A-ZONE
ENVIRONMENTAL SERVICES

July 31, 2019

Commonwealth of Virginia Department of Environmental Quality
Northern Regional Office: Petroleum Remediation
13901 Crown Court
Woodbridge, Virginia 22193

Commonwealth of Virginia Department of Environmental Quality
Office of Remediation Programs
629 East Main Street
Richmond, Virginia 23219

Attention: Mr. Alexander Wardle, Project Manager
Mr. Vincent Maiden, Brownfields Program Coordinator

Subject: **July 2019 Corrective Action Plan Implementation Monitoring Report**, Former Robinson Terminal North Property, 500 and 501 North Union Street, Alexandria, Virginia

Reference: VDEQ PC No. 2016-3090
VRP Site No. 00673
A-Zone Project No. 6078.004

Dear Mr. Wardle and Mr. Maiden:

Attached for your review is the *July 2019 Corrective Action Plan Implementation Monitoring Report* (IMR) prepared by A-Zone Environmental Services, LLC (A-Zone) for the Former Robinson Terminal North property (herein referred to as the SITE) located at 500 and 501 North Union Street in Alexandria, Virginia. The IMR summarizes the July 2019 groundwater sampling activities conducted by A-Zone at the SITE. The sampling activities were conducted to monitor groundwater quality at the SITE and satisfy a Commonwealth of Virginia Department of Environmental Quality directive dated May 13, 2019.

If you have any questions concerning the IMR, please feel free to contact me at (703) 608-5969.

Sincerely,

Michael A. Bruzzesi, CPG
Program Manager/Senior Geologist
VA CPG No. 2801 001428

Attachment

July 2019 Corrective Action Plan Implementation Monitoring Report

cc: Mr. Greg Hoffman, Alexandria North Terminal, LLC
Mr. Jim Thornhill, McGuire Woods, LLP
Mr. William Skrabak, City of Alexandria

JULY 2019 CORRECTIVE ACTION PLAN IMPLEMENTATION MONITORING REPORT

FORMER ROBINSON TERMINAL NORTH PROPERTY
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VIRGINIA

VDEQ VRP# 00673
VDEQ PC# 2016-3090

Prepared for:

Commonwealth of Virginia Department of Environmental Quality
Northern Regional Office: Petroleum Remediation
13901 Crown Court
Woodbridge, Virginia 22193
(703) 583-3800
and
Office of Remediation Programs
629 East Main Street
Richmond, Virginia 23219
(804) 698-4021

On Behalf of:

Alexandria North Terminal, LLC
c/o Rooney Properties
3330 Washington Boulevard, Suite 220
Arlington, Virginia 22201
(571) 297-4833

Prepared by:

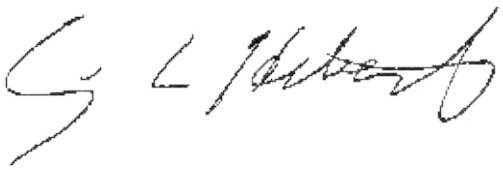
A-Zone Environmental Services, LLC
2181 Berryville Pike
Charles Town, West Virginia 25414
(304) 724-6458

A-Zone Project No. 6078.04

JULY 31, 2019

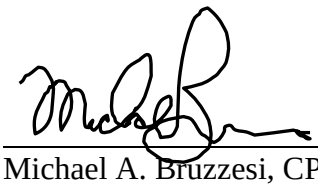
SIGNATURE SHEET

This *July 2019 Corrective Action Plan Implementation Monitoring Report* (IMR) for the Former Robinson Terminal North property located at 500 and 501 North Union Street in Alexandria, Virginia, was prepared by:



July 31, 2019
Craig Hebert, CPG Date
Project Manager/Senior Geologist

The IMR was reviewed and approved for release by:



July 31, 2019
Michael A. Bruzzesi, CPG Date
Program Manager/Senior Geologist
VA CPG No. 2801 001428

TABLE OF CONTENTS

FIGURES

TABLES

ATTACHMENT

LIST OF ACRONYMS AND ABBREVIATIONS

AlexRenew	Alexandria Renew Enterprises
ANT	Alexandria North Terminal, LLC
A-Zone	A-Zone Environmental Services, LLC
CAP	Corrective Action Plan
DO	dissolved oxygen
EPA	United States Environmental Protection Agency
IM	Implementation Monitoring
IMR	Implementation Monitoring Report
mg/l	milligram per liter
ORP	oxygen reduction potential
PC#	Pollution Compliant number
PCE	tetrachloroethene
PPL	Priority Pollutant List
PSCM	Post-Site Characterization Monitoring
PSTP	Petroleum Storage Tank Program
RL	analytical method reporting limit
SCR	Site Characterization Report
SCS	Site Characterization Study
SVOC	semi-VOC
TCE	trichloroethene
TCL	Target Compound List
TPH	total petroleum hydrocarbons
TPH-DRO	diesel range TPH
TPH-GRO	gasoline range TPH
ug/l	microgram per liter
UST	underground storage tank
VDEQ	Commonwealth of Virginia Department of Environmental Quality
VDEQ-PDS	VDEQ general permit discharge standard for petroleum contaminated
VDEQ-T2PWSSL	VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL	VDEQ Tier II surface water fresh screening level
VDEQ-T3CDSL	VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-T3IGSL	VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3RGSL	VDEQ Tier III residential groundwater vapor intrusion screening level
VOC	volatile organic compound
VRP	Voluntary Remediation Program
WP	Work Plan

1.0 INTRODUCTION

This report summarizes the Corrective Action Plan Implementation Monitoring (IM) conducted by A-Zone Environmental Services, LLC (A-Zone) in July 2019 at the Former Robinson Terminal North property (herein referred to as the SITE) located at 500 and 501 North Union Street in Alexandria, Virginia. The IM activities were conducted on behalf of Alexandria North Terminal, LLC (ANT). IM activities included collection of groundwater samples from existing groundwater monitoring wells at the SITE for laboratory analysis. The sampling activities were conducted to monitor groundwater quality at the SITE and satisfy a Commonwealth of Virginia Department of Environmental Quality (VDEQ) directive dated May 13, 2019. The directive was associated with VDEQ Pollution Compliant number (PC#) 2016-3090, assigned to the SITE to address a suspect release of petroleum from past storage tanks.

When the SITE was assigned the PC#, the VDEQ mandated that a Site Characterization Study (SCS) be conducted to address the suspect release. The SITE was also entered into the VDEQ's Voluntary Remediation Program (VRP) in 2016 and was assigned VRP number 00673. The SITE was entered into the VRP to address non-petroleum impacts, which are not typically addressed through the VDEQ's Petroleum Storage Tank Program (PSTP). The SCS was completed in February 2017 and a *Site Characterization Report* (SCR) was submitted to the VDEQ in August 2017. The VDEQ accepted the findings of the SCS in September 2017. Based on their review of the SCS, the VDEQ mandated further groundwater monitoring as part of a Post- Site Characterization Monitoring (PSCM) program. Several new groundwater monitoring wells were installed and groundwater samples were collected for laboratory analysis on two occasions as part of the program. The findings of each sampling event were reported to the VDEQ. Based on the findings of PSCM events, the VDEQ mandated that a *Corrective Action Plan* (CAP) be prepared for the SITE to address identified petroleum impacts to soil and groundwater. A CAP was submitted to the VDEQ in January 2019 and granted approval in May 2019. The CAP detailed corrective actions and engineering and institutional controls proposed to address the petroleum impacts. The SCS was conducted and the SCR and CAP were prepared to satisfy PSTP and VRP SCS and SCR and PSTP CAP requirements.

As part of the CAP approval, the VDEQ requested that semi-annual groundwater sampling of the groundwater monitoring well network be initiated in July 2019 and be continued every 6 months until the start of SITE development. The IM activities were conducted in conformance with a VDEQ-approved SCS Work Plan (WP) prepared by ICOR, Ltd. (dated April 1, 2016) and two PSCM events conducted in January and June 2018. The PSCM activities were conducted to further evaluate the type, degree, and extent of soil and groundwater impacts and to further evaluate general risks posed by the impacts to current and future site users. The findings of the SCS and follow-up PSCM were used to develop a remedial approach (in the form of a CAP) that allows for successful development of the SITE and minimization of risks to human health and the environment.

The history of the SITE and detailed discussion of the SCS activities and findings were provided in the SCR. The corrective actions and engineering and institutional controls proposed to address the identified impacts were presented in the CAP. This report details the findings of the

July 2019 groundwater sampling event associated with IM. The report also includes an update concerning the development schedule.

2.0 BACKGROUND

The SITE is located in a mixed commercial and residential land use area and is currently improved with two vacant warehouses, small shed, railroad spur, paved parking lots, dock (pier), and landscaping. The proposed development of the SITE has not been finalized, but is anticipated to include construction of residential townhouses and will entail removal of most of the existing structures and features and mass grading and some excavation. A large stormwater infrastructure/utility project associated with Alexandria Renew Enterprises (AlexRenew) is also planned on the 501 North Union Street parcel. Based on the findings of past and recent environmental assessments, soil and groundwater beneath the SITE have been impacted by the past uses of the SITE, which included bulk oil storage, fertilizer storage, coal storage, chemical mixing and manufacturing, and warehouse operations. Contributions from adjacent and nearby properties that were used in the past for fertilizer storage, city gas works, chemical manufacturing and mixing, and bulk oil storage are also suspected. Constituents of concern identified at elevated concentrations in soil, groundwater, and soil gas at the SITE include gasoline and diesel range total petroleum hydrocarbons (TPH-GRO and TPH-DRO, respectively), volatile organic compounds (VOCs), semi-VOCs (SVOCs), and metals.

3.0 SITE DESCRIPTION

The SITE is located at 500 and 501 North Union Street in Alexandria, Virginia, at the intersection of Oronoco Street and North Union Street. The SITE is comprised of two parcels, the 500 and 501 North Union Street parcels (herein referred to as the 500 and 501 Parcels, respectively), separated by North Union Street. The two parcels comprise approximately 3.2 acres of land. In past reports, the parcel addresses have also been listed as 1 and 101 Oronoco Street (corresponding to the 500 and 501 Parcels, respectively). A site location map is included as Figure 1. The SITE is situated in a mixed commercial and residential land use area. Adjacent property use is depicted on the aerial photograph included as Figure 2.

The SITE is currently improved with two 1-story, slab-on-grade brick, concrete, and steel warehouses, a large concrete dock (pier), railroad spur, a small wood-frame shed (near the dock), gravel and asphalt and concrete-paved parking areas, and landscaping. The warehouses were constructed in 1966. The warehouse situated on the 500 Parcel is referred to as Warehouse #16. The warehouse situated on the 501 Parcel is referred to as Warehouse #10, #11, and #12. Three diesel underground storage tanks (USTs) were formerly buried on the northeastern portion of the 501 Parcel. The USTs were formerly used to store and dispense diesel fuel via two dispensers located on the east-central portion of the 501 Parcel (next to the small wood shed). The tanks were removed in 2016. A site plan depicting existing conditions is included as Figure 3.

Topography at SITE is relatively flat. The SITE is bound to the north by Pendleton Street and railroad tracks across which is Oronoco Bay Park and Oronoco Bay, to the east and northeast by

the Potomac River, to the south by Oronoco Street across which is Founders Park and a residential building, and to the west by Dalton Wharf Office Center. North Union Street separates the 500 and 501 North Union Street parcels.

4.0 IMPLEMENTATION MONITORING ACTIVITIES

The IM activities conducted at the SITE by A-Zone included collection of groundwater samples for laboratory analysis. The IM activities were conducted using the same methods and protocols established in the SCS WP and used during the two PSCM events conducted in January and June 2018. Sampling was conducted under the supervision of a Commonwealth of Virginia Certified Professional Geologist.

Groundwater samples were collected for laboratory analysis from existing wells TEC-MW2, TEC-MW4, ECS-MW4, MiHpt-5, MiHpt-7, MiHpt-8, MiHpt-14, MiHpt-15, MiHpt-20, MiHpt-21, MiHpt-22, MW23, MW24, and MW25. Well construction information for all existing wells is provided on Table 1.

Sampling was performed using a peristaltic pump fitted with new, dedicated, and disposable high-density polyethylene tubing. Before sampling each well, the depth to petroleum free product and groundwater was measured to the nearest 0.01 foot from the well's top of casing using an oil/water interface probe. The well measurements recorded before sampling the wells are summarized on Table 2. The sample tubing inlet was placed at a depth corresponding to the center of each monitoring well's submerged screen interval. The samples were collected at a low flow rate (less than 250 milliliters per minute) to minimize agitation and aeration. Sampling was conducted in accordance with low-flow purging and sampling protocols recommended by the United States Environmental protection Agency (EPA).

The groundwater samples were collected after field parameters stabilized during purging. The following field parameters were monitored during purging: temperature, pH, specific conductivity, dissolved oxygen (DO), oxygen reduction potential (ORP), and turbidity. All of these parameters were measured using a multi-meter and low volume flow cell. Purging was considered complete when temperature, pH, specific conductivity, DO, ORP, and turbidity readings (an acceptable EPA, subset of parameters) stabilized for a minimum of three consecutive readings. It should be noted that wells TEC-MW2 and MiHpt-22 went dry during sampling. Samples were collected from the wells that went dry after they were allowed to recharge. Field parameter readings recorded at stabilization are summarized on Table 3.

The samples were transferred to appropriate sample containers directly from the discharge tubing and were grab samples. The groundwater samples were analyzed for TPH-GRO and TPH-DRO using EPA Method 8015C, Target Compound List (TCL) TCL VOCs using EPA Method 8260B, TCL SVOCs using EPA Method 8270C, and Priority Pollutant List (PPL) metals using EPA Method 6020A. The collection of samples for PPL metals analysis was not required by the PSTP per the CAP approval and was conducted to obtain data needed to update a VRP risk assessment.

All purge water generated during sampling was stored in a 55-gallon drum pending proper disposal.

5.0 GROUNDWATER QUALITY

Based on the recent and historical groundwater measurements obtained from monitoring wells, the depth to groundwater at the SITE ranges from approximately 3 to 7 feet below grade and groundwater flow is to the north-northeast towards Oronoco Bay and the Potomac River. Oronoco Bay and the Potomac River are tidally influenced; however, data collected to date does not suggest that tidal change has a significant effect of groundwater flow beneath the SITE. Recent and historical groundwater measurements obtained from the site wells are summarized on Table 2. A groundwater contour map generated from the recent groundwater sampling event is included as Figure 5.

Petroleum odors were noted during collection of groundwater samples from wells MiHpt-5, MiHpt-7, MiHpt-14, MiHpt-15, MiHpt-20, MiHpt-21, and MiHpt-22. A petroleum sheen was also observed during collection of the groundwater sample from well MiHpt-21. The groundwater samples were analyzed for TPH-GRO, TPH-DRO, TCL VOCs, TCL SVOCs, and PPL metals. The PPL metals results are not discussed in this report and will be presented in future submittals to the VRP. The recent and historical groundwater analytical results for target constituents required for monitoring by the PSTP are summarized on Table 4. A copy of the laboratory report of analysis is included in Attachment 1.

The groundwater analytical results were compared to the most-current VDEQ Tier III residential groundwater vapor intrusion screening level (VDEQ-T3RGSLs), VDEQ Tier III industrial groundwater vapor intrusion screening level (VDEQ-T3IGSLs), and VDEQ Tier III construction direct (<15 feet) screening level (VDEQ-T3CDSLs). The analytical results were also compared to surface water screening levels including VDEQ general permit discharge standards for petroleum contaminated water (VDEQ-PDSs), VDEQ Tier II public water supply screening level (VDEQ-T2PWSSLs), and VDEQ Tier II surface water fresh screening level (VDEQ-T2SWFSLs). It should be noted that VDEQ groundwater and surface water screening levels have not been developed for many of the target constituents detected.

TPH-GRO, TPH-DRO, 17 VOCs, and 16 SVOCs were detected in the groundwater samples at concentrations above the RL. Eight VOCs and four SVOCs were detected at concentrations above VDEQ groundwater and/or surface water screening levels. A list of the constituents detected above screening levels is detailed below.

Constituents Detected Above VDEQ-T3RGSLs

- **Benzene** was detected above VDEQ-T3RGSLs in the groundwater samples collected from wells MiHpt-5, MiHpt-7, MiHpt-14, MiHpt-21, MiHpt-22, and MW-25.
- **Biphenyl** was detected above VDEQ-T3RGSLs in the groundwater sample collected from well MiHpt-7.

- **Cyclohexane** was detected above VDEQ-T3RGSLs in the groundwater sample collected from well MiHpt-21.
- **Ethylbenzene** was detected above VDEQ-T3RGSLs in the groundwater samples collected from wells MiHpt-7 and MiHpt-21.
- **Naphthalene** (as a VOC and SVOC) was detected above VDEQ-T3RGSLs in the groundwater samples collected from wells MiHpt-5, MiHpt-7, MiHpt-8, MiHpt-14, and MW-25.
- **Tetrachloroethene (PCE)** was detected above VDEQ-T3RGSLs in the groundwater sample collected from well MiHpt-21.
- **Tricholoroethene (TCE)** was detected above VDEQ-T3RGSLs in the groundwater sample collected from well MiHpt-21.
- **Xylenes (m, p, and/or o type)** were detected above VDEQ-T3RGSLs in the groundwater samples collected from wells MiHpt-5, MiHpt-7, and MiHpt-21.

Constituents Detected Above VDEQ-T3IGSLs

- **Benzene** was detected above VDEQ-TRIGSLs in the groundwater samples collected from wells MiHpt-5, MiHpt-7, MiHpt-14, MiHpt-21, and MiHpt-22.
- **Cyclohexane** was detected above VDEQ-TRIGSLs in the groundwater sample collected from well MiHpt-21.
- **Naphthalene** (as a VOC and SVOC) was detected above VDEQ-TRIGSLs in the groundwater samples collected from wells MiHpt-5, MiHpt-7, and MW-25.
- **PCE** was detected above VDEQ-TRIGSLs in the groundwater sample collected from well MiHpt-21.
- **TCE** was detected above VDEQ-TRIGSLs in the groundwater sample collected from well MiHpt-21.

Constituents Detected Above VDEQ-T3CDSLs

- **Benzene** was detected above VDEQ-T3CDSLs in the groundwater samples collected from wells MiHpt-5, MiHpt-7, MiHpt-14, MiHpt-21, MiHpt-22, and MW-25.
- **Biphenyl** was detected above VDEQ-T3CDSLs in the groundwater sample collected from well MiHpt-7.
- **Naphthalene** (as a VOC and SVOC) was detected above VDEQ-T3CDSLs in the groundwater samples collected from wells MiHpt-5, MiHpt-7, MiHpt-8, MiHpt-14, MiHpt-15, MiHpt-21, and MW-25.
- **Pentachlorophenol** was detected above VDEQ-T3CDSLs in the groundwater sample collected from well MiHpt-21.
- **PCE** was detected above VDEQ-T3CDSLs in the groundwater sample collected from well MiHpt-21.
- **TCE** was detected above VDEQ-T3CDSLs in the groundwater sample collected from well MiHpt-21.
- **Xylenes (m, p, and/or o type)** were detected above VDEQ-T3CDSLs in the groundwater samples collected from wells MiHpt-5, MiHpt-7, and MiHpt-21.

Constituents Detected Above VDEQ-PDSs

- **Benzene** was detected above VDEQ-PDSs in the groundwater samples collected from wells MiHpt-5, MiHpt-7, MiHpt-14, MiHpt-21, MiHpt-22, and MW-25.
- **Ethylbenzene** was detected above VDEQ-PDSs in the groundwater samples collected from wells MiHpt-5, MiHpt-7, MiHpt-14, and MiHpt-21.
- **Naphthalene** (as a VOC and SVOC) was detected above VDEQ-PDSs in the groundwater samples collected from wells MiHpt-5, MiHpt-7, MiHpt-8, MiHpt-14, and MW-25.
- **PCE** was detected above VDEQ-PDSs in the groundwater sample collected from well MiHpt-21.
- **TCE** was detected above VDEQ-PDSs in the groundwater sample collected from well MiHpt-21.
- **Toluene** was detected above VDEQ-PDSs in the groundwater sample collected from well MiHpt-21.
- **Xylenes (m, p, and/or o type)** were detected above VDEQ-PDSs in the groundwater samples collected from wells MiHpt-5, MiHpt-7, and MiHpt-21.

Constituents Detected Above VDEQ-T2SWSSLs

- **Benzene** was detected above VDEQ-T2PWSSLs in the groundwater samples collected from wells MiHpt-5, MiHpt-7, MiHpt-14, MiHpt-21, MiHpt-22, and MiHpt-25.
- **PCE** was detected above VDEQ-T2PWSSLs in the groundwater sample collected from well MiHpt-21.
- **TCE** was detected above VDEQ-T2PWSSLs in the groundwater sample collected from well MiHpt-21.
- **2,4-Dichlorophenol** was detected above VDEQ-T2PWSSLs in the groundwater sample collected from well MiHpt-21.
- **Pentachlorophenol** was detected above VDEQ-T2PWSSLs in the groundwater sample collected from well MiHpt-21.

Constituents Detected Above VDEQ-*T2SWFSLs*

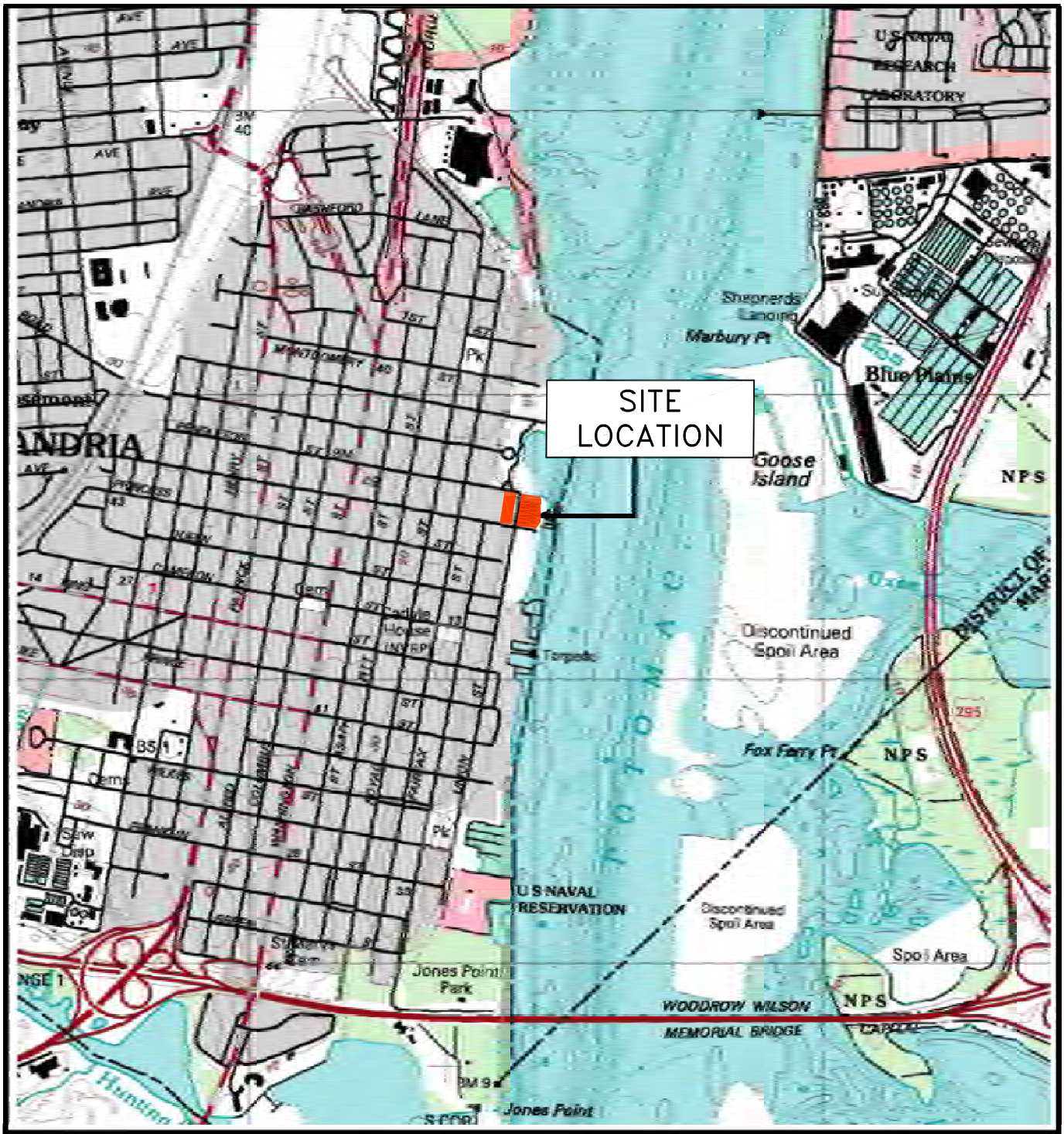
- **PCE** was detected above VDEQ-T2SWFSLs in the groundwater sample collected from well MiHpt-21.
- **2,4-Dichlorophenol** was detected above VDEQ-T2SWFSLs in the groundwater sample collected from well MiHpt-21.
- **Pentachlorophenol** was detected above VDEQ-T2SWFSLs in the groundwater sample collected from well MiHpt-21.

In general, the concentrations of TPH-GRO, TPH-DRO, VOCs, and SVOCs detected in groundwater appear to be relatively stable over time. The highest concentrations of target constituents detected were on the western and southern portions of the SITE. Isoconcentration maps prepared from the recent groundwater analytical data for TPH-GRO, TPH-DRO, benzene, and naphthalene are included as Figures 6 through 9.

6.0 DEVELOPMENT SCHEDULE UPDATE

The potential development schedule is not yet set and will depend on approvals and the completion of the AlexRenew project anticipated to be completed from 2021-2025.

FIGURES



REFERENCE:
7.5 MINUTE SERIES TOPOGRAPHIC QUADRANGLE
ALEXANDRIA, VIRGINIA
PHOTOREVISED 1994 SCALE 1:24,000

SITE LOCATION

DESIGNED BRUZZESI	DATE 04/04/17
DRAWN CONNELLY	DATE 04/04/17

A-ZONE ENVIRONMENTAL SERVICES
2181 BERRYVILLE PIKE
CHARLES TOWN, WV 25414

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 6048.04	SCALE: AS SHOWN
DRAWING NO.	FIGURE 1

6078-04-RTN SCR01-SITE LOC.DWG – July 6, 2016

MICROSOFT CORPORATION 2016

0 125 250 500

SCALE IN FEET

AERIAL PHOTOGRAPH

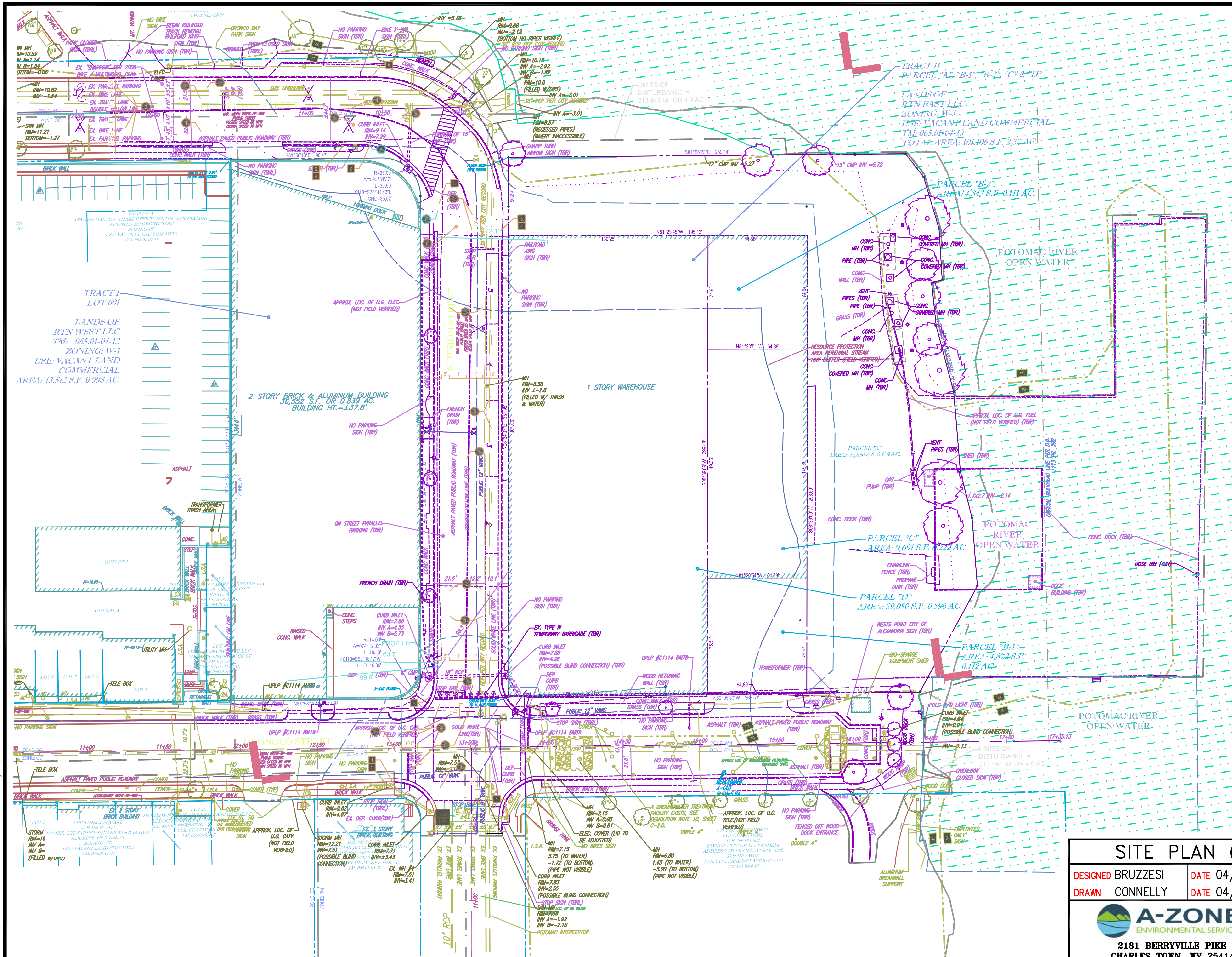
DESIGNED BRUZZESI	DATE 04/04/17
DRAWN CONNELLY	DATE 04/04/17

A-ZONE ENVIRONMENTAL SERVICES
2181 BERRYVILLE PIKE
CHARLES TOWN, WV 25414

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 6078.04	SCALE: AS SHOWN
DRAWING NO.	FIGURE 2

6078-04-RTN SCR02-AERIAL.DWG — July 6, 2016



0 30 60 120

SCALE IN FEET

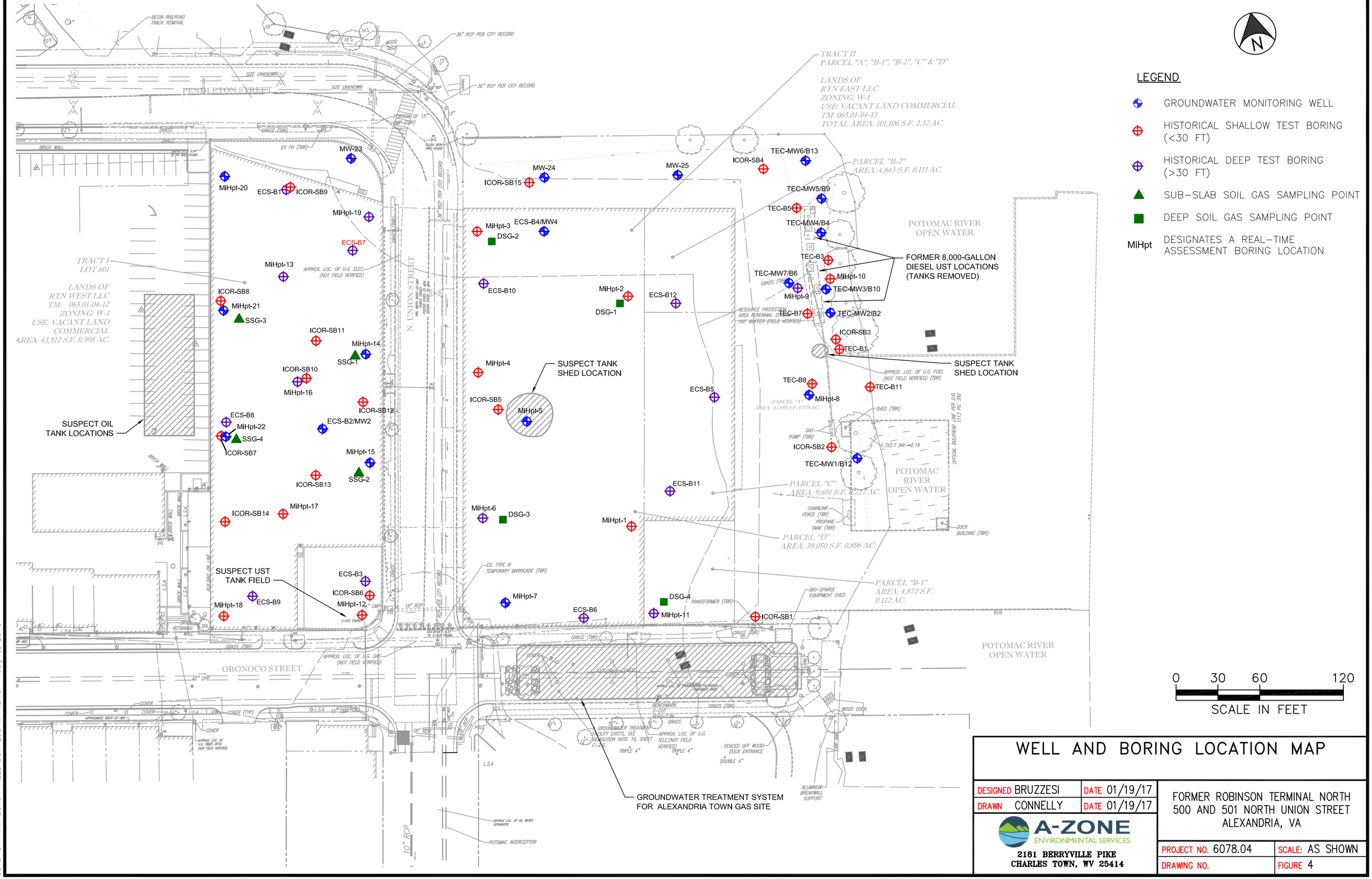
SITE PLAN (EXISTING CONDITIONS)

DESIGNED	BRUZZESI	DATE	04/04/17	FORMER ROBINSON TERMINAL NORTH 500 AND 501 NORTH UNION STREET ALEXANDRIA, VA
DRAWN	CONNELLY	DATE	04/04/17	

A-ZONE ENVIRONMENTAL SERVICES
2181 BERRYVILLE PIKE
CHARLES TOWN, WV 25414

PROJECT NO.	6078.04	SCALE:	AS SHOWN
DRAWING NO.		FIGURE	3

6078-04-RTN SCR03-EXIST SITE.DWG – July 6, 2016



WELL AND BORING LOCATION MAP

DESIGNED	BRUZZESI	DATE	01/19/17
DRAWN	CONNELLY	DATE	01/19/17

A-ZONE ENVIRONMENTAL SERVICES
2181 BERRYVILLE PIKE
CHARLES TOWN, WV 25414

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 6078.04	SCALE: AS SHOWN
DRAWING NO.	FIGURE 4

6078-04-RTN SCR04-WELL BOR LOC MAP.DWG — July 6, 2016

N

Legend

- Site Property
- Groundwater Contours (7/2019)
- Groundwater Flow Direction
- Groundwater Monitoring Well

Notes:
DRY - Well was dry.

0 25 50 100
Feet

GROUNDWATER CONTOUR MAP (7/11/19)

DESIGNED BRUZZESI	DATE 07/28/19
DRAWN CONNELLY	DATE 07/28/19

A-ZONE ENVIRONMENTAL SERVICES
2181 BERRYVILLE PIKE
CHARLES TOWN, WV 25414

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 6078.04	SCALE: AS SHOWN
DRAWING NO.	FIGURE 5

6078-04-RTN SCR05-GW CONT MAP.DWG -- July 6, 2016

	VDEQ-PDS
TPH-GRO (C6-C10)	15 mg/L

MiHpt-20
ND

MW-23
ND

MW-24
ND

MW-25
ND

TEC-MW6/B13

TEC-MW5/B9

TEC-MW4/B4
ND

ECS-B4/MW4
ND

MiHpt-21
12 mg/L

TEC-MW7/B6

MiHpt-14
0.22 mg/L

MiHpt-10

MiHpt-22
0.23 mg/L

ECS-B2/MW2

MiHpt-5
0.45 mg/L

MiHpt-8
ND

TEC-MW3/B10

TEC-MW2/B2
ND

MiHpt-15
ND

TEC-MW1/B12

MiHpt-7
1.0 mg/L

N

Legend

- Site Property
- Groundwater Monitoring Well

Isoconcentration (TPH-GRO)

- 0.15 mg/L
- 1.5 mg/L

Sample ID
TPH-GRO Concentration (mg/L)

Notes:
ND - Non-Detect
VDEQ-PDS = general permit discharge standard for petroleum contaminated water

0 25 50 100 Feet

TPH–GRO IN GROUNDWATER CONCENTRATION MAP (7/11/19)

DESIGNED BRUZZESI	DATE 07/28/19
DRAWN CONNELLY	DATE 07/28/19

A-ZONE ENVIRONMENTAL SERVICES
2181 BERRYVILLE PIKE
CHARLES TOWN, WV 25414

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 6078.04	SCALE: AS SHOWN
DRAWING NO.	FIGURE 6

6078-04-RTN SCR06-TPHGRO GW CONC.DWG — July 6, 2016

	VDEQ-PDS
TPH-DRO (C10-C28)	15 mg/L

MiHpt-20
ND

MW-23
ND

MW-24
0.13 mg/L

MW-25
0.16 mg/L

TEC-MW6/B13

ECS-B4/MW4
ND

TEC-MW5/B9

MiHpt-21
2.2 mg/L

TEC-MW4/B4
0.11 mg/L

MiHpt-14
0.59 mg/L

TEC-MW7/B6

MiHpt-10

MiHpt-22
0.12 mg/L

MiHpt-5
0.7 mg/L

MiHpt-8
ND

TEC-MW3/B10

ECS-B2/MW2

TEC-MW2/B2
ND

MiHpt-15
ND

TEC-MW1/B12

MiHpt-7
2.7 mg/L

N

Legend

- Site Property
- Groundwater Monitoring Well

Isoconcentration (TPH-DRO)

- 0.15 mg/L
- 1.5 mg/L

Sample ID
TPH-DRO Concentration (mg/L)

Notes:
ND - Non-Detect
VDEQ-PDS = general permit discharge standard for petroleum contaminated water

0 25 50 100
Feet

TPH–DRO IN GROUNDWATER CONCENTRATION MAP (7/11/19)

DESIGNED BRUZZESI	DATE 07/28/19
DRAWN CONNELLY	DATE 07/28/19

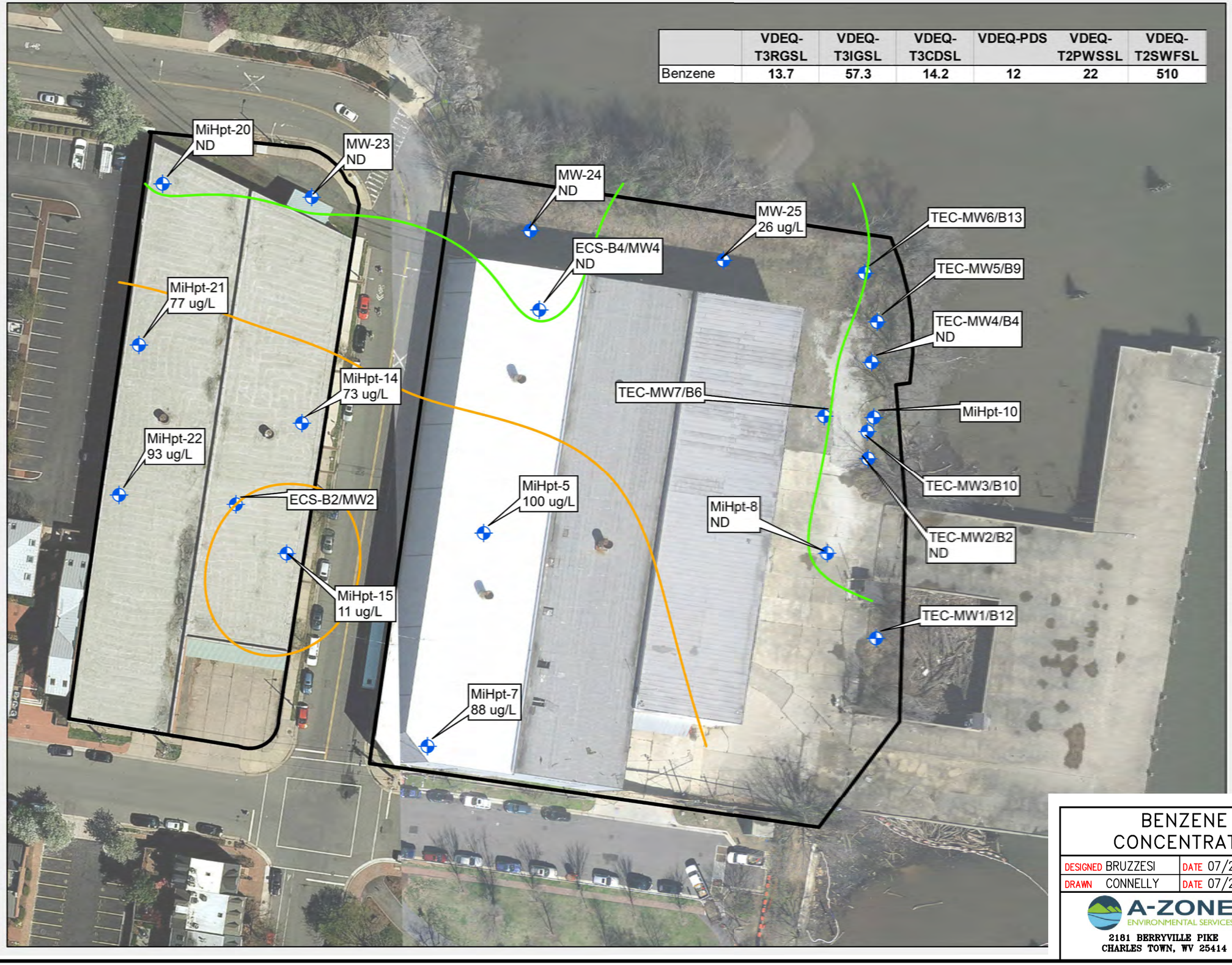
A-ZONE ENVIRONMENTAL SERVICES
2181 BERRYVILLE PIKE
CHARLES TOWN, WV 25414

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 6078.04	SCALE: AS SHOWN
DRAWING NO.	FIGURE 7

6078-04-RTN SCR07-TPHDRO GW CONC.DWG – July 6, 2016

	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL
Benzene	13.7	57.3	14.2	12	22	510



N

Legend

- Site Property
- Groundwater Monitoring Well

Isoconcentration (Benzene)

- 5 ug/L
- 50 ug/L

Sample ID
Benzene Concentration (ug/L)

Notes:
ND - Non-Detect
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level

0 25 50 100
Feet

BENZENE IN GROUNDWATER CONCENTRATION MAP (7/11/19)

DESIGNED	BRUZZESI	DATE	07/28/19
DRAWN	CONNELLY	DATE	07/28/19

A-ZONE ENVIRONMENTAL SERVICES
2181 BERRYVILLE PIKE
CHARLES TOWN, WV 25414

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 6078.04	SCALE: AS SHOWN
DRAWING NO.	FIGURE 8

6078-04-RTN SCR08-BENZ GW CONC.DWG — July 6, 2016

	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS
Naphthalene	**17.2**	**72.3**	**0.722**	**8.9**

MiHpt-20
ND

MW-23
ND

MW-24
ND

MW-25
78 ug/L

TEC-MW6/B13

ECS-B4/MW4
ND

TEC-MW5/B9

MiHpt-21
48 ug/L

TEC-MW4/B4
ND

MiHpt-14
56 ug/L

TEC-MW7/B6

MiHpt-10

MiHpt-22
1.1 ug/L

TEC-MW3/B10

ECS-B2/MW2

MiHpt-5
390 ug/L

MiHpt-8
20 ug/L

TEC-MW2/B2
ND

MiHpt-15
1.1 ug/L

TEC-MW1/B12

MiHpt-7
1900 ug/L

N

Site Property

Groundwater Monitoring Well

Isoconcentration (Naphthalene)

5 ug/L

50 ug/L

500 ug/L

Sample ID
Naphthalene Concentration (ug/L)

Notes:
ND - Non-Detect
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water

0 25 50 100
Feet

NAPHTHALENE IN GROUNDWATER CONCENTRATION MAP (7/11/19)

DESIGNED BRUZZESI DATE 07/28/19
DRAWN CONNELLY DATE 07/28/19

A-ZONE ENVIRONMENTAL SERVICES
2181 BERRYVILLE PIKE
CHARLES TOWN, WV 25414

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

PROJECT NO. 6078.04 SCALE: AS SHOWN
DRAWING NO. FIGURE 9

TABLES

TABLE 1. WELL CONSTRUCTION INFORMATION

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Well ID	Date Installed	Well Diameter (inches ID)	Well Material	Total Depth (feet bgs)	Screen Interval (feet bgs)
TEC-MW1	4/27/06	1	PVC	10.0	UKN
TEC-MW2	4/27/06	1	PVC	16.0	UKN
TEC-MW3	UKN	1	PVC	UKN	UKN
TEC-MW4	4/27/06	1	PVC	12.0	UKN
TEC-MW5	4/27/06	1	PVC	16.0	UKN
TEC-MW6	4/28/06	1	PVC	16.0	UKN
TEC-MW7	4/27/06	1	PVC	12.0	UKN
ECS-MW2	12/20/07	1	PVC	UKN	UKN
ECS-MW4	12/27/07	1	PVC	UKN	UKN
MiHpt-5	9/7/16	1	PVC	16.0	6.0 - 16.0
MiHpt-7	9/6/16	1	PVC	17.0	7.0 - 17.0
MiHpt-8	9/6/16	1	PVC	20.0	10.0 - 20.0
MiHpt-14	9/8/16	1	PVC	16.0	6.0 - 16.0
MiHpt-15	9/8/16	1	PVC	16.0	6.0 - 16.0
MiHpt-20	9/8/16	1	PVC	18.0	8.0 - 18.0
MiHpt-21	9/9/16	1	PVC	16.0	6.0 - 16.0
MiHpt-22	9/9/16	1	PVC	16.0	6.0 - 16.0
MW23	1/22/18	1	PVC	19.8	4.8 - 19.8
MW24	1/22/18	1	PVC	19.0	4.0 - 19.0
MW25	1/22/18	1	PVC	19.0	4.0 - 19.0

NOTES:
ID = inner diameter
bgs = below surface grade
UKN = unknown

TABLE 2. HISTORICAL GROUNDWATER MEASUREMENTS

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Well ID	Well TOC Elevation (feet)	Date	Total Well Depth (feet bgs)	Depth to Groundwater (feet bgs)	Groundwater Elevation (feet)
TEC-MW1	7.92	5/4/06	10.0	5.64	2.28
TEC-MW2	9.26	5/4/06	16.0	6.79	2.47
		9/21/16		6.74	2.52
		2/7/17		7.21	2.05
		1/29/18		7.81	1.45
		6/7/18		6.32	2.94
		7/11/19		6.33	2.93
TEC-MW3	9.47	5/4/06	UKN	7.00	2.47
		9/21/16		7.22	2.25
		2/7/17		7.44	2.03
		1/29/18		OBS	OBS
		6/7/18		6.39	3.08
TEC-MW4	9.51	5/4/06	12.0	7.05	2.46
		9/21/16		7.23	2.28
		2/7/17		7.50	2.01
		1/29/18		8.12	1.39
		6/7/18		6.45	3.06
		7/11/19		6.45	3.06
TEC-MW5	8.02	5/4/06	16.0	7.89	0.13
		9/21/16		7.58	0.44
		2/7/17		6.83	1.19
		1/29/18		6.31	1.71
TEC-MW6	7.52	5/4/06	16.0	6.40	1.12
TEC-MW7	8.70	5/4/06	12.0	6.49	2.21
ECS-MW2	11.48	12/20/07	UKN	10.08	1.40
		9/21/16		6.97	4.51
		2/7/17		6.53	4.95
		1/29/18		DRY	DRY
		6/7/18		DRY	DRY
		7/11/19		DRY	DRY

TABLE 2. HISTORICAL GROUNDWATER MEASUREMENTS

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Well ID	Well TOC Elevation (feet)	Date	Total Well Depth (feet bgs)	Depth to Groundwater (feet bgs)	Groundwater Elevation (feet)
ECS-MW4	8.76	12/20/07	UKN	9.15	-0.39
		9/21/16		2.98	5.78
		2/7/17		3.38	5.38
		1/29/18		4.65	4.11
		6/7/18		2.73	6.03
		7/11/19		1.90	6.86
MiHpt-5	8.82	9/21/16	16.0	5.37	3.45
		2/7/17		6.62	2.20
		1/29/18		6.31	2.51
		6/7/18		4.52	4.30
		7/11/19		4.22	4.60
MiHpt-7	8.97	9/21/16	17.0	5.18	3.79
		2/7/17		5.07	3.90
		1/29/17		6.11	2.86
		6/7/18		4.50	4.47
		7/11/19		4.17	4.80
MiHpt-8	8.21	9/21/16	20.0	5.99	2.22
		2/7/17		6.19	2.02
		1/29/18		6.16	2.05
		6/7/18		5.13	3.08
		7/11/19		5.16	3.05
MiHpt-14	11.48	9/21/16	16.0	7.90	3.58
		2/7/17		7.62	3.86
		1/29/18		8.95	2.53
		6/7/18		7.39	4.09
		7/11/19		6.97	4.51
MiHpt-15	11.54	9/21/16	16.0	7.22	4.32
		2/7/17		6.59	4.95
		1/29/17		8.11	3.43
		6/7/18		6.58	4.96
		7/11/19		6.21	5.33

TABLE 2. HISTORICAL GROUNDWATER MEASUREMENTS

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Well ID	Well TOC Elevation (feet)	Date	Total Well Depth (feet bgs)	Depth to Groundwater (feet bgs)	Groundwater Elevation (feet)
MiHpt-20	11.59	9/21/16	18.0	9.41	2.18
		2/7/17		9.50	2.09
		1/29/18		10.57	1.02
		6/7/18		8.14	3.45
		7/11/19		8.91	2.68
MiHpt-21	11.56	9/21/16	16.0	7.19	4.37
		2/7/17		6.99	4.57
		1/29/18		11.05	0.51
		6/7/18		6.70	4.86
		7/11/19		5.84	5.72
MiHpt-22	11.63	9/21/16	16.0	7.30	4.33
		2/7/17		6.99	4.64
		1/29/18		8.10	3.53
		6/7/18		6.57	5.06
		7/11/19		8.94	2.69
MW23	9.12	1/29/18	19.8	8.27	0.85
		6/7/18		6.43	2.69
		7/11/19		6.42	2.70
MW24	8.62	1/29/18	19.0	7.61	1.01
		6/7/18		5.79	2.83
		7/11/19		5.32	3.30
MW25	7.73	1/29/18	19.0	6.49	1.24
		6/7/18		4.85	2.88
		7/11/19		4.74	2.99

NOTES:
All survey data generated by a professional surveyor
TOC = top of casing
bgs = below ground surface
UKN = unknown
OBS = obstructed
DRY = well dry

TABLE 3. GROUNDWATER PARAMETER READINGS AT STABLIZATION

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Well ID	Date Measurement Collected	Time to Stabilization (minutes)	Temperature (°C)	Specific Conductance (mS/cm)	pH	Oxygen Reduction Potential (mv)	Dissolved Oxygen (mg/l)	Turbidity (NTU)
TEC-MW2	1/29/18	10/DRY	12.68	0.413	6.80	-145	8.5	113.0
	6/7/18	15/DRY	16.32	1.010	6.67	-70	1.0	22.0
	7/11/19	15/DRY	21.24	1.690	6.57	-71	1.5	122.0
TEC-MW4	1/29/18	35	14.00	0.888	6.81	-109	0.0	3.3
	6/7/18	30	15.43	0.722	6.67	-67	0.0	11.0
	7/11/19	30	17.99	1.290	7.37	-123	0.0	0.0
ECS-MW4	1/29/18	35	15.74	0.485	6.60	-92	0.0	10.3
	6/7/18	30	17.43	0.565	6.72	-145	0.0	4.7
	7/11/19	25	18.08	0.671	6.95	-130	0.0	15.5
MiHpt-5	1/29/18	35	14.18	0.843	2.37	351	4.8	410.0
	6/7/18	30	15.55	0.779	2.66	322	0.0	0.0
	7/11/19	25	18.33	0.939	2.98	297	0.0	20.0
MiHpt-7	1/29/18	35	15.69	0.469	6.81	-116	0.0	15.5
	6/7/18	25	16.70	0.486	6.76	-138	0.0	9.0
	7/11/19	25	18.34	0.598	7.24	-161	0.0	0.0
MiHpt-8	1/29/18	40	12.01	1.870	7.08	-245	7.5	3.5
	6/7/18	40	18.07	1.120	6.67	-419	0.0	9.2
	7/11/19	25	23.61	1.760	6.94	-339	0.0	34.9
MiHpt-14	1/29/18	35	15.83	1.330	5.81	-6	0.0	33.2
	6/7/18	25	16.99	1.050	6.00	-8	0.0	2.0
	7/11/19	35	21.42	1.360	6.11	-38	0.0	11.0
MiHpt-15	1/29/18	25	13.50	0.592	6.19	52	0.0	18.1
	6/7/18	25	18.03	0.903	6.16	50	0.0	70.5
	7/11/19	20	22.19	1.430	6.32	-6	0.0	23.4
MiHpt-20	1/29/18	35	16.12	0.754	6.43	19	0.0	11.2
	6/7/18	30	16.37	0.947	5.92	119	0.1	115.0
	7/11/19	25	22.11	0.668	6.11	164	0.8	19.0
MiHpt-21	1/29/18	10/DRY	15.48	0.948	6.26	-25	0.0	148.0
	6/7/18	10/DRY	17.06	1.150	6.41	-22	2.7	437.0
	7/11/19	20/DRY	23.36	1.610	6.92	-106	0.0	46.7
MiHpt-22	1/29/18	15/DRY	14.72	0.654	6.26	-24	0.0	28.6
	6/7/18	25	17.10	0.772	6.50	-48	0.0	170.0
	7/11/19	25	22.10	0.903	6.79	-99	0.0	40.1
MW-23	1/29/18	35	15.78	0.536	6.66	-74	0.0	60.7
	6/7/18	30	17.58	0.730	6.48	-40	0.0	5.2
	7/11/19	25	18.86	1.060	6.45	-81	0.0	18.1
MW-24	1/29/18	35	12.40	0.570	6.63	-132	0.0	3.1
	6/7/18	30	12.51	0.597	6.20	-31	0.0	3.3
	7/11/19	20	23.01	0.872	6.33	-48	0.0	16.7
MW-25	1/29/18	35	14.78	2.380	4.39	75	0.00	6.3
	6/7/18	30	15.13	2.390	4.16	85	0.00	2.3
	7/11/19	25	22.17	2.640	4.03	67	0.0	13.2

NOTES:
°C = degrees Celcius
mS/cm = milliSiemens per cubic meter
mv = millivolts
mg/l = milligrams per liter
NTU = Nephelometric Turbidity Units
NM = not measured
DRY = well went dry

TABLE 4. GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	CAS No.	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	TEC-MW2					TEC-MW4					ECS-MW4				
Sample Date:									9/21/16	2/7/17	1/29/18	6/7/18	7/11/19	9/21/16	2/7/17	1/29/18	6/7/18	7/11/19	9/21/16	2/7/17	1/29/18	6/7/18	7/11/19
TPH 8015																							
TPH-GRO (C6-C10)	mg/L	C6C10GRO	**NE**	**NE**	**NE**	**15**	**NE**	**NE**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TPH-DRO (C10-C28)	mg/L	C10C28DRO	**NE**	**NE**	**NE**	**15**	**NE**	**NE**	**0.21**	**0.18**	**0.28**	**0.22**	<0.13	**0.21**	**0.26**	**0.30**	**0.17**	**0.11**	<0.10	<0.10	**0.11**	<0.10	<0.10
TCL VOCs 8260B																							
Acetone	ug/L	67-64-1	**2240000**	**9780000**	**13400**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	ug/L	71-43-2	**13.7**	**57.3**	**14.2**	**12**	**22**	**510**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Disulfide	ug/L	75-15-0	**124**	**527**	**122**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroform	ug/L	67-66-3	**8**	**35.3**	**54.3**	**80**	**340**	**11000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cyclohexane	ug/L	110-82-7	**103**	**424**	**3330**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	ug/L	100-41-4	**34.1**	**152**	**591**	**4.3**	**530**	**2100**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Isopropylbenzene	ug/L	98-82-8	**89.3**	**383**	**19.9**	**NE**	**NE**	**NE**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl-t-butyl ether	ug/L	1634-04-4	**4580**	**19600**	**524**	**15**	**NE**	**NE**	**2.5**	**2.8**	**2.3**	**1.5**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	**3.7**	**4.7**	**4.9**	**4.8**	**5.9**
Methylcyclohexane	ug/L	108-87-2	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	91-20-3	**17.2**	**72.3**	**0.722**	**8.9**	**NE**	**NE**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tetrachloroethene (PCE)	ug/L	127-18-4	**5.8**	**24.9**	**10.4**	**5**	**6.9**	**33**	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0
Toluene	ug/L	108-88-3	**1920**	**8100**	**949**	**43**	**510**	**6000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene (TCE)	ug/L	79-01-6	**0.521**	**2.19**	**0.46**	**5**	**25**	**300**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	ug/L	156-59-2	**NE**	**NE**	**2260**	**70**	**NE**	**NE**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	ug/L	156-60-5	**NE**	**NE**	**157**	**100**	**140**	**10000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m,p-Xylenes	ug/L	108-38-3	**150**	**1290**	**20.8**	**33**	**NE**	**NE**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	ug/L	95-47-6	**47.2**	**208**	**20.9**	**33**	**NE**	**NE**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TCL SVOCs 8270C																							
2,4,5-Trichlorophenol	ug/L	95-95-4	**NE**	**NE**	**7860**	**NE**	**300**	**600**	NA	<5.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<5.0	<2.0
2,4-Dichlorophenol	ug/L	120-83-2	**NE**	**NE**	**1060**	**NE**	**77**	**290**	NA	<5.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<5.0	<2.0
2-Chlorophenol	ug/L	95-57-8	**NE**	**NE**	**1110**	**NE**	**81**	**150**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Methylnaphthalene	ug/L	91-57-6	**NE**	**NE**	**59**	**NE**	**NE**	**NE**	NA	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50
Acenaphthene	ug/L	83-32-9	**NE**	**NE**	**2950**	**NE**	**670**	**990**	NA	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	**2.5**	**2.1**	**1.1**	**5.0**
Acenaphthylene	ug/L	208-96-8	**NE**	**NE**	**1430**	**NE**	**NE**	**NE**	NA	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	**0.70**
Anthracene	ug/L	120-12-7	**NE**	**NE**	**7850**	**NE**	**8300**	**40000**	NA	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50
Biphenyl (Diphenyl)	ug/L	92-52-4	**3.34**	**14.3**	**1.18**	**NE**	**NE**	**NE**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Carbazole	ug/L	86-74-8	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibenzofuran	ug/L	132-64-9	**NE**	**NE**	**48.4**	**NE**	**NE**	**NE**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Fluoranthene	ug/L	206-44-0	**NE**	**NE**	**311**	**NE**	**130**	**140**	NA	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50
Fluorene	ug/L	86-73-7	**NE**	**NE**	**4370**	**NE**	**1100**	**5300**	NA	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	**0.75**	**0.66**	<0.50	**1.3**
Naphthalene	ug/L	91-20-3	**17.2**	**72.3**	**0.722**	**8.9**	**NE**	**NE**	NA	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50
Pentachlorophenol	ug/L	87-86-5	**NE**	**NE**	**5.54**	**NE**	**0.03**	**0.04**	NA	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Phenanthrene	ug/L	85-01-8	**NE**	**NE**	**1430**	**NE**	**NE**	**NE**	NA	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50
Pyrene	ug/L	129-00-0	**NE**	**NE**	**1430**	**NE**	**830**	**4000**	NA	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/L = micrograms per liter
mg/L = milligrams per liter
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

TABLE 4. GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	CAS No.	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	MiHpt-05					MiHpt-07					MiHpt-08				
Sample Date:									9/21/16	2/7/17	1/29/18	6/7/18	7/11/19	9/21/16	2/7/17	1/29/18	6/7/18	7/11/19	9/21/16	2/7/17	1/29/18	6/7/18	7/11/19
TPH 8015																							
TPH-GRO (C6-C10)	mg/L	C6C10GRO	**NE**	**NE**	**NE**	**15**	**NE**	**NE**	**0.81**	**0.79**	**0.6**	**0.95**	**0.45**	**0.88**	**0.89**	**1.4**	**2.1**	**1**	<0.1	<0.1	<0.1	<0.1	<0.1
TPH-DRO (C10-C28)	mg/L	C10C28DRO	**NE**	**NE**	**NE**	**15**	**NE**	**NE**	**0.52**	**0.41**	**0.41**	**0.48**	**0.70**	**2.0**	**1.8**	**2.6**	**3.6**	**2.7**	**0.15**	**0.20**	**0.22**	**0.17**	<0.12
TCL VOCs 8260B																							
Acetone	ug/L	67-64-1	**2240000**	**9780000**	**13400**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	ug/L	71-43-2	**13.7**	**57.3**	**14.2**	**12**	**22**	**510**	**110**	**150**	**130**	**130**	**100**	**25**	**31**	**59**	**75**	**88**	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Disulfide	ug/L	75-15-0	**124**	**527**	**122**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroform	ug/L	67-66-3	**8**	**35.3**	**54.3**	**80**	**340**	**11000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cyclohexane	ug/L	110-82-7	**103**	**424**	**3330**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	ug/L	100-41-4	**34.1**	**152**	**591**	**4.3**	**530**	**2100**	**26**	**14**	**13**	**24**	**30**	**61**	**57**	**94**	**110**	**140**	<1.0	<1.0	<1.0	<1.0	<1.0
Isopropylbenzene	ug/L	98-82-8	**89.3**	**383**	**19.9**	**NE**	**NE**	**NE**	**4.5**	**4.4**	**5.5**	**7.9**	**10**	**12**	**13**	**15**	**23**	**25**	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl-t-butyl ether	ug/L	1634-04-4	**4580**	**19600**	**524**	**15**	**NE**	**NE**	<1.0	<1.0	<1.0	<1.0	<1.0	**1.0**	**1.6**	**1.4**	**1.7**	**1.7**	<1.0	<1.0	<1.0	<1.0	<1.0
Methylcyclohexane	ug/L	108-87-2	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	91-20-3	**17.2**	**72.3**	**0.722**	**8.9**	**NE**	**NE**	**170**	**250**	**220**	**340**	**390**	**830**	**720**	**970**	**1400**	**1900**	**14**	**14**	<1.0	**21**	**20**
Tetrachloroethene (PCE)	ug/L	127-18-4	**5.8**	**24.9**	**10.4**	**5**	**6.9**	**33**	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0
Toluene	ug/L	108-88-3	**1920**	**8100**	**949**	**43**	**510**	**6000**	**2.4**	**1.0**	**1.5**	**2.6**	**2.9**	**3.7**	**2.7**	**2.9**	**2.9**	**4.2**	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene (TCE)	ug/L	79-01-6	**0.521**	**2.19**	**0.46**	**5**	**25**	**300**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	ug/L	156-59-2	**NE**	**NE**	**2260**	**70**	**NE**	**NE**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	ug/L	156-60-5	**NE**	**NE**	**157**	**100**	**140**	**10000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m,p-Xylenes	ug/L	108-38-3	**150**	**1290**	**20.8**	**33**	**NE**	**NE**	**12**	**18**	**19**	**22**	**27**	**32**	**30**	**39**	**52**	**110**	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	ug/L	95-47-6	**47.2**	208	**20.9**	**33**	**NE**	**NE**	**23**	**38**	**39**	**37**	**45**	**32**	**38**	**56**	**61**	**77**	<1.0	<1.0	<1.0	<1.0	<1.0
TCL SVOCs 8270C																							
2,4,5-Trichlorophenol	ug/L	95-95-4	**NE**	**NE**	**7860**	**NE**	**300**	**600**	<5.3	<5.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.3	<5.0	<5.0	<5.0	<2.0
2,4-Dichlorophenol	ug/L	120-83-2	**NE**	**NE**	**1060**	**NE**	**77**	**290**	<5.3	<5.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.3	<5.0	<5.0	<5.0	<2.0
2-Chlorophenol	ug/L	95-57-8	**NE**	**NE**	**1110**	**NE**	**81**	**150**	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0
2-Methylnaphthalene	ug/L	91-57-6	**NE**	**NE**	**59**	**NE**	**NE**	**NE**	**16**	**1.9**	**1.4**	**8.0**	**36**	**40**	**28**	**4.7**	**37**	**190**	<5.3	<0.50	<0.50	**0.74**	**1.0**
Acenaphthene	ug/L	83-32-9	**NE**	**NE**	**2950**	**NE**	**670**	**990**	<5.3	**1.0**	<0.50	**1.7**	**8.7**	**36**	**38**	**14**	**25**	**74**	<5.3	**1.6**	**0.66**	**1.4**	**1.8**
Acenaphthylene	ug/L	208-96-8	**NE**	**NE**	**1430**	**NE**	**NE**	**NE**	<5.3	<0.50	<0.50	<0.50	<0.50	<5.0	**1.2**	<0.50	**0.57**	**0.92**	<5.3	<0.50	<0.50	<0.50	<0.50
Anthracene	ug/L	120-12-7	**NE**	**NE**	**7850**	**NE**	**8300**	**40000**	<5.3	<0.50	<0.50	<0.50	<0.50	<5.0	**1.6**	**0.61**	**1.7**	**3.3**	<5.3	<0.50	<0.50	<0.50	<0.50
Biphenyl (Diphenyl)	ug/L	92-52-4	**3.34**	**14.3**	**1.18**	**NE**	**NE**	**NE**	<5.3	<5.0	<5.0	<5.0	<5.0	**7.0**	**7.1**	<5.0	**5.4**	**17**	<5.3	<5.0	<5.0	<5.0	<5.0
Carbazole	ug/L	86-74-8	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0
Dibenzofuran	ug/L	132-64-9	**NE**	**NE**	**48.4**	**NE**	**NE**	**NE**	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	**5.3**	<5.3	<5.0	<5.0	<5.0	<5.0
Fluoranthene	ug/L	206-44-0	**NE**	**NE**	**311**	**NE**	**130**	**140**	<5.3	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	**0.67**	<5.3	<0.50	<0.50	<0.50	<0.50
Fluorene	ug/L	86-73-7	**NE**	**NE**	**4370**	**NE**	**1100**	**5300**	<5.3	**1.1**	<0.50	**1.3**	**4.9**	**8.2**	**9.5**	**3.5**	**7.2**	**18**	<5.3	**0.51**	<0.50	**0.68**	**0.70**
Naphthalene	ug/L	91-20-3	**17.2**	**72.3**	**0.722**	**8.9**	**NE**	**NE**	**83**	**47**	**16**	**48**	**190**	**200**	**170**	**73**	**170**	**740**	<5.3	**2.2**	<0.50	**4.1**	**4.8**
Pentachlorophenol	ug/L	87-86-5	**NE**	**NE**	**5.54**	**NE**	**0.03**	**0.04**	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0
Phenanthrene	ug/L	85-01-8	**NE**	**NE**	**1430**	**NE**	**NE**	**NE**	<5.3	<0.50	<0.50	**0.55**	**1.8**	**8.7**	**8.8**	**3.2**	**8.3**	**17**	<5.3	<0.50	<0.50	<0.50	<0.50
Pyrene	ug/L	129-00-0	**NE**	**NE**	**1430**	**NE**	**830**	**4000**	<5.3	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	**0.77**	<5.3	<0.50	<0.50	<0.50	<0.50

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/L = micrograms per liter
mg/L = milligrams per liter
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

TABLE 4. GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	CAS No.	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	MiHpt-14					MiHpt-15					MiHpt-20				
Sample Date:									9/21/16	2/7/17	1/29/18	6/7/18	7/11/19	9/21/16	2/7/17	1/29/18	6/7/18	7/11/19	9/21/16	2/7/17	1/29/18	6/7/18	7/11/19
TPH 8015																							
TPH-GRO (C6-C10)	mg/L	C6C10GRO	NE	NE	NE	15	NE	NE	**0.33**	**0.41**	**0.28**	**0.41**	**0.22**	<0.1	<0.1	<0.1	<0.1	<0.1	**0.18**	**0.14**	**0.16**	<0.1	<0.1
TPH-DRO (C10-C28)	mg/L	C10C28DRO	NE	NE	NE	15	NE	NE	**0.75**	**1.2**	**1.5**	**1.3**	**0.59**	<0.10	<0.10	<0.10	<0.10	<0.11	**0.72**	**0.62**	**0.77**	<0.10	<0.10
TCL VOCs 8260B																							
Acetone	ug/L	67-64-1	**2240000**	**9780000**	**13400**	NE	NE	NE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	ug/L	71-43-2	**13.7**	**57.3**	**14.2**	12	22	510	**66**	**70**	**66**	**92**	**73**	**9.9**	**6.2**	<1.0	**1.6**	**11**	**14**	**13**	**14**	<1.0	<1.0
Carbon Disulfide	ug/L	75-15-0	**124**	**527**	**122**	NE	NE	NE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroform	ug/L	67-66-3	**8**	**35.3**	**54.3**	80	340	11000	**1.4**	**1.3**	**2.2**	**1.1**	**6.8**	**7.7**	**63**	**12**	**43**	**1.7**	<1.0	<1.0	<1.0	**1.2**	**1.4**
Cyclohexane	ug/L	110-82-7	**103**	**424**	**3330**	NE	NE	NE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	ug/L	100-41-4	**34.1**	**152**	**591**	4.3	530	2100	**5.4**	**7.4**	**6.0**	**9.8**	**10**	<1.0	<1.0	<1.0	<1.0	<1.0	**1.4**	<1.0	**1.5**	<1.0	<1.0
Isopropylbenzene	ug/L	98-82-8	**89.3**	**383**	**19.9**	NE	NE	NE	<1.0	<1.0	<1.0	**1.3**	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl-t-butyl ether	ug/L	1634-04-4	**4580**	**19600**	**524**	15	NE	NE	<1.0	<1.0	<1.0	<1.0	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylcyclohexane	ug/L	108-87-2	NE	NE	NE	NE	NE	NE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	91-20-3	**17.2**	**72.3**	**0.722**	8.9	NE	NE	**37**	**48**	**48**	**62**	**56**	<1.0	**1.1**	<1.0	<1.0	**1.1**	**67**	**42**	**64**	<1.0	<1.0
Tetrachloroethene (PCE)	ug/L	127-18-4	**5.8**	**24.9**	**10.4**	5	6.9	33	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0
Toluene	ug/L	108-88-3	**1920**	**8100**	**949**	43	510	6000	**5.6**	**5.6**	**4.7**	**6.1**	**6.2**	<1.0	<1.0	<1.0	<1.0	<1.0	**2.6**	**2.0**	**2.2**	<1.0	<1.0
Trichloroethene (TCE)	ug/L	79-01-6	**0.521**	**2.19**	**0.46**	5	25	300	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	ug/L	156-59-2	NE	NE	**2260**	70	NE	NE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	ug/L	156-60-5	NE	NE	**157**	100	140	10000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m,p-Xylenes	ug/L	108-38-3	**150**	**1290**	**20.8**	33	NE	NE	**2.8**	**4.5**	**3.8**	**4.9**	**5.8**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	ug/L	95-47-6	**47.2**	**208**	**20.9**	33	NE	NE	**4.8**	**7.4**	**5.7**	**8.5**	**9.2**	<1.0	<1.0	<1.0	<1.0	<1.0	**1.4**	**1.1**	**1.6**	<1.0	<1.0
TCL SVOCs 8270C																							
2,4,5-Trichlorophenol	ug/L	95-95-4	NE	NE	**7860**	NE	**300**	**600**	<5.0	<5.0	<5.3	<5.0	<2.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<5.0	<2.0
2,4-Dichlorophenol	ug/L	120-83-2	NE	NE	**1060**	NE	77	290	**13**	<5.0	<5.3	<5.0	<2.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<5.0	<5.0	<5.0	<2.0
2-Chlorophenol	ug/L	95-57-8	NE	NE	**1110**	NE	**81**	**150**	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Methylnaphthalene	ug/L	91-57-6	NE	NE	**59**	NE	NE	NE	<5.0	**0.68**	<0.53	**0.54**	**1.1**	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50
Acenaphthene	ug/L	83-32-9	NE	NE	**2950**	NE	**670**	**990**	**12**	**8.5**	**2.5**	**5.9**	**18**	<5.0	<0.50	<0.50	<0.50	<0.50	**6.3**	**1.7**	**2.0**	<0.50	<0.50
Acenaphthylene	ug/L	208-96-8	NE	NE	**1430**	NE	NE	NE	<5.0	<0.50	<0.53	<0.50	**1.2**	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	**0.94**	**1.2**	<0.50	<0.50
Anthracene	ug/L	120-12-7	NE	NE	**7850**	NE	**8300**	**40000**	**6.3**	**2.4**	**0.83**	**1.6**	**3.8**	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50
Biphenyl (Diphenyl)	ug/L	92-52-4	**3.34**	**14.3**	**1.18**	NE	NE	NE	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Carbazole	ug/L	86-74-8	NE	NE	NE	NE	NE	NE	**7.4**	<5.0	<5.3	<5.0	**13**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibenzofuran	ug/L	132-64-9	NE	NE	**48.4**	NE	NE	NE	**13**	**7.2**	<5.3	<5.0	**14**	<5.0	<5.0	<5.0	<5.0	<5.0	**11**	<5.0	<5.0	<5.0	<5.0
Fluoranthene	ug/L	206-44-0	NE	NE	**311**	NE	**130**	**140**	<5.0	**1.9**	**0.60**	**1.1**	**2.5**	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50
Fluorene	ug/L	86-73-7	NE	NE	**4370**	NE	**1100**	**5300**	**18**	**9.6**	**2.9**	**6.0**	**17**	<5.0	<0.50	<0.50	<0.50	<0.50	**12**	**2.5**	<0.50	<0.50	<0.50
Naphthalene	ug/L	91-20-3	**17.2**	**72.3**	**0.722**	8.9	NE	NE	**10**	**8.8**	**2.9**	**7.1**	**17**	<5.0	**1.7**	**1.8**	<0.50	**0.62**	**13**	**4.3**	**5.7**	**0.52**	<0.50
Pentachlorophenol	ug/L	87-86-5	NE	NE	**5.54**	NE	**0.03**	**0.04**	<5.0	<5.0	<5.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Phenanthrene	ug/L	85-01-8	NE	NE	**1430**	NE	NE	NE	**21**	**6.9**	**2.3**	**4.1**	**10**	<5.0	<0.50	<0.50	<0.50	<0.50	**10**	**1.5**	**1.7**	<0.50	<0.50
Pyrene	ug/L	129-00-0	NE	NE	**1430**	NE	**830**	**4000**	<5.0	**1.3**	<0.53	**0.71**	**1.8**	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	<0.50	<0.50

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/L = micrograms per liter
mg/L = milligrams per liter
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

TABLE 4. GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	CAS No.	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	MiHpt-21					MiHpt-22					MW-23		
Sample Date:									9/21/16	2/7/17	1/29/18	6/7/18	7/11/19	9/21/16	2/7/17	1/29/18	6/7/18	7/11/19	1/29/18	6/7/18	7/11/19
TPH 8015																					
TPH-GRO (C6-C10)	mg/L	C6C10GRO	NE	NE	NE	15	NE	NE	7.5	15	4.5	12	12	0.38	2.3	0.27	0.56	0.23	<0.1	<0.1	<0.1
TPH-DRO (C10-C28)	mg/L	C10C28DRO	NE	NE	NE	15	NE	NE	1.7	1.2	2.3	2.4	2.2	0.27	0.19	33	0.38	0.12	0.28	0.15	<0.10
TCL VOCs 8260B																					
Acetone	ug/L	67-64-1	2240000	9780000	13400	NE	NE	NE	<50	<100	19	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	ug/L	71-43-2	13.7	57.3	14.2	12	22	510	58	59	75	74	77	130	630	34	200	93	<1.0	<1.0	<1.0
Carbon Disulfide	ug/L	75-15-0	124	527	122	NE	NE	NE	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chloroform	ug/L	67-66-3	8	35.3	54.3	80	340	11000	<5.0	<10	<1.0	8.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cyclohexane	ug/L	110-82-7	103	424	3330	NE	NE	NE	560	710	460	1200	1500	10	<10	<10	<10	<10	<10	<10	<10
Ethylbenzene	ug/L	100-41-4	34.1	152	591	4.3	530	2100	150	160	73	140	170	1.6	16	<1.0	2.1	<1.0	<1.0	<1.0	<1.0
Isopropylbenzene	ug/L	98-82-8	89.3	383	19.9	NE	NE	NE	17	15	8.4	15	14	<1.0	1.6	1.2	<1.0	<1.0	<1.0	<1.0	<1.0
Methyl-t-butyl ether	ug/L	1634-04-4	4580	19600	524	15	NE	NE	<5.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	4.3	5.5	5.7
Methylcyclohexane	ug/L	108-87-2	NE	NE	NE	NE	NE	NE	460	690	340	670	740	<10	<10	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	91-20-3	17.2	72.3	0.722	8.9	NE	NE	6.4	<10	3.2	3.2	3.1	<1.0	3.1	1.3	<1.0	1.1	1.4	1.3	<1.0
Tetrachloroethene (PCE)	ug/L	127-18-4	5.8	24.9	10.4	5	6.9	33	47	64	26	60	76	<1.0	<1.0	<5.0	<1.0	<1.0	<5.0	<1.0	<1.0
Toluene	ug/L	108-88-3	1920	8100	949	43	510	6000	45	44	31	46	67	<1.0	3.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene (TCE)	ug/L	79-01-6	0.521	2.19	0.46	5	25	300	10	11	10	14	27	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	ug/L	156-59-2	NE	NE	2260	70	NE	NE	<1.0	<1.0	2.1	2.1	5.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	ug/L	156-60-5	NE	NE	157	100	140	10000	<1.0	<1.0	<1.0	1.3	6.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m,p-Xylenes	ug/L	108-38-3	150	1290	20.8	33	NE	NE	190	240	110	200	250	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	ug/L	95-47-6	47.2	208	20.9	33	NE	NE	9.1	11	4.6	7.6	11	<1.0	8.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
TCL SVOCs 8270C																					
2,4,5-Trichlorophenol	ug/L	95-95-4	NE	NE	7860	NE	300	600	53	19	11	32	32	<5.0	<5.0	<5.6	<5.0	<2.0	<5.0	<5.0	<2.0
2,4-Dichlorophenol	ug/L	120-83-2	NE	NE	1060	NE	77	290	710	220	120	370	290	<5.0	<5.0	<5.6	<5.0	<2.0	<5.0	<5.0	<2.0
2-Chlorophenol	ug/L	95-57-8	NE	NE	1110	NE	81	150	8.3	<5.0	<5.0	5.1	13	<5.0	<5.0	<5.6	<5.0	<5.0	<5.0	<5.0	<5.0
2-Methylnaphthalene	ug/L	91-57-6	NE	NE	59	NE	NE	NE	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.56	<0.50	0.69	<0.50	<0.50	<0.50
Acenaphthene	ug/L	83-32-9	NE	NE	2950	NE	670	990	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.56	<0.50	0.75	0.90	1.5	7.2
Acenaphthylene	ug/L	208-96-8	NE	NE	1430	NE	NE	NE	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.56	<0.50	<0.50	<0.50	<0.50	<0.50
Anthracene	ug/L	120-12-7	NE	NE	7850	NE	8300	40000	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.56	<0.50	<0.50	<0.50	<0.50	0.50
Biphenyl (Diphenyl)	ug/L	92-52-4	3.34	14.3	1.18	NE	NE	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.6	<5.0	<5.0	<5.0	<5.0	<5.0
Carbazole	ug/L	86-74-8	NE	NE	NE	NE	NE	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.6	<5.0	<5.0	<5.0	<5.0	<5.0
Dibenzofuran	ug/L	132-64-9	NE	NE	48.4	NE	NE	NE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.6	<5.0	<5.0	<5.0	<5.0	<5.0
Fluoranthene	ug/L	206-44-0	NE	NE	311	NE	130	140	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.56	<0.50	<0.50	<0.50	<0.50	0.67
Fluorene	ug/L	86-73-7	NE	NE	4370	NE	1100	5300	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.56	<0.50	<0.50	0.52	0.77	3.8
Naphthalene	ug/L	91-20-3	17.2	72.3	0.722	8.9	NE	NE	35	0.66	<0.50	26	48	<5.0	<0.50	<0.56	<0.50	0.99	<0.50	<0.50	<0.50
Pentachlorophenol	ug/L	87-86-5	NE	NE	5.54	NE	0.03	0.04	13	<5.0	<5.0	6.8	7.8	<5.0	<5.0	<5.6	<5.0	<5.0	<5.0	<5.0	<5.0
Phenanthrene	ug/L	85-01-8	NE	NE	1430	NE	NE	NE	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.56	<0.50	<0.50	0.60	<0.50	1.5
Pyrene	ug/L	129-00-0	NE	NE	1430	NE	830	4000	<5.0	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.56	<0.50	<0.50	<0.50	<0.50	<0.50

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/L = micrograms per liter
mg/L = milligrams per liter
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

TABLE 4. GROUNDWATER ANALYTICAL RESULTS (DETECTIONS ONLY)

FORMER ROBINSON TERMINAL NORTH
500 AND 501 NORTH UNION STREET
ALEXANDRIA, VA

Sample ID:	Units	CAS No.	VDEQ-T3RGSL	VDEQ-T3IGSL	VDEQ-T3CDSL	VDEQ-PDS	VDEQ-T2PWSSL	VDEQ-T2SWFSL	MW-24			MW-25		
Sample Date:									1/29/18	6/7/18	7/11/19	1/29/18	6/7/18	7/11/19
TPH 8015														
TPH-GRO (C6-C10)	mg/L	C6C10GRO	**NE**	**NE**	**NE**	**15**	**NE**	**NE**	<0.1	<0.1	<0.1	**0.11**	**0.16**	<0.1
TPH-DRO (C10-C28)	mg/L	C10C28DRO	**NE**	**NE**	**NE**	**15**	**NE**	**NE**	**1.1**	**0.61**	**0.13**	**0.45**	**0.33**	**0.16**
TCL VOCs 8260B														
Acetone	ug/L	67-64-1	**2240000**	**9780000**	**13400**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10
Benzene	ug/L	71-43-2	**13.7**	**57.3**	**14.2**	**12**	**22**	**510**	<1.0	<1.0	<1.0	**14**	**17**	**26**
Carbon Disulfide	ug/L	75-15-0	**124**	**527**	**122**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	**15**
Chloroform	ug/L	67-66-3	**8**	**35.3**	**54.3**	**80**	**340**	**11000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Cyclohexane	ug/L	110-82-7	**103**	**424**	**3330**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10
Ethylbenzene	ug/L	100-41-4	**34.1**	**152**	**591**	**4.3**	**530**	**2100**	<1.0	<1.0	<1.0	**2.3**	**2.1**	**2.8**
Isopropylbenzene	ug/L	98-82-8	**89.3**	**383**	**19.9**	**NE**	**NE**	**NE**	**1.7**	**2.7**	<1.0	**1.6**	**1.7**	**1.5**
Methyl-t-butyl ether	ug/L	1634-04-4	**4580**	**19600**	**524**	**15**	**NE**	**NE**	**3.9**	**1.9**	**1.5**	<1.0	<1.0	<1.0
Methylcyclohexane	ug/L	108-87-2	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	<10	<10	<10	<10	<10	<10
Naphthalene	ug/L	91-20-3	**17.2**	**72.3**	**0.722**	**8.9**	**NE**	**NE**	**2.6**	**3.4**	<1.0	**83**	**77**	**78**
Tetrachloroethene (PCE)	ug/L	127-18-4	**5.8**	**24.9**	**10.4**	**5**	**6.9**	**33**	<5.0	<1.0	<1.0	<5.0	<1.0	<1.0
Toluene	ug/L	108-88-3	**1920**	**8100**	**949**	**43**	**510**	**6000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene (TCE)	ug/L	79-01-6	**0.521**	**2.19**	**0.46**	**5**	**25**	**300**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,2-Dichloroethene	ug/L	156-59-2	**NE**	**NE**	**2260**	**70**	**NE**	**NE**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	ug/L	156-60-5	**NE**	**NE**	**157**	**100**	**140**	**10000**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m,p-Xylenes	ug/L	108-38-3	**150**	**1290**	**20.8**	**33**	**NE**	**NE**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	ug/L	95-47-6	**47.2**	**208**	**20.9**	**33**	**NE**	**NE**	<1.0	<1.0	<1.0	**2.4**	**1.9**	**2.5**
TCL SVOCs 8270C														
2,4,5-Trichlorophenol	ug/L	95-95-4	**NE**	**NE**	**7860**	**NE**	**300**	**600**	<5.0	<5.0	<2.0	<5.0	<5.0	<2.0
2,4-Dichlorophenol	ug/L	120-83-2	**NE**	**NE**	**1060**	**NE**	**77**	**290**	<5.0	<5.0	<2.0	<5.0	<5.0	<2.0
2-Chlorophenol	ug/L	95-57-8	**NE**	**NE**	**1110**	**NE**	**81**	**150**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2-Methylnaphthalene	ug/L	91-57-6	**NE**	**NE**	**59**	**NE**	**NE**	**NE**	<0.50	<0.50	<0.50	<0.50	**0.58**	**1.9**
Acenaphthene	ug/L	83-32-9	**NE**	**NE**	**2950**	**NE**	**670**	**990**	**2.5**	**8.3**	**8.0**	**0.81**	**1.5**	**5.0**
Acenaphthylene	ug/L	208-96-8	**NE**	**NE**	**1430**	**NE**	**NE**	**NE**	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Anthracene	ug/L	120-12-7	**NE**	**NE**	**7850**	**NE**	**8300**	**40000**	**0.55**	**1.1**	**0.73**	<0.50	<0.50	<0.50
Biphenyl (Diphenyl)	ug/L	92-52-4	**3.34**	**14.3**	**1.18**	**NE**	**NE**	**NE**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Carbazole	ug/L	86-74-8	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dibenzofuran	ug/L	132-64-9	**NE**	**NE**	**48.4**	**NE**	**NE**	**NE**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Fluoranthene	ug/L	206-44-0	**NE**	**NE**	**311**	**NE**	**130**	**140**	**1.1**	**0.91**	**0.87**	<0.50	<0.50	<0.50
Fluorene	ug/L	86-73-7	**NE**	**NE**	**4370**	**NE**	**1100**	**5300**	**1.3**	**3.9**	**3.8**	<0.50	**0.75**	**2.5**
Naphthalene	ug/L	91-20-3	**17.2**	**72.3**	**0.722**	**8.9**	**NE**	**NE**	<0.50	<0.50	<0.50	**3.5**	**6.1**	**20**
Pentachlorophenol	ug/L	87-86-5	**NE**	**NE**	**5.54**	**NE**	**0.03**	**0.04**	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Phenanthrene	ug/L	85-01-8	**NE**	**NE**	**1430**	**NE**	**NE**	**NE**	**2.2**	**5.8**	**3.5**	<0.50	**1.1**	**2.6**
Pyrene	ug/L	129-00-0	**NE**	**NE**	**1430**	**NE**	**830**	**4000**	**0.88**	**0.59**	**0.56**	<0.50	<0.50	<0.50

NOTES:
TPH = total petroleum hydrocarbons
TPH-DRO = diesel range TPH
TPH-GRO = gasoline range TPH
TCL = Target Compound List
VOCs = volatile organic compounds
SVOCs = semi-VOCs
EPA 8260B = United States Environmental Protection Agency SW-846 analytical method
ug/L = micrograms per liter
mg/L = milligrams per liter
<1.0 = not detected above analytical method reporting limit (RL)
VDEQ = Commonwealth of Virginia Department of Environmental Quality
VDEQ-T3RGSL = VDEQ Tier III residential groundwater vapor intrusion screening level
VDEQ-T3CGSL = VDEQ Tier III industrial groundwater vapor intrusion screening level
VDEQ-T3CDSL = VDEQ Tier III construction direct (<15 feet) screening level
VDEQ-PDS = general permit discharge standard for petroleum contaminated water
VDEQ-T2PWSSL = VDEQ Tier II public water supply screening level
VDEQ-T2SWFSL = VDEQ Tier II surface water fresh screening level
NE = not established
Bold and right justification designates target compound was detected at a concentration above RL
Yellow highlighting designates target compound was detected at a concentration above the VDEQ groundwater screening level in at least 1 sample
Blue highlighting designates target compound was detected at a concentration above the VDEQ surface water screening level in at least 1 sample
Green highlighting designates target compound was detected at a concentration above the VDEQ groundwater and surface water screening level in at least 1 sample

ATTACHMENT 1

LABORATORY REPORT OF ANALYSIS

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

July 19, 2019

Mike Bruzzesi
A-Zone Environmental Services
2181 Berryville Pike
Charles Town, WV 25414

Reference: PSS Project No: **19071205**
Project Name: Robinson Terminal North
Project Location: Alexandria, VA

Dear Mike Bruzzesi:

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Project number(s) **19071205**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on August 16, 2019, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt, the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal
Laboratory Manager

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Explanation of Qualifiers

Project Name: Robinson Terminal North

PSS Project No.: 19071205

The following samples were received under chain of custody by Phase Separation Science (PSS) on 07/12/2019 at 11:25 am

PSS Sample ID	Sample ID	Matrix	Date/Time Collected
19071205-001	MW-25-071119	GROUND WATER	07/11/19 09:45
19071205-002	TEC-MW4-071119	GROUND WATER	07/11/19 10:05
19071205-003	TEC-MW2-071119	GROUND WATER	07/11/19 10:30
19071205-004	MW-24-071119	GROUND WATER	07/11/19 11:00
19071205-005	MiHpt-8-071119	GROUND WATER	07/11/19 11:05
19071205-006	MiHpt-21-071119	GROUND WATER	07/11/19 12:30
19071205-007	MiHpt-7-071119	GROUND WATER	07/11/19 13:00
19071205-008	MiHpt-20-071119	GROUND WATER	07/11/19 13:25
19071205-009	MiHpt-5-071119	GROUND WATER	07/11/19 14:10
19071205-010	MiHpt-22-071119	GROUND WATER	07/11/19 14:30
19071205-011	ECS-MW4-071119	GROUND WATER	07/11/19 15:20
19071205-012	MiHpt-15-071119	GROUND WATER	07/11/19 15:20
19071205-013	MiHpt-14-071119	GROUND WATER	07/11/19 16:45
19071205-014	MW-23-071119	GROUND WATER	07/11/19 17:05

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Explanation of Qualifiers

Project Name: Robinson Terminal North

PSS Project No.: 19071205

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-25-071119 **Date/Time Sampled: 07/11/2019 09:45** **PSS Sample ID: 19071205-001**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	07/15/19	07/16/19 22:30	1064
Arsenic	**2.2**	ug/L	1.0		1	07/15/19	07/16/19 22:30	1064
Beryllium	**3.2**	ug/L	1.0		1	07/15/19	07/17/19 18:26	1064
Cadmium	ND	ug/L	1.0		1	07/15/19	07/16/19 22:30	1064
Chromium	**4.7**	ug/L	1.0		1	07/15/19	07/16/19 22:30	1064
Copper	ND	ug/L	1.0		1	07/15/19	07/16/19 22:30	1064
Lead	**4.7**	ug/L	1.0		1	07/15/19	07/17/19 18:26	1064
Mercury	ND	ug/L	0.20		1	07/15/19	07/17/19 18:26	1064
Nickel	**4.8**	ug/L	1.0		1	07/15/19	07/16/19 22:30	1064
Selenium	ND	ug/L	1.0		1	07/15/19	07/16/19 22:30	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 18:26	1064
Thallium	ND	ug/L	1.0		1	07/15/19	07/17/19 18:26	1064
Zinc	**35**	ug/L	20		1	07/15/19	07/16/19 22:30	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**0.16**	mg/L	0.10		1	07/12/19	07/15/19 11:52	1059
Surrogate(s)	***Recovery***		***Limits***					
o-Terphenyl	*71*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 11:52*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	07/15/19	07/15/19 15:54	1045
Surrogate(s)	***Recovery***		***Limits***					
a,a,a-Trifluorotoluene	*94*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 15:54*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-25-071119 **Date/Time Sampled: 07/11/2019 09:45** **PSS Sample ID: 19071205-001**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 165978 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/12/19	07/12/19 17:06	1011
Benzene	**26**	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Bromochloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Bromoform	ND	ug/L	5.0		1	07/12/19	07/12/19 17:06	1011
Bromomethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/12/19	07/12/19 17:06	1011
Carbon Disulfide	**15**	ug/L	10		1	07/12/19	07/12/19 17:06	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Chlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Chloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Chloroform	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Chloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Cyclohexane	ND	ug/L	10		1	07/12/19	07/12/19 17:06	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/12/19	07/12/19 17:06	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Ethylbenzene	**2.8**	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/12/19	07/12/19 17:06	1011
Isopropylbenzene	**1.5**	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Methyl Acetate	ND	ug/L	10		1	07/12/19	07/12/19 17:06	1011
Methylcyclohexane	ND	ug/L	10		1	07/12/19	07/12/19 17:06	1011
Methylene chloride	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-25-071119 **Date/Time Sampled: 07/11/2019 09:45** **PSS Sample ID: 19071205-001**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

Qualifier(s): See Batch 165978 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/12/19	07/12/19 17:06	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Naphthalene	**78**	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Styrene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Toluene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Trichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/12/19	07/12/19 17:06	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
Vinyl chloride	ND	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011
m&p-Xylene	ND	ug/L	2.0		1	07/12/19	07/12/19 17:06	1011
o-Xylene	**2.5**	ug/L	1.0		1	07/12/19	07/12/19 17:06	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*101*	*%*	*87-109*		*1*	*07/12/19*	*07/12/19 17:06*	*1011*
Dibromofluoromethane	*99*	*%*	*93-111*		*1*	*07/12/19*	*07/12/19 17:06*	*1011*
Toluene-D8	*99*	*%*	*91-109*		*1*	*07/12/19*	*07/12/19 17:06*	*1011*

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	**5.0**	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Acenaphthylene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-25-071119 **Date/Time Sampled: 07/11/2019 09:45** **PSS Sample ID: 19071205-001**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Carbazole	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
2-Chlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Dibenzofuran	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
2,4-Dichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 07:41	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 07:41	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Fluorene	**2.5**	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-25-071119 **Date/Time Sampled: 07/11/2019 09:45** **PSS Sample ID: 19071205-001**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
2-Methylnaphthalene	**1.9**	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 07:41	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 07:41	1055
Naphthalene	**20**	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Pentachlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Phenanthrene	**2.6**	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 07:41	1055
Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 07:41	1055
2,4,5-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 07:41	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 07:41	1055

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*88*	*%*	*35-107*		*1*	*07/15/19*	*07/16/19 07:41*	*1055*
2-Fluorophenol	*80*	*%*	*32-106*		*1*	*07/15/19*	*07/16/19 07:41*	*1055*
Nitrobenzene-d5	*85*	*%*	*34-123*		*1*	*07/15/19*	*07/16/19 07:41*	*1055*
Phenol-d6	*80*	*%*	*36-111*		*1*	*07/15/19*	*07/16/19 07:41*	*1055*
Terphenyl-D14	*101*	*%*	*43-143*		*1*	*07/15/19*	*07/16/19 07:41*	*1055*
2,4,6-Tribromophenol	*94*	*%*	*26-122*		*1*	*07/15/19*	*07/16/19 07:41*	*1055*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: TEC-MW4-071119 **Date/Time Sampled: 07/11/2019 10:05** **PSS Sample ID: 19071205-002**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	07/15/19	07/16/19 22:58	1064
Arsenic	**2.0**	ug/L	1.0		1	07/15/19	07/16/19 22:58	1064
Beryllium	ND	ug/L	1.0		1	07/15/19	07/17/19 18:31	1064
Cadmium	ND	ug/L	1.0		1	07/15/19	07/16/19 22:58	1064
Chromium	ND	ug/L	1.0		1	07/15/19	07/16/19 22:58	1064
Copper	ND	ug/L	1.0		1	07/15/19	07/16/19 22:58	1064
Lead	**15**	ug/L	1.0		1	07/15/19	07/17/19 18:31	1064
Mercury	ND	ug/L	0.20		1	07/15/19	07/17/19 18:31	1064
Nickel	ND	ug/L	1.0		1	07/15/19	07/16/19 22:58	1064
Selenium	ND	ug/L	1.0		1	07/15/19	07/16/19 22:58	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 18:31	1064
Thallium	ND	ug/L	1.0		1	07/15/19	07/17/19 18:31	1064
Zinc	ND	ug/L	20		1	07/15/19	07/16/19 22:58	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**0.11**	mg/L	0.10		1	07/12/19	07/15/19 13:32	1059
Surrogate(s)	***Recovery***		***Limits***					
o-Terphenyl	*80*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 13:32*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	07/15/19	07/15/19 16:17	1045
Surrogate(s)	***Recovery***		***Limits***					
a,a,a-Trifluorotoluene	*97*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 16:17*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: TEC-MW4-071119 **Date/Time Sampled: 07/11/2019 10:05** **PSS Sample ID: 19071205-002**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/15/19	07/15/19 11:09	1011
Benzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Bromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Bromoform	ND	ug/L	5.0		1	07/15/19	07/15/19 11:09	1011
Bromomethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/15/19	07/15/19 11:09	1011
Carbon Disulfide	ND	ug/L	10		1	07/15/19	07/15/19 11:09	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Chlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Chloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Chloroform	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Chloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Cyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 11:09	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/15/19	07/15/19 11:09	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Ethylbenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 11:09	1011
Isopropylbenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Methyl Acetate	ND	ug/L	10		1	07/15/19	07/15/19 11:09	1011
Methylcyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 11:09	1011
Methylene chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: TEC-MW4-071119 **Date/Time Sampled: 07/11/2019 10:05** **PSS Sample ID: 19071205-002**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 11:09	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Naphthalene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Styrene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Toluene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Trichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/15/19	07/15/19 11:09	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
Vinyl chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011
m&p-Xylene	ND	ug/L	2.0		1	07/15/19	07/15/19 11:09	1011
o-Xylene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:09	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*102*	*%*	*87-109*		*1*	*07/15/19*	*07/15/19 11:09*	*1011*
Dibromofluoromethane	*99*	*%*	*93-111*		*1*	*07/15/19*	*07/15/19 11:09*	*1011*
Toluene-D8	*100*	*%*	*91-109*		*1*	*07/15/19*	*07/15/19 11:09*	*1011*

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Acenaphthylene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: TEC-MW4-071119 **Date/Time Sampled: 07/11/2019 10:05** **PSS Sample ID: 19071205-002**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Carbazole	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
2-Chlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Dibenzofuran	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
2,4-Dichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 00:52	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 00:52	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Fluorene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: TEC-MW4-071119 **Date/Time Sampled: 07/11/2019 10:05** **PSS Sample ID: 19071205-002**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
2-Methylnaphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 00:52	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 00:52	1055
Naphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Pentachlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Phenanthrene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 00:52	1055
Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 00:52	1055
2,4,5-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 00:52	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 00:52	1055

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*95*	*%*	*35-107*		*1*	*07/15/19*	*07/16/19 00:52*	*1055*
2-Fluorophenol	*80*	*%*	*32-106*		*1*	*07/15/19*	*07/16/19 00:52*	*1055*
Nitrobenzene-d5	*91*	*%*	*34-123*		*1*	*07/15/19*	*07/16/19 00:52*	*1055*
Phenol-d6	*77*	*%*	*36-111*		*1*	*07/15/19*	*07/16/19 00:52*	*1055*
Terphenyl-D14	*97*	*%*	*43-143*		*1*	*07/15/19*	*07/16/19 00:52*	*1055*
2,4,6-Tribromophenol	*91*	*%*	*26-122*		*1*	*07/15/19*	*07/16/19 00:52*	*1055*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: TEC-MW2-071119 **Date/Time Sampled: 07/11/2019 10:30** **PSS Sample ID: 19071205-003**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	07/15/19	07/16/19 23:04	1064
Arsenic	**7.9**	ug/L	1.0		1	07/15/19	07/16/19 23:04	1064
Beryllium	ND	ug/L	1.0		1	07/15/19	07/17/19 18:37	1064
Cadmium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:04	1064
Chromium	**2.0**	ug/L	1.0		1	07/15/19	07/16/19 23:04	1064
Copper	**3.6**	ug/L	1.0		1	07/15/19	07/16/19 23:04	1064
Lead	**14**	ug/L	1.0		1	07/15/19	07/17/19 18:37	1064
Mercury	ND	ug/L	0.20		1	07/15/19	07/17/19 18:37	1064
Nickel	**2.8**	ug/L	1.0		1	07/15/19	07/16/19 23:04	1064
Selenium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:04	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 18:37	1064
Thallium	ND	ug/L	1.0		1	07/15/19	07/17/19 18:37	1064
Zinc	**79**	ug/L	20		1	07/15/19	07/16/19 23:04	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.13		1	07/12/19	07/15/19 13:32	1059
Surrogate(s)	***Recovery***		***Limits***					
o-Terphenyl	*90*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 13:32*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	07/15/19	07/15/19 16:40	1045
Surrogate(s)	***Recovery***		***Limits***					
a,a,a-Trifluorotoluene	*99*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 16:40*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: TEC-MW2-071119 **Date/Time Sampled: 07/11/2019 10:30** **PSS Sample ID: 19071205-003**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 165978 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/12/19	07/12/19 17:52	1011
Benzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Bromochloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Bromoform	ND	ug/L	5.0		1	07/12/19	07/12/19 17:52	1011
Bromomethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/12/19	07/12/19 17:52	1011
Carbon Disulfide	ND	ug/L	10		1	07/12/19	07/12/19 17:52	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Chlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Chloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Chloroform	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Chloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Cyclohexane	ND	ug/L	10		1	07/12/19	07/12/19 17:52	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/12/19	07/12/19 17:52	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Ethylbenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/12/19	07/12/19 17:52	1011
Isopropylbenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Methyl Acetate	ND	ug/L	10		1	07/12/19	07/12/19 17:52	1011
Methylcyclohexane	ND	ug/L	10		1	07/12/19	07/12/19 17:52	1011
Methylene chloride	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: TEC-MW2-071119 **Date/Time Sampled: 07/11/2019 10:30** **PSS Sample ID: 19071205-003**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 165978 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/12/19	07/12/19 17:52	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Naphthalene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Styrene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Toluene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Trichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/12/19	07/12/19 17:52	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
Vinyl chloride	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011
m&p-Xylene	ND	ug/L	2.0		1	07/12/19	07/12/19 17:52	1011
o-Xylene	ND	ug/L	1.0		1	07/12/19	07/12/19 17:52	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*102*	*%*	*87-109*		*1*	*07/12/19*	*07/12/19 17:52*	*1011*
Dibromofluoromethane	*99*	*%*	*93-111*		*1*	*07/12/19*	*07/12/19 17:52*	*1011*
Toluene-D8	*101*	*%*	*91-109*		*1*	*07/12/19*	*07/12/19 17:52*	*1011*

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Acenaphthylene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: TEC-MW2-071119 **Date/Time Sampled: 07/11/2019 10:30** **PSS Sample ID: 19071205-003**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Carbazole	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
2-Chlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Dibenzofuran	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
2,4-Dichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 01:21	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 01:21	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Fluorene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: TEC-MW2-071119 **Date/Time Sampled: 07/11/2019 10:30** **PSS Sample ID: 19071205-003**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
2-Methylnaphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 01:21	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 01:21	1055
Naphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Pentachlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Phenanthrene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:21	1055
Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 01:21	1055
2,4,5-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 01:21	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 01:21	1055

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*93*	*%*	*35-107*		*1*	*07/15/19*	*07/16/19 01:21*	*1055*
2-Fluorophenol	*85*	*%*	*32-106*		*1*	*07/15/19*	*07/16/19 01:21*	*1055*
Nitrobenzene-d5	*94*	*%*	*34-123*		*1*	*07/15/19*	*07/16/19 01:21*	*1055*
Phenol-d6	*82*	*%*	*36-111*		*1*	*07/15/19*	*07/16/19 01:21*	*1055*
Terphenyl-D14	*104*	*%*	*43-143*		*1*	*07/15/19*	*07/16/19 01:21*	*1055*
2,4,6-Tribromophenol	*98*	*%*	*26-122*		*1*	*07/15/19*	*07/16/19 01:21*	*1055*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-24-071119 **Date/Time Sampled: 07/11/2019 11:00** **PSS Sample ID: 19071205-004**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	07/15/19	07/16/19 23:32	1064
Arsenic	**4.7**	ug/L	1.0		1	07/15/19	07/16/19 23:32	1064
Beryllium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:32	1064
Cadmium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:32	1064
Chromium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:32	1064
Copper	**3.2**	ug/L	1.0		1	07/15/19	07/17/19 18:42	1064
Lead	**620**	ug/L	1.0		1	07/15/19	07/17/19 18:42	1064
Mercury	ND	ug/L	0.20		1	07/15/19	07/17/19 18:42	1064
Nickel	**1.5**	ug/L	1.0		1	07/15/19	07/16/19 23:32	1064
Selenium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:32	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 18:42	1064
Thallium	ND	ug/L	1.0		1	07/15/19	07/17/19 18:42	1064
Zinc	**160**	ug/L	20		1	07/15/19	07/16/19 23:32	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**0.13**	mg/L	0.10		1	07/12/19	07/15/19 13:57	1059

Surrogate(s)	***Recovery***		***Limits***				
o-Terphenyl	*89*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 13:57*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	07/15/19	07/15/19 17:03	1045

Surrogate(s)	***Recovery***		***Limits***				
a,a,a-Trifluorotoluene	*94*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 17:03*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-24-071119 **Date/Time Sampled: 07/11/2019 11:00** **PSS Sample ID: 19071205-004**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 165978 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/12/19	07/12/19 18:14	1011
Benzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Bromochloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Bromoform	ND	ug/L	5.0		1	07/12/19	07/12/19 18:14	1011
Bromomethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/12/19	07/12/19 18:14	1011
Carbon Disulfide	ND	ug/L	10		1	07/12/19	07/12/19 18:14	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Chlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Chloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Chloroform	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Chloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Cyclohexane	ND	ug/L	10		1	07/12/19	07/12/19 18:14	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/12/19	07/12/19 18:14	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Ethylbenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/12/19	07/12/19 18:14	1011
Isopropylbenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Methyl Acetate	ND	ug/L	10		1	07/12/19	07/12/19 18:14	1011
Methylcyclohexane	ND	ug/L	10		1	07/12/19	07/12/19 18:14	1011
Methylene chloride	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-24-071119 **Date/Time Sampled: 07/11/2019 11:00** **PSS Sample ID: 19071205-004**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

Qualifier(s): See Batch 165978 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/12/19	07/12/19 18:14	1011
Methyl-t-Butyl Ether	**1.5**	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Naphthalene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Styrene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Toluene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Trichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/12/19	07/12/19 18:14	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
Vinyl chloride	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011
m&p-Xylene	ND	ug/L	2.0		1	07/12/19	07/12/19 18:14	1011
o-Xylene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:14	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*100*	*%*	*87-109*		*1*	*07/12/19*	*07/12/19 18:14*	*1011*
Dibromofluoromethane	*98*	*%*	*93-111*		*1*	*07/12/19*	*07/12/19 18:14*	*1011*
Toluene-D8	*101*	*%*	*91-109*		*1*	*07/12/19*	*07/12/19 18:14*	*1011*

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	**8.0**	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Acenaphthylene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Anthracene	**0.73**	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-24-071119 **Date/Time Sampled: 07/11/2019 11:00** **PSS Sample ID: 19071205-004**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Carbazole	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
2-Chlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Dibenzofuran	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
2,4-Dichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 01:50	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 01:50	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Fluoranthene	**0.87**	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Fluorene	**3.8**	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-24-071119 **Date/Time Sampled: 07/11/2019 11:00** **PSS Sample ID: 19071205-004**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
2-Methylnaphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 01:50	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 01:50	1055
Naphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Pentachlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Phenanthrene	**3.5**	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 01:50	1055
Pyrene	**0.56**	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 01:50	1055
2,4,5-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 01:50	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 01:50	1055

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*93*	*%*	*35-107*		*1*	*07/15/19*	*07/16/19 01:50*	*1055*
2-Fluorophenol	*81*	*%*	*32-106*		*1*	*07/15/19*	*07/16/19 01:50*	*1055*
Nitrobenzene-d5	*90*	*%*	*34-123*		*1*	*07/15/19*	*07/16/19 01:50*	*1055*
Phenol-d6	*79*	*%*	*36-111*		*1*	*07/15/19*	*07/16/19 01:50*	*1055*
Terphenyl-D14	*100*	*%*	*43-143*		*1*	*07/15/19*	*07/16/19 01:50*	*1055*
2,4,6-Tribromophenol	*100*	*%*	*26-122*		*1*	*07/15/19*	*07/16/19 01:50*	*1055*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-8-071119 **Date/Time Sampled: 07/11/2019 11:05** **PSS Sample ID: 19071205-005**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	07/15/19	07/16/19 23:37	1064
Arsenic	**3.6**	ug/L	1.0		1	07/15/19	07/16/19 23:37	1064
Beryllium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:37	1064
Cadmium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:37	1064
Chromium	**2.3**	ug/L	1.0		1	07/15/19	07/16/19 23:37	1064
Copper	**3.3**	ug/L	1.0		1	07/15/19	07/17/19 18:48	1064
Lead	**24**	ug/L	1.0		1	07/15/19	07/17/19 18:48	1064
Mercury	ND	ug/L	0.20		1	07/15/19	07/17/19 18:48	1064
Nickel	**2.0**	ug/L	1.0		1	07/15/19	07/16/19 23:37	1064
Selenium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:37	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 18:48	1064
Thallium	ND	ug/L	1.0		1	07/15/19	07/17/19 18:48	1064
Zinc	**45**	ug/L	20		1	07/15/19	07/16/19 23:37	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.12		1	07/12/19	07/15/19 13:57	1059

Surrogate(s)	***Recovery***		***Limits***				
o-Terphenyl	*75*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 13:57*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	07/15/19	07/15/19 17:26	1045

Surrogate(s)	***Recovery***		***Limits***				
a,a,a-Trifluorotoluene	*95*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 17:26*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-8-071119 **Date/Time Sampled: 07/11/2019 11:05** **PSS Sample ID: 19071205-005**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 165978 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/12/19	07/12/19 18:37	1011
Benzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Bromochloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Bromoform	ND	ug/L	5.0		1	07/12/19	07/12/19 18:37	1011
Bromomethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/12/19	07/12/19 18:37	1011
Carbon Disulfide	ND	ug/L	10		1	07/12/19	07/12/19 18:37	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Chlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Chloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Chloroform	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Chloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Cyclohexane	ND	ug/L	10		1	07/12/19	07/12/19 18:37	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/12/19	07/12/19 18:37	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Ethylbenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/12/19	07/12/19 18:37	1011
Isopropylbenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Methyl Acetate	ND	ug/L	10		1	07/12/19	07/12/19 18:37	1011
Methylcyclohexane	ND	ug/L	10		1	07/12/19	07/12/19 18:37	1011
Methylene chloride	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-8-071119 **Date/Time Sampled: 07/11/2019 11:05** **PSS Sample ID: 19071205-005**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 165978 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/12/19	07/12/19 18:37	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Naphthalene	**20**	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Styrene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Toluene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Trichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/12/19	07/12/19 18:37	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
Vinyl chloride	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011
m&p-Xylene	ND	ug/L	2.0		1	07/12/19	07/12/19 18:37	1011
o-Xylene	ND	ug/L	1.0		1	07/12/19	07/12/19 18:37	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*101*	*%*	*87-109*		*1*	*07/12/19*	*07/12/19 18:37*	*1011*
Dibromofluoromethane	*100*	*%*	*93-111*		*1*	*07/12/19*	*07/12/19 18:37*	*1011*
Toluene-D8	*101*	*%*	*91-109*		*1*	*07/12/19*	*07/12/19 18:37*	*1011*

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	**1.8**	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Acenaphthylene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-8-071119 **Date/Time Sampled: 07/11/2019 11:05** **PSS Sample ID: 19071205-005**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Carbazole	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
2-Chlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Dibenzofuran	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
2,4-Dichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 04:16	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 04:16	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Fluorene	**0.70**	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-8-071119 **Date/Time Sampled: 07/11/2019 11:05** **PSS Sample ID: 19071205-005**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
2-Methylnaphthalene	**1.0**	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 04:16	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 04:16	1055
Naphthalene	**4.8**	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Pentachlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Phenanthrene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:16	1055
Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 04:16	1055
2,4,5-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 04:16	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 04:16	1055

Surrogate(s)	***Recovery***		***Limits***				
2-Fluorobiphenyl	*91*	*%*	*35-107*		*1*	*07/15/19*	*07/16/19 04:16*	*1055*
2-Fluorophenol	*80*	*%*	*32-106*		*1*	*07/15/19*	*07/16/19 04:16*	*1055*
Nitrobenzene-d5	*88*	*%*	*34-123*		*1*	*07/15/19*	*07/16/19 04:16*	*1055*
Phenol-d6	*80*	*%*	*36-111*		*1*	*07/15/19*	*07/16/19 04:16*	*1055*
Terphenyl-D14	*100*	*%*	*43-143*		*1*	*07/15/19*	*07/16/19 04:16*	*1055*
2,4,6-Tribromophenol	*95*	*%*	*26-122*		*1*	*07/15/19*	*07/16/19 04:16*	*1055*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-21-071119 **Date/Time Sampled: 07/11/2019 12:30** **PSS Sample ID: 19071205-006**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	07/15/19	07/16/19 23:43	1064
Arsenic	**460**	ug/L	1.0		1	07/15/19	07/16/19 23:43	1064
Beryllium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:43	1064
Cadmium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:43	1064
Chromium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:43	1064
Copper	ND	ug/L	1.0		1	07/15/19	07/17/19 18:53	1064
Lead	ND	ug/L	1.0		1	07/15/19	07/17/19 18:53	1064
Mercury	ND	ug/L	0.20		1	07/15/19	07/17/19 18:53	1064
Nickel	**2.1**	ug/L	1.0		1	07/15/19	07/16/19 23:43	1064
Selenium	**2.3**	ug/L	1.0		1	07/15/19	07/16/19 23:43	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 18:53	1064
Thallium	ND	ug/L	1.0		1	07/15/19	07/17/19 18:53	1064
Zinc	**21**	ug/L	20		1	07/15/19	07/16/19 23:43	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

LF/DF - Lighter fuel/oil and No. 2/diesel fuel patterns observed in sample.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**2.2**	mg/L	0.10	LF	1	07/12/19	07/15/19 14:21	1059

Surrogate(s)	***Recovery***		***Limits***				
o-Terphenyl	*101*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 14:21*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	**12,000**	ug/L	100		1	07/15/19	07/15/19 17:49	1045

Surrogate(s)	***Recovery***		***Limits***				
a,a,a-Trifluorotoluene	*98*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 17:49*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-21-071119 **Date/Time Sampled: 07/11/2019 12:30** **PSS Sample ID: 19071205-006**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 165978 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/12/19	07/12/19 19:00	1011
Benzene	**77**	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Bromochloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Bromoform	ND	ug/L	5.0		1	07/12/19	07/12/19 19:00	1011
Bromomethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/12/19	07/12/19 19:00	1011
Carbon Disulfide	ND	ug/L	10		1	07/12/19	07/12/19 19:00	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Chlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Chloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Chloroform	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Chloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Cyclohexane	**1,500**	ug/L	200		20	07/12/19	07/15/19 16:49	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/12/19	07/12/19 19:00	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
cis-1,2-Dichloroethene	**5.4**	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
trans-1,2-Dichloroethene	**6.1**	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Ethylbenzene	**170**	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/12/19	07/12/19 19:00	1011
Isopropylbenzene	**14**	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Methyl Acetate	ND	ug/L	10		1	07/12/19	07/12/19 19:00	1011
Methylcyclohexane	**740**	ug/L	200		20	07/12/19	07/15/19 16:49	1011
Methylene chloride	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-21-071119 **Date/Time Sampled: 07/11/2019 12:30** **PSS Sample ID: 19071205-006**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

Qualifier(s): See Batch 165978 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/12/19	07/12/19 19:00	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Naphthalene	**3.1**	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Styrene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Tetrachloroethene	**76**	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Toluene	**67**	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Trichloroethene	**27**	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/12/19	07/12/19 19:00	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
Vinyl chloride	ND	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011
m&p-Xylene	**250**	ug/L	2.0		1	07/12/19	07/12/19 19:00	1011
o-Xylene	**11**	ug/L	1.0		1	07/12/19	07/12/19 19:00	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*99*	*%*	*87-109*	*1*	*07/12/19*	*07/12/19 19:00*	*1011*
Dibromofluoromethane	*94*	*%*	*93-111*	*1*	*07/12/19*	*07/12/19 19:00*	*1011*
Toluene-D8	*102*	*%*	*91-109*	*1*	*07/12/19*	*07/12/19 19:00*	*1011*
4-Bromofluorobenzene	*101*	*%*	*87-109*	*20*	*07/15/19*	*07/15/19 16:49*	*1011*
Dibromofluoromethane	*97*	*%*	*93-111*	*20*	*07/15/19*	*07/15/19 16:49*	*1011*
Toluene-D8	*101*	*%*	*91-109*	*20*	*07/15/19*	*07/15/19 16:49*	*1011*

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Acenaphthylene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-21-071119 **Date/Time Sampled: 07/11/2019 12:30** **PSS Sample ID: 19071205-006**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Carbazole	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
2-Chlorophenol	**13**	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Dibenzofuran	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
2,4-Dichlorophenol	**290**	ug/L	10		5	07/15/19	07/16/19 13:16	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 06:42	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Fluorene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-21-071119 **Date/Time Sampled: 07/11/2019 12:30** **PSS Sample ID: 19071205-006**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
2-Methylnaphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 06:42	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 06:42	1055
Naphthalene	**48**	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Pentachlorophenol	**7.8**	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Phenanthrene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:42	1055
Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 06:42	1055
2,4,5-Trichlorophenol	**32**	ug/L	2.0		1	07/15/19	07/16/19 06:42	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 06:42	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-21-071119 **Date/Time Sampled: 07/11/2019 12:30** **PSS Sample ID: 19071205-006**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

Surrogate(s)	Recovery		Limits				
2-Fluorobiphenyl	*91*	*%*	*35-107*	*1*	*07/15/19*	*07/16/19 06:42*	*1055*
2-Fluorophenol	*83*	*%*	*32-106*	*1*	*07/15/19*	*07/16/19 06:42*	*1055*
Nitrobenzene-d5	*86*	*%*	*34-123*	*1*	*07/15/19*	*07/16/19 06:42*	*1055*
Phenol-d6	*86*	*%*	*36-111*	*1*	*07/15/19*	*07/16/19 06:42*	*1055*
Terphenyl-D14	*102*	*%*	*43-143*	*1*	*07/15/19*	*07/16/19 06:42*	*1055*
2,4,6-Tribromophenol	*104*	*%*	*26-122*	*1*	*07/15/19*	*07/16/19 06:42*	*1055*
2-Fluorobiphenyl	*80*	*%*	*35-107*	*5*	*07/15/19*	*07/16/19 13:16*	*1055*
2-Fluorophenol	*69*	*%*	*32-106*	*5*	*07/15/19*	*07/16/19 13:16*	*1055*
Nitrobenzene-d5	*69*	*%*	*34-123*	*5*	*07/15/19*	*07/16/19 13:16*	*1055*
Phenol-d6	*67*	*%*	*36-111*	*5*	*07/15/19*	*07/16/19 13:16*	*1055*
Terphenyl-D14	*85*	*%*	*43-143*	*5*	*07/15/19*	*07/16/19 13:16*	*1055*
2,4,6-Tribromophenol	*82*	*%*	*26-122*	*5*	*07/15/19*	*07/16/19 13:16*	*1055*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-7-071119 **Date/Time Sampled: 07/11/2019 13:00** **PSS Sample ID: 19071205-007**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	07/15/19	07/16/19 23:48	1064
Arsenic	**12**	ug/L	1.0		1	07/15/19	07/16/19 23:48	1064
Beryllium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:48	1064
Cadmium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:48	1064
Chromium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:48	1064
Copper	**4.8**	ug/L	1.0		1	07/15/19	07/17/19 18:59	1064
Lead	**1.5**	ug/L	1.0		1	07/15/19	07/17/19 18:59	1064
Mercury	ND	ug/L	0.20		1	07/15/19	07/17/19 18:59	1064
Nickel	ND	ug/L	1.0		1	07/15/19	07/16/19 23:48	1064
Selenium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:48	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 18:59	1064
Thallium	ND	ug/L	1.0		1	07/15/19	07/17/19 18:59	1064
Zinc	**190**	ug/L	20		1	07/15/19	07/16/19 23:48	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**2.7**	mg/L	0.10		1	07/12/19	07/15/19 14:21	1059
Surrogate(s)	***Recovery***		***Limits***					
o-Terphenyl	*75*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 14:21*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	**1,000**	ug/L	100		1	07/15/19	07/15/19 18:12	1045
Surrogate(s)	***Recovery***		***Limits***					
a,a,a-Trifluorotoluene	*98*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 18:12*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-7-071119 **Date/Time Sampled: 07/11/2019 13:00** **PSS Sample ID: 19071205-007**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 165978 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/12/19	07/12/19 19:22	1011
Benzene	**88**	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Bromochloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Bromoform	ND	ug/L	5.0		1	07/12/19	07/12/19 19:22	1011
Bromomethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/12/19	07/12/19 19:22	1011
Carbon Disulfide	ND	ug/L	10		1	07/12/19	07/12/19 19:22	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Chlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Chloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Chloroform	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Chloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Cyclohexane	ND	ug/L	10		1	07/12/19	07/12/19 19:22	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/12/19	07/12/19 19:22	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Ethylbenzene	**140**	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/12/19	07/12/19 19:22	1011
Isopropylbenzene	**25**	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Methyl Acetate	ND	ug/L	10		1	07/12/19	07/12/19 19:22	1011
Methylcyclohexane	ND	ug/L	10		1	07/12/19	07/12/19 19:22	1011
Methylene chloride	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-7-071119 **Date/Time Sampled: 07/11/2019 13:00** **PSS Sample ID: 19071205-007**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

Qualifier(s): See Batch 165978 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/12/19	07/12/19 19:22	1011
Methyl-t-Butyl Ether	**1.7**	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Naphthalene	**1,900**	ug/L	20		20	07/12/19	07/15/19 17:12	1011
Styrene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Toluene	**4.2**	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Trichloroethene	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/12/19	07/12/19 19:22	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
Vinyl chloride	ND	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011
m&p-Xylene	**110**	ug/L	2.0		1	07/12/19	07/12/19 19:22	1011
o-Xylene	**77**	ug/L	1.0		1	07/12/19	07/12/19 19:22	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*100*	*%*	*87-109*	*1*	*07/12/19*	*07/12/19 19:22*	*1011*
Dibromofluoromethane	*98*	*%*	*93-111*	*1*	*07/12/19*	*07/12/19 19:22*	*1011*
Toluene-D8	*100*	*%*	*91-109*	*1*	*07/12/19*	*07/12/19 19:22*	*1011*
4-Bromofluorobenzene	*102*	*%*	*87-109*	*20*	*07/15/19*	*07/15/19 17:12*	*1011*
Dibromofluoromethane	*98*	*%*	*93-111*	*20*	*07/15/19*	*07/15/19 17:12*	*1011*
Toluene-D8	*101*	*%*	*91-109*	*20*	*07/15/19*	*07/15/19 17:12*	*1011*

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	**74**	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Acenaphthylene	**0.92**	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Anthracene	**3.3**	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-7-071119 **Date/Time Sampled: 07/11/2019 13:00** **PSS Sample ID: 19071205-007**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Biphenyl (Diphenyl)	**17**	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Carbazole	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
2-Chlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Dibenzofuran	**5.3**	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
2,4-Dichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 04:45	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 04:45	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Fluoranthene	**0.67**	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Fluorene	**18**	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-7-071119 **Date/Time Sampled: 07/11/2019 13:00** **PSS Sample ID: 19071205-007**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
2-Methylnaphthalene	**190**	ug/L	10		20	07/15/19	07/16/19 13:45	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 04:45	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 04:45	1055
Naphthalene	**740**	ug/L	10		20	07/15/19	07/16/19 13:45	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Pentachlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Phenanthrene	**17**	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 04:45	1055
Pyrene	**0.77**	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 04:45	1055
2,4,5-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 04:45	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 04:45	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-7-071119 **Date/Time Sampled: 07/11/2019 13:00** **PSS Sample ID: 19071205-007**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

Surrogate(s)	Recovery		Limits				
2-Fluorobiphenyl	*98*	*%*	*35-107*	*1*	*07/15/19*	*07/16/19 04:45*	*1055*
2-Fluorophenol	*82*	*%*	*32-106*	*1*	*07/15/19*	*07/16/19 04:45*	*1055*
Nitrobenzene-d5	*104*	*%*	*34-123*	*1*	*07/15/19*	*07/16/19 04:45*	*1055*
Phenol-d6	*83*	*%*	*36-111*	*1*	*07/15/19*	*07/16/19 04:45*	*1055*
Terphenyl-D14	*101*	*%*	*43-143*	*1*	*07/15/19*	*07/16/19 04:45*	*1055*
2,4,6-Tribromophenol	*105*	*%*	*26-122*	*1*	*07/15/19*	*07/16/19 04:45*	*1055*
2-Fluorobiphenyl	*84*	*%*	*35-107*	*20*	*07/15/19*	*07/16/19 13:45*	*1055*
2-Fluorophenol	*66*	*%*	*32-106*	*20*	*07/15/19*	*07/16/19 13:45*	*1055*
Nitrobenzene-d5	*73*	*%*	*34-123*	*20*	*07/15/19*	*07/16/19 13:45*	*1055*
Phenol-d6	*58*	*%*	*36-111*	*20*	*07/15/19*	*07/16/19 13:45*	*1055*
Terphenyl-D14	*86*	*%*	*43-143*	*20*	*07/15/19*	*07/16/19 13:45*	*1055*
2,4,6-Tribromophenol	*40*	*%*	*26-122*	*20*	*07/15/19*	*07/16/19 13:45*	*1055*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-20-071119 **Date/Time Sampled: 07/11/2019 13:25** **PSS Sample ID: 19071205-008**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	07/15/19	07/16/19 23:54	1064
Arsenic	**23**	ug/L	1.0		1	07/15/19	07/16/19 23:54	1064
Beryllium	ND	ug/L	1.0		1	07/15/19	07/16/19 23:54	1064
Cadmium	**38**	ug/L	1.0		1	07/15/19	07/16/19 23:54	1064
Chromium	**3.7**	ug/L	1.0		1	07/15/19	07/16/19 23:54	1064
Copper	**290**	ug/L	1.0		1	07/15/19	07/17/19 19:05	1064
Lead	**38**	ug/L	1.0		1	07/15/19	07/17/19 19:05	1064
Mercury	**0.41**	ug/L	0.20		1	07/15/19	07/17/19 19:05	1064
Nickel	**10**	ug/L	1.0		1	07/15/19	07/16/19 23:54	1064
Selenium	**41**	ug/L	1.0		1	07/15/19	07/16/19 23:54	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 19:05	1064
Thallium	ND	ug/L	1.0		1	07/15/19	07/17/19 19:05	1064
Zinc	**13,000**	ug/L	400		20	07/15/19	07/16/19 21:12	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	07/12/19	07/15/19 16:01	1059
Surrogate(s)	***Recovery***		***Limits***					
o-Terphenyl	*95*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 16:01*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	07/15/19	07/15/19 18:36	1045
Surrogate(s)	***Recovery***		***Limits***					
a,a,a-Trifluorotoluene	*98*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 18:36*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-20-071119 **Date/Time Sampled: 07/11/2019 13:25** **PSS Sample ID: 19071205-008**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/15/19	07/15/19 11:32	1011
Benzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Bromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Bromoform	ND	ug/L	5.0		1	07/15/19	07/15/19 11:32	1011
Bromomethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/15/19	07/15/19 11:32	1011
Carbon Disulfide	ND	ug/L	10		1	07/15/19	07/15/19 11:32	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Chlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Chloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Chloroform	**1.4**	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Chloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Cyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 11:32	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/15/19	07/15/19 11:32	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Ethylbenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 11:32	1011
Isopropylbenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Methyl Acetate	ND	ug/L	10		1	07/15/19	07/15/19 11:32	1011
Methylcyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 11:32	1011
Methylene chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-20-071119 **Date/Time Sampled: 07/11/2019 13:25** **PSS Sample ID: 19071205-008**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 11:32	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Naphthalene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Styrene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Toluene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Trichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/15/19	07/15/19 11:32	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
Vinyl chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011
m&p-Xylene	ND	ug/L	2.0		1	07/15/19	07/15/19 11:32	1011
o-Xylene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:32	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*101*	*%*	*87-109*		*1*	*07/15/19*	*07/15/19 11:32*	*1011*
Dibromofluoromethane	*100*	*%*	*93-111*		*1*	*07/15/19*	*07/15/19 11:32*	*1011*
Toluene-D8	*100*	*%*	*91-109*		*1*	*07/15/19*	*07/15/19 11:32*	*1011*

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Acenaphthylene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-20-071119 **Date/Time Sampled: 07/11/2019 13:25** **PSS Sample ID: 19071205-008**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Carbazole	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
2-Chlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Dibenzofuran	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
2,4-Dichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 02:20	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 02:20	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Fluorene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-20-071119 **Date/Time Sampled: 07/11/2019 13:25** **PSS Sample ID: 19071205-008**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
2-Methylnaphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 02:20	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 02:20	1055
Naphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Pentachlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Phenanthrene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:20	1055
Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 02:20	1055
2,4,5-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 02:20	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 02:20	1055

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*88*	*%*	*35-107*		*1*	*07/15/19*	*07/16/19 02:20*	*1055*
2-Fluorophenol	*82*	*%*	*32-106*		*1*	*07/15/19*	*07/16/19 02:20*	*1055*
Nitrobenzene-d5	*100*	*%*	*34-123*		*1*	*07/15/19*	*07/16/19 02:20*	*1055*
Phenol-d6	*81*	*%*	*36-111*		*1*	*07/15/19*	*07/16/19 02:20*	*1055*
Terphenyl-D14	*106*	*%*	*43-143*		*1*	*07/15/19*	*07/16/19 02:20*	*1055*
2,4,6-Tribromophenol	*98*	*%*	*26-122*		*1*	*07/15/19*	*07/16/19 02:20*	*1055*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-5-071119 **Date/Time Sampled: 07/11/2019 14:10** **PSS Sample ID: 19071205-009**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	07/15/19	07/16/19 23:59	1064
Arsenic	**200**	ug/L	1.0		1	07/15/19	07/16/19 23:59	1064
Beryllium	**24**	ug/L	1.0		1	07/15/19	07/16/19 23:59	1064
Cadmium	**30**	ug/L	1.0		1	07/15/19	07/16/19 23:59	1064
Chromium	**160**	ug/L	1.0		1	07/15/19	07/16/19 23:59	1064
Copper	**5,400**	ug/L	20		20	07/15/19	07/16/19 21:18	1064
Lead	**120**	ug/L	1.0		1	07/15/19	07/17/19 19:10	1064
Mercury	ND	ug/L	0.20		1	07/15/19	07/17/19 19:10	1064
Nickel	**720**	ug/L	1.0		1	07/15/19	07/16/19 23:59	1064
Selenium	**3.3**	ug/L	1.0		1	07/15/19	07/16/19 23:59	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 19:10	1064
Thallium	**1.5**	ug/L	1.0		1	07/15/19	07/17/19 19:10	1064
Zinc	**15,000**	ug/L	400		20	07/15/19	07/16/19 21:18	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**0.70**	mg/L	0.10		1	07/12/19	07/15/19 14:46	1059
Surrogate(s)	***Recovery***		***Limits***					
o-Terphenyl	*89*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 14:46*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	**450**	ug/L	100		1	07/15/19	07/15/19 18:59	1045
Surrogate(s)	***Recovery***		***Limits***					
a,a,a-Trifluorotoluene	*99*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 18:59*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-5-071119 **Date/Time Sampled: 07/11/2019 14:10** **PSS Sample ID: 19071205-009**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/15/19	07/15/19 11:54	1011
Benzene	**100**	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Bromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Bromoform	ND	ug/L	5.0		1	07/15/19	07/15/19 11:54	1011
Bromomethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/15/19	07/15/19 11:54	1011
Carbon Disulfide	ND	ug/L	10		1	07/15/19	07/15/19 11:54	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Chlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Chloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Chloroform	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Chloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Cyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 11:54	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/15/19	07/15/19 11:54	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Ethylbenzene	**30**	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 11:54	1011
Isopropylbenzene	**10**	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Methyl Acetate	ND	ug/L	10		1	07/15/19	07/15/19 11:54	1011
Methylcyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 11:54	1011
Methylene chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-5-071119 **Date/Time Sampled: 07/11/2019 14:10** **PSS Sample ID: 19071205-009**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 11:54	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Naphthalene	**390**	ug/L	10		10	07/15/19	07/15/19 13:02	1011
Styrene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Toluene	**2.9**	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Trichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/15/19	07/15/19 11:54	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
Vinyl chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011
m&p-Xylene	**27**	ug/L	2.0		1	07/15/19	07/15/19 11:54	1011
o-Xylene	**45**	ug/L	1.0		1	07/15/19	07/15/19 11:54	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*99*	*%*	*87-109*	*1*	*07/15/19*	*07/15/19 11:54*	*1011*
Dibromofluoromethane	*98*	*%*	*93-111*	*1*	*07/15/19*	*07/15/19 11:54*	*1011*
Toluene-D8	*100*	*%*	*91-109*	*1*	*07/15/19*	*07/15/19 11:54*	*1011*
4-Bromofluorobenzene	*102*	*%*	*87-109*	*10*	*07/15/19*	*07/15/19 13:02*	*1011*
Dibromofluoromethane	*97*	*%*	*93-111*	*10*	*07/15/19*	*07/15/19 13:02*	*1011*
Toluene-D8	*100*	*%*	*91-109*	*10*	*07/15/19*	*07/15/19 13:02*	*1011*

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	**8.7**	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Acenaphthylene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-5-071119 **Date/Time Sampled: 07/11/2019 14:10** **PSS Sample ID: 19071205-009**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Carbazole	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
2-Chlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Dibenzofuran	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
2,4-Dichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 05:15	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 05:15	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Fluorene	**4.9**	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-5-071119 **Date/Time Sampled: 07/11/2019 14:10** **PSS Sample ID: 19071205-009**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
2-Methylnaphthalene	**36**	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 05:15	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 05:15	1055
Naphthalene	**190**	ug/L	2.5		5	07/15/19	07/16/19 12:47	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Pentachlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Phenanthrene	**1.8**	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 05:15	1055
Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 05:15	1055
2,4,5-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 05:15	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 05:15	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-5-071119 **Date/Time Sampled: 07/11/2019 14:10** **PSS Sample ID: 19071205-009**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

Surrogate(s)	Recovery		Limits				
2-Fluorobiphenyl	*95*	*%*	*35-107*	*1*	*07/15/19*	*07/16/19 05:15*	*1055*
2-Fluorophenol	*83*	*%*	*32-106*	*1*	*07/15/19*	*07/16/19 05:15*	*1055*
Nitrobenzene-d5	*88*	*%*	*34-123*	*1*	*07/15/19*	*07/16/19 05:15*	*1055*
Phenol-d6	*85*	*%*	*36-111*	*1*	*07/15/19*	*07/16/19 05:15*	*1055*
Terphenyl-D14	*105*	*%*	*43-143*	*1*	*07/15/19*	*07/16/19 05:15*	*1055*
2,4,6-Tribromophenol	*99*	*%*	*26-122*	*1*	*07/15/19*	*07/16/19 05:15*	*1055*
2-Fluorobiphenyl	*90*	*%*	*35-107*	*5*	*07/15/19*	*07/16/19 12:47*	*1055*
2-Fluorophenol	*76*	*%*	*32-106*	*5*	*07/15/19*	*07/16/19 12:47*	*1055*
Nitrobenzene-d5	*77*	*%*	*34-123*	*5*	*07/15/19*	*07/16/19 12:47*	*1055*
Phenol-d6	*76*	*%*	*36-111*	*5*	*07/15/19*	*07/16/19 12:47*	*1055*
Terphenyl-D14	*98*	*%*	*43-143*	*5*	*07/15/19*	*07/16/19 12:47*	*1055*
2,4,6-Tribromophenol	*82*	*%*	*26-122*	*5*	*07/15/19*	*07/16/19 12:47*	*1055*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-22-071119 **Date/Time Sampled: 07/11/2019 14:30** **PSS Sample ID: 19071205-010**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	07/15/19	07/17/19 00:05	1064
Arsenic	**230**	ug/L	1.0		1	07/15/19	07/17/19 00:05	1064
Beryllium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:05	1064
Cadmium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:05	1064
Chromium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:05	1064
Copper	**1.2**	ug/L	1.0		1	07/15/19	07/17/19 19:55	1064
Lead	ND	ug/L	1.0		1	07/15/19	07/17/19 19:55	1064
Mercury	ND	ug/L	0.20		1	07/15/19	07/17/19 19:55	1064
Nickel	ND	ug/L	1.0		1	07/15/19	07/17/19 00:05	1064
Selenium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:05	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 19:55	1064
Thallium	ND	ug/L	1.0		1	07/15/19	07/17/19 19:55	1064
Zinc	**26**	ug/L	20		1	07/15/19	07/17/19 00:05	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**0.12**	mg/L	0.10		1	07/12/19	07/15/19 14:46	1059
Surrogate(s)	***Recovery***		***Limits***					
o-Terphenyl	*79*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 14:46*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	**230**	ug/L	100		1	07/15/19	07/15/19 19:22	1045
Surrogate(s)	***Recovery***		***Limits***					
a,a,a-Trifluorotoluene	*97*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 19:22*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-22-071119 **Date/Time Sampled: 07/11/2019 14:30** **PSS Sample ID: 19071205-010**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/15/19	07/15/19 14:56	1011
Benzene	**93**	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Bromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Bromoform	ND	ug/L	5.0		1	07/15/19	07/15/19 14:56	1011
Bromomethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/15/19	07/15/19 14:56	1011
Carbon Disulfide	ND	ug/L	10		1	07/15/19	07/15/19 14:56	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Chlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Chloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Chloroform	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Chloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Cyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 14:56	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/15/19	07/15/19 14:56	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Ethylbenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 14:56	1011
Isopropylbenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Methyl Acetate	ND	ug/L	10		1	07/15/19	07/15/19 14:56	1011
Methylcyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 14:56	1011
Methylene chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-22-071119 **Date/Time Sampled: 07/11/2019 14:30** **PSS Sample ID: 19071205-010**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 14:56	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Naphthalene	**1.1**	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Styrene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Toluene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Trichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/15/19	07/15/19 14:56	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
Vinyl chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011
m&p-Xylene	ND	ug/L	2.0		1	07/15/19	07/15/19 14:56	1011
o-Xylene	ND	ug/L	1.0		1	07/15/19	07/15/19 14:56	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*101*	*%*	*87-109*		*1*	*07/15/19*	*07/15/19 14:56*	*1011*
Dibromofluoromethane	*99*	*%*	*93-111*		*1*	*07/15/19*	*07/15/19 14:56*	*1011*
Toluene-D8	*100*	*%*	*91-109*		*1*	*07/15/19*	*07/15/19 14:56*	*1011*

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: 3510C

Qualifier(s): See Batch 166075 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	**0.75**	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Acenaphthylene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-22-071119 **Date/Time Sampled: 07/11/2019 14:30** **PSS Sample ID: 19071205-010**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166075 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Carbazole	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
2-Chlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Dibenzofuran	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
2,4-Dichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 12:18	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 12:18	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Fluorene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-22-071119 **Date/Time Sampled: 07/11/2019 14:30** **PSS Sample ID: 19071205-010**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166075 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
2-Methylnaphthalene	**0.69**	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 12:18	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 12:18	1055
Naphthalene	**0.99**	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Pentachlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Phenanthrene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 12:18	1055
Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 12:18	1055
2,4,5-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 12:18	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 12:18	1055

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*93*	*%*	*35-107*		*1*	*07/15/19*	*07/16/19 12:18*	*1055*
2-Fluorophenol	*87*	*%*	*32-106*		*1*	*07/15/19*	*07/16/19 12:18*	*1055*
Nitrobenzene-d5	*89*	*%*	*34-123*		*1*	*07/15/19*	*07/16/19 12:18*	*1055*
Phenol-d6	*82*	*%*	*36-111*		*1*	*07/15/19*	*07/16/19 12:18*	*1055*
Terphenyl-D14	*103*	*%*	*43-143*		*1*	*07/15/19*	*07/16/19 12:18*	*1055*
2,4,6-Tribromophenol	*105*	*%*	*26-122*		*1*	*07/15/19*	*07/16/19 12:18*	*1055*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: ECS-MW4-071119 **Date/Time Sampled: 07/11/2019 15:20** **PSS Sample ID: 19071205-011**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	07/15/19	07/17/19 00:10	1064
Arsenic	**16**	ug/L	1.0		1	07/15/19	07/17/19 00:10	1064
Beryllium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:10	1064
Cadmium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:10	1064
Chromium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:10	1064
Copper	**1.6**	ug/L	1.0		1	07/15/19	07/17/19 20:00	1064
Lead	ND	ug/L	1.0		1	07/15/19	07/17/19 20:00	1064
Mercury	ND	ug/L	0.20		1	07/15/19	07/17/19 20:00	1064
Nickel	ND	ug/L	1.0		1	07/15/19	07/17/19 00:10	1064
Selenium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:10	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 20:00	1064
Thallium	ND	ug/L	1.0		1	07/15/19	07/17/19 20:00	1064
Zinc	**47**	ug/L	20		1	07/15/19	07/17/19 00:10	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	07/12/19	07/15/19 15:11	1059
Surrogate(s)	***Recovery***		***Limits***					
o-Terphenyl	*89*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 15:11*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	07/15/19	07/15/19 19:45	1045
Surrogate(s)	***Recovery***		***Limits***					
a,a,a-Trifluorotoluene	*94*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 19:45*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: ECS-MW4-071119 **Date/Time Sampled: 07/11/2019 15:20** **PSS Sample ID: 19071205-011**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/15/19	07/15/19 15:18	1011
Benzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Bromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Bromoform	ND	ug/L	5.0		1	07/15/19	07/15/19 15:18	1011
Bromomethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/15/19	07/15/19 15:18	1011
Carbon Disulfide	ND	ug/L	10		1	07/15/19	07/15/19 15:18	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Chlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Chloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Chloroform	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Chloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Cyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 15:18	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/15/19	07/15/19 15:18	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Ethylbenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 15:18	1011
Isopropylbenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Methyl Acetate	ND	ug/L	10		1	07/15/19	07/15/19 15:18	1011
Methylcyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 15:18	1011
Methylene chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: ECS-MW4-071119 **Date/Time Sampled: 07/11/2019 15:20** **PSS Sample ID: 19071205-011**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 15:18	1011
Methyl-t-Butyl Ether	**5.9**	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Naphthalene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Styrene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Toluene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Trichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/15/19	07/15/19 15:18	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
Vinyl chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011
m&p-Xylene	ND	ug/L	2.0		1	07/15/19	07/15/19 15:18	1011
o-Xylene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:18	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*101*	*%*	*87-109*		*1*	*07/15/19*	*07/15/19 15:18*	*1011*
Dibromofluoromethane	*100*	*%*	*93-111*		*1*	*07/15/19*	*07/15/19 15:18*	*1011*
Toluene-D8	*101*	*%*	*91-109*		*1*	*07/15/19*	*07/15/19 15:18*	*1011*

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	**5.0**	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Acenaphthylene	**0.70**	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: ECS-MW4-071119 **Date/Time Sampled: 07/11/2019 15:20** **PSS Sample ID: 19071205-011**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Carbazole	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
2-Chlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Dibenzofuran	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
2,4-Dichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 02:49	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 02:49	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Fluorene	**1.3**	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: ECS-MW4-071119 **Date/Time Sampled: 07/11/2019 15:20** **PSS Sample ID: 19071205-011**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
2-Methylnaphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 02:49	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 02:49	1055
Naphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Pentachlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Phenanthrene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 02:49	1055
Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 02:49	1055
2,4,5-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 02:49	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 02:49	1055

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*91*	*%*	*35-107*		*1*	*07/15/19*	*07/16/19 02:49*	*1055*
2-Fluorophenol	*81*	*%*	*32-106*		*1*	*07/15/19*	*07/16/19 02:49*	*1055*
Nitrobenzene-d5	*85*	*%*	*34-123*		*1*	*07/15/19*	*07/16/19 02:49*	*1055*
Phenol-d6	*80*	*%*	*36-111*		*1*	*07/15/19*	*07/16/19 02:49*	*1055*
Terphenyl-D14	*94*	*%*	*43-143*		*1*	*07/15/19*	*07/16/19 02:49*	*1055*
2,4,6-Tribromophenol	*93*	*%*	*26-122*		*1*	*07/15/19*	*07/16/19 02:49*	*1055*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-15-071119 **Date/Time Sampled: 07/11/2019 15:20** **PSS Sample ID: 19071205-012**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	**26**	ug/L	5.0		1	07/15/19	07/17/19 00:16	1064
Arsenic	**5,000**	ug/L	20		20	07/15/19	07/16/19 21:35	1064
Beryllium	**1.1**	ug/L	1.0		1	07/15/19	07/17/19 00:16	1064
Cadmium	**7.0**	ug/L	1.0		1	07/15/19	07/17/19 00:16	1064
Chromium	**38**	ug/L	1.0		1	07/15/19	07/17/19 00:16	1064
Copper	**510**	ug/L	1.0		1	07/15/19	07/17/19 20:06	1064
Lead	**82**	ug/L	1.0		1	07/15/19	07/17/19 20:06	1064
Mercury	**0.50**	ug/L	0.20		1	07/15/19	07/17/19 20:06	1064
Nickel	**21**	ug/L	1.0		1	07/15/19	07/17/19 00:16	1064
Selenium	**4.2**	ug/L	1.0		1	07/15/19	07/17/19 00:16	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 20:06	1064
Thallium	**3.3**	ug/L	1.0		1	07/15/19	07/17/19 20:06	1064
Zinc	**4,100**	ug/L	400		20	07/15/19	07/16/19 21:35	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.11		1	07/12/19	07/15/19 15:11	1059
Surrogate(s)	***Recovery***		***Limits***					
o-Terphenyl	*80*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 15:11*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	07/15/19	07/15/19 20:08	1045
Surrogate(s)	***Recovery***		***Limits***					
a,a,a-Trifluorotoluene	*93*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 20:08*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-15-071119 **Date/Time Sampled: 07/11/2019 15:20** **PSS Sample ID: 19071205-012**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/15/19	07/15/19 15:41	1011
Benzene	**11**	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Bromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Bromoform	ND	ug/L	5.0		1	07/15/19	07/15/19 15:41	1011
Bromomethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/15/19	07/15/19 15:41	1011
Carbon Disulfide	ND	ug/L	10		1	07/15/19	07/15/19 15:41	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Chlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Chloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Chloroform	**1.7**	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Chloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Cyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 15:41	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/15/19	07/15/19 15:41	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Ethylbenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 15:41	1011
Isopropylbenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Methyl Acetate	ND	ug/L	10		1	07/15/19	07/15/19 15:41	1011
Methylcyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 15:41	1011
Methylene chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-15-071119 **Date/Time Sampled: 07/11/2019 15:20** **PSS Sample ID: 19071205-012**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 15:41	1011
Methyl-t-Butyl Ether	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Naphthalene	**1.1**	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Styrene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Toluene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Trichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/15/19	07/15/19 15:41	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
Vinyl chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011
m&p-Xylene	ND	ug/L	2.0		1	07/15/19	07/15/19 15:41	1011
o-Xylene	ND	ug/L	1.0		1	07/15/19	07/15/19 15:41	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*101*	*%*	*87-109*		*1*	*07/15/19*	*07/15/19 15:41*	*1011*
Dibromofluoromethane	*99*	*%*	*93-111*		*1*	*07/15/19*	*07/15/19 15:41*	*1011*
Toluene-D8	*100*	*%*	*91-109*		*1*	*07/15/19*	*07/15/19 15:41*	*1011*

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Acenaphthylene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-15-071119 **Date/Time Sampled: 07/11/2019 15:20** **PSS Sample ID: 19071205-012**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Carbazole	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
2-Chlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Dibenzofuran	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
2,4-Dichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 03:18	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 03:18	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Fluorene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-15-071119 **Date/Time Sampled: 07/11/2019 15:20** **PSS Sample ID: 19071205-012**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
2-Methylnaphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 03:18	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 03:18	1055
Naphthalene	**0.62**	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Pentachlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Phenanthrene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:18	1055
Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 03:18	1055
2,4,5-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 03:18	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 03:18	1055

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*93*	*%*	*35-107*		*1*	*07/15/19*	*07/16/19 03:18*	*1055*
2-Fluorophenol	*83*	*%*	*32-106*		*1*	*07/15/19*	*07/16/19 03:18*	*1055*
Nitrobenzene-d5	*93*	*%*	*34-123*		*1*	*07/15/19*	*07/16/19 03:18*	*1055*
Phenol-d6	*82*	*%*	*36-111*		*1*	*07/15/19*	*07/16/19 03:18*	*1055*
Terphenyl-D14	*100*	*%*	*43-143*		*1*	*07/15/19*	*07/16/19 03:18*	*1055*
2,4,6-Tribromophenol	*98*	*%*	*26-122*		*1*	*07/15/19*	*07/16/19 03:18*	*1055*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-14-071119 **Date/Time Sampled: 07/11/2019 16:45** **PSS Sample ID: 19071205-013**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	07/15/19	07/17/19 00:21	1064
Arsenic	**31**	ug/L	1.0		1	07/15/19	07/17/19 00:21	1064
Beryllium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:21	1064
Cadmium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:21	1064
Chromium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:21	1064
Copper	**9.1**	ug/L	1.0		1	07/15/19	07/17/19 20:11	1064
Lead	ND	ug/L	1.0		1	07/15/19	07/17/19 20:11	1064
Mercury	ND	ug/L	0.20		1	07/15/19	07/17/19 20:11	1064
Nickel	**8.4**	ug/L	1.0		1	07/15/19	07/17/19 00:21	1064
Selenium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:21	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 20:11	1064
Thallium	ND	ug/L	1.0		1	07/15/19	07/17/19 20:11	1064
Zinc	**13,000**	ug/L	400		20	07/15/19	07/16/19 21:40	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	**0.59**	mg/L	0.10		1	07/12/19	07/15/19 15:36	1059
Surrogate(s)	***Recovery***		***Limits***					
o-Terphenyl	*99*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 15:36*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	**220**	ug/L	100		1	07/15/19	07/15/19 20:31	1045
Surrogate(s)	***Recovery***		***Limits***					
a,a,a-Trifluorotoluene	*96*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 20:31*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-14-071119 **Date/Time Sampled: 07/11/2019 16:45** **PSS Sample ID: 19071205-013**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/15/19	07/15/19 16:04	1011
Benzene	**73**	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Bromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Bromoform	ND	ug/L	5.0		1	07/15/19	07/15/19 16:04	1011
Bromomethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/15/19	07/15/19 16:04	1011
Carbon Disulfide	ND	ug/L	10		1	07/15/19	07/15/19 16:04	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Chlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Chloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Chloroform	**6.8**	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Chloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Cyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 16:04	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/15/19	07/15/19 16:04	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Ethylbenzene	**10**	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 16:04	1011
Isopropylbenzene	**1.2**	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Methyl Acetate	ND	ug/L	10		1	07/15/19	07/15/19 16:04	1011
Methylcyclohexane	ND	ug/L	10		1	07/15/19	07/15/19 16:04	1011
Methylene chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-14-071119 **Date/Time Sampled: 07/11/2019 16:45** **PSS Sample ID: 19071205-013**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

Qualifier(s): See Batch 166021 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/15/19	07/15/19 16:04	1011
Methyl-t-Butyl Ether	**1.2**	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Naphthalene	**56**	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Styrene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Toluene	**6.2**	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Trichloroethene	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/15/19	07/15/19 16:04	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
Vinyl chloride	ND	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011
m&p-Xylene	**5.8**	ug/L	2.0		1	07/15/19	07/15/19 16:04	1011
o-Xylene	**9.2**	ug/L	1.0		1	07/15/19	07/15/19 16:04	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*101*	*%*	*87-109*		*1*	*07/15/19*	*07/15/19 16:04*	*1011*
Dibromofluoromethane	*99*	*%*	*93-111*		*1*	*07/15/19*	*07/15/19 16:04*	*1011*
Toluene-D8	*100*	*%*	*91-109*		*1*	*07/15/19*	*07/15/19 16:04*	*1011*

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	**18**	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Acenaphthylene	**1.2**	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Anthracene	**3.8**	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-14-071119 **Date/Time Sampled: 07/11/2019 16:45** **PSS Sample ID: 19071205-013**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Carbazole	**13**	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
2-Chlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Dibenzofuran	**14**	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
2,4-Dichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 06:13	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 06:13	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Fluoranthene	**2.5**	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Fluorene	**17**	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MiHpt-14-071119 **Date/Time Sampled: 07/11/2019 16:45** **PSS Sample ID: 19071205-013**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
2-Methylnaphthalene	**1.1**	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 06:13	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 06:13	1055
Naphthalene	**17**	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Pentachlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Phenanthrene	**10**	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 06:13	1055
Pyrene	**1.8**	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 06:13	1055
2,4,5-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 06:13	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 06:13	1055

Surrogate(s)	***Recovery***		***Limits***				
2-Fluorobiphenyl	*90*	*%*	*35-107*		*1*	*07/15/19*	*07/16/19 06:13*	*1055*
2-Fluorophenol	*81*	*%*	*32-106*		*1*	*07/15/19*	*07/16/19 06:13*	*1055*
Nitrobenzene-d5	*90*	*%*	*34-123*		*1*	*07/15/19*	*07/16/19 06:13*	*1055*
Phenol-d6	*81*	*%*	*36-111*		*1*	*07/15/19*	*07/16/19 06:13*	*1055*
Terphenyl-D14	*93*	*%*	*43-143*		*1*	*07/15/19*	*07/16/19 06:13*	*1055*
2,4,6-Tribromophenol	*97*	*%*	*26-122*		*1*	*07/15/19*	*07/16/19 06:13*	*1055*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-23-071119 **Date/Time Sampled: 07/11/2019 17:05** **PSS Sample ID: 19071205-014**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3010A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	ug/L	5.0		1	07/15/19	07/17/19 00:55	1064
Arsenic	**23**	ug/L	1.0		1	07/15/19	07/17/19 00:55	1064
Beryllium	ND	ug/L	1.0		1	07/15/19	07/17/19 20:17	1064
Cadmium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:55	1064
Chromium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:55	1064
Copper	**47**	ug/L	1.0		1	07/15/19	07/17/19 20:17	1064
Lead	**55**	ug/L	1.0		1	07/15/19	07/17/19 20:17	1064
Mercury	ND	ug/L	0.20		1	07/15/19	07/17/19 20:17	1064
Nickel	**1.4**	ug/L	1.0		1	07/15/19	07/17/19 00:55	1064
Selenium	ND	ug/L	1.0		1	07/15/19	07/17/19 00:55	1064
Silver	ND	ug/L	1.0		1	07/15/19	07/17/19 20:17	1064
Thallium	ND	ug/L	1.0		1	07/15/19	07/17/19 20:17	1064
Zinc	**1,800**	ug/L	20		1	07/15/19	07/17/19 00:55	1064

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: 3510C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/L	0.10		1	07/12/19	07/15/19 15:36	1059
Surrogate(s)	***Recovery***		***Limits***					
o-Terphenyl	*80*	*%*	*38-114*		*1*	*07/12/19*	*07/15/19 15:36*	*1059*

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/L	100		1	07/15/19	07/15/19 20:54	1045
Surrogate(s)	***Recovery***		***Limits***					
a,a,a-Trifluorotoluene	*100*	*%*	*64-142*		*1*	*07/15/19*	*07/15/19 20:54*	*1045*

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-23-071119 **Date/Time Sampled: 07/11/2019 17:05** **PSS Sample ID: 19071205-014**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds Analytical Method: SW-846 8260 B Preparation Method: 5030B

Qualifier(s): See Batch 166046 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acetone	ND	ug/L	10		1	07/16/19	07/16/19 19:19	1011
Benzene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Bromochloromethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Bromodichloromethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Bromoform	ND	ug/L	5.0		1	07/16/19	07/16/19 19:19	1011
Bromomethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
2-Butanone (MEK)	ND	ug/L	10		1	07/16/19	07/16/19 19:19	1011
Carbon Disulfide	ND	ug/L	10		1	07/16/19	07/16/19 19:19	1011
Carbon tetrachloride	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Chlorobenzene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Chloroethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Chloroform	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Chloromethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Cyclohexane	ND	ug/L	10		1	07/16/19	07/16/19 19:19	1011
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0		1	07/16/19	07/16/19 19:19	1011
Dibromochloromethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
1,2-Dibromoethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Dichlorodifluoromethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
cis-1,2-Dichloroethene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Ethylbenzene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
2-Hexanone (MBK)	ND	ug/L	5.0		1	07/16/19	07/16/19 19:19	1011
Isopropylbenzene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Methyl Acetate	ND	ug/L	10		1	07/16/19	07/16/19 19:19	1011
Methylcyclohexane	ND	ug/L	10		1	07/16/19	07/16/19 19:19	1011
Methylene chloride	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-23-071119 **Date/Time Sampled: 07/11/2019 17:05** **PSS Sample ID: 19071205-014**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

Qualifier(s): See Batch 166046 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5.0		1	07/16/19	07/16/19 19:19	1011
Methyl-t-Butyl Ether	**5.7**	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Naphthalene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Styrene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Tetrachloroethene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Toluene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
1,2,3-Trichlorobenzene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Trichloroethene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	07/16/19	07/16/19 19:19	1011
1,1,2-Trichlorotrifluoroethane	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
Vinyl chloride	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011
m&p-Xylene	ND	ug/L	2.0		1	07/16/19	07/16/19 19:19	1011
o-Xylene	ND	ug/L	1.0		1	07/16/19	07/16/19 19:19	1011

Surrogate(s)	*Recovery*		*Limits*				
4-Bromofluorobenzene	*100*	*%*	*87-109*		*1*	*07/16/19*	*07/16/19 19:19*	*1011*
Dibromofluoromethane	*98*	*%*	*93-111*		*1*	*07/16/19*	*07/16/19 19:19*	*1011*
Toluene-D8	*100*	*%*	*91-109*		*1*	*07/16/19*	*07/16/19 19:19*	*1011*

TCL Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	**7.2**	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Acenaphthylene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Acetophenone	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Anthracene	**0.50**	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Atrazine	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Benzo(a)anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Benzo(a)pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Benzo(b)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Benzo(g,h,i)perylene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-23-071119 **Date/Time Sampled: 07/11/2019 17:05** **PSS Sample ID: 19071205-014**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Benzo(k)fluoranthene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Biphenyl (Diphenyl)	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Butyl benzyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
bis(2-chloroethoxy) methane	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
bis(2-chloroethyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
bis(2-chloroisopropyl) ether	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
bis(2-ethylhexyl) phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
4-Bromophenylphenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Di-n-butyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Carbazole	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Caprolactam	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
4-Chloro-3-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
4-Chloroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
2-Chloronaphthalene	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
2-Chlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
4-Chlorophenyl Phenyl ether	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Chrysene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Dibenz(a,h)Anthracene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Dibenzofuran	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
3,3-Dichlorobenzidine	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
2,4-Dichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 03:47	1055
Diethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Dimethyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
2,4-Dimethylphenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
4,6-Dinitro-2-methyl phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
2,4-Dinitrophenol	ND	ug/L	10		1	07/15/19	07/16/19 03:47	1055
2,4-Dinitrotoluene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
2,6-Dinitrotoluene	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Fluoranthene	**0.67**	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Fluorene	**3.8**	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Hexachlorobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Hexachlorobutadiene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Hexachlorocyclopentadiene	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Hexachloroethane	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Certificate of Analysis

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Sample ID: MW-23-071119 **Date/Time Sampled: 07/11/2019 17:05** **PSS Sample ID: 19071205-014**
Matrix: GROUND WATER **Date/Time Received: 07/12/2019 11:25**

TCL Semivolatile Organic Compounds Analytical Method: SW-846 8270 C Preparation Method: 3510C

Qualifier(s): See Batch 166073 on Case Narrative.

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Isophorone	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
2-Methylnaphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
2-Methyl phenol	ND	ug/L	2.0		1	07/15/19	07/16/19 03:47	1055
3&4-Methylphenol	ND	ug/L	2.0		1	07/15/19	07/16/19 03:47	1055
Naphthalene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
2-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
3-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
4-Nitroaniline	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Nitrobenzene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
2-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
4-Nitrophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
N-Nitrosodi-n-propyl amine	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
N-Nitrosodiphenylamine	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Di-n-octyl phthalate	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Pentachlorophenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Phenanthrene	**1.5**	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Phenol	ND	ug/L	5.0		1	07/15/19	07/16/19 03:47	1055
Pyrene	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
Pyridine	ND	ug/L	0.50		1	07/15/19	07/16/19 03:47	1055
2,4,5-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 03:47	1055
2,4,6-Trichlorophenol	ND	ug/L	2.0		1	07/15/19	07/16/19 03:47	1055

Surrogate(s)	*Recovery*		*Limits*				
2-Fluorobiphenyl	*88*	*%*	*35-107*		*1*	*07/15/19*	*07/16/19 03:47*	*1055*
2-Fluorophenol	*79*	*%*	*32-106*		*1*	*07/15/19*	*07/16/19 03:47*	*1055*
Nitrobenzene-d5	*88*	*%*	*34-123*		*1*	*07/15/19*	*07/16/19 03:47*	*1055*
Phenol-d6	*79*	*%*	*36-111*		*1*	*07/15/19*	*07/16/19 03:47*	*1055*
Terphenyl-D14	*91*	*%*	*43-143*		*1*	*07/15/19*	*07/16/19 03:47*	*1055*
2,4,6-Tribromophenol	*89*	*%*	*26-122*		*1*	*07/15/19*	*07/16/19 03:47*	*1055*

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Project Name: Robinson Terminal North

PSS Project No.: 19071205

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Sample Receipt:

All sample receipt conditions were acceptable.

Analytical:

TCL Volatile Organic Compounds

Batch: 165978
Laboratory control sample exceedances identified; see QC summary.

Batch: 166021
Laboratory control sample exceedances identified; see QC summary.

Batch: 166046
Laboratory control sample exceedances identified; see QC summary.

Analytical:

TCL Semivolatile Organic Compounds

Batch: 166073
The continuing calibration verification (CCV) showed a percent recovery for 3,3'-Dichlorobenzidine at 127%. QC limits are 80-120%. The samples analyzed were non-detect for this compound.

Batch: 166075
The continuing calibration verification (CCV) showed a percent recovery for 3,3'-Dichlorobenzidine at 131%. QC limits are 80-120%. The samples analyzed were non-detect for this compound.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Lab Chronology

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SW-846 6020 A	MW-25-071119	Initial	19071205-001	W	77647	166058	07/15/2019 11:32	07/16/2019 22:30
	TEC-MW4-071119	Initial	19071205-002	W	77647	166058	07/15/2019 11:32	07/16/2019 22:58
	TEC-MW2-071119	Initial	19071205-003	W	77647	166058	07/15/2019 11:32	07/16/2019 23:04
	MW-24-071119	Initial	19071205-004	W	77647	166058	07/15/2019 11:32	07/16/2019 23:32
	MiHpt-8-071119	Initial	19071205-005	W	77647	166058	07/15/2019 11:32	07/16/2019 23:37
	MiHpt-21-071119	Initial	19071205-006	W	77647	166058	07/15/2019 11:32	07/16/2019 23:43
	MiHpt-7-071119	Initial	19071205-007	W	77647	166058	07/15/2019 11:32	07/16/2019 23:48
	MiHpt-20-071119	Initial	19071205-008	W	77647	166058	07/15/2019 11:32	07/16/2019 23:54
	MiHpt-5-071119	Initial	19071205-009	W	77647	166058	07/15/2019 11:32	07/16/2019 23:59
	MiHpt-22-071119	Initial	19071205-010	W	77647	166058	07/15/2019 11:32	07/17/2019 00:05
	ECS-MW4-071119	Initial	19071205-011	W	77647	166058	07/15/2019 11:32	07/17/2019 00:10
	MiHpt-15-071119	Initial	19071205-012	W	77647	166058	07/15/2019 11:32	07/17/2019 00:16
	MiHpt-14-071119	Initial	19071205-013	W	77647	166058	07/15/2019 11:32	07/17/2019 00:21
	MW-23-071119	Initial	19071205-014	W	77647	166058	07/15/2019 11:32	07/17/2019 00:55
	77647-1-BKS	BKS	77647-1-BKS	W	77647	166058	07/15/2019 11:32	07/16/2019 20:00
	77647-1-BLK	BLK	77647-1-BLK	W	77647	166058	07/15/2019 11:32	07/16/2019 19:54
	MW-25-071119 S	MS	19071205-001 S	W	77647	166058	07/15/2019 11:32	07/16/2019 22:36
	MW-25-071119 SD	MSD	19071205-001 S	W	77647	166058	07/15/2019 11:32	07/16/2019 22:41
	MiHpt-20-071119	Reanalysis	19071205-008	W	77647	166058	07/15/2019 11:32	07/16/2019 21:12
	MiHpt-5-071119	Reanalysis	19071205-009	W	77647	166058	07/15/2019 11:32	07/16/2019 21:18
	MiHpt-15-071119	Reanalysis	19071205-012	W	77647	166058	07/15/2019 11:32	07/16/2019 21:35
	MiHpt-14-071119	Reanalysis	19071205-013	W	77647	166058	07/15/2019 11:32	07/16/2019 21:40
	MW-25-071119	Reanalysis	19071205-001	W	77647	166082	07/15/2019 11:32	07/17/2019 18:26
	TEC-MW4-071119	Reanalysis	19071205-002	W	77647	166082	07/15/2019 11:32	07/17/2019 18:31
	TEC-MW2-071119	Reanalysis	19071205-003	W	77647	166082	07/15/2019 11:32	07/17/2019 18:37
	MW-24-071119	Reanalysis	19071205-004	W	77647	166082	07/15/2019 11:32	07/17/2019 18:42
	MiHpt-8-071119	Reanalysis	19071205-005	W	77647	166082	07/15/2019 11:32	07/17/2019 18:48
	MiHpt-21-071119	Reanalysis	19071205-006	W	77647	166082	07/15/2019 11:32	07/17/2019 18:53
	MiHpt-7-071119	Reanalysis	19071205-007	W	77647	166082	07/15/2019 11:32	07/17/2019 18:59
	MiHpt-20-071119	Reanalysis	19071205-008	W	77647	166082	07/15/2019 11:32	07/17/2019 19:05
	MiHpt-5-071119	Reanalysis	19071205-009	W	77647	166082	07/15/2019 11:32	07/17/2019 19:10
	MiHpt-22-071119	Reanalysis	19071205-010	W	77647	166082	07/15/2019 11:32	07/17/2019 19:55
	ECS-MW4-071119	Reanalysis	19071205-011	W	77647	166082	07/15/2019 11:32	07/17/2019 20:00
	MiHpt-15-071119	Reanalysis	19071205-012	W	77647	166082	07/15/2019 11:32	07/17/2019 20:06
	MiHpt-14-071119	Reanalysis	19071205-013	W	77647	166082	07/15/2019 11:32	07/17/2019 20:11
	MW-23-071119	Reanalysis	19071205-014	W	77647	166082	07/15/2019 11:32	07/17/2019 20:17
SW-846 8015 C	MW-25-071119	Initial	19071205-001	W	77627	165997	07/12/2019 10:31	07/15/2019 11:52
	TEC-MW2-071119	Initial	19071205-003	W	77627	165997	07/12/2019 10:31	07/15/2019 13:32
	MiHpt-8-071119	Initial	19071205-005	W	77627	165997	07/12/2019 10:31	07/15/2019 13:57
	MiHpt-7-071119	Initial	19071205-007	W	77627	165997	07/12/2019 10:31	07/15/2019 14:21
	MiHpt-20-071119	Initial	19071205-008	W	77627	165997	07/12/2019 10:31	07/15/2019 16:01
	MiHpt-22-071119	Initial	19071205-010	W	77627	165997	07/12/2019 10:31	07/15/2019 14:46
	MiHpt-15-071119	Initial	19071205-012	W	77627	165997	07/12/2019 10:31	07/15/2019 15:11
	MW-23-071119	Initial	19071205-014	W	77627	165997	07/12/2019 10:31	07/15/2019 15:36
	TEC-MW4-071119	Initial	19071205-002	W	77627	165998	07/12/2019 10:31	07/15/2019 13:32

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Lab Chronology

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SW-846 8015 C	MW-24-071119	Initial	19071205-004	W	77627	165998	07/12/2019 10:31	07/15/2019 13:57
	MiHpt-21-071119	Initial	19071205-006	W	77627	165998	07/12/2019 10:31	07/15/2019 14:21
	MiHpt-5-071119	Initial	19071205-009	W	77627	165998	07/12/2019 10:31	07/15/2019 14:46
	ECS-MW4-071119	Initial	19071205-011	W	77627	165998	07/12/2019 10:31	07/15/2019 15:11
	MiHpt-14-071119	Initial	19071205-013	W	77627	165998	07/12/2019 10:31	07/15/2019 15:36
	77627-1-BKS	BKS	77627-1-BKS	W	77627	165998	07/12/2019 10:31	07/15/2019 11:03
	77627-1-BLK	BLK	77627-1-BLK	W	77627	165998	07/12/2019 10:31	07/15/2019 10:38
	77627-1-BSD	BSD	77627-1-BSD	W	77627	165998	07/12/2019 10:31	07/15/2019 11:27
SW-846 8015C	MW-25-071119	Initial	19071205-001	W	77653	166009	07/15/2019 12:03	07/15/2019 15:54
	TEC-MW4-071119	Initial	19071205-002	W	77653	166009	07/15/2019 12:03	07/15/2019 16:17
	TEC-MW2-071119	Initial	19071205-003	W	77653	166009	07/15/2019 12:03	07/15/2019 16:40
	MW-24-071119	Initial	19071205-004	W	77653	166009	07/15/2019 12:03	07/15/2019 17:03
	MiHpt-8-071119	Initial	19071205-005	W	77653	166009	07/15/2019 12:03	07/15/2019 17:26
	MiHpt-21-071119	Initial	19071205-006	W	77653	166009	07/15/2019 12:03	07/15/2019 17:49
	MiHpt-7-071119	Initial	19071205-007	W	77653	166009	07/15/2019 12:03	07/15/2019 18:12
	MiHpt-20-071119	Initial	19071205-008	W	77653	166009	07/15/2019 12:03	07/15/2019 18:36
	MiHpt-5-071119	Initial	19071205-009	W	77653	166009	07/15/2019 12:03	07/15/2019 18:59
	MiHpt-22-071119	Initial	19071205-010	W	77653	166009	07/15/2019 12:03	07/15/2019 19:22
	ECS-MW4-071119	Initial	19071205-011	W	77653	166009	07/15/2019 12:03	07/15/2019 19:45
	MiHpt-15-071119	Initial	19071205-012	W	77653	166009	07/15/2019 12:03	07/15/2019 20:08
	MiHpt-14-071119	Initial	19071205-013	W	77653	166009	07/15/2019 12:03	07/15/2019 20:31
	MW-23-071119	Initial	19071205-014	W	77653	166009	07/15/2019 12:03	07/15/2019 20:54
	77653-2-BKS	BKS	77653-2-BKS	W	77653	166009	07/15/2019 12:03	07/15/2019 12:26
	77653-2-BLK	BLK	77653-2-BLK	W	77653	166009	07/15/2019 12:03	07/15/2019 13:58
	77653-2-BSD	BSD	77653-2-BSD	W	77653	166009	07/15/2019 12:03	07/15/2019 12:49
	OF-032 S	MS	19070913-003 S	W	77653	166009	07/15/2019 12:03	07/15/2019 13:12
	OF-032 SD	MSD	19070913-003 S	W	77653	166009	07/15/2019 12:03	07/15/2019 13:35
SW-846 8260 B	MW-25-071119	Initial	19071205-001	W	77638	165978	07/12/2019 08:04	07/12/2019 17:06
	TEC-MW2-071119	Initial	19071205-003	W	77638	165978	07/12/2019 08:04	07/12/2019 17:52
	MW-24-071119	Initial	19071205-004	W	77638	165978	07/12/2019 08:04	07/12/2019 18:14
	MiHpt-8-071119	Initial	19071205-005	W	77638	165978	07/12/2019 08:04	07/12/2019 18:37
	MiHpt-21-071119	Initial	19071205-006	W	77638	165978	07/12/2019 08:04	07/12/2019 19:00
	MiHpt-7-071119	Initial	19071205-007	W	77638	165978	07/12/2019 08:04	07/12/2019 19:22
	77638-1-BKS	BKS	77638-1-BKS	W	77638	165978	07/12/2019 08:04	07/12/2019 09:05
	77638-1-BLK	BLK	77638-1-BLK	W	77638	165978	07/12/2019 08:04	07/12/2019 10:36
	AOC #1-3 S	MS	19071118-003 S	W	77638	165978	07/12/2019 08:04	07/12/2019 15:35
	AOC #1-3 SD	MSD	19071118-003 S	W	77638	165978	07/12/2019 08:04	07/12/2019 15:58
	TEC-MW4-071119	Initial	19071205-002	W	77661	166021	07/15/2019 08:04	07/15/2019 11:09
	MiHpt-20-071119	Initial	19071205-008	W	77661	166021	07/15/2019 08:04	07/15/2019 11:32
	MiHpt-5-071119	Initial	19071205-009	W	77661	166021	07/15/2019 08:04	07/15/2019 11:54
	MiHpt-22-071119	Initial	19071205-010	W	77661	166021	07/15/2019 08:04	07/15/2019 14:56
	ECS-MW4-071119	Initial	19071205-011	W	77661	166021	07/15/2019 08:04	07/15/2019 15:18
	MiHpt-15-071119	Initial	19071205-012	W	77661	166021	07/15/2019 08:04	07/15/2019 15:41
	MiHpt-14-071119	Initial	19071205-013	W	77661	166021	07/15/2019 08:04	07/15/2019 16:04
	77661-1-BKS	BKS	77661-1-BKS	W	77661	166021	07/15/2019 08:04	07/15/2019 09:09

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Lab Chronology

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Method	Client Sample ID	Analysis Type	PSS Sample ID	Mtx	Prep Batch	Analytical Batch	Prepared	Analyzed
SW-846 8260 B	77661-1-BLK	BLK	77661-1-BLK	W	77661	166021	07/15/2019 08:04	07/15/2019 10:46
	TEC-MW4-071119 S	MS	19071205-002 S	W	77661	166021	07/15/2019 08:04	07/15/2019 13:25
	TEC-MW4-071119 SD	MSD	19071205-002 S	W	77661	166021	07/15/2019 08:04	07/15/2019 13:48
	MiHpt-21-071119	Reanalysis	19071205-006	W	77638	166021	07/12/2019 08:04	07/15/2019 16:49
	MiHpt-7-071119	Reanalysis	19071205-007	W	77638	166021	07/12/2019 08:04	07/15/2019 17:12
	MiHpt-5-071119	Reanalysis	19071205-009	W	77661	166021	07/15/2019 08:04	07/15/2019 13:02
	MW-23-071119	Initial	19071205-014	W	77675	166046	07/16/2019 11:46	07/16/2019 19:19
	77675-1-BKS	BKS	77675-1-BKS	W	77675	166046	07/16/2019 11:46	07/16/2019 12:52
	77675-1-BLK	BLK	77675-1-BLK	W	77675	166046	07/16/2019 11:46	07/16/2019 14:22
	MW-23-071119 S	MS	19071205-014 S	W	77675	166046	07/16/2019 11:46	07/16/2019 20:05
	MW-23-071119 SD	MSD	19071205-014 S	W	77675	166046	07/16/2019 11:46	07/16/2019 20:28
SW-846 8270 C	MW-25-071119	Initial	19071205-001	W	77642	166073	07/15/2019 08:53	07/16/2019 07:41
	TEC-MW4-071119	Initial	19071205-002	W	77642	166073	07/15/2019 08:53	07/16/2019 00:52
	TEC-MW2-071119	Initial	19071205-003	W	77642	166073	07/15/2019 08:53	07/16/2019 01:21
	MW-24-071119	Initial	19071205-004	W	77642	166073	07/15/2019 08:53	07/16/2019 01:50
	MiHpt-8-071119	Initial	19071205-005	W	77642	166073	07/15/2019 08:53	07/16/2019 04:16
	MiHpt-21-071119	Initial	19071205-006	W	77642	166073	07/15/2019 08:53	07/16/2019 06:42
	MiHpt-7-071119	Initial	19071205-007	W	77642	166073	07/15/2019 08:53	07/16/2019 04:45
	MiHpt-20-071119	Initial	19071205-008	W	77642	166073	07/15/2019 08:53	07/16/2019 02:20
	MiHpt-5-071119	Initial	19071205-009	W	77642	166073	07/15/2019 08:53	07/16/2019 05:15
	ECS-MW4-071119	Initial	19071205-011	W	77642	166073	07/15/2019 08:53	07/16/2019 02:49
	MiHpt-15-071119	Initial	19071205-012	W	77642	166073	07/15/2019 08:53	07/16/2019 03:18
	MiHpt-14-071119	Initial	19071205-013	W	77642	166073	07/15/2019 08:53	07/16/2019 06:13
	MW-23-071119	Initial	19071205-014	W	77642	166073	07/15/2019 08:53	07/16/2019 03:47
	77642-1-BKS	BKS	77642-1-BKS	W	77642	166073	07/15/2019 08:53	07/15/2019 23:24
	77642-1-BLK	BLK	77642-1-BLK	W	77642	166073	07/15/2019 08:53	07/15/2019 22:55
	77642-1-BSD	BSD	77642-1-BSD	W	77642	166073	07/15/2019 08:53	07/15/2019 23:53
	MiHpt-22-071119	Initial	19071205-010	W	77642	166075	07/15/2019 08:53	07/16/2019 12:18
	MiHpt-21-071119	Reanalysis	19071205-006	W	77642	166075	07/15/2019 08:53	07/16/2019 13:16
	MiHpt-7-071119	Reanalysis	19071205-007	W	77642	166075	07/15/2019 08:53	07/16/2019 13:45
	MiHpt-5-071119	Reanalysis	19071205-009	W	77642	166075	07/15/2019 08:53	07/16/2019 12:47

Analytical Method: SW-846 6020 A Prep Method: SW3010A
Seq Number: 166058 Matrix: Water Date Prep: 07/15/19
MB Sample Id: 77647-1-BLK LCS Sample Id: 77647-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Antimony	<5.000	40.00	40.98	102	80-120	ug/L	
Arsenic	<1.000	40.00	39.24	98	80-120	ug/L	
Beryllium	<1.000	40.00	37.16	93	80-120	ug/L	
Cadmium	<1.000	40.00	41.16	103	80-120	ug/L	
Chromium	<1.000	40.00	40.14	100	80-120	ug/L	
Copper	<1.000	40.00	37.12	93	80-120	ug/L	
Lead	<1.000	40.00	36.93	92	80-120	ug/L	
Mercury	<0.2000	1.000	0.8960	90	80-120	ug/L	
Nickel	<1.000	40.00	40.87	102	80-120	ug/L	
Selenium	<1.000	40.00	39.34	98	80-120	ug/L	
Silver	<1.000	40.00	36.38	91	80-120	ug/L	
Thallium	<1.000	40.00	36.14	90	80-120	ug/L	
Zinc	<20.00	200	207.5	104	80-120	ug/L	

Analytical Method: SW-846 6020 A Prep Method: SW3010A
Seq Number: 166058 Matrix: Ground Water Date Prep: 07/15/19
Parent Sample Id: 19071205-001 MS Sample Id: 19071205-001 S MSD Sample Id: 19071205-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Antimony	<5.000	40.00	41.90	105	42.17	105	75-125	0	25	ug/L	
Arsenic	2.158	40.00	43.78	104	40.67	96	75-125	8	25	ug/L	
Beryllium	2.662	40.00	35.24	81	35.63	82	75-125	1	25	ug/L	
Cadmium	<1.000	40.00	42.38	106	40.27	101	75-125	5	25	ug/L	
Chromium	4.739	40.00	45.33	101	41.92	93	75-125	8	25	ug/L	
Copper	<1.000	40.00	38.69	97	36.55	91	75-125	6	25	ug/L	
Lead	3.405	40.00	37.79	86	36.89	84	75-125	2	25	ug/L	
Mercury	<0.2000	1.000	0.8150	82	0.8440	84	75-125	2	25	ug/L	
Nickel	4.794	40.00	44.92	100	42.55	94	75-125	6	25	ug/L	
Selenium	<1.000	40.00	4.734	12	4.921	12	75-125	0	25	ug/L	X
Silver	<1.000	40.00	35.36	88	35.75	89	75-125	1	25	ug/L	
Thallium	<1.000	40.00	29.26	73	30.07	75	75-125	3	25	ug/L	X
Zinc	35.36	200	242.7	104	229.5	97	75-125	7	25	ug/L	

Analytical Method: SW-846 8015 C Prep Method: SW3510C
Seq Number: 165998 Matrix: Water Date Prep: 07/12/19
MB Sample Id: 77627-1-BLK LCS Sample Id: 77627-1-BKS LCSD Sample Id: 77627-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
TPH-DRO (Diesel Range Organics)	<0.1000	1.000	0.9449	94	0.9707	97	53-113	3	21	mg/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
o-Terphenyl	74		92		93		38-114	%

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

QC Summary

Project Name Robinson Terminal North
PSS Project No.: 19071205

Analytical Method: SW-846 8270 C Prep Method: SW3510C
Seq Number: 166073 Matrix: Water Date Prep: 07/15/19
MB Sample Id: 77642-1-BLK LCS Sample Id: 77642-1-BKS LCSD Sample Id: 77642-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Acenaphthene	<0.5000	40.00	32.42	81	33.41	84	67-110	4	20	ug/L	
Acenaphthylene	<0.5000	40.00	33.43	84	33.12	83	69-106	1	20	ug/L	
Acetophenone	<5.000	40.00	30.02	75	29.94	75	67-107	0	20	ug/L	
Anthracene	<0.5000	40.00	33.70	84	31.45	79	79-108	6	20	ug/L	
Atrazine	<5.000	40.00	20.01	50	19.10	48	17-98	4	20	ug/L	
Benzo(a)anthracene	<0.5000	40.00	38.96	97	36.21	91	76-109	6	20	ug/L	
Benzo(a)pyrene	<0.5000	40.00	36.18	90	36.16	90	76-114	0	20	ug/L	
Benzo(b)fluoranthene	<0.5000	40.00	40.28	101	41.45	104	67-121	3	20	ug/L	
Benzo(g,h,i)perylene	<0.5000	40.00	34.81	87	33.90	85	75-107	2	20	ug/L	
Benzo(k)fluoranthene	<0.5000	40.00	27.36	68	29.63	74	62-132	8	20	ug/L	
Biphenyl (Diphenyl)	<5.000	40.00	29.38	73	31.22	78	71-108	7	20	ug/L	
Butyl benzyl phthalate	<5.000	40.00	39.43	99	37.19	93	74-117	6	20	ug/L	
bis(2-chloroethoxy) methane	<5.000	40.00	32.21	81	33.40	84	69-111	4	20	ug/L	
bis(2-chloroethyl) ether	<5.000	40.00	30.45	76	31.31	78	62-103	3	20	ug/L	
bis(2-chloroisopropyl) ether	<5.000	40.00	26.64	67	27.14	68	50-103	1	20	ug/L	
bis(2-ethylhexyl) phthalate	<5.000	40.00	40.20	101	39.07	98	78-114	3	20	ug/L	
4-Bromophenylphenyl ether	<5.000	40.00	36.44	91	36.99	92	82-108	1	20	ug/L	
Di-n-butyl phthalate	<5.000	40.00	35.06	88	32.37	81	71-115	8	20	ug/L	
Carbazole	<5.000	40.00	42.32	106	38.46	96	52-134	10	20	ug/L	
Caprolactam	<5.000	40.00	30.95	77	31.22	78	50-125	1	20	ug/L	
4-Chloro-3-methyl phenol	<5.000	40.00	36.77	92	38.30	96	72-121	4	20	ug/L	
4-Chloroaniline	<5.000	40.00	33.37	83	34.81	87	54-103	5	20	ug/L	
2-Chloronaphthalene	<5.000	40.00	30.42	76	31.23	78	66-105	3	20	ug/L	
2-Chlorophenol	<5.000	40.00	33.74	84	34.92	87	63-109	4	20	ug/L	
4-Chlorophenyl Phenyl ether	<5.000	40.00	33.61	84	35.66	89	73-100	6	20	ug/L	
Chrysene	<0.5000	40.00	38.75	97	38.09	95	78-111	2	20	ug/L	
Dibenz(a,h)Anthracene	<0.5000	40.00	37.04	93	37.85	95	76-106	2	20	ug/L	
Dibenzofuran	<5.000	40.00	32.00	80	32.67	82	70-111	2	20	ug/L	
3,3-Dichlorobenzidine	<5.000	40.00	51.92	130	50.72	127	79-132	2	20	ug/L	
2,4-Dichlorophenol	<2.000	40.00	37.15	93	38.59	96	65-118	3	20	ug/L	
Diethyl phthalate	<5.000	40.00	34.41	86	34.18	85	60-114	1	20	ug/L	
Dimethyl phthalate	<5.000	40.00	35.45	89	34.91	87	66-107	2	20	ug/L	
2,4-Dimethylphenol	<5.000	40.00	36.28	91	37.20	93	60-119	2	20	ug/L	
4,6-Dinitro-2-methyl phenol	<5.000	40.00	42.66	107	42.78	107	60-130	0	20	ug/L	
2,4-Dinitrophenol	<10.00	40.00	46.42	116	45.49	114	36-136	2	20	ug/L	
2,4-Dinitrotoluene	<0.5000	40.00	35.05	88	34.46	86	70-119	2	20	ug/L	
2,6-Dinitrotoluene	<5.000	40.00	34.24	86	32.90	82	68-117	5	20	ug/L	
Fluoranthene	<0.5000	40.00	34.89	87	35.03	88	79-112	1	20	ug/L	
Fluorene	<0.5000	40.00	32.45	81	36.34	91	71-109	12	20	ug/L	
Hexachlorobenzene	<0.5000	40.00	32.20	81	31.73	79	76-110	3	20	ug/L	
Hexachlorobutadiene	<0.5000	40.00	31.16	78	32.66	82	64-113	5	20	ug/L	
Hexachlorocyclopentadiene	<5.000	40.00	36.70	92	38.05	95	49-124	3	20	ug/L	
Hexachloroethane	<0.5000	40.00	28.11	70	28.38	71	62-105	1	20	ug/L	
Indeno(1,2,3-c,d)Pyrene	<0.5000	40.00	38.43	96	39.06	98	69-120	2	20	ug/L	
Isophorone	<5.000	40.00	36.63	92	37.71	94	68-108	2	20	ug/L	
2-Methylnaphthalene	<0.5000	40.00	32.99	82	35.17	88	64-117	7	20	ug/L	
2-Methyl phenol	<2.000	40.00	34.19	85	34.38	86	67-111	1	20	ug/L	
3&4-Methylphenol	<2.000	40.00	33.76	84	33.66	84	67-107	0	20	ug/L	
Naphthalene	<0.5000	40.00	30.50	76	31.92	80	65-103	5	20	ug/L	
2-Nitroaniline	<5.000	40.00	32.31	81	32.33	81	59-114	0	20	ug/L	
3-Nitroaniline	<5.000	40.00	36.57	91	35.79	89	60-109	2	20	ug/L	

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

QC Summary

Project Name Robinson Terminal North
PSS Project No.: 19071205

Analytical Method: SW-846 8270 C Prep Method: SW3510C
Seq Number: 166073 Matrix: Water Date Prep: 07/15/19
MB Sample Id: 77642-1-BLK LCS Sample Id: 77642-1-BKS LCSD Sample Id: 77642-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
4-Nitroaniline	<5.000	40.00	39.81	100	35.80	90	51-125	11	20	ug/L	
Nitrobenzene	<0.5000	40.00	30.13	75	31.51	79	60-107	5	20	ug/L	
2-Nitrophenol	<5.000	40.00	36.91	92	38.29	96	65-119	4	20	ug/L	
4-Nitrophenol	<5.000	40.00	35.46	89	31.61	79	46-121	12	20	ug/L	
N-Nitrosodi-n-propyl amine	<5.000	40.00	34.31	86	34.38	86	60-98	0	20	ug/L	
N-Nitrosodiphenylamine	<5.000	40.00	37.46	94	37.34	93	68-106	1	20	ug/L	
Di-n-octyl phthalate	<5.000	40.00	33.55	84	35.52	89	69-120	6	20	ug/L	
Pentachlorophenol	<5.000	40.00	42.22	106	39.26	98	63-119	8	20	ug/L	
Phenanthrene	<0.5000	40.00	32.95	82	34.21	86	73-109	5	20	ug/L	
Phenol	<5.000	40.00	32.57	81	33.82	85	65-110	5	20	ug/L	
Pyrene	<0.5000	40.00	36.54	91	33.71	84	78-111	8	20	ug/L	
Pyridine	<0.5000	40.00	24.82	62	25.21	63	47-105	2	20	ug/L	
2,4,5-Trichlorophenol	<2.000	40.00	37.48	94	37.35	93	69-114	1	20	ug/L	
2,4,6-Trichlorophenol	<2.000	40.00	37.70	94	39.88	100	68-118	6	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
2-Fluorobiphenyl	87		88		91		35-107	%
2-Fluorophenol	80		76		81		32-106	%
Nitrobenzene-d5	82		81		86		34-123	%
Phenol-d6	80		77		79		36-111	%
Terphenyl-D14	94		94		90		43-143	%
2,4,6-Tribromophenol	89		106		104		26-122	%

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 166009 Matrix: Water Date Prep: 07/15/19
MB Sample Id: 77653-2-BLK LCS Sample Id: 77653-2-BKS LCSD Sample Id: 77653-2-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
TPH-GRO (Gasoline Range Organics	<100	5000	4700	94	4400	88	58-141	7	20	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units
a,a,a-Trifluorotoluene	100		100		100		64-142	%

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

QC Summary

Project Name Robinson Terminal North
PSS Project No.: 19071205

Analytical Method: SW-846 8260 B
Prep Method: SW5030B
Seq Number: 165978
Matrix: Water
Date Prep: 07/12/19
MB Sample Id: 77638-1-BLK
LCS Sample Id: 77638-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<10.00	50.00	63.12	126	55-120	ug/L	H
Benzene	<1.000	50.00	50.80	102	87-123	ug/L	
Bromochloromethane	<1.000	50.00	51.27	103	74-136	ug/L	
Bromodichloromethane	<1.000	50.00	51.24	102	83-125	ug/L	
Bromoform	<5.000	50.00	51.66	103	72-129	ug/L	
Bromomethane	<1.000	50.00	52.36	105	45-167	ug/L	
2-Butanone (MEK)	<10.00	50.00	61.94	124	45-136	ug/L	
Carbon Disulfide	<10.00	50.00	47.72	95	87-123	ug/L	
Carbon tetrachloride	<1.000	50.00	50.89	102	79-133	ug/L	
Chlorobenzene	<1.000	50.00	52.00	104	87-127	ug/L	
Chloroethane	<1.000	50.00	46.06	92	81-122	ug/L	
Chloroform	<1.000	50.00	47.55	95	76-129	ug/L	
Chloromethane	<1.000	50.00	49.39	99	59-121	ug/L	
Cyclohexane	<10.00	50.00	55.07	110	83-122	ug/L	
1,2-Dibromo-3-chloropropane	<5.000	50.00	50.12	100	63-140	ug/L	
Dibromochloromethane	<1.000	50.00	52.10	104	73-139	ug/L	
1,2-Dibromoethane	<1.000	50.00	54.79	110	80-127	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	55.37	111	82-129	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	54.47	109	88-127	ug/L	
Dichlorodifluoromethane	<1.000	50.00	47.20	94	70-131	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	53.42	107	84-129	ug/L	
1,1-Dichloroethane	<1.000	50.00	50.13	100	85-120	ug/L	
1,2-Dichloroethane	<1.000	50.00	49.63	99	86-125	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	51.05	102	86-126	ug/L	
1,1-Dichloroethene	<1.000	50.00	47.04	94	85-123	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.56	103	83-120	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	51.86	104	81-125	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	51.55	103	79-121	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	47.37	95	87-120	ug/L	
Ethylbenzene	<1.000	50.00	56.91	114	82-128	ug/L	
2-Hexanone (MBK)	<5.000	50.00	60.97	122	56-116	ug/L	H
Isopropylbenzene	<1.000	50.00	59.01	118	81-128	ug/L	
Methyl Acetate	<10.00	50.00	47.33	95	68-129	ug/L	
Methylcyclohexane	<10.00	50.00	56.67	113	84-127	ug/L	
Methylene chloride	<1.000	50.00	45.81	92	85-119	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	55.93	112	57-116	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	49.89	100	61-130	ug/L	
Naphthalene	<1.000	50.00	52.47	105	74-114	ug/L	
Styrene	<1.000	50.00	51.89	104	76-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.18	104	79-131	ug/L	
Tetrachloroethene	<1.000	50.00	52.21	104	85-131	ug/L	
Toluene	<1.000	50.00	52.11	104	82-127	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	58.62	117	79-123	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	59.42	119	78-123	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	52.68	105	87-125	ug/L	
Trichloroethene	<1.000	50.00	53.46	107	87-124	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	52.97	106	84-127	ug/L	
Trichlorofluoromethane	<5.000	50.00	51.94	104	85-130	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	45.65	91	81-132	ug/L	
Vinyl chloride	<1.000	50.00	44.97	90	66-133	ug/L	
m&p-Xylene	<2.000	100	113	113	78-126	ug/L	

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

QC Summary

Project Name Robinson Terminal North
PSS Project No.: 19071205

Analytical Method: SW-846 8260 B
Prep Method: SW5030B
Seq Number: 165978
Matrix: Water
Date Prep: 07/12/19
MB Sample Id: 77638-1-BLK
LCS Sample Id: 77638-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	56.45	113	75-130	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	103		99		87-109	%
Dibromofluoromethane	99		100		93-111	%
Toluene-D8	100		101		91-109	%

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

QC Summary

Project Name Robinson Terminal North
PSS Project No.: 19071205

Analytical Method: SW-846 8260 B
Prep Method: SW5030B
Seq Number: 166021
Matrix: Water
Date Prep: 07/15/19
MB Sample Id: 77661-1-BLK
LCS Sample Id: 77661-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<10.00	50.00	63.18	126	55-120	ug/L	H
Benzene	<1.000	50.00	51.87	104	87-123	ug/L	
Bromochloromethane	<1.000	50.00	54.75	110	74-136	ug/L	
Bromodichloromethane	<1.000	50.00	50.19	100	83-125	ug/L	
Bromoform	<5.000	50.00	49.95	100	72-129	ug/L	
Bromomethane	<1.000	50.00	35.79	72	45-167	ug/L	
2-Butanone (MEK)	<10.00	50.00	64.10	128	45-136	ug/L	
Carbon Disulfide	<10.00	50.00	56.15	112	87-123	ug/L	
Carbon tetrachloride	<1.000	50.00	53.65	107	79-133	ug/L	
Chlorobenzene	<1.000	50.00	51.39	103	87-127	ug/L	
Chloroethane	<1.000	50.00	47.66	95	81-122	ug/L	
Chloroform	<1.000	50.00	47.55	95	76-129	ug/L	
Chloromethane	<1.000	50.00	44.32	89	59-121	ug/L	
Cyclohexane	<10.00	50.00	53.49	107	83-122	ug/L	
1,2-Dibromo-3-chloropropane	<5.000	50.00	46.23	92	63-140	ug/L	
Dibromochloromethane	<1.000	50.00	50.38	101	73-139	ug/L	
1,2-Dibromoethane	<1.000	50.00	52.99	106	80-127	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	52.02	104	82-129	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	51.46	103	88-127	ug/L	
Dichlorodifluoromethane	<1.000	50.00	61.65	123	70-131	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	49.84	100	84-129	ug/L	
1,1-Dichloroethane	<1.000	50.00	51.01	102	85-120	ug/L	
1,2-Dichloroethane	<1.000	50.00	50.69	101	86-125	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	52.74	105	86-126	ug/L	
1,1-Dichloroethene	<1.000	50.00	49.94	100	85-123	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.61	103	83-120	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	49.67	99	81-125	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	50.20	100	79-121	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	49.29	99	87-120	ug/L	
Ethylbenzene	<1.000	50.00	55.45	111	82-128	ug/L	
2-Hexanone (MBK)	<5.000	50.00	59.88	120	56-116	ug/L	H
Isopropylbenzene	<1.000	50.00	56.56	113	81-128	ug/L	
Methyl Acetate	<10.00	50.00	46.18	92	68-129	ug/L	
Methylcyclohexane	<10.00	50.00	55.51	111	84-127	ug/L	
Methylene chloride	<1.000	50.00	47.43	95	85-119	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	52.48	105	57-116	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	51.09	102	61-130	ug/L	
Naphthalene	<1.000	50.00	50.11	100	74-114	ug/L	
Styrene	<1.000	50.00	49.11	98	76-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	48.14	96	79-131	ug/L	
Tetrachloroethene	<1.000	50.00	52.80	106	85-131	ug/L	
Toluene	<1.000	50.00	52.31	105	82-127	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	54.81	110	79-123	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	54.67	109	78-123	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	55.02	110	87-125	ug/L	
Trichloroethene	<1.000	50.00	54.69	109	87-124	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	52.11	104	84-127	ug/L	
Trichlorofluoromethane	<5.000	50.00	51.46	103	85-130	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	49.59	99	81-132	ug/L	
Vinyl chloride	<1.000	50.00	46.03	92	66-133	ug/L	
m&p-Xylene	<2.000	100	110.6	111	78-126	ug/L	

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

QC Summary

Project Name Robinson Terminal North
PSS Project No.: 19071205

Analytical Method: SW-846 8260 B
Prep Method: SW5030B
Seq Number: 166021
Matrix: Water
Date Prep: 07/15/19
MB Sample Id: 77661-1-BLK
LCS Sample Id: 77661-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	54.60	109	75-130	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	101		99		87-109	%
Dibromofluoromethane	98		100		93-111	%
Toluene-D8	100		101		91-109	%

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

QC Summary

Project Name Robinson Terminal North
PSS Project No.: 19071205

Analytical Method: SW-846 8260 B
Seq Number: 166046
MB Sample Id: 77675-1-BLK

Matrix: Water
LCS Sample Id: 77675-1-BKS

Prep Method: SW5030B
Date Prep: 07/16/19

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
Acetone	<10.00	50.00	64.03	128	55-120	ug/L	H
Benzene	<1.000	50.00	50.96	102	87-123	ug/L	
Bromochloromethane	<1.000	50.00	53.00	106	74-136	ug/L	
Bromodichloromethane	<1.000	50.00	48.96	98	83-125	ug/L	
Bromoform	<5.000	50.00	48.18	96	72-129	ug/L	
Bromomethane	<1.000	50.00	44.38	89	45-167	ug/L	
2-Butanone (MEK)	<10.00	50.00	65.53	131	45-136	ug/L	
Carbon Disulfide	<10.00	50.00	54.29	109	87-123	ug/L	
Carbon tetrachloride	<1.000	50.00	51.75	104	79-133	ug/L	
Chlorobenzene	<1.000	50.00	49.95	100	87-127	ug/L	
Chloroethane	<1.000	50.00	47.65	95	81-122	ug/L	
Chloroform	<1.000	50.00	46.61	93	76-129	ug/L	
Chloromethane	<1.000	50.00	48.39	97	59-121	ug/L	
Cyclohexane	<10.00	50.00	52.54	105	83-122	ug/L	
1,2-Dibromo-3-chloropropane	<5.000	50.00	45.31	91	63-140	ug/L	
Dibromochloromethane	<1.000	50.00	48.52	97	73-139	ug/L	
1,2-Dibromoethane	<1.000	50.00	51.93	104	80-127	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	50.74	101	82-129	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	50.22	100	88-127	ug/L	
Dichlorodifluoromethane	<1.000	50.00	60.62	121	70-131	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	48.62	97	84-129	ug/L	
1,1-Dichloroethane	<1.000	50.00	50.04	100	85-120	ug/L	
1,2-Dichloroethane	<1.000	50.00	49.45	99	86-125	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	51.46	103	86-126	ug/L	
1,1-Dichloroethene	<1.000	50.00	48.92	98	85-123	ug/L	
1,2-Dichloropropane	<1.000	50.00	50.42	101	83-120	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.00	96	81-125	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	48.38	97	79-121	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	47.88	96	87-120	ug/L	
Ethylbenzene	<1.000	50.00	54.09	108	82-128	ug/L	
2-Hexanone (MBK)	<5.000	50.00	59.89	120	56-116	ug/L	H
Isopropylbenzene	<1.000	50.00	55.07	110	81-128	ug/L	
Methyl Acetate	<10.00	50.00	46.07	92	68-129	ug/L	
Methylcyclohexane	<10.00	50.00	54.62	109	84-127	ug/L	
Methylene chloride	<1.000	50.00	46.69	93	85-119	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	52.72	105	57-116	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	49.48	99	61-130	ug/L	
Naphthalene	<1.000	50.00	49.05	98	74-114	ug/L	
Styrene	<1.000	50.00	48.08	96	76-130	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	47.78	96	79-131	ug/L	
Tetrachloroethene	<1.000	50.00	50.68	101	85-131	ug/L	
Toluene	<1.000	50.00	50.97	102	82-127	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	53.46	107	79-123	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	53.06	106	78-123	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	53.14	106	87-125	ug/L	
Trichloroethene	<1.000	50.00	53.37	107	87-124	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	51.15	102	84-127	ug/L	
Trichlorofluoromethane	<5.000	50.00	50.44	101	85-130	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	48.39	97	81-132	ug/L	
Vinyl chloride	<1.000	50.00	47.18	94	66-133	ug/L	
m&p-Xylene	<2.000	100	107.3	107	78-126	ug/L	

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

QC Summary

Project Name Robinson Terminal North
PSS Project No.: 19071205

Analytical Method: SW-846 8260 B
Prep Method: SW5030B
Seq Number: 166046
Matrix: Water
Date Prep: 07/16/19
MB Sample Id: 77675-1-BLK
LCS Sample Id: 77675-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Flag
o-Xylene	<1.000	50.00	53.09	106	75-130	ug/L	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units
4-Bromofluorobenzene	101		100		87-109	%
Dibromofluoromethane	98		100		93-111	%
Toluene-D8	100		101		91-109	%

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

QC Summary

Project Name Robinson Terminal North
PSS Project No.: 19071205

Analytical Method: SW-846 8260 B Prep Method: SW5030B
Seq Number: 166021 Matrix: Ground Water Date Prep: 07/15/19
Parent Sample Id: 19071205-002 MS Sample Id: 19071205-002 S MSD Sample Id: 19071205-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Acetone	<10.00	50.00	32.81	66	32.07	64	50-156	3	25	ug/L	
Benzene	<1.000	50.00	52.32	105	50.88	102	77-143	3	25	ug/L	
Bromochloromethane	<1.000	50.00	54.02	108	52.96	106	83-133	2	25	ug/L	
Bromodichloromethane	<1.000	50.00	48.84	98	48.38	97	75-142	1	25	ug/L	
Bromoform	<5.000	50.00	48.27	97	48.26	97	74-131	0	25	ug/L	
Bromomethane	<1.000	50.00	38.16	76	38.39	77	48-166	1	25	ug/L	
2-Butanone (MEK)	<10.00	50.00	45.53	91	44.62	89	68-127	2	25	ug/L	
Carbon Disulfide	<10.00	50.00	54.42	109	53.20	106	73-148	3	25	ug/L	
Carbon tetrachloride	<1.000	50.00	52.06	104	51.31	103	76-144	1	25	ug/L	
Chlorobenzene	<1.000	50.00	51.14	102	50.07	100	73-150	2	25	ug/L	
Chloroethane	<1.000	50.00	49.59	99	47.62	95	72-142	4	25	ug/L	
Chloroform	<1.000	50.00	48.93	98	47.69	95	81-134	3	25	ug/L	
Chloromethane	<1.000	50.00	46.43	93	43.24	86	46-143	8	25	ug/L	
Cyclohexane	<10.00	50.00	52.70	105	50.83	102	75-138	3	25	ug/L	
1,2-Dibromo-3-chloropropane	<5.000	50.00	47.78	96	49.16	98	73-135	2	25	ug/L	
Dibromochloromethane	<1.000	50.00	48.89	98	48.70	97	81-137	1	25	ug/L	
1,2-Dibromoethane	<1.000	50.00	52.73	105	52.58	105	68-149	0	25	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	51.25	103	51.09	102	66-146	1	25	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	50.16	100	49.96	100	61-154	0	25	ug/L	
Dichlorodifluoromethane	<1.000	50.00	61.41	123	59.43	119	60-148	3	25	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	48.26	97	48.30	97	64-150	0	25	ug/L	
1,1-Dichloroethane	<1.000	50.00	48.88	98	44.66	89	76-139	10	25	ug/L	
1,2-Dichloroethane	<1.000	50.00	50.33	101	49.34	99	81-139	2	25	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	52.33	105	51.38	103	80-142	2	25	ug/L	
1,1-Dichloroethene	<1.000	50.00	49.64	99	47.91	96	74-142	3	25	ug/L	
1,2-Dichloropropane	<1.000	50.00	51.21	102	50.39	101	73-138	1	25	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	47.71	95	46.87	94	64-149	1	25	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	47.27	95	47.01	94	67-135	1	25	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	49.05	98	46.04	92	75-142	6	25	ug/L	
Ethylbenzene	<1.000	50.00	55.11	110	53.80	108	68-151	2	25	ug/L	
2-Hexanone (MBK)	<5.000	50.00	47.59	95	47.28	95	43-147	0	25	ug/L	
Isopropylbenzene	<1.000	50.00	56.34	113	55.41	111	67-148	2	25	ug/L	
Methyl Acetate	<10.00	50.00	48.15	96	47.71	95	69-133	1	25	ug/L	
Methylcyclohexane	<10.00	50.00	53.47	107	51.65	103	62-152	4	25	ug/L	
Methylene chloride	<1.000	50.00	47.82	96	46.47	93	73-141	3	25	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	53.68	107	53.28	107	61-125	0	25	ug/L	
Methyl-t-Butyl Ether	<1.000	50.00	50.51	101	45.39	91	45-143	10	25	ug/L	
Naphthalene	<1.000	50.00	51.56	103	51.58	103	40-145	0	25	ug/L	
Styrene	<1.000	50.00	47.98	96	46.96	94	72-135	2	25	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	50.56	101	51.05	102	70-150	1	25	ug/L	
Tetrachloroethene	<1.000	50.00	50.83	102	50.25	101	55-166	1	25	ug/L	
Toluene	<1.000	50.00	52.09	104	50.78	102	68-152	2	25	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	52.28	105	52.35	105	21-172	0	25	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	51.12	102	51.11	102	16-172	0	25	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	54.37	109	53.31	107	80-143	2	25	ug/L	
Trichloroethene	<1.000	50.00	53.34	107	52.12	104	73-148	3	25	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	51.88	104	50.90	102	68-154	2	25	ug/L	
Trichlorofluoromethane	<5.000	50.00	51.40	103	49.43	99	80-145	4	25	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	48.02	96	46.21	92	73-147	4	25	ug/L	
Vinyl chloride	<1.000	50.00	45.70	91	40.99	82	79-128	10	25	ug/L	
m&p-Xylene	<2.000	100	108.6	109	106.2	106	70-138	3	25	ug/L	

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

QC Summary

Project Name Robinson Terminal North
PSS Project No.: 19071205

Analytical Method: SW-846 8260 B
Prep Method: SW5030B
Seq Number: 166021
Matrix: Ground Water
Date Prep: 07/15/19
Parent Sample Id: 19071205-002
MS Sample Id: 19071205-002 S
MSD Sample Id: 19071205-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
o-Xylene	<1.000	50.00	54.30	109	53.18	106	71-139	3	25	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
4-Bromofluorobenzene	100		100		87-109	%
Dibromofluoromethane	99		100		93-111	%
Toluene-D8	101		101		91-109	%

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

QC Summary

Project Name Robinson Terminal North
PSS Project No.: 19071205

Analytical Method: SW-846 8260 B Prep Method: SW5030B
Seq Number: 166046 Matrix: Ground Water Date Prep: 07/16/19
Parent Sample Id: 19071205-014 MS Sample Id: 19071205-014 S MSD Sample Id: 19071205-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
Acetone	<10.00	50.00	36.02	72	35.88	72	50-156	0	25	ug/L	
Benzene	<1.000	50.00	54.67	109	52.73	105	77-143	4	25	ug/L	
Bromochloromethane	<1.000	50.00	55.37	111	53.95	108	83-133	3	25	ug/L	
Bromodichloromethane	<1.000	50.00	50.66	101	49.98	100	75-142	1	25	ug/L	
Bromoform	<5.000	50.00	50.05	100	49.58	99	74-131	1	25	ug/L	
Bromomethane	<1.000	50.00	46.89	94	46.27	93	48-166	1	25	ug/L	
2-Butanone (MEK)	<10.00	50.00	46.99	94	48.35	97	68-127	3	25	ug/L	
Carbon Disulfide	<10.00	50.00	56.62	113	54.88	110	73-148	3	25	ug/L	
Carbon tetrachloride	<1.000	50.00	55.04	110	52.93	106	76-144	4	25	ug/L	
Chlorobenzene	<1.000	50.00	53.38	107	51.93	104	73-150	3	25	ug/L	
Chloroethane	<1.000	50.00	52.52	105	49.68	99	72-142	6	25	ug/L	
Chloroform	<1.000	50.00	49.52	99	47.73	95	81-134	4	25	ug/L	
Chloromethane	<1.000	50.00	55.21	110	50.72	101	46-143	9	25	ug/L	
Cyclohexane	<10.00	50.00	55.18	110	52.56	105	75-138	5	25	ug/L	
1,2-Dibromo-3-chloropropane	<5.000	50.00	51.75	104	51.77	104	73-135	0	25	ug/L	
Dibromochloromethane	<1.000	50.00	50.46	101	50.07	100	81-137	1	25	ug/L	
1,2-Dibromoethane	<1.000	50.00	55.14	110	54.66	109	68-149	1	25	ug/L	
1,2-Dichlorobenzene	<1.000	50.00	53.47	107	53.03	106	66-146	1	25	ug/L	
1,3-Dichlorobenzene	<1.000	50.00	52.01	104	51.55	103	61-154	1	25	ug/L	
Dichlorodifluoromethane	<1.000	50.00	61.72	123	59.05	118	60-148	4	25	ug/L	
1,4-Dichlorobenzene	<1.000	50.00	50.21	100	49.92	100	64-150	0	25	ug/L	
1,1-Dichloroethane	<1.000	50.00	47.70	95	46.20	92	76-139	3	25	ug/L	
1,2-Dichloroethane	<1.000	50.00	52.38	105	51.05	102	81-139	3	25	ug/L	
cis-1,2-Dichloroethene	<1.000	50.00	54.11	108	52.55	105	80-142	3	25	ug/L	
1,1-Dichloroethene	<1.000	50.00	51.50	103	49.12	98	74-142	5	25	ug/L	
1,2-Dichloropropane	<1.000	50.00	53.51	107	52.09	104	73-138	3	25	ug/L	
cis-1,3-Dichloropropene	<1.000	50.00	48.22	96	47.02	94	64-149	2	25	ug/L	
trans-1,3-Dichloropropene	<1.000	50.00	47.89	96	47.49	95	67-135	1	25	ug/L	
trans-1,2-Dichloroethene	<1.000	50.00	50.89	102	48.49	97	75-142	5	25	ug/L	
Ethylbenzene	<1.000	50.00	58.05	116	55.98	112	68-151	4	25	ug/L	
2-Hexanone (MBK)	<5.000	50.00	50.06	100	50.74	101	43-147	1	25	ug/L	
Isopropylbenzene	<1.000	50.00	58.58	117	57.23	114	67-148	3	25	ug/L	
Methyl Acetate	<10.00	50.00	48.66	97	48.11	96	69-133	1	25	ug/L	
Methylcyclohexane	<10.00	50.00	53.93	108	51.62	103	62-152	5	25	ug/L	
Methylene chloride	<1.000	50.00	50.01	100	47.82	96	73-141	4	25	ug/L	
4-Methyl-2-Pentanone (MIBK)	<5.000	50.00	56.53	113	57.17	114	61-125	1	25	ug/L	
Methyl-t-Butyl Ether	5.690	50.00	57.57	104	56.70	102	45-143	2	25	ug/L	
Naphthalene	<1.000	50.00	54.26	109	55.72	111	40-145	2	25	ug/L	
Styrene	<1.000	50.00	50.56	101	49.25	99	72-135	2	25	ug/L	
1,1,2,2-Tetrachloroethane	<1.000	50.00	53.80	108	53.99	108	70-150	0	25	ug/L	
Tetrachloroethene	<1.000	50.00	51.46	103	50.06	100	55-166	3	25	ug/L	
Toluene	<1.000	50.00	54.02	108	52.55	105	68-152	3	25	ug/L	
1,2,3-Trichlorobenzene	<1.000	50.00	55.11	110	55.20	110	21-172	0	25	ug/L	
1,2,4-Trichlorobenzene	<1.000	50.00	53.19	106	53.91	108	16-172	2	25	ug/L	
1,1,1-Trichloroethane	<1.000	50.00	55.94	112	53.91	108	80-143	4	25	ug/L	
Trichloroethene	<1.000	50.00	54.57	109	53.16	106	73-148	3	25	ug/L	
1,1,2-Trichloroethane	<1.000	50.00	54.20	108	53.54	107	68-154	1	25	ug/L	
Trichlorofluoromethane	<5.000	50.00	53.55	107	50.71	101	80-145	6	25	ug/L	
1,1,2-Trichlorotrifluoroethane	<1.000	50.00	48.36	97	45.92	92	73-147	5	25	ug/L	
Vinyl chloride	<1.000	50.00	50.12	100	47.11	94	79-128	6	25	ug/L	
m&p-Xylene	<2.000	100	114.2	114	110.5	111	70-138	3	25	ug/L	

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

QC Summary

Project Name Robinson Terminal North
PSS Project No.: 19071205

Analytical Method: SW-846 8260 B

Prep Method: SW5030B
Seq Number: 166046
Matrix: Ground Water
Date Prep: 07/16/19
Parent Sample Id: 19071205-014
MS Sample Id: 19071205-014 S
MSD Sample Id: 19071205-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Flag
o-Xylene	<1.000	50.00	56.94	114	55.24	110	71-139	4	25	ug/L	

Surrogate	MS Result	MS Flag	MSD Result	MSD Flag	Limits	Units
4-Bromofluorobenzene	101		100		87-109	%
Dibromofluoromethane	100		99		93-111	%
Toluene-D8	101		100		91-109	%

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

1

*CLIENT: A-ZONE *OFFICE LOC.

*PROJECT MGR: M. BRUZZESE *PHONE NO.: (703) 608-5969

EMAIL: mbruzzese@a-zoneenvironmental.com FAX NO.: ( )

*PROJECT NAME: Robinson Terminal North PROJECT NO.:

SITE LOCATION: Alexandria, VA P.O. NO.:

SAMPLER(S): CH, EL, RP DW CERT NO.:

PSS Work Order #: 1907105 PAGE 1 OF 2

Matrix Codes:
SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe

2

LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used	HCl	–	HCl	–	HNO3							REMARKS
							Analysis/ Method Required (3) *	TPH GRO 8015C	TPH DRO 8015C	TCL VOCs 8260C	TCL SVOCs 8270C	PP Metals 6020A							
1	MW-25-071119	7/11/19	0945	GW	9	G		X	X	X	X	X							
2	TEC-MW4-071119		1005					X	X	X	X	X							
3	TEC-MW2-071119		1030					X	X	X	X	X							
4	MW-24-071119		1100					X	X	X	X	X							
5	MiHpt-8-071119		1105					X	X	X	X	X							
6	MiHpt-21-071119		1230					X	X	X	X	X							
7	MiHpt-7-071119		1300					X	X	X	X	X							
8	MiHpt-20-071119		1325					X	X	X	X	X							
9	MiHpt-5-071119		1410					X	X	X	X	X							
10	MiHpt-22-071119		1430					X	X	X	X	X							

5

Relinquished By: (1)	Date 7/12/19	Time 1040	Received By:
Relinquished By: (2)	Date 7/12/19	Time 1125	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

4

*Requested TAT (One TAT per COC)
☒ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☐ Other

Data Deliverables Required:
COA ☒ QC SUMM ☐ CLP LIKE ☐ OTHER ☐

# of Coolers: 5

Custody Seal: ABS

Ice Present: PRES Temp: 4.4°-5.2°C

Shipping Carrier: FDE

Special Instructions:

DW COMPLIANCE? YES ☐

EDD FORMAT TYPE

STATE RESULTS REPORTED TO:
MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

(1) *CLIENT: A-ZONE *OFFICE LOC.

*PROJECT MGR: M. BRUZZESI *PHONE NO.: (703) 608-5969

EMAIL: mbruzzesi@a-zoneenvironmental.com FAX NO.: ( )

*PROJECT NAME: Robinson Terminal North PROJECT NO.:

SITE LOCATION: Alexandria, VA P.O. NO.:

SAMPLER(S): CH, EL, RP DW CERT NO.:

PSS Work Order #: 1907125 PAGE 2 OF 2

Matrix Codes: SW=Surface Wtr DW=Drinking Wtr GW=Ground Wtr WW=Waste Wtr O=Oil S=Soil L=Liquid SOL=Solid A=Air WI=Wipe

(2)

LAB NO.	*SAMPLE IDENTIFICATION	*DATE (SAMPLED)	*TIME (SAMPLED)	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	Preservatives Used: HCl / — / HCl / — / HNO3	Analysis/ Method Required (3) * TPH GRO 8015C	TPH DRO 8015C	TCL VOCs 8260C	TCL SVOCs 8270C	PP Metals 6020A	REMARKS
11	EC5-MW4-071119	7/11/19	1520	GW	9	G		X	X	X	X	X	
12	MiHpt-15-071119		1520					X	X	X	X	X	
13	MiHpt-14-071119		1645					X	X	X	X	X	
14	~~MiHpt~~ MW-23-071119		1705					X	X	X	X	X	

(5)

Relinquished By: (1)	Date	Time	Received By:
	7/12/19	1040	
Relinquished By: (2)	Date	Time	Received By:
	7/12/19	1125	
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

*Requested TAT (One TAT per COC)
☒ 5-Day ☐ 3-Day ☐ 2-Day ☐ Next Day ☐ Emergency ☐ Other

Data Deliverables Required: COA ☒ QC SUMM ☐ CLP LIKE ☐ OTHER ☐

Special Instructions:

DW COMPLIANCE? YES ☐

EDD FORMAT TYPE

STATE RESULTS REPORTED TO: MD ☐ DE ☐ PA ☐ VA ☐ WV ☐ OTHER

# of Coolers: 5

Custody Seal: ABS

Ice Present: PRES Temp: 4.4° - 5.2°C

Shipping Carrier: DE

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

PHASE SEPARATION SCIENCE

6630 Baltimore National Pike
Baltimore, MD 21228
410-747-8770
800-932-9047
www.phaseonline.com

Sample Receipt Checklist

Project Name: Robinson Terminal North
PSS Project No.: 19071205

Client Name A-Zone Environmental Services
Disposal Date 08/16/2019

Received By Thomas Wingate
Date Received 07/12/2019 11:25:00 AM
Delivered By Trans Time Express
Tracking No Not Applicable
Logged In By Thomas Wingate

Shipping Container(s)
No. of Coolers 5

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	5.2
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	CH, EL, RP
COC agrees with sample labels?	Yes	MD DW Cert. No.	N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Holding Time

		Total No. of Samples Received	14
All Samples Received Within Holding Time(s)?	Yes	Total No. of Containers Received	126

Preservation

Total Metals	(pH<2)	Yes
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Samples Inspected/Checklist Completed By: Thomas Wingate — Date: 07/12/2019

PM Review and Approval: Lynn Jackson — Date: 07/15/2019