
P134	T-5*	63.01	378.59	395.14 - 378.59
P135	T-6*	64.10	380.60	394.85 - 380.60
P136	T-7*	62.08	380.32	395.32 - 380.32
P138	T-15*	72.40	371.10	397.10 - 371.10

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IEPA Well No.	Facility Well No.	Well Depth (Ft-bgs)	Well Depth Elevation (Ft MSL)	Well Screen Interval (Ft MSL)
P139	T-17*	67.29	375.91	401.91 – 375.91
P140	T-19*	74.98	370.02	396.02 - 370.02
P142	T-21*	56.07	386.03	412.03 - 386.03
P143	T-22*	56.26	384.94	410.64 - 384.94
P144	T-23*	53.24	379.46	405.26 - 379.41
P145	T-24*	64.84	376.66	402.31 - 376.66
G240	T-28+	89.75	353.05	
P147	P-47	45.70	380.10	400.10 – 380.10
P148	T-38	66.47	376.53	396.53 - 376.53
P150	T-42	33.79	398.11	418.11 - 398.11
P151	P-51	38.89	385.41	405.41 - 385.41
P152	P-52	58.05	384.55	409.55 - 384.55
P153	P-53	61.69	382.91	407.91 - 382.91
P154	P-54	63.28	379.32	404.32 - 379.32
P155	T-52*+	38.15	394.35	
R157	P-57	52.23	392.77	402.77 – 392.77
P158	P-58	63.57	379.73	404.73 - 379.73
P159	T-64	47.18	379.12	409.12 – 379.12
P161	P-61	68.21	373.80	398.80 - 373.80
P162	P-62	65.14	375.96	400.96 - 375.96
P163	P-63	70.04	373.56	398.56 - 373.56
P164	P-64	69.64	374.66	399.66 - 374.66
P165	P-65	70.02	37.58	397.58 – 372.58
P166	P-66	59.81	377.09	402.09 – 377.09
P167	P-67	65.18	377.13	402.13 - 377.13
P168	P-68	67.08	374.92	399.92 - 374.92
P169	P-69	63.52	377.58	402.58 - 377.58
P170	P-70	68.02	373.28	398.28 - 373.28
P171	P-71	65.17	377.33	402.33 - 377.33
P172	P-72	67.88	373.72	398.72 - 373.72
P173	P-73	65.14	377.27	402.27 - 377.27
P174	P-74	67.81	373.29	398.29 - 373.29
P175	P-75	65.91	378.29	403.29 - 378.29
P176	P-18	38.00	393.30	403.30 - 393.30
P177	P-98	45.13	388.17	408.17 - 388.17
P178	P-99	44.88	387.63	407.63 - 387.63
P179	T-43	41.30	391.11	411.11 - 391.11
P180	T-44	39.47	393.42	413.42 - 393.42

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IEPA Well No.	Facility Well No.	Well Depth (Ft-bgs)	Well Depth Elevation (Ft MSL)	Well Screen Interval (Ft MSL)
P181	T-46	36.41	390.19	410.19 - 390.19
P182	T-51*+	39.56	393.08	
P183	T-62	47.82	382.28	412.28 - 382.28
P184	T-63	48.05	381.45	411.45 - 381.45
239A	P-114R	33.63	395.95	406.25 - 395.95

Notes to Condition 1.a and 1.b:

* = The boring log for this monitoring well is not available.

+ = Construction details unavailable.

"Ft-bgs" = refers to the number of feet below the ground surface.

"Ft-MSL" = refers to the number of feet referenced to mean sea level.

"Stick-up" = refers to the height of the reference survey datum. This point is determined with + 0.01 foot in relation to mean sea level, which in turn is established by reference to an established National Geodetic Vertical Datum.

GMZ = GMZ boundary well

- c. Off-site wells in the Interim Groundwater Monitoring Program that are part of the GMZ Boundary include: MW-10, MW-28, ROST-3-MW, MW-11, MW-22, MW-16, MW-1, MW-26, MW-3, and MW-5. Well construction details must be added in accordance with Condition IV.E.2.

2. The Permittee shall maintain the Water Production Wells identified in the table below to allow for the withdrawal of contaminated groundwater, in order to adequately control the flow of groundwater, as required by Condition IV.A.1 above.

IEPA Well No.	Facility Well No.	Well Depth (Ft-bgs)	Well Depth Elevation (Ft MSL)	Well Screen Interval (Ft MSL)
Water Production Wells**				
W39	W-39	137.00	307.40	377.40 - 307.40
W68*	W-68	130.00	312.70	351.00 - 311.00
W69	W-69	140.00	304.50	355.00 - 305.00
W70*	W-70	136.50	308.15	348.15 - 308.15
W72	W-72	137.00	308.10	348.10 - 308.10
W73+	W-73	135.00	310.00	350.00 - 310.00
W77	W-77	142.00	300.60	330.60 - 300.60

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IEPA Well No.	Facility Well No.	Well Depth (Ft-bgs)	Well Depth Elevation (Ft MSL)	Well Screen Interval (Ft MSL)
W78	W-78	138.33	303.77	333.77 – 303.77
W79	W-79	134.92	308.28	338.28 – 308.28
W80	W-80	135.83	307.17	337.17 – 307.17
W81	W-81	129.00	315.40	345.40 – 315.40
W86	W-86	108.50	337.10	370.10 – 337.10
W87	W-87	103.00	340.00	365.00 – 340.00
W88	W-88	100.00	345.73	370.73 – 345.73
W89	W-89	108.00	338.50	363.50 – 338.50
W90	W-90	111	333.2	363.2 – 333.2
W91	W-91	107.00	337.90	362.90 – 337.90
W92 ¹	--	--	--	--

Notes:

* = The boring log for this monitoring well is not available.

** = Ground surface elevations for water production wells are based on December 2014 survey.

+ = W73 remains for possible oil recovery.

¹ = Production Well W-92 details must be provided within thirty (30) days of the date that installation of the well is completed in accordance with Condition IV.C.6.

3. Construction of each monitor well/piezometer must be in accordance with the monitoring well diagram found at the Illinois EPA's website, unless otherwise approved in writing by the Illinois EPA. All new monitoring wells/piezometers to be installed must be continuously sampled and logged on the Illinois EPA boring log form found at the Illinois EPA's website, unless otherwise approved by the Illinois EPA.
4. The Permittee shall notify the Illinois EPA within thirty (30) days in writing if any of the wells identified in Conditions IV.C.1 and IV.C.2 are damaged or the structural integrity has been compromised causing the well not to serve its function or to act as a contaminant pathway. A proposal for the replacement of the subject well shall accompany this notification. The well shall not be plugged until the new well is on-line and monitoring data has been obtained and verified, unless the well is extremely damaged or would create a potential route for groundwater contamination. Prior to replacing the subject well, the Permittee shall obtain written approval from the Illinois EPA regarding the proposed installation procedures and construction.

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5. Should any well become consistently dry or unserviceable, a replacement well shall be provided within ten (10) feet of the existing well. This well shall monitor the same zone as the existing well and be constructed in accordance with the current Illinois EPA groundwater monitoring well construction standards at the time that the wells are replaced. A well which is more than ten (10) feet from the existing well or which does not monitor the same geologic zone must be approved by the Illinois EPA and designated as a new well. The Illinois EPA plugging and abandonment procedures are provided in Attachment IV-D.
6. The Permittee shall submit boring logs, construction diagrams and datasheets from installation and development of a new or replacement well to the Illinois EPA at the address below within thirty (30) days of the date that installation of the well is completed. In addition, the Permittee shall submit certification that plugging and abandonment of a well was carried out in accordance with the approved procedures to the Illinois EPA at the address below within thirty (30) days of the date that the well is plugged and abandoned. All pertinent information should be submitted to the appropriate State agencies.

Illinois Environmental Protection Agency
Bureau of Land – #33
Permit Section
2520 West Iles Avenue
Post Office Box 19276
Springfield, Illinois 62794-9276

7. All wells/piezometers shall be clearly identified and shall be equipped with protective caps and locks. Monitoring wells or piezometers located in high traffic areas must be protected with bumper guards.
8. All groundwater monitoring wells and piezometers not utilized in the approved groundwater monitoring system, but retained by the facility, must be constructed and maintained in accordance with 77 Ill. Adm. Code Part 920 regulations. Monitoring wells and piezometers that are improperly constructed must be abandoned in accordance with Condition IV.C.4.

D. GROUNDWATER PROTECTION STANDARD

1. The following hazardous constituents and their concentration limits (35 Ill. Adm. Code Part 620, Class I, Groundwater Quality Standards) comprise the groundwater protection standard for the groundwater monitoring wells found in Condition IV.C.1. Total (unfiltered) values will be used for the comparison with

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the 35 Ill. Adm. Code Part 620, Class I, Groundwater Quality Standards.
Dissolved values shall be used for statistical evaluations required in Condition
IV.I (unless otherwise noted):

Field Parameters	Storet	Units
pH	00400	s.u.
Specific Conductance	00094	micromhos/cm
Temperature of Water Sample	00011	(°F)
Turbidity	45626	Ntus
Depth to Water (below land surface)	72019	Feet
Depth to Water (below measuring point)	72109	Ft bgs
Elevation of Groundwater Surface	71993	Ft MSL
Elevation of Bottom of Well #	72020	Ft MSL
Elevation of Measuring Point (Top of casing) ##	72110	Ft MSL

Shall be determined during the first semi-annual sampling event each year.

Shall be surveyed once every five (5) years, or at the request of the Illinois EPA, or whenever the elevation changes as required by Condition IV.H.9.a.

Hazardous Constituents	Storet No. (Total)	Storet No. (Dissolved)	Concentration Limits (mg/L)
<u>Inorganics</u>			
Antimony	01097	01095	0.006
Arsenic	01002	01000	0.01
Barium	01007	01005	2.0
Beryllium	01012	01010	0.004
Cadmium	01027	01025	0.005
Chromium	01034	01030	0.1
Cobalt	01037	01035	1.0
Cyanide	00720	00723	0.2
Lead	01051	01049	0.0075
Mercury	71900	71890	0.002
Nickel	01067	01065	0.1
Selenium	01147	01145	0.05
Silver	01077	01075	0.05
Vanadium	01087	01085	0.049
Zinc	01092	01090	5.0

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Organics

Acenaphthene	34205	0.42
Anthracene	34220	2.1
Benzene	34030	0.005
Benzenethiol	73518	--
Benzo(a)anthracene	34526	0.00013
Benzo(b)fluoranthene	34230	0.00018
Benzo(k)fluoranthene	34242	0.00017
Benzo(a)pyrene	34247	0.0002
Bis(2-ethylhexyl)phthalate	39100	0.006 [#]
Carbon Disulfide	81309	0.7
Chlorobenzene	34301	0.100 [#]
Chloroform	32106	0.07
Chrysene	34320	0.012
o-Cresol (2-methylphenol)	77152	0.35
m-Cresol (3-methylphenol)	77151	0.35 ^{&}
p-Cresol (4-methylphenol)	77146	0.7 ^{&}
Dibenz(a,h)acridine	73541	--
Dibenzo(a,h)anthracene	34556	0.0003
Di-n-butyl phthalate	39110	0.7
1,2-Dichlorobenzene	34536	0.6
1,3-Dichlorobenzene	34566	--
1,4-Dichlorobenzene	34571	0.075
1,1-Dichloroethane	34496	1.4
1,2-Dichloroethane	34501	0.005
Diethyl phthalate	34336	5.6
2,4-Dimethylphenol	34606	0.14 [#]
Dimethyl phthalate	34341	--
2, 4-Dinitrophenol	34616	0.014 [#]
1,4-Dioxane	82388	0.0077
Ethylbenzene	78113	0.7
Ethylene dibromide (EDB)	34721	0.00005
Fluoranthene	34376	0.28
Fluorene	34381	0.28
Indene	77202	--
Indeno(1,2,3-cd)pyrene	34403	0.00043
1-Methylnaphthalene	77418	0.49 ^{&}
2-Methylnaphthalene	77416	0.028
Methyl tert-butyl ether	46491	0.070
Naphthalene	34696	0.14
4-Nitrophenol	34646	--

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Phenanthrene	34661	0.21 ^{&}
Phenol	32730	0.1
Pyrene	34469	0.21
Pyridine	77045	0.007 ^{&}
Quinoline	77299	--
Styrene	77128	0.1
Tetrachloroethene	34475	0.005
Toluene	34010	1.0
1,1,1-Trichloroethane	34506	0.2
Trichloroethene	39180	0.005
Xylenes (total)	34020	10.0

Source – 35 Ill. Adm. Code Part 742 (TACO), Appendix B, Table E

& Source – Illinois EPA Toxicity Assessment Unit (Chemicals not in TACO, Tier 1 Tables)

-- Not available

- a. In addition to meeting the individual Class I groundwater standards, as applicable: (1) equations for mixtures of similar-acting substances must be satisfied for non-carcinogenic substances, as required by 35 Ill. Adm. Code 620.615, and 35 Ill. Adm. Code 742.805(c) where Part 742 applies; and (2) the requirements for carcinogenic substances per the requirements of 35 Ill. Adm. Code 620.615, and 35 Ill. Adm. Code 742.805(d) where Part 742 applies.
- b. Within 60 days, provide updates to the permit renewal application under review by the Illinois EPA to propose the following to reflect revisions to 35 Ill. Adm. Code Part 620 which became effective March 28, 2025:
 - i. Since submittal of the permit renewal application, 35 Ill. Adm. Code has been revised to require the Lower Limit of Quantitation (LLOQ) instead of the Practical Quantitation Limit (PQL), include different standards, and more chemical constituents. Based on these changes and the industry code associated with the refinery, these updates must also include the addition of the six new PFAS constituents.
 - ii. Propose revisions to Condition IV.D.1 to incorporate necessary changes required by Condition IV.D.1.b.i.

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2. Alternate concentration limits may be established where the Permittee can determine a constituent will not pose a substantial hazard to human health or the environment.
 - a. Where a hazardous constituent has a standard in 35 Ill. Adm. Code Part 620, the facility must apply for an adjusted standard as outlined in Section 28.1 of the Environmental Protection Act or reapply once corrective measures have been implemented pursuant to 35 Ill. Adm. Code 620.450.
 - b. For those hazardous constituents without a 35 Ill. Adm. Code Part 620 standard, the alternative concentration limits proposed by the facility must be approved by the Illinois EPA.
3. The compliance period (post-closure period) during which the groundwater protection standard applies shall be extended until the Permittee demonstrates that the groundwater protection standard has not been exceeded at the point of compliance for three (3) consecutive years.
4. The approved sampling parameter list in Condition IV.D.1 will be considered appropriate until such time that the ongoing investigations in the vicinity of the western fenceline of the North Property, with Illinois EPA review and approval, have been deemed complete. At that time, the facility must request to modify the Permit, as described in Condition IV.J, to reduce or add any additional Constituents of Concern (COCs) to the sampling parameter list. COC refers to any constituent of concern detected during the groundwater analytical testing.

E. GROUNDWATER CORRECTIVE ACTION PROGRAM

The Permittee shall conduct the Corrective Action Program and perform groundwater monitoring detailed in this section, in accordance with the following:

1. The Permittee shall monitor the wells designated in Condition IV.C.1.a during the second quarter for all hazardous constituents listed in Condition IV.D.1 above. The Permittee shall monitor the wells designated in Condition IV.C.1.a during the fourth quarter for the following hazardous constituents listed in Condition IV.D.1 above: dissolved arsenic, barium, cobalt, lead, nickel, and vanadium; and 2-methylnaphthalene, naphthalene, phenol, benzene, ethylbenzene, toluene and xylenes (BETX).
2. The GMZ must be monitored and maintained as follows:
 - a. The GMZ shall be defined with the following wells:

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P-84 (A-D), T-13, T-1, MW-10, MW-28, ROST-3-MW, MW-11, MW-22, MW-16, MW-1, MW-26, MW-3, MW-5, MW-6 (A-D), MW-14, P-82 (A-D), P-88 (A-D), P-95, P-81 (A-D), T-41 (shallow), P-85 (B-D), P-86 (A-D), P-17 (shallow), P-87 (B-D), P-94, and P-83 (A-D).

- i. Within 180 days submit a Class 1* permit modification request, for Illinois EPA review and approval, to address exceedances of any concentration limit in Condition IV.D.1 at any GMZ Boundary well observed in the last five years. The wells in Condition IV.E.2.a can only be approved on an interim basis as GMZ Boundary wells must be below the applicable groundwater standards.
- b. Continued approval of off-site wells are dependent upon meeting Condition IV.E.2.b.i and effectiveness of the SEE system. The off-site wells are located within the Village of Roxana and are part of the Interim Groundwater Monitoring Program required by Section V.
 - i. Within 180 days, the facility must submit a Class 1* permit modification request, for Illinois EPA review and approval, with written documentation to the Illinois EPA with each affected property owner's written permission to the establishment of the GMZ on its property. Off-site wells in Comment 2.b are not approved until this condition is met and may need to be adjusted dependent on the permissions obtained.
 - ii. The Class 1* permit modification request in Condition IV.E.2.b.i above must also include monitoring well details to be added to Condition IV.D.1 for any off-site wells being added to the GMZ.
- c. Analytical results from Production Wells in Condition IV.C.2 must be included in semi-annual monitoring reports required by Condition IV.I.2.
- d. Evaluations for the indoor inhalation exposure route must be provided for exceedances of 35 Ill. Adm. Code Part 620 and screening levels identified in Table H of Appendix B in 35 Ill. Adm. Code Part 742 at the groundwater monitoring wells located at the property boundary and at any off-site locations any time groundwater is sampled. Screening levels for the current type of property use shall be used.

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- i. Identify any homes or buildings potentially impacted by the exceedance and evaluate, in accordance with 35 Ill. Adm. Code Part 742, if the indoor inhalation pathway is completed by conducting site-specific evaluations based on the most recent water level, building-specific construction information if known, known occupancy and any other site-specific factors, as appropriate and applicable, at each building.
 - ii. If the evaluation demonstrates that the indoor inhalation pathway is incomplete, the Permittee shall include the demonstration in the semi-annual report required by Condition III.I.2.
 - iii. If the evaluation demonstrates that the indoor inhalation pathway is complete, the Permittee must submit the evaluation and propose additional corrective action within 30 days of the discovery of the exceedance for the Illinois EPA review and approval.
 - iv. A new evaluation is required for each sampling event when the screening levels are exceeded to determine whether screening levels are exceeded.
 - v. Vapor monitoring data may also be used to demonstrate the indoor inhalation exposure route is met.
- e. The GMZ Boundary wells shall be monitored semi-annually for the constituents listed in Condition IV.D.1 for on-site wells, and for constituents required by the Interim Groundwater Monitoring Program in Section V for off-site wells, in accordance with the schedule listed in Condition IV.I.2.
- f. The results of monitoring the GMZ shall be submitted to the Illinois EPA semi-annually in accordance with the schedule found in Condition IV.I.2.
- g. The GMZ expires when all groundwater monitoring wells within the GMZ have attained the appropriate Class I concentration limits that comprise the Groundwater Protection Standard found in Condition IV.D.1.
- h. The appropriate Class I concentration limits shall be considered attained when groundwater monitoring results meet the appropriate concentration limit for two consecutive years. A Mann-Kendall trend analysis based on eight quarters of data shall be submitted for Illinois EPA review and approval unless otherwise approved.

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- i. An evaluation of the GMZ shall be submitted in a report for Illinois EPA review and approval, a minimum of every five years, in accordance with the guidance document for re-evaluation of GMZs found at the Illinois EPA website. Statistical analysis required by Subsection IV.H must also be included.
 - j. Propose additional on-site wells to serve as new observation wells. At a minimum, the following requirements apply:
 - i. The wells must be installed adjacent to existing locations yet screened at a shallower interval to intercept the water table for LNAPL observations.
 - ii. These wells will be used for gauging LNAPL.
 - iii. Additional wells, not adjacent to existing monitoring wells, may be proposed to better define the LNAPL footprint.
 - iv. Wells must be installed in accordance with Section IV.D.3 of the Permit, and associated information provided to the appropriate State agencies as required by Condition IV.D.6 of the Permit.
 - v. Submit this proposal within 90 days, for Illinois EPA review and approval, request as a Class 1* modification to the Permit.
 - vi. Overall, LNAPL must continue to be addressed at individual wells until no measurable or visually observed product, including a sheen, has been detected for four consecutive quarterly or semiannual monitoring events, unless otherwise approved by the Illinois EPA. Conditions must be adequate for potential product to enter the well (i.e., water table conditions intercept well screen) or the length of observations will be extended.
3. The Corrective Action Program shall include the following: (1) control the horizontal and vertical flow in the vertical column of water present in the uppermost aquifer beneath the North and Main Properties and monitor the position and rate of migration of the Hydrocarbon Pool; (2) removal of LNAPL; (3) capture and treatment of vapors using the SVE system; and (4) implementation of the SEE system; as follows:

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- a. The pumping from the Water Production Wells, at a minimum rate of 3,000 gallons per minute (gpm), shall maintain the cone of depression to ensure groundwater flow is adequately controlled in the uppermost aquifer. This minimum pumping rate is based on the modeling approved to date.
 - b. The pumping rate from the Water Production Wells system shall be recorded daily. This data shall be used to calculate monthly average withdrawal rates.
 - c. The Permittee shall treat the water withdrawn from the aquifer to maintain the necessary control of flow and recover hydrocarbon material which is present on the top of the water table beneath portions of the North and Main Properties.
 - d. Operation of the SVE system, as required by Section V, to control vapors associated with the dissolved groundwater plume, LNAPL, and/or residual product.
 - e. Operation of the SEE system, as required by Section V, to address LNAPL and residual product at the PWY area and capture and treatment of associated vapors.
4. The Permittee shall monitor the groundwater horizontal and vertical gradients in the uppermost aquifer beneath the facility.
5. The Permittee shall record the following measurements and submit to the Illinois EPA semi-annually as required by Condition IV.I.2.
 - a. A record of the amount of groundwater withdrawn each day by the Water Production Wells system.
 - b. Quarterly monitoring of the piezometric head at wells in the uppermost aquifer identified in Conditions IV.C.1 and IV.C.2 above to demonstrate that groundwater flow is properly controlled throughout the contaminated area requiring corrective action in the uppermost aquifer and is being contained.
6. The Permittee shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually from the monitoring wells listed in Condition IV.C.1.
7. The groundwater quality in the uppermost aquifer beneath the facility shall be monitored on a semi-annual basis at each of the monitoring wells identified in Condition IV.C.1.a.

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8. Submit an investigation workplan within ninety (90) days, for Illinois EPA review and approval, to determine the source of the benzene contamination detected at well P-51. This proposal must also propose investigation locations to delineate the extent of groundwater contamination, and at a minimum, the workplan must propose groundwater sampling and analysis for COCs benzene, chromium, and MTBE.

F. GROUNDWATER ELEVATIONS

1. The Permittee shall determine the groundwater surface elevation referenced to MSL at each well each time groundwater is sampled in accordance with Condition IV.J.3.
2. The Permittee shall report the surveyed elevation of stick-up and ground surface referenced to MSL once every five years or at the request of the Illinois EPA, or whenever the elevation changes in accordance with Condition IV.J.9.
3. Elevation, as referenced to MSL, of the bottom of each monitoring well (STORET 72020), is to be reported at least annually. The mandatory measurement shall be taken during the first semi-annual sampling event each year.

G. SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall follow the techniques and procedures described in Section C.7.5 of the approved permit application, except as modified below, when obtaining and analyzing samples from the groundwater monitoring wells described in Condition IV.C.1:

1. Samples shall be collected by the techniques described in Section C.7.5 of the approved permit application, with the exception of those wells also sampled for the Roxana Interim Groundwater Monitoring Program, which are sampled using low-flow sampling techniques approved in accordance with Section V of the Permit.
2. Samples shall be preserved, shipped and handled in accordance with the procedures specified in Section C.7.5 of the approved permit application.
3. Samples shall be analyzed according to the procedures specified in Section C.7.5, and identified on Table C-15, of the approved permit application.
4. Samples shall be tracked and controlled using the chain-of-custody procedures specified in Section C.7.5 of the approved permit application.

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5. Procedures for groundwater monitoring well installation, abandonment, and replacement shall be followed, except as modified below:
 - a. Wells installed with bottom depths on the order of 90 feet bgs or greater, where coarser sands and increased hydraulic pressures are encountered, must be installed using sonic drilling techniques.
 - b. Groundwater monitoring wells can be hybrid well constructions. Screen material for groundwater monitoring well installations must be composed of stainless steel, while the riser material may be constructed of PVC.
 - c. Well screens for groundwater monitoring wells must be either 5 or 10 feet in length. The screened interval of the monitoring well during installation must be positioned to intercept the appropriate groundwater elevation at the time the well is installed.

H. STATISTICAL METHODS

1. The Permittee shall statistically evaluate the quality of groundwater samples collected during semi-annual sampling events identified in Condition IV.E to demonstrate the effectiveness of the corrective actions.
2. Statistical evaluations required by Condition IV.H.1 shall be performed annually for groundwater collected each calendar year, in accordance with the approved GMZ application (Log Nos. B-43R-M-32, M-44, M-53, and CA-93), using the following tools to evaluate trends and plume changes:
 - a. Monitoring and Remediation Optimization System (MAROS), Version 2.2, open source software used to provide statistical review of groundwater monitoring data. A 90% confidence in trend will be considered probably increasing or probably decreasing.
 - b. Environmental Visualization System PRO, Version 9.89 (EVS-PRO) modeling to estimate the distribution of benzene in groundwater and estimate benzene footprint square footage changes.
 - c. Mann-Kendall (MK) and Linear Regression (LR) trend evaluation and Moment Analysis tools.

I. REPORTING AND RECORDKEEPING

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1. The Permittee shall enter all monitoring, testing and analytical data obtained in accordance with Subsections IV. D, IV.E, IV.F and IV.H into the operating record.
2. Samples collected to meet the requirements of the groundwater monitoring program described in Subsections IV. D, IV.E, IV.F and IV.H shall be collected and reported as identified in the table below. All additional data required by the groundwater monitoring program (as specified in Subsections IV. D, IV.E, IV.F and IV.H) shall also be submitted to the Illinois EPA at the address listed in Condition IV.C.6 in accordance with this schedule.

Sampling Event of Calendar Year	Samples to be Collected During the Months of	Results Submitted to the Agency by the Following
First Quarter	January - March	August 1
Second Quarter	April - June	August 1
Third Quarter	July - September	February 1
Fourth Quarter	October - December	February 1

3. Groundwater surface elevation data, measured pursuant to Condition IV.F.1, shall be collected at least quarterly and submitted to the Illinois EPA as identified in Condition IV.I.2 above.
4. Groundwater withdrawal rates, calculated pursuant to Condition IV.E.2.b shall be submitted quarterly as identified in Condition IV.I.2.
5. Gradient control measurements collected pursuant to Condition IV.E.4 shall be submitted to the Illinois EPA as part of the second and fourth quarter reports as identified in Condition IV.I.2.
6. Statistical evaluations, as required by Subsection IV.H, shall be submitted to the Illinois EPA as a part of the semi-annual reports as identified in Condition IV.I.14, and within the 5-year GMZ evaluation required by Condition IV.E.2.e.i.
7. The Permittee shall report the groundwater flow rate and direction, as required by Condition IV.E.5, during the second semi-annual sampling event each year.
8. Groundwater quality samples collected to meet the requirements of Condition IV.E.6 shall be collected during the second and fourth quarters and submitted to the Illinois EPA as identified in Condition IV.I.2.

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9. The Permittee shall report the surveyed elevation, as required by Condition IV.F.2, of the top of the well casing (“stick-up”), referenced to MSL, in accordance with the following schedule:
 - a. For wells identified in Condition IV.C.1 above, every five (5) years (during the second semi-annual sampling event), or at the request of the Illinois EPA, or whenever the elevation changes.
 - b. For any new wells, at the time of installation and reported in the as-built diagrams. Subsequent measurements shall be made every five (5) years (during the second quarter sampling event) or whenever the elevation changes.
10. Elevation of the bottom of each monitoring well identified in Condition IV.C.1, referenced to MSL, is to be reported annually. This measurement shall be taken during the second semi-annual sampling event (Storet 72020).
11. Information required by Conditions IV.I.2, IV.I.3, IV.I.9 and IV.I.10 must be submitted in an electronic format. The information is to be submitted as fixed-width text files formatted as found in Attachment IV-C of this Permit, in accordance with the schedule found in Condition IV.I.2. Additional guidance regarding the submittal of the information in an electronic format can be found on the Illinois EPA’s webpage titled, Electronic Reporting of Groundwater Data.
12. The Permittee shall submit a completed “RCRA Facility Groundwater, Leachate and Gas Reporting Form” (LPC 592) as a cover sheet for any notices or reports required by the facility’s permit for identification purposes. Only one (1) copy of the LPC 592 must accompany your submittal. However, the Permittee must submit one (1) original and (excluding the groundwater and leachate monitoring results submitted in an electronic format) a minimum of two (2) copies of each notice or report you submit to the Illinois EPA. The form is not to be used for permit modification requests.
13. The Permittee shall report all information to the Illinois EPA in a form which can be easily reviewed. All submittals must contain tables of data, drawings, and text (as necessary) to accurately describe the information contained in the submittal.
14. The Permittee shall submit a written report, annually to the Illinois EPA by July 15 of each year, which discusses the effectiveness of the Corrective Action Program. At a minimum, the report must include, but not be restricted to, the following:

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- a. Address the information requirements in Subsections IV.C, IV.D, IV.E, IV.F, and IV.H.
 - b. Evaluate the effectiveness of the hydraulic control and contaminant removal, including the information required by Subsection IV.D.
 - c. Provide a discussion of any change in the quality of groundwater beneath the facility which has resulted from the corrective action.
15. If the Permittee determines that groundwater flow is not being adequately controlled, the Permittee shall:
 - a. Notify the Agency in writing within seven (7) days of the date that this determination is made;
 - b. Take actions as necessary to regain the control of groundwater flow as required by Condition IV.E.2.
 - c. Submit a written report to the Illinois EPA within thirty (30) days describing the actions taken to regain control of groundwater flow. In addition, the report must contain information which demonstrates that groundwater flow is being adequately controlled.
 - d. Submit a request for permit modification to the Illinois EPA within sixty (60) days describing any changes which must be made to the Corrective Action Program to ensure that the groundwater flow is adequately controlled.

J. REQUEST FOR PERMIT MODIFICATION

1. If the Permittee determines that the Corrective Action Program required by this permit no longer satisfies the requirements of 35 Ill. Adm. Code 724, Subpart F, the Permittee must, within 90 days, submit an application for permit modification to the Illinois EPA, Bureau of Land, Permit Section to make any appropriate changes to the program which will satisfy the regulations.
2. Conditions in this section of the Permit may be modified by the Illinois EPA in accordance with 35 Ill. Adm. Code 702.183 and 705.128 if there is cause for such modification, as defined in 35 Ill. Adm. Code 702.184. Causes for modification in this section of the regulations include, but are not limited to, alterations to the permitted facility, additional information which would have justified the application of different permit conditions at the time of permit issuance, and new regulation.

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SECTION V: CLOSURE AND CORRECTIVE ACTION

A. INTRODUCTION

1. In accordance with Section 3004(u) of RCRA and Title 35 Illinois Administrative Code Subtitle G (35 Ill. Adm. Code) 724.201, the Permittee shall institute such corrective action as necessary to protect human health and the environment from all releases of hazardous wastes or hazardous constituents, listed in 35 Ill. Adm. Code Part 721, Appendix H from any solid waste management unit (SWMU) at the WRB Refining facility in Roxana, Illinois.
2. Eight former hazardous waste management units were once in operation at this facility. As these units are a subset of solid waste management units, it is necessary to ensure that all of these units have been closed in accordance with 35 Ill. Adm. Code Parts 724 and 725. Two of the units have been properly closed and additional efforts must be completed to complete closure of the other six units. This permit sets forth general requirements which must be met in closing these six units.
3. This facility was initially issued a RCRA permit by USEPA and Illinois EPA on September 29, 1989. The USEPA portion of the permit (also known as "Hazardous and Solid Waste Amendments (HSWA) Permit," contained, among other things, corrective action requirements for twenty-two SWMUs).
4. The facility has completed a substantial amount of investigation and, as necessary, remediation of these SWMUs under USEPA's oversight. Six additional SWMUs were discovered during the course of these efforts and have been or are being addressed under the facility's RCRA Corrective Action Program.
5. Illinois EPA now has authority for imposing corrective action requirements at RCRA permitted facilities and thus will now be responsible for overseeing future corrective action activities at this facility as part of the requirements in this renewed RCRA Permit.
6. Unless there is a desire to modify specific requirements set forth in this Section, information submitted to Illinois EPA regarding the corrective action requirements set forth in this Section is not a request to modify this permit nor subject to the requirements of 35 Ill. Adm. Code Part 703, Subpart G.

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- a. A completed Illinois EPA RCRA Corrective Action Certification form (available on Illinois EPA's internet site) must accompany all corrective action-related information submitted to Illinois EPA.
 - b. To allow for proper review of all corrective action-related information submitted to Illinois EPA, the original and two copies of the information must be submitted.
7. The Permittee must provide corrective action, as appropriate, for any future releases from SWMUs present at the facility.
8. The requirements of 35 Ill. Adm. Code Part 742 must be met, as appropriate, in determining remediation objectives for corrective action activities. In addition, the requirements of 35 Ill. Adm. Code Part 620 and 724.201 must be met during implementation of the RCRA corrective program at this facility.
9. Illinois EPA's final action on all corrective action-related submittals made by the Permittee are subject to the appeal provisions of Section 39 and 40 of the Illinois Environmental Protection Act.

B. STATUS OF FORMER HAZARDOUS WASTE MANAGEMENT UNITS

1. Several hazardous waste management units were once in operation at this facility which have either been closed or are in the process of being closed. As hazardous waste management units are a subset of solid waste management units, the status of these various units and, as necessary, requirements to complete closure of these units are set forth in this subsection.
2. The former hazardous waste management units once in operation at this facility include:

CATCO Building
Tank CH-290

Ponds 1 and 2
Tanks B-58, D-30, B-58 and L-143

The status of these units is discussed in Items 3 thru 7 below.

3. The CATCO Building was a permitted hazardous waste container storage area. Illinois EPA approved a closure plan for this unit on August 16, 2006 (Log No. B-43-CA-2) and accepted certification of closure of the unit on July 30, 2007 (Log No. B-43-CA-3).
4. Tank CH-290 was an interim status hazardous waste storage tank which became regulated when the definition of hazardous waste was expanded to include, among

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other things, the TCLP characteristic for benzene. Illinois EPA approved a closure plan for this unit on August 16, 2006 (Log No. B-43-CA-1) and accepted certification of closure of the unit on July 30, 2007 (Log No. B-43-CA-4).

5. Pond 1 was an interim status hazardous waste surface impoundment which became regulated when the definition of hazardous waste was expanded to include, among other things, the TCLP characteristic for benzene. This unit was associated with the facility's wastewater treatment plant. From 1990 until March 1994, this unit occasionally received hazardous waste. From April 1994 to the time closure of the unit began, it received non-hazardous waste under a delay of closure adjusted standard issued by the Illinois Pollution Control Board (Docket No. AS-97-3).
 - a. A closure plan for this unit was approved by Illinois EPA on October 4, 2006 (C-851).
 - b. Modifications to the approved closure plan were approved by Illinois EPA on July 20, 2007 (Log No. C-851-M-1 and 2). The documents comprising the modification request were entitled "Closure Sampling Report and Conceptual Closure Design" and "Addendum to Pond 1 Closure."
 - i. Illinois EPA determined closure of soil will be complete once an ELUC is established which ensures: (1) the property will only be used for industrial and commercial purposes; (2) a site safety plan to address possible work exposure to the soil will be developed and implemented during any future excavation/construction in these areas; and (3) any soil removed from Pond 1 during any future activities will be managed in accordance with 35 Ill. Adm. Code, Subtitle G: Waste Disposal
 - ii. Illinois EPA also determined that closure relative to groundwater will be achieved if the environmental land use control (ELUC) required above prohibits the use of groundwater as a potable water supply. It was also determined that groundwater monitoring for Pond 1 may be discontinued.
 - iii. This letter also contained a groundwater monitoring program for Pond 2.
 - c. Illinois EPA approved a Closure Documentation for this unit and a draft ELUC on March 15, 2010.

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- d. Illinois EPA approved the final certification of closure for this unit (which included a certified copy of the ELUC filed with the Madison County Recorder on December 14, 2009 as Document No. 2009R60789) on August 19, 2010. The final action brings closure of Pond 1 to completion.
6. Pond 2 was also an interim status hazardous waste surface impoundment which became regulated when the definition of hazardous waste was expanded to include, among other things, the TCLP characteristic for benzene. This unit is located adjacent to Pond 1 and is associated with the facility's wastewater treatment plant. From 1990 until sometime in 1995, this unit occasionally received hazardous waste. Since 1995, the unit has received non-hazardous waste under a delay of closure adjusted standard issued by the Illinois Pollution Control Board (Docket No. AS-98-6). A plan to close this unit was approved by Illinois EPA on December 9, 2009 (Log No. C-868). A revised closure plan was approved by Illinois EPA on April 10, 2010; this letter superseded the December 9, 2009 letter mentioned above. In this letter, Illinois EPA:
- a. determined closure of the soil beneath Pond 2 will be considered complete if: (a) the asphalt liner of Pond 2 is employed as an engineered barrier; and (b) exposure to the soil beneath Pond 2 is restricted via an institutional control
 - b. required that the sediments within the inlet ditch of Pond 2 be address;
 - c. set forth requirements for groundwater monitoring at Pond 2.
 - d. Illinois EPA approved a closure plan modification on March 16, 2011. This letter:
 - i. Required that the sediments in the inlet ditch to Pond 2 be removed;
 - ii. Set forth groundwater monitoring requirements for Pond 2
 - iii. Required that an ELUC be established which requires: (a) the liner of Pond 2 be maintained as an engineered barrier; (b) the land where Pond 2 is located to only be used for commercial/industrial activities; (c) a site safety plan to address possible work exposure to the soil beneath the engineered barrier Pond 2 be developed and implemented during any future excavation/construction activities at Pond 2; (d) that any soil removed from beneath Pond 2 be managed in accordance with 35 Ill. Adm. Code, Subtitle G: Waste

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Disposal; and (e) that groundwater in the vicinity of Pond 2 cannot be used for potable purposes

- e. On January 22, 2013, Illinois EPA approved a closure documentation report for Pond 2 and a draft ELUC.
- f. On August 6, 2013, Illinois EPA:
 - i. Accepted the ELUC filed for Pond 2 with the Madison County Recorder's Office on March 6, 2013 as Document No. 2013R10588;
 - ii. Determined that closure of Pond 2 was complete.
- 7. Tanks B-58, L-143, D-27 and D-30 were interim status hazardous waste storage tanks which became regulated with the definition of hazardous waste was expanded to include, among other things, the TCLP characteristic for benzene. Operation of these tanks as hazardous waste management units ceased in 1994. A plan to close these units was initially approved by USEPA on July 21, 1994. A certification of closure of these units was submitted to USEPA on October 20, 1995, but USEPA never formally accepted or approved this certification.
 - a. A new closure plan was submitted to Illinois EPA for these units which were approved on May 7, 2008 (Log No. C-864).
 - b. On February 17, 2009, Illinois EPA approved a TACO Sampling Report which contained the results of a soil sampling/analysis effort beneath the tanks. Illinois EPA determined an ELUC must be established restricting future use of the facility to industrial/commercial activities. (Log No. B-43-CA-11).
 - c. February 16, 2010, a certified copy of the ELUC filed for this tank was submitted to Illinois EPA. This ELUC (filed with the Madison County Recorder on December 14, 2009 as Document No. 2009R60789) placed the following restrictions on this area: (1) future activities in the area of tanks are restricted to commercial/industrial activities; and (2) any soil removed from the area where the tanks were located must be characterized and disposed in accordance with all applicable rules and regulations.
 - d. Illinois EPA approved certification of closure of these four tanks on May 19, 2010. This letter indicated that closure of the tanks was complete and that the requirements of the aforementioned ELUC must continue to be met in the future.

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8. Given all of the above, the only former hazardous waste management unit at this facility which must be closed in accordance with 35 Ill. Adm. Code Parts 725 and 742 is Pond 2.
9. If Pond 2 cannot be closed in accordance with 35 Ill. Adm. Code Part 742, it will be necessary to close it as a landfill and provide thirty years of post-closure care of the unit in accordance with 35 Ill. Adm. Code Parts 724 and 725. If it is necessary to close Pond 2 as a landfill, this permit will need to be modified incorporating such a unit and its post-closure care into the permit.

C. OVERVIEW OF THE SWMUS ADDRESSED UNDER THE ORIGINAL RCRA PERMIT

1. The original RCRA Permit issued by USEPA required that corrective action be completed at 22 SWMUs at this facility (these SWMUs are referred to as SWMUs A thru N and S thru Z). During the course of carrying out corrective action efforts, an additional six SWMUs at the facility (referred to as SWMUs AA through AF) were discovered. From 1989 until 2009, corrective action at these units was overseen by USEPA.
2. Section F-1.b of the approved permit application to renew the facility's RCRA Permit contains detailed information about each of the 28 SWMUs of concern at this facility and information regarding the corrective action completed at each unit.
3. The 28 SWMUs of concern at this facility, as well as the current status of the corrective action program for each SWMU is presented in the following table.

ID	Name	Status
A	Inactive Solids Landfill	Final Report for Phase III RFI approved by USEPA on October 23, 2002. No further action needed, provided it remains undisturbed in present condition.
B	Inactive Concrete Waste Pile	USEPA letter of April 25, 2001 indicates no further action necessary at unit.
C	Inactive Asphalt Disposal	Final RFI report for this SWMU approved by USEPA with no further action needed for soils on July 7, 1998; groundwater still a concern and must still be addressed under IEPA's groundwater corrective action program.

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D	Inactive Oily Impoundment Area	USEPA's January 29, 2001 letter indicates RFI for unit has been completed and unit does not pose a threat to human health, provided area used for industrial purposes. Ecological risks must still be evaluated.
E	Inactive Surface Impoundment	USEPA approved the Phase III RFI report for this unit on July 27, 2002. No further action required provided: (1) area only used for industrial activities; and (2) facility ecological assessment indicates no impact of area.
F	Inactive Oil Tank Bottoms	The RFI report was approved July 7, 1998 by USEPA. No further action needed for soils; groundwater still a concern and must still be addressed under IEPA groundwater corrective action program.
G	Inactive Oil Contaminated Waste Piles	The RFI report was approved July 7, 1998 by USEPA. No further action needed for soils; groundwater still a concern and must still be addressed under IEPA groundwater corrective action program.
H	Inactive Acid/Caustic Impoundment Area	USEPA approved the Phase III RFI report for this unit on July 27, 2002. No further action provided: (1) area only used for industrial activities; and (2) facility ecological assessment indicates no impact of area.
I	Inactive Crude Tank Bottoms Impound Area	Per April 25, 2001 letter, no further action needed, provided: (1) institutional controls in place to restrict human exposure, and to soils remaining in the unit; and (2) site-wide ecological investigation is conducted.
J	Inactive Sludge Impoundment Area	USEPA's January 29, 2001 letter indicates RFI for unit has been completed and unit does not pose a threat to human health. provided, area used for industrial purposes. Ecological risks must still be evaluated.
K	Inactive Lead Tank Bottoms Impoundment Area	No further action determination made by USEPA on April 25, 2001.
L	Inactive Boiler House for Incinerator	USEPA letter of April 25, 2001 indicated no further action necessary at this unit.
M	Inactive Cooling Tower Sludge Impoundment Area	USEPA approved the Phase III RFI report for this unit on July 27, 2002. No further action provided: (1) area only used for industrial activities; and (2) facility ecological assessment indicates no impact of area.
N	Inactive Solids Burial Area	Final Report for Phase III RFI approved by USEPA October 23, 2002. No further action needed, provided it remains undisturbed in present condition.

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O – R		These letters were skipped in the labeling of SOPUS's SWMUs.
S	Inactive White Star Refinery Area	No further action needed, based on the USEPA's July 11, 2000 approval of the RFI for this unit.
T	Inactive International Shoe Tannery Area	No further action needed, based on the USEPA's July 11, 2000 approval of the RFI for this unit.
U	Inactive Buried Chemicals Area	Corrective action report approved by USEPA on August 2, 2002; no further action needed provided appropriate land use restrictions established.
V	Active Wastewater Treatment Ponds and Lagoons (includes an area where dredged material was placed)	USEPA approved the RFI on April 6, 2001; need for corrective measures dependent on further human and ecological risk assessment. Ponds 1 and 2 associated with the wastewater treatment facility were removed from the RFI, as they are interim status hazardous waste management units. Facility now pursuing interim status closure of Ponds 1 and 2.
W	Inactive Roxana City Dump	Final Report for Phase III RFI approved on October 23, 2002. No further action needed, provided it remains undisturbed in present condition.
X	Inactive Tank for Spent Sulfide/Caustic	On November 20, 1995, USEPA approved the RFI report for the facility. The RFI report indicated no action was necessary at this unit.
Y	Active Solid Waste Disposal Basin	RCRA Interim status unit. Closed as a landfill in accordance with a plan approved by IEPA (log No. C-426). Post-closure care of unit addressed in RCRA permit for facility.
Z	Active Drum Storage Facility	Permitted hazardous waste container storage area. Unit closed in accordance with plan approved by Illinois EPA; certification of closure of unit has been accepted by Illinois EPA.
AA	Active Smith Lake	USEPA approved the Phase III RFI report for this unit on July 27, 2002. No further action provided: (1) area only used for industrial activities; and (2) facility ecological assessment indicates no impact of area.
AB	Inactive Impoundment Area	A corrective measures and a report documenting remedial efforts at SWMU was approved by USEPA August 2, 2002; a no further action determination was made, provided appropriate land use restrictions are established.

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ID	Name	Status
AC	Active Crude Oil Sump	No further action needed based on USEPA's October 23, 2000 approval of an investigation report.
AD	Inactive Solids Landfill	On April 14, 2004 USEPA approved a Corrective Measures Report for this facility and determined remedial activities adequately completed at this unit.
AE	Tank Bottom Sludge and Lime Material Disposal Area	RFI Phase I workplan approved July 19, 2007. RFI report submitted to USEPA November 30, 2007.
AF	Potential Radioactive Waste Disposal Area	Notification of and background information for unit submitted December 2, 2008. As this was a site where radioactive waste may have been present, the Illinois Emergency Management Agency/Division of Nuclear Safety (IEMA/DNS) oversaw work at this SWMU. IEMA/DNS approved an investigation workplan for this unit on April 8, 2009. A report documenting the results of the approved investigation was submitted on to IEMA/DNS; IEMA/DNS approved this report on August 31, 2009. IEMA/DNS oversaw and reviewed the approved investigation activities and on August 31, 2009, determined that no further action was necessary at this unit as the radioactivity of the material disposed at this unit had decayed to background values.

4. As indicated above, USEPA oversaw corrective action efforts at this facility from 1989 to 2009. During that time, Equilon completed a substantial amount of investigative and, as necessary, remedial work to address the twenty-eight SWMUs mentioned above. The work conducted during this time was carried out in accordance with plans approved by USEPA and then documented in reports approved by USEPA.

A summary of the workplans/reports mentioned above as well as the date of the USEPA letter responding to such documents is presented in the following table. The table presents this information in the chronological order of the date of USEPA's letters responding to the various corrective action submittals; the actual document that USEPA responded to is also presented in the table, as well as the conclusions/final action set forth in USEPA's letter. Copies of the USEPA's letters and the plans/reports submitted by Equilon identified in the table are present in Illinois EPA's files.

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Date of Letter	Subject of Letter
November 3, 1989	RCRA permit issued to facility; USEPA portion contains corrective action requirements. This permit required that corrective action be conducted at 22 solid waste management units (referred to as SWMUs A-N and S-Z)
August 29, 1990	NOD for revised RFI workplan.
May 3, 1990	Notice of Deficiency (NOD) for RFI Work Plan submitted by SOPUS
June 18, 1991	Approved RFI Phase I Data Submittal for SWMUs B, I, M, S, T, U and V. This information was specifically required to be submitted for these SWMUs by Condition III.B.1.a of the USEPA portion of the facility's RCRA permit. Phase II Sampling Plan required only for SWMUs I, S, T, U, and V; no Phase II required for SWMUs B and M
April 21, 1995	NOD for the following documents: (1) RFI Draft Report (September 27, 1991); (2) RFI Draft Report – SWMUs I, S, T, U, V (September 16, 1991), and (3) RFI Work Plan – SWMU AB (November 16, 1991)
August 14, 1995	Approved "RFI Report of Additional Characterization – Southwest Tank Farm". No further action required for soil; quarterly groundwater monitoring required to continue
November 20, 1995	Approved "Response to USEPA Comments – RFI Reports Dated September 27, 1991 and September 12, 1992" (September 1995) and "Proposed Approach for Screening Risk Assessment RFI" (September 1, 1991)
January 9, 1997	Request for RFI Work Plan for SWMUs C, F, and G
May 14, 1997	NOD for RFI Phase III Work Plan - SWMU CFG, (dated March 1997)
June 6, 1997	NOD for Phase III RFI Draft Report – SWMU U/AB, (dated May 1997)
July 30, 1997	Approved RFI Phase III Work Plan for SWMU CFG, (dated July 1997)
August 12, 1997	Approved: (1) Groundwater Monitoring Schedule proposed July 17, 1997 for the Southwest Tank Farm and Ponds 1 and 2; and (2) Phase III RFI Final Report, SWMU U/AB (revised July 1997)
September 17, 1997	CMS needed for SWMU U/AB as well as need for additional investigations for pesticides/herbicides contamination at unit
February 6, 1998	Request for CMS for SWMU U/AB; remediation of groundwater associated with units to be addressed by the groundwater corrective action program required by IEPA

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Date of Letter	Subject of Letter
July 7, 1998	No further action needed for soils at SWMUs C, F, and G based on review of RFI report for these units; groundwater is still a concern and must continue to be addressed under the groundwater corrective action program required by IEPA. Requested RFI work plan for SWMUs A, E, N, W, and D
October 16, 1998	Approved RFI Phase III Work Plan – SWMUs D and J, dated September 1998
May 17, 1999	Request for Work Plan for further investigation at SWMUs S, T, and V
August 5, 1999	NOD for “RCRA Corrective Measures Study for SWMU U/AB”, dated March 1999
October 6, 1999	Additional Response to “Draft Report – RCRA Corrective Measures Study – SWMU U/AB”, dated March 1999; additional work required
January 6, 2000	Additional evaluation of corrective measures for SWMU U/AB must be conducted
March 3, 2000	Approved RFI Phase III Draft Report – SWMUs D and J (dated September 1999); additional investigation required
March 29, 2000	Approved Phase III RFI SWMUs D and J Supplemental Work Plan
July 11, 2000	Approved “RFI Phase III RFI Draft Report – SWMUs S, T, and V,” (dated May 2000). No further action needed for SMWUs S and T, additional investigation needed for SWMU V
September 6, 2000	Approved “Phase III Supplemental Work Plan for Additional Characterization SWMU V”, dated August 24, 2000
October 2000	Approved supplemental Phase III report for SWMUs D and J. Determined no further action necessary at these units, provided only industrial land use activities occur at unit
January 29, 2001	Summarizes current status of corrective action efforts at facility
March 20, 2001	Approved “RCRA Corrective Measures Study Supplemental Investigation SWMU U/AB”, dated March 2001
April 6, 2001	Approved “RFI Phase III Supplemental Investigation – SWMU V”, (dated February 22, 2001); additional assessment needed for human and ecological effects at Riverfront ponds
April 25, 2001	Additional sampling requested for SWMUs A, N, E, W; no further action needed at SWMU B, I, K, and L; and additional investigation needed at SWMUs H, M and AA

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Date of Letter	Subject of Letter
May 24, 2001	Approved Phase III work plan for SWMUs A, E, N and W, dated May, 2001
July 10, 2001	Approved Phase III RFI work plan for SWMUs H, M, and AA (dated June, 2001)
August 14, 2001	Acknowledged discovery of previously unknown SWMU referred to as SWMU AC
October 10, 2001	Approved Implementation Work Plan – SWMU U, (dated September 13, 2001). This plan proposes removal of soil at this unit
July 27, 2002	Approved Draft Report Phase III RFI SWMUs H, M & AA, and Draft Report Phase III RFI – SWMU E: No further action required for any of these units provided: (1) the areas are used for industrial purposes; and (2) the site-wide ecological risk assessment indicates these areas do not adversely impact environment
August 2, 2002	Approved SWMU U Corrective Action Report (July 2002). (removal of contaminated soil, collection of verification samples). No further action needed at this unit
August 8, 2002	Conditional approval of Phase I workplan for SWMU AD
October 23, 2002	Approved Final Report – Phase III RFI SWMUs A, N, and W, (dated August 2002). No further action needed at these SWMUs, provided land restrictions are placed on property. Also indicated that no further action needed at SWMU AC, based on review of report for this unit, (dated February 28, 2002). Finally, letter indicates only remaining issues are RFI report for SWMU AD and site-wide ecological risk assessment
March 13, 2003	Approved change in schedule for progress reports from monthly submissions to quarterly submissions and “Final Report – Phase I RFI SWMU AD.” Further investigation is necessary at this SWMU, as well as possibly some remediation
April 25, 2003	Approved RFI SWMU AD Supplemental Information Work Plan
January 21, 2004	Provided comments on the CMS report for SWMU AD, dated October 17, 2003
April 14, 2004	Approved Revised SWMU AD Corrective Measures Report; no further action needed at this unit. Required submittal of site-wide ecological risk assessment
July 19, 2007	Approved Phase I RFI Work Plan for SWMU AE
March 19, 2009	Comments on Ecological Risk Assessment submitted October 2005

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Date of Letter	Subject of Letter
	RFI Report for SWMU AE, submitted November 30, 2007 (currently under review by USEPA)
	Ecological Risk Assessment, submitted August 13, 2009 (currently under review by USEPA)
	Investigation and Remediation Report for SWMU AF, submitted August 13, 2009 (currently under review by USEPA)

5. As indicated above, SWMU AF was a located potential radioactive waste had been disposed in the distant past. Due to the potential radioactive issues at this SWMU, Illinois Environmental Management Agency/Division of Nuclear Safety (IEMA/DNS) oversaw evaluation of this SWMU rather than USEPA. IEMA/DNS approved a workplan for investigating this area on April 8, 2009, oversaw the investigative efforts and determined in an August 31, 2009 letter that any radioactive material present in the area had decayed to background values and no further action was necessary at this unit. Copies of the two IEMA/DNS letters as well as the workplan mentioned above are in Illinois EPA's files.
6. An ELUC for SWMU AC located in a portion of the facility having Parcel Index No. 18-1-14-03-00-000-002) was filed with the Madison County Recorder on October 15, 2013 (Document No. 2013R43765) and places the following restrictions on the subject property:
 - a. Petroleum constituents are present in the soil at SWMU AC, but do not pose a threat to human health or the environment, provided the existing soil cover remains intact.
 - b. Any soil that is removed, excavated, or disturbed from SWMU AC must be handled in accordance with all applicable laws and regulations, specifically 35 Ill. Adm. Code, Subtitle G: Waste Disposal.
 - c. A site safety plan must be developed and implemented during any construction or excavation activity in SWMU AC where workers may come into contact with the soil in SWMU AC. This plan will restrict worker and any other person's exposure to contaminated soils.
 - d. Future use of Parcel 18-1-14-03-00-000-002 must remain industrial/commercial.

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7. An ELUC for SWMU I located in a portion of the facility having Parcel Index No. 19-1-14-02-00-000-001 was filed with Madison County Recorder on October 15, 2013 (Document No. 2013R43762) and places the following restrictions on the subject property:
 - a. Petroleum constituents are present in the soil at SWMU I, but do not pose a threat to human health or the environment, provided the existing soil cover remains intact.
 - b. The soil cover must be maintained at SWMU I. It must be noted that the site was excavated and backfilled with soil in July 1980.
 - c. Any soil that is removed, excavated, or disturbed from SMWU I must be handled in accordance with all applicable laws and regulations, specifically 35 Ill. Adm. Code, Subtitle G: Waste Disposal.
 - d. A site safety plan must be developed and implemented during any construction or excavation activity in SWMU I where workers may come into contact with the soil in SWMU I. This plan will restrict work and any other person's exposure to contaminated soils.
 - e. Future use of Parcel 18-1-14-02-00-000-001 must remain industrial/commercial.
8. An ELUC for SWMUs A, E, N, W, C, F, G, H, U, Z, AA and AB which are all located in a portion of the facility having Parcel Index No. 19-1-08-35-00-000-002 was filed with the Madison County Recorder on October 15, 2013 (Document No. 2013R43763) and places the following restrictions on the subject property:
 - a. Petroleum constituents are present in soil at SWMUs A, E, N, W, C, F, G, U/AB, and Z but do not pose a threat to human health or the environment, provided the existing soil cover remains intact.
 - b. Soil or existing cover must be maintained:
 - i. As it relates to SWMU A, E, N, W the site remains covered with imported or manmade silty clay fill and recently gravel was placed on top of these SWMUs to permit current use of the site for equipment laydown and material storage;
 - ii. As it relates to SMWU C, the soil and clay cap installed during remedial work remains in place and additional gravel was recently

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placed on top of the SMWU to permit current use of the site for equipment laydown and material storage.

- iii. As it relates to SMWU G, gravel was recently placed on top of the SMWU to permit current use of the site for laydown and material storage.
 - iv. As it relates to SMWU U/AB, the compacted gravel, clay and soil cap installed during the corrective measures implementation remains in place along with the addition of gravel for heavy equipment parking and the construction of the Heavy Haul Road;
 - v. As it relates to SMWU Z, the erected building with concrete floor remains in place and available for storage.
 - c. Any soil that is removed, excavated, or disturbed from SWMU A, E, N, W, C, F, G, U/AB, and Z must be handled in accordance with all applicable laws and regulations, specifically 35 Ill. Adm. Code, Subtitle G: Waste Disposal.
 - d. A site safety plan must be developed and implemented during any construction or excavation activity in SWMUs A, E, N, W, C, F, G, U/AB, and Z where workers may come into contact with the soil in SWMUs A, E, N, W, C, F, G, U/AB, and Z. This plan will restrict worker and any other person's exposure to contaminated soils.
 - e. Future use of Parcel 19-1-08-36-00-000-002 must remain industrial/commercial.
9. An ELUC for SWMUs D, J, L, M, X and AE located within a portion of the facility identified as Parcel Index No. 19-1-08-35-00-000-000-001 was filed with the Madison County Recorder on October 15, 2013 (Document No. 2013R43764) and places the following restrictions on the subject property:
- a. Petroleum constituents are present in soil at SWMUs D, J, M and AE but do not pose a threat to human health or the environment, provided the existing soil cover remains intact.
 - b. Soil or existing cover must be maintained:
 - i. As it relates to SWMU D, the site remains in use as the coker stacker/reclaimer and coke storage yard, with associated lined process and storm water impoundments.

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- ii. As it relates to SMWU J, the site remains in use as the coker and associated process units.
 - iii. As it relates to SMWU L, the site remains occupied by Distillation Unit No. 2;
 - iv. As it relates to SWMU M, the site remains covered by surficial manmade fill (gravel, sand and asphalt) in the vicinity of the operating Cooling Water Tower (CWT) No. 11A;
 - v. As it relates to SWMU X, the site remains a vacant tank yard as the tank covered by this SWMU was demolished;
 - vi. As it relates to SMWU AE, the site remains in use as the site of the Main Office South building.
 - c. Any soil that is removed, excavated or disturbed from SWMU D, J, M and AE must be handled in accordance with all applicable laws and regulations, specifically 35 Ill. Adm. Code, Subtitle G: Waste Disposal.
 - d. A site safety plan must be developed and implemented during any construction or excavation activity in SWMU D, J, M and AE where workers may come into contact with the soil in SWMU D, J, M and AE. This plan will restrict worker and any other person's exposure to contaminated soils.
 - e. SWMUs L and X were removed from the RCRA Facility Investigation (RFI) based on letters from USEPA dated April 25, 2001 and April 21, 1995 respectively.
 - f. Future use of Parcel 19-1-08-35-00-000-001 must remain industrial/commercial.
10. An ELUC for SWMU T located in a portion of the facility having Parcel Index No. 19-1-08-34-00-000-004.002 was filed with the Madison County Recorder on February 13, 2014 as Document 2014R04621. This ELUC places the following restrictions on the subject property:
- a. Petroleum constituents are present in soil at SWMU T, but do not pose a threat to human health or the environment, provided the existing soil cover remains intact. The site is currently a relatively vacant parcel of land with some former building foundations and rubble. The surficial soils generally consist of clay and silty clay. The central and southeastern

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portions of the former Tannery Property were regraded and placed on top of the site to permit recent use of the site for constructions coordination related to the refinery.

- b. Any soil that is removed, excavated, or disturbed from SWMU T must be handled in accordance with all applicable laws and regulations, specifically 35 Ill. Adm. Code, Subtitle G: Waste Disposal.
 - c. A site safety plan to address possible worker exposure to the soil beneath within the affected area the must be developed and implemented for any future excavation or construction activities in the affected area and any soil that is removed or excavated from the affected area must be handled in accordance with all applicable laws and regulations.
 - d. Future use of Parcel 19-1-08-34-00-000-004.002 must remain industrial/commercial.
- 11. The limitations or requirements of an ELUC apply in perpetuity until:
 - a. The Illinois EPA issues a new no further action determination approving modification or removal of the limitation/requirement; and
 - b. A release or modification of the land use limitation is filed on the chain of title for the property that is subject of the ELUC.
- 12. At no time shall this site be used in a manner inconsistent with the land use limitations established in an approved ELUC, unless: (1) attainment of objectives appropriate for the new land use is achieved, and (2) a new no further action determination is obtained from the Illinois EPA and subsequently recorded in accordance with 35 Ill. Adm. Code Part 742.
 - a. Requests to release or modify an ELUC must be formally requested in writing from Illinois EPA as a request to amend the certification of closure. Sufficient information must be provided in these requests to demonstrate that the requested change meets all the requirements of 35 Ill. Adm. Code Part 742.
 - b. Any final approval by Illinois EPA of a request to release or modify an ELUC must be filed with the chain of title for the subject facility.
- 13. Failure to comply with the limitations or requirements of an ELUC may result in avoidance of an Agency no further remediation determination in accordance with the program under which the determination was made. The failure to comply

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with the limitations or requirements of an ELUC may also be grounds for an enforcement action pursuant to Title VIII of the Illinois Environmental Protection Act.

14. Establishment of the ELUCs described in Conditions V.C.6 thru V.C.11 brings corrective action of the SWMUs identified in these conditions to completion except for the groundwater associated with SWMUs C, F and G. The groundwater corrective action efforts required by Section IV of the facility's RCRA permit also addresses the groundwater at SWMUs C, F and G.

D. CORRECTIVE ACTION EFFORTS STILL TO BE COMPLETED

1. USEPA determined that groundwater is still a concern at SWMUs C, F and G. However, USEPA pointed out the groundwater corrective action program for the facility should adequately address groundwater at these units.
2. The Permittee must still pursue appropriate corrective action at SWMU AE; Illinois EPA is reviewing an investigation report for this unit.
3. The Permittee must properly address the contamination related to historical release(s) in the vicinity of facility well P-60 and the 1986 benzene pipeline release detected at and beyond the west fenceline of the Wood River Refinery's North Property, detected in the groundwater and vadose zone near P-60 and near the corner of Route 111 and Rand Avenue. A plan to investigate this contamination was approved by Illinois EPA on May 12, 2009; a report documenting the results of this investigation was approved by Illinois EPA on August 5, 2010. Illinois EPA's August 5, 2010 letter required that additional investigation efforts be conducted and the contamination be adequately remediated. Requirements of Illinois EPA letters issued to date must also be met.
 - a. Approval of Log No. B-43R-M-29 required a new groundwater monitoring well, 293B, must be installed and added to the network with a 10-foot screen to intercept potential groundwater contamination observed in the B-level well, P-93B. This new well will also be used to delineate the vertical and horizontal extent of contamination required to be defined for the GMZ.
 - b. The requirements related to the GMZ outlined in Section IV must be satisfied, including the following conditions:
 - i. Continue to perform the following activities until approved otherwise: (1) LNAPL removal; (2) groundwater pump and treat at

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the WRR to maintain an inward gradient; and (3) SVE system operation to capture vapors to prevent exposure above applicable remediation objectives and operation of the Steam Enhanced Extraction (SEE) system in accordance with Illinois EPA letters; and

- ii. Submit written documentation to the Illinois EPA with each affected property owner's written permission to the establishment of the GMZ on its property.
 - iii. Reporting of off-site information related to the Interim Groundwater Monitoring Program and GMZ may be included within reporting required by Section IV of the Permit as the GMZ and corrective actions are combined at this time.
4. The requirements of 35 Ill. Adm. Code Parts 620, 724 and, as appropriate, 742 must be met in completing corrective action at this facility, as well as Illinois EPA's letters regarding such activities. Development and implementation of plans/reports associated with these efforts must be carried out in accordance with guidance for such activities developed by Illinois EPA and USEPA.

E. INTERIM MEASURES

At any time during the course of this Permit, the Permittee may, subject to Illinois EPA review and approval, initiate interim measures for the purpose of preventing continuing releases and/or mitigating the results of releases and/or mitigating the migration of hazardous wastes or hazardous constituents. It shall not be necessary to conduct all phases of an investigation prior to implementing an interim measure if the Illinois EPA and the Permittee agree that a problem can be corrected, or a release cleaned up, without additional study and/or without a formal corrective measures study (CMS).

- 1. Prior to implementing any interim measures, the Permittee must submit detailed information regarding the proposed interim measure to the Illinois EPA for approval. This information shall include, at a minimum:
 - a. Objectives of the interim measures (how the proposed measure will mitigate the potential threat to human health and the environment and/or will be consistent with and integrated into any long-term solution at the facility);
 - b. Design, construction, and maintenance requirements;
 - c. Schedules for design and construction; and
 - d. Schedules for progress reports.

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2. If the Illinois EPA determines that a release cannot be addressed without additional study and/or a formal CMS, then the Illinois EPA will notify the Permittee that these must be performed. Any proposal made under this provision or any other activity resulting from such proposal shall not affect the schedule for implementation of any other portion of the permit.
3. If the Illinois EPA determines that interim measures are necessary to protect human health or the environment, then the Permittee will be allowed to proceed under plans, procedures and schedules approved by Illinois EPA.

F. FINANCIAL ASSURANCE FOR CORRECTIVE ACTION

1. Within sixty (60) days of the date of this permit modification, the Permittee shall demonstrate in accordance with the requirements of Condition V.F.3 financial assurance for corrective action required under this permit of at least \$10,710,936 in 2021 dollars. Documentation of the establishment of financial assurance for corrective action shall be submitted to the Agency's Division of Land Pollution Control (DLPC).
2. The Permittee shall prepare a detailed cost estimate for the completion of any investigation or corrective measure required under this permit, in order to provide financial assurance for completion of corrective action, as required under 35 Ill. Adm. Code 724.201(b). Such a cost estimate will be based upon the cost of contamination investigations and assessments for the SWMU(s), and design, construction, operation, inspection, monitoring, and maintenance of the corrective measure(s) to meet the requirements of 35 Ill. Adm. Code 724.201 and this permit. All calculations and unit costs made in developing this estimate must be provided, as well as justification for all values used. These estimates must be based on third party costs. A detailed cost estimate must be included in each workplan or report submitted to Illinois EPA for review and approval.
3. The Permittee shall demonstrate continuous compliance with 35 Ill. Adm. Code 724.201 by providing documentation of financial assurance using a mechanism specified in 35 Ill. Adm. Code 724.243, in at least the amount of the cost estimate required under Condition V.F.2. The words "completion of corrective action" shall be substituted for "closure and/or post-closure", as appropriate in the financial instrument specified in 35 Ill. Adm. Code 724.251. The documentation shall be submitted to the Agency's DLPC within sixty (60) days after the approval of the initial or revised cost estimates required under Condition V.F.2. The Agency's DLPC may accept financial assurance for completion of corrective

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action in combination with another financial mechanism that is acceptable under 35 Ill. Adm. Code 724.246 at its discretion.

G. NOTIFICATION REQUIREMENTS FOR AN ASSESSMENT OF IDENTIFIED SOLID WASTE MANAGEMENT UNIT(S)

1. The Permittee shall notify the Agency's DLPC in writing of any newly-identified SWMU(s) discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, no later than sixty (60) calendar days after discovery. Such a notification must also be submitted if the Permittee discovered that a possible release has occurred from one of the SWMUs identified in this permit. The notification shall provide the following information, as available:
 - a. A scaled map showing the location of the newly-identified SWMU within the facility;
 - b. The past and present function of the unit;
 - c. The general dimensions, capacities, and structural properties of the unit;
 - d. The period during which the unit was operated;
 - e. The specifics on all materials, including but not limited to, wastes and hazardous constituents, that have been or are being managed at the SWMU, to the extent available; and
 - f. The results of any relevant available sampling and analysis which may aid in determining whether releases of hazardous wastes or hazardous constituents have occurred or are occurring from the unit.
2. If the submitted information demonstrates a potential for a release of hazardous waste or hazardous waste constituents from the newly identified SWMU, the Agency's DLPC may request in writing, that the Permittee prepare a Solid Waste Management Unit (SWMU) Assessment Plan and a proposed schedule of implementation and completion of the Plan for any additional SWMU(s) discovered subsequent to the issuance of this Permit.
3. Within sixty (60) calendar days after receipt of the Agency's DLPC request for a SWMU Assessment Plan, the Permittee shall prepare a SWMU Assessment Plan. This SWMU Assessment Plan must propose investigations, including field investigations if necessary, to determine the release potential to specific environmental media for the newly-identified SWMU. The SWMU Assessment

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Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste and hazardous constituents from the newly-discovered SWMU(s) to the environment.

4. After the Permittee submits the SWMU Assessment Plan, the Agency's DLPC shall either approve, approve with conditions or disapprove the Plan in writing. If the plan is approved, the Permittee shall begin to implement the Plan within forty-five (45) calendar days of receiving such written notification. If the Plan is disapproved, the Agency's DLPC shall notify the Permittee in writing of the Plan's deficiencies and specify a due date for submittal of a revised plan.
5. The Permittee shall submit a report documenting the results of the approved SWMU Assessment Plan to the Agency's DLPC in accordance with the schedule in the approved SWMU Assessment Plan. The SWMU Assessment Report shall describe all results obtained from the implementation of the approved SWMU Assessment Plan. Additional investigation and remediation must then be conducted to ensure the requirements of 35 Ill. Adm. Code 724.200 and Part 742 are met.
6. Development of remediation objectives and execution of corrective measures must meet the requirements of Subsection D above.

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SECTION VI: STANDARD CONDITIONS

A. INTRODUCTION

This section contains standard conditions applicable to the facility being permitted herein. These standard conditions pertain to: (1) general requirements; and (2) post-closure care of the closed surface impoundment at the facility.

B. GENERAL REQUIREMENTS

1. **EFFECT OF PERMIT** (Title 35 Illinois Administrative Code Subtitle G (35 Ill. Adm. Code) 702.181) The existence of a RCRA permit shall not constitute a defense to a violation of the Environmental Protection Act or Subtitle G, except for prohibition against development, modification or operation without a permit. Issuance of this permit does not convey property rights or any exclusive privilege. Issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or infringement of state or local law or regulations.
2. **PERMIT ACTIONS** (35 Ill. Adm. Code 702.146) This permit may be modified, reissued or revoked for cause as specified in 35 Ill. Adm. Code 703.270 through 703.273 and Section 702.186. The filing of a request by the Permittee for a permit modification or reissuance, or a notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.
3. **SEVERABILITY** (35 Ill. Adm. Code 700.107) The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.
4. **PERMIT CONDITION CONFLICT** (35 Ill. Adm. Code 702.160) In case of conflict between a special permit condition and a standard condition, the special condition will prevail.
5. **DUTY TO COMPLY** (35 Ill. Adm. Code 702.141 and 703.242) The Permittee shall comply with all conditions of this permit except for the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance constitutes a violation of the Environmental Protection Act and is

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grounds for enforcement action; permit revocation or modification; or for denial of a permit renewal application.

6. **DUTY TO REAPPLY** (35 Ill. Adm. Code 702.142 and 703.125) If the Permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the Permittee must apply for a new permit at least 180 days before this permit expires, unless permission for a later date has been granted by the Agency.
7. **PERMIT EXPIRATION** This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application (see 35 Ill. Adm. Code 703.181-703.209) and, through no fault of the Permittee, the Agency has not issued a new permit as set forth in 35 Ill. Adm. Code 702.125.
8. **NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE** (35 Ill. Adm. Code 702.143) It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
9. **DUTY TO MITIGATE** (35 Ill. Adm. Code 702.144) In the event of noncompliance with the permit, the permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment.
10. **PROPER OPERATION AND MAINTENANCE** (35 Ill. Adm. Code 702.145) The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory, and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.
11. **DUTY TO PROVIDE INFORMATION** (35 Ill. Adm. Code 702.148) The Permittee shall furnish to the Agency, within a reasonable time, any relevant information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing or terminating this permit, or to determine

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compliance with this permit. The Permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.

12. INSPECTION AND ENTRY (35 Ill. Adm. Code 702.149) The Permittee shall allow an authorized representative of the Agency, upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location.

13. MONITORING AND RECORDS. (35 Ill. Adm. Code 702.150)

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste must be the appropriate method from Appendix A of 35 Ill. Adm. Code 721. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, latest versions; Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, latest versions; or an equivalent method as specified in the approved Waste Analysis Plan.
- b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report or application. These periods may be extended by request of the Agency at any time. The permittee shall maintain records from all groundwater monitoring wells

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and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.

- c. Records of monitoring information shall include:
 - i. The date(s), exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical technique(s) or method(s) used; and
 - vi. The result(s) of such analyses.

- 14. **REPORTING PLANNED CHANGES** (35 Ill. Adm. Code 703.244 and 702.152(a)) The permittee shall give notice to the Agency as soon as possible of any planned physical alterations or additions to the permitted facility. For a new HWM facility, the permittee may not commence treatment, storage or disposal of hazardous waste; and for a facility being modified the permittee may not treat, store or dispose of hazardous waste in the modified portion of the facility, until:

- a. The permittee has submitted to the Agency by certified mail or hand delivery a letter signed by the permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit; and
- b. The Agency has inspected the modified or newly constructed facility and finds it is in compliance with the condition of the permit; or if, within fifteen (15) days of the date of submission of the letter in paragraph (a), the permittee has not received notice from the Agency of its intent to inspect, prior inspection is waived and the permittee may commence treatment, storage or disposal of hazardous waste.

- 15. **ANTICIPATED NONCOMPLIANCE** (35 Ill. Adm. Code 702.152(b) and 703.247) The Permittee shall give advance notice to the Agency of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. For a new facility, the permittee shall not treat, store or dispose of hazardous waste; and for a facility being modified, the permittee shall not treat, store or dispose of hazardous waste in the modified portion of the facility, except as provided in Section 703.280, until:

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- a. The permittee has submitted to the Agency by certified mail or hand delivery a letter signed by the permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit; and
 - b. Either:
 - i. The Agency has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the permit; or
 - ii. Within fifteen (15) days after the date of submission of the letter in paragraph i. above, the permittee has not received notice from the Agency of its intent to inspect, the permittee may commence treatment, storage or disposal of hazardous waste.
- 16. TRANSFER OF PERMITS (35 Ill. Adm. Code 702.152(c)) This permit is not transferable to any person except after notice to the Agency. The Agency may require modification of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the appropriate Act. (See Sections 703.260 and 703.270, in some cases modification is mandatory.)
- 17. MONITORING REPORTS (35 Ill. Adm. Code 702.152(d)) Monitoring results shall be reported at the intervals specified in the permit.
- 18. COMPLIANCE SCHEDULES (35 Ill. Adm. Code 702.152(e)) Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than specified in 35 Ill. Adm. Code 702.162.
- 19. TWENTY-FOUR HOUR REPORTING (35 Ill. Adm. Code 702.152(f) and 703.245(b))
 - a. The Permittee shall report to the Agency any noncompliance with the permit which may endanger health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the following circumstances. This report shall include the following:
 - i. Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.

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- ii. Information concerning the release or discharge of any hazardous waste or of a fire or explosion at the HWM facility, which could threaten the environment or human health outside the facility.
 - b. The description of the occurrence and its cause shall include:
 - i. Name, address, and telephone number of the owner or operator;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident;
 - iv. Name and quantity of material(s) involved;
 - v. The extent of injuries, if any;
 - vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where applicable; and
 - vii. Estimated quantity and disposition of recovered material that resulted from the incident.
 - c. A written submission shall also be provided within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Agency may waive the five (5) day written notice requirement in favor of a written report within fifteen (15) days.
- 20. **OTHER NONCOMPLIANCE (35 Ill. Adm. Code 702.152(g))** The Permittee shall report all instances of noncompliance not otherwise required to be reported under Standard Conditions 17, 18, and 19, at the time monitoring reports, as required by this permit, are submitted. The reports shall contain the information listed in Standard Condition 19.
- 21. **OTHER INFORMATION (35 Ill. Adm. Code 702.152(h))** Where the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Agency, the Permittee shall promptly submit such facts or information.

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22. REPORTING REQUIREMENTS (35 Ill. Adm. Code 724.175) The report required by 35 Ill. Adm. Code 724.175 shall be submitted in addition to those required by 35 Ill. Adm. Code 702.152 (reporting requirements).
23. SUBMITTAL OF REPORTS OR OTHER INFORMATION All written reports or other written information required to be submitted by the terms of this permit shall be sent to:

Illinois Environmental Protection Agency
Bureau of Land
Permit Section - #33
2520 West Iles Avenue
Post Office Box 19276
Springfield, Illinois 62794-9276
24. SIGNATORY REQUIREMENT (35 Ill. Adm. Code 702.151) All permit applications, reports or information submitted to the Agency shall be signed and certified as required by 35 Ill. Adm. Code 702.126.
25. CONFIDENTIAL INFORMATION Any claim of confidentiality must be asserted in accordance with 35 Ill. Adm. Code 702.103 and 35 Ill. Adm. Code 161.
26. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE The Permittee shall maintain the following documents and amendments, revisions and modifications to these documents:
 - a. The post-closure care plan as required by 35 Ill. Adm. Code 724.212(a) and this permit.
 - b. Cost estimate for facility post-closure care as required by 35 Ill. Adm. Code 724.242(d) and this permit.
 - c. Operating record as required by 35 Ill. Adm. Code 724.173 and this permit.
 - d. Inspection schedules as required by 35 Ill. Adm. Code 724.115(b) and this permit.

These documents shall be maintained by the contact identified in Condition III.f.2 of this permit.

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C. POST-CLOSURE

1. **CARE AND USE OF PROPERTY** The Permittee shall provide post-closure care for the facility as required by 35 Ill. Adm. Code 724.217 and in accordance with the approved post-closure plan.
2. **AMENDMENT TO POST-CLOSURE PLAN** The Permittee must amend the post-closure plan whenever a change in the facility operation plans or facility design affects the post-closure plan or when an unexpected event has occurred which has affected the post-closure plan pursuant to 35 Ill. Adm. Code 724.218(d).
3. **COST ESTIMATE FOR FACILITY POST-CLOSURE** The Permittee's original post-closure cost estimate, prepared in accordance with 35 Ill. Adm. Code 724.244, must be:
 - a. Adjusted for inflation either sixty (60) days prior to each anniversary of the date on which the first closure cost estimate was prepared or if using the financial test or corporate guarantee, within thirty (30) days after close of the firm's fiscal year.
 - b. Revised whenever there is a change in the facility's post-closure plan increasing the cost of closure.
 - c. Kept on record at the facility and updated.
4. **FINANCIAL ASSURANCE FOR POST-CLOSURE CARE** The Permittee shall demonstrate compliance with 35 Ill. Adm. Code 724.245 by providing documentation of financial assurance, as required by 35 Ill. Adm. Code 724.251, in at least the amount of the cost estimates required by the previous Permit Condition. Changes in financial assurance mechanisms must be approved by the Agency pursuant to 35 Ill. Adm. Code 724.245.
5. **LIABILITY REQUIREMENTS** The Permittee shall demonstrate continuous compliance with the requirements of 35 Ill. Adm. Code 724.247 and the documentation requirements of 35 Ill. Adm. Code 724.251.
6. **INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS** The Permittee shall comply with 35 Ill. Adm. Code 724.248 whenever necessary.

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SECTION VII: SPECIAL CONDITIONS

A. HAZARDOUS WASTE MANAGEMENT ACTIVITIES

1. In addition to the terms and conditions of this permit, the requirements of Title 35 Illinois Administrative Code Subtitle G (35 Ill. Adm. Code) Part 722 must be met in regards to the management of hazardous waste generated in carrying out the requirements of this Permit.
2. Documentation of compliance with the requirements of 35 Ill. Adm. Code Part 722 must be maintained by Equilon Enterprises.

B. PUBLIC NOTIFICATION AND PARTICIPATION

1. A repository of all information submitted to Illinois EPA as part of the requirements of this Permit must be established and maintained at the Roxana Public Library. This repository must be well organized and kept up to date. A comprehensive list of all documents in the repository must be provided, as well as a brief description of each document in the repository. The Permittee must visit the repository on a regular basis to ensure its organization and integrity is maintained.
2. The public participation and public notification requirements of 35 Ill. Adm. Code Parts 703 and 705 must be met any time requests to modify this facility are submitted to Illinois EPA for review and approval.
3. An appropriate facility mailing list as required by 35 Ill. Adm. Code Part 705 must be maintained and updated on a regular basis.

C. REQUIRED FORMS

1. The Permittee shall provide a completed Illinois EPA permit application form LPC-PA23 with all additional information, permit modifications, and permit applications that are submitted to the Illinois EPA Bureau of Land. A copy of this form is available on Illinois EPA's website.
2. The permittee shall submit a current 39i Certification form and supporting documentation with all permit applications, including permit modification request that are submitted to the Illinois EPA Bureau of Land. An individual 39i certification form must be submitted for each person signing applications or

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reports submitted by the Permittee. The 39i Certification form can be found on the Illinois EPA website.

D. REVISED COST ESTIMATE FOR POST-CLOSURE AND CORRECTIVE ACTION

The Permittee shall submit revised cost estimates for post-closure care and corrective action to be performed under this Permit to address the deficiencies in the most recent cost estimate, dated December 16, 2021 and received by the Illinois EPA December 17, 2021 identified below. This submittal entitled, "2021 Financial Assurance Cost Estimates", was assigned a Log Number of B-43R-M-49. The revised cost estimates must be submitted to Illinois EPA for review and approval as a Class 1* permit modification request within ninety (90) days of the approval date of this modified Permit. The revised estimate must be developed to address the following.

1. General Requirements for Cost Estimates

- a. Cost estimates may be based on engineering line-item estimates and/or third-party contractor bids. The owner or operator must furnish bid specifications for third-party estimates. Detailed supporting information must be provided to the Illinois EPA, including the source of cost data used.

The costs of performing specific analytical tasks are established by using bids from commercial laboratories accredited by the state of Illinois to perform environmental analyses in the matrices, analytes, and methods required. The estimates must reflect the matrices, the number of samples, the methods to be used, and the data quality objectives for the task.

- b. The estimates must be based on the cost for a third party to perform the necessary activities associated with required post-closure care and corrective action activities.
- c. The estimates must not incorporate any salvage value from the sale of hazardous waste, facility structures, equipment, land, or other assets associated with the facility.
- d. The estimates must identify all necessary task/activities and their associate cost that are required for post-closure care and corrective action activities. The amount of time/materials/efforts needed to complete each task/activity must be provided as well as their unit cost. Justification must be provided for all values used in the calculation of the costs. The tasks/activities associated with post-closure care and corrective action activities must be

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sufficiently detailed and/or subdivided to assure that all required costs have been included in the estimates.

- e. The post-closure cost estimate should include, as applicable, the following items:

i. Waste Management and Waste Disposal Systems

Cost associate with operation and maintenance of waste management systems and waste disposal associated with the management of leachate, landfill gas, stormwater, and other waste. The cost estimate should describe tasks and cost related to waste management systems and waste disposal including the followings:

- Operating Staff/Labor,
- Engineering/Technical oversight (oversight of task performance, data analysis and reporting),
- On-site waste management, including sumps, piping, pumps, tanks, and transport systems (waste removal areas and vehicle access),
- Inspection of waste management systems,
- Equipment Operation and Maintenance,
- Waste characterization (sampling and analysis necessary for system operation and waste disposal),
- Utilities (electric, gas, water, and tele/data communications),
- Off-site treatment/disposal, and
- Decommissioning and/or removal of waste treatment and management system following completion of post-closure care.

ii. Site Security

Cost associate with operation and maintenance of site security/access control, including:

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- Operating Staff/Labor,
- Inspection and maintenance of access controls (fences, gates, guard shacks, lighting, video monitoring, or other security monitoring equipment),
- other security equipment such as patrol vehicles, on-site and off-site communications (radio and telephone).

iii. Maintenance of the Cover System

Cost associate with operation and maintenance of the cover system, including:

- Inspection of the cover system,
- Maintenance of vegetative cover, including mowing, watering, seeding, and fertilizing,
- Maintenance of run-on and run-off control systems, including piping, pumps, sumps, water management structures such as lined drainage channels and riprap structures, and retention/sediment ponds, and
- Repair of the cover system.

iv. Environmental Monitoring Systems

Cost associate with operation and maintenance of the various environmental monitoring systems, including:

- Groundwater Monitoring
- Leachate Monitoring
- Landfill Gas Monitoring
- Inspection, maintenance, and repair of monitoring systems/equipment
- Collection of samples
- Analytical and/or physical testing, and
- Engineering/Technical oversight (oversight of task performance, data analysis and reporting)

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v. Completion of Post-Closure Care

Cost associated with:

- Decommissioning of Equipment and Structures. Equipment and structures associated with waste management systems, environmental monitoring systems and site security to be decommissioned and/or removed to prevent future hazards to human health and the environment. This should include (1) securing and/or plugging groundwater, leachate, and gas monitoring and extraction wells, and (2) waste management systems (tanks, sumps, vaults, and piping).
- Post-Closure Certification, and
- Environmental Covenant/Deed Notation.

- f. The estimates must include a minimum 10% contingency factor to account for unknowns and omissions.
- g. Cost estimates submitted to the Illinois EPA for approval must include a certification from an Illinois licensed Professional Engineer.

2. Table 1 -- Post-Closure Care Cost Estimate

a. Biotreater O&M

- i. The description of the cost for the Biotreater operation and maintenance (O&M) identifies a range of cost from \$67,000 to \$1,300,000 annually. The annual cost is then assumed to be approximately \$400,000/year. The justification for the assumed cost must be provided in the cost estimate.
- ii. The cost estimate for this unit includes four line items: Project Management, Labor, Subcontractors, and Equipment. The line item categories are too broad to determine if they adequately identify the costs associated with the task to be performed. The cost estimate must identify and describe the tasks to be performed and the associated cost including labor, materials, supplies/consumables, equipment, sampling, testing, waste disposal, waste treatment, oversight and permitting.

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- iii. The cost estimate must include estimates of the cost for the decommissioning of the Biotreater.
- b. Oil Recovery Wells O&M and Groundwater/Recovery System Decommissioning
 - i. The description of the cost for the Oil Recovery Wells O&M identifies a range of cost from \$7,000 to \$1,300,000 annually. The annual cost for O&M is then assumed to be approximately \$200,000/year. Justification for the assumed cost must be provided in the cost estimates.
 - ii. The cost estimate for this unit includes five line items: Project Management, Labor, Groundwater & Recovery System Decommissioning, Subcontractors, and Equipment. The line item categories are too board to determine if they adequately identify the costs associated the task to be performed. The cost estimate must identify and describe the tasks to be performed and the associated cost including labor, materials, supplies/consumables, equipment, sampling, testing, waste disposal, waste treatment, oversight and permitting.
 - iii. The O&M cost estimate should include cost for the replacement of at least one existing groundwater pumping well and oil recovery well due to the size of the systems and the anticipated 30-year operational period.
 - iv. The cost estimate must include an estimate of the cost for the decommissioning of the Oil Recovery Systems.
- c. Groundwater Corrective Action Program (CAP) Monitoring and RCRA Hazardous Waste Management Post-Closure Permit Support
 - i. The line item categories are too board to determine if they adequately identify the costs associated the task to be performed. The cost estimate must identify and describe the tasks to be performed and the associated cost including labor, materials, supplies/consumables, equipment, sampling, testing, waste disposal, waste treatment, oversight and permitting.

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- ii. Annual groundwater sampling has not been approved, therefore, the cost estimate for groundwater monitoring must be revised to reflect the required semi-annual groundwater sampling.
 - d. Post-Closure Care - Site 15 Cover Maintenance and Repairs
 - i. The line item categories are too board to determine if they adequately identify the costs associated the task to be performed. The cost estimate must identify and describe the tasks to be performed and the associated cost including labor, materials, supplies/consumables, equipment, sampling, testing, waste disposal, waste treatment, oversight and permitting.
 - e. Work Pending IEPA Approval - LNAPL System Evaluation and Riverfront Property Investigation
 - i. The line item categories are too board to determine if they adequately identify the costs associated the task to be performed. The cost estimate must identify and describe the tasks to be performed and the associated cost including labor, materials, supplies/consumables, equipment, sampling, testing, waste disposal, waste treatment, oversight and permitting.
- 3. Table 3 -- Corrective Action Cost Estimate
 - a. The corrective action program within the Village of Roxana, which includes the planned remediation at the Public Works Yard is estimated to be completed in 4 years. Corrective action costs-estimates for soil and groundwater remediation programs and their associated monitoring programs, must be provided for a minimum of ten (10) years unless an alternative time period has been approved.
 - b. West Fenceline/Village of Roxana
 - i. The line item categories for the activities under this section of the cost estimate are too broad to determine if they adequately identify the costs associated the each of the task to be performed. The cost estimate must identify and describe the various tasks to be performed and the associated cost including labor, materials, supplies/consumables, equipment, sampling, testing, waste disposal, waste treatment, oversight and permitting.

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c. Anticipated Public Works Yard Remediation

- i. The single line item category, Construction & Operation, is too broad to determine if they adequately identify the costs associated the task to be performed. The cost estimate must identify and describe the tasks to be performed and the associated cost including labor, materials, supplies/consumables, equipment, sampling, testing, waste disposal, waste treatment, oversight and permitting.

4. Inflation Adjustment Tables -- 2 and 4

- a. The inflation adjustment tables must be updated to reflect changes to the post-closure and corrective action cost estimates.

SECTION VIII: REPORTING AND NOTIFICATION REQUIREMENTS

Condition	Submittal	Due Date
Section III: Post-Closure		
F.5	Submit notification that post-closure contact person has changed.	Within five days after change is made.
G.2	Submit application for permit modification, if the Permittee wishes to remove any materials from the closed SWDB.	At least 180 days prior to the date that wish to remove the materials.
G.3	Submit certification for completion of post-closure care.	Within 60 days after post-closure care has been completed.
SECTION IV: GROUNDWATER CORRECTIVE ACTION PROGRAM		
C.4	Notification that well has been damaged or its structural integrity compromised.	Within 30 days of identification.
C.6	Boring logs, construction diagrams and datasheets from installation and development of new/replaced well.	Within 30 days of identification
E.2.a.i	Address exceedances of any concentration limit in Condition IV.D.1 at any GMZ Boundary well observed in the last five years	Within 180 days submit a Class 1* permit modification for Illinois EPA review and approval.
E.2.b.i	Provide written permission to the establishment of the GMZ on affected off-site properties.	Within 180 days, the facility must submit a Class 1* permit modification request, for Illinois EPA review and approval.
E.2.d	Evaluate the indoor inhalation pathway	Every time groundwater is sampled.
E.2.d.iii	Determination indoor inhalation pathway is complete	Propose additional corrective action within 30 days

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I.2 General schedule for collection and reporting of groundwater data:		
	Sampling Event: Calendar Quarter (Months Collected)	Submit Results to Agency by following:
	First Quarter (January –March)	August 1
	Second Quarter (April – June)	August 1
	Third Quarter (July – September)	February 1
	Fourth Quarter (October - December)	February 1
I.3	Groundwater surface elevation data	Quarterly as set forth in Condition I.2
I.4	Groundwater withdrawal rates	Quarterly as set forth in Condition I.2
I.5	Gradient control measurements	Second and fourth quarter as set forth in Condition I.2
I.6	Statistical evaluations	Submitted as part of the semi- annual reports as set forth in Condition I.2
I.7	Groundwater flow rate and direction	During the second semi-annual event of each year.
I.8	Groundwater quality results	Second and fourth quarter as set forth in Condition I.2
I.9	Top of well casing	Every five years (during the second semi- annual event)
I.10	Elevation of bottom of each well	Second semi-annual event as set forth in Condition I.2
I.14	Report to Agency on effectiveness	By August 1 of each year.
I.15.a	Notify the Agency in writing that groundwater flow is not being adequately controlled.	Within seven days
I.15.c	Submit a report to the Agency describing the actions taken to regain control of groundwater flow.	Within 30 days.

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I.15.d	Submit a request for permit modification to the Agency describing any changes to the corrective action program to regain control of groundwater flow.	Within 60 days.
J.1	Modification of groundwater corrective action program.	Within 90 days of determination existing program not meet the requirements of 35 Ill. Adm. Code Part 724, Subpart F.
SECTION V: CORRECTIVE ACTION		
F.2	Cost estimate for the completion of any investigation or corrective measure.	Submit with each workplan or report submitted to Illinois EPA for review and approval.
F.3	Updated financial assurance for corrective action.	As necessary.
G.1	Notification of Newly Identified SWMUs	Within 60 days of discovery.
G.3	Submittal of Assessment Plan for Newly Identified SWMU.	Within 60 days of request for plan from Illinois EPA.
G.5	Submittal of SWMU Assessment Report for Newly Identified SWMU.	In accordance with schedule in assessment plan.
SECTION VI: STANDARD CONDITIONS		
B.6	Complete application for new permit.	At least 180 days prior to permit expiration.
B.11	Information requested by Agency and copies of records required to be kept by this permit.	Submittal date to be determined by the Agency.
B.14	Notify Agency of planned physical alterations or additions.	At least 15 days prior to planned change.
B.15	Notify Agency of changes which may result in permit noncompliance.	Within 15 days of change.
B.16	Application for permit modification indicating permit is to be transferred.	At least 90 days prior to transfer date.
B.18	Submission of any information required in a compliance schedule.	Within 14 days after each schedule date.

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B.19.	Report to Agency any non-compliance which may endanger health or environment.	Notify by telephone within 24 hours after discovery, and in writing five days after discovery.
B.20	Report of all other instances of non-compliance.	March 1 of each year along with Annual Report.
B.22	Annual Report	March 1 of each year (for previous calendar year).
C.2	Application for permit modification amending post closure plan.	Within 90 days of discovery of need for modification.
C.3.a.	Adjust post closure cost estimate for inflation.	Within 30 days after anniversary date.
C.3.b	Revision of post closure cost estimate.	As needed, within 90 days of discovery of revision.
C.4	Change in financial assurance mechanism for post closure care.	As needed.
C.5	Change in coverage for sudden and non-sudden accidental occurrences.	As needed.
C.6	Notify Agency of commencement of voluntary or involuntary bankruptcy proceedings.	Within 10 days after commencement of proceeding.

ATTACHMENT A

Approved Permit Application for the Renewed Permit Issued September 23, 2010

**Equilon Enterprises
1191150002 – Madison County
USEPA ID No. ILD080012305**

Log Nos. B-43R-M-32, B-43R-M-44, B-43R-M-53, B-43R-CA-93 (Reissued)

ATTACHMENT A – Approved Permit Application

Approved permit application for the Renewed Permit Issued September 23, 2010

Equilon Enterprises initially submitted an application to renew the RCRA permit for the subject facility on May 6, 1999; additional information regarding this application was submitted by Equilon on October 29, 1999. However, these submittals were superseded by a submittal which contained a completely revised application as requested by Illinois EPA on November 14, 2007. Given the above, the approved permit application to renew the RCRA permit for the subject facility consists of the following documents:

1. A May 30, 2008 submittal from Kevin E. Dyer, Shell Oil Products US. This submittal included a two page cover letter, a completed LPC-PA23 form, and a document entitled "RCRA Post Closure Permit Application, EPA No. ILD080012305," dated June 2008. Illinois EPA received this submittal on June 2, 2008. All pages in the application associated with this submittal have a footer containing the date "May 2008."
2. A two page letter dated December 5, 2008 and associated attachments submitted by Eric S. Petersen, ConocoPhillips. This submittal was received by Illinois EPA on December 8, 2008. The submittal proposed to abandon certain wells and replace others. The information in this submittal was subsequently incorporated into Section E of the permit application.
3. A December 11, 2008 submittal from Kevin E. Dyer, Shell Oil Products US. This submittal includes a two page cover letter and revisions to the application identified in Item 1 above. The footer of the revised pages includes the following statement: "Revised December 2008"
4. A one page letter dated June 18, 2009 and associated revisions to the application to renew Equilon's RCRA permit submitted by Robert B. Billman, URS Corporation. This submittal was received by Illinois EPA on June 19, 2009. The footer of the revised pages contains the following statement: "Revised June 2009."
5. A one page letter dated August 12, 2009 and associated revisions to the subject application submitted by Robert B. Billman, URS Corporation. This submittal was received by Illinois EPA on August 17, 2009. The footer of the revised pages contains the date "August 2009."

As indicated above, revised pages to the application submitted May 30, 2008 have been submitted to the Illinois EPA three times. A summary of the version of each section, attachment, table or figures which comprise the approved permit application is as follows:

Sections of the Application:

Section of Application	Title	Date of Creation or Revision
A	Forms, Certifications, Confidentiality and Public Involvement	December 2008
B	Facility Description	December 2008
C	Groundwater Monitoring	June 2009
D	Procedures to Prevent Hazards	December 2008
E	Closure and Post-Closure Requirements	December 2008
F	Corrective Action	December 2008

Attachments to the Application:

Attachment No.	Creation/Revision Date
A-1 thru A-4	December 2008
A-5	May 2008
C-1	June 2009 (Table C-1 within attachment revised August 2009)
C-2 and C-3	June 2009
E-1 and E-2	May 2008
F-1	December 2008

Tables Associated with the Application

Table No.	Creation/Revision Date
A-1	December 2008
C-1 thru C-12	May 2008
C-13-C-17	June 2009
C-18	July 2009
D-1 and F-1	May 2008

Figures Associated with the Application

Figure No.	Creation/Revision Date
B-1	December 2008
B-2	May 2008
B-3 and B-4	December 2008
B-5	May 2008
B-6a and 6b	December 2008
C-1 thru C-20	May 2008
C-21 thru C-26	June 2009
D-1 and 2	May 2008
E-1 thru E-8	May 2008
F-1 thru F-17	May 2008

ATTACHMENT B
Permit Modification Requests

Equilon Enterprises
1191150002 – Madison County
USEPA ID No. ILD080012305

Log Nos. B-43R-M-32, B-43R-M-44, B-43R-M-53, B-43R-CA-93 (Reissued)

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Log Nos. B-43R-M-32, B-43R-M-44, B-43R-M-53, B-43R-CA-93 (Reissued)

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ATTACHMENT B – Permit Modification Requests

A. Modification Requests Approved by Illinois EPA

1. Modification Log No. B-43R-M-1, dated December 17, 2010, and received by the Illinois EPA on January 25, 2011, was submitted by Robert B. Billman of URS Corporation. This modification was submitted to satisfy Condition IV.D.9 of the Permit. The document was reviewed as a modification request to the Groundwater Corrective Action Program of the Permit. As a result of this approval, Condition IV.D.9 was removed from the Permit.
2. Modification B-43R-M-4, dated August 19, 2011 and received on August 29, 2011, was submitted by Robert B. Billman of URS Corporation. This submittal notified the Agency that the property owner WRB Refining LLC was converted to a limited partnership named WRB Refining LP, effective 11:59 pm CST on December 31, 2010. This notification also requested that future correspondence to the property owner be directed to:

WRB Refining, LP
Wood River Refinery
Attn: Mr. Mike Bechtol, Environmental Director
900 South Central Avenue
P.O. Box 76
Roxana, Illinois 62084

3. Modification B-43R-M-6 entitled, "Groundwater Pumping System", dated July 29, 2011 and received by the Illinois EPA August 29, 2011, was prepared by Robert B. Billman of URS Corporation. This modification request to reestablish a minimum pumping rate of 3,000 gallons per minute from all groundwater pumping wells at the Main and North Property of WRR was approved.
4. Modification B-43R-M-7 entitled, "New Groundwater Pumping Well W-86", dated October 13, 2011 and received by the Illinois EPA on October 18, 2011, was prepared by Robert B. Billman of URS Corporation. This modification provided the required well construction details for pumping well W-86 which was installed to replace pumping well W-82. The Water Production Wells portion of Condition IV.D.2 were modified to reflect the removal of pumping well W-82 and the addition of pumping well W-86 and corresponding well construction details. The construction details for well W-86 were provided in a February 14, 2013 email from Mr. Billman.
5. Modification B-43R-M-8 entitled, "Groundwater Pumping Well", dated March 12, 2012 and received by the Illinois EPA on March 21, 2012, was prepared by Robert B.

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Billman of URS Corporation. This modification provided the required well construction details for pumping well W-88, which was installed to replace pumping well W-75. The construction details for well W-88 were provided in a February 14, 2013 email from Mr. Billman.

6. Modification B-43R-M-9 entitled, "IEPA Well Numbers and WRR Facility Well Numbers", dated February 19, 2013 and received by the Illinois EPA February 22, 2013. The submittal requests to correct a typographical error for six (6) well identification numbers.
7. Modification B-43R-M-10 entitled, "New Groundwater Monitoring Well Installation", dated February 22, 2013 and received by the Illinois EPA February 25, 2013. The submittal provides boring logs, construction diagrams and monitoring well development forms for a replacement well for P-55.
8. Modification B-43R-M-11 entitled, "IEPA Well Numbers and WRR Facility Well Numbers", dated February 19, 2013 and received by the Illinois EPA March 4, 2013. The submittal requests to correct a typographical error for six (6) well identification numbers. Besides different received dates, the submittal appears to be identical to information submitted in Modification B-43R-M-9 above.
9. Modification B-43R-M-12 entitled, "Groundwater Pumping Well W-85", dated August 23, 2013 and received by the Illinois EPA August 26, 2013. The submittal provides well details for W-85 to update Condition IV.D.2 of the Permit.
10. Modification B-43R-M-13 entitled, "Groundwater Monitoring Well Construction", dated August 23, 2013 and received by the Illinois EPA August 26, 2013. The submittal presents information collected during an October 2009 comprehensive well survey and requests the data provided be incorporated into Conditions IV.D.1.a and IV.D.1.b.
11. Modification B-43R-M-15 entitled, "Groundwater Pumping Well", dated December 19, 2013 and received by the Illinois EPA December 23, 2013. The submittal requests to remove well W-73 as a gradient control well and add a new groundwater production well to be named W-89.
 - a. Additional information for Modification B-43R-M-15 entitled, "Additional Information to Supplement Class 1* Permit Modification Request; Groundwater Pumping Well", dated February 28, 2014 and received by the Illinois EPA March 3, 2014. The submittal presents information to address the additional information request emailed to the facility February 7, 2014.

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- b. Additional information for Modification B-43R-M-15 entitled, “Class 1* Permit Modification; New Groundwater Pumping Well W-89”, dated April 17, 2014 and received by the Illinois EPA April 18, 2014. The submittal requests that the Illinois EPA issue a response by the end of April 2014 or a meeting be held.
 - c. Additional information for Modification B-43R-M-15 entitled, “Further Information to Supplement Class 1* Permit Modification Request; Groundwater Pumping Well W-89”, dated May 8, 2014 and received by the Illinois EPA May 13, 2014. The submittal presents information to address the additional information request discussed during the April 30, 2014 phone call.
- 12. Modification B-43R-M-17 entitled, “Supplemental Sampling & Analysis Plan Information – Groundwater Monitoring Well Installation & Abandonment Procedures and Well Replacement Request”, dated May 9, 2014 and received by the Illinois EPA May 13, 2014. The submittal requests to incorporate the groundwater monitoring well installation and abandonment procedures into Condition IV.H of the Groundwater Corrective Action Program within the Hazardous Waste Management RCRA Post-Closure Permit (Permit) maintained by SOPUS and Phillips 66. The submittal also requests to install five (5) replacement wells at the Wood River Refinery (WRR), using these procedures.
- 13. Modification B-43R-M-18 entitled, “Request for Clarification – ELUC and Pond 2 Conditions, RCRA Post-Closure Permit WRB Refining LP, Wood River Refinery”, dated September 26, 2014 and received by the Illinois EPA September 29, 2014, 2014. The submittal is a request to clarify permit information regarding the Pond 2 hazardous waste management unit (HWMU) and solid waste management unit (SWMU) Environmental Land Use Control (ELUC) submittals contained in the RCRA Post Closure Permit (Permit).
- 14. Modification B-43R-M-19 entitled, “Notification of Damage to Well P-92C and Proposal for Replacement”, dated September 26, 2014 and received by the Illinois EPA October 3, 2014.
- 15. Modification B-43R-M-14 entitled, “Request to Remove Gauging Requirements for the Riverfront, West, and Southwest Tank Farm Properties; and Discontinue Southwest Tank Farm Sampling Activities”, dated August 23, 2013 and received by the Illinois EPA September 6, 2013. The submittal requests to cease all gauging and sampling at the Riverfront, West, and Southwest Tank Farm properties.
- 16. Modification B-43R-M-20 entitled, “Groundwater Pumping Well W-89”, dated November 5, 2014 and received by the Illinois EPA November 7, 2014. The

submittal requests to add well construction details to the table in Condition IV.D.2 of the Permit.

- a. Additional Information for Log No. B-43R-M-20 – A document entitled, “Additional Information”, dated February 11, 2015, and received by the Illinois EPA February 17, 2015. The submittal provides the boring log and well completion report for groundwater pumping well W-89.
 - b. Modification B-43R-M-22 entitled, “Groundwater Monitoring Well Construction Information Update”, dated February 11, 2015 and received by the Illinois EPA February 15, 2015. The submittal provides the well survey information from the required 5-year survey of wells, and provides construction details for groundwater monitoring wells P-57, P-92C, P-93A, and P-93C required by Condition IV.D.1.b of the Permit.
17. Modification B-43R-M-23 entitled, “Unable to Gauge Well Notification and Additional Information to Supplement 8/23/13 Request to Remove Gauging Requirements for Riverfront, West, and Southwest Tank Farm Properties; and Discontinue Southwest Tank Farm Sampling”, dated May 14, 2015 and received by the Illinois EPA May 15, 2015. The submittal provides details of gauging difficulties at the well P-114 and proposes to abandon the well based on the request to cease gauging in Modification B-43M-14 above.
18. Modification B-43R-M-24 entitled, “Groundwater Pumping Well W-85”, dated August 23, 2013 and received by the Illinois EPA September 6, 2013. The submittal provides well construction details for production well W-85.
19. Modification B-43R-M-25 entitled, “Groundwater Monitoring Well Construction”, dated August 23, 2013 and received by the Illinois EPA September 6, 2013. The submittal provides well survey information from October 2009. This information is superseded by the December 2014 well survey details provided in Submittal No. 4.
20. Modification Log No. B-43R-M-21 – A document entitled, “Sampling and Analysis Plan Revision”, dated February 11, 2015 and received by the Illinois EPA February 13, 2015. The submittal is provided in response to Condition IV.H.6 and requests to replace two pages of Section C text and provides a new Attachment C-4 to the approved permit application.
21. Modification Log No. B-43R-M-26 – A document entitled, “Clarification Information to Supplement the 8/23/13 Request to Discontinue Southwest Tank Farm Sampling Activities”, dated September 23, 2015 and received by the Illinois EPA September 28, 2015. The submittal presents information to clarify that groundwater monitoring

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sampling results for wells at the Southwest Tank Farm were reported to Illinois EPA within semi-annual reports, instead of being sent to USEPA, as of the renewed RCRA Permit dated September 23, 2010.

22. Modification Log No. B-43R-M-27 – A document entitled, “Monitoring Well P-84A Integrity Assessment”, dated September 25, 2015 and received by the Illinois EPA September 28, 2015. The submittal requests to correct and update well construction details to the table in Condition IV.D.1 of the Permit.
23. Modification Log No. B-43R-M-28 – A document entitled, “Update of Groundwater Protection Standards”, dated September 24, 2015, and received by the Illinois EPA September 28, 2015. The submittal provides updated Groundwater Protection Standards to reflect revisions to 35 Ill. Adm. Code Part 620, as required by Condition IV.E.5 of the Permit.
24. Modification Log No. B-43R-M-29 – A document entitled, “Groundwater Monitoring Well Construction Information Update”, dated October 22, 2015 and received by the Illinois EPA October 23, 2015. The submittal request multiple revisions to Condition IV.1.a and 1.b, including: (1) construction information updates for replacement of monitoring well P-114 with P-114R; (2) minor typographical errors in the June 29, 2015 modified Permit; and (3) addition of newly obtained boring logs and/or monitoring well installation details, previously thought unavailable, recently provided to AECOM by Phillips 66. Copies of boring logs and/or monitoring well installation details were sent via email on August 20 and September 11, 2019 at the request of Illinois EPA.
25. Modification Log No. B-43R-M-30 – A document entitled, “West Fenceline Groundwater Monitoring Well Sampling Methods”, dated October 23, 2015 and received by the Illinois EPA October 26, 2015. The submittal clarifies low-flow sampling methods are used on groundwater monitoring wells required to be sampled by both the Roxana Interim Groundwater Monitoring Program and the WRR Groundwater Corrective Action Program.
26. Modification Log No. B-43R-M-35 – A document entitled, “Groundwater Pumping Well W-87 to Replace W-42”, dated April 24, 2017 and received by the Illinois EPA April 25, 2017. The submittal requests existing Water Production Well W-87 serve as a replacement for W-42 and provides well construction details for W-87.
27. Modification Log No. B-43R-M-36 – A document entitled, “Updated Permit Renewal Application Table C-15 for Laboratory Provided Containers”, dated April 21, 2017 and received by the Illinois EPA April 24, 2017. The submittal provides revised pages to reflect the current sample container used by the laboratory.

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28. Modification Log No. B-43R-M-38 – A document entitled, “Class 1* Permit Modification – Section C Revision for SOP Reference”, dated April 21, 2017 and received by the Illinois EPA April 24, 2017. The submittal provides revised pages to the Standard Operating Procedures (SOPs) to reflect revisions to Sections C.7.5 and C.8.4.3 made in response to the Illinois EPA letter dated October 10, 2017.
29. Modification Log No. B-43R-M-39 – A document entitled, “Groundwater Pumping Well W-90 to Replace W-76”, dated May 18, 2018 and received by the Illinois EPA May 21, 2018. The submittal is provided due to pumping well W-76 no longer being functional. Well details for W-90 are requested to be added and those for W-76 be removed from Condition IV.D.2 of the Permit.
30. Modification Log No. B-43R-M-41 – A document entitled, Change in WRB Refining, LP Contact Personnel, dated March 20, 2019 and received March 22, 2019. This document provides updated contact information for WRB Refining, LP which is identified Condition III.F.3 of the Permit.
31. Modification Log No. B-43R-M-42 – A document entitled, Change in Shell Oil Products Contact Personnel, dated December 20, 2019 and received December 23, 2019. This document provides updated contact information for Equilon d/b/a Shell Oil Products US which is identified Condition III.F.2 of the Permit.
32. Modification Log No. B-43R-M-46 – A document entitled, Change in Shell Oil Products Contact Personnel, dated March 2, 2021 and received March 3, 2021. This document provides updated contact information for Equilon d/b/a Shell Oil Products US contained Condition III.F.2 of the Permit.
33. Modification Log No. B-43R-M-47 – A document entitled, “Notice Water Production Well W-84 Outage and Request for Extension for Permit Modification Request”, dated March 22, 2021 and received by the Illinois EPA March 23, 2021. The submittal presents a notification pumping well W-84 is not repairable and requests a 4-month period for assessment of system.
34. Modification Log No. B-43R-M-48 – A document entitled, “Water Production Well W-91 to Replace W-84”, dated July 28, 2021 and received by the Illinois EPA July 29, 2021. The submittal requests to use W-91 in place of W-84, since W-84 is no longer able to serve its intended purpose. Well details for W-91 are requested to be added and those for W-84 be removed from Condition IV.D.2 of the Permit.
35. Modification Log No. B-43R-M-2 – A document entitled, “Post-Closure Cost Estimates”, dated November 24, 2010 and received by the Illinois EPA on December 6, 2010. The document was submitted to satisfy requirements of Condition VI.C.3 of

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the RCRA Post-Closure Permit, Log No. B-43R (effective Date October 28, 2010). The cost estimates are provided for post-closure care of the Solid Waste Disposal Basin (SWDB). The document was prepared by Mr. Don Grahlherr, P.E. of URS.

36. Modification Log No. B-43R-M-3: A document entitled, "Financial Assurance Cost Estimates", dated January 21, 2011 and received by the Illinois EPA on January 21, 2011. The document was submitted to satisfy requirements of Section V.F.2 of the RCRA Post-Closure Permit, Log No. B-43R (effective Date October 28, 2010). The cost estimates are for corrective action activities to be conducted at the site. The document was prepared by Mr. Robert Billman, P.E. of URS.
37. Modification Log No. B-43R-M-5: A document entitled, "Revised Financial Assurance Cost Estimates", dated August 19, 2011 and received by the Illinois EPA August 29, 2011. The document is submitted to satisfy Conditions III.E.1 and E.2 and V.F.1 through F.3 of the Permit, and the notice of deficiencies issued in the Illinois EPA letter dated May 27, 2011 (Log Nos. B-43R-M-2 and M-3). The document was prepared by Mr. Ken Hagg, P.E. of URS.
38. Modification Log No. B-43R-CA-49: A document entitled, "Revised Financial Assurance Cost Estimates", dated January 31, 2013 and received by the Illinois EPA February 1, 2013. The document was prepared by Ken Hagg, P.E. of URS.
39. Modification Log No. B-43R-M-16 – A document entitled, "Financial Assurance Cost Estimates", dated December 20, 2013 and received by the Illinois EPA December 23, 2013. The document was prepared by Ms. Wendy Pennington and Mr. Robert B. Billman of URS.
40. Modification Log No. B-43R-M-31 – A document entitled, "2015 Financial Assurance Cost Estimates", dated December 15, 2015 and received by the Illinois EPA December 16, 2015. The document was prepared by Ms. Wendy Pennington and Mr. Robert B. Billman of URS.
41. Modification Log No. B-43R-M-33 – A document entitled, "2016 Financial Assurance Cost Estimates", dated December 12, 2016 and received by the Illinois EPA December 13, 2016. The document was prepared by Ms. Wendy Pennington and Mr. Robert B. Billman of URS. The subject submittal is superseded by the 2020 estimate (Log No. B-43R-M-45) listed below.
42. Modification Log No. B-43R-M-37 – A document entitled, "2017 Financial Assurance Cost Estimates", dated December 12, 2017 and received by the Illinois EPA December 12, 2017. The document was prepared by Ms. Wendy Pennington

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and Mr. Robert B. Billman of URS. The subject submittal is superseded by the 2020 estimate (Log No. B-43R-M-45) listed below.

43. Modification Log No. B-43R-M-40 – A document entitled, “2018 Financial Assurance Cost Estimates”, dated November 9, 2018 and received by the Illinois EPA November 13, 2018. The document was prepared by Ms. Wendy Pennington and Mr. Robert B. Billman of URS. The subject submittal is superseded by the 2020 estimate (Log No. B-43R-M-45) listed below.
44. Modification Log No. B-43R-M-43 – A document entitled, “2019 Financial Assurance Cost Estimates”, dated December 20, 2019 and received by the Illinois EPA December 23, 2019. The document was prepared by Ms. Wendy Pennington and Mr. Robert B. Billman of URS. The subject submittal is superseded by the 2020 estimate (Log No. B-43R-M-45) listed below.
45. Modification Log No. B-43R-M-45 – A document entitled, “2020 Financial Assurance Cost Estimates”, dated December 11, 2020 and received by the Illinois EPA December 15, 2020. The document was prepared by Ms. Wendy Pennington and Mr. Robert B. Billman of URS.
46. Modification Log No. B-43R-M-49 – A document entitled, “2021 Financial Assurance Cost Estimates”, dated December 16, 2021 and received by the Illinois EPA December 17, 2021. The document was prepared by Ms. Wendy Pennington and Mr. Robert B. Billman of URS.
47. Modification Log No. B-43R-M-51 – A document entitled, “Class 1* Permit Modification – Groundwater Corrective Action Monitoring Program – Report Due Dates,” was reviewed as a Class 1* permit modification requesting to revise the due dates for semi-annual reports listed in Condition IV.J.2, to allow two (2) additional weeks for report deadlines for adequate review of information to be reported. Please note, the submittal is dated July 17, 2022, which appears to be an error and should be dated July 17, 2023. The submittal was received by the Illinois EPA July 18, 2023.
48. Modification Log No. B-43R-M-52 – A document entitled, “Class 1* Permit Modification – Further Discussion of W-85 Notification Timeline; W-85 Removal; Proposal for New Well (W-92),” was reviewed as a Class 1* permit modification requesting removal of production well W-85, and proposing a new location more than 10 feet from the original location of W-85. A new well, W-92, is proposed to meet the gradient control needs previously provided by W-85. The submittal was received by the Illinois EPA August 15, 2023.

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49. Modification Log No. B-43R-M-32 – A May 19, 2016 submittal entitled “Proposed Groundwater Management Zone,” received by Illinois EPA on May 20, 2016. The submittal proposed the construction of a Groundwater Management Zone (GMZ) was developed in accordance with the Illinois EPA guidance document entitled, “Establishing a Groundwater Management Zone at RCRA Facilities” (2001).
 - a. Additional Information for Log No. B-43R-M-32 – A May 30, 2017 submittal entitled “Submittal of Additional Information: Corrected Information for Proposed Groundwater Management Zone” and received by the Illinois EPA on May 31, 2017. The submittal revised laboratory analytical information based on the laboratory’s internal evaluation and reporting to SOPUS of the GMZ equipment. The updated results involved updating footnotes of the application identified in Item 49 above.
 - b. Additional Information for Log No. B-43R-M-32 – A January 16, 2018 submittal entitled “Groundwater Management Zone” received by Illinois EPA on January 17, 2018. The submittal responded to multiple concerns over the proposed method and statistical analysis compiled from the Monitoring and Remediation Optimization System (MAROS) as a response to an email correspondence dated January 2, 2018.
 - c. Additional Information for Log No. B-43R-M-32 – A September 26, 2018 submittal entitled “Groundwater Monitoring Zone – Additional Information” received by Illinois EPA on September 27, 2018. In response to an Illinois EPA meeting on April 5, 2018, the submittal revised GMZ boundaries, identified subsurface vertical extent of contamination, the addition of the P-93 well nest, and groundwater trend information.
 - d. Additional Information for Log No. B-43R-M-32 – A March 18, 2022 submittal entitled “Additional Information Supplemental to the Proposed Groundwater Monitoring Zone” and received by Illinois EPA on March 21, 2022, which detailed more recent groundwater program analytics and a revised GMZ well list.
50. Modification Log No. B-43R-M-44 – An October 12, 2020 submittal entitled “Response to Condition 4.b. in Attachment A and Condition V.D.3. of the 12/20/2019 IEPA Letter with Modified Permit”, received by Illinois EPA on October 13, 2020. The submittal proposes that the Illinois EPA requirement for the installation of an additional well to intercept potential groundwater contamination observed in well P-93B is not necessary. The request was submitted as a Class 1* modification to the Permit.

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51. Modification Log No. B-43R-M-53 – A May 23, 2024 submittal entitled “Change in WRB Refining LP Contact Personnel” and received by Illinois EPA on May 28, 2024. The submittal revised the WRB contact personnel.
52. Corrective Action Log No. B-43R-CA-94 – A October 14, 2016 submittal entitled “Response to IEPA Letter dated July 27, 2016 – Groundwater Conditions near East 3rd and Chaffer Streets”, and received by the Illinois EPA on October 17, 2016. The submittal included new Corrective Action Certification forms with wet signatures previously received on March 13, 2024. The submittal demonstrates the status of groundwater near East 3rd and Chaffer Streets by groundwater wells. This submittal was included with Modification Log Nos. B-43R-M-32, B-43R-M-44, and B-43R-M-53 as an additional groundwater document detailing the subsurface groundwater potentiometric data for northeastern portions of the proposed GMZ area.

B. Portions/Aspects of the Modification Requests Identified in Section A Above Which Are Not Part of the approved permit application

Certain portions/aspects of the modification requests identified in Section A above are not approved and thus are not a part of the approved permit application. A listing of these, as well as the reason why they are not approved is as follows:

1. Regarding B-43R-M-14:
 - a. The Illinois EPA cannot approve the request to discontinue sampling required by the USEPA at the SWTF at facility wells P-109, P-122, P-123, P-124, and P-125. Any gauging, sampling, reporting, and/or maintenance required by the USEPA cannot be modified or reduced by the Illinois EPA.
 - b. The Illinois EPA cannot approve the request to remove gauging requirements for Riverfront Property wells based on an exceedance of the Class I GQS for benzene at well P-51 detected during the split sampling event in April/May 2014. A Condition IV.F.8 has been added to require an investigation workplan be submitted within ninety (90) days, for Illinois EPA review and approval, to determine the source of the benzene contamination detected at well P-51. This proposal must also propose investigation locations to delineate the extent of groundwater contamination, and at a minimum, the workplan must propose groundwater sampling and analysis for COCs benzene, chromium, and MTBE.

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- c. The Illinois EPA cannot approve the request to remove gauging requirements for the wells at the West Property. These wells must continue to be gauged for demonstrating hydraulic control of groundwater.
2. Regarding B-43R-M-23: Well P-114 cannot be abandoned as it is part of the Roxana Interim Groundwater Monitoring Network, and the purpose of this well is to serve as part of the monitoring network used to demonstrate the extent of contamination and effectiveness of corrective action. Well P-114 must be replaced within ninety (90) days in accordance with Condition IV.D.5 and the approved Sampling and Analysis Plan.
3. Regarding B-43R-M-44: Illinois EPA cannot approve the request to not install an additional well. Illinois EPA has determined new well 293B continues to be necessary. A letter dated January 26, 2024 (Log No. B-43R-CA-113, 114, and 115) which approved the Steam Enhanced Extraction (SEE) system requires delineation to the southwest, south, and southeast of the area based on information presented in the SEE workplan, supporting the necessity for additional well 293B.

