

All Phase Environmental, LLC

February 15, 2019

For: Alan Gray
Rooker Company

Subject Site: Invista-Dupont
110 Voyles Road
Athens, Georgia 30601

Limited Phase II Subsurface Investigation Report

All Phase Environmental, LLC completed a Limited Phase II Subsurface Investigation for the Invista-Dupont facility in Athens, Georgia on February 4, 2019. The purpose of the investigation was to test for petroleum hydrocarbons in areas near the former heating oil underground storage tanks (USTs). These non-regulated UST systems were removed prior to 1988 UST regulations. Heating oil USTs would not require any sampling by today's standards, however, any contamination from the former USTs would be regulated. We used present-day UST regulations to assess the current subsurface groundwater conditions near the former UST locations.

Three monitoring wells exist on the subject property in the area of the former USTs. All Phase Environmental collected groundwater samples from two of the monitoring wells (MW-1 and MW-2). (See the enclosed Site Map 1). The third monitoring well was dry. Before each sample was collected with a disposable bailer, the depth to groundwater was measured and the monitoring wells were purged of three well volumes of water. The average depth to groundwater was approximately 36 feet. The groundwater samples were manifested, placed in lab supplied containers, and were shipped overnight to AES Laboratories. The samples were analyzed for BTEX and PAHs.

A hand auger was used to collect one soil sample (HA-1) from a drainpipe discharge area that leads from the parking lot and the former AST dike location. (See the enclosed Site Map 2). The soil sample was collected from 6-12 inches below the ground surface (bgs). The soil sample was manifested, placed in lab supplied containers, and was shipped overnight to AES Laboratories. The sample was analyzed for BTEX, PAHs, TPH-DRO, and TPH-GRO. This sample was needed to assess existing soil conditions down-gradient from the dike drain and parking lot storm water drainage.

All Phase Environmental, LLC

Results of Lab Analysis

Table 1 – Soil Sample

	B mg/kg	T mg/kg	E mg/kg	X mg/kg	GRO mg/kg	DRO mg/kg	PAHs mg/kg
HA-1 6"-12"	BRL	BRL	BRL	BRL	BRL	68	BRL
Regulatory Standards	0.005	0.400	0.500	27.00	10	10	N/A

BRL = Below Reporting Limits

Concentrations in bold exceed regulatory standards.

Please see the lab report for complete names of chemicals analyzed in the samples.

Table 2 – Groundwater Samples

	B ug/L	T ug/L	E ug/L	X ug/L	PAHs ug/L
MW-1, 35.70'	BRL	BRL	BRL	BRL	BRL
MW-2, 37.55'	BRL	BRL	BRL	BRL	BRL
In-Stream Water Quality Standards	51	5,980	2,100	N/A	N/A

BRL = Below Reporting Limits

Please see the lab report for complete names of chemicals analyzed in the samples.

Although the former heating oil tanks are not regulated by the GA EPD UST Management Program, any potential contamination would be subject to the rules and regulations set forth by the EPD. The above tables include the most stringent regulatory standards for sites located in a lower groundwater pollution susceptibility area as listed in the GA EPD's *UST Guidance Documents*. We also used these guidelines for the basis for our conclusions and recommendations.

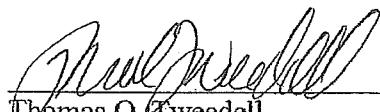
Conclusions:

1. BTEX and PAH compounds were below laboratory reporting limits in soil and groundwater.
2. TPH-GRO compounds were below laboratory reporting limits in soil.
3. TPH-DRO (total petroleum hydrocarbon-diesel range organics) contamination levels detected in the soil sample were above the recommended 10 mg/kg. However, the PAH analysis consists of several specific diesel range organics. Therefore, since BTEX and

All Phase Environmental, LLC

PAH compounds were delineated to BRL, no further actions or investigations are recommended regarding the detected amount of TPH-DRO.

If you have any questions or comments, please contact us and we will discuss the report with you.

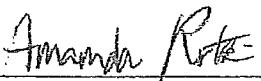

Thomas O. Tweedell

February 18, 2019

Date

Signature of Registered Professional Geologist

I certify that I have directed and supervised the field work and preparation of this plan, in accordance with State Rules and Regulations. As a registered geologist, I certify that I am a qualified groundwater professional, as defined by the Georgia State Board of Professional Geologists. All of the information and laboratory data in this plan and in all of the attachments are true, accurate, complete, and in accordance with applicable State Rules and Regulations.


Amanda T. Robertson

February 18, 2019

Date





ANALYTICAL ENVIRONMENTAL SERVICES, INC.

February 12, 2019

Tom Tweedell
All Phase Environmental
1233 Wolfskin Road
Arnoldsville GA 30619

RE: Rooter

Dear Tom Tweedell: Order No: 1902401

Analytical Environmental Services, Inc. received 4 samples on 2/6/2019 10:16:00 AM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES's accreditations are as follows:

-NELAP/State of Florida Laboratory ID E87582 for analysis of Non-Potable Water, Solid & Chemical Materials, Air & Emissions Volatile Organics, and Drinking Water Microbiology & Metals, effective 07/01/18-06/30/19.

State of Georgia, Department of Natural Resources ID #800 for analysis of Drinking Water Metals, effective 07/01/18-06/30/19 and Total Coliforms/ E. coli, effective 04/25/17-04/24/20.

-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Metals, PCM Asbestos, Gravimetric), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 11/01/19.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

Jessica Shilling
Project Manager

Client: All Phase Environmental
Project: Rooter
Lab ID: 1902401

Case Narrative

Sample Receiving Nonconformance:

A Trip Blank was provided but not listed on the Chain of Custody. Trip blank analyzed at no cost to the client.

Analytical Environmental Services, Inc

Date: 12-Feb-19

Client:	All Phase Environmental	Client Sample ID:	HA-1 6"-12" CREEK/ DRAINAC
Project Name:	Rooter	Collection Date:	2/4/2019 11:25:00 AM
Lab ID:	1902401-001	Matrix:	Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
VOLATILE ORGANICS SW8260B								
							(SW5035)	
Benzene	BRL	0.0008		mg/Kg-dry	274172	1	02/08/2019 19:59	JF
Toluene	BRL	0.0008		mg/Kg-dry	274172	1	02/08/2019 19:59	JF
Ethylbenzene	BRL	0.0008		mg/Kg-dry	274172	1	02/08/2019 19:59	JF
m,p-Xylene	BRL	0.0008		mg/Kg-dry	274172	1	02/08/2019 19:59	JF
o-Xylene	BRL	0.0008		mg/Kg-dry	274172	1	02/08/2019 19:59	JF
Surr: 4-Bromofluorobenzene	91.6	65.1-125		%REC	274172	1	02/08/2019 19:59	JF
POLYAROMATIC HYDROCARBONS SW8270D								
							(SW3546)	
Naphthalene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Acenaphthylene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
1-Methylnaphthalene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
2-Methylnaphthalene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Acenaphthene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Fluorene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Phenanthrene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Anthracene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Fluoranthene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Pyrene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Benz(a)anthracene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Chrysene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Benzo(b)fluoranthene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Benzo(k)fluoranthene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Benzo(a)pyrene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Dibenz(a,h)anthracene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Benzo(g,h,i)perylene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Indeno(1,2,3-cd)pyrene	BRL	0.45		mg/Kg-dry	274079	1	02/08/2019 19:02	RF
Surr: 2-Fluorobiphenyl	63.6	54.4-120		%REC	274079	1	02/08/2019 19:02	RF
Surr: 4-Terphenyl-d14	57.2	60.4-120	S	%REC	274079	1	02/08/2019 19:02	RF
Surr: Nitrobenzene-d5	70	51-120		%REC	274079	1	02/08/2019 19:02	RF
GASOLINE RANGE ORGANICS SW8015C								
							(SW5035)	
TPH (Gasoline Range Organics)	BRL	0.38		mg/Kg-dry	274172	1	02/08/2019 19:59	JF
Surr: a.a.a-trifluorotoluene	112	71.5-133		%REC	274172	1	02/08/2019 19:59	JF
DIESEL RANGE ORGANICS SW8015C								
							(SW3550C)	
TPH (Diesel Range Organics)	68	9.2		mg/Kg-dry	274090	1	02/08/2019 22:06	RF
Surr: Diocetylphthalate	110	51.1-122		%REC	274090	1	02/08/2019 22:06	RF
PERCENT MOISTURE D2216								
Percent Moisture	27.1	0		wt%	R390633	1	02/08/2019 14:00	JW

Qualifiers: * Value exceeds maximum contaminant level

E Estimated (value above quantitation range)

BRL Below reporting limit

S Spike Recovery outside limits due to matrix

H Holding times for preparation or analysis exceeded

Narr See case narrative

N Analyte not NEILAC certified

NC Not confirmed

B Analyte detected in the associated method blank

< Less than Result value

> Greater than Result value

J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 12-Feb-19

Client:	All Phase Environmental	Client Sample ID:	MW-1, 35.7' B TO C
Project Name:	Rooter	Collection Date:	2/4/2019 11:50:00 AM
Lab ID:	1902401-002	Matrix:	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
VOLATILE ORGANICS SW8260B								
Benzene	BRL	1.0		ug/L	274270	1	02/08/2019 13:57	OM
Toluene	BRL	1.0		ug/L	274270	1	02/08/2019 13:57	OM
Ethylbenzene	BRL	1.0		ug/L	274270	1	02/08/2019 13:57	OM
m,p-Xylene	BRL	1.0		ug/L	274270	1	02/08/2019 13:57	OM
o-Xylene	BRL	1.0		ug/L	274270	1	02/08/2019 13:57	OM
Surr: 4-Bromofluorobenzene	104	64-125		%REC	274270	1	02/08/2019 13:57	OM
PAHs by Microextraction SW8270D								
1-Methylnaphthalene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
2-Methylnaphthalene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Acenaphthene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Acenaphthylene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Anthracene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Benz(a)anthracene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Benzo(a)pyrene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Benzo(b)fluoranthene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Benzo(g,h,i)perylene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Benzo(k)fluoranthene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Chrysene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Dibenz(a,h)anthracene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Fluoranthene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Fluorene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Indeno(1,2,3-cd)pyrene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Naphthalene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Phenanthrene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Pyrene	BRL	9.1		ug/L	274123	1	02/07/2019 17:06	RF
Surr: 2-Fluorobiphenyl	87.7	52.2-120		%REC	274123	1	02/07/2019 17:06	RF
Surr: 4-Terphenyl-d14	123	42.7-120	S	%REC	274123	1	02/07/2019 17:06	RF
Surr: Nitrobenzene-d5	107	50.7-122		%REC	274123	1	02/07/2019 17:06	RF

Qualifiers:

- ^ Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Client: All Phase Environmental	Client Sample ID: MW-2, 37.55' B TO C
Project Name: Rooter	Collection Date: 2/4/2019 12:12:00 PM
Lab ID: 1902401-003	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
VOLATILE ORGANICS SW8260B								
(SW5030B)								
Benzene	BRL	1.0		ug/L	274270	1	02/08/2019 14:21	OM
Toluene	BRL	1.0		ug/L	274270	1	02/08/2019 14:21	OM
Ethylbenzene	BRL	1.0		ug/L	274270	1	02/08/2019 14:21	OM
m,p-Xylene	BRL	1.0		ug/L	274270	1	02/08/2019 14:21	OM
o-Xylene	BRL	1.0		ug/L	274270	1	02/08/2019 14:21	OM
Surr: 4-Bromofluorobenzene	103	64-125		%REC	274270	1	02/08/2019 14:21	OM
PAHs by Microextraction SW8270D								
(SW3511)								
1-Methylnaphthalene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
2-Methylnaphthalene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Acenaphthene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Acenaphthylene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Anthracene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Benz(a)anthracene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Benzo(a)pyrene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Benzo(b)fluoranthene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Benzo(g,h,i)perylene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Benzo(k)fluoranthene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Chrysene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Dibenz(a,h)anthracene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Fluoranthene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Fluorene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Indeno(1,2,3-cd)pyrene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Naphthalene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Phenanthrene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Pyrene	BRL	8.9		ug/L	274123	1	02/07/2019 18:16	RF
Surr: 2-Fluorobiphenyl	89.4	52.2-120		%REC	274123	1	02/07/2019 18:16	RF
Surr: 4-Terphenyl-d14	140	42.7-120	S	%REC	274123	1	02/07/2019 18:16	RF
Surr: Nitrobenzene-d5	118	50.7-122		%REC	274123	1	02/07/2019 18:16	RF

Qualifiers: * Value exceeds maximum contaminant level

E Estimated (value above quantitation range)

BRL Below reporting limit

S Spike Recovery outside limits due to matrix

H Holding times for preparation or analysis exceeded

Narr See case narrative

N Analyte not NELAC certified

NC Not confirmed

B Analyte detected in the associated method blank

< Less than Result value

> Greater than Result value

J Estimated value detected below Reporting Limit

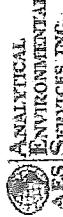
Client:	All Phase Environmental	Client Sample ID:	TRIP BLANK
Project Name:	Rooter	Collection Date:	2/4/2019
Lab ID:	1902401-004	Matrix:	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
VOLATILE ORGANICS SW8260B								
					(SW5030B)			
Benzene	BRL	1.0		ug/L	274270	1	02/08/2019 12:20	OM
Toluene	BRL	1.0		ug/L	274270	1	02/08/2019 12:20	OM
Ethylbenzene	BRL	1.0		ug/L	274270	1	02/08/2019 12:20	OM
m,p-Xylene	BRL	1.0		ug/L	274270	1	02/08/2019 12:20	OM
o-Xylene	BRL	1.0		ug/L	274270	1	02/08/2019 12:20	OM
Surr: 4-Bromofluorobenzene	104	64-125		%REC	274270	1	02/08/2019 12:20	OM

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

E Estimated (value above quantitation range)
 S Spike Recovery outside limits due to matrix
 Narr See case narrative
 NC Not confirmed
 < Less than Result value
 J Estimated value detected below Reporting Limit

[Clear](#)[Save as](#)
SAMPLE/COOLER RECEIPT CHECKLIST
AES Work Order Number: 1902401
1. Client Name: ALL PHASE ENVIRONMENTAL

1. Client Name:	ALL PHASE ENVIRONMENTAL		
2. Carrier: FedEx <input type="checkbox"/> UPS <input checked="" type="checkbox"/> UPS <input type="checkbox"/> Client <input type="checkbox"/> Courier <input type="checkbox"/> Other <input type="checkbox"/>	Yes	No	N/A
3. Shipping container/cooler received in good condition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> damaged <input type="checkbox"/> leaking <input type="checkbox"/> other <input type="checkbox"/>
4. Custody seals present on shipping container?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Custody seals intact on shipping container?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Temperature blanks present?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Cooler temperature(s) within limits of 0-8°C [See item 13 and 14 for temperature recordings.]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Chain of custody (COC) present?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Chain of custody signed, dated, and timed when relinquished and received?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Sampler name and/or signature on COC?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Were all samples received within holding time?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. TAT marked on the COC?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Cooler 1 Temperature <u>1.8</u> °C	<input type="checkbox"/>	<input type="checkbox"/> Cooler 2 Temperature <u> </u> °C	<input type="checkbox"/> Cooler 3 Temperature <u> </u> °C
14. Cooler 5 Temperature <u> </u> °C	<input type="checkbox"/>	<input type="checkbox"/> Cooler 6 Temperature <u> </u> °C	<input type="checkbox"/> Cooler 7 Temperature <u> </u> °C
15. Comments: _____	I certify that I have completed sections 1-15 (dated initials). <u>EW 2/6/19</u>		

16. Were sample containers intact upon receipt?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Custody seals present on sample containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Custody seals intact on sample containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Do sample container labels match the COC?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Are analyses requested indicated on the COC?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Were all of the samples listed on the COC received?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Was the sample collection date/time noted?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Did we receive sufficient sample volume for indicated analyses?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Were samples received in appropriate containers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Were VOA samples received without headspace (< 1/4" bubble)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Were trip blanks submitted?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Comments: _____	I certify that I have completed sections 16-27 (dated initials). <u>EW 2/6/19</u>		
This section only applies to samples where pH can be checked at Sample Receipt.			
28. Have containers needing chemical preservation been checked? *	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. Containers meet preservation guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Was pH adjusted at Sample Receipt?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
* Note: Certain analyses require chemical preservation but must be checked in the laboratory and not upon Sample Receipt such as Coliforms, VOCs and Oil & Grease/TPH.			
I certify that I have completed sections 28-30 (dated initials). <u>EW 2/6/19</u>			

Analytical Environmental Services, Inc

Date: 12-Feb-19

ANALYTICAL QC SUMMARY REPORT

Client: All Phase Environmental
 Project Name: Rooter
 Workorder: 1902401

BatchID: 274079

Sample ID: MBR-274079	Client ID: TestCode: POLYAROMATIC HYDROCARBONS SW8270D	Units: ug/Kg	Prep Date: 02/07/2019	Run No: 390545							
Sample Type: MBLK	Result	RPT Limit	SPK value	SPK RefVal	%REC	Low Limit	High Limit	RPD RefVal	%RPD	RPD Limit	Qual
1-Methylnaphthalene	BRL	330									
2-Methylnaphthalene	BRL	330									
Acenaphthene	BRL	330									
Acenaphthylene	BRL	330									
Anthracene	BRL	330									
Benz(a)anthracene	BRL	330									
Benzo(a)pyrene	BRL	330									
Benzo(b)fluoranthene	BRL	330									
Benzo(g,h,i)perylene	BRL	330									
Benzo(k)fluoranthene	BRL	330									
Chrysene	BRL	330									
Dibenz(a,h)anthracene	BRL	330									
Fluoranthene	BRL	330									
Fluorene	BRL	330									
Indeno(1,2,3-cd)pyrene	BRL	330									
Naphthalene	BRL	330									
Phenanthrene	BRL	330									
Pyrene	BRL	330									
Surr: 2-Fluorobiphenyl	1731	0	1667		104	54.4	120				
Surr: 4-Terphenyl-d4	1748	0	1667		105	60.4	120				
Surr: Nitrobenzene-d5	1779	0	1667		107	51	120				
Sample ID: LCS-274079	Client ID: TestCode: POLYAROMATIC HYDROCARBONS SW8270D	Units: ug/Kg	Prep Date: 02/07/2019	Run No: 390545							
Sample Type: LCS	Result	RPT Limit	SPK value	SPK RefVal	%REC	Low Limit	High Limit	RPD RefVal	%RPD	RPD Limit	Qual
1-Methylnaphthalene	1752	330	1667		105	67.6	120				

Qualifiers: > Greater than Result value
 BRL Below reporting limit
 f Estimated value detected below Reporting Limit
 Rpt Lim Reporting Limit

< Less than Result value
 E Estimated (value above quantitation range)
 N Analyte not NEA, AC certified
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank
 H Holding times for preparation or analysis exceeded
 R RPD outside limits due to matrix

Analytical Environmental Services, Inc

Date: 12-Feb-19

ANALYTICAL QC SUMMARY REPORT

Client: All Phase Environmental
Project Name: Rooter
Work Order: 1902401

BatchID: 274079

Sample ID: LCS-274079	Client ID: TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	Units: ug/Kg	Prep Date: 02/07/2019	Run No: 390545						
Sample Type: LCS			BatchID: 274079	Analysis Date: 02/07/2019	Seq No: 8738403						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
2-Methylnaphthalene	1741	330	1667	104	66.9	120					
Acenaphthene	1682	330	1667	101	67.5	120					
Acenaphthylene	1720	330	1667	103	66.5	120					
Authracene	1743	330	1667	105	70	120					
Benz(a)anthracene	1783	330	1667	107	70	120					
Benz(o)pyrene	1762	330	1667	106	70	120					
Benz(o)b)fluoranthene	1733	330	1667	104	64.9	120					
Benz(o,g,h)perylene	1749	330	1667	105	70	120					
Benz(o,k)fluoranthene	1735	330	1667	104	70	120					
Chrysene	1732	330	1667	104	68.3	120					
Dibenz(a,h)anthracene	1713	330	1667	103	70	120					
Fluoranthene	1714	330	1667	103	70	120					
Fluorene	1701	330	1667	102	69.5	120					
Indeno(1,2,3-cd)pyrene	1748	330	1667	105	70	120					
Naphthalene	1722	330	1667	103	62.8	120					
Phenanthrene	1662	330	1667	99.7	70	120					
Pyrene	1770	330	1667	106	70	120					
Surr: 2-Fluorobiphenyl	1764	0	1667	106	54.4	120					
Surr: 4-Terphenyl-d14	1842	0	1667	110	60.4	120					
Surr: Nitrobenzene-d5	1903	0	1667	114	51	120					
Sample ID: 1902483-002BMS	Client ID: TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	Units: mg/Kg-dry	Prep Date: 02/07/2019	Run No: 390545						
Sample Type: MS			BatchID: 274079	Analysis Date: 02/07/2019	Seq No: 8739351						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1-Methylnaphthalene	1.660	0.35	1.765	94.1	57.1	120					
2-Methylnaphthalene	1.631	0.35	1.765	92.4	54.9	120					
Acenaphthene	1.609	0.35	1.765	91.2	51.4	120					

Qualifiers: > Greater than Result value
BRL Below reporting limit
J Estimated value detected below Reporting Limit
Rpt Lim Reporting Limit

E Estimated (value above quantification range)
N Analyte not NELAC certified
S Spike Recovery outside limits due to matrix

L Less than Result value
H Holding times for preparation or analysis exceeded
R RPD outside limits due to matrix

Analytical Environmental Services, Inc

Date: 12-Feb-19
ANALYTICAL QC SUMMARY REPORTClient: All Phase Environmental
Project Name: Rootcr
Workorder: 1902401

BatchID: 274079

Sample ID: 1902483-002BMS Client ID: 274079
SampleType: MSD TestCode: POLYAROMATIC HYDROCARBONS SW8370D

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual	Units: mg/Kg-dry	BatchID: 274079	Prep Date: 02/07/2019	Analysis Date: 02/07/2019	Run No: 390545	Seq No: 8739351
												Units: mg/Kg-dry	BatchID: 274079	Prep Date: 02/07/2019	Analysis Date: 02/07/2019	Run No: 390545	Seq No: 8739351
Acenaphthylene	1.667	0.35	1.765		94.5	56.5	120										
Anthracene	1.701	0.35	1.765		96.4	61.5	120										
Benz(a)anthracene	1.767	0.35	1.765		100	59.6	120										
Benzo(a)pyrene	1.748	0.35	1.765		99.0	63.2	120										
Benzo(b)fluoranthene	1.703	0.35	1.765		96.5	52.3	124										
Benzo(b,l)perylene	1.724	0.35	1.765		97.7	50.7	120										
Benzo(k)fluoranthene	1.666	0.35	1.765		94.4	59.2	120										
Chrysene	1.734	0.35	1.765		98.2	56.5	120										
Dibenz(a,h)anthracene	1.687	0.35	1.765		95.6	51.2	119										
Fluoranthene	1.713	0.35	1.765		97.1	58.1	120										
Fluorene	1.663	0.35	1.765		94.2	52.6	120										
Indeno(1,2,3-cd)pyrene	1.684	0.35	1.765		95.4	51.7	119										
Naphthalene	1.557	0.35	1.765		87.1	49.9	120										
Phenanthrene	1.652	0.35	1.765		93.6	57.4	120										
Pyrene	1.767	0.35	1.765		100	56.8	120										
Surr: 2-Fluorobiphenyl	1.544	0	1.765		87.5	54.4	120										
Surr: 4-Terphenyl-d14	1.712	0	1.765		97.0	60.4	120										
Surr: Nitrobenzene-d5	1.511	0	1.765		85.6	51	120										
Sample ID: 1902483-002BMSD Client ID: 274079	SampleType: MSD	TestCode: POLYAROMATIC HYDROCARBONS	SW8370D														
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual	Units: mg/Kg-dry	BatchID: 274079	Prep Date: 02/07/2019	Analysis Date: 02/07/2019	Run No: 390545	Seq No: 8739352
1-Methylnaphthalene	1.700	0.35	1.765		96.3	57.1	120										
2-Methylnaphthalene	1.636	0.35	1.765		92.7	54.9	120										
Acenaphthene	1.630	0.35	1.765		92.4	51.4	120										
Acenaphthylene	1.678	0.35	1.765		95.1	56.5	120										
Anthracene	1.706	0.35	1.765		96.6	61.5	120										
Quantifiers:	>	Greater than Result value			<	Less than Result value											
ERL:	Before reporting limit				E	Estimated (value above quantitation range)											
J:	Estimated value detected below Reporting Limit				N	Analyte not NELAC certified											
RPL:	Reporting Limit				S	Spk Recovery outside limits due to matrix											

B: Analyte detected in the associated method blank

F: Fielding times for preparation or analysis exceeded

R: RPD outside limits due to matrix

Analytical Environmental Services, Inc

Date: 12-Feb-19

ANALYTICAL QC SUMMARY REPORT

Client: All Phase Environmental
 Project Name: Rooter
 WorkOrder: 1902401

BatchID: 274079

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual	Units: mg/Kg-dry	BatchID: 274079	Prep Date: 02/07/2019	Analysis Date: 02/07/2019	Run No: 390545	Seq No: 8739352
Benz(a)anthracene	1.790	0.35	1.765	101	59.6	120	1.767	1.31	24.8								
Benzo(a)pyrene	1.780	0.35	1.765	101	63.2	120	1.748	1.80	21.8								
Benzo(b)fluoranthene	1.754	0.35	1.765	99.4	52.3	124	1.703	2.94	35.2								
Benzo(g,h,i)perylene	1.730	0.35	1.765	98.0	50.7	120	1.724	0.327	27.7								
Benzo(k)fluoranthene	1.706	0.35	1.765	96.6	59.2	120	1.666	2.35	31.8								
Chrysene	1.752	0.35	1.765	99.2	56.5	120	1.734	1.01	32.7								
Dibenz(a,h)anthracene	1.714	0.35	1.765	97.1	51.2	119	1.687	1.62	34.8								
Fluoranthene	1.706	0.35	1.765	96.7	58.1	120	1.713	0.413	34.2								
Fluorene	1.705	0.35	1.765	96.6	52.6	120	1.663	2.52	52.9								
Indeno(1,2,3-cd)pyrene	1.761	0.35	1.765	99.8	51.7	119	1.684	4.47	35.2								
Naphthalene	1.533	0.35	1.765	86.8	49.9	120	1.537	0.276	54.6								
Phenanthrene	1.620	0.35	1.765	91.8	57.4	120	1.652	1.94	51.4								
Pyrene	1.811	0.35	1.765	103	56.8	120	1.767	2.45	33.8								
Surr: 2-Fluorobiphenyl	1.568	0	1.765	88.8	54.4	120	1.544	0	0								
Surr: 4-Terphenyl-d14	1.725	0	1.765	97.8	60.4	120	1.712	0	0								
Surr: Nitrobenzene-d5	1.571	0	1.765	89.0	51	120	1.511	0	0								

Qualifiers: > Greater than Result value
 BBL Below reporting limit
 J Estimated value detected below Reporting Limit
 Rpt Lim Reporting Limit

< Less than Result value
 E Estimated (value above quantitation range)
 N Analyte not NELAC certified
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank
 H Holding times for preparation or analysis exceeded
 R RPD outside limits due to matrix

Analytical Environmental Services, Inc

Date: 12-Feb-19

ANALYTICAL QC SUMMARY REPORT

Client: All Phase Environmental
 Project Name: Rooter
 WorkOrder: 1902401

BatchID: 274090

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
TPH (Diesel Range Organics)	BRL	6.7	3.300		91.0	51.1	122				
Surr: Diocetylphthalate	3.004	0									
Sample ID: MBLK-274090	Client ID: TestCode: DIESEL RANGE ORGANICS	SW8015C				Units: mg/Kg		Prep Date: 02/07/2019	Run No: 390716		
SampleType: MBLK						BatchID: 274090		Analysis Date: 02/08/2019	Seq No: 8742618		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
TPH (Diesel Range Organics)	26.62	6.7	33.30		79.9	47.3	120				
Surr: Diocetylphthalate	3.023	0	3.330		90.8	51.1	122				
Sample ID: 1902483-002BMS	Client ID: TestCode: DIESEL RANGE ORGANICS	SW8015C				Units: mg/Kg-dry		Prep Date: 02/07/2019	Run No: 390716		
SampleType: MS						BatchID: 274090		Analysis Date: 02/08/2019	Seq No: 8742623		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
TPH (Diesel Range Organics)	18.87	7.1	35.26		53.5	40.5	120				
Surr: Diocetylphthalate	2.195	0	3.526		62.3	51.1	122				
Sample ID: 1902483-002BMSD	Client ID: TestCode: DIESEL RANGE ORGANICS	SW8015C				Units: mg/Kg-dry		Prep Date: 02/07/2019	Run No: 390716		
SampleType: MSD						BatchID: 274090		Analysis Date: 02/08/2019	Seq No: 8742624		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
TPH (Diesel Range Organics)	21.13	7.1	35.26		59.9	40.5	120	18.87	11.3	27.5	
Surr: Diocetylphthalate	2.345	0	3.526		66.5	51.1	122	2.195	0	0	

Qualifiers: > Greater than Result value < Less than Result value
 BRL Below reporting limit E Estimated value above quantitation range
 J Estimated value detected below Reporting Limit N Analyte not NELAC certified
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank
 E Holding times for preparation or analysis exceeded
 R RPD outside limits due to matrix

Analytical Environmental Services, Inc

Date: 12-Feb-19

ANALYTICAL QC SUMMARY REPORT

Client: All Phase Environmental
 Project Name: Rooter
 Workorder: 1902401

BatchID: 274123

Sample ID: MBLK-274123	Client ID: TestCode: PAHs by Microextraction	SW8270D	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1-Methylnaphthalene	BRL	8.6									
2-Methylnaphthalene	BRL	8.6									
Acenaphthene	BRL	8.6									
Acenaphthylene	BRL	8.6									
Anthracene	BRL	8.6									
Benz(a)anthracene	BRL	8.6									
Benzo(a)pyrene	BRL	8.6									
Benzo(b)fluoranthene	BRL	8.6									
Benzo(e,h,i)perylene	BRL	8.6									
Benzo(k)fluoranthene	BRL	8.6									
Chrysene	BRL	8.6									
Dibenz(a,h)anthracene	BRL	8.6									
Fluoranthene	BRL	8.6									
Fluorene	BRL	8.6									
Indeno(1,2,3-cd)pyrene	BRL	8.6									
Naphthalene	BRL	8.6									
Phenanthrene	BRL	8.6									
Pyrene	27.03	0	28.57			94.6	70	130			
Surr: 2-Fluorobiphenyl	31.73	0	28.57			111	70	130			
Surr: 4-Terphenyl-d14	31.74	0	28.57			111	70	130			
Surr: Nitrobenzene-d5											
Sample ID: LCS-274123	Client ID: TestCode: PAHs by Microextraction	SW8270D	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
SampleType: LCS	Result	RPT Limit									
Analyte											
1-Methylnaphthalene	30.24	8.6	28.57			106	70	130			
2-Methylnaphthalene	28.27	8.6	28.57			98.9	70	130			

Qualifiers: > Greater than Result value
 BRL Below reporting limit
 J Estimated value detected below Reporting Limit
 Rpt Lim Reporting Limit

B Analyte detected in the associated method blank
 F Holding times for preparation or analysis exceeded
 N Analyte not NEAC certified
 S Spike Recovery outside limits due to matrix

Analytical Environmental Services, Inc

Date: 12-Feb-19

ANALYTICAL QC SUMMARY REPORT

BatchID: 274123

Client: All Phase Environmental
 Project Name: Rooter
 WorkOrder: 1902401

Sample ID: LCS-274123	Client ID: TestCode: PAHs by Microextraction	SW3270D	Units: $\mu\text{g/L}$				Prep Date: 02/07/2019	Run No: 390756		
SampleType: LCS			RPT Limit	SPK value	SPK RefVal	%REC	Low Limit	High Limit	Analysis Date: 02/07/2019	Seq No: 8743673
Analyte	Result									
Acenaphthene	29.75	8.6	28.57			104	70	130		
Acenaphthylene	31.02	8.6	28.57			109	70	130		
Anthracene	32.35	8.6	28.57			113	70	130		
Benz(a)anthracene	34.30	8.6	28.57			120	70	130		
Benzo(a)pyrene	33.36	8.6	28.57			117	70	130		
Benzo(b)fluoranthene	32.30	8.6	28.57			113	70	130		
Benzo(g,h,i)perylene	34.64	8.6	28.57			121	70	130		
Benzo(k)fluoranthene	32.41	8.6	28.57			113	70	130		
Chrysene	31.87	8.6	28.57			112	70	130		
Dibenz(a,h)anthracene	35.42	8.6	28.57			124	70	130		
Fluoranthene	34.07	8.6	28.57			119	70	130		
Fluorene	29.38	8.6	28.57			103	70	130		
Indeno(1,2,3-cd)pyrene	35.71	8.6	28.57			125	70	130		
Naphthalene	27.92	8.6	28.57			97.7	70	130		
Phenanthrene	30.79	8.6	28.57			108	70	130		
Pyrene	31.48	8.6	28.57			110	70	130		
Surr: 2-Fluorobiphenyl	28.39	0	28.57			99.4	70	130		
Surr: 4-Terphenyl-d14	32.59	0	28.57			114	70	130		
Surr: Nitrobenzene-d5	33.72	0	28.57			118	70	130		

Sample ID: 1902401-002EIMS	Client ID: MW-1, 35.7 ^b TO C	SW3270D	Units: $\mu\text{g/L}$				Prep Date: 02/07/2019	Run No: 390756		
SampleType: MS	TestCode: PAHs by Microextraction		RPT Limit	SPK value	SPK RefVal	%REC	Low Limit	High Limit	Analysis Date: 02/07/2019	Seq No: 8743675
Analyte	Result									
1-Methylnaphthalene	31.71	9.1	30.22			105	53.4	120		
2-Methylnaphthalene	30.92	9.1	30.22			102	49.3	120		
Acenaphthene	32.42	9.1	30.22			107	59.8	120		
Acenaphthylene	34.55	9.1	30.22			114	56.3	120		

Qualifiers:	>	Greater than Result value	<	Less than Result value						
	BRL	Below reporting limit			E	Estimated (value above quantitation range)				
	J	Estimated value detected below Reporting Limit			N	Analyte not NEA/C certified				
	Rpt Lim	Reporting Limit			S	Spike Recovery outside limits due to matrix				

B Analyte detected in the associated method blank
 H Holding times for preparation or analysis exceeded
 R RPD outside limits due to matrix

Analytical Environmental Services, Inc

Date: 12-Feb-19

ANALYTICAL QC SUMMARY REPORT

Client: All Phase Environmental
 Project Name: Rooter
 Workorder: 1902401

BatchID: 274123

Sample ID: 1902401-002BMS	Client ID: MW-1, 35.7% TO C	TestCode: PAHs by Microextraction	SW870D	Units: ug/L	BatchID: 274123	Prep Date: 02/07/2019	Analysis Date: 02/07/2019	Run No: 390756							
Sample Type: MS	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	%RPD							
Anthracene	32.78	9.1	30.22		108	64.2	118								
Benz(a)anthracene	18.84	9.1	30.22		62.3	63	124	S							
Benz(a)pyrene	37.31	9.1	30.22		123	57.6	126								
Benz(b)fluoranthene	29.58	9.1	30.22		97.9	62.1	133								
Benz(g,h)perylene	31.40	9.1	30.22		104	54.8	127								
Benz(k)fluoranthene	41.79	9.1	30.22		138	52.4	123	S							
Chrysene	32.33	9.1	30.22		107	62.6	118								
Dibenz(a,h)anthracene	33.10	9.1	30.22		110	52.8	125	S							
Fluoranthene	37.36	9.1	30.22		124	69.7	121	S							
Fluorene	35.97	9.1	30.22		119	57.8	117								
Indeno(1,2,3-cd)pyrene	32.56	9.1	30.22		108	51.1	129								
Naphthalene	30.87	9.1	30.22		102	43.5	120								
Phenanthrene	32.61	9.1	30.22		108	61.7	121	S							
Pyrene	39.19	9.1	30.22		130	67.3	118								
Surr: 2-Fluorobiphenyl	28.64	0	30.22		94.8	52.2	120								
Surr: 4-Terphenyl-d14	38.54	0	30.22		128	42.7	120	S							
Surr: Nitrobenzene-d5	36.61	0	30.22		121	50.7	122								
Sample ID: 1902401-002BMSD	Client ID: MW-1, 35.7% TO C	TestCode: PAHs by Microextraction	SW870D	Units: ug/L	BatchID: 274123	Prep Date: 02/07/2019	Analysis Date: 02/07/2019	Run No: 390756							
Sample Type: MSD	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	%RPD							
1-Methylnaphthalene	29.78	9.2	30.58		97.4	53.4	120	31.71							
2-Methylnaphthalene	28.67	9.2	30.58		93.8	49.3	120	30.92							
Acenaphthene	30.41	9.2	30.58		99.4	59.8	120	32.42							
Acenaphthylene	32.49	9.2	30.58		106	56.3	120	34.58							
Anthracene	31.84	9.2	30.58		104	64.2	118	32.78							
Benz(a)anthracene	20.15	9.2	30.58		65.9	63	124	18.84							
Qualifiers:	<	Less than Result value													
	>	Greater than Result value													
	BRL	Below reporting limit													
J	Estimated value detected below Reporting Limit														
Rpt Lim	Reporting Limit														

B Analyte detected in the associated method blank
 E Estimated (value above quantitation range)
 N Analyte not NELAC certified
 S Spike Recovery outside limits due to matrix

Analytical Environmental Services, Inc

Date: 12-Feb-19

ANALYTICAL QC SUMMARY REPORT

Client: All Phase Environmental

Project Name: Rooter

Workorder: 1902401

BatchID: 274423

Sample ID: 1902401-002BMSD Client ID: MW-1,35.7' B TO C
Sample Type: MSD TestCode: PAHs by Microextraction

Units: ug/L

BatchID: 274123

Prep Date: 02/07/2019

Analysis Date: 02/07/2019

Run No: 390756

Seq No: 8743676

Analyte	Result	RPT Limit	SPK value	SPK RefVal	%REC	Low Limit	High Limit	RPD RefVal	%RPD	RPD Limit	Qual
Benzo(a)pyrene	36.65	9.2	30.58		120	57.6	126	37.31	1.77	21.9	
Benzo(b)fluoranthene	34.02	9.2	30.58		111	62.1	133	29.58	14.0	22.2	
Benzo(g,h,i)perylene	30.81	9.2	30.58		101	54.8	127	31.40	1.92	25.8	
Benzo(k)fluoranthene	36.65	9.2	30.58		120	52.4	123	41.79	13.1	21.2	
Chrysene	36.75	9.2	30.58		120	62.6	118	32.33	12.8	17.5	S
Dibenz(a,h)anthracene	32.65	9.2	30.58		107	52.8	125	33.10	1.35	26	
Fluoranthene	36.46	9.2	30.58		119	69.7	121	37.36	2.45	17.8	
Fluorene	34.84	9.2	30.58		114	57.8	117	35.97	3.18	21.6	
Indeno(1,2,3-cd)pyrene	32.57	9.2	30.58		107	51.1	129	32.56	0.026	26	
Naphthalene	27.09	9.2	30.58		88.6	45.5	120	30.87	13.0	21.9	
Phenanthrene	31.24	9.2	30.58		102	61.7	121	32.61	4.31	21.8	
Pyrene	42.43	9.2	30.58		139	67.3	118	39.19	7.95	18	S
Surr: 2-Fluorobiphenyl	29.90	0	30.58		97.8	52.2	120	28.64	0	0	
Surr: 4-Terphenyl-d14	45.94	0	30.58		150	42.7	120	38.54	0	0	S
Surr: Nitrobenzene-d5	38.39	0	30.58		126	50.7	122	36.61	0	0	S

Qualifiers: >	Greater than Result value	< Less than Result value
BRL	Below reporting limit	E Estimated (value above quantitation range)
J	Estimated value detected below Reporting Limit	N Analyte not NELAC certified
Rpt Lim	Reporting Limit	S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank
H Holding times for preparation or analysis exceeded
R RPD outside limits due to matrix

Analytical Environmental Services, Inc

Date: 12-Feb-19

ANALYTICAL QC SUMMARY REPORT

Client: All Phase Environmental
 Project Name: Rooter
 Workorder: 1902401

BatchID: 274172

Sample ID: MBLK-274172	Client ID: TestCode: VOLATILE ORGANICS	Client ID: TestCode: GASOLINE RANGE ORGANICS	Sample ID: LCS-274172	Client ID: TestCode: VOLATILE ORGANICS	Client ID: TestCode: GASOLINE RANGE ORGANICS
SampleType: MBLK	SW8260B	SW8015C	SampleType: LCS	SW8260B	SW8015C
Analyte	Result	RPT Limit	Analyte	Result	RPT Limit
Benzene	BRL 1.0		Benzene	BRL 0.50	
Ethylbenzene	BRL 1.0		Ethylbenzene	BRL 0	
m,p-Xylene	BRL 1.0		m,p-Xylene	BRL 0	
o-Xylene	BRL 1.0		o-Xylene	BRL 0	
Toluene	BRL 1.0		Toluene	BRL 0	
Surr: 4-Bromofluorobenzene	44.22	0	Surr: 4-Bromofluorobenzene	50.00	0
Sample ID: MBLK-274172	Client ID: TestCode: VOLATILE ORGANICS	Client ID: TestCode: GASOLINE RANGE ORGANICS	Sample ID: LCS-274172	Client ID: TestCode: VOLATILE ORGANICS	Client ID: TestCode: GASOLINE RANGE ORGANICS
SampleType: MBLK	SW8260B	SW8015C	SampleType: LCS	SW8260B	SW8015C
Analyte	Result	RPT Limit	Analyte	Result	RPT Limit
TPH (Gasoline Range Organics)	BRL 0.50		TPH (Gasoline Range Organics)	BRL 0.50	
Surr: a,a,a-trifluorotoluene	0.05510	0	Surr: a,a,a-trifluorotoluene	0.05000	0
Sample ID: LCS-274172	Client ID: TestCode: VOLATILE ORGANICS	Client ID: TestCode: GASOLINE RANGE ORGANICS	Sample ID: LCS-274172	Client ID: TestCode: VOLATILE ORGANICS	Client ID: TestCode: GASOLINE RANGE ORGANICS
SampleType: LCS	SW8260B	SW8015C	SampleType: LCS	SW8260B	SW8015C
Analyte	Result	RPT Limit	Analyte	Result	RPT Limit
Benzene	49.52	1.0	Benzene	49.0	1.0
Ethylbenzene	52.37	1.0	Ethylbenzene	50.00	1.0
m,p-Xylene	102.9	1.0	m,p-Xylene	100.0	1.0
o-Xylene	51.49	1.0	o-Xylene	50.00	1.0
Toluene	50.35	1.0	Toluene	50.00	1.0
Surr: 4-Bromofluorobenzene	48.89	0	Surr: 4-Bromofluorobenzene	50.00	0

Qualifiers: > Greater than Result value
 BRL Below reporting limit
 J Estimated value detected below Reporting Limit
 Rpt Lim Reporting Limit

< Less than Result value
 E Estimated (value above quantitation range)
 N Analyte not NEIAC certified
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank
 H Holding times for preparation or analysis exceeded
 R RPD outside limits due to matrix

Analytical Environmental Services, Inc

Date: 12-Feb-19

ANALYTICAL QC SUMMARY REPORT

Client: All Phase Environmental
 Project Name: Rooter
 Workorder: 1902401

BatchID: 274172

Sample ID: LCS-274172	Client ID: TestCode: GASOLINE RANGE ORGANICS	Units: mg/Kg	Prep Date: 02/07/2019	Run No: 390692							
Sample Type: LCS	TestCode: SW8015C	BatchID: 274172	Analysis Date: 02/08/2019	Seq No: 8742443							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
TPH (Gasoline Range Organics)	1.057	0.50	1.000		106	68.8	123				
Surr: a,a-trifluorotoluene	0.05856	0	0.0500		117	71.5	133				
Sample ID: 1902401-001AMS	Client ID: HA-1 6"-12" CREEK/ DRAINAGE BED	Units: mg/Kg-dry	Prep Date: 02/07/2019	Run No: 390795							
Sample Type: MS	TestCode: GASOLINE RANGE ORGANICS	BatchID: 274172	Analysis Date: 02/11/2019	Seq No: 8744569							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
TPH (Gasoline Range Organics)	0.6699	0.39	0.7727		86.7	54.2	134				
Surr: a,a-trifluorotoluene	0.04919	0	0.0386		127	71.5	133				
Sample ID: 1902263-001ADUP	Client ID: GASOLINE RANGE ORGANICS	Units: mg/Kg-dry	Prep Date: 02/07/2019	Run No: 390795							
Sample Type: DUP	TestCode: SW8015C	BatchID: 274172	Analysis Date: 02/11/2019	Seq No: 8744564							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
TPH (Gasoline Range Organics)	BRL	0.70						0.1420	0	20	
Surr: a,a-trifluorotoluene	0.08625	0						0.09491	0	0	
Sample ID: 1902374-001ADUP	Client ID: VOLATILE ORGANICS	Units: mg/Kg-dry	Prep Date: 02/07/2019	Run No: 390621							
Sample Type: DUP	TestCode: SW3260B	BatchID: 274172	Analysis Date: 02/08/2019	Seq No: 8742137							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	BRL	0.0011						0	0	20	
Ethybenzene	BRL	0.0011						0	0	20	
m,p-Xylene	BRL	0.0011						0	0	20	
o-Xylene	BRL	0.0011						0	0	20	
Toluene	BRL	0.0011						0	0	20	
Surr: 4-Bromofluorobenzene	0.05549	0						0.05250	0	0	

Qualifiers: > Greater than Result value
 BRL Below reporting limit
 J Estimated value detected below Reporting Limit
 Rpt Lim Reporting Limit

< Less than Result value
 E Estimated (value above quantitation range)
 N Analyte not NELAC certified
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank
 H Holding times for preparation or analysis exceeded
 R RPD outside limits due to matrix

Analytical Environmental Services, Inc

Date: 12-Feb-19

ANALYTICAL QC SUMMARY REPORT

Client: All Phase Environmental
 Project Name: Rooter
 Workorder: 1902401

BatchID: 274270

Sample ID: MB-274270	Client ID: TestCode: VOLATILE ORGANICS	Client ID: TestCode: VOLATILE ORGANICS	Sample Type: MBLK	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	BRL	1.0												
Ethylbenzene	BRL	1.0												
m,p-Xylene	BRL	1.0												
o-Xylene	BRL	1.0												
Toluene	BRL	1.0												
Surrogate: 4-Bromofluorobenzene	51.18	0	50.00											
Sample ID: LCS-274270	Client ID: TestCode: VOLATILE ORGANICS	Client ID: TestCode: VOLATILE ORGANICS	Sample Type: LCS	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	48.28	1.0	50.00											
Ethylbenzene	48.17	1.0	50.00											
m,p-Xylene	94.56	1.0	100.0											
o-Xylene	46.78	1.0	50.00											
Toluene	48.11	1.0	50.00											
Surrogate: 4-Bromofluorobenzene	52.17	0	50.00											
Sample ID: 1902401-009AMS	Client ID: TestCode: VOLATILE ORGANICS	Client ID: TestCode: VOLATILE ORGANICS	Sample Type: MS	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzene	48.10	1.0	50.00											
Ethylbenzene	48.68	1.0	50.00											
m,p-Xylene	96.44	1.0	100.0											
o-Xylene	47.98	1.0	50.00											
Toluene	48.28	1.0	50.00											
Surrogate: 4-Bromofluorobenzene	54.11	0	50.00											

B Analyte detected in the associated method blank

H Holding times for preparation or analysis exceeded

R RPD outside limits due to matrix

< Less than Result value

E Estimated (value above quantitation range)

N Analyte not NELAC certified

S Spike Recovery outside limits due to matrix

Qualifiers: > Greater than Result value
 BRL Below reporting limit
 J Estimated value detected below Reporting Limit
 Rpt Lim Reporting limit

Page 20 of 21

Analytical Environmental Services, Inc

Date: 12-Feb-19

ANALYTICAL QC SUMMARY REPORT

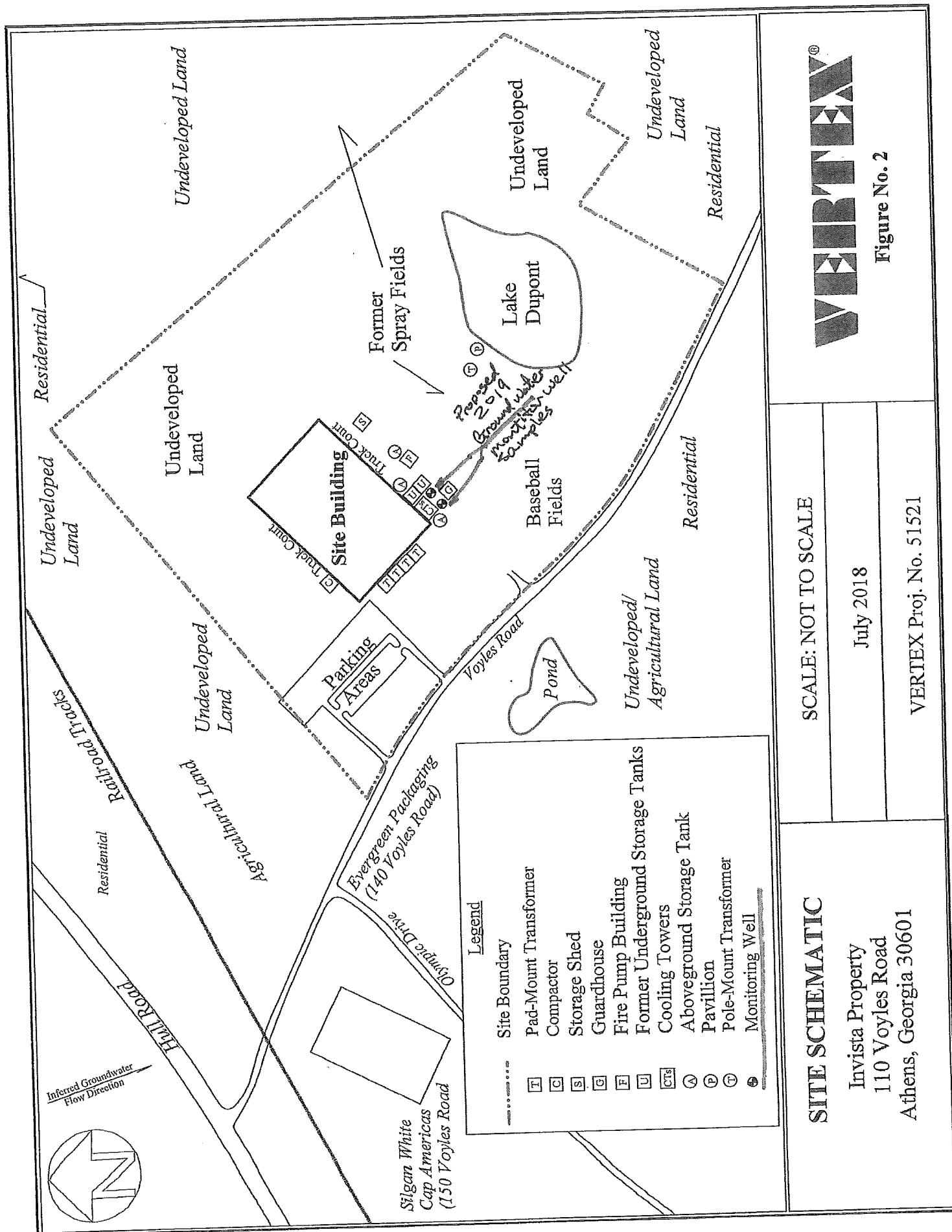
Client: All Phase Environmental
 Project Name: Rooter
 Workorder: 1902401

BatchID: 274270

Analyte	Result	RPLimit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%6RPD	RPD Limit	Qual	Units: ug/L	Prep Date: 02/08/2019	Run No: 390620
												BatchID: 274270	Analysis Date: 02/08/2019	Seq No: 8741804
Benzene	BRL	1.0							0	0	20			
Ethylbenzene	BRL	1.0							0	0	20			
m,p-Xylene	BRL	1.0							0	0	20			
o-Xylene	BRL	1.0							0	0	20			
Toluene	BRL	1.0							0	0	20			
Surr: 4-Bromofluorobenzene	52.21	0							64	125	52.18	0	0	

Qualifiers: > Greater than Result value < Less than Result value
 BRL Below reporting limit E Estimated (value above quantitation range)
 J Estimated value detected below Reporting Limit N Analyte not NEA/C certified
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank
 H Holding times for preparation or analysis exceeded
 R RPD outside limits due to matrix



Proposed
A.P.E.
2019
Hand Auger
Sample
0-12"

