



Illinois Environmental Protection Agency

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

RCRA Permit Application Form (LPC-PA23)

This form must be used for any permit application for a hazardous waste management facility regulated in accordance with RCRA, Subtitle C, including all requests to modify an existing permit. One original and three (3) copies, of all permit applications must be submitted. Attach the original and appropriate number of copies of a cover letter, any necessary plans, specifications, reports, forms, (e.g., corrective action certification form), and any other certifications etc. to fully support and describe the activities or modifications being proposed. Attach sufficient information to demonstrate compliance with all applicable regulatory requirements. Applications without this form will be deemed incomplete. Please refer to the RCRA checklist and decision guide documents for further guidance. For RCRA corrective action, this form should only be used if requesting an actual modification to a RCRA permit. A RCRA Corrective Action Certification form should be used in all other instances.

Note: Permit applications which are hand-delivered to the Bureau of Land, Permit Section must be delivered to 1021 North Grand Avenue East between the hours of 8:30 a.m. to 5:00 p.m., Monday through Friday (excluding State holidays).

Please type or print all information legibly.

I. Site Identification

Site # (Illinois EPA): 1191150002 USEPA ID Number: ILD080012305
Site Name: Equilon Enterprises LLC d/b/a Shell Oil Products US
Physical Site Location (street, road, etc.): 900 South Central Ave
City: Roxana Zip Code: 62084 County: Madison
Existing RCRA Permit (if applicable): B-43R

II. Owner/Operator Identification

Owner Information

Name: WRB Refining LP
Mailing Address:

2331 City West Blvd
Houston, TX 77042

Contact Name: Thomas Morgan
Phone #: 618-255-2142
Email: Thomas.R.Morgan@p66.com

Operator Information

Name: Equilon Enterprises LLC d/b/a SOPUS
Mailing Address:

128 East Center St
Nazareth, PA 18064

Contact Name: Leroy Bealer
Phone #: 484-632-7955
Email: leroy.bealer@shell.com

A 39(i) certification must be submitted with information concerning the following persons or entities:

- the owner of the business entity applying for the permit;
- the operator of the business entity applying for the permit;
- each employee or officer of the owner or operator who signed the permit application or has managerial authority at the site; and
- any additional owner, operator, or officer or employee of the owner or operator from whom a certification is requested by the Illinois EPA, including any officer or employee who will be responsible for overseeing or implementing regulated activities governed by the permit.

III. Permit Application Identification

Application Type

- | | | |
|------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| <input type="checkbox"/> New Part B Permit | <input type="checkbox"/> Class 1 Modification | <input type="checkbox"/> Remedial Action Plan Permit (RAPP) |
| <input type="checkbox"/> Part B Permit Renewal | <input checked="" type="checkbox"/> Class 1* (prior approval required) Modification | <input type="checkbox"/> Sig RAPP Modification |
| | <input type="checkbox"/> Class 2 Modification | <input type="checkbox"/> Non Sig RAPP Modification |
| | <input type="checkbox"/> Class 3 Modification | <input type="checkbox"/> Major UIC Modification |
| | <input type="checkbox"/> Additional information to supplement UIC Class I application Log Number | <input type="checkbox"/> Minor UIC Modification |
-

This Application Involves

- | | | | |
|-------------------------------------------------|-------------------------------------------------------|--------------------------------------|---------------------------------------|
| <input type="checkbox"/> Storage | <input type="checkbox"/> Treatment | <input type="checkbox"/> Disposal | <input type="checkbox"/> Incineration |
| <input checked="" type="checkbox"/> Groundwater | <input checked="" type="checkbox"/> Corrective Action | <input type="checkbox"/> UIC Class I | <input type="checkbox"/> UIC Class V |

Description of This Permit Request: (Include a brief narrative description here.)

Additional information in the form of figures to provide more recent information about analytical exceedances to support the Propose GMZ previously submitted.

IV. SIGNATURES

Original signatures required. Signature stamps or applications transmitted electronically or by facsimile are not acceptable. All applications shall be signed by the person in accordance with 35 IAC 702.126(a).

Please check the box of the appropriate certification.

Owner

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Alternative owner certification. For remedial action plans (RAPs) permit under Subpart H of 35 IAC 703, the owner may choose to make the following certification instead of the certification above.

Based on my knowledge of the conditions of the property described in the RAP and my inquiry of the person or persons that manage the system referenced in the operator's certification, or those persons directly responsible for gathering the information, the information submitted is, upon information and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Name (Printed or Typed): Ray Rigdon

Owner Signature: Ray Rigdon Date: 3/15/2022

Title: Vice President, Wood River Refinery

Notary (Required for both owner and operator signatures)

Subscribed and Sworn before me this 15th day of March 2022.

Notary Signature: Merideth A. Wilson



My commission expires on: 8-22-22

Notary Seal

Operator

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Operator Name (Printed or Typed): Leroy Bealer

Operator Signature: _____

Date: 1/3/2022

Title: Principal Program Manager

Notary (Required for both owner and operator signatures)

*Commonwealth of PA:
County of Northampton*

Subscribed and Sworn before me this 3rd day of January 2022.

Notary Signature: *William R Flyte*

Commonwealth of Pennsylvania - Notary Seal
William R Flyte, Notary Public
Northampton County
My commission expires November 25, 2022
Commission number 1051624

My commission expires on: 11-25-2022

Notary Seal

Engineer

I certify under penalty of law that this document and all attachment were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons that manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.

Engineer Name (Print or Type): NOT APPLICABLE

Engineer Signature: _____

Illinois License No.: _____

Expiration Date of License: _____

Engineer Phone No. _____

Email: _____

Engineer Address:
[Empty Box]

Engineer Seal

All information submitted as part of the Application is available to the public except when specifically designated by the Applicant to be treated confidentially as a trade secret or secret process in accordance with Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines.

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



Illinois Environmental Protection Agency

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

39(i) Certification for Operating a Waste Management Facility

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

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

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

I. Applicant Information

Hauling Company: Equilon Enterprises LLC d/b/a Shell Oil Products US IEPA BOL No.: 1191150002
Address: 900 South Central Ave
City: Roxana State: IL Zip Code: 62084
Permit Numbers (if applicable): B-43R

Owner

Owner Name: WRB Refining LP
Street Address: 2331 City West Blvd
City: Houston State: TX Zip: 77042

Operator

Operator Name: Equilon Enterprises LLC dba SOPUS
Street Address: 128 East Center St
City: Nazareth State: PA Zip: 18064

Is this 39(i) certification for the owner or the operator?

Owner Operator Owner and operator are the same entity

II. Officers and Employees with Site Responsibility

Unless the owner and operator are the same entity, a separate 39(i) form must be submitted for both the owner and operator. Persons operating under the authority of the owner should be listed on the owner's 39(i) form and persons operating under authority of the operator should be listed on the operator's 39(i) form.

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

Name	Title
William E. Platt	Global Manager Environmental Projects
Leroy Bealer	Principal Program Manager

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

Name	Title
Wendy Pennington	AECOM, Project Manager

III. Owner, Operator, Officer, and Employee Information

A. Prior Conduct Identification

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

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

B. Pending Proceedings

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

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

C. Prior Application Information

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

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

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

RCRA Post-Closure Permit Renewal Application; EPA ID No ILD 080012305; Log No. B-43R2

Authorization for Release of Information

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

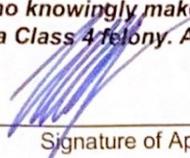
The undersigned authorizes any representative of the Illinois Environmental Protection Agency bearing this release to obtain any information from the Illinois State Police pertaining to the criminal records of the applicant and hereby directs the Illinois State Police to release such information upon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

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

Certification Statements

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

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



Signature of Applicant Officer

1/3/2022

Date

Leroy Bealer

Printed Name

Principal Program Manager

Title

Attachment A (1 of 1)

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

Name: _____ Title: _____

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

A. Prior Findings or Convictions

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

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

B. Pending Proceedings

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

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

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



Illinois Environmental Protection Agency

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

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39(i) Certification
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Owner Name: WRB Refining LP
Street Address: 2331 City West Blvd
City: Houston State: TX Zip: 77042

Operator

Operator Name: Equilon Enterprises LLC dba SOPUS
Street Address: 128 East Center St
City: Nazareth State: PA Zip: 18064

Is this 39(i) certification for the owner or the operator?

Owner Operator Owner and operator are the same entity

II. Officers and Employees with Site Responsibility

Unless the owner and operator are the same entity, a separate 39(i) form must be submitted for both the owner and operator. Persons operating under the authority of the owner should be listed on the owner's 39(i) form and persons operating under authority of the operator should be listed on the operator's 39(i) form.

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

Name	Title
Ray Rigdon	Vice President, Wood River Refinery

Authorization for Release of Information

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

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

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

Certification Statements

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

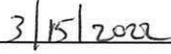
Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))



Signature of Applicant Officer

Ray Rigdon

Printed Name



Date

Vice President, Wood River Refinery

Title

Attachment A (1 of 1)

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

Name: _____ Title: _____

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

A. Prior Findings or Convictions

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

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

B. Pending Proceedings

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

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

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

March 18, 2022

Mr. Kenneth Smith, PE
Manager, Permit Section
Illinois Environmental Protection Agency
Bureau of Land
1021 North Grand Ave East
Springfield, IL 62794

**Additional Information Supplemental to the Proposed Groundwater Management Zone
Equilon Enterprises LLC d/b/a Shell Oil Productions US
1191150002 - Madison County
Roxana, Illinois
Log No. B-43R-M-32**

Dear Mr. Smith;

Per phone conversations with Amy Butler (Illinois Environmental Protection Agency [IEPA]) on December 20, 2021, January 18, 2022 and February 4, 2022, please find supplemental information below and enclosed additional figures to support the following previous submittals:

- Proposed Groundwater Management Zone (GMZ), dated May 19, 2016
- Addendum to Proposed Groundwater Management Zone, dated May 30, 2017
- GMZ Response to Comments, dated January 16, 2018
- GMZ Additional Information, dated September 26, 2018

The enclosed figures are being submitted to provide more recent groundwater analytical screening criteria exceedance information related to Figure 11 (Wood River Refinery groundwater program analytical exceedances 2H15) and Figure 12 (Roxana groundwater program analytical exceedances 4Q15) in the Proposed GMZ, dated May 19, 2016.

The information presented and proposed below represent modifications to the current GMZ proposal based upon a review of the more recent groundwater analytical data.

GMZ Wells

Based upon a review of more recent groundwater analytical data, it is requested that the table presented in Section 5.5.4 of the original Proposed GMZ submittal be modified as indicated below.

North Property (Annual)				Main Property (Annual)
P-014	P-57	P-74	P-94	MW-6A
P-15	P-58	P-83A	T-1	P-66
P-16	P-59*	P-84A	T-12*	P-81A thru D
P-17 (P-87A)	P-60	P-86A	T-13	P-82A thru D
P-55R*	P-68	P-93A thru D*	T-51	P-88A thru D
P-56*				P-95
Study Area (Annual)				
MW-2+		MW-10		MW-27
MW-3		MW-11		MW-28+
MW-4+		MW-16		ROST-3-MW+
MW-5+		MW-22+		ROST-4-PZ(C)+
MW-7+		MW-25+		ROST-4-PZ(E)+
MW-8+		MW-26		

Strikethrough analytes (analyte) – proposed to be removed from the proposed GMZ program because wells have not exhibited exceedances of these within the last three years (2019 through 2021), analyte is a common laboratory contaminant¹, or analyte is not typically expected to be associated with refinery operations².

The analytes proposed to be added to/removed from the GMZ program in the table above are based on exceedances of the GQs screening criteria during the last three years (2019 through 2021) at wells currently included in the Roxana Interim Groundwater Monitoring Program and/or the WRR Semi-annual Groundwater Monitoring Program.

Groundwater Trends

The September 26, 2018 *Groundwater Management Zone – Additional Information* submittal also discussed groundwater (benzene) trend information and provided trend plots for selected wells in the 4th Street and Public Works Yard areas. These plots have been included in the quarterly Roxana Interim Groundwater Monitoring Program reports since 2nd Quarter 2018 (2Q18). The set of these plots that was included in the 4th quarter Roxana groundwater report are also enclosed with this letter for ease of reference.

Potential two GMZs scenario

Based on the phone conversations between AECOM and IEPA (Amy Butler) on December 20, 2021 and January 18, 2022, it is possible that two separate GMZs will be issued by IEPA (one for the Roxana Corrective Action Program and one for the WRR Groundwater Program). If this will be the case, it is requested that one of the following scenarios be adopted for the split programs:

- 1) Groundwater monitoring wells physically located outside the WRR property line be included in the Roxana-related GMZ and wells physically located inside the WRR property line be included in the WRR-related GMZ.
 - a. Under this scenario, it is requested that both GMZ programs be performed during the same quarters, and both reports submitted under the same cover letter and submittal form as the data from one GMZ would help complete the picture with the data from the other GMZ.
- 2) It is requested that both the Roxana-related GMZ and WRR-related GMZ be analyzed for the same VOC and SVOC analyte list. Groundwater monitoring wells³ included in the WRR GMZ will also have samples analyzed for inorganics.

GMZ Boundary Figure

In an email from Amy Butler (IEPA) dated December 28, 2021, it was requested that Figure 13 (revised 9/2018) be revised again to accurately reflect locations with exceedances of the GQs even if they are not organic petroleum hydrocarbon constituents (inorganics/metals). It was stated in this email that all constituents must be “at or below the standards at the boundary”.

During evaluation of the inorganic data for revision of Figure 13, there are minor exceedances of some metals in GMZ boundary wells. These exceedances will be further evaluated moving forward and addressed separately from this submittal.

Based on the information above, Figure 13 has been re-evaluated. It is requested that Figure 13 be replaced by **Figures 13a, 13b, and 13c** enclosed with this letter showing the proposed Roxana GMZ boundary, proposed WRR GMZ boundary, and proposed combined GMZ boundary, respectively.

¹ bis(2-Ethylhexyl) phthalate is a common laboratory contaminant. The contracted laboratory has issued a Corrective Action Report listing the immediate contamination cause to be the “lack of awareness on the part of extractions staff as to the source of these compounds [bis(2-Ethylhexyl) phthalate] which is primarily plastic products including gloves, brushes, scouring pads, etc. coming in contact with acids and solvents.”

² Pentachlorophenol is a common constituent in pesticides and is not typically associated with refinery operations. Observed exceedances of this constituent have been sporadically observed and localized to the vicinity of the Roxana Public Works Yard.

³ Only WRR wells that were historically sampled for inorganics will continue to be sampled for inorganics.

If you have any further questions during your review, please contact Leroy (Buddy) Bealer, SOPUS Senior Program Manager, at leroy.bealer@shell.com (484-632-7955), or Wendy Pennington, AECOM Project Manager, at wendy.pennington@aecom.com (314-452-8929).

Sincerely,



Wendy Pennington, PE
Project Manager
AECOM
M: 314-452-8929
E: wendy.pennington@aecom.com

enclosures: LPC-PA23 RCRA Form
Figure 10 from original 2016 Proposed GMZ submittal
Updated Figures to supplement 2016 GMZ Figure 11
Updated Figures to supplement 2016 GMZ Figure 12
Benzene Concentration over Time Plots & GWSDAT Charts
Figure 13a Proposed Roxana GMZ Boundary
Figure 13b Proposed WRR GMZ Boundary
Figure 13c Proposed Combined GMZ Boundary
39i Certification

cc: Amy Butler, IEPA
IEPA Collinsville FOS
Leroy (Buddy) Bealer, SOPUS
Tom Morgan, P66
Repositories (Roxana Public Library, website)
Project File

**MORE RECENT FIGURES TO SUPPLEMENT
FIGURE 11 IN THE PROPOSED GMZ**

**(Wood River Refinery groundwater program
analytical exceedances)**

2nd Half 2015 included in Proposed GMZ

**1st Half 2015, and
1st Half 2016 through 2nd Half 2021
included herein**

LEGEND

-  GROUNDWATER MONITORING WELL WITH ANALYTICAL EXCEEDANCES OF SCREENING CRITERIA
-  GROUNDWATER MONITORING WELL WITHOUT ANALYTICAL EXCEEDANCES OF SCREENING CRITERIA
-  GROUNDWATER MONITORING WELL NOT SAMPLED

NOTES:

1. ANALYTICAL RESULTS ARE SCREENED AGAINST CRITERIA OUTLINED IN THE WRR RCRA PART B PERMIT.
2. GROUNDWATER CLASS I SCREENING CRITERIA.

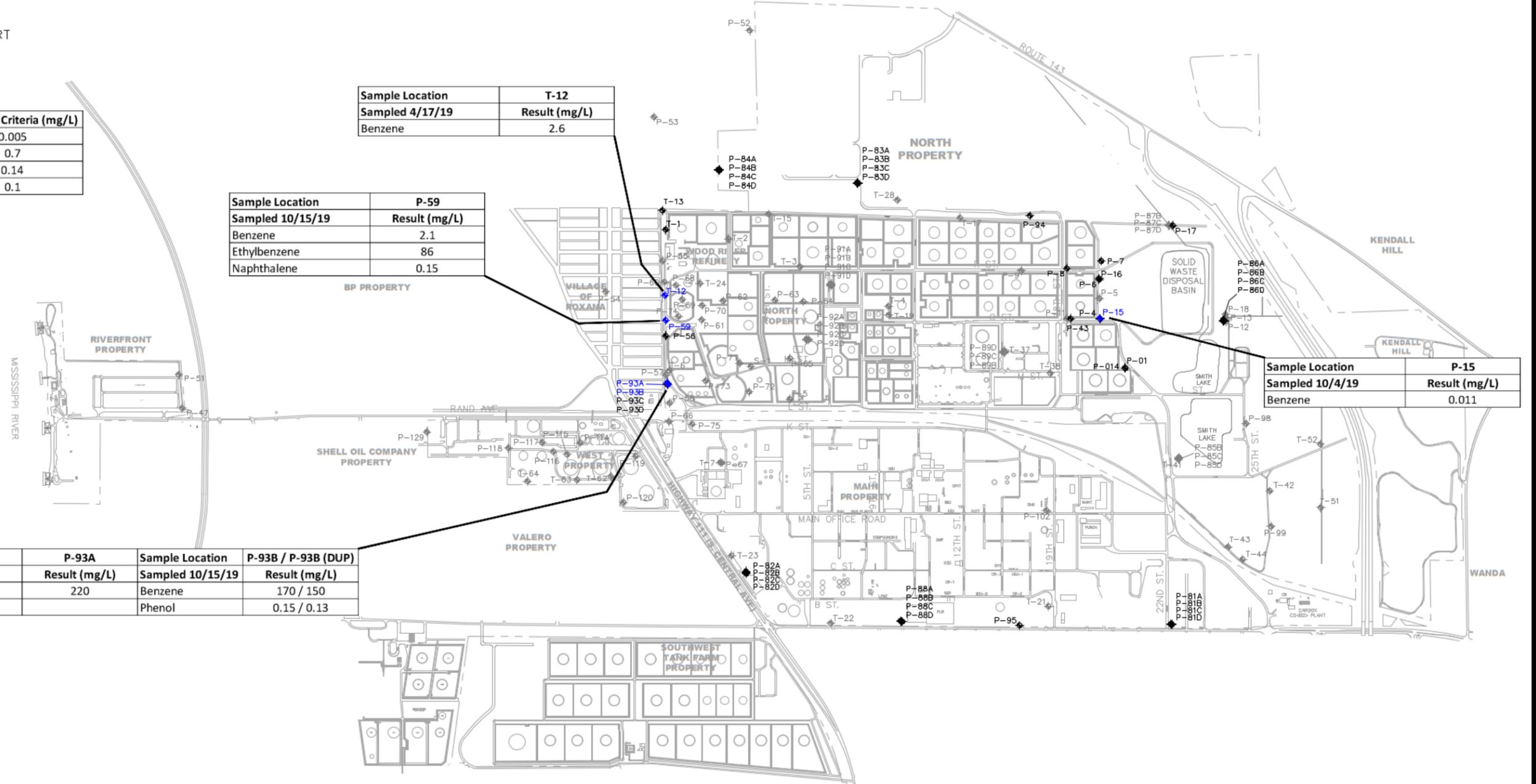
Analyte	Screening Criteria (mg/L)
Benzene	0.005
Ethylbenzene	0.7
Naphthalene	0.14
Phenol	0.1

Sample Location	T-12
Sampled 4/17/19	Result (mg/L)
Benzene	2.6

Sample Location	P-59
Sampled 10/15/19	Result (mg/L)
Benzene	2.1
Ethylbenzene	86
Naphthalene	0.15

Sample Location	P-15
Sampled 10/4/19	Result (mg/L)
Benzene	0.011

Sample Location	P-93A	Sample Location	P-93B / P-93B (DUP)
Sampled 10/15/19	Result (mg/L)	Sampled 10/15/19	Result (mg/L)
Benzene	220	Benzene	170 / 150
		Phenol	0.15 / 0.13



SOPUS RCRA GROUNDWATER MONITORING PROGRAM WRB REFINING LP – WOOD RIVER REFINERY ROXANA, ILLINOIS	PROJECT NO. 60592794
	
DRN. BY: wmp January 2020 DSGN. BY: djd CHKD. BY: b3	Analytical Exceedances— Fourth Quarter 2019
FIG. NO. 6	

LEGEND

-  GROUNDWATER MONITORING WELL WITH ANALYTICAL EXCEEDANCES OF SCREENING CRITERIA
-  GROUNDWATER MONITORING WELL WITHOUT ANALYTICAL EXCEEDANCES OF SCREENING CRITERIA
-  GROUNDWATER MONITORING WELL NOT SAMPLED

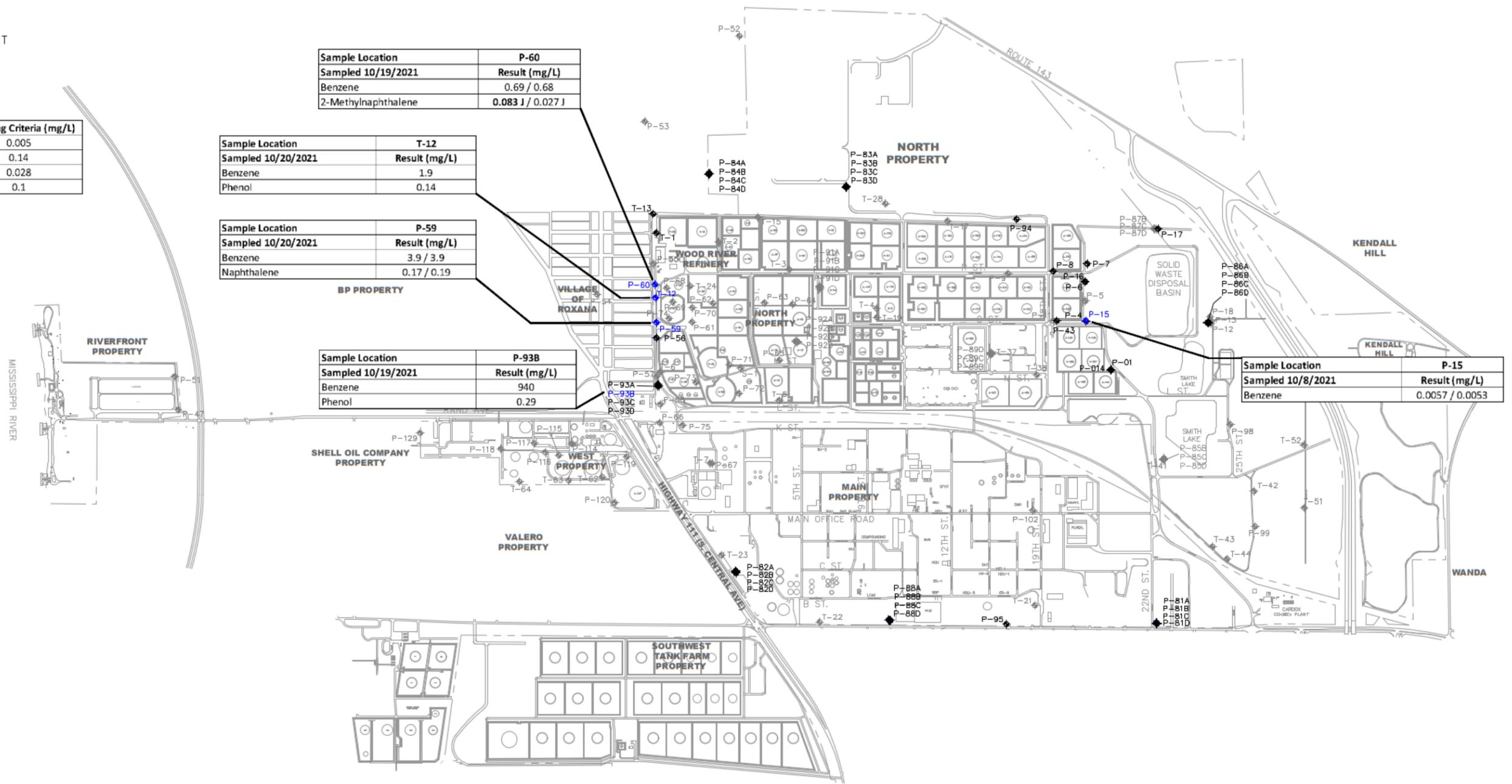
NOTES:

1. ANALYTICAL RESULTS ARE SCREENED AGAINST CRITERIA OUTLINED IN THE WRR RCRA PART B PERMIT.
2. GROUNDWATER CLASS I SCREENING CRITERIA.

Analyte	Screening Criteria (mg/L)
Benzene	0.005
Naphthalene	0.14
2-Methylnaphthalene	0.028
Phenol	0.1

3. MULTIPLE RESULTS (E.G., 3.9 / 3.9) INDICATE DUPLICATE SAMPLES OR CONFIRMATION SAMPLES.

J = THE RESULT IS ESTIMATED.



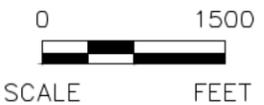
Sample Location	P-60
Sampled 10/19/2021	Result (mg/L)
Benzene	0.69 / 0.68
2-Methylnaphthalene	0.083 J / 0.027 J

Sample Location	T-12
Sampled 10/20/2021	Result (mg/L)
Benzene	1.9
Phenol	0.14

Sample Location	P-59
Sampled 10/20/2021	Result (mg/L)
Benzene	3.9 / 3.9
Naphthalene	0.17 / 0.19

Sample Location	P-93B
Sampled 10/19/2021	Result (mg/L)
Benzene	940
Phenol	0.29

Sample Location	P-15
Sampled 10/8/2021	Result (mg/L)
Benzene	0.0057 / 0.0053



SOPUS RCRA GROUNDWATER MONITORING PROGRAM WRB REFINING LP – WOOD RIVER REFINERY ROXANA, ILLINOIS		PROJECT NO. 60648474
AECOM		
DRN. BY:GDS January 2022 DSGN. BY:mar CHKD. BY:wmp	Analytical Exceedances— Fourth Quarter 2021	FIG. NO. 6

**MORE RECENT FIGURES TO SUPPLEMENT
FIGURE 12 IN THE PROPOSED GMZ**

**(Roxana groundwater program
analytical exceedances)**

4th Quarter 2015 included in Proposed GMZ

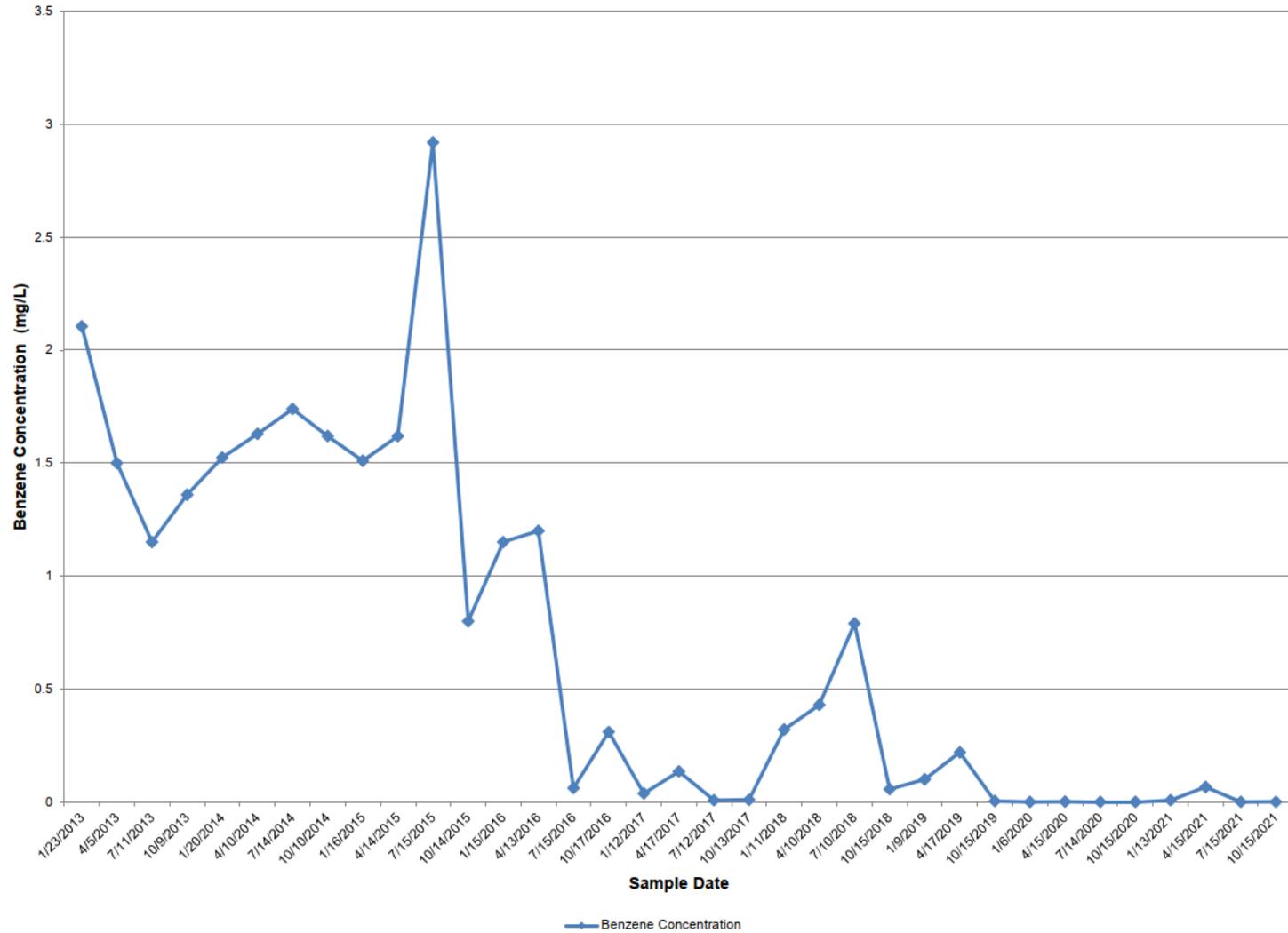
**1st Quarter 2016 through 4th Quarter 2021
included herein**

GWSDAT Summary/Legend

- Black Solid Data Points = Detections
- Orange Solid Data Points = Non-Detects
- Black-Hollow Data Points = Groundwater Elevation
- Solid Blue Line = Smoothed estimate of the mean trend
- Dashed Blue Line = 95% confidence interval around the estimated mean trend
- Solid Green Line = Linear trend estimate (Mann-Kendall Analysis)
- Dashed Green Line = 95% confidence interval around linear trend estimate

4th Street Area

Benzene Concentrations Over Time - MW-22



Notes:

mg/L = milligrams per liter

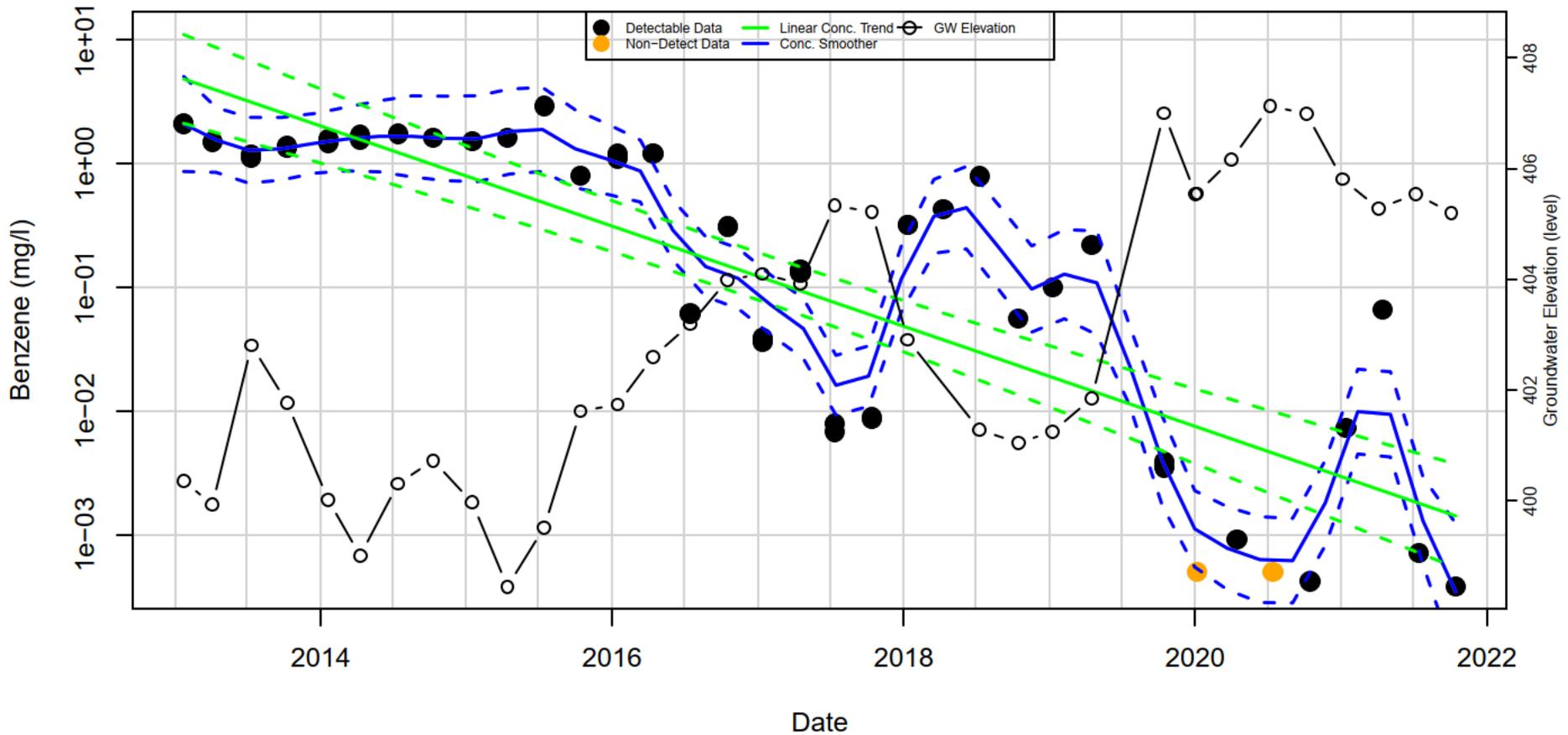
Duplicate values were averaged.

Timeframe specific to available data.

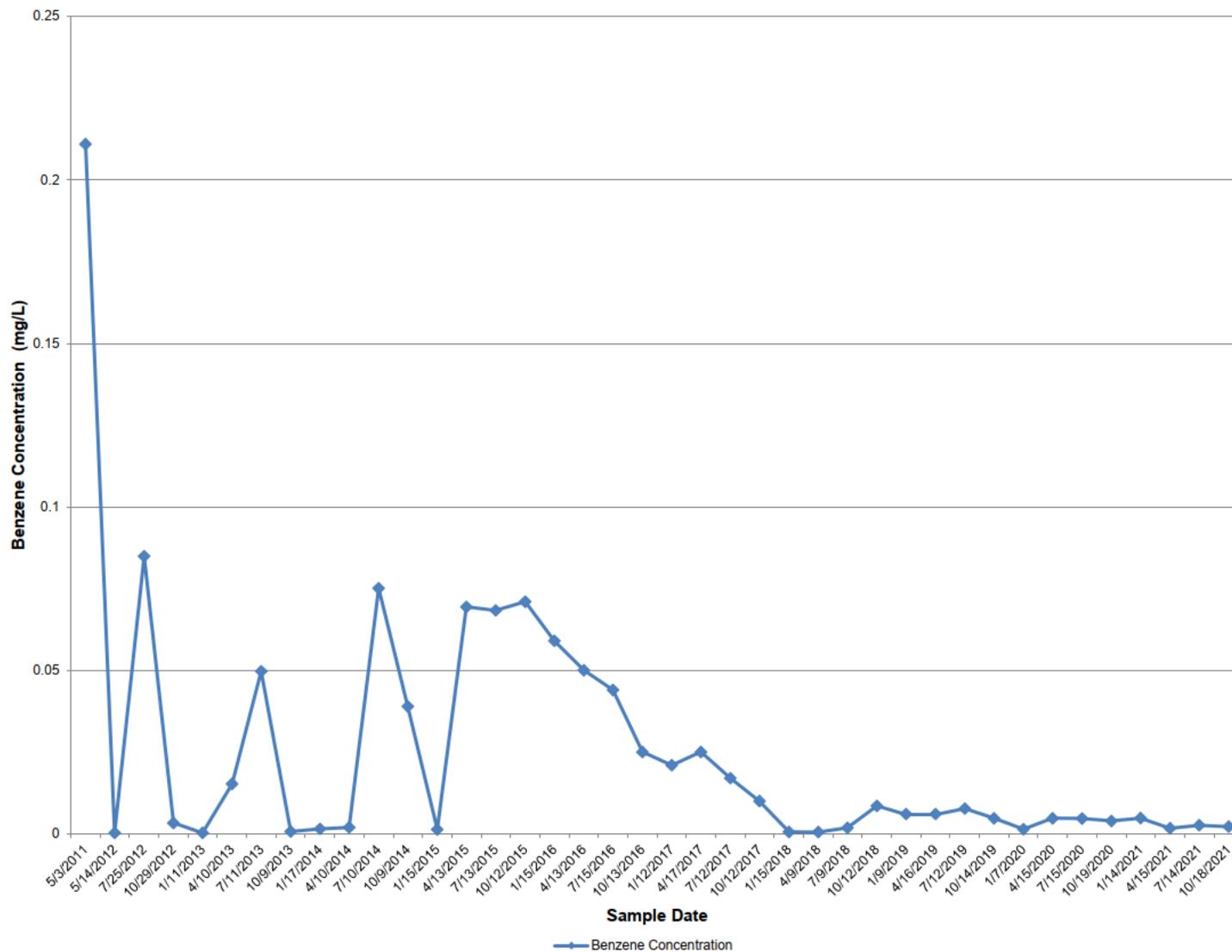
Non-detect values are shown at half the reporting limit.

Benzene in MW-22 : Aquifer-Blank

Mann-Kendall P.Value= <0.01; Half-Life= 272 days



Benzene Concentrations Over Time - ROST-4-PZ(C)



Notes:

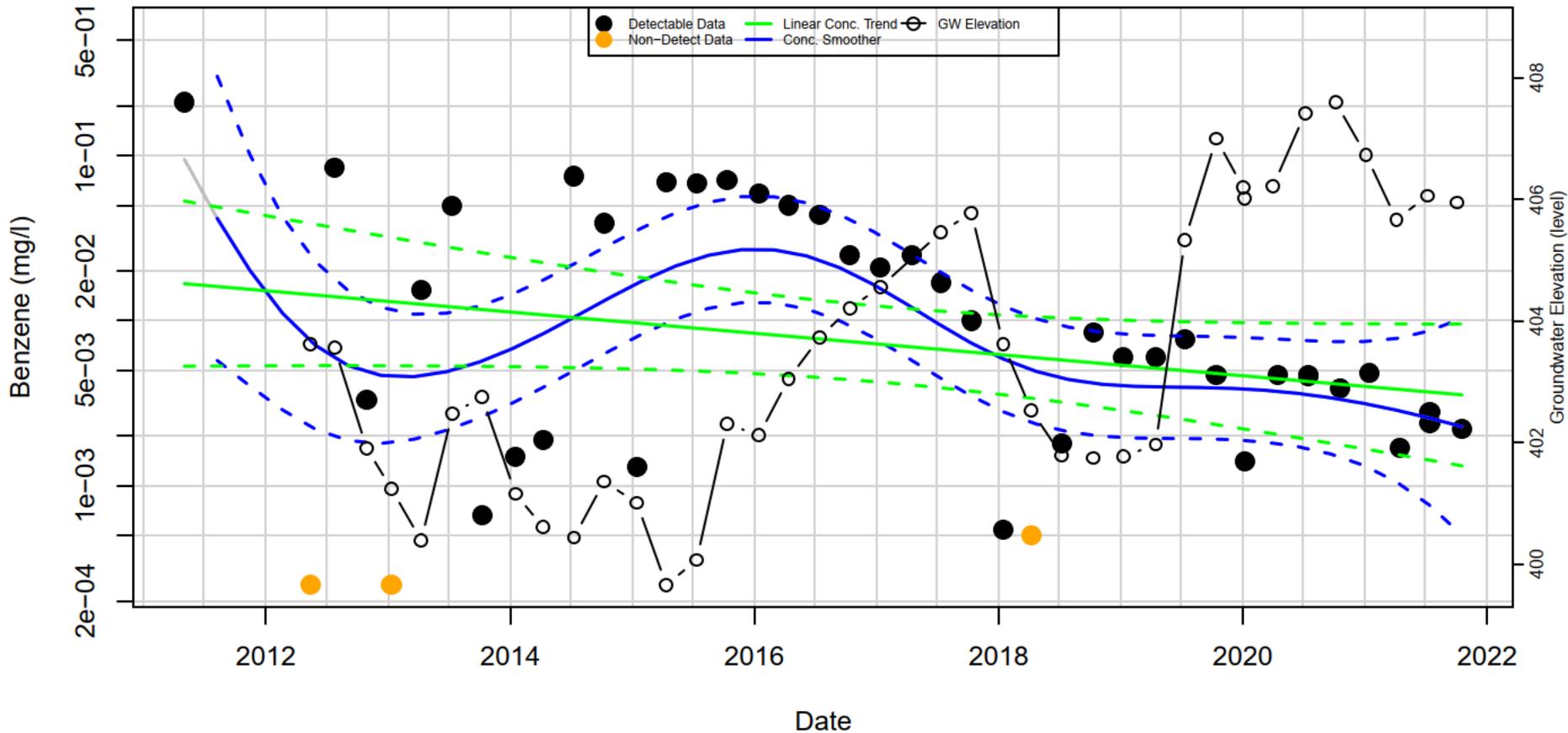
mg/L = milligrams per liter

Timeframe specific to available data.

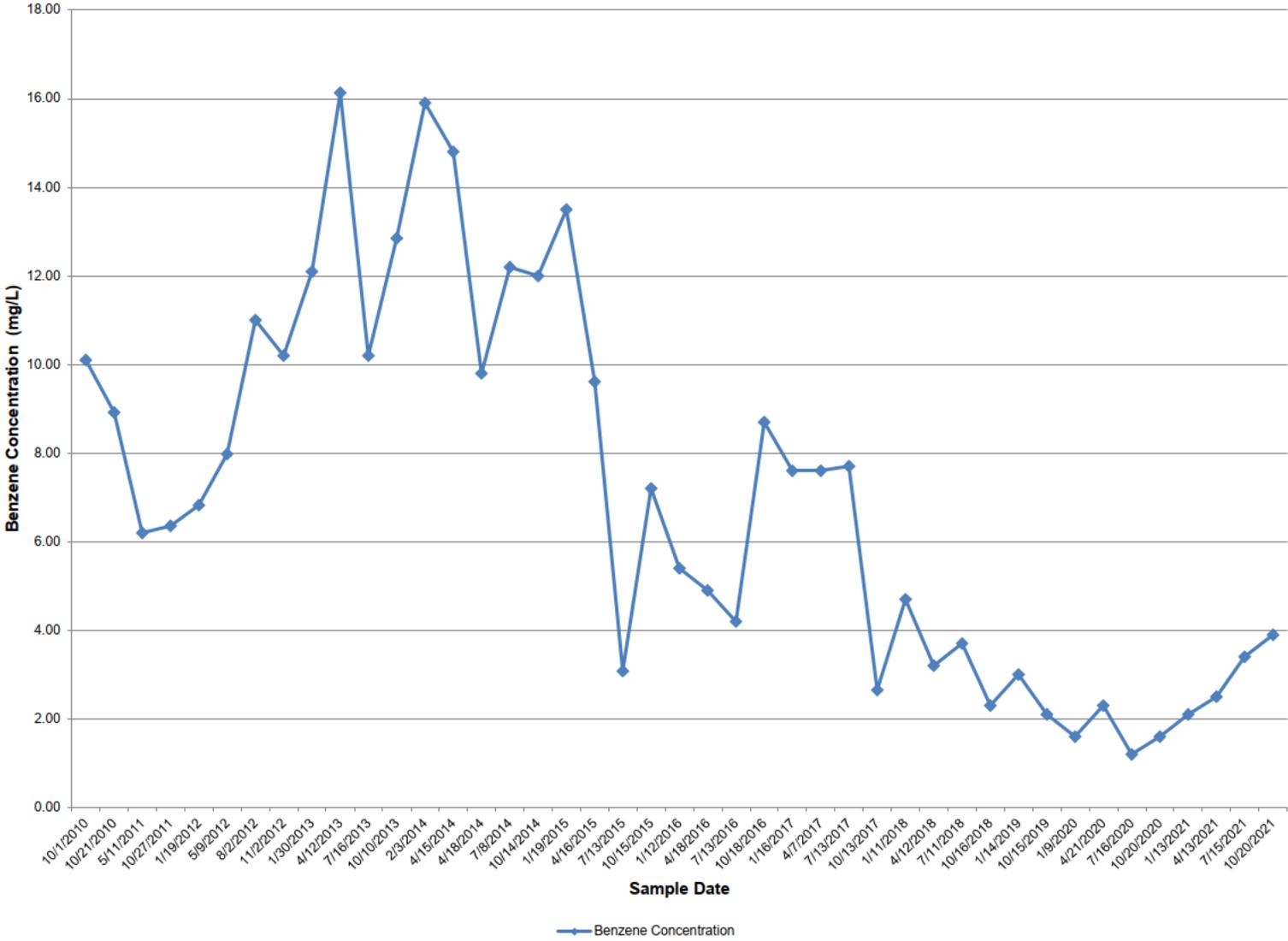
Non-detect values are shown at half the reporting limit.

Benzene in ROST-4-PZ(C) : Aquifer-Blank

Mann-Kendall P.Value= <0.01; Half-Life= 1706 days

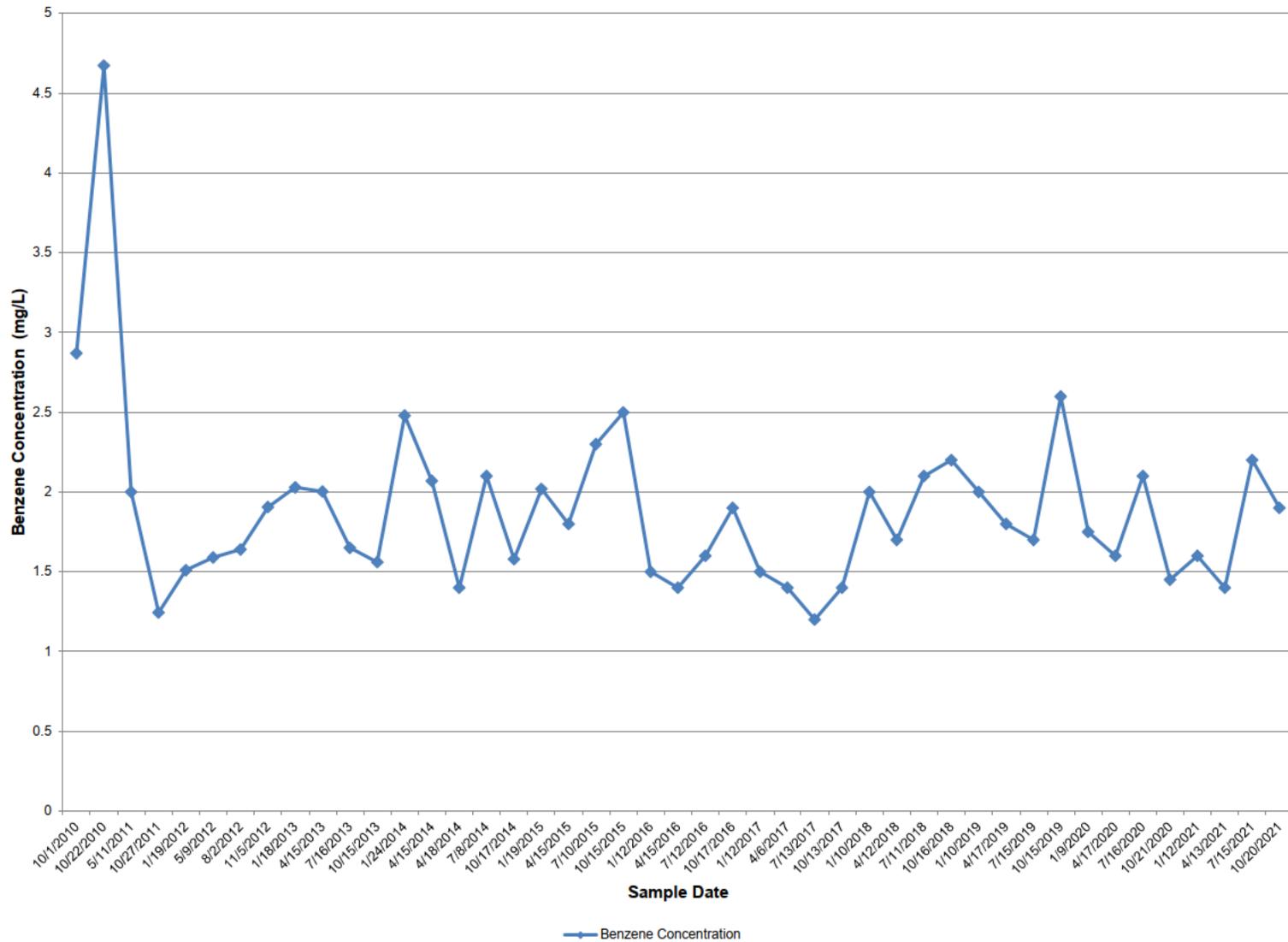


Benzene Concentrations Over Time - P-59



Notes:
mg/L = milligrams per liter
Duplicate values were averaged.
Timeframe specific to available data.

Benzene Concentrations Over Time - T-12

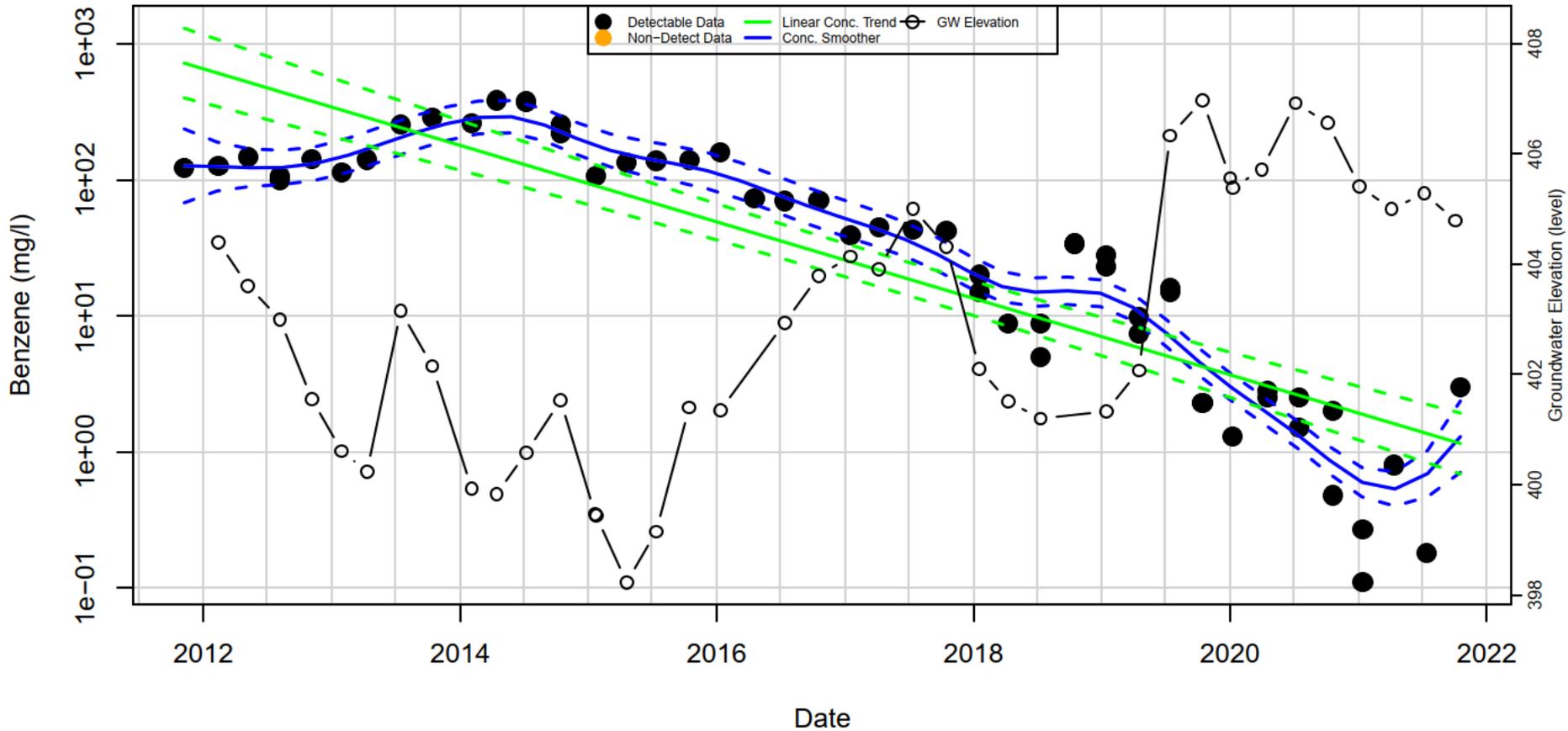


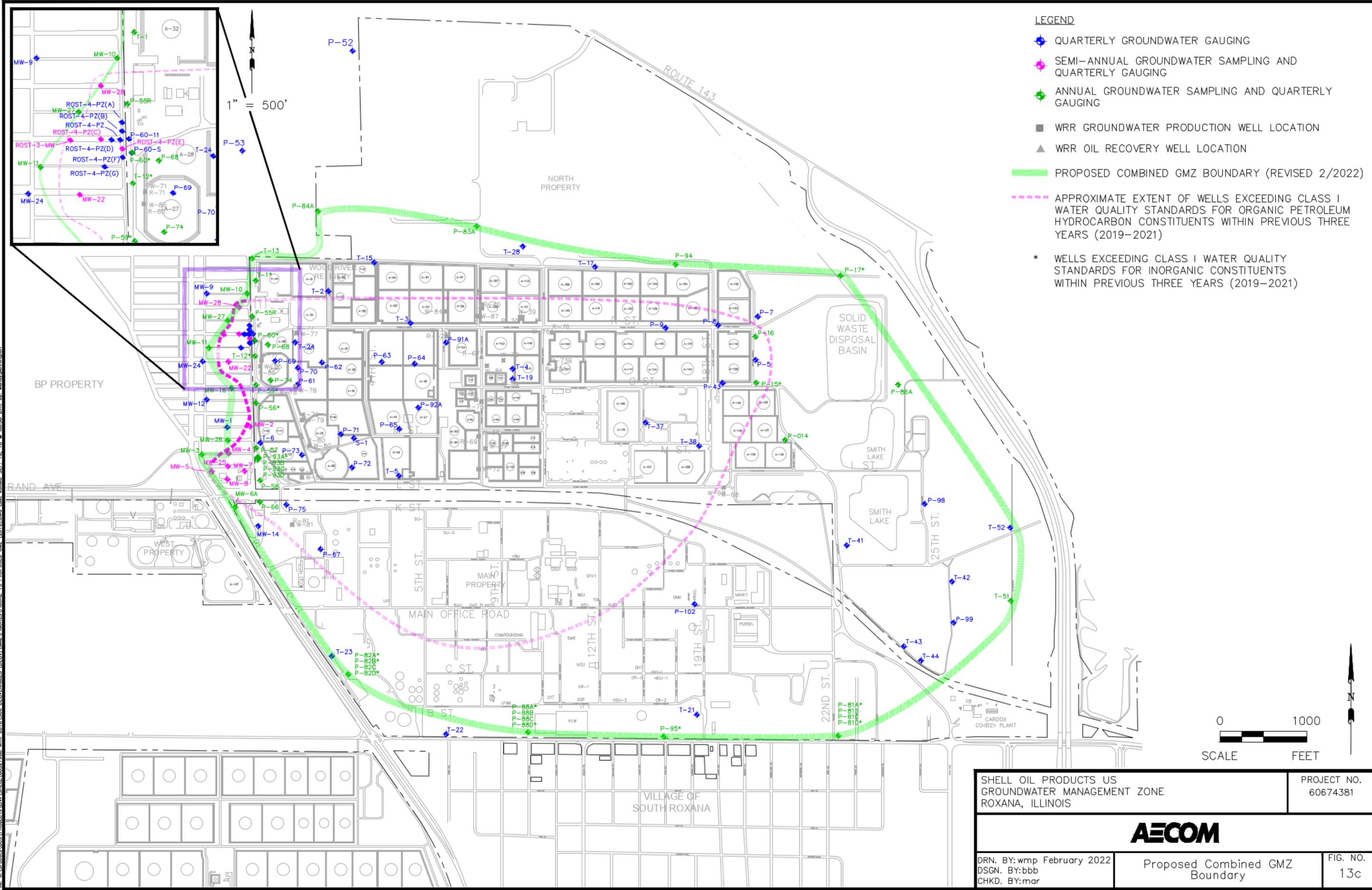
Notes:
mg/L = milligrams per liter
Duplicate values were averaged.
Timeframe specific to available data.

Public Works Yard Area

Benzene in P-57 : Aquifer-Blank

Mann-Kendall P.Value= <0.01; Half-Life= 391 days





- LEGEND**
- ◆ QUARTERLY GROUNDWATER GAUGING
 - ◆ SEMI-ANNUAL GROUNDWATER SAMPLING AND QUARTERLY GAUGING
 - ◆ ANNUAL GROUNDWATER SAMPLING AND QUARTERLY GAUGING
 - WRR GROUNDWATER PRODUCTION WELL LOCATION
 - ▲ WRR OIL RECOVERY WELL LOCATION
 - PROPOSED COMBINED GMZ BOUNDARY (REVISED 2/2022)
 - - - - - APPROXIMATE EXTENT OF WELLS EXCEEDING CLASS I WATER QUALITY STANDARDS FOR ORGANIC PETROLEUM HYDROCARBON CONSTITUENTS WITHIN PREVIOUS THREE YEARS (2019-2021)
 - * WELLS EXCEEDING CLASS I WATER QUALITY STANDARDS FOR INORGANIC CONSTITUENTS WITHIN PREVIOUS THREE YEARS (2019-2021)

FILE: G:\ST.LOUIS\PROJECTS\BNA\SHELL\60572850_WRR_2018\500_DELIVERABLES_DELIV\GMZ\FIGURES\FIGURE_13_PROPOSED_GMZ_2021.DWG Date: SEP_19_18 08:56 a.m. BY: wandy.pennington

SHELL OIL PRODUCTS US GROUNDWATER MANAGEMENT ZONE ROXANA, ILLINOIS		PROJECT NO. 60674381
DRN. BY: wmp February 2022 DSGN. BY: bbb CHKD. BY: mar	Proposed Combined GMZ Boundary	FIG. NO. 13c