URS

September 12, 2013

Stephen F. Nightingale, P.E.
Manager, Permit Section
Bureau of Land
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

RE: 1191150002 – Madison County
Equilon Enterprises LLC d/b/a Shell Oil Products US
Log No. B-43R-CA-57
Response to Public Works Yard Soil Sampling Agency Comments Provided in July 9, 2013 Letter
Roxana, Illinois

Dear Mr. Nightingale:

URS Corporation (URS), on behalf of Shell Oil Products US (SOPUS) has conducted and reported soil investigation activities inside of, along the southern boundary of and in areas surrounding the Village of Roxana Public Works Yard in the Village of Roxana, Illinois (Village). Presented below is a discussion in response to the IEPA conditions in their July 9, 2013 letter.

CONDITION 1

The soil sampling and analysis effort has detected significant soil contamination. As such, the horizontal and vertical extent of this contamination must be determined.

Previous investigative work from the area was reviewed and evaluated to address the Agency's request. Based upon previous work conducted and in conjunction with the information obtained from the December 2012 and January 2013 soil borings conducted at the Public Works Yard, the horizontal and vertical extents of impact have been delineated. The lithology, photoionization detector (PID) headspace screening results and soil analytical results were reviewed from various drilling and sampling locations in and around the Public Works Yard. **Figure 1** shows the locations of these borings. Three cross sections were compiled (**Figures 2** through **4**) which illustrate PID headspace screening results and/or benzene analytical results along with lithology.

Analytical results from subsurface soil samples were screened against the Tiered Approach to Corrective Action Objectives (TACO) Tier 1 Soil Remediation Objectives for Industrial Commercial Properties[1]. Benzene detections were the results found to most commonly have exceedances for the ingestion and/or inhalation exposure pathways.

Benzene analytical exceedances and/or elevated PID screening results observed in the Public Works Yard area have been bounded by another soil sample in the same or a neighboring boring which does not exceed the screening criteria for the ingestion and/or inhalation exposure pathways and/or which exhibits significantly lower PID headspace screening results.

An outline was drawn around the benzene analytical exceedances and/or elevated PID headspace screening results (e.g., greater than 500 ppm). The approximate horizontal extent of this impact is shown on **Figure 1**. The vertical extent of soil impact is defined by the water table (the water table elevation observed at the time of drilling is illustrated on **Figures 2** through **4**. The approximate depth of impact beneath the water table attributed to groundwater is shown on **Figures 2** through **4**. The lines showing the approximate horizontal and vertical extents show that this impact has been delineated within the Public Works Yard area.

CONDITION 2

A yellow/green substance was detected in several soil borings. The nature and extent of this substance must be determined.

No yellow/green substance has been visually observed in any soil borings completed to date as part of the West Fenceline or Public Works Yard investigations. Most recently, five soil borings were advanced at approximately 100-foot intervals from Route 111 to the eastern edge of the Public Works Yard in December 2012 through January 2013 (GP-14 through GP-18). These borings were along the southern edge of the Public Works Yard. During drilling and sampling activities at two of these borings (GP-17 and GP-18), yellow staining of acetate sample liners, zipper bags and

[1] 35 IAC 742 Appendix B Table B

nitrile gloves was observed after coming into contact with the soil at 13 to 17 feet below ground surface (bgs) in GP-17 and at 37 to 43 feet bgs in GP-18.

A sample of the soil from boring GP-18 (37 to 43 feet bgs) was sent to SOPUS' Westhollow laboratory in Houston, Texas. SOPUS' internal laboratory testing determined that the yellow staining of acetate sample liners zipper bags and nitrile gloves was most likely due to kerosene. **Figures 2** through **4** illustrate the reported naphthalene concentrations (which can be indicative of the presence of kerosene) observed during investigation activities. The naphthalene results at 37 feet bgs in boring GP-18 were observed to be non-detect, however, this is just below the water table at the time of drilling (observed at 35 feet bgs). Analytical results and PID screenings at GP-18 are consistent with those typically observed near the upper portions of the saturated zone at other drilling locations. The naphthalene results at 15 feet bgs in boring GP-17 were observed to be 45.3 mg/kg and 64.5 mg/kg (duplicate sample), which are greater than the naphthalene results observed in other soil samples throughout the investigation area. Historic pipeline information is provided on **Figure 1** and shows a historic kerosene pipeline traversing through the Public Works Yard near borings GP-17 and GP-18. It is our understanding that this line is no longer in operation based on conversations with Phillips 66 personnel.

To address the extent of the naphthalene concentrations, a review of the lithology at and around the Public Works Yard was performed. Boring logs from drilling and sampling activities were reviewed. **Figure 1** shows the locations of GP-14 through GP-18 as well as previous drilling locations in the surrounding area along with the locations of cross section transects. **Figures 2** through **4** are cross sections that summarize the lithology in and around the Public Works Yard and summarize soil screening and analytical results at the drilling locations along the cross section transects.

The yellow staining of acetate sample liners, zipper bags and nitrile gloves caused by the kerosene referenced above was not observed during any previous drilling work in the surrounding area. The boring log for SVE-27 (located near GP-18) indicated hydrocarbon odor and staining (but not yellow staining) in the soil at depths of about

12 to 16 feet bgs, which is consistent with the depth of the naphthalene concentrations observed at GP-17. The PID headspace screenings performed at about 13 to 17 feet bgs at GP-17 were observed to be significantly higher, however, than those at the same depth range at SVE-27.

Based on the review of the lithology of the Public Works Yard and surrounding area, as well as soil naphthalene analytical results and PID headspace screenings, the extent of higher soil naphthalene concentrations has been determined to be localized to the area around boring GP-17, and at a depth of about 13 to 18 feet bgs.

CONDITION 3

A work plan to determine the extent of contamination must be submitted by September 15, 2013. This work plan must contain detailed background information about the area in question and the contamination encountered as well as proposed efforts for conducting the additional investigation. Guidance regarding the development of investigation work plans for RCRA remediation projects can be found on Illinois EPA's internet site.

Based on the information presented above in response to Conditions 1 and 2 of the IEPA's July 9, 2013 letter, the extent of impact at the Public Works Yard has been delineated. In addition this area is already under the influence of the Public Works portion of the SVE remediation system and the Refinery groundwater depression system which is pulling the groundwater into the refinery and being treated This response letter is being submitted in lieu of a work plan.

If there are any questions on the information contained in this report please do not hesitate to contact us (314-429-0100) or Kevin Dyer (SOPUS) (618-288-7237).

Sincerely,

URS Corporation, on behalf of Shell Oil Products US

Wendy Pennington
Staff Engineer

Robert B. Billman
Senior Project Manager

Enclosures: **Figure 1** Public Works Yard Plan View and Cross Section Key Map
Figure 2 Cross Section A-A' Public Works Yard
Figure 3 Cross Section B-B' Public Works Yard
Figure 4 Cross Section C-C' Public Works Yard

cc: Jim Moore, IEPA
Kevin Dyer, SOPUS
Marty Reynolds, Village of Roxana
Shannon Haney, Greensfelder, Hemker & Gale (4 copies)
Repositories (Village Hall, Website, & Roxana Public Library)
Project File

Illinois Environmental Protection Agency

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

ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.

1.0 Facility Identification

Name: Equilon Enterprises LP dba Shell Oil Products US
County: Madison
Street Address: 900 South Central Ave.
Site No. (IEPA): 1191150002
City: Roxana, IL 62084
Site No. (USEPA): ILD 080 012 305

2.0 Owner Information

Name: Not applicable
Mail Address:
City:
State: Zip Code:
Contact Name:
Contact Title:
Phone:

3.0 Operator Information

Name: Equilon Enterprises LLC d/b/a SOPUS
Mail Address: 17 Junction Drive, PMB #399
City: Glen Carbon
State: IL Zip Code: 62034
Contact Name: Kevin Dyer
Contact Title: Principal Program Manager
Phone: 618-288-7237

4.0 Type of Submission (check applicable item and provide requested information, as applicable)

☐ RFI Phase I Workplan/Report
☐ RFI Phase II Workplan/Report
☐ CMP Report;
☑ Other (describe): Response to Agency comments in July 9, 2013 letter

IEPA Permit Log No. B-43R
Date of Last IEPA Letter on Project: Jul 9, 2013
Log No. of Last IEPA Letter on Project: B-43R-CA-57

Does this submittal include groundwater information: ☐ Yes ☐ No

Date of Submittal: Sep 12, 2013

5.0 Description of Submittal: (briefly describe what is being submitted and its purpose)

Response to Public Works Yard soil sampling Agency comments provided in their July 9, 2013 letter.

6.0 Documents Submitted (identify all documents in submittal, including cover letter; give dates of all documents)

RCRA Corrective Action Certification form and Response to Public Works Yard Soil Sampling Agency Comments provided in July 9, 2013 Letter

7.0 Certification Statement

(This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below). The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

7.1 Owner/Operator Certification

(Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: _____ Date: _____

Title: _____

Operator Signature: Kevin E Myers Date: September 13, 2013

Title: Sr. Principal Program Manager

7.2 Professional Certification (if necessary)

Work carried out in this 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. No one is relieved 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.

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))

Professional's Signature: Robert Billman Date: 9/12/13

Professional's Name Robert Billman

Address 1001 Highlands Plaza Drive

City St Louis

State MO Zip Code 63110

Phone 314-429-0100

Professional's Seal:

LICENSED PROFESSIONAL GEOLOGIST
ROBERT B. BILLMAN
196-000646

7.3 Laboratory Certification (if necessary)

The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory _____

_____ Date: _____

Signature of Laboratory Responsible Officer

Mailing Address of Laboratory

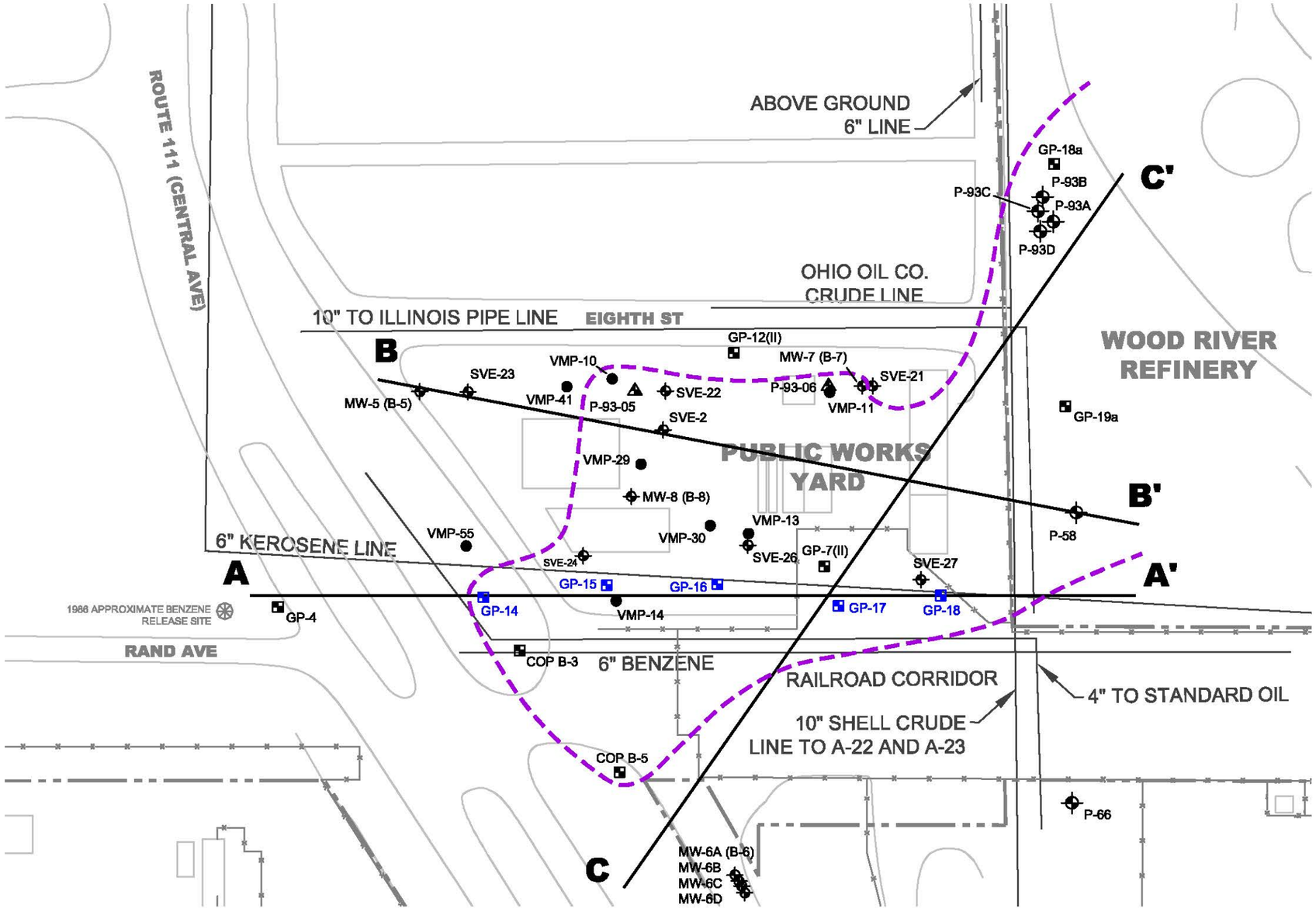
Address _____

City _____

State _____ Zip Code _____

_____

Name and Title of Laboratory Responsible Officer



LEGEND

- SOIL BORING LOCATION (MOST RECENT PUBLIC WORKS YARD SAMPLING)
- APPROXIMATE HORIZONTAL EXTENT OF SOIL IMPACT (SEE NOTE)
- SOIL BORING LOCATION
- CPT/MIP LOCATION
- GROUNDWATER MONITORING WELL LOCATION SOIL VAPOR EXTRACTION (SVE) WELL LOCATION
- VAPOR MONITORING POINT LOCATION
- A——A' CROSS SECTION TRANSECT LINE

NOTES:

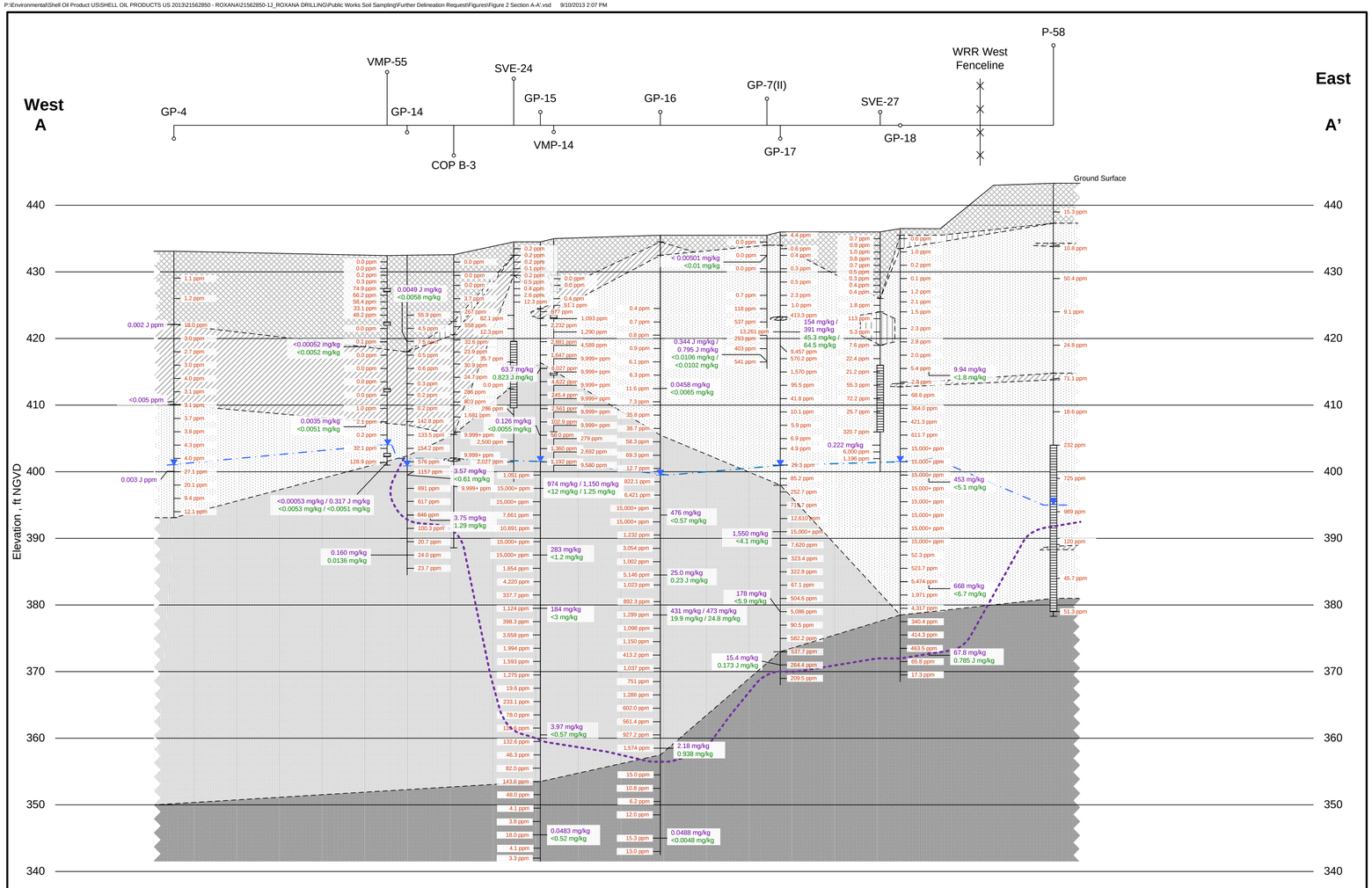
1. INFORMATION FROM BORING LOCATIONS SHOWN WERE REVIEWED FOR THE PURPOSES OF THIS RESPONSE SUBMITTAL. NOT ALL OF THE LOCATIONS SHOWN ARE INCLUDED ON THE ACCOMPANYING CROSS SECTIONS.
2. HORIZONTAL EXTENT OF IMPACT BASED ON: EXCEEDANCES OF TACO INDUSTRIAL/COMMERCIAL AND/OR CONSTRUCTION WORKER SCREENING CRITERIA FOR BENZENE; "RED" OR "PINK" SUDAN IV(R) SCREENING RESULTS; AND/OR PID HEADSPACE SCREENING RESULTS GREATER THAN 500 PPM.
3. PIPELINE INFORMATION IS A COMPILATION FROM SEVERAL DRAWINGS PROVIDED BY THE REFINERY IN 2009 AND IS NOT MEANT TO BE USED AS AN ACTUAL UTILITY PIPELINE LOCATION MAP.

0 100
SCALE FEET

N

SHELL OIL PRODUCTS US ROXANA, ILLINOIS	PROJECT NO. 21562850
URS	
DRN. BY: wmp 8/16/13 DSGN. BY: djd CHKD. BY: bj/rt	Public Works Yard Plan View and Cross Section Key Map
	FIG. NO. 1

P:\Environmental\Shell Oil Product US\SHELL OIL PRODUCTS US 2013\21562850 - ROXANA\21562850-12_ROXANA DRILLING\Public Works Soil Sampling\Further Delineation Request\Figures\Figure 2 Section A-A'.vsd 9/10/2013 2:07 PM



Notes:
This cross section is generally based on interpretation of borings generated by URS during investigative activities between 2008 through 2013. Location of cross section can be found on key map (Figure 1).

Construction details (screen length and depth, seal interval, total depth, etc) of monitoring wells and vapor monitoring ports installed were based on geologic conditions observed during drilling and sampling activities. Actual geologic conditions observed within monitoring well boring can be viewed in field boring logs.

Cross section trace line shows distance and direction each point was projected to construct this cross section.

Approximate horizontal and vertical extent of impact is based on benzene analytical exceedances of TACO industrial/commercial and construction worker screening criteria, and/or PID headspace screening results greater than 500 ppm.

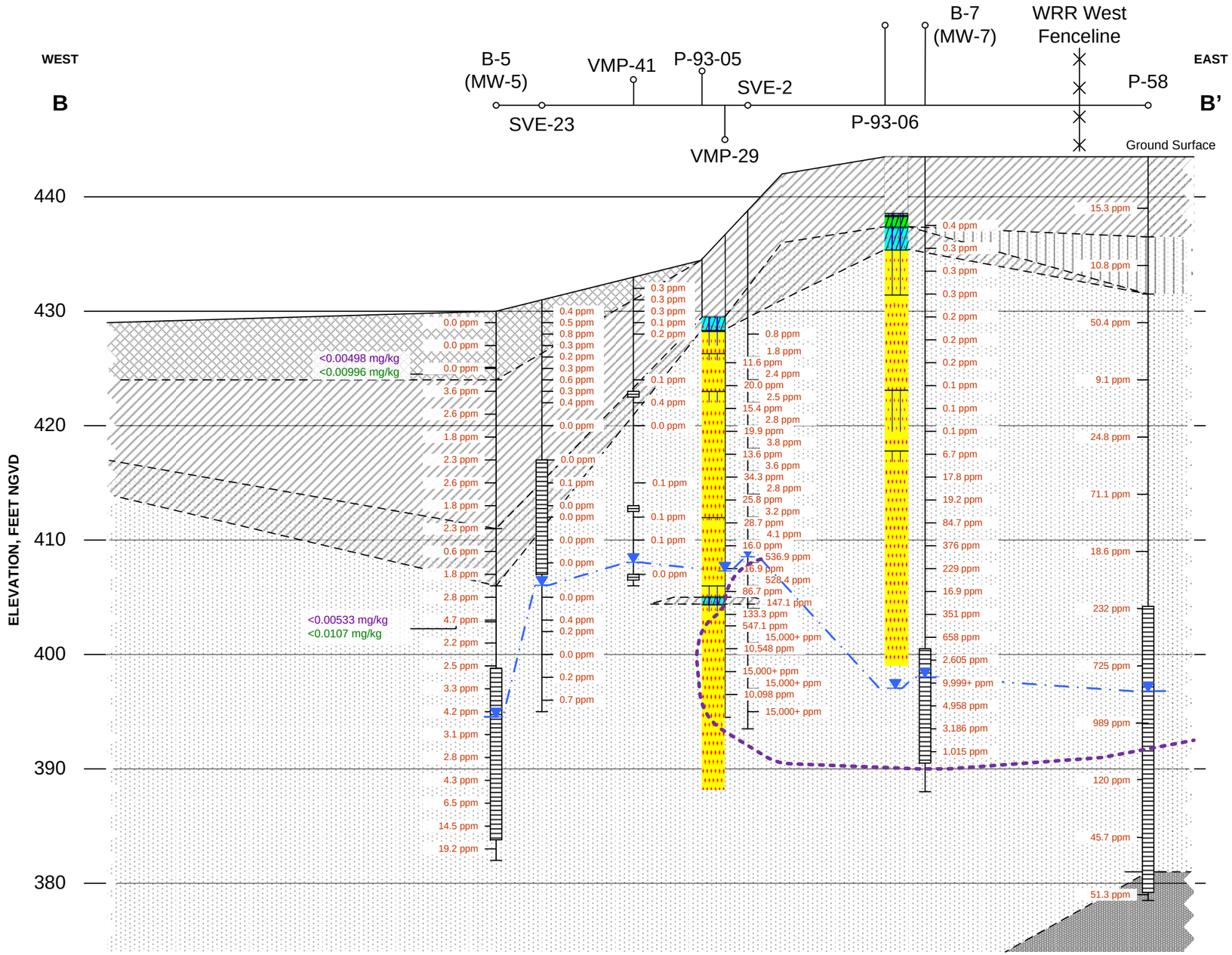
Legend:

- Fill projected between borings
- Clay projected between borings
- Silt projected between borings
- Fine to Medium Sand projected between borings
- Medium to Coarse Sand projected between borings
- Coarse Sand with coarse gravel projected between borings
- Stratum boundary - estimated
- Well Screen
- 55.6 mg/kg — Soil Sampling Benzene Result
- 0.938 mg/kg — Soil Sampling Naphthalene Result
- 132.6 ppm — Soil Sampling Headspace Screening Result
- Potentiometric Surface – At Time of Drilling
- Approximate Vertical Extent of Impact into Groundwater (see note)

Vertical Scale: 0 10

Plan View and Horizontal Scale: 0 50

SHELL OIL PRODUCTS US ROXANA, ILLINOIS		PROJECT NO. 21562850
URS		
DRN. BY: mpm/wmp 9/10/13 DSGN. BY: wmp CHKD. BY: b3/rt	Cross Section A - A' Public Works Yard	FIG. NO. 2



Legend:

- Fill (gravel, clay, etc.) projected between points
- Silt projected between points
- Clay projected between points
- Clayey Sand projected between points
- Fine to Medium Sand projected between borings
- Medium to Coarse Sand projected between borings
- Coarse Sand with coarse gravel projected between borings
- CPT interpreted Clay
- CPT interpreted Sandy Clay
- CPT interpreted Sand
- Stratum boundary - assumed
- Well Screen
- 55.6 mg/kg Soil Sampling Benzene Result
- 0.938 mg/kg Soil Sampling Naphthalene Result
- 132.6 ppm Soil Sampling Headspace Screening Result
- Water Level
- Potentiometric Surface - assumed
- Approximate Vertical Extent of Impact into Groundwater (see note)

Vertical Scale: 0 10

Plan View and Horizontal Scale: 0 100

Notes:

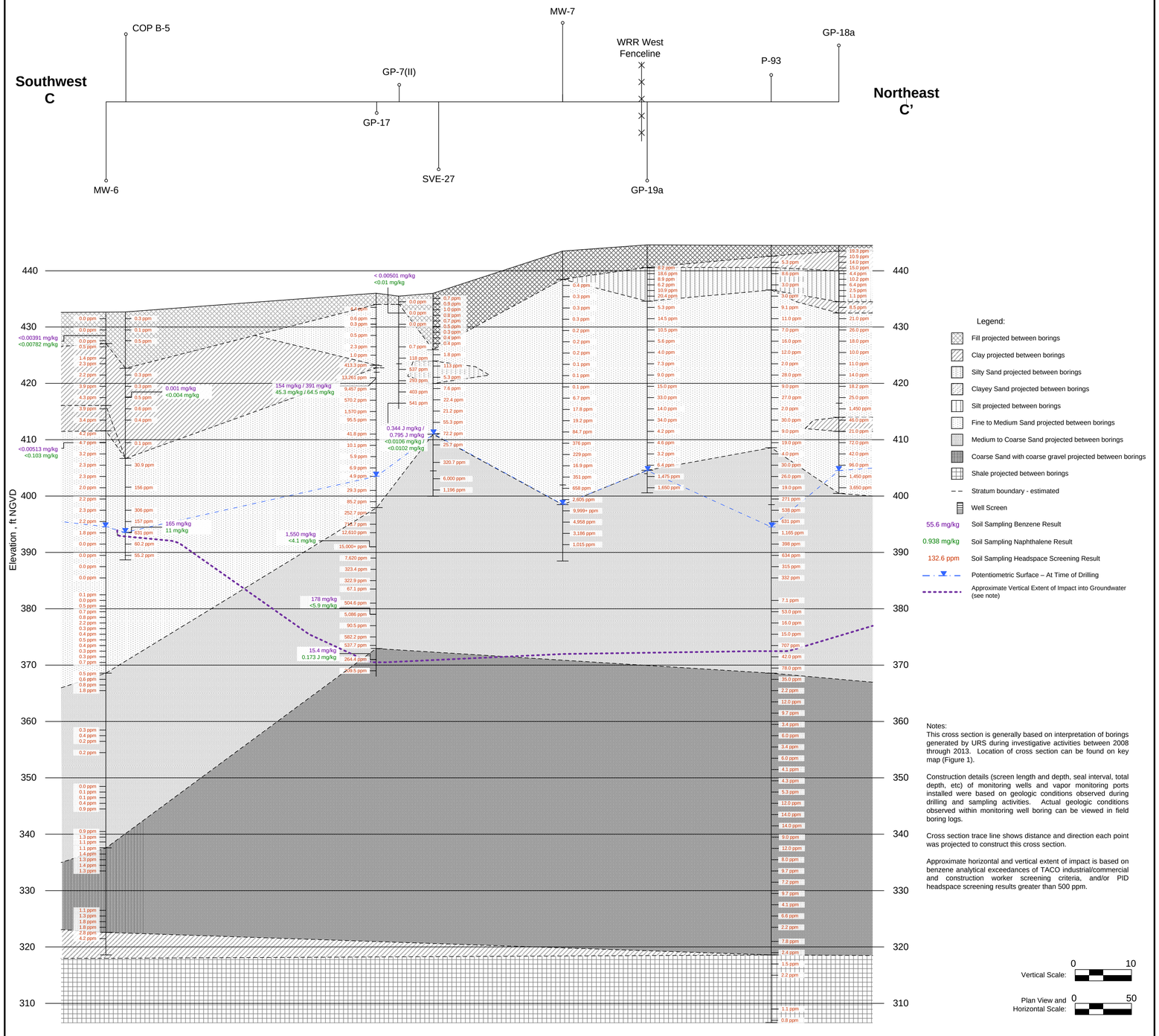
This cross section is generally based on interpretation of borings generated by URS during investigative activities between 2008 through 2013. Location of cross section can be found on key map (Figure 1).

Construction details (screen length and depth, seal interval, total depth, etc) of monitoring wells and vapor monitoring ports installed were based on geologic conditions observed during drilling and sampling activities. Actual geologic conditions observed within monitoring well boring can be viewed in field boring logs.

Cross section trace line shows distance and direction each point was projected to construct this cross section.

Approximate horizontal and vertical extent of impact is based on benzene analytical exceedances of TACO industrial/commercial and construction worker screening criteria, and/or PID headspace screening results greater than 500 ppm.

SHELL OIL PRODUCTS US ROXANA, ILLINOIS	PROJECT NO. 21562850
URS	
DRN. BY: mpm/wmp 9/10/13 DSGN. BY: mpm CHKD. BY: b3/rt	Cross Section B - B' Public Works Yard
	FIG. NO. 3



Legend:

- Fill projected between borings
- Clay projected between borings
- Silty Sand projected between borings
- Clayey Sand projected between borings
- Silt projected between borings
- Fine to Medium Sand projected between borings
- Medium to Coarse Sand projected between borings
- Coarse Sand with coarse gravel projected between borings
- Shale projected between borings
- Stratum boundary - estimated
- Well Screen
- 55.6 mg/kg — Soil Sampling Benzene Result
- 0.938 mg/kg — Soil Sampling Naphthalene Result
- 132.6 ppm — Soil Sampling Headspace Screening Result
- Potentiometric Surface – At Time of Drilling
- Approximate Vertical Extent of Impact into Groundwater (see note)

Notes:

This cross section is generally based on interpretation of borings generated by URS during investigative activities between 2008 through 2013. Location of cross section can be found on key map (Figure 1).

Construction details (screen length and depth, seal interval, total depth, etc) of monitoring wells and vapor monitoring ports installed were based on geologic conditions observed during drilling and sampling activities. Actual geologic conditions observed within monitoring well boring can be viewed in field boring logs.

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Approximate horizontal and vertical extent of impact is based on benzene analytical exceedances of TACO industrial/commercial and construction worker screening criteria, and/or PID headspace screening results greater than 500 ppm.

Vertical Scale: 0 10

Plan View and Horizontal Scale: 0 50

SHELL OIL PRODUCTS US ROXANA, ILLINOIS		PROJECT NO. 21562850
URS		
DRN. BY: mpm/wmp 9/10/13 DSGN. BY: wmp CHKD. BY: b3/rt	Cross SectionC - C' Public Works Yard	FIG. NO. 4