



PHASE ENGINEERING

Phase II Environmental Site Assessment

September 9, 2024

PE Project No.: 202408109

11685 Arrowwood Circle
Houston, Texas 77063
Harris County

Prepared by:

Phase Engineering, LLC
5524 Cornish Street
Houston, Texas 77007

September 9, 2024

Re: Phase II Environmental Site Assessment
11685 Arrowwood Circle
Houston, Harris County, Texas 77063
Phase Engineering, LLC Project No. 202408109

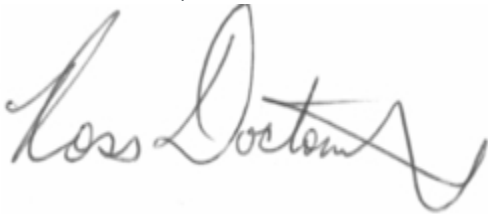
To Whom It May Concern,

Phase Engineering, LLC (Phase) has completed a Phase II Environmental Site Assessment of the above-referenced property. The scope of work was conducted in accordance with the executed letter of engagement based on generally accepted industry standards. This report has been released under the authority of Ross Doctoroff (TBPGE License #2767) and Phase Engineering, LLC (TBPGE Licensed Geoscience Firm #50283) on September 9, 2024.

Thank you for using the professional environmental services of Phase Engineering, LLC. Please contact either of the undersigned if you have any questions regarding this project.

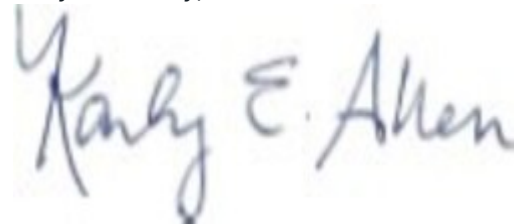
Sincerely,

Ross Doctoroff, Texas P.G. #2767



Vice President

Karly E. Cherry, MSPH



Remediation Projects Director

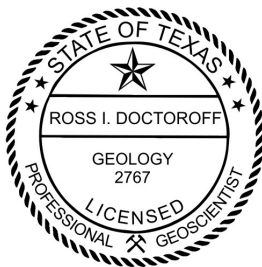


TABLE OF CONTENTS

1.0	Executive Summary	1
1.1	Subject Property Description	1
1.2	Purpose of Assignment	1
2.0	Background	2
2.1	Prior Environmental Site Assessments	2
3.0	Scope of Investigation	3
3.1	Soil Investigation Details	3
3.1.1	Soil Sample Handling and Preservation Details	3
3.1.2	Laboratory Analysis Performed	3
3.1.3	Locations of Areas Assessed	3
3.1.4	Field Screening Summary	4
3.1.5	Summary of Soil Samples Selected for Laboratory Analysis	4
3.2	Groundwater Investigation Details	4
3.2.1	Groundwater Handling and Preservation Details	5
3.2.2	Laboratory Analysis Performed	5
3.2.3	Methodology Utilized During Groundwater Sample Collection	5
4.0	Findings	6
4.1	Soil Laboratory Results Summary	6
4.2	Groundwater Laboratory Results Summary	6
5.0	Conclusions and Opinions	8
6.0	Recommendations	9
7.0	Laboratory Report Review	10
8.0	Summary of General Methodology	11
9.0	Signature(s)	12
10.0	Common Acronyms	13

TABLE OF APPENDICES

APPENDIX I: LABORATORY SUMMARY TABLE(S)
APPENDIX II: MAP(S)
APPENDIX III: SOIL BORING LOGS
APPENDIX IV: LABORATORY REPORT(S)
APPENDIX V: PHOTO GALLERY
APPENDIX VI: AGREEMENT FOR SERVICES

1.0 Executive Summary

1.1 Subject Property Description

The subject property is located at 11685 Arrowwood Circle, Houston, Harris County, Texas 77063 and currently consists of a vacant residential lot.

1.2 Purpose of Assignment

The purpose of this Phase II Environmental Site Assessment (ESA) was to investigate existing soil and groundwater conditions.

2.0 Background

2.1 Prior Environmental Site Assessments

No prior environmental site assessments were provided. Phase Engineering, LLC was contracted to conduct a subsurface investigation as part of a real estate transaction associated with the subject property to investigate existing soil and groundwater conditions prior to development activities.

3.0 Scope of Investigation

The investigation consisted of installation of four (4) soil borings utilizing direct push technology (DPT), conversion of two (2) soil borings into temporary groundwater monitoring wells (TMWs) (the remaining two (2) borings were limited in depth to evaluate surface and near-surface soil conditions), and collection of selected soil and groundwater samples for laboratory analysis on September 3, 2024.

A groundwater bearing unit (GWBU) was encountered during soil boring installation activities at depths ranging from 20 to 25 feet bgs. Two (2) of the soil borings was converted into temporary groundwater monitoring wells.

All samples selected for laboratory analysis during this assessment were submitted to A&B Labs and verification of delivery and transfer of the samples is documented on the enclosed laboratory chain of custody.

3.1 Soil Investigation Details

3.1.1 Soil Sample Handling and Preservation Details

Soil grab samples were collected directly from Shelby tubes with disposable plastic liners and handled with nitrile gloves. Soil samples were collected into containers provided by A&B Labs and preserved utilizing the following methods:

- EPA Method 5035
- Methanol
- Placed on ice at temperatures less than 4° C.

3.1.2 Laboratory Analysis Performed

The following laboratory methods were performed by A&B Labs for soil samples selected during this assessment:

Selected Soil Sample Information	
Type of Analysis	Analysis Method
Volatile Organic Compounds (VOCs)	EPA Method 8260
Total Petroleum Hydrocarbons (TPH)	Texas Method 1005
RCRA 8 Metals	EPA Method 6020 EPA Method 7471
Semi-Volatile Organic Compounds (SVOCs)	EPA Method 8270
pH	EPA Method 9045

3.1.3 Locations of Areas Assessed

Soil boring locations / rationale are summarized in the following table:

Soil Boring Locations and Rationale		
Sample Location #	Location Description	Rationale
SB-1	West of center of subject property	Proximate to historical structures
SB-2	East of center of subject property	Proximate to historical structures
SB-3	Southeast portion of subject property	Proximate to historical structures
SB-4	West-central portion of subject property	Proximate to historical structures

3.1.4 Field Screening Summary

Soil field screening activities were conducted at minimum intervals of two to five feet bgs during advancement of each soil boring. The soil samples were collected into disposable plastic bags and allowed to equilibrate (allowing concentrations between the soil and headspace of the bag to equalize) prior to Organic Vapor Meter (OVM) screening. The field technician additionally noted visual or olfactory observations during the sample event. The following table summarizes screening results noted during investigation activities:

Field Screening Summary			
Sample Location #	Visual Observation	Olfactory Observation	OVM Summary
SB-1	None	None	14.8 ppm / 5-7' bgs
SB-2	None	None	9.4 ppm / 3-5' bgs
SB-3	None	None	8.0 ppm / 3-5' bgs
SB-4	None	None	9.1 ppm / 1-3' bgs

3.1.5 Summary of Soil Samples Selected for Laboratory Analysis

The following table summarizes the sample interval depths and the rationale utilized for selection of soil samples for laboratory analysis:

Soil Sample Selection Rationale Summary		
Sample Location #	Sample Depth (feet bgs)	Rationale Description
SB-1	5-7	Evaluation of potential near-surface releases Highest OVM reading
SB-2	3-5	Evaluation of potential near-surface releases Highest OVM reading
SB-3	3-5	Evaluation of potential near-surface releases Highest OVM reading
SB-4	1-3	Evaluation of potential surface releases Highest OVM reading

3.2 Groundwater Investigation Details

3.2.1 Groundwater Handling and Preservation Details

Groundwater samples were collected into containers provided by A&B Labs and preserved utilizing the following methods:

- Hydrochloric acid
- Nitric acid
- Placed on ice at temperatures less than 4° C.

3.2.2 Laboratory Analysis Performed

The following laboratory methods were performed by A&B Labs for groundwater samples collected during this assessment:

Groundwater Laboratory Analysis Performed	
Type of Analysis	Analysis Method
Volatile Organic Compounds (VOCs)	EPA Method 8260
Total Petroleum Hydrocarbons (TPH)	Texas Method 1005
RCRA 8 Metals	EPA Method 6020 EPA Method 7470
Semi-Volatile Organic Compounds (SVOCs)	EPA Method 8270

3.2.3 Methodology Utilized During Groundwater Sample Collection

Groundwater samples were collected using low-flow techniques with a peristaltic pump and dedicated tubing. Depth to groundwater measurements were collected prior to purging and prior to sample collection. A minimum of three well volumes was attempted to have been purged from each temporary groundwater monitoring well. Groundwater was allowed to recharge to at least 90% of the initial static water level prior to sample collection. Groundwater samples collected for metals analysis were field-filtered using an inline 10-micron filter prior to filling the sample containers.

4.0 Findings

4.1 Soil Laboratory Results Summary

The following summarizes the results of each analytical suite for the soil samples selected for laboratory analyses during this assessment:

- Arsenic, barium, chromium, lead, selenium, and mercury were detected or estimated to be present (J-flagged) in all soil samples selected for laboratory analysis at concentrations that are less than their respective Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program (TRRP) Tier 1 Protective Concentration Levels (PCLs) (or Texas State Background Concentrations (TSBC) (applicable for the soil to groundwater pathway)) for soil.

Cadmium and silver were not detected in any of the soil samples selected for laboratory analysis at concentrations greater than their respective laboratory reporting limits (RLs).

- One (1) VOC constituent, specifically toluene, was detected in the soil sample selected for laboratory analysis from SB-3 at a concentration that is less than its TCEQ TRRP Tier 1 PCL for soil.

No other VOC constituents were detected in the soil samples selected for laboratory analysis at concentrations greater than their respective laboratory RLs.

- No SVOC constituents were detected in the soil samples selected for laboratory analysis at concentrations greater than their respective laboratory RLs.
- No TPH ranges were detected in the soil samples selected for laboratory analysis at concentrations greater than their respective laboratory RLs.

The soil analytical results are summarized in the attached table and are presented in the attached laboratory analytical report.

4.2 Groundwater Laboratory Results Summary

The following summarizes the results of each analytical suite for the groundwater samples collected for laboratory analyses during this assessment:

- Barium and mercury were detected in both groundwater samples collected for laboratory analysis at concentrations that are less than their respective TRRP Tier 1 PCLs for ingestion of groundwater.

No other metals were detected in the groundwater samples collected for laboratory analysis at concentrations greater than their respective laboratory RLs.

- Two (2) VOC constituents, specifically m- & p-xylenes and xylenes, were estimated to be present in the groundwater sample collected for laboratory analysis at TMW-2 at concentrations that are less than their respective TCEQ TRRP Tier 1 PCLs for ingestion of groundwater.

No other VOC constituents were detected in the groundwater samples collected for laboratory analysis at concentrations greater than their respective laboratory RLs.

-
- No SVOC constituents were detected in the groundwater sample collected for laboratory analysis of SVOCs at concentrations greater than their respective laboratory RLs.
 - No TPH ranges were detected in the groundwater samples collected for laboratory analysis at concentrations greater than their respective laboratory RLs.

The groundwater analytical results are summarized in the attached table and are presented in the attached laboratory analytical report.

5.0 Conclusions and Opinions

The following conclusions are based on laboratory analytical results and field screening observations associated with this assessment:

- **No indication of a reportable release to soil or groundwater from petroleum products or hazardous substances was identified in the areas evaluated under this assessment.**
- Metals were detected in the soil across the site at concentrations that appear to be consistent with background conditions. All detected concentrations of contaminants of concern are less than their respective regulatory action levels for unrestricted site use and are less than their baseline regulatory action levels for the soil to groundwater pathway and ingestion of groundwater.

Based on laboratory analytical results and field screening observations, the assessment does not demonstrate that a release of hazardous substances or petroleum products has occurred at the subject property in connection with any past uses of the subject property.

6.0 Recommendations

No further investigation appears to be warranted at this time based on results of soil and groundwater samples that were selected for laboratory analysis as well as from field screening observations noted at areas evaluated during this assessment.

7.0 Laboratory Report Review

A review of the laboratory analytical report for quality assurance/quality control indicators reveals that the soil and groundwater data are acceptable and usable for the purposes of this Phase II assessment. QC sample recoveries were within control limits and there were no contaminants detected in the blank samples. No anomalies were noted that would affect the outcome of the assessment.

8.0 Summary of General Methodology

It is the opinion of Phase Engineering, LLC that the scope and character of the environmental report and services, and the investigation performed, were sufficient to justify the conclusions reached in light of the character of the property and the results of tests performed. Phase Engineering has used methodologies that conform to standards established by the EPA and appropriate state environmental protection agencies under similar budget and time constraints, good and customary practices, and laboratory standards for this kind of work. The soil and groundwater samples collected and analyzed as part of this limited assessment are indicative of only those areas sampled.

9.0 Signature(s)

The following individual(s) performed this assessment:

Prepared By:

A handwritten signature in blue ink that reads "Jade Mehaffie".

Jade Mehaffie
Environmental Project Manager

Reviewed By:

A handwritten signature in black ink that reads "Jaymi Reser".

Jaymi Reser
Environmental Project Manager

10.0 Common Acronyms

AAI – All Appropriate Inquiry

ACBM – Asbestos Containing Building Material

AST – Aboveground Storage Tank

ASTM – American Society for Testing and Materials (2001)

AUL – Activity and Usage Limitation

BF – Brownfield

bgs – below ground surface

BTEX – Benzene, Toluene, Ethyl benzene and Xylenes

CDC – Certified Development Corporation

CERCLA – Comprehensive Environmental Response, Compensation and Liability Act

CERCLIS – Comprehensive Environmental Response, Compensation and Liability Information System

CERCLIS NFRAP – Comprehensive Environmental Response, Compensation and Liability Information System with No Further Remedial Action Planned

CLI – Closed Landfill Inventory

CORRACTS – Corrective Action (RCRA)

CREC – Controlled recognized environmental condition

EC – Engineering Control

EPA – Environmental Protection Agency

ERNS – Emergency Response Notification System

FOIA – Freedom of Information Act

GWBZ – Groundwater Bearing Zone

HH – Human Health

HREC – Historical recognized environmental condition

IC – Institutional Control

IHW – Industrial Hazardous Waste

IOP – Innocent Owner / Operator Program

LPST – Leaking Petroleum Storage Tank

MUD – Municipal Utility District

MSD – Municipal Settings Designation

MSL – Mean Sea Level

MTBE – Methyl tert butyl ether

NAPL – Non-aqueous Phase Liquids

NPL – National Priority List

NRCS – Natural Resource Conservation Service

OSHA – Occupational Safety and Health Administration

PAH – Polycyclic Aromatic Hydrocarbons

PCB – Polychlorinated Biphenyls

PCE – Perchloroethene (Tetrachloroethene)

PCL – Protective Concentration Level

PPM – Parts Per Million

PSH – Phase Separated Hydrocarbons

PUD – Public Utility District

RCRA – Resource Conservation and Recovery Act

REC – Recognized environmental condition

RRC – Texas Railroad Commission

SBA – Small Business Administration

SCL – State CERCLIS List

SPL – State Priority List

SVOC – Semi-Volatile Organic Compounds

SWLF – Solid Waste Landfill

TCEQ – Texas Commission on Environmental Quality

TDSHS – Texas Department of State Health Services

TNRCC – Texas Natural Resource Conservation Commission

TNRIS – Texas Natural Resource Information System

TPH – Total Petroleum Hydrocarbons

TRRP – Texas Risk Reduction Program

TSBC – Texas State Background Concentration

TSD – Treatment, Storage and Disposal (RCRA)

TWC – Texas Water Commission

TWDB – Texas Water Development Board

USACOE – United States Army Corps of Engineers

USDA – United States Department of Agriculture

UST – Underground Storage Tank

USGS – United States Geological Survey

VCP – Voluntary Cleanup Program

VEC – Vapor Encroachment Condition

VOC – Volatile Organic Compounds

WMU – Waste Management Unit

APPENDIX I

LABORATORY SUMMARY TABLE(S)

SOIL ANALYTICAL RESULTS
11685 ARROWWOOD CIRCLE HOUSTON
PIESA

ANALYTE	TRRP Tier 1 PCLs	TRRP Tier 2 PCLs	TSCB	SB-1	SB-2	SB-3	SB-4
	¹⁰⁵ SrSO ₄ mg/kg	⁶⁶ SeSO ₄ mg/kg	⁶⁶ SeSO ₄ mg/kg	5-7 lbs 9/3/2024 mg/kg	9-5 lbs 9/3/2024 mg/kg	9-5 lbs 9/3/2024 mg/kg	1-9 lbs 9/3/2024 mg/kg
RCRA Metals (EPA 6020, 7471)							
Arsenic	24	5	5.9	1.06	0.883	1.38	1.05
Barium	8100	440	200	28	27.2	29	35.6
Calcium	52	1.5	N/A	<0.080	<0.080	<0.090	<0.080
Chromium	33000	2400	30	8.7	6.63	11.7	4.12
Lead	500	3	15	5.49	6.76	8.12	6.97
Selenium	310	2.3	0.3	0.586	0.866	1.17	0.71
Silver	97	0.48	N/A	<0.0910	<0.0920	<0.0940	<0.0920
Mercury	3.6	2.1	0.04	0.00283	0.00293	0.00467	0.0386
VOCs (EPA 8260)							
1,1,1,2-Tetrachloroethane	65	1.4	N/A	<0.00078	<0.00085	<0.00063	<0.00079
1,1,1-Trichloroethane	5900	1.6	N/A	<0.00140	<0.00150	<0.00110	<0.00140
1,1,2,2-Tetrachloroethane	30	0.023	N/A	<0.00120	<0.00130	<0.00098	<0.00120
1,1,2-Trichloroethane	18	0.02	N/A	<0.00160	<0.00180	<0.00130	<0.00160
1,1-Dichloroethane	11000	18	N/A	<0.00140	<0.00160	<0.00120	<0.00150
1,1-Dichloroethylene	2300	0.05	N/A	<0.00160	<0.00170	<0.00130	<0.00160
1,1-Dichloropropane	36	0.13	N/A	<0.00130	<0.00140	<0.0010	<0.00130
1,2,3-Trichlorobenzene	120	26	N/A	<0.00150	<0.00170	<0.00120	<0.00150
1,2,3-Trichloropropane	0.2	0.00053	N/A	<0.00140	<0.00150	<0.0010	<0.00140
1,2,4-Trichlorobenzene	120	4.8	N/A	<0.00130	<0.00140	<0.0010	<0.00130
1,2,4-Trimethylbenzene	1600	31	N/A	<0.00110	<0.00120	<0.00090	<0.00110
1,2-Dibromo-3-chloropropane	0.15	0.0017	N/A	<0.00120	<0.00130	<0.00090	<0.00120
1,2-Dibromoethane	2.5	0.00021	N/A	<0.00100	<0.00110	<0.00084	<0.00100
1,2-Dichlorobenzene	720	18	N/A	<0.00092	<0.00100	<0.00074	<0.00092
1,2-Dichloroethane	41	0.014	N/A	<0.00120	<0.00130	<0.00098	<0.00120
1,2-Dichloropropane	61	0.023	N/A	<0.00100	<0.00110	<0.00084	<0.00100
1,3,5-Trimethylbenzene	1500	36	N/A	<0.00140	<0.00150	<0.0010	<0.00140
1,3-Dichlorobenzene	120	6.7	N/A	<0.00130	<0.00140	<0.0010	<0.00130
1,3-Dichloropropane	36	0.064	N/A	<0.00130	<0.00140	<0.0010	<0.00130
1,4-Dichlorobenzene	250	2.1	N/A	<0.00130	<0.00140	<0.0010	<0.00130
1,4-Dioxane	45	0.018	N/A	<0.00160	<0.00170	<0.00120	<0.00160
2,2-Dichloropropane	61	0.12	N/A	<0.00200	<0.00220	<0.00160	<0.00200
2-Chlorotoluene	1200	9.1	N/A	<0.00130	<0.00140	<0.0010	<0.00130
4-Chlorotoluene	1600	11	N/A	<0.00130	<0.00140	<0.0010	<0.00130
4-Isopropyltoluene	8200	238	N/A	<0.00130	<0.00140	<0.0010	<0.00130
Benzene	120	0.026	N/A	<0.00098	<0.00110	<0.00079	<0.00098
Bromobenzene	390	2.3	N/A	<0.00100	<0.00110	<0.00084	<0.00100
Bromochloroethane	3300	3	N/A	<0.00120	<0.00130	<0.00093	<0.00120
Bromodichloroethane	98	0.065	N/A	<0.00081	<0.00088	<0.00065	<0.00081
Bromoflors	400	0.61	N/A	<0.00063	<0.00078	<0.00053	<0.00066
Bromomethane	46	0.13	N/A	<0.00160	<0.00170	<0.00120	<0.00160
Carbon disulfide	4600	14	N/A	<0.00130	<0.00140	<0.0010	<0.00130
Carbon tetrachloride	35	0.062	N/A	<0.00140	<0.00150	<0.0010	<0.00140
Chlorobenzene	520	1.1	N/A	<0.00140	<0.00150	<0.0010	<0.00140
Chloroethane	27000	31	N/A	<0.00120	<0.00130	<0.00090	<0.00120
Chloroform	16	1	N/A	<0.00110	<0.00120	<0.00088	<0.00110
Chloromethane	140	0.41	N/A	<0.00210	<0.00230	<0.00170	<0.00210
cis-1,2-Dichloroethylene	140	0.25	N/A	<0.00110	<0.00120	<0.00088	<0.00110
cis-1,3-Dichloropropene	36	0.13	N/A	<0.00130	<0.00140	<0.00098	<0.00130
Dibromochloromethane	72	0.049	N/A	<0.00100	<0.00110	<0.00081	<0.00100
Dibromomethane	81	1.1	N/A	<0.00130	<0.00140	<0.0010	<0.00130
Dichlorodifluoromethane	1400	240	N/A	<0.00120	<0.00130	<0.00090	<0.00120
Ethylbenzene	6400	7.6	N/A	<0.00130	<0.00140	<0.0010	<0.00130
Isopropylbenzene	4300	190	N/A	<0.00120	<0.00130	<0.00090	<0.00120
m- & p-Xylenes	8900	110	N/A	<0.00250	<0.00270	<0.00200	<0.00250
MEK	40000	29	N/A	<0.00250	<0.00270	<0.00200	<0.00250
Methylene chloride	1600	0.013	N/A	<0.00140	<0.00150	<0.0010	<0.00140
MXCE	800	0.41	N/A	<0.00098	<0.00110	<0.00079	<0.00098
Naphthalene	220	31	N/A	<0.00170	<0.00190	<0.00140	<0.00170
n-Butylbenzene	3300	150	N/A	<0.00160	<0.00180	<0.00130	<0.00170
n-Propylbenzene	2200	45	N/A	<0.00130	<0.00140	<0.0010	<0.00130
o-Xylene	48000	71	N/A	<0.00120	<0.00130	<0.00093	<0.00120
sec-Butylbenzene	3300	85	N/A	<0.00160	<0.00180	<0.00130	<0.00160
Styrene	6700	3.3	N/A	<0.00120	<0.00130	<0.00093	<0.00120
t-Butylbenzene	3300	100	N/A	<0.00130	<0.00140	<0.0010	<0.00130
Tetrachloroethylene	710	0.05	N/A	<0.00130	<0.00140	<0.0010	<0.00130
Toluene	5900	8.2	N/A	<0.00110	<0.00120	0.00093	<0.00110
trans-1,2-Dichloroethylene	590	0.48	N/A	<0.00130	<0.00140	<0.0010	<0.00130
trans-1,3-Dichloropropene	36	0.036	N/A	<0.00085	<0.00093	<0.00065	<0.00089
Trichloroethylene	18	0.034	N/A	<0.00096	<0.00100	<0.00077	<0.00096
Trichlorofluoroethane	2500	1.90	N/A	<0.00180	<0.00200	<0.00150	<0.00180
Vinyl Chloride	3.7	0.027	N/A	<0.00170	<0.00180	<0.00130	<0.00170
Xylenes	6000	120	N/A	<0.00120	<0.00130	<0.00093	<0.00120
SVOCs (EPA 8270)							
1,2,4-Trichlorobenzene	120	4.8	N/A	<0.025	<0.025	<0.025	<0.025
1,2-Dichlorobenzene	720	18	N/A	<0.025	<0.025	<0.025	<0.025
1,3-Dichlorobenzene	120	6.7	N/A	<0.025	<0.025	<0.025	<0.025
1,4-Dichlorobenzene	250	2.1	N/A	<0.027	<0.027	<0.027	<0.027
2,4,5-Trichlorophenol	6700	34	N/A	<0.034	<0.034	<0.035	<0.034
2,4,6-Trichlorophenol	67	0.17	N/A	<0.054	<0.054	<0.055	<0.054
2,4-Dichlorophenol	200	0.36	N/A	<0.025	<0.025	<0.025	<0.025
2,4-Dimethylphenol	1300	3.2	N/A	<0.027	<0.027	<0.027	<0.027
2,4-Dinitrophenol	130	0.094	N/A	<0.378	<0.381	<0.385	<0.380
2,4-Dinitrotoluene	6.9	0.0053	N/A	<0.061	<0.061	<0.062	<0.061
2,6-Dinitrotoluene	6.9	0.0048	N/A	<0.038	<0.038	<0.039	<0.038
2-Chlorophthalene	5000	676	N/A	<0.025	<0.025	<0.025	<0.025
2-Chlorophenol	410	1.6	N/A	<0.025	<0.025	<0.025	<0.025
2-Methylnaphthalene	250	17	N/A	<0.032	<0.032	<0.033	<0.032
2-Methylphenol (o-Cresol)	3300	7.1	N/A	<0.035	<0.035	<0.035	<0.035
2-Nitrophenol	130	0.13	N/A	<0.013	<0.014	<0.014	<0.014
3,4-Methylphenol	330	0.63	N/A	<0.041	<0.041	<0.041	<0.041
3,3-Dichlorobenzidine	10	0.063	N/A	<0.064	<0.065	<0.065	<0.064
4,6-Dinitro-2-methylphenol	6.7	0.047	N/A	<0.082	<0.082	<0.083	<0.082
4-Bromophenyl phenyl ether	0.28	0.36	N/A	<0.029	<0.029	<0.030	<0.029
4-Chloro-3-methylphenol	330	4.5	N/A	<0.043	<0.044	<0.044	<0.044
4-Chlorophenyl phenyl ether	0.16	0.032	N/A	<0.025	<0.025	<0.025	<0.025
4-Nitrophenol	130	0.1	N/A	<0.040	<0.040	<0.040	<0.040
Acenaphthene	3000	240	N/A	<0.017	<0.018	<0.018	<0.017
Acenaphthylene	3800	410	N/A	<0.027	<0.027	<0.027	<0.027
Anthracene	18000	6900	N/A	<0.021	<0.021	<0.021	<0.021
Benzo(a)anthracene	41	130	N/A	<0.032	<0.032	<0.033	<0.032
Benzo(a)pyrene	4.1	7.6	N/A	<0.049	<0.050	<0.050	<0.049
Benzo(b)fluoranthene	42	440	N/A	<0.034	<0.034	<0.035	<0.034
Benzo(e)fluoranthene	1800	46000	N/A	<0.034	<0.034	<0.035	<0.034
Benzo(k)fluoranthene	420	4500	N/A	<0.053	<0.054	<0.054	<0.054
Bis(2-chloroethoxy)methane	3.1	0.012	N/A	<0.025	<0.025	<0.025	<0.025
Bis(2-chloroethyl) ether	2.2	0.0021	N/A	<0.019	<0.019	<0.019	<0.019
Bis(2-chloropropyl) ether	51	0.18	N/A	<0.017	<0.018	<0.018	<0.017
Bis(2-ethylhexyl) phthalate	43	160	N/A	<0.165	<0.167	<0.168	<0.166
Butyl benzyl phthalate	1600	260	N/A	<0.076	<0.077	<0.078	<0.077
Chrysene	4100	11000	N/A	<0.027	<0.027	<0.027	<0.027
Dibenz(a,h)anthracene	4	15	N/A	<0.056	<0.057	<0.057	<0.056
Dibenzofuran	270	33	N/A	<0.019	<0.019	<0.019	<0.019
Diethyl phthalate	53000	160	N/A	<0.034	<0.034	<0.035	<0.034
Dimethyl phthalate	53000	62	N/A	<0.013	<0.014	<0.014	<0.014
Di-n-butyl phthalate	6200	3300	N/A	<0.077	<0.078	<0.078	<0.077
Di-n-octyl phthalate	640	810000	N/A	<0.145	<0.146	<0.145	<0.145
Fluorene	2300	1900	N/A	<0.029	<0.029	<0.030	<0.029
Fluorene	2300	300	N/A	<0.013	<0.014	<0.014	<0.014
Hexachlorobenzene	1.1	1.1	N/A	<0.045	<0.046	<0.046	<0.046
Hexachlorobutadiene	20	3.3	N/A				

GROUNDWATER ANALYTICAL RESULTS
11685 ARROWWOOD CIRCLE HOUSTON
PUEA

ANALYTE	TRRP Tier 1 PCLs mg/L _{as is}	TMW-1 9/3/2024 mg/L	TMW-2 9/3/2024 mg/L
RCA Metals (EPA 6020, 7470)			
Arsenic	0.01	<0.00930	<0.00930
Barium	2	0.325	0.164
Calcium	0.005	<0.00420	<0.00420
Chromium	0.1	<0.00160	<0.00160
Lead	0.015	<0.00320	<0.00320
Selenium	0.05	<0.0580	<0.0580
Silver	0.12	<0.00360	<0.00360
Mercury	0.002	0.00055	0.00055
VOCS (EPA 8260)			
1,1,1,2-Tetrachloroethane	0.035	<0.00110	<0.00110
1,1,1-Trichloroethane	0.2	<0.00082	<0.00082
1,1,2-Trichloroethane	0.035	<0.00079	<0.00079
1,1,2-Trichloroethane	0.005	<0.00085	<0.00085
1,1-Dichloroethane	4.9	<0.00050	<0.00050
1,1-Dichloroethylene	0.007	<0.00063	<0.00063
1,1-Dichloropropane	0.0091	<0.00088	<0.00088
1,2,3-trichlorobenzene	0.073	<0.00038	<0.00038
1,2,3-Trichloropropane	0.00003	<0.00088	<0.00088
1,2,4-Trichlorobenzene	0.07	<0.00044	<0.00044
1,2,4-Trimethylbenzene	0.83	<0.00038	<0.00038
1,2-Dibromo-3-chloropropane	0.0002	<0.00091	<0.00091
1,2-Dibromoethane	0.00005	<0.00066	<0.00066
1,2-Dichlorobenzene	0.6	<0.00050	<0.00050
1,2-Dichloroethane	0.005	<0.00057	<0.00057
1,2-Dichloropropane	0.005	<0.00050	<0.00050
1,3,5-Trimethylbenzene	0.83	<0.00038	<0.00038
1,3-Dichlorobenzene	0.73	<0.00047	<0.00047
1,3-Dichloropropane	0.0091	<0.00063	<0.00063
1,4-Dichlorobenzene	0.075	<0.00035	<0.00035
1,4-Dioxane	0.0091	<0.08200	<0.08200
1,2-Dichloropropane	0.013	<0.00028	<0.00028
2-Chlorobutane	0.49	<0.00038	<0.00038
4-Chlorobutane	0.49	<0.00038	<0.00038
4-Isopropyltoluene	2.4	<0.00019	<0.00019
Benzene	0.005	<0.00038	<0.00038
Bromobenzene	0.2	<0.00035	<0.00035
Bromodichloromethane	0.98	<0.00053	<0.00053
Bromodichloromethane	0.015	<0.00038	<0.00038
Bromoform	0.12	<0.00057	<0.00057
Bromomethane	0.034	<0.00082	<0.00082
Carbon disulfide	2.4	<0.00069	<0.00069
Carbon tetrachloride	0.005	<0.00050	<0.00050
Chlorobenzene	0.1	<0.00057	<0.00057
Chloroethane	9.8	<0.00110	<0.00110
Chloroform	0.24	<0.00069	<0.00069
Chloromethane	0.07	<0.00088	<0.00088
cis-1,2-Dichloroethylene	0.07	<0.00060	<0.00060
cis-1,3-Dichloropropene	0.0017	<0.00057	<0.00057
Dibromochloromethane	0.011	<0.00085	<0.00085
Dibromomethane	0.12	<0.00044	<0.00044
Dichlorodifluoromethane	4.9	<0.00038	<0.00038
Ethylbenzene	0.7	<0.00031	<0.00031
Isopropylbenzene	2.4	<0.00041	<0.00041
m, p-Xylenes	10	<0.00088	0.00101
MEK	15	<0.00110	<0.00110
Methylene chloride	0.005	<0.00097	<0.00097
Naphthalene	0.49	<0.00050	<0.00050
n-Butylbenzene	1.2	<0.00062	<0.00062
n-Propylbenzene	0.98	<0.00022	<0.00022
o-Xylene	10	<0.00060	<0.00060
sec-Butylbenzene	0.98	<0.00031	<0.00031
Styrene	0.1	<0.00053	<0.00053
t-butylbenzene	0.98	<0.00038	<0.00038
Tetrachloroethylene	0.005	<0.00072	<0.00072
Toluene	1	<0.00063	<0.00063
trans-1,2-Dichloroethylene	0.1	<0.00073	<0.00073
trans-1,3-Dichloropropene	0.0091	<0.00075	<0.00075
Trichloroethylene	0.005	<0.00031	<0.00031
Trichlorofluoromethane	7.3	<0.00044	<0.00044
Vinyl Chloride	0.001	<0.00097	<0.00097
Xylenes	10	<0.00060	0.00101
SVOCs (EPA 8270)			
1,2,4-Trichlorobenzene	0.072	<0.00065	<0.00062
1,2-Dichlorobenzene	0.005	<0.00071	<0.00069
1,3-Dichlorobenzene	0.73	<0.00057	<0.00055
1,4-Dichlorobenzene	0.075	<0.00071	<0.00069
2,4,5-Trichlorophenol	2.4	<0.00081	<0.00078
2,4,6-Trichlorophenol	0.004	<0.00063	<0.00062
2,4-Dichlorophenol	0.073	<0.00075	<0.00072
2,4-Dimethylphenol	0.49	<0.00081	<0.00078
2,4-Dinitrophenol	0.049	<0.0110	<0.0100
2,6-Dinitrophenol	0.0013	<0.00081	<0.00078
2,6-Dinitrotoluene	0.013	<0.00062	<0.00059
2-Chloronaphthalene	2	<0.00081	<0.00078
2-Chlorophenol	0.12	<0.00081	<0.00078
2-Methylnaphthalene	0.098	<0.00027	<0.00026
2-Nitrophenol	1.2	<0.00110	<0.00100
2-Nitrophenol	0.049	<0.00078	<0.00075
3,4-Methylphenol	0.12	<0.00140	<0.00140
4,6-Dinitro-2-methylphenol	0.0024	<0.00071	<0.00069
4-Bromophenyl phenyl ether	0.00061	<0.00088	<0.00084
4-Chloro-3-methylphenol	0.12	<0.00048	<0.00046
4-Chlorophenyl phenyl ether	0.00061	<0.00089	<0.00085
4-Nitrophenol	0.049	<0.00038	<0.00036
7,12-Dimethylbenz[a]anthracene	0.000007	<0.00140	<0.00130
Acenaphthene	1.5	<0.00095	<0.00092
Acenaphthylene	1.5	<0.00085	<0.00082
Anthracene	7.3	<0.00071	<0.00069
Benzo[a]anthracene	0.0091	<0.00081	<0.00078
Benzo[a]pyrene	0.0002	<0.00100	<0.00098
Benzo[b]fluoranthene	0.0091	<0.00130	<0.00110
Benzo[k]fluoranthene	0.73	<0.00081	<0.00078
Benzo[a]fluoranthene	0.091	<0.00140	<0.00130
Benzo[e]fluoranthene	0.00081	<0.00078	<0.00075
Bis(2-chloroethyl)ether	0.00083	<0.00078	<0.00075
Bis(2-chloroisopropyl)ether	0.013	<0.00100	<0.00100
Bis(2-ethylhexyl)phthalate	0.006	<0.00081	<0.00078
Butyl benzyl phthalate	0.48	<0.00075	<0.00072
Chrysene	0.91	<0.00095	<0.00092
Dibenz[a,h]anthracene	0.0002	<0.00062	<0.00059
Diethyl phthalate	20	<0.00089	<0.00085
Dimethyl phthalate	20	<0.00071	<0.00069
Di-n-butyl phthalate	2.4	<0.00065	<0.00062
Di-n-octyl phthalate	0.24	<0.00100	<0.00098
Fluoranthene	0.98	<0.00075	<0.00072
Fluorene	0.98	<0.00095	<0.00092
Hexachlorobenzene	0.001	<0.00120	<0.00110
Hexachlorobutadiene	0.012	<0.00067	<0.00065
Hexachlorocyclopentadiene	0.05	<0.0110	<0.0100
Hexachloroethane	0.017	<0.00051	<0.00049
Indeno[1,2,3-cd]pyrene	0.0091	<0.00062	<0.00059
Isothorone	0.96	<0.00071	<0.00069
Naphthalene	0.49	<0.00071	<0.00069
Nitrobenzene	0.049	<0.00130	<0.00120
N-Nitrosodimethylamine	0.000018	<0.00051	<0.00049
N-Nitrosodi-n-propylamine	0.00013	<0.00068	<0.00066
Pentachlorophenol	0.001	<0.00068	<0.00066
Phenanthrene	0.73	<0.00078	<0.00075
Phenol	7.3	<0.00051	<0.00049
Pyrene	0.73	<0.00075	<0.00072
Pyridine	0.024	<0.00051	<0.00049
TPH (TX100)			
<=C12 to <=C28	0.98	<0.61	<0.61
<=C28 to <=C35	0.98	<0.45	<0.45
<=C6 to <=C12	0.98	<0.59	<0.59

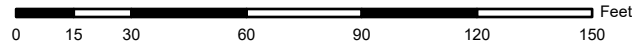
Less than TRRP Tier 1 PCLs

APPENDIX II

MAP(S)



Sources: Esri, HERE, Garmin, (c) OpenStreetMap contributors, 2024 Nearmap Aerial Imagery

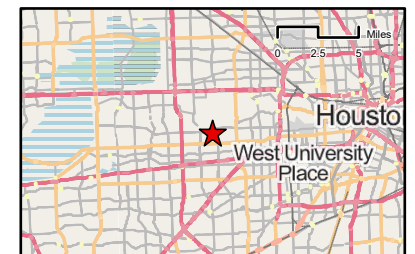


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Sample Location Map - August 3, 2024

- Subject Property
- Soil Boring Location
- Soil Boring / Temporary Monitoring Well Location



Phase Project No: 202408109

APPENDIX III

SOIL BORING LOGS



Phase Engineering, LLC
5524 Cornish Street
77007

BORING NUMBER SB-1 / TMW-1

CLIENT _____	PROJECT NAME _____
PROJECT NUMBER <u>202408109</u>	PROJECT LOCATION <u>11685 Arrowwood Circle</u>
DATE STARTED <u>9/3/24</u> COMPLETED <u>9/3/24</u>	GROUND ELEVATION _____ HOLE SIZE <u>2 inches</u>
DRILLING CONTRACTOR <u>MEDI</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Push Core</u>	▽ AT TIME OF DRILLING <u>20.00 ft</u>
LOGGED BY <u>Jade Mehaffie</u> CHECKED BY <u>Ross Doctoroff</u>	AT END OF DRILLING <u>---</u>
NOTES _____	▽ AFTER DRILLING <u>18.90 ft</u>

ENVIRONMENTAL.BH - GINT STD US LAB.GDT - 9/3/24 14:40 - S:REMEDATION_PROJECTS\SOIL BORINGS\BORING LOGS\TEMPORARY WELLS\11685 ARROWWOOD CIRCLE.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
1.0					Topsoil	
			PID = 12.2		(CL) Brown sandy clay; soft; moist; no odor	
5	ST		PID = 11.7			
			PID = 14.8			
9.0			PID = 12.2		(CL) Tan and orange sandy clay; medium soft; moist; no odor	3/4" solid PVC riser
			PID = 11.3			
15.0					(SP) Tan and orange sand; dense; moist; no odor	
			PID = 7.1			
20.0					(SP) Orange sand; dense; wet; no odor	3/4" 0.010 gauge slotted PVC
25.0						

Bottom of borehole at 25.0 feet.



Ross Doctoroff

9/3/2024



Phase Engineering, LLC
5524 Cornish Street
77007

BORING NUMBER SB-2 / TMW-2

PAGE 1 OF 1

CLIENT _____	PROJECT NAME _____
PROJECT NUMBER 202408109	PROJECT LOCATION 11685 Arrowwood Circle
DATE STARTED 9/3/24 COMPLETED 9/3/24	GROUND ELEVATION _____ HOLE SIZE 2 inches
DRILLING CONTRACTOR MEDI	GROUND WATER LEVELS:
DRILLING METHOD Push Core	▽ AT TIME OF DRILLING 25.00 ft
LOGGED BY Jade Mehaffie CHECKED BY Ross Doctoroff	AT END OF DRILLING ---
NOTES _____	▽ AFTER DRILLING 17.20 ft

ENVIRONMENTAL.BH - GINT STD US LAB.GDT - 9/3/24 14:40 - S:\REMEDIATION_PROJECTS\SOIL BORINGS\BORING LOGS\TEMPORARY WELLS\11685 ARROWWOOD CIRCLE.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						
1.0					Topsoil	
			PID = 8.3		(CL) Tan and orange sandy clay; soft; moist; no odor	
5	ST		PID = 9.4			
			PID = 6.5			
			PID = 6.6			
10						
			PID = 8.2		(CL) Tan and orange sandy clay; medium soft; moist; no odor	3/4" solid PVC riser
12.0						
15					(SP) Tan and orange sand; dense; moist; no odor	
			PID = 8.5			
15.0						
20						
25					(SP) Tan sand; dense; wet; no odor	3/4" 0.010 gauge slotted PVC
25.0						
30						
30.0						

Bottom of borehole at 30.0 feet.



Ross Doctoroff

9/3/2024



Phase Engineering, LLC
5524 Cornish Street
77007

BORING NUMBER SB-3

CLIENT _____ PROJECT NAME _____
 PROJECT NUMBER 202408109 PROJECT LOCATION 11685 Arrowwood Circle
 DATE STARTED 9/3/24 COMPLETED 9/3/24 GROUND ELEVATION _____ HOLE SIZE 2 inches
 DRILLING CONTRACTOR MEDI GROUND WATER LEVELS:
 DRILLING METHOD Push Core AT TIME OF DRILLING --- No groundwater encountered.
 LOGGED BY Jade Mehaffie CHECKED BY Ross Doctoroff AT END OF DRILLING ---
 NOTES _____ AFTER DRILLING --- No groundwater observed.

ENVIRONMENTAL.BH - GINT STD US LAB.GDT - 9/3/24 14:40 - S:REMEDIATION_PROJECTS\SOIL BORINGS\BORING LOGS\TEMPORARY WELLS\11685 ARROWWOOD CIRCLE.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Topsoil	
1.0			PID = 3.8		(CL) Tan and orange sandy clay; medium soft; moist; no odor	
5	ST		PID = 8			No well installed
8.0			PID = 4.7			

Bottom of borehole at 8.0 feet.



Ross Doctoroff

9/3/2024


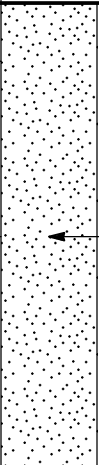




Phase Engineering, LLC
5524 Cornish Street
77007

BORING NUMBER SB-4

CLIENT _____ PROJECT NAME _____
 _____ PROJECT LOCATION 11685 Arrowwood Circle
 _____ COMPLETED 9/3/24 GROUND ELEVATION _____ HOLE SIZE 2 inches
 PROJECT NUMBER 202408109 GROUND WATER LEVELS:
 DATE STARTED 9/3/24 AT TIME OF DRILLING --- No groundwater encountered.
 DRILLING CONTRACTOR Medi Environmental CHECKED BY Ross Doctoroff AT END OF DRILLING ---
 DRILLING METHOD Push Core AFTER DRILLING --- No groundwater observed.

ENVIRONMENTAL.BH - GINT STD US LAB.GDT - 9/3/24 14:40 - S:REMEDIATION_PROJECTS\SOIL BORINGS\BORING LOGS\TEMPORARY WELLS\11685 ARROWWOOD CIRCLE.GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	ENVIRONMENTAL DATA	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Topsoil	
	ST		PID = 9.1		(CL-ML) Dark brown silty clay; soft; moist; no odor	 No well installed
			PID = 6.1		(CL) Brown sandy clay; soft; moist; no odor	
5			PID = 7.3			
					Bottom of borehole at 8.0 feet.	



Ross Doctoroff

9/3/2024

APPENDIX IV
LABORATORY REPORT(S)

Laboratory Analysis Report

Total Number of Pages: 91

Job ID : 24090063



10100 East Freeway, Suite 100, Houston, TX 77029 tel: 713-453-6060, fax: 713-453-6091, <http://www.ablabs.com>

Client Project Name :

202408109 / 11685 Arrowwood Circle Houston, TX 77063

Report To : Client Name: Phase Engineering, LLC
Attn: Ross Doctoroff
Client Address: 5524 Cornish St
City, State, Zip: Houston, Texas, 77007

P.O.#.:
Sample Collected By: Jade Mehaffie
Date Collected: 09/03/24

A&B Labs has analyzed the following samples...

Client Sample ID	Matrix	A&B Sample ID
SB-1 5-7'	Soil	24090063.01
SB-2 3-5'	Soil	24090063.02
SB-3 3-5'	Soil	24090063.03
SB-4 1-3'	Soil	24090063.04
TMW-1	Water	24090063.05
TMW-2	Water	24090063.06

A handwritten signature in black ink, appearing to read 'Ashley Arnett'.

Released By: Ashley Arnett
Title: Project Manager
Date: 09/06/2024



This Laboratory is NELAP (T104704213-23-31) accredited. Effective: 04/01/2024; Expires: 03/31/2025

Scope: Non-Potable Water, Drinking Water, Air, Solid, Biological Tissue, Hazardous Waste

I am the laboratory manager, or his/her designee, and I am responsible for the release of this data package. This laboratory data package has been reviewed and is complete and technically compliant with the requirements of the methods used, except where noted in the attached exception reports. I affirm, to the best of my knowledge that all problems/anomalies observed by this laboratory (and if applicable, any and all laboratories subcontracted through this laboratory) that might affect the quality of the data, have been identified in the Laboratory Review Checklist, and that no information or data have been knowingly withheld that would affect the quality of the data.

This report cannot be reproduced, except in full, without prior written permission of A&B Labs. Results shown relate only to the items tested. Results apply to the sample as received. Samples are assumed to be in acceptable condition unless otherwise noted. Blank correction is not made unless otherwise noted. Air concentrations reported are based on field sampling information provided by client. Soil samples are reported on a wet weight basis unless otherwise noted. Uncertainty estimates are available on request.

ab-q210-0321

Date Received : 09/03/2024 12:00



HIT REPORT

Date: 09/06/2024

Job ID : 24090063
 CLIENT : Phase Engineering, LLC

PROJECT ID :
 PROJECT Name : 202408109 / 11685 Arrowwood Circle Houston, TX
 77063

Department Metals									
Matrix			Solid	Solid	Solid	Solid	Liquid	Liquid	
SampleID			01	02	03	04	05	06	
Client SampleID			SB-1 5-7'	SB-2 3-5'	SB-3 3-5'	SB-4 1-3'	TMW-1	TMW-2	
Test	Parameter	Unit							
Mercury	Mercury	mg/Kg	0.00283 (J)	0.00329 (J)	0.00467	0.0386			
Mercury	Mercury	mg/L					0.000550	0.000580	
Metals ICP/MS	Arsenic	mg/Kg	1.06	0.883	1.38	1.05			
Metals ICP/MS	Barium	mg/Kg	38.0	27.3	59.0	55.6			
Metals ICP/MS	Chromium	mg/Kg	8.70	6.63	13.7	4.12			
Metals ICP/MS	Lead	mg/Kg	5.49	4.76	8.12	6.97			
Metals ICP/MS	Selenium	mg/Kg	0.686	0.866	1.17	0.710			
Metals ICP/MS	Barium	mg/L					0.325	0.164	
Department Organic									
Matrix			Solid	Liquid					
SampleID			03	06					
Client SampleID			SB-3 3-5'	TMW-2					
Test	Parameter	Unit							
VOC	Toluene	mg/Kg	0.00209 (J)						
VOC	m- & p-Xylenes	mg/L		0.00100 (J)					
VOC	Xylenes	mg/L		0.00100 (J)					
Department Wet Lab									
Matrix			Solid	Solid	Solid	Solid			
SampleID			01	02	03	04			
Client SampleID			SB-1 5-7'	SB-2 3-5'	SB-3 3-5'	SB-4 1-3'			
Test	Parameter	Unit							



HIT REPORT

Date: 09/06/2024

Job ID : 24090063
 CLIENT : Phase Engineering, LLC

PROJECT ID :
 PROJECT Name : 202408109 / 11685 Arrowwood Circle Houston, TX
 77063

Department Wet Lab									
Matrix			Solid	Solid	Solid	Solid			
SampleID			01	02	03	04			
Client SampleID			SB-1 5-7'	SB-2 3-5'	SB-3 3-5'	SB-4 1-3'			
Test	Parameter	Unit							
%Moisture	% Moisture	%	12.0	12.7	13.5	12.4			
pH	pH	s.u.	7.80 (H)	8.00 (H3)	8.10 (H3)	8.20 (H3)			
pH	Temperature when read, °C	s.u.	22.4 (H)	22.3 (H3)	22.3 (H3)	22.1 (H3)			



LABORATORY TEST RESULTS

Client Sample ID: SB-1 5-7'

Date: 9/6/2024

A&B Job Sample ID: 24090063.01

Client Name: Phase Engineering, LLC

Attn: Ross Doctoroff

Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Test Description: % Moisture

Sample Matrix: Soil

Analytical Method: SM 2540G

Date Collected: 09/03/2024 08:48

QC Batch ID: Qb240905104

Date Received: 09/03/2024 12:00

Prep Method: SM 2540G

Date Prepared: 09/05/2024 13:00

Prepared By: BRose

Prep Batch ID: PB24090526

Analyst Initial: BR

% Moisture: 12

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
	% Moisture	12.0			0.100		0.1	----	%	1	09/05/24 13:30

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-1 5-7'
 A&B Job Sample ID: 24090063.01

Date: 9/6/2024

Client Name: Phase Engineering, LLC
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: **Metals by ICP/MS**

Analytical Method: SW-846 6020B

QC Batch ID: Qb240906134

Prep Method: SW-846 3050B

Prepared By: JYou

Prep Batch ID: PB24090659

Analyst Initial: YWZ

Sample Matrix: Soil

Date Collected: 09/03/2024 08:48

Date Received: 09/03/2024 12:00

Date Prepared: 09/06/2024 09:40

% Moisture: 12

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
7440-38-2T	Arsenic	1.06		0.0590	0.142	0.05162	0.125	50	mg/Kg	1	09/06/24 14:59
7440-39-3T	Barium	38.0		0.199	0.284	0.17493	0.25	50	mg/Kg	1	09/06/24 14:59
7440-43-9	Cadmium	<0.0890	U	0.0890	0.142	0.07806	0.125	50	mg/Kg	1	09/06/24 14:59
7440-47-3T	Chromium	8.70		0.0400	0.142	0.03517	0.125	50	mg/Kg	1	09/06/24 14:59
7439-92-1T	Lead	5.49		0.0330	0.142	0.02873	0.125	50	mg/Kg	1	09/06/24 14:59
7782-49-2	Selenium	0.686		0.457	0.568	0.402	0.5	50	mg/Kg	1	09/06/24 14:59
7440-22-4	Silver	<0.0910	U	0.0910	0.142	0.08032	0.125	50	mg/Kg	1	09/06/24 14:59

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-1 5-7'

Date: 9/6/2024

A&B Job Sample ID: 24090063.01

Client Name: Phase Engineering, LLC

Attn: Ross Doctoroff

Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Test Description: Total Metals - Mercury

Sample Matrix: Soil

Analytical Method: SW-846 7471B

Date Collected: 09/03/2024 08:48

QC Batch ID: Qb240906133

Date Received: 09/03/2024 12:00

Prep Method: SW-846 7471B

Date Prepared: 09/06/2024 11:00

Prepared By: MSenarath

Prep Batch ID: PB24090650

Analyst Initial: MAS

% Moisture: 12

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
7439-97-6T	Mercury	0.00283	J	0.00160	0.00450	0.00141	0.004	0.2	mg/Kg	1	09/06/24 14:13

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-1 5-7'
A&B Job Sample ID: 24090063.01

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Volatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8260C

Date Collected: 09/03/2024 08:48

QC Batch ID: Qb240904127

Date Received: 09/03/2024 12:00

Prep Method: SW-846 5035A

Date Prepared: 09/04/2024 10:00

Prepared By: KVignesh

Prep Batch ID: PB24090449

Analyst Initial: VK

% Moisture: 12

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows list various chemical compounds and their test results.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-1 5-7'
 A&B Job Sample ID: 24090063.01

Date: 9/6/2024

Client Name: Phase Engineering, LLC
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: **Volatile Organic Compounds**

Sample Matrix: Soil
 Date Collected: 09/03/2024 08:48
 Date Received: 09/03/2024 12:00
 Date Prepared: 09/04/2024 10:00

Analytical Method: SW-846 8260C
 QC Batch ID: Qb240904127
 Prep Method: SW-846 5035A
 Prepared By: KVignesh
 Prep Batch ID: PB24090449

Analyst Initial: VK

% Moisture: 12

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
67-66-3	Chloroform	<0.00110	U	0.00110	0.00460	0.00119	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
74-87-3	Chloromethane	<0.00210	U	0.00210	0.00460	0.00226	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
156-59-2	cis-1,2-Dichloroethylene	<0.00110	U	0.00110	0.00460	0.00119	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
10061-01-5	cis-1,3-Dichloropropene	<0.00100	U	0.00100	0.00460	0.00113	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
124-48-1	Dibromochloromethane	<0.00100	U	0.00100	0.00460	0.00110	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
74-95-3	Dibromomethane	<0.00130	U	0.00130	0.00460	0.00138	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
75-71-8	Dichlorodifluoromethane	<0.00120	U	0.00120	0.00460	0.00135	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
100-41-4	Ethylbenzene	<0.00130	U	0.00130	0.00460	0.00138	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
98-82-8	Isopropylbenzene	<0.00120	U	0.00120	0.00460	0.00126	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
179601-23-1	m- & p-Xylenes	<0.00250	U	0.00250	0.00920	0.00273	0.01	0.4	mg/Kg	0.81	09/05/24 00:31
78-93-3	MEK	<0.00250	U	0.00250	0.00460	0.00267	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
75-09-2	Methylene chloride	<0.00140	U	0.00140	0.00460	0.00154	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
1634-04-4	MTBE	<0.00098	U	0.00098	0.00460	0.00107	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
91-20-3	Naphthalene	<0.00170	U	0.00170	0.00460	0.00188	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
104-51-8	n-Butylbenzene	<0.00160	U	0.00160	0.00460	0.00179	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
103-65-1	n-Propylbenzene	<0.00130	U	0.00130	0.00460	0.00138	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
95-47-6	o-Xylene	<0.00120	U	0.00120	0.00460	0.00126	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
135-98-8	sec-Butylbenzene	<0.00150	U	0.00150	0.00460	0.00160	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
100-42-5	Styrene	<0.00120	U	0.00120	0.00460	0.00126	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
98-06-6	t-butylbenzene	<0.00130	U	0.00130	0.00460	0.00141	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
127-18-4	Tetrachloroethylene	<0.00130	U	0.00130	0.00460	0.00138	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
108-88-3	Toluene	<0.00110	U	0.00110	0.00460	0.00119	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
156-60-5	trans-1,2-Dichloroethylene	<0.00130	U	0.00130	0.00460	0.00144	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
10061-02-6	trans-1,3-Dichloropropene	<0.000865	U	0.000865	0.00460	0.00094	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
79-01-6	Trichloroethylene	<0.00096	U	0.00096	0.00460	0.00104	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
75-69-4	Trichlorofluoromethane	<0.00180	U	0.00180	0.00460	0.00198	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
75-01-4	Vinyl Chloride	<0.00170	U	0.00170	0.00460	0.00185	0.005	0.2	mg/Kg	0.81	09/05/24 00:31
1330-20-7	Xylenes	<0.00120	U	0.00120	0.00460	0.00126	0.005	0.6	mg/Kg	0.81	09/05/24 00:31
17060-07-0	1,2-Dichloroethane-d4(surr)	113					70	130	%	0.81	09/05/24 00:31
1868-53-7	Dibromofluoromethane (surr)	106					70	130	%	0.81	09/05/24 00:31
2037-26-5	Toluene-d8(surr)	96.3					70	130	%	0.81	09/05/24 00:31
460-00-4	p-Bromofluorobenzene (surr)	95					70	130	%	0.81	09/05/24 00:31

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-1 5-7'
A&B Job Sample ID: 24090063.01

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: SemiVolatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8270D

Date Collected: 09/03/2024 08:48

QC Batch ID: Qb240904170

Date Received: 09/03/2024 12:00

Prep Method: SW-846 3546

Date Prepared: 09/04/2024 07:45

Prepared By: MMuteen

Prep Batch ID: PB24090401

Analyst Initial: GM

% Moisture: 12

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows list various chemical compounds and their test results.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-1 5-7'
A&B Job Sample ID: 24090063.01

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: SemiVolatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8270D

Date Collected: 09/03/2024 08:48

QC Batch ID: Qb240904170

Date Received: 09/03/2024 12:00

Prep Method: SW-846 3546

Date Prepared: 09/04/2024 07:45

Prepared By: MMuteen

Prep Batch ID: PB24090401

Analyst Initial: GM

% Moisture: 12

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Contains 33 rows of chemical analysis data.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-1 5-7'
A&B Job Sample ID: 24090063.01

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Corrosivity, pH
Analytical Method: SW-846 9045D
QC Batch ID: Qb24090683
Prep Method:
Prepared By:
Prep Batch ID:

Sample Matrix: Soil
Date Collected: 09/03/2024 08:48
Date Received: 09/03/2024 12:00
Date Prepared:

Analyst Initial: BR

% Moisture

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows include pH (7.80) and Temperature when read (22.4).

Approved By : ANA



LABORATORY TEST RESULTS

Client Sample ID: SB-1 5-7'
 A&B Job Sample ID: 24090063.01

Date: 9/6/2024

Client Name: Phase Engineering, LLC
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: **Total Petroleum Hydrocarbons**

Sample Matrix: Soil

Analytical Method: TX 1005

Date Collected: 09/03/2024 08:48

QC Batch ID: Qb24090384

Date Received: 09/03/2024 12:00

Prep Method: TX 1005

Date Prepared: 09/03/2024 13:00

Prepared By: JOlivera

Prep Batch ID: PB24090345

Analyst Initial: SKY

% Moisture: 12

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
TPH-1005-1	C6-C12	<8.13	U	8.13	22.7	8.94	25	1000	mg/Kg	0.80	09/03/24 21:00
TPH-1005-2	>C12-C28	<6.68	U	6.68	22.7	7.35	25	1000	mg/Kg	0.80	09/03/24 21:00
TPH-1005-4	>C28-C35	<5.64	U	5.64	22.7	6.20	25	1000	mg/Kg	0.80	09/03/24 21:00
	Total C6-C35	<5.64	U	5.64		6.20	----	----	mg/Kg	0.80	09/03/24 21:00
111-85-3	1-Chlorooctane(surr)	105					70	130	%	0.80	09/03/24 21:00
3386-33-2	Chlorooctadecane(surr)	85.9					70	130	%	0.80	09/03/24 21:00

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-2 3-5'

Date: 9/6/2024

A&B Job Sample ID: 24090063.02

Client Name: Phase Engineering, LLC

Attn: Ross Doctoroff

Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Test Description: % Moisture

Sample Matrix: Soil

Analytical Method: SM 2540G

Date Collected: 09/03/2024 09:22

QC Batch ID: Qb240905104

Date Received: 09/03/2024 12:00

Prep Method: SM 2540G

Date Prepared: 09/05/2024 13:00

Prepared By: BRose

Prep Batch ID: PB24090526

Analyst Initial: BR

% Moisture: 12.7

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
	% Moisture	12.7			0.100		0.1	----	%	1	09/05/24 13:30

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-2 3-5'
 A&B Job Sample ID: 24090063.02

Date: 9/6/2024

Client Name: Phase Engineering, LLC Attn: Ross Doctoroff
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Test Description: **Metals by ICP/MS**
 Analytical Method: SW-846 6020B
 QC Batch ID: Qb240906134
 Prep Method: SW-846 3050B
 Prepared By: JYou
 Prep Batch ID: PB24090659
 Analyst Initial: YWZ

Sample Matrix: Soil
 Date Collected: 09/03/2024 09:22
 Date Received: 09/03/2024 12:00
 Date Prepared: 09/06/2024 09:40

% Moisture: 12.7

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
7440-38-2T	Arsenic	0.883		0.0590	0.143	0.05162	0.125	50	mg/Kg	1	09/06/24 15:15
7440-39-3T	Barium	27.3		0.200	0.286	0.17493	0.25	50	mg/Kg	1	09/06/24 15:15
7440-43-9	Cadmium	<0.0890	U	0.0890	0.143	0.07806	0.125	50	mg/Kg	1	09/06/24 15:15
7440-47-3T	Chromium	6.63		0.0400	0.143	0.03517	0.125	50	mg/Kg	1	09/06/24 15:15
7439-92-1T	Lead	4.76		0.0330	0.143	0.02873	0.125	50	mg/Kg	1	09/06/24 15:15
7782-49-2	Selenium	0.866		0.460	0.573	0.402	0.5	50	mg/Kg	1	09/06/24 15:15
7440-22-4	Silver	<0.0920	U	0.0920	0.143	0.08032	0.125	50	mg/Kg	1	09/06/24 15:15

Approved By : ANA

ab-q212-0321
 Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-2 3-5'

Date: 9/6/2024

A&B Job Sample ID: 24090063.02

Client Name: Phase Engineering, LLC

Attn: Ross Doctoroff

Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Test Description: Total Metals - Mercury

Sample Matrix: Soil

Analytical Method: SW-846 7471B

Date Collected: 09/03/2024 09:22

QC Batch ID: Qb240905131

Date Received: 09/03/2024 12:00

Prep Method: SW-846 7471B

Date Prepared: 09/05/2024 11:45

Prepared By: MSenarath

Prep Batch ID: PB24090534

Analyst Initial: MAS

% Moisture: 12.7

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
7439-97-6T	Mercury	0.00329	J	0.00160	0.00460	0.00141	0.004	0.2	mg/Kg	1	09/05/24 14:53

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-2 3-5'
A&B Job Sample ID: 24090063.02

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Volatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8260C

Date Collected: 09/03/2024 09:22

QC Batch ID: Qb240904127

Date Received: 09/03/2024 12:00

Prep Method: SW-846 5035A

Date Prepared: 09/04/2024 10:00

Prepared By: KVignesh

Prep Batch ID: PB24090449

Analyst Initial: VK

% Moisture: 12.7

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Contains 40 rows of chemical analysis data.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-2 3-5'
 A&B Job Sample ID: 24090063.02

Date: 9/6/2024

Client Name: Phase Engineering, LLC
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: **Volatile Organic Compounds**

Sample Matrix: Soil
 Date Collected: 09/03/2024 09:22
 Date Received: 09/03/2024 12:00
 Date Prepared: 09/04/2024 10:00

Analytical Method: SW-846 8260C
 QC Batch ID: Qb240904127
 Prep Method: SW-846 5035A
 Prepared By: KVignesh
 Prep Batch ID: PB24090449

Analyst Initial: VK

% Moisture: 12.7

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
67-66-3	Chloroform	<0.00120	U	0.00120	0.00500	0.00119	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
74-87-3	Chloromethane	<0.00230	U	0.00230	0.00500	0.00226	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
156-59-2	cis-1,2-Dichloroethylene	<0.00120	U	0.00120	0.00500	0.00119	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
10061-01-5	cis-1,3-Dichloropropene	<0.00110	U	0.00110	0.00500	0.00113	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
124-48-1	Dibromochloromethane	<0.00110	U	0.00110	0.00500	0.00110	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
74-95-3	Dibromomethane	<0.00140	U	0.00140	0.00500	0.00138	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
75-71-8	Dichlorodifluoromethane	<0.00130	U	0.00130	0.00500	0.00135	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
100-41-4	Ethylbenzene	<0.00140	U	0.00140	0.00500	0.00138	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
98-82-8	Isopropylbenzene	<0.00130	U	0.00130	0.00500	0.00126	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
179601-23-1	m- & p-Xylenes	<0.00270	U	0.00270	0.0100	0.00273	0.01	0.4	mg/Kg	0.87	09/05/24 00:53
78-93-3	MEK	<0.00270	U	0.00270	0.00500	0.00267	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
75-09-2	Methylene chloride	<0.00150	U	0.00150	0.00500	0.00154	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
1634-04-4	MTBE	<0.00110	U	0.00110	0.00500	0.00107	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
91-20-3	Naphthalene	<0.00190	U	0.00190	0.00500	0.00188	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
104-51-8	n-Butylbenzene	<0.00180	U	0.00180	0.00500	0.00179	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
103-65-1	n-Propylbenzene	<0.00140	U	0.00140	0.00500	0.00138	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
95-47-6	o-Xylene	<0.00130	U	0.00130	0.00500	0.00126	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
135-98-8	sec-Butylbenzene	<0.00160	U	0.00160	0.00500	0.00160	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
100-42-5	Styrene	<0.00130	U	0.00130	0.00500	0.00126	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
98-06-6	t-butylbenzene	<0.00140	U	0.00140	0.00500	0.00141	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
127-18-4	Tetrachloroethylene	<0.00140	U	0.00140	0.00500	0.00138	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
108-88-3	Toluene	<0.00120	U	0.00120	0.00500	0.00119	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
156-60-5	trans-1,2-Dichloroethylene	<0.00140	U	0.00140	0.00500	0.00144	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
10061-02-6	trans-1,3-Dichloropropene	<0.000937	U	0.000937	0.00500	0.00094	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
79-01-6	Trichloroethylene	<0.00100	U	0.00100	0.00500	0.00104	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
75-69-4	Trichlorofluoromethane	<0.00200	U	0.00200	0.00500	0.00198	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
75-01-4	Vinyl Chloride	<0.00180	U	0.00180	0.00500	0.00185	0.005	0.2	mg/Kg	0.87	09/05/24 00:53
1330-20-7	Xylenes	<0.00130	U	0.00130	0.00500	0.00126	0.005	0.6	mg/Kg	0.87	09/05/24 00:53
17060-07-0	1,2-Dichloroethane-d4(surr)	107					70	130	%	0.87	09/05/24 00:53
1868-53-7	Dibromofluoromethane (surr)	107					70	130	%	0.87	09/05/24 00:53
2037-26-5	Toluene-d8(surr)	96.3					70	130	%	0.87	09/05/24 00:53
460-00-4	p-Bromofluorobenzene (surr)	99.5					70	130	%	0.87	09/05/24 00:53

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-2 3-5'
A&B Job Sample ID: 24090063.02

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: SemiVolatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8270D

Date Collected: 09/03/2024 09:22

QC Batch ID: Qb240904170

Date Received: 09/03/2024 12:00

Prep Method: SW-846 3546

Date Prepared: 09/04/2024 07:45

Prepared By: MMuteen

Prep Batch ID: PB24090401

Analyst Initial: GM

% Moisture: 12.7

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows list various chemical compounds and their test results.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-2 3-5'
A&B Job Sample ID: 24090063.02

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: SemiVolatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8270D

Date Collected: 09/03/2024 09:22

QC Batch ID: Qb240904170

Date Received: 09/03/2024 12:00

Prep Method: SW-846 3546

Date Prepared: 09/04/2024 07:45

Prepared By: MMuteen

Prep Batch ID: PB24090401

Analyst Initial: GM

% Moisture: 12.7

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Contains multiple rows of chemical test results.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-2 3-5'

Date: 9/6/2024

A&B Job Sample ID: 24090063.02

Client Name: Phase Engineering, LLC

Attn: Ross Doctoroff

Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Test Description: Corrosivity, pH

Sample Matrix: Soil

Analytical Method: SW-846 9045D

Date Collected: 09/03/2024 09:22

QC Batch ID: Qb24090683

Date Received: 09/03/2024 12:00

Prep Method:

Date Prepared:

Prepared By:

Prep Batch ID:

Analyst Initial: BR

% Moisture:

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
12408-02-5	pH	8.00	H3				----	----	s.u.		09/06/24 09:00
TEMPERATU RE	Temperature when read, °C ²	22.3	H3				----	----	s.u.		09/06/24 09:00

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-2 3-5'
 A&B Job Sample ID: 24090063.02

Date: 9/6/2024

Client Name: Phase Engineering, LLC
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: **Total Petroleum Hydrocarbons**

Sample Matrix: Soil

Analytical Method: TX 1005

Date Collected: 09/03/2024 09:22

QC Batch ID: Qb24090384

Date Received: 09/03/2024 12:00

Prep Method: TX 1005

Date Prepared: 09/03/2024 13:00

Prepared By: JOlivera

Prep Batch ID: PB24090345

Analyst Initial: SKY

% Moisture: 12.7

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
TPH-1005-1	C6-C12	<8.29	U	8.29	23.2	8.94	25	1000	mg/Kg	0.81	09/03/24 21:34
TPH-1005-2	>C12-C28	<6.82	U	6.82	23.2	7.35	25	1000	mg/Kg	0.81	09/03/24 21:34
TPH-1005-4	>C28-C35	<5.75	U	5.75	23.2	6.20	25	1000	mg/Kg	0.81	09/03/24 21:34
	Total C6-C35	<5.75	U	5.75		6.20	----	----	mg/Kg	0.81	09/03/24 21:34
111-85-3	1-Chlorooctane(surr)	129					70	130	%	0.81	09/03/24 21:34
3386-33-2	Chlorooctadecane(surr)	78.5					70	130	%	0.81	09/03/24 21:34

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-3 3-5'

Date: 9/6/2024

A&B Job Sample ID: 24090063.03

Client Name: Phase Engineering, LLC

Attn: Ross Doctoroff

Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Test Description: % Moisture

Sample Matrix: Soil

Analytical Method: SM 2540G

Date Collected: 09/03/2024 09:50

QC Batch ID: Qb240905104

Date Received: 09/03/2024 12:00

Prep Method: SM 2540G

Date Prepared: 09/05/2024 13:00

Prepared By: BRose

Prep Batch ID: PB24090526

Analyst Initial: BR

% Moisture: 13.5

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
	% Moisture	13.5			0.100		0.1	----	%	1	09/05/24 13:30

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-3 3-5'
A&B Job Sample ID: 24090063.03

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Metals by ICP/MS

Sample Matrix: Soil
Date Collected: 09/03/2024 09:50
Date Received: 09/03/2024 12:00
Date Prepared: 09/06/2024 09:40

Analytical Method: SW-846 6020B
QC Batch ID: Qb240906134
Prep Method: SW-846 3050B
Prepared By: JYou
Prep Batch ID: PB24090659

Analyst Initial: YWZ

% Moisture: 13.5

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, and Silver.

Approved By : ANA

ab-q212-0321
Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-3 3-5'

Date: 9/6/2024

A&B Job Sample ID: 24090063.03

Client Name: Phase Engineering, LLC

Attn: Ross Doctoroff

Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Test Description: Total Metals - Mercury

Sample Matrix: Soil

Analytical Method: SW-846 7471B

Date Collected: 09/03/2024 09:50

QC Batch ID: Qb240905131

Date Received: 09/03/2024 12:00

Prep Method: SW-846 7471B

Date Prepared: 09/05/2024 11:45

Prepared By: MSenarath

Prep Batch ID: PB24090534

Analyst Initial: MAS

% Moisture: 13.5

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
7439-97-6T	Mercury	0.00467		0.00160	0.00460	0.00141	0.004	0.2	mg/Kg	1	09/05/24 15:03

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-3 3-5'
A&B Job Sample ID: 24090063.03

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Volatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8260C

Date Collected: 09/03/2024 09:50

QC Batch ID: Qb240904127

Date Received: 09/03/2024 12:00

Prep Method: SW-846 5035A

Date Prepared: 09/04/2024 10:00

Prepared By: KVignesh

Prep Batch ID: PB24090449

Analyst Initial: VK

% Moisture: 13.5

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Contains 40 rows of chemical analysis data.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-3 3-5'
A&B Job Sample ID: 24090063.03

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Volatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8260C

Date Collected: 09/03/2024 09:50

QC Batch ID: Qb240904127

Date Received: 09/03/2024 12:00

Prep Method: SW-846 5035A

Date Prepared: 09/04/2024 10:00

Prepared By: KVignesh

Prep Batch ID: PB24090449

Analyst Initial: VK

% Moisture: 13.5

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows include various chemical compounds like Chloroform, Chloromethane, etc., with their respective test results and flags.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-3 3-5'

Date: 9/6/2024

A&B Job Sample ID: 24090063.03

Client Name: Phase Engineering, LLC

Attn: Ross Doctoroff

Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Test Description: SemiVolatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8270D

Date Collected: 09/03/2024 09:50

QC Batch ID: Qb240904170

Date Received: 09/03/2024 12:00

Prep Method: SW-846 3546

Date Prepared: 09/04/2024 07:45

Prepared By: MMuteen

Prep Batch ID: PB24090401

Analyst Initial: GM

% Moisture: 13.5

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows list various chemical compounds and their test results.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-3 3-5'
A&B Job Sample ID: 24090063.03

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: SemiVolatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8270D

Date Collected: 09/03/2024 09:50

QC Batch ID: Qb240904170

Date Received: 09/03/2024 12:00

Prep Method: SW-846 3546

Date Prepared: 09/04/2024 07:45

Prepared By: MMuteen

Prep Batch ID: PB24090401

Analyst Initial: GM

% Moisture: 13.5

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows list various chemical compounds and their test results.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-3 3-5'

Date: 9/6/2024

A&B Job Sample ID: 24090063.03

Client Name: Phase Engineering, LLC

Attn: Ross Doctoroff

Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Test Description: Corrosivity, pH

Sample Matrix: Soil

Analytical Method: SW-846 9045D

Date Collected: 09/03/2024 09:50

QC Batch ID: Qb24090683

Date Received: 09/03/2024 12:00

Prep Method:

Date Prepared:

Prepared By:

Prep Batch ID:

Analyst Initial: BR

% Moisture:

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
12408-02-5	pH	8.10	H3				----	----	s.u.		09/06/24 09:00
TEMPERATU RE	Temperature when read, °C ²	22.3	H3				----	----	s.u.		09/06/24 09:00

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-3 3-5'
 A&B Job Sample ID: 24090063.03

Date: 9/6/2024

Client Name: Phase Engineering, LLC
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: **Total Petroleum Hydrocarbons**

Sample Matrix: Soil

Analytical Method: TX 1005

Date Collected: 09/03/2024 09:50

QC Batch ID: Qb24090384

Date Received: 09/03/2024 12:00

Prep Method: TX 1005

Date Prepared: 09/03/2024 13:00

Prepared By: JOlivera

Prep Batch ID: PB24090345

Analyst Initial: SKY

% Moisture: 13.5

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
TPH-1005-1	C6-C12	<7.85	U	7.85	22.0	8.94	25	1000	mg/Kg	0.76	09/03/24 22:08
TPH-1005-2	>C12-C28	<6.46	U	6.46	22.0	7.35	25	1000	mg/Kg	0.76	09/03/24 22:08
TPH-1005-4	>C28-C35	<5.45	U	5.45	22.0	6.20	25	1000	mg/Kg	0.76	09/03/24 22:08
	Total C6-C35	<5.45	U	5.45		6.20	----	----	mg/Kg	0.76	09/03/24 22:08
111-85-3	1-Chlorooctane(surr)	114					70	130	%	0.76	09/03/24 22:08
3386-33-2	Chlorooctadecane(surr)	96.1					70	130	%	0.76	09/03/24 22:08

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-4 1-3'

Date: 9/6/2024

A&B Job Sample ID: 24090063.04

Client Name: Phase Engineering, LLC

Attn: Ross Doctoroff

Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Test Description: % Moisture

Sample Matrix: Soil

Analytical Method: SM 2540G

Date Collected: 09/03/2024 10:22

QC Batch ID: Qb240905104

Date Received: 09/03/2024 12:00

Prep Method: SM 2540G

Date Prepared: 09/05/2024 13:00

Prepared By: BRose

Prep Batch ID: PB24090526

Analyst Initial: BR

% Moisture: 12.4

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
	% Moisture	12.4			0.100		0.1	----	%	1	09/05/24 13:30

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-4 1-3'
 A&B Job Sample ID: 24090063.04

Date: 9/6/2024

Client Name: Phase Engineering, LLC
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: **Metals by ICP/MS**

Sample Matrix: Soil
 Date Collected: 09/03/2024 10:22
 Date Received: 09/03/2024 12:00
 Date Prepared: 09/06/2024 09:40

Analytical Method: SW-846 6020B
 QC Batch ID: Qb240906134
 Prep Method: SW-846 3050B
 Prepared By: JYou
 Prep Batch ID: PB24090659

Analyst Initial: YWZ

% Moisture: 12.4

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
7440-38-2T	Arsenic	1.05		0.0590	0.143	0.05162	0.125	50	mg/Kg	1	09/06/24 15:42
7440-39-3T	Barium	55.6		2.00	2.85	0.17493	0.25	50	mg/Kg	10	09/06/24 15:45
7440-43-9	Cadmium	<0.0890	U	0.0890	0.143	0.07806	0.125	50	mg/Kg	1	09/06/24 15:42
7440-47-3T	Chromium	4.12		0.0400	0.143	0.03517	0.125	50	mg/Kg	1	09/06/24 15:42
7439-92-1T	Lead	6.97		0.0330	0.143	0.02873	0.125	50	mg/Kg	1	09/06/24 15:42
7782-49-2	Selenium	0.710		0.459	0.571	0.402	0.5	50	mg/Kg	1	09/06/24 15:42
7440-22-4	Silver	<0.0920	U	0.0920	0.143	0.08032	0.125	50	mg/Kg	1	09/06/24 15:42

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-4 1-3'
A&B Job Sample ID: 24090063.04

Date: 9/6/2024

Client Name: Phase Engineering, LLC Attn: Ross Doctoroff
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Test Description: **Total Metals - Mercury**

Sample Matrix: Soil

Analytical Method: SW-846 7471B

Date Collected: 09/03/2024 10:22

QC Batch ID: Qb240905131

Date Received: 09/03/2024 12:00

Prep Method: SW-846 7471B

Date Prepared: 09/05/2024 11:45

Prepared By: MSenarath

Prep Batch ID: PB24090534

Analyst Initial: MAS

% Moisture: 12.4

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
7439-97-6T	Mercury	0.0386		0.00160	0.00460	0.00141	0.004	0.2	mg/Kg	1	09/05/24 15:07

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-4 1-3'
A&B Job Sample ID: 24090063.04

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Volatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8260C

Date Collected: 09/03/2024 10:22

QC Batch ID: Qb240904127

Date Received: 09/03/2024 12:00

Prep Method: SW-846 5035A

Date Prepared: 09/04/2024 10:00

Prepared By: KVignesh

Prep Batch ID: PB24090449

Analyst Initial: VK

% Moisture: 12.4

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Contains 40 rows of chemical test data.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-4 1-3'
A&B Job Sample ID: 24090063.04

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Volatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8260C

Date Collected: 09/03/2024 10:22

QC Batch ID: Qb240904127

Date Received: 09/03/2024 12:00

Prep Method: SW-846 5035A

Date Prepared: 09/04/2024 10:00

Prepared By: KVignesh

Prep Batch ID: PB24090449

Analyst Initial: VK

% Moisture: 12.4

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows include various chemical compounds like Chloroform, Chloromethane, etc., with their respective test results and flags.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-4 1-3'
A&B Job Sample ID: 24090063.04

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: SemiVolatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8270D

Date Collected: 09/03/2024 10:22

QC Batch ID: Qb240904170

Date Received: 09/03/2024 12:00

Prep Method: SW-846 3546

Date Prepared: 09/04/2024 07:45

Prepared By: MMuteen

Prep Batch ID: PB24090401

Analyst Initial: GM

% Moisture: 12.4

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Contains 40 rows of chemical analysis data.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-4 1-3'
A&B Job Sample ID: 24090063.04

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: SemiVolatile Organic Compounds

Sample Matrix: Soil

Analytical Method: SW-846 8270D

Date Collected: 09/03/2024 10:22

QC Batch ID: Qb240904170

Date Received: 09/03/2024 12:00

Prep Method: SW-846 3546

Date Prepared: 09/04/2024 07:45

Prepared By: MMuteen

Prep Batch ID: PB24090401

Analyst Initial: GM

% Moisture: 12.4

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows list various chemical compounds and their test results.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-4 1-3'
 A&B Job Sample ID: 24090063.04

Date: 9/6/2024

Client Name: Phase Engineering, LLC Attn: Ross Doctoroff
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Test Description: **Corrosivity, pH**

Sample Matrix: Soil

Analytical Method: SW-846 9045D

Date Collected: 09/03/2024 10:22

QC Batch ID: Qb24090683

Date Received: 09/03/2024 12:00

Prep Method:

Date Prepared:

Prepared By:

Prep Batch ID:

Analyst Initial: BR

% Moisture:

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
12408-02-5	pH	8.20	H3				----	----	s.u.		09/06/24 09:00
TEMPERATU RE	Temperature when read, °C ²	22.1	H3				----	----	s.u.		09/06/24 09:00

Approved By : ANA

ab-q212-0321
 Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: SB-4 1-3'
 A&B Job Sample ID: 24090063.04

Date: 9/6/2024

Client Name: Phase Engineering, LLC
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: **Total Petroleum Hydrocarbons**

Sample Matrix: Soil

Analytical Method: TX 1005

Date Collected: 09/03/2024 10:22

QC Batch ID: Qb24090384

Date Received: 09/03/2024 12:00

Prep Method: TX 1005

Date Prepared: 09/03/2024 13:00

Prepared By: JOlivera

Prep Batch ID: PB24090345

Analyst Initial: SKY

% Moisture: 12.4

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
TPH-1005-1	C6-C12	<8.27	U	8.27	23.1	8.94	25	1000	mg/Kg	0.81	09/03/24 22:42
TPH-1005-2	>C12-C28	<6.80	U	6.80	23.1	7.35	25	1000	mg/Kg	0.81	09/03/24 22:42
TPH-1005-4	>C28-C35	<5.73	U	5.73	23.1	6.20	25	1000	mg/Kg	0.81	09/03/24 22:42
	Total C6-C35	<5.73	U	5.73		6.20	----	----	mg/Kg	0.81	09/03/24 22:42
111-85-3	1-Chlorooctane(surr)	126					70	130	%	0.81	09/03/24 22:42
3386-33-2	Chlorooctadecane(surr)	78.5					70	130	%	0.81	09/03/24 22:42

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: TMW-1
A&B Job Sample ID: 24090063.05

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Metals by ICP/MS

Sample Matrix: Water

Analytical Method: SW-846 6020B

Date Collected: 09/03/2024 10:35

QC Batch ID: Qb240904160

Date Received: 09/03/2024 12:00

Prep Method: SW-846 3010A

Date Prepared: 09/04/2024 10:30

Prepared By: JYou

Prep Batch ID: PB24090463

Analyst Initial: YWZ

% Moisture

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, and Silver.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: TMW-1
A&B Job Sample ID: 24090063.05

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Total Metals - Mercury

Sample Matrix Water

Analytical Method: SW-846 7470A

Date Collected 09/03/2024 10:35

QC Batch ID: Qb240905128

Date Received 09/03/2024 12:00

Prep Method: SW-846 7470A

Date Prepared 09/05/2024 08:00

Prepared By: MSenarath

Prep Batch ID PB24090530

Analyst Initial MAS

% Moisture

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Row 1: 7439-97-6T, Mercury, 0.000550, 6E-05, 0.000200, 0.00006, 0.0002, 0.01, mg/L, 1, 09/05/24 13:57

Approved By : ANA



LABORATORY TEST RESULTS

Client Sample ID: TMW-1
A&B Job Sample ID: 24090063.05

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Volatile Organic Compounds

Sample Matrix: Water

Analytical Method: SW-846 8260C

Date Collected: 09/03/2024 10:35

QC Batch ID: Qb240905113

Date Received: 09/03/2024 12:00

Prep Method: SW-846 5030C

Date Prepared: 09/05/2024 10:00

Prepared By: PNaidu

Prep Batch ID: PB24090522

Analyst Initial: PN

% Moisture

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Contains 40 rows of chemical test results.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: TMW-1
 A&B Job Sample ID: 24090063.05

Date: 9/6/2024

Client Name: Phase Engineering, LLC
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: **Volatile Organic Compounds**

Sample Matrix: Water

Analytical Method: SW-846 8260C

Date Collected: 09/03/2024 10:35

QC Batch ID: Qb240905113

Date Received: 09/03/2024 12:00

Prep Method: SW-846 5030C

Date Prepared: 09/05/2024 10:00

Prepared By: PNaidu

Prep Batch ID: PB24090522

Analyst Initial: PN

% Moisture

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
67-66-3	Chloroform	<0.00069	U	0.00069	0.00500	0.00069	0.005	0.2	mg/L	1.00	09/05/24 18:36
74-87-3	Chloromethane	<0.00088	U	0.00088	0.00500	0.00088	0.005	0.2	mg/L	1.00	09/05/24 18:36
156-59-2	cis-1,2-Dichloroethylene	<0.00060	U	0.00060	0.00500	0.0006	0.005	0.2	mg/L	1.00	09/05/24 18:36
10061-01-5	cis-1,3-Dichloropropene	<0.00057	U	0.00057	0.00500	0.00057	0.005	0.2	mg/L	1.00	09/05/24 18:36
124-48-1	Dibromochloromethane	<0.00085	U	0.00085	0.00500	0.00085	0.005	0.2	mg/L	1.00	09/05/24 18:36
74-95-3	Dibromomethane	<0.00044	U	0.00044	0.00500	0.00044	0.005	0.2	mg/L	1.00	09/05/24 18:36
75-71-8	Dichlorodifluoromethane	<0.00038	U	0.00038	0.00500	0.00038	0.005	0.2	mg/L	1.00	09/05/24 18:36
100-41-4	Ethylbenzene	<0.00031	U	0.00031	0.00500	0.00031	0.005	0.2	mg/L	1.00	09/05/24 18:36
98-82-8	Isopropylbenzene	<0.00041	U	0.00041	0.00500	0.00041	0.005	0.2	mg/L	1.00	09/05/24 18:36
179601-23-1	m- & p-Xylenes	<0.00088	U	0.00088	0.0100	0.00088	0.01	0.4	mg/L	1.00	09/05/24 18:36
78-93-3	MEK	<0.00110	U	0.00110	0.00500	0.00113	0.005	0.2	mg/L	1.00	09/05/24 18:36
75-09-2	Methylene chloride	<0.00097	U	0.00097	0.00500	0.00097	0.005	0.2	mg/L	1.00	09/05/24 18:36
1634-04-4	MTBE	<0.00091	U	0.00091	0.00500	0.00091	0.005	0.2	mg/L	1.00	09/05/24 18:36
91-20-3	Naphthalene	<0.00050	U	0.00050	0.00500	0.0005	0.005	0.2	mg/L	1.00	09/05/24 18:36
104-51-8	n-Butylbenzene	<0.00035	U	0.00035	0.00500	0.00035	0.005	0.2	mg/L	1.00	09/05/24 18:36
103-65-1	n-Propylbenzene	<0.00022	U	0.00022	0.00500	0.00022	0.005	0.2	mg/L	1.00	09/05/24 18:36
95-47-6	o-Xylene	<0.00060	U	0.00060	0.00500	0.0006	0.005	0.2	mg/L	1.00	09/05/24 18:36
135-98-8	sec-Butylbenzene	<0.00031	U	0.00031	0.00500	0.00031	0.005	0.2	mg/L	1.00	09/05/24 18:36
100-42-5	Styrene	<0.00053	U	0.00053	0.00500	0.00053	0.005	0.2	mg/L	1.00	09/05/24 18:36
98-06-6	t-butylbenzene	<0.00038	U	0.00038	0.00500	0.00038	0.005	0.2	mg/L	1.00	09/05/24 18:36
127-18-4	Tetrachloroethylene	<0.00072	U	0.00072	0.00500	0.00072	0.005	0.2	mg/L	1.00	09/05/24 18:36
108-88-3	Toluene	<0.00063	L4,U	0.00063	0.00500	0.00063	0.005	0.2	mg/L	1.00	09/05/24 18:36
156-60-5	trans-1,2-Dichloroethylene	<0.00072	U	0.00072	0.00500	0.00072	0.005	0.2	mg/L	1.00	09/05/24 18:36
10061-02-6	trans-1,3-Dichloropropene	<0.00075	L4,U	0.00075	0.00500	0.00075	0.005	0.2	mg/L	1.00	09/05/24 18:36
79-01-6	Trichloroethylene	<0.00031	U	0.00031	0.00500	0.00031	0.005	0.2	mg/L	1.00	09/05/24 18:36
75-69-4	Trichlorofluoromethane	<0.00044	U	0.00044	0.00500	0.00044	0.005	0.2	mg/L	1.00	09/05/24 18:36
75-01-4	Vinyl Chloride	<0.00097	U	0.00097	0.00500	0.00097	0.005	0.2	mg/L	1.00	09/05/24 18:36
1330-20-7	Xylenes	<0.00060	U	0.00060	0.00500	0.0006	0.005	0.6	mg/L	1.00	09/05/24 18:36
17060-07-0	1,2-Dichloroethane-d4(surr)	101					70	130	%	1.00	09/05/24 18:36
1868-53-7	Dibromofluoromethane (surr)	101					70	130	%	1.00	09/05/24 18:36
2037-26-5	Toluene-d8(surr)	98.6					70	130	%	1.00	09/05/24 18:36
460-00-4	p-Bromofluorobenzene (surr)	96.4					70	130	%	1.00	09/05/24 18:36

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: TMW-1
A&B Job Sample ID: 24090063.05

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description:
Analytical Method: SW-846 8270D
QC Batch ID: Qb240904175
Prep Method: SW-846 3510C
Prepared By: MMuteen
Prep Batch ID: PB24090434

Sample Matrix: Water
Date Collected: 09/03/2024 10:35
Date Received: 09/03/2024 12:00
Date Prepared: 09/04/2024 08:30

Analyst Initial: GM

% Moisture

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Contains 40 rows of chemical analysis data.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: TMW-1
A&B Job Sample ID: 24090063.05

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description:
Analytical Method: SW-846 8270D
QC Batch ID: Qb240904175
Prep Method: SW-846 3510C
Prepared By: MMuteen
Prep Batch ID: PB24090434

Sample Matrix: Water
Date Collected: 09/03/2024 10:35
Date Received: 09/03/2024 12:00
Date Prepared: 09/04/2024 08:30

Analyst Initial: GM

% Moisture

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Contains multiple rows of chemical analysis data.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: TMW-1
A&B Job Sample ID: 24090063.05

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description:
Analytical Method: SW-846 8270D
QC Batch ID: Qb240904175
Prep Method: SW-846 3510C
Prepared By: MMuteen
Prep Batch ID: PB24090434

Sample Matrix: Water
Date Collected: 09/03/2024 10:35
Date Received: 09/03/2024 12:00
Date Prepared: 09/04/2024 08:30

Analyst Initial: GM

% Moisture

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows include 2-Fluorophenol(surr) and Nitrobenzene-d5(surr).

Approved By : ANA



LABORATORY TEST RESULTS

Client Sample ID: TMW-1
 A&B Job Sample ID: 24090063.05

Date: 9/6/2024

Client Name: Phase Engineering, LLC
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: **Total Petroleum Hydrocarbons**

Sample Matrix: Water

Analytical Method: TX 1005

Date Collected: 09/03/2024 10:35

QC Batch ID: Qb240904176

Date Received: 09/03/2024 12:00

Prep Method: TX 1005

Date Prepared: 09/04/2024 10:00

Prepared By: JOlivera

Prep Batch ID: PB24090478

Analyst Initial: VK

% Moisture

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
TPH-1005-1	C6-C12	<0.59	U	0.59	2.06	0.61	2.15	86	mg/L	0.96	09/05/24 02:10
TPH-1005-2	>C12-C28	<0.61	U	0.61	2.06	0.64	2.15	86	mg/L	0.96	09/05/24 02:10
TPH-1005-4	>C28-C35	<0.45	U	0.45	2.06	0.47	2.15	86	mg/L	0.96	09/05/24 02:10
	Total C6-C35	<0.45	U	0.45		0.47	----	----	mg/L	0.96	09/05/24 02:10
111-85-3	1-Chlorooctane(surr)	91.7					70	130	%	0.96	09/05/24 02:10
3386-33-2	Chlorooctadecane(surr)	79.8					70	130	%	0.96	09/05/24 02:10

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: TMW-2
A&B Job Sample ID: 24090063.06

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Metals by ICP/MS

Sample Matrix: Water

Analytical Method: SW-846 6020B

Date Collected: 09/03/2024 10:52

QC Batch ID: Qb240904160

Date Received: 09/03/2024 12:00

Prep Method: SW-846 3010A

Date Prepared: 09/04/2024 10:30

Prepared By: JYou

Prep Batch ID: PB24090463

Analyst Initial: YWZ

% Moisture

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows include Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, and Silver.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: TMW-2
A&B Job Sample ID: 24090063.06

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Total Metals - Mercury

Sample Matrix: Water

Analytical Method: SW-846 7470A

Date Collected: 09/03/2024 10:52

QC Batch ID: Qb240905128

Date Received: 09/03/2024 12:00

Prep Method: SW-846 7470A

Date Prepared: 09/05/2024 08:00

Prepared By: MSenarath

Prep Batch ID: PB24090530

Analyst Initial: MAS

% Moisture

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Row 1: 7439-97-6T, Mercury, 0.000580, 6E-05, 0.000200, 0.00006, 0.0002, 0.01, mg/L, 1, 09/05/24 14:10

Approved By : ANA



LABORATORY TEST RESULTS

Client Sample ID: TMW-2
A&B Job Sample ID: 24090063.06

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: Volatile Organic Compounds

Sample Matrix: Water

Analytical Method: SW-846 8260C

Date Collected: 09/03/2024 10:52

QC Batch ID: Qb240905113

Date Received: 09/03/2024 12:00

Prep Method: SW-846 5030C

Date Prepared: 09/05/2024 10:00

Prepared By: PNaidu

Prep Batch ID: PB24090522

Analyst Initial: PN

% Moisture

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Contains 40 rows of chemical test results.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: TMW-2
 A&B Job Sample ID: 24090063.06

Date: 9/6/2024

Client Name: Phase Engineering, LLC
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: **Volatile Organic Compounds**

Sample Matrix: Water
 Date Collected: 09/03/2024 10:52
 Date Received: 09/03/2024 12:00
 Date Prepared: 09/05/2024 10:00

Analytical Method: SW-846 8260C
 QC Batch ID: Qb240905113
 Prep Method: SW-846 5030C
 Prepared By: PNaidu
 Prep Batch ID: PB24090522

Analyst Initial: PN

% Moisture

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
67-66-3	Chloroform	<0.00069	U	0.00069	0.00500	0.00069	0.005	0.2	mg/L	1.00	09/05/24 19:21
74-87-3	Chloromethane	<0.00088	U	0.00088	0.00500	0.00088	0.005	0.2	mg/L	1.00	09/05/24 19:21
156-59-2	cis-1,2-Dichloroethylene	<0.00060	U	0.00060	0.00500	0.0006	0.005	0.2	mg/L	1.00	09/05/24 19:21
10061-01-5	cis-1,3-Dichloropropene	<0.00057	U	0.00057	0.00500	0.00057	0.005	0.2	mg/L	1.00	09/05/24 19:21
124-48-1	Dibromochloromethane	<0.00085	U	0.00085	0.00500	0.00085	0.005	0.2	mg/L	1.00	09/05/24 19:21
74-95-3	Dibromomethane	<0.00044	U	0.00044	0.00500	0.00044	0.005	0.2	mg/L	1.00	09/05/24 19:21
75-71-8	Dichlorodifluoromethane	<0.00038	U	0.00038	0.00500	0.00038	0.005	0.2	mg/L	1.00	09/05/24 19:21
100-41-4	Ethylbenzene	<0.00031	U	0.00031	0.00500	0.00031	0.005	0.2	mg/L	1.00	09/05/24 19:21
98-82-8	Isopropylbenzene	<0.00041	U	0.00041	0.00500	0.00041	0.005	0.2	mg/L	1.00	09/05/24 19:21
179601-23-1	m- & p-Xylenes	0.00100	J	0.00088	0.0100	0.00088	0.01	0.4	mg/L	1.00	09/05/24 19:21
78-93-3	MEK	<0.00110	U	0.00110	0.00500	0.00113	0.005	0.2	mg/L	1.00	09/05/24 19:21
75-09-2	Methylene chloride	<0.00097	U	0.00097	0.00500	0.00097	0.005	0.2	mg/L	1.00	09/05/24 19:21
1634-04-4	MTBE	<0.00091	U	0.00091	0.00500	0.00091	0.005	0.2	mg/L	1.00	09/05/24 19:21
91-20-3	Naphthalene	<0.00050	U	0.00050	0.00500	0.0005	0.005	0.2	mg/L	1.00	09/05/24 19:21
104-51-8	n-Butylbenzene	<0.00035	U	0.00035	0.00500	0.00035	0.005	0.2	mg/L	1.00	09/05/24 19:21
103-65-1	n-Propylbenzene	<0.00022	U	0.00022	0.00500	0.00022	0.005	0.2	mg/L	1.00	09/05/24 19:21
95-47-6	o-Xylene	<0.00060	U	0.00060	0.00500	0.0006	0.005	0.2	mg/L	1.00	09/05/24 19:21
135-98-8	sec-Butylbenzene	<0.00031	U	0.00031	0.00500	0.00031	0.005	0.2	mg/L	1.00	09/05/24 19:21
100-42-5	Styrene	<0.00053	U	0.00053	0.00500	0.00053	0.005	0.2	mg/L	1.00	09/05/24 19:21
98-06-6	t-butylbenzene	<0.00038	U	0.00038	0.00500	0.00038	0.005	0.2	mg/L	1.00	09/05/24 19:21
127-18-4	Tetrachloroethylene	<0.00072	U	0.00072	0.00500	0.00072	0.005	0.2	mg/L	1.00	09/05/24 19:21
108-88-3	Toluene	<0.00063	L4,U	0.00063	0.00500	0.00063	0.005	0.2	mg/L	1.00	09/05/24 19:21
156-60-5	trans-1,2-Dichloroethylene	<0.00072	U	0.00072	0.00500	0.00072	0.005	0.2	mg/L	1.00	09/05/24 19:21
10061-02-6	trans-1,3-Dichloropropene	<0.00075	L4,U	0.00075	0.00500	0.00075	0.005	0.2	mg/L	1.00	09/05/24 19:21
79-01-6	Trichloroethylene	<0.00031	U	0.00031	0.00500	0.00031	0.005	0.2	mg/L	1.00	09/05/24 19:21
75-69-4	Trichlorofluoromethane	<0.00044	U	0.00044	0.00500	0.00044	0.005	0.2	mg/L	1.00	09/05/24 19:21
75-01-4	Vinyl Chloride	<0.00097	U	0.00097	0.00500	0.00097	0.005	0.2	mg/L	1.00	09/05/24 19:21
1330-20-7	Xylenes	0.00100	J	0.00060	0.00500	0.0006	0.005	0.6	mg/L	1.00	09/05/24 19:21
17060-07-0	1,2-Dichloroethane-d4(surr)	103					70	130	%	1.00	09/05/24 19:21
1868-53-7	Dibromofluoromethane (surr)	99.1					70	130	%	1.00	09/05/24 19:21
2037-26-5	Toluene-d8(surr)	97					70	130	%	1.00	09/05/24 19:21
460-00-4	p-Bromofluorobenzene (surr)	92.6					70	130	%	1.00	09/05/24 19:21

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: TMW-2
A&B Job Sample ID: 24090063.06

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description:
Analytical Method: SW-846 8270D
QC Batch ID: Qb240904175
Prep Method: SW-846 3510C
Prepared By: MMuteen
Prep Batch ID: PB24090434

Sample Matrix: Water
Date Collected: 09/03/2024 10:52
Date Received: 09/03/2024 12:00
Date Prepared: 09/04/2024 08:30

Analyst Initial: GM

% Moisture

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Contains multiple rows of chemical test results.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: TMW-2
A&B Job Sample ID: 24090063.06

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description:
Analytical Method: SW-846 8270D
QC Batch ID: Qb240904175
Prep Method: SW-846 3510C
Prepared By: MMuteen
Prep Batch ID: PB24090434

Sample Matrix: Water
Date Collected: 09/03/2024 10:52
Date Received: 09/03/2024 12:00
Date Prepared: 09/04/2024 08:30

Analyst Initial: GM

% Moisture

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows list various chemical compounds and their test results.

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis



LABORATORY TEST RESULTS

Client Sample ID: TMW-2
A&B Job Sample ID: 24090063.06

Date: 9/6/2024

Client Name: Phase Engineering, LLC
Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description:
Analytical Method: SW-846 8270D
QC Batch ID: Qb240904175
Prep Method: SW-846 3510C
Prepared By: MMuteen
Prep Batch ID: PB24090434

Sample Matrix: Water
Date Collected: 09/03/2024 10:52
Date Received: 09/03/2024 12:00
Date Prepared: 09/04/2024 08:30

Analyst Initial: GM

% Moisture

Table with 12 columns: CAS Number, Parameter, Result, Flag, SDL, SQL, MDL, MQL, UQL, Units, DF, Date/Time. Rows include 2-Fluorophenol(surr) and Nitrobenzene-d5(surr).

Approved By : ANA



LABORATORY TEST RESULTS

Client Sample ID: TMW-2
 A&B Job Sample ID: 24090063.06

Date: 9/6/2024

Client Name: Phase Engineering, LLC
 Project Name: 202408109 / 11685 Arrowwood Circle Houston, TX 77063

Attn: Ross Doctoroff

Test Description: **Total Petroleum Hydrocarbons**

Sample Matrix: Water

Analytical Method: TX 1005

Date Collected: 09/03/2024 10:52

QC Batch ID: Qb240904176

Date Received: 09/03/2024 12:00

Prep Method: TX 1005

Date Prepared: 09/04/2024 10:00

Prepared By: JOlivera

Prep Batch ID: PB24090478

Analyst Initial: VK

% Moisture

CAS Number	Parameter	Result	Flag	SDL	SQL	MDL	MQL	UQL	Units	DF	Date/Time
TPH-1005-1	C6-C12	<0.59	U	0.59	2.06	0.61	2.15	86	mg/L	0.96	09/05/24 02:43
TPH-1005-2	>C12-C28	<0.61	U	0.61	2.06	0.64	2.15	86	mg/L	0.96	09/05/24 02:43
TPH-1005-4	>C28-C35	<0.45	U	0.45	2.06	0.47	2.15	86	mg/L	0.96	09/05/24 02:43
	Total C6-C35	<0.45	U	0.45		0.47	----	----	mg/L	0.96	09/05/24 02:43
111-85-3	1-Chlorooctane(surr)	97.4					70	130	%	0.96	09/05/24 02:43
3386-33-2	Chlorooctadecane(surr)	89.5					70	130	%	0.96	09/05/24 02:43

Approved By : ANA

ab-q212-0321

Soil results reported on dry weight basis

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Total Petroleum Hydrocarbons **Method :** TX 1005 **Reporting Units :** mg/Kg

QC Batch ID : Qb24090384 **Created Date :** 09/03/24 **Created By :** SKYanduru

Samples in This QC Batch : 24090063.01,02,03,04

Sample Preparation : PB24090345 **Prep Method :** TX 1005 **Prep Date :** 09/03/24 13:00 **Prep By :** JOlivera

QC Type: Method Blank									
Parameter	CAS #	Result	Units	D.F.	MQL	MDL			Qual
C6-C12	TPH-1005-1	< MDL	mg/Kg	1.00	25	8.94			
>C12-C28	TPH-1005-2	< MDL	mg/Kg	1.00	25	7.35			
>C28-C35	TPH-1005-4	< MDL	mg/Kg	1.00	25	6.20			
Total C6-C35		< MDL	mg/Kg	1.00	----	6.20			
Chlorooctadecane(surr)	3386-33-2	121	%	1.00					
1-Chlorooctane(surr)	111-85-3	115	%	1.00					

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
C6-C12	500	392	78.5	500	385	77	1.9	20	75-125	
>C12-C28	500	488	97.6	500	481	96.3	1.5	20	75-125	
>C28-C35	500	449	89.9	500	443	88.6	1.4	20	75-125	

QC Type: MS and MSD											
QC Sample ID: 24083467.04											
Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
C6-C12	BRL	500	464	92.8	500	447	89.3	3.7	20	75-125	
>C12-C28	BRL	500	521	104	500	479	95.7	8.4	20	75-125	
>C28-C35	BRL	500	380	76	500	402	80.4	5.7	20	75-125	

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Volatile Organic Compounds **Method :** SW-846 8260C **Reporting Units :** mg/Kg

QC Batch ID : Qb240904127 **Created Date :** 09/04/24 **Created By :** KVignesh

Samples in This QC Batch : 24090063.01,02,03,04

Sample Preparation : PB24090449 **Prep Method :** SW-846 5035A **Prep Date :** 09/04/24 10:00 **Prep By :** KVignesh

QC Type: Method Blank							
Parameter	CAS #	Result	Units	D.F.	MQL	MDL	Qual
1,1,1,2-Tetrachloroethane	630-20-6	< MDL	mg/Kg	1.00	0.005	0.00085	
1,1,1-Trichloroethane	71-55-6	< MDL	mg/Kg	1.00	0.005	0.00148	
1,1,2,2-Tetrachloroethane	79-34-5	< MDL	mg/Kg	1.00	0.005	0.00132	
1,1,2-Trichloroethane	79-00-5	< MDL	mg/Kg	1.00	0.005	0.00176	
1,1-Dichloroethane	75-34-3	< MDL	mg/Kg	1.00	0.005	0.00157	
1,1-Dichloroethylene	75-35-4	< MDL	mg/Kg	1.00	0.005	0.00173	
1,1-Dichloropropene	563-58-6	< MDL	mg/Kg	1.00	0.005	0.00144	
1,2,3-trichlorobenzene	87-61-6	< MDL	mg/Kg	1.00	0.005	0.00166	
1,2,3-Trichloropropane	96-18-4	< MDL	mg/Kg	1.00	0.005	0.00151	
1,2,4-Trichlorobenzene	120-82-1	< MDL	mg/Kg	1.00	0.005	0.00138	
1,2,4-Trimethylbenzene	95-63-6	< MDL	mg/Kg	1.00	0.005	0.00122	
1,2-Dibromo-3-chloropropa	96-12-8	< MDL	mg/Kg	1.00	0.005	0.00311	
1,2-Dibromoethane	106-93-4	< MDL	mg/Kg	1.00	0.005	0.00113	
1,2-Dichlorobenzene	95-50-1	< MDL	mg/Kg	1.00	0.005	0.00100	
1,2-Dichloroethane	107-06-2	< MDL	mg/Kg	1.00	0.005	0.00132	
1,2-Dichloropropane	78-87-5	< MDL	mg/Kg	1.00	0.005	0.00113	
1,3,5-Trimethylbenzene	108-67-8	< MDL	mg/Kg	1.00	0.005	0.00151	
1,3-Dichlorobenzene	541-73-1	< MDL	mg/Kg	1.00	0.005	0.00141	
1,3-Dichloropropane	142-28-9	< MDL	mg/Kg	1.00	0.005	0.00141	
1,4-Dichlorobenzene	106-46-7	< MDL	mg/Kg	1.00	0.005	0.00144	
1,4-Dioxane	123-91-1	< MDL	mg/Kg	1.00	0.16	0.08023	
2,2-Dichloropropane	594-20-7	< MDL	mg/Kg	1.00	0.005	0.00220	
2-Chlorotoluene	95-49-8	< MDL	mg/Kg	1.00	0.005	0.00144	
4-Chlorotoluene	106-43-4	< MDL	mg/Kg	1.00	0.005	0.00138	
4-Isopropyltoluene	99-87-6	< MDL	mg/Kg	1.00	0.005	0.00141	
Benzene	71-43-2	< MDL	mg/Kg	1.00	0.005	0.00107	
Bromobenzene	108-86-1	< MDL	mg/Kg	1.00	0.005	0.00113	
Bromochloromethane	74-97-5	< MDL	mg/Kg	1.00	0.005	0.00126	
Bromodichloromethane	75-27-4	< MDL	mg/Kg	1.00	0.005	0.00088	
Bromoform	75-25-2	< MDL	mg/Kg	1.00	0.005	0.00072	
Bromomethane	74-83-9	< MDL	mg/Kg	1.00	0.005	0.00170	
Carbon disulfide	75-15-0	< MDL	mg/Kg	1.00	0.005	0.00138	
Carbon tetrachloride	56-23-5	< MDL	mg/Kg	1.00	0.005	0.00151	
Chlorobenzene	108-90-7	< MDL	mg/Kg	1.00	0.005	0.00148	
Chloroethane	75-00-3	< MDL	mg/Kg	1.00	0.005	0.00242	
Chloroform	67-66-3	< MDL	mg/Kg	1.00	0.005	0.00119	
Chloromethane	74-87-3	< MDL	mg/Kg	1.00	0.005	0.00226	
cis-1,2-Dichloroethylene	156-59-2	< MDL	mg/Kg	1.00	0.005	0.00119	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Volatile Organic Compounds

Method : SW-846 8260C

Reporting Units : mg/Kg

QC Batch ID : Qb240904127 **Created Date :** 09/04/24

Created By : KVignesh

Samples in This QC Batch : 24090063.01,02,03,04

QC Type: Method Blank									
Parameter	CAS #	Result	Units	D.F.	MLQ	MDL			Qual
cis-1,3-Dichloropropene	10061-01-5	< MDL	mg/Kg	1.00	0.005	0.00113			
Dibromochloromethane	124-48-1	< MDL	mg/Kg	1.00	0.005	0.00110			
Dibromomethane	74-95-3	< MDL	mg/Kg	1.00	0.005	0.00138			
Dichlorodifluoromethane	75-71-8	< MDL	mg/Kg	1.00	0.005	0.00135			
Ethylbenzene	100-41-4	< MDL	mg/Kg	1.00	0.005	0.00138			
Hexachlorobutadiene	87-68-3	< MDL	mg/Kg	1.00	0.005	0.002			
Isopropylbenzene	98-82-8	< MDL	mg/Kg	1.00	0.005	0.00126			
m- & p-Xylenes	179601-23-1	< MDL	mg/Kg	1.00	0.01	0.00273			
MEK	78-93-3	< MDL	mg/Kg	1.00	0.005	0.00267			
Methylene chloride	75-09-2	< MDL	mg/Kg	1.00	0.005	0.00154			
MTBE	1634-04-4	< MDL	mg/Kg	1.00	0.005	0.00107			
Naphthalene	91-20-3	< MDL	mg/Kg	1.00	0.005	0.00188			
n-Butylbenzene	104-51-8	< MDL	mg/Kg	1.00	0.005	0.00179			
n-Propylbenzene	103-65-1	< MDL	mg/Kg	1.00	0.005	0.00138			
o-Xylene	95-47-6	< MDL	mg/Kg	1.00	0.005	0.00126			
sec-Butylbenzene	135-98-8	< MDL	mg/Kg	1.00	0.005	0.00160			
Styrene	100-42-5	< MDL	mg/Kg	1.00	0.005	0.00126			
t-butylbenzene	98-06-6	< MDL	mg/Kg	1.00	0.005	0.00141			
Tetrachloroethylene	127-18-4	< MDL	mg/Kg	1.00	0.005	0.00138			
Toluene	108-88-3	< MDL	mg/Kg	1.00	0.005	0.00119			
trans-1,2-Dichloroethylene	156-60-5	< MDL	mg/Kg	1.00	0.005	0.00144			
trans-1,3-Dichloropropene	10061-02-6	< MDL	mg/Kg	1.00	0.005	0.00094			
Trichloroethylene	79-01-6	< MDL	mg/Kg	1.00	0.005	0.00104			
Trichlorofluoromethane	75-69-4	< MDL	mg/Kg	1.00	0.005	0.00198			
Vinyl Chloride	75-01-4	< MDL	mg/Kg	1.00	0.005	0.00185			
Xylenes	1330-20-7	< MDL	mg/Kg	1.00	0.005	0.00126			
Dibromofluoromethane(surr)	1868-53-7	108	%	1.00					
1,2-Dichloroethane-d4(surr)	17060-07-0	104	%	1.00					
Toluene-d8(surr)	2037-26-5	99.7	%	1.00					
p-Bromofluorobenzene(surr)	460-00-4	102	%	1.00					

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrLimit	%Recovery CtrLimit	Qual
1,1,1,2-Tetrachloroethane	0.04	0.0436	109	0.04	0.0424	106	2.7	30	88-114	
1,1,1-Trichloroethane	0.04	0.0437	109	0.04	0.0434	109	0.7	30	85.8-120	
1,1,2,2-Tetrachloroethane	0.04	0.0469	117	0.04	0.0460	115	2	30	75.2-123	
1,1,2-Trichloroethane	0.04	0.0438	109	0.04	0.0424	106	3.2	30	83.9-116	
1,1-Dichloroethane	0.04	0.0414	104	0.04	0.0411	103	0.8	30	84.4-122	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Volatile Organic Compounds Method : SW-846 8260C Reporting Units : mg/Kg

QC Batch ID : Qb240904127 Created Date : 09/04/24 Created By : KVignesh

Samples in This QC Batch : 24090063.01,02,03,04

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrLimit	%Recovery CtrLimit	Qual
1,1-Dichloroethylene	0.04	0.0428	107	0.04	0.0421	105	1.7	30	82.5-122	
1,1-Dichloropropene	0.04	0.0425	106	0.04	0.0424	106	0.2	30	83.6-122	
1,2,3-trichlorobenzene	0.04	0.0440	110	0.04	0.0449	112	1.9	30	79.3-123	
1,2,3-Trichloropropane	0.04	0.0449	112	0.04	0.0432	108	3.9	30	78.1-122	
1,2,4-Trichlorobenzene	0.04	0.0448	112	0.04	0.0459	115	2.4	30	84.5-122	
1,2,4-Trimethylbenzene	0.04	0.0434	109	0.04	0.0423	106	2.6	30	92-114	
1,2-Dibromo-3-chloropropa	0.04	0.0438	109	0.04	0.0432	108	1.3	30	72.7-127	
1,2-Dibromoethane	0.04	0.0445	111	0.04	0.0444	111	0.2	30	85.6-114	
1,2-Dichlorobenzene	0.04	0.0438	109	0.04	0.0435	109	0.6	30	91.6-112	
1,2-Dichloroethane	0.04	0.0448	112	0.04	0.0436	109	2.7	30	80.2-120	
1,2-Dichloropropane	0.04	0.0426	106	0.04	0.0423	106	0.7	30	86.3-120	
1,3,5-Trimethylbenzene	0.04	0.0433	108	0.04	0.0417	104	3.7	30	92.1-116	
1,3-Dichlorobenzene	0.04	0.0438	109	0.04	0.0438	110	0.1	30	92.7-113	
1,3-Dichloropropane	0.04	0.0421	105	0.04	0.0411	103	2.5	30	77.9-119	
1,4-Dichlorobenzene	0.04	0.0441	110	0.04	0.0438	109	0.8	30	92.7-113	
1,4-Dioxane	1.28	1.50	117	1.28	1.49	116	0.7	30	71.9-128	
2,2-Dichloropropane	0.04	0.0447	112	0.04	0.0440	110	1.6	30	81.3-125	
2-Chlorotoluene	0.04	0.0430	107	0.04	0.0413	103	4	30	89.2-119	
4-Chlorotoluene	0.04	0.0428	107	0.04	0.0418	104	2.4	30	81.4-127	
4-Isopropyltoluene	0.04	0.0439	110	0.04	0.0434	108	1.2	30	92.2-116	
Benzene	0.04	0.0424	106	0.04	0.0421	105	0.6	30	89.7-116	
Bromobenzene	0.04	0.0440	110	0.04	0.0429	107	2.5	30	92-112	
Bromochloromethane	0.04	0.0420	105	0.04	0.0419	105	0.3	30	79.4-120	
Bromodichloromethane	0.04	0.0442	111	0.04	0.0438	110	1	30	88.1-116	
Bromoform	0.04	0.0466	116	0.04	0.0455	114	2.4	30	80.9-117	
Bromomethane	0.04	0.0374	93.5	0.04	0.0372	93	0.5	30	55.7-152	
Carbon disulfide	0.04	0.0416	104	0.04	0.0408	102	1.8	30	78.5-124	
Carbon tetrachloride	0.04	0.0445	111	0.04	0.0441	110	0.8	30	85.3-125	
Chlorobenzene	0.04	0.0432	108	0.04	0.0426	107	1.5	30	93-111	
Chloroethane	0.04	0.0413	103	0.04	0.0402	100	2.6	30	62.1-142	
Chloroform	0.04	0.0417	104	0.04	0.0416	104	0.3	30	85.5-121	
Chloromethane	0.04	0.0404	101	0.04	0.0401	100	0.9	30	68.9-127	
cis-1,2-Dichloroethylene	0.04	0.0419	105	0.04	0.0415	104	1	30	86.2-120	
cis-1,3-Dichloropropene	0.04	0.0449	112	0.04	0.0441	110	1.8	30	88.8-117	
Dibromochloromethane	0.04	0.0446	111	0.04	0.0437	109	2	30	84.9-115	
Dibromomethane	0.04	0.0448	112	0.04	0.0441	110	1.6	30	83.3-117	
Dichlorodifluoromethane	0.04	0.0405	101	0.04	0.0403	101	0.5	30	49.2-134	
Ethylbenzene	0.04	0.0436	109	0.04	0.0424	106	2.9	30	93-113	
Isopropylbenzene	0.04	0.0447	112	0.04	0.0441	110	1.4	30	92.4-114	
m- & p-Xylenes	0.08	0.0870	109	0.08	0.0854	107	1.8	30	92.7-113	
MEK	0.04	0.0481	120	0.04	0.0474	118	1.4	30	59.9-132	

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Volatile Organic Compounds

Method : SW-846 8260C

Reporting Units : mg/Kg

QC Batch ID : Qb240904127 **Created Date :** 09/04/24

Created By : KVignesh

Samples in This QC Batch : 24090063.01,02,03,04

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Methylene chloride	0.04	0.0385	96.4	0.04	0.0382	95.4	0.9	30	64.3-148	
MTBE	0.04	0.0439	110	0.04	0.0440	110	0.2	30	80.5-117	
Naphthalene	0.04	0.0433	108	0.04	0.0437	109	0.9	30	72.8-125	
n-Butylbenzene	0.04	0.0450	113	0.04	0.0445	111	1.2	30	90.7-117	
n-Propylbenzene	0.04	0.0431	108	0.04	0.0416	104	3.5	30	90.2-118	
o-Xylene	0.04	0.0434	109	0.04	0.0427	107	1.7	30	92.7-113	
sec-Butylbenzene	0.04	0.0440	110	0.04	0.0424	106	3.8	30	91.8-116	
Styrene	0.04	0.0448	112	0.04	0.0440	110	1.9	30	92.2-114	
t-butylbenzene	0.04	0.0441	110	0.04	0.0433	108	1.8	30	92.3-116	
Tetrachloroethylene	0.04	0.0421	105	0.04	0.0418	104	0.8	30	74.9-129	
Toluene	0.04	0.0417	104	0.04	0.0410	102	1.7	30	91.3-115	
trans-1,2-Dichloroethylene	0.04	0.0418	104	0.04	0.0407	102	2.6	30	81.2-123	
trans-1,3-Dichloropropene	0.04	0.0434	109	0.04	0.0427	107	1.7	30	86.2-116	
Trichloroethylene	0.04	0.0435	109	0.04	0.0429	107	1.4	30	86.8-115	
Trichlorofluoromethane	0.04	0.0439	110	0.04	0.0427	107	2.7	30	71.2-135	
Vinyl Chloride	0.04	0.0410	103	0.04	0.0402	100	2.1	30	77.2-123	
Xylenes	0.12	0.13	109	0.12	0.128	107	1.9	30	93-113	

QC Type: MS and MSD											
QC Sample ID: 24090200.01											
Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
1,1,1,2-Tetrachloroethane	BRL	0.039	0.0411	105						71.4-131	
1,1,1-Trichloroethane	BRL	0.039	0.0405	104						69.6-140	
1,1,2,2-Tetrachloroethane	BRL	0.039	0.0441	113						66.6-128	
1,1,2-Trichloroethane	BRL	0.039	0.0418	107						72.8-125	
1,1-Dichloroethane	BRL	0.039	0.0388	99.4						72.7-129	
1,1-Dichloroethylene	BRL	0.039	0.0389	99.7						71.4-131	
1,1-Dichloropropene	BRL	0.039	0.0391	100						75.9-132	
1,2,3-trichlorobenzene	BRL	0.039	0.0412	106						56.7-153	
1,2,3-Trichloropropane	BRL	0.039	0.0404	104						61.6-138	
1,2,4-Trichlorobenzene	BRL	0.039	0.0413	106						55.9-150	
1,2,4-Trimethylbenzene	BRL	0.039	0.0392	101						71.1-131	
1,2-Dibromo-3-chloropropa	BRL	0.039	0.0401	103						52.4-150	
1,2-Dibromoethane	BRL	0.039	0.0429	110						72.9-125	
1,2-Dichlorobenzene	BRL	0.039	0.0413	106						76.1-126	
1,2-Dichloroethane	BRL	0.039	0.0432	111						66.4-134	
1,2-Dichloropropane	BRL	0.039	0.0408	105						70.2-128	
1,3,5-Trimethylbenzene	BRL	0.039	0.0391	100						75.1-127	
1,3-Dichlorobenzene	BRL	0.039	0.0405	104						73.9-126	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Volatile Organic Compounds

Method : SW-846 8260C

Reporting Units : mg/Kg

QC Batch ID : Qb240904127 **Created Date :** 09/04/24

Created By : KVignesh

Samples in This QC Batch : 24090063.01,02,03,04

QC Type: MS and MSD											
QC Sample ID: 24090200.01											
Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
1,3-Dichloropropane	BRL	0.039	0.0405	104						68.3-124	
1,4-Dichlorobenzene	BRL	0.039	0.0403	103						72.3-127	
1,4-Dioxane	BRL	1.26	1.39	110						70-130	
2,2-Dichloropropane	BRL	0.039	0.0399	102						68.5-138	
2-Chlorotoluene	BRL	0.039	0.0388	99.4						71.7-128	
4-Chlorotoluene	BRL	0.039	0.0389	99.8						72.2-126	
4-Isopropyltoluene	BRL	0.039	0.0398	102						77.5-125	
Benzene	BRL	0.039	0.0402	103						74-126	
Bromobenzene	BRL	0.039	0.0407	104						73.3-129	
Bromochloromethane	BRL	0.039	0.0405	104						68.8-131	
Bromodichloromethane	BRL	0.039	0.0422	108						69-135	
Bromoform	BRL	0.039	0.0441	113						62-146	
Bromomethane	BRL	0.039	0.0368	94.3						58.7-139	
Carbon disulfide	BRL	0.039	0.0378	96.9						70-130	
Carbon tetrachloride	BRL	0.039	0.0414	106						68.7-135	
Chlorobenzene	BRL	0.039	0.0407	104						73.3-129	
Chloroethane	BRL	0.039	0.0382	97.9						66.2-129	
Chloroform	BRL	0.039	0.0402	103						73.7-134	
Chloromethane	BRL	0.039	0.0381	97.8						51.4-135	
cis-1,2-Dichloroethylene	BRL	0.039	0.0392	101						72.4-132	
cis-1,3-Dichloropropene	BRL	0.039	0.0427	109						67.7-134	
Dibromochloromethane	BRL	0.039	0.0424	109						73.2-126	
Dibromomethane	BRL	0.039	0.0431	111						69.9-134	
Dichlorodifluoromethane	BRL	0.039	0.0376	96.5						36.8-144	
Ethylbenzene	BRL	0.039	0.0404	104						72.2-128	
Isopropylbenzene	BRL	0.039	0.0412	106						71.2-131	
m- & p-Xylenes	BRL	0.079	0.0808	102						70.7-131	
MEK	BRL	0.039	0.0426	109						52.5-152	
Methylene chloride	BRL	0.039	0.0384	98.5						70.6-129	
MTBE	BRL	0.039	0.0423	108						70-130	
Naphthalene	BRL	0.039	0.0404	104						60.7-145	
n-Butylbenzene	BRL	0.039	0.0398	102						66.5-136	
n-Propylbenzene	BRL	0.039	0.0380	97.3						73.3-126	
o-Xylene	BRL	0.039	0.0408	105						71.6-130	
sec-Butylbenzene	BRL	0.039	0.0392	100						77.9-124	
Styrene	BRL	0.039	0.0423	108						71.1-131	
t-butylbenzene	BRL	0.039	0.0401	103						74.4-130	
Tetrachloroethylene	BRL	0.039	0.0400	103						62.6-157	
Toluene	BRL	0.039	0.0390	100						73.3-127	
trans-1,2-Dichloroethylene	BRL	0.039	0.0382	98						70-130	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Volatile Organic Compounds

Method : SW-846 8260C

Reporting Units : mg/Kg

QC Batch ID : Qb240904127 **Created Date :** 09/04/24

Created By : KVignesh

Samples in This QC Batch : 24090063.01,02,03,04

QC Type: MS and MSD											
QC Sample ID: 24090200.01											
Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
trans-1,3-Dichloropropene	BRL	0.039	0.0413	106						71.5-124	
Trichloroethylene	BRL	0.039	0.0414	106						69.2-133	
Trichlorofluoromethane	BRL	0.039	0.0405	104						63.9-140	
Vinyl Chloride	BRL	0.039	0.0385	98.8						40.9-159	
Xylenes	BRL	0.118	0.122	103						69.2-133	

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Metals by ICP/MS

Method : SW-846 6020B

Reporting Units : mg/L

QC Batch ID : Qb240904160 **Created Date :** 09/04/24

Created By : YWZhang

Samples in This QC Batch : 24090063.05,06

QC Type: MS and MSD											
QC Sample ID: 24090063.05											
Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
Arsenic	BRL	2	1.95	97.3						75-125	
Barium	0.325	2	2.13	90.3						75-125	
Cadmium	BRL	2	2.01	101						75-125	
Chromium	BRL	2	1.98	98.9						75-125	
Lead	BRL	2	1.99	99.6						75-125	
Selenium	BRL	2	1.91	95.5						75-125	
Silver	BRL	2	2.02	101						75-125	

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : **Method :** SW-846 8270D **Reporting Units :** mg/Kg

QC Batch ID : Qb240904170 **Created Date :** 09/04/24 **Created By :** GeMu

Samples in This QC Batch : 24090063.01,02,03,04

Extraction : PB24090401 **Prep Method :** SW-846 3546 **Prep Date :** 09/04/24 07:45 **Prep By :** MMuteen

QC Type: Method Blank

Parameter	CAS #	Result	Units	D.F.	MQL	MDL	Qual
1,2,4-Trichlorobenzene	120-82-1	< MDL	mg/Kg	1.00	0.167	0.02167	
1,2-Dichlorobenzene	95-50-1	< MDL	mg/Kg	1.00	0.167	0.02167	
1,3-Dichlorobenzene	541-73-1	< MDL	mg/Kg	1.00	0.167	0.03065	
1,4-Dichlorobenzene	106-46-7	< MDL	mg/Kg	1.00	0.167	0.02374	
2,4,5-Trichlorophenol	95-95-4	< MDL	mg/Kg	1.00	0.167	0.02986	
2,4,6-Trichlorophenol	88-06-2	< MDL	mg/Kg	1.00	0.167	0.04748	
2,4-Dichlorophenol	120-83-2	< MDL	mg/Kg	1.00	0.167	0.02167	
2,4-Dimethylphenol	105-67-9	< MDL	mg/Kg	1.00	0.167	0.02374	
2,4-Dinitrophenol	51-28-5	< MDL	mg/Kg	1.00	0.333	0.333	
2,4-Dinitrotoluene	121-14-2	< MDL	mg/Kg	1.00	0.167	0.05351	
2,6-Dinitrotoluene	606-20-2	< MDL	mg/Kg	1.00	0.167	0.03357	
2-Chloronaphthalene	91-58-7	< MDL	mg/Kg	1.00	0.167	0.02167	
2-Chlorophenol	95-57-8	< MDL	mg/Kg	1.00	0.167	0.02167	
2-Methylnaphthalene	91-57-6	< MDL	mg/Kg	1.00	0.167	0.02826	
2-Methylphenol	95-48-7	< MDL	mg/Kg	1.00	0.167	0.03065	
2-Nitrophenol	88-75-5	< MDL	mg/Kg	1.00	0.167	0.01187	
3- & 4-Methylphenols	65794-96-9	< MDL	mg/Kg	1.00	0.167	0.03573	
3,3-Dichlorobenzidine	91-94-1	< MDL	mg/Kg	1.00	0.167	0.05649	
4,6-Dinitro-2-methylphenol	534-52-1	< MDL	mg/Kg	1.00	0.167	0.07187	
4-Bromophenyl phenyl ethe	101-55-3	< MDL	mg/Kg	1.00	0.167	0.02562	
4-Chloro-3-methylphenol	59-50-7	< MDL	mg/Kg	1.00	0.167	0.03815	
4-Chlorophenyl phenyl ethe	7005-72-3	< MDL	mg/Kg	1.00	0.167	0.02167	
4-Nitrophenol	100-02-7	< MDL	mg/Kg	1.00	0.167	0.03495	
Acenaphthene	83-32-9	< MDL	mg/Kg	1.00	0.167	0.01532	
Acenaphthylene	208-96-8	< MDL	mg/Kg	1.00	0.167	0.02374	
Anthracene	120-12-7	< MDL	mg/Kg	1.00	0.167	0.01812	
Benzo(a)anthracene	56-55-3	< MDL	mg/Kg	1.00	0.167	0.02826	
Benzo(a)pyrene	50-32-8	< MDL	mg/Kg	1.00	0.167	0.04333	
Benzo(b)fluoranthene	205-99-2	< MDL	mg/Kg	1.00	0.167	0.02986	
Benzo(g,h,i)perylene	191-24-2	< MDL	mg/Kg	1.00	0.167	0.02986	
Benzo(k)fluoranthene	207-08-9	< MDL	mg/Kg	1.00	0.167	0.04697	
Bis(2-chloroethoxy) methan	111-91-1	< MDL	mg/Kg	1.00	0.167	0.02167	
Bis(2-chloroethyl) ether	111-44-4	< MDL	mg/Kg	1.00	0.167	0.0168	
Bis(2-chloroisopropyl) ether	108-60-1	< MDL	mg/Kg	1.00	0.167	0.01532	
Bis(2-ethylhexyl) phtalate	117-81-7	< MDL	mg/Kg	1.00	0.167	0.14551	
Butyl benzyl phtalate	85-68-7	< MDL	mg/Kg	1.00	0.167	0.06713	
Chrysene	218-01-9	< MDL	mg/Kg	1.00	0.167	0.02374	
Dibenzo(a,h)anthracene	53-70-3	< MDL	mg/Kg	1.00	0.167	0.04942	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : **Method :** SW-846 8270D **Reporting Units :** mg/Kg

QC Batch ID : Qb240904170 **Created Date :** 09/04/24 **Created By :** GeMu

Samples in This QC Batch : 24090063.01,02,03,04

QC Type: Method Blank								
Parameter	CAS #	Result	Units	D.F.	ML	MDL		Qual
Dibenzofuran	132-64-9	< MDL	mg/Kg	1.00	0.167	0.0168		
Diethyl phthalate	84-66-2	< MDL	mg/Kg	1.00	0.167	0.02986		
Dimethyl phthalate	131-11-3	< MDL	mg/Kg	1.00	0.167	0.01187		
Di-n-butyl phthalate	84-74-2	< MDL	mg/Kg	1.00	0.167	0.06782		
Di-n-octyl Phthalate	117-84-0	< MDL	mg/Kg	1.00	0.167	0.1256		
Fluoranthene	206-44-0	< MDL	mg/Kg	1.00	0.167	0.02562		
Fluorene	86-73-7	< MDL	mg/Kg	1.00	0.167	0.01187		
Hexachlorobenzene	118-74-1	< MDL	mg/Kg	1.00	0.167	0.03994		
Hexachlorobutadiene	87-68-3	< MDL	mg/Kg	1.00	0.167	0.02986		
Hexachlorocyclopentadiene	77-47-4	< MDL	mg/Kg	1.00	0.333	0.333		
Hexachloroethane	67-72-1	< MDL	mg/Kg	1.00	0.167	0.04748		
Indeno(1,2,3-cd)pyrene	193-39-5	< MDL	mg/Kg	1.00	0.167	0.03561		
Isophorone	78-59-1	< MDL	mg/Kg	1.00	0.167	0.02374		
Naphthalene	91-20-3	< MDL	mg/Kg	1.00	0.167	0.01532		
Nitrobenzene	98-95-3	< MDL	mg/Kg	1.00	0.167	0.03357		
N-Nitrosodimethylamine	62-75-9	< MDL	mg/Kg	1.00	0.167	0.0168		
N-nitroso-di-n-propylamine	621-64-7	< MDL	mg/Kg	1.00	0.167	0.01532		
Pentachlorophenol	87-86-5	< MDL	mg/Kg	1.00	0.167	0.03561		
Phenanthrene	85-01-8	< MDL	mg/Kg	1.00	0.167	0.02167		
Phenol	108-95-2	< MDL	mg/Kg	1.00	0.167	0.01812		
Pyrene	129-00-0	< MDL	mg/Kg	1.00	0.167	0.03815		
Pyridine	110-86-1	< MDL	mg/Kg	1.00	0.167	0.02471		
2-Fluorophenol(surr)	367-12-4	73.2	%	1.00				
Phenol-d6(surr)	13127-88-3	68.5	%	1.00				
Nitrobenzene-d5(surr)	4165-60-0	72.9	%	1.00				
2-Fluorobiphenyl(surr)	321-60-8	69.6	%	1.00				
2,4,6-Tribromophenol(surr)	118-79-6	66.1	%	1.00				
p-Terphenyl-d14(surr)	1718-51-0	82.5	%	1.00				

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
1,2,4-Trichlorobenzene	1.67	1.25	75.1	1.67	1.29	77.2	2.8	35	47.7-128	
1,2-Dichlorobenzene	1.67	1.23	73.9	1.67	1.23	73.4	0.4	35	41.6-131	
1,3-Dichlorobenzene	1.67	1.24	74.4	1.67	1.29	77.4	3.7	35	42.9-130	
1,4-Dichlorobenzene	1.67	1.24	74.5	1.67	1.29	77	3.7	35	42.1-132	
2,4,5-Trichlorophenol	1.67	1.28	76.8	1.67	1.37	82.1	6.6	35	50.2-142	
2,4,6-Trichlorophenol	1.67	1.31	78.5	1.67	1.39	83	5.9	35	52.7-134	
2,4-Dichlorophenol	1.67	1.41	84.2	1.67	1.51	90.5	7.1	35	50.6-133	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Method : SW-846 8270D Reporting Units : mg/Kg

QC Batch ID : Qb240904170 Created Date : 09/04/24 Created By : GeMu

Samples in This QC Batch : 24090063.01,02,03,04

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
2,4-Dimethylphenol	3.33	2.84	85.4	3.33	3.02	90.8	6	35	10-118	
2,4-Dinitrophenol	1.67	0.457	27.4	1.67	0.511	30.6	11.1	35	10-169	
2,4-Dinitrotoluene	1.67	1.34	80.1	1.67	1.43	85.6	6.7	35	49.3-147	
2,6-Dinitrotoluene	1.67	1.26	75.2	1.67	1.37	82.3	8.7	35	49.1-136	
2-Chloronaphthalene	1.67	1.12	66.8	1.67	1.18	70.5	5.6	35	39.8-112	
2-Chlorophenol	1.67	1.25	75	1.67	1.35	80.6	7.5	35	45.1-130	
2-Methylnaphthalene	1.67	1.31	78.7	1.67	1.40	83.7	6.3	35	49.9-130	
2-Methylphenol	1.67	1.41	84.4	1.67	1.54	91.9	8.8	35	41.7-130	
2-Nitrophenol	1.67	1.31	78.5	1.67	1.37	82.3	4.4	35	49-137	
3- & 4-Methylphenols	3.33	2.73	82.1	3.33	2.91	87.3	6.3	35	43.8-117	
3,3-Dichlorobenzidine	1.67	1.19	71.5	1.67	1.32	78.9	10	35	36.8-150	
4,6-Dinitro-2-methylphenol	1.67	0.703	42.1	1.67	0.807	48.3	13.8	35	26.7-165	
4-Bromophenyl phenyl ethe	1.67	1.21	72.3	1.67	1.35	80.8	11.2	35	44-136	
4-Chloro-3-methylphenol	1.67	1.52	90.8	1.67	1.66	99.3	9	35	49.2-142	
4-Chlorophenyl phenyl ethe	1.67	1.25	75	1.67	1.35	80.9	7.5	35	45.6-131	
4-Nitrophenol	1.67	0.862	51.6	1.67	0.936	56	8.2	35	10.5-179	
Acenaphthene	1.67	1.22	73	1.67	1.31	78.4	7.2	35	46.1-129	
Acenaphthylene	1.67	1.22	72.8	1.67	1.33	79.5	9	35	48.5-132	
Anthracene	1.67	1.23	73.8	1.67	1.33	79.6	7.7	35	42.7-132	
Benzo(a)anthracene	1.67	1.19	71.5	1.67	1.30	77.7	8.5	35	47.5-132	
Benzo(a)pyrene	1.67	1.21	72.2	1.67	1.33	79.7	9.8	35	44.3-142	
Benzo(b)fluoranthene	1.67	1.08	64.6	1.67	1.17	70.2	8.1	35	40.4-136	
Benzo(g,h,i)perylene	1.67	1.23	73.5	1.67	1.36	81.3	10.3	35	39.8-138	
Benzo(k)fluoranthene	1.67	1.11	66.6	1.67	1.21	72.4	8.5	35	43.1-134	
Bis(2-chloroethoxy) methan	1.67	1.21	72.7	1.67	1.30	77.9	6.8	35	47.2-128	
Bis(2-chloroethyl) ether	1.67	1.11	66.5	1.67	1.12	67.3	0.8	35	43.9-130	
Bis(2-chloroisopropyl) ether	1.67	1.05	62.9	1.67	1.11	66.3	5.5	35	39.1-130	
Bis(2-ethylhexyl)phthalate	1.67	1.45	86.9	1.67	1.62	96.9	10.9	35	46.5-153	
Butyl benzyl phthalate	1.67	1.39	83.4	1.67	1.51	90.4	8.1	35	44.9-153	
Chrysene	1.67	1.33	79.5	1.67	1.44	86.4	8.1	35	46.9-133	
Dibenzo(a,h)anthracene	1.67	1.19	71.5	1.67	1.34	80.2	11.6	35	43-137	
Dibenzofuran	1.67	1.27	76.3	1.67	1.35	81.1	5.7	35	46.6-129	
Diethyl phthalate	1.67	1.25	74.9	1.67	1.35	80.9	7.6	35	45.8-138	
Dimethyl phthalate	1.67	1.22	72.9	1.67	1.29	77.3	5.8	35	47.5-130	
Di-n-butyl phthalate	1.67	1.32	79.3	1.67	1.44	86.5	8.3	35	55.1-147	
Di-n-octyl Phthalate	1.67	1.30	77.9	1.67	1.42	84.9	8.7	35	53.6-148	
Fluoranthene	1.67	1.18	70.9	1.67	1.26	75.6	6.2	35	45.7-141	
Fluorene	1.67	1.30	78	1.67	1.40	83.9	7.2	35	48.9-134	
Hexachlorobenzene	1.67	1.16	69.7	1.67	1.25	75	7.1	35	43-133	
Hexachlorobutadiene	1.67	1.24	74.4	1.67	1.28	76.4	3	35	44.6-127	
Hexachlorocyclopentadiene	1.67	1.09	65.1	1.67	1.18	70.5	8.2	35	10-164	

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : **Method :** SW-846 8270D **Reporting Units :** mg/Kg

QC Batch ID : Qb240904170 **Created Date :** 09/04/24 **Created By :** GeMu

Samples in This QC Batch : 24090063.01,02,03,04

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Hexachloroethane	1.67	1.20	71.8	1.67	1.25	74.8	4.2	35	40.1-130	
Indeno(1,2,3-cd)pyrene	1.67	1.16	69.2	1.67	1.26	75.5	8.7	35	41-140	
Isophorone	1.67	1.02	61	1.67	1.08	64.6	5.9	35	42.5-127	
Naphthalene	1.67	2.23	134	1.67	2.39	143	6.9	35	34.4-135	L1
Nitrobenzene	1.67	1.29	77	1.67	1.36	81.5	5.6	35	47.2-135	
N-Nitrosodimethylamine	1.67	1.19	71.3	1.67	1.22	72.8	2.5	35	43.5-133	
N-nitroso-di-n-propylamine	1.67	1.20	71.7	1.67	1.22	73.2	1.8	35	44-136	
Pentachlorophenol	1.67	0.811	48.5	1.67	0.887	53.1	9	35	44.9-154	
Phenanthrene	1.67	1.26	75.3	1.67	1.36	81.3	7.8	35	44.4-134	
Phenol	1.67	1.32	79.3	1.67	1.37	82.3	3.4	35	33.6-133	
Pyrene	1.67	1.38	82.7	1.67	1.55	92.7	11.5	35	40.6-141	
Pyridine	1.67	1.00	60.1	1.67	1.04	62.2	3.5	35	33.9-132	

QC Type: MS and MSD											
QC Sample ID: 24083423.01											
Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
1,2,4-Trichlorobenzene	BRL	1.67	1.37	82.1						32-126	
1,2-Dichlorobenzene	BRL	1.67	1.32	79.2						34-118	
1,3-Dichlorobenzene	BRL	1.67	1.28	76.4						34-118	
1,4-Dichlorobenzene	BRL	1.67	1.33	79.7						35-115	
2,4,5-Trichlorophenol	BRL	1.67	1.39	83.3						35-124	
2,4,6-Trichlorophenol	BRL	1.67	1.46	87.2						35-123	
2,4-Dichlorophenol	BRL	1.67	1.52	91.1						31-124	
2,4-Dimethylphenol	BRL	3.33	3.06	91.8						29-129	
2,4-Dinitrophenol	BRL	1.67	0.470	28.1						10-94	
2,4-Dinitrotoluene	BRL	1.67	1.47	88.2						42-134	
2,6-Dinitrotoluene	BRL	1.67	1.38	82.8						37-128	
2-Chloronaphthalene	BRL	1.67	1.25	74.6						37-124	
2-Chlorophenol	BRL	1.67	1.33	79.7						26-119	
2-Methylnaphthalene	BRL	1.67	1.43	85.7						28-128	
2-Methylphenol	BRL	1.67	1.50	90						26-125	
2-Nitrophenol	BRL	1.67	1.45	86.7						25-123	
3- & 4-Methylphenols	BRL	3.33	2.81	84.4						29-118	
3,3-Dichlorobenzidine	BRL	1.67	1.29	77						20-135	
4,6-Dinitro-2-methylphenol	BRL	1.67	0.758	45.4						10-129	
4-Bromophenyl phenyl ethe	BRL	1.67	1.42	85.3						50-122	
4-Chloro-3-methylphenol	BRL	1.67	1.62	96.9						40-127	
4-Chlorophenyl phenyl ethe	BRL	1.67	1.39	83.3						47-125	
4-Nitrophenol	BRL	1.67	0.875	52.4						14-138	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Method : SW-846 8270D Reporting Units : mg/Kg

QC Batch ID : Qb240904170 Created Date : 09/04/24 Created By : GeMu

Samples in This QC Batch : 24090063.01,02,03,04

QC Type: MS and MSD											
QC Sample ID: 24083423.01											
Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
Acenaphthene	BRL	1.67	1.37	81.9						45-125	
Acenaphthylene	BRL	1.67	1.36	81.2						43-118	
Anthracene	BRL	1.67	1.38	82.7						53-119	
Benzo(a)anthracene	BRL	1.67	1.35	80.6						43-131	
Benzo(a)pyrene	BRL	1.67	1.39	83.5						43-126	
Benzo(b)fluoranthene	BRL	1.67	1.24	74.2						36-126	
Benzo(g,h,i)perylene	BRL	1.67	1.42	84.8						27-126	
Benzo(k)fluoranthene	BRL	1.67	1.28	76.4						36-134	
Bis(2-chloroethoxy) methan	BRL	1.67	1.33	79.5						33-125	
Bis(2-chloroethyl) ether	BRL	1.67	1.15	68.9						30-125	
Bis(2-chloroisopropyl) ether	BRL	1.67	1.13	67.6						27-122	
Bis(2-ethylhexyl)phthalate	BRL	1.67	1.66	99.4						10-158	
Butyl benzyl phthalate	BRL	1.67	1.57	93.8						50-139	
Chrysene	BRL	1.67	1.50	89.6						42-131	
Dibenzo(a,h)anthracene	BRL	1.67	1.44	86.4						33-122	
Dibenzofuran	BRL	1.67	1.41	84.3						22-122	
Diethyl phthalate	BRL	1.67	1.38	82.7						48-126	
Dimethyl phthalate	BRL	1.67	1.36	81.3						48-122	
Di-n-butyl phthalate	BRL	1.67	1.49	89.3						51-126	
Di-n-octyl Phthalate	BRL	1.67	1.46	87.4						50-124	
Fluoranthene	BRL	1.67	1.30	77.8						51-125	
Fluorene	BRL	1.67	1.45	86.7						48-123	
Hexachlorobenzene	BRL	1.67	1.32	79.1						35-130	
Hexachlorobutadiene	BRL	1.67	1.34	80.1						31-115	
Hexachlorocyclopentadiene	BRL	1.67	1.27	76						10-116	
Hexachloroethane	BRL	1.67	1.26	75.6						36-114	
Indeno(1,2,3-cd)pyrene	BRL	1.67	1.33	79.8						31-135	
Isophorone	BRL	1.67	1.13	67.5						30-126	
Naphthalene	BRL	1.67	2.40	143						32-124	M1
Nitrobenzene	BRL	1.67	1.36	81.2						29-126	
N-Nitrosodimethylamine	BRL	1.67	1.25	74.9						21-121	
N-nitroso-di-n-propylamine	BRL	1.67	1.25	74.8						30-128	
Pentachlorophenol	BRL	1.67	0.826	49.5						36-117	
Phenanthrene	BRL	1.67	1.41	84.5						45-125	
Phenol	BRL	1.67	1.37	81.9						22-118	
Pyrene	BRL	1.67	1.59	95.2						32-138	
Pyridine	BRL	1.67	1.06	63.5						10-110	

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Method : SW-846 8270D Reporting Units : mg/L

QC Batch ID : Qb240904175 Created Date : 09/04/24 Created By : GeMu

Samples in This QC Batch : 24090063.05,06

Extraction : PB24090434 Prep Method : SW-846 3510C Prep Date : 09/04/24 08:30 Prep By : MMuteen

QC Type: Method Blank							
Parameter	CAS #	Result	Units	D.F.	MQL	MDL	Qual
1,2,4-Trichlorobenzene	120-82-1	< MDL	mg/L	1.00	0.005	0.0006	
1,2-Dichlorobenzene	95-50-1	< MDL	mg/L	1.00	0.005	0.00066	
1,3-Dichlorobenzene	541-73-1	< MDL	mg/L	1.00	0.005	0.00053	
1,4-Dichlorobenzene	106-46-7	< MDL	mg/L	1.00	0.005	0.00066	
2,4,5-Trichlorophenol	95-95-4	< MDL	mg/L	1.00	0.005	0.00075	
2,4,6-Trichlorophenol	88-06-2	< MDL	mg/L	1.00	0.005	0.0006	
2,4-Dichlorophenol	120-83-2	< MDL	mg/L	1.00	0.005	0.00069	
2,4-Dimethylphenol	105-67-9	< MDL	mg/L	1.00	0.005	0.00075	
2,4-Dinitrophenol	51-28-5	< MDL	mg/L	1.00	0.01	0.010	
2,4-Dinitrotoluene	121-14-2	< MDL	mg/L	1.00	0.005	0.00075	
2,6-Dinitrotoluene	606-20-2	< MDL	mg/L	1.00	0.005	0.00057	
2-Chloronaphthalene	91-58-7	< MDL	mg/L	1.00	0.005	0.00075	
2-Chlorophenol	95-57-8	< MDL	mg/L	1.00	0.005	0.00075	
2-Methylnaphthalene	91-57-6	< MDL	mg/L	1.00	0.005	0.00025	
2-Methylphenol	95-48-7	< MDL	mg/L	1.00	0.005	0.001	
2-Nitrophenol	88-75-5	< MDL	mg/L	1.00	0.005	0.00072	
3- & 4-Methylphenols	65794-96-9	< MDL	mg/L	1.00	0.005	0.00132	
3,3-Dichlorobenzidine	91-94-1	< MDL	mg/L	1.00	0.005	0.00129	
4,6-Dinitro-2-methylphenol	534-52-1	< MDL	mg/L	1.00	0.005	0.00066	
4-Bromophenyl phenyl ethe	101-55-3	< MDL	mg/L	1.00	0.005	0.00079	
4-Chloro-3-methylphenol	59-50-7	< MDL	mg/L	1.00	0.005	0.00044	
4-Chlorophenyl phenyl ethe	7005-72-3	< MDL	mg/L	1.00	0.005	0.00082	
4-Nitrophenol	100-02-7	< MDL	mg/L	1.00	0.005	0.00035	
7,12-Dimethylbenz (a) anth	57-97-6	< MDL	mg/L	1.00	0.005	0.005	
Acenaphthene	83-32-9	< MDL	mg/L	1.00	0.005	0.00088	
Acenaphthylene	208-96-8	< MDL	mg/L	1.00	0.005	0.00079	
Anthracene	120-12-7	< MDL	mg/L	1.00	0.005	0.00066	
Benzo(a)anthracene	56-55-3	< MDL	mg/L	1.00	0.005	0.00075	
Benzo(a)pyrene	50-32-8	< MDL	mg/L	1.00	0.005	0.00094	
Benzo(b)fluoranthene	205-99-2	< MDL	mg/L	1.00	0.005	0.0011	
Benzo(g,h,i)perylene	191-24-2	< MDL	mg/L	1.00	0.005	0.00075	
Benzo(k)fluoranthene	207-08-9	< MDL	mg/L	1.00	0.005	0.00126	
Bis(2-chloroethoxy) methan	111-91-1	< MDL	mg/L	1.00	0.005	0.00072	
Bis(2-chloroethyl) ether	111-44-4	< MDL	mg/L	1.00	0.005	0.00072	
Bis(2-chloroisopropyl) ether	108-60-1	< MDL	mg/L	1.00	0.005	0.00097	
Bis(2-ethylhexyl) phthalate	117-81-7	< MDL	mg/L	1.00	0.005	0.00075	
Butyl benzyl phthalate	85-68-7	< MDL	mg/L	1.00	0.005	0.00069	
Chrysene	218-01-9	< MDL	mg/L	1.00	0.005	0.00088	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : **Method :** SW-846 8270D **Reporting Units :** mg/L

QC Batch ID : Qb240904175 **Created Date :** 09/04/24 **Created By :** GeMu

Samples in This QC Batch : 24090063.05,06

QC Type: Method Blank									
Parameter	CAS #	Result	Units	D.F.	ML	MDL			Qual
Dibenzo(a,h)anthracene	53-70-3	< MDL	mg/L	1.00	0.005	0.00057			
Dibenzofuran	132-64-9	< MDL	mg/L	1.00	0.005	0.00025			
Diethyl phthalate	84-66-2	< MDL	mg/L	1.00	0.005	0.00082			
Dimethyl phthalate	131-11-3	< MDL	mg/L	1.00	0.005	0.00066			
Di-n-butyl phthalate	84-74-2	< MDL	mg/L	1.00	0.005	0.0006			
Di-n-octyl Phthalate	117-84-0	< MDL	mg/L	1.00	0.005	0.00094			
Fluoranthene	206-44-0	< MDL	mg/L	1.00	0.005	0.00069			
Fluorene	86-73-7	< MDL	mg/L	1.00	0.005	0.00088			
Hexachlorobenzene	118-74-1	< MDL	mg/L	1.00	0.005	0.00107			
Hexachlorobutadiene	87-68-3	< MDL	mg/L	1.00	0.005	0.00053			
Hexachlorocyclopentadiene	77-47-4	< MDL	mg/L	1.00	0.01	0.010			
Hexachloroethane	67-72-1	< MDL	mg/L	1.00	0.005	0.00047			
Indeno(1,2,3-cd)pyrene	193-39-5	< MDL	mg/L	1.00	0.005	0.00057			
Isophorone	78-59-1	< MDL	mg/L	1.00	0.005	0.00066			
Naphthalene	91-20-3	< MDL	mg/L	1.00	0.005	0.00066			
Nitrobenzene	98-95-3	< MDL	mg/L	1.00	0.005	0.00119			
N-Nitrosodimethylamine	62-75-9	< MDL	mg/L	1.00	0.005	0.00047			
N-nitroso-di-n-propylamine	621-64-7	< MDL	mg/L	1.00	0.005	0.00063			
Pentachlorophenol	87-86-5	< MDL	mg/L	1.00	0.005	0.00063			
Phenanthrene	85-01-8	< MDL	mg/L	1.00	0.005	0.00072			
Phenol	108-95-2	< MDL	mg/L	1.00	0.005	0.00047			
Pyrene	129-00-0	< MDL	mg/L	1.00	0.005	0.00069			
Pyridine	110-86-1	< MDL	mg/L	1.00	0.005	0.00047			
2-Fluorophenol(surr)	367-12-4	70.5	%	1.00					
Phenol-d6(surr)	13127-88-3	68.9	%	1.00					
Nitrobenzene-d5(surr)	4165-60-0	73.9	%	1.00					
2-Fluorobiphenyl(surr)	321-60-8	71	%	1.00					
2,4,6-Tribromophenol(surr)	118-79-6	63.6	%	1.00					
p-Terphenyl-d14(surr)	1718-51-0	85	%	1.00					

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrLimit	%Recovery CtrLimit	Qual
1,2,4-Trichlorobenzene	0.05	0.0235	47.1	0.05	0.0246	49.1	4.4	35	57-130	L2
1,2-Dichlorobenzene	0.05	0.0247	49.4	0.05	0.0260	52	5.2	35	36.5-81.7	
1,3-Dichlorobenzene	0.05	0.0245	48.9	0.05	0.0258	51.5	5.3	35	36.3-79.1	
1,4-Dichlorobenzene	0.05	0.0253	50.5	0.05	0.0263	52.5	4	35	36-79.2	
2,4,5-Trichlorophenol	0.05	0.0282	56.3	0.05	0.0286	57.2	1.5	35	35.4-117	
2,4,6-Trichlorophenol	0.05	0.0267	53.4	0.05	0.0275	55.1	2.9	35	52-118	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Method : SW-846 8270D Reporting Units : mg/L

QC Batch ID : Qb240904175 Created Date : 09/04/24 Created By : GeMu

Samples in This QC Batch : 24090063.05,06

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrLimit	%Recovery CtrLimit	Qual
2,4-Dichlorophenol	0.05	0.0306	61.3	0.05	0.0319	63.7	4	35	53-116	
2,4-Dimethylphenol	0.1	0.0799	79.9	0.1	0.0792	79.2	0.9	35	42-120	
2,4-Dinitrophenol	0.05	0.0355	70.9	0.05	0.0340	67.9	4.2	35	10-143	
2,4-Dinitrotoluene	0.05	0.0357	71.4	0.05	0.0360	72	0.9	35	51.2-127	
2,6-Dinitrotoluene	0.05	0.0330	66	0.05	0.0356	71.1	7.6	35	68-118	L2
2-Chloronaphthalene	0.05	0.0269	53.8	0.05	0.0277	55.4	2.9	35	65-120	L2
2-Chlorophenol	0.05	0.0277	55.3	0.05	0.0292	58.4	5.4	35	36-120	
2-Methylnaphthalene	0.05	0.0279	55.9	0.05	0.0289	57.8	3.4	35	49.8-100	
2-Methylphenol	0.05	0.0355	71	0.05	0.0371	74.1	4.4	35	44-103	
2-Nitrophenol	0.05	0.0286	57.1	0.05	0.0296	59.3	3.6	35	45-119	
3- & 4-Methylphenols	0.1	0.0617	61.7	0.1	0.0643	64.3	4.2	35	35.4-89.2	
3,3-Dichlorobenzidine	0.05	0.0364	72.8	0.05	0.0383	76.7	5.1	35	48.2-116	
4,6-Dinitro-2-methylphenol	0.05	0.0307	61.4	0.05	0.0312	62.4	1.6	35	53-130	
4-Bromophenyl phenyl ethe	0.05	0.0339	67.8	0.05	0.0356	71.3	4.9	35	65-112	
4-Chloro-3-methylphenol	0.05	0.0356	71.2	0.05	0.0370	74	3.9	35	45.3-114	
4-Chlorophenyl phenyl ethe	0.05	0.0333	66.7	0.05	0.0340	68	2	35	56.3-108	
4-Nitrophenol	0.05	0.0319	63.7	0.05	0.0325	65	2	35	13-129	
7,12-Dimethylbenz (a) anth	0.05	0.0328	65.7	0.05	0.0343	68.6	4.3	35	37.1-121	
Acenaphthene	0.05	0.0322	64.3	0.05	0.0334	66.9	3.8	35	60-132	
Acenaphthylene	0.05	0.0317	63.4	0.05	0.0330	65.9	4	35	54-126	
Anthracene	0.05	0.0344	68.9	0.05	0.0365	73.1	5.8	35	53.5-112	
Benzo(a)anthracene	0.05	0.0382	76.5	0.05	0.0395	79	3.2	35	50.7-122	
Benzo(a)pyrene	0.05	0.0332	66.3	0.05	0.0349	69.8	5.1	35	41.3-146	
Benzo(b)fluoranthene	0.05	0.0342	68.4	0.05	0.0360	71.9	5.1	35	35.2-134	
Benzo(g,h,i)perylene	0.05	0.0344	68.7	0.05	0.0376	75.3	9	35	32-131	
Benzo(k)fluoranthene	0.05	0.0310	62	0.05	0.0330	65.9	6.3	35	35.3-128	
Bis(2-chloroethoxy) methan	0.05	0.0352	70.5	0.05	0.0360	72	2.2	35	49-165	
Bis(2-chloroethyl) ether	0.05	0.0311	62.1	0.05	0.0296	59.2	4.8	35	43-126	
Bis(2-chloroisopropyl) ether	0.05	0.0266	53.1	0.05	0.0280	56	5.3	35	63-139	L2
Bis(2-ethylhexyl)phthalate	0.05	0.0388	77.5	0.05	0.0400	80	3.1	35	44.2-129	
Butyl benzyl phthalate	0.05	0.0374	74.8	0.05	0.0387	77.3	3.4	35	52.1-133	
Chrysene	0.05	0.0350	70	0.05	0.0370	74	5.5	35	57.5-119	
Dibenzo(a,h)anthracene	0.05	0.0330	66	0.05	0.0360	71.9	8.8	35	36.2-136	
Dibenzofuran	0.05	0.0332	66.5	0.05	0.0341	68.2	2.6	35	56.7-109	
Diethyl phthalate	0.05	0.0374	74.8	0.05	0.0385	76.9	2.9	35	50.7-120	
Dimethyl phthalate	0.05	0.0353	70.6	0.05	0.0361	72.2	2.2	35	55.9-112	
Di-n-butyl phthalate	0.05	0.0365	73	0.05	0.0378	75.5	3.4	35	54-120	
Di-n-octyl Phthalate	0.05	0.0402	80.4	0.05	0.0417	83.4	3.7	35	45.9-125	
Fluoranthene	0.05	0.0367	73.4	0.05	0.0382	76.5	4.1	35	48.9-121	
Fluorene	0.05	0.0347	69.5	0.05	0.0356	71.1	2.5	35	70-113	L2
Hexachlorobenzene	0.05	0.0328	65.5	0.05	0.0342	68.4	4.3	35	52.7-107	

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : **Method :** SW-846 8270D **Reporting Units :** mg/L

QC Batch ID : Qb240904175 **Created Date :** 09/04/24 **Created By :** GeMu

Samples in This QC Batch : 24090063.05,06

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Hexachlorobutadiene	0.05	0.0212	42.4	0.05	0.0221	44.3	4.1	35	38-120	L2
Hexachlorocyclopentadiene	0.05	0.0266	53.2	0.05	0.0275	54.9	3.3	35	12.7-170	
Hexachloroethane	0.05	0.0216	43.3	0.05	0.0234	46.7	7.8	35	55-120	
Indeno(1,2,3-cd)pyrene	0.05	0.0340	67.9	0.05	0.0374	74.9	9.6	35	40.7-132	
Isophorone	0.05	0.0315	62.9	0.05	0.0320	63.9	1.7	35	47-180	
Naphthalene	0.05	0.0256	51.3	0.05	0.0278	55.5	8	35	36-120	
Nitrobenzene	0.05	0.0364	72.7	0.05	0.0384	76.7	5.5	35	54-158	
N-Nitrosodimethylamine	0.05	0.0275	55	0.05	0.0263	52.7	4.4	35	33.1-74.1	
N-nitroso-di-n-propylamine	0.05	0.0348	69.6	0.05	0.0367	73.4	5.3	35	14-198	
Pentachlorophenol	0.05	0.0304	60.8	0.05	0.0302	60.5	0.7	35	38-135	
Phenanthrene	0.05	0.0344	68.7	0.05	0.0357	71.3	3.8	35	65-120	
Phenol	0.05	0.0165	32.9	0.05	0.0167	33.4	1.4	35	17-120	
Pyrene	0.05	0.0370	74	0.05	0.0392	78.3	5.8	35	70-120	
Pyridine	0.05	0.0235	47.1	0.05	0.0225	45	4.5	35	33-158	

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Total Petroleum Hydrocarbons **Method :** TX 1005 **Reporting Units :** mg/L

QC Batch ID : Qb240904176 **Created Date :** 09/04/24 **Created By :** Vinod

Samples in This QC Batch : 24090063.05,06

Sample Preparation : PB24090478 **Prep Method :** TX 1005 **Prep Date :** 09/04/24 10:00 **Prep By :** JOlivera

QC Type: Method Blank								
Parameter	CAS #	Result	Units	D.F.	MQL	MDL		Qual
C6-C12	TPH-1005-1	< MDL	mg/L	1.00	2.15	0.61		
>C12-C28	TPH-1005-2	< MDL	mg/L	1.00	2.15	0.64		
>C28-C35	TPH-1005-4	< MDL	mg/L	1.00	2.15	0.47		
Total C6-C35		< MDL	mg/L	1.00	----	0.47		
Chlorooctadecane(surr)	3386-33-2	94	%	1.00				
1-Chlorooctane(surr)	111-85-3	101	%	1.00				

QC Type: Duplicate						
QC Sample ID: 24090109.01						
Parameter	QCSample Result	Sample Result	Units	RPD	RPD CtrlLimit	Qual
>C12-C28	BRL	BRL	mg/L	0	20	
>C28-C35	BRL	BRL	mg/L	0	20	
C6-C12	BRL	BRL	mg/L	0	20	
Total C6-C35	BRL	BRL	mg/L	0	20	

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
C6-C12	43	35.2	81.9	43	34.2	79.5	2.9	20	75-125	
>C12-C28	43	35.6	82.7	43	35.6	82.8	0.1	20	75-125	
>C28-C35	43	41.1	95.5	43	41.4	96.3	0.8	20	75-125	

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Volatile Organic Compounds **Method :** SW-846 8260C **Reporting Units :** mg/L

QC Batch ID : Qb240905113 **Created Date :** 09/05/24 **Created By :** PNaidu

Samples in This QC Batch : 24090063.05,06

Sample Preparation : PB24090522 **Prep Method :** SW-846 5030C **Prep Date :** 09/05/24 10:00 **Prep By :** PNaidu

QC Type: Method Blank							
Parameter	CAS #	Result	Units	D.F.	MQL	MDL	Qual
1,1,1,2-Tetrachloroethane	630-20-6	< MDL	mg/L	1.00	0.005	0.00107	
1,1,1-Trichloroethane	71-55-6	< MDL	mg/L	1.00	0.005	0.00082	
1,1,2,2-Tetrachloroethane	79-34-5	< MDL	mg/L	1.00	0.005	0.00079	
1,1,2-Trichloroethane	79-00-5	< MDL	mg/L	1.00	0.005	0.00085	
1,1-Dichloroethane	75-34-3	< MDL	mg/L	1.00	0.005	0.0005	
1,1-Dichloroethylene	75-35-4	< MDL	mg/L	1.00	0.005	0.00063	
1,1-Dichloropropene	563-58-6	< MDL	mg/L	1.00	0.005	0.00088	
1,2,3-trichlorobenzene	87-61-6	< MDL	mg/L	1.00	0.005	0.00038	
1,2,3-Trichloropropane	96-18-4	< MDL	mg/L	1.00	0.005	0.00088	
1,2,4-Trichlorobenzene	120-82-1	< MDL	mg/L	1.00	0.005	0.00044	
1,2,4-Trimethylbenzene	95-63-6	< MDL	mg/L	1.00	0.005	0.00038	
1,2-Dibromo-3-chloropropa	96-12-8	< MDL	mg/L	1.00	0.005	0.00091	
1,2-Dibromoethane	106-93-4	< MDL	mg/L	1.00	0.005	0.00066	
1,2-Dichlorobenzene	95-50-1	< MDL	mg/L	1.00	0.005	0.0005	
1,2-Dichloroethane	107-06-2	< MDL	mg/L	1.00	0.005	0.00057	
1,2-Dichloropropane	78-87-5	< MDL	mg/L	1.00	0.005	0.0005	
1,3,5-Trimethylbenzene	108-67-8	< MDL	mg/L	1.00	0.005	0.00038	
1,3-Dichlorobenzene	541-73-1	< MDL	mg/L	1.00	0.005	0.00047	
1,3-Dichloropropane	142-28-9	< MDL	mg/L	1.00	0.005	0.00063	
1,4-Dichlorobenzene	106-46-7	< MDL	mg/L	1.00	0.005	0.00035	
1,4-Dioxane	123-91-1	< MDL	mg/L	1.00	0.16	0.08177	
2,2-Dichloropropane	594-20-7	< MDL	mg/L	1.00	0.005	0.00028	
2-Chlorotoluene	95-49-8	< MDL	mg/L	1.00	0.005	0.00038	
4-Chlorotoluene	106-43-4	< MDL	mg/L	1.00	0.005	0.00028	
4-Isopropyltoluene	99-87-6	< MDL	mg/L	1.00	0.005	0.00019	
Benzene	71-43-2	< MDL	mg/L	1.00	0.005	0.00038	
Bromobenzene	108-86-1	< MDL	mg/L	1.00	0.005	0.00035	
Bromochloromethane	74-97-5	< MDL	mg/L	1.00	0.005	0.00063	
Bromodichloromethane	75-27-4	< MDL	mg/L	1.00	0.005	0.00038	
Bromoform	75-25-2	< MDL	mg/L	1.00	0.005	0.00057	
Bromomethane	74-83-9	< MDL	mg/L	1.00	0.005	0.00082	
Carbon disulfide	75-15-0	< MDL	mg/L	1.00	0.005	0.00069	
Carbon tetrachloride	56-23-5	< MDL	mg/L	1.00	0.005	0.0005	
Chlorobenzene	108-90-7	< MDL	mg/L	1.00	0.005	0.00057	
Chloroethane	75-00-3	< MDL	mg/L	1.00	0.005	0.00107	
Chloroform	67-66-3	< MDL	mg/L	1.00	0.005	0.00069	
Chloromethane	74-87-3	< MDL	mg/L	1.00	0.005	0.00088	
cis-1,2-Dichloroethylene	156-59-2	< MDL	mg/L	1.00	0.005	0.0006	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Volatile Organic Compounds

Method : SW-846 8260C

Reporting Units : mg/L

QC Batch ID : Qb240905113 **Created Date :** 09/05/24

Created By : PNaidu

Samples in This QC Batch : 24090063.05,06

QC Type: Method Blank									
Parameter	CAS #	Result	Units	D.F.	ML	MDL			Qual
cis-1,3-Dichloropropene	10061-01-5	< MDL	mg/L	1.00	0.005	0.00057			
Dibromochloromethane	124-48-1	< MDL	mg/L	1.00	0.005	0.00085			
Dibromomethane	74-95-3	< MDL	mg/L	1.00	0.005	0.00044			
Dichlorodifluoromethane	75-71-8	< MDL	mg/L	1.00	0.005	0.00038			
Ethylbenzene	100-41-4	< MDL	mg/L	1.00	0.005	0.00031			
Hexachlorobutadiene	87-68-3	< MDL	mg/L	1.00	0.005	0.00057			
Isopropylbenzene	98-82-8	< MDL	mg/L	1.00	0.005	0.00041			
m- & p-Xylenes	179601-23-1	< MDL	mg/L	1.00	0.01	0.00088			
MEK	78-93-3	< MDL	mg/L	1.00	0.005	0.00113			
Methylene chloride	75-09-2	< MDL	mg/L	1.00	0.005	0.00097			
MTBE	1634-04-4	< MDL	mg/L	1.00	0.005	0.00091			
Naphthalene	91-20-3	< MDL	mg/L	1.00	0.005	0.0005			
n-Butylbenzene	104-51-8	< MDL	mg/L	1.00	0.005	0.00035			
n-Propylbenzene	103-65-1	< MDL	mg/L	1.00	0.005	0.00022			
o-Xylene	95-47-6	< MDL	mg/L	1.00	0.005	0.0006			
sec-Butylbenzene	135-98-8	< MDL	mg/L	1.00	0.005	0.00031			
Styrene	100-42-5	< MDL	mg/L	1.00	0.005	0.00053			
t-butylbenzene	98-06-6	< MDL	mg/L	1.00	0.005	0.00038			
Tetrachloroethylene	127-18-4	< MDL	mg/L	1.00	0.005	0.00072			
Toluene	108-88-3	< MDL	mg/L	1.00	0.005	0.00063			
trans-1,2-Dichloroethylene	156-60-5	< MDL	mg/L	1.00	0.005	0.00072			
trans-1,3-Dichloropropene	10061-02-6	< MDL	mg/L	1.00	0.005	0.00075			
Trichloroethylene	79-01-6	< MDL	mg/L	1.00	0.005	0.00031			
Trichlorofluoromethane	75-69-4	< MDL	mg/L	1.00	0.005	0.00044			
Vinyl Chloride	75-01-4	< MDL	mg/L	1.00	0.005	0.00097			
Xylenes	1330-20-7	< MDL	mg/L	1.00	0.005	0.0006			
Dibromofluoromethane(surr)	1868-53-7	98.7	%	1.00					
1,2-Dichloroethane-d4(surr)	17060-07-0	101	%	1.00					
Toluene-d8(surr)	2037-26-5	99.3	%	1.00					
p-Bromofluorobenzene(surr)	460-00-4	98.9	%	1.00					

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrLimit	%Recovery CtrLimit	Qual
1,1,1,2-Tetrachloroethane	0.04	0.0369	92.3	0.04	0.0398	99.4	7.5	20	86.3-118	
1,1,1-Trichloroethane	0.04	0.0354	88.5	0.04	0.0389	97.3	9.5	20	82.2-118	
1,1,2,2-Tetrachloroethane	0.04	0.0364	90.9	0.04	0.0387	96.7	6.2	20	82.5-124	
1,1,2-Trichloroethane	0.04	0.0351	87.8	0.04	0.0395	98.7	11.7	20	86.6-119	
1,1-Dichloroethane	0.04	0.0344	86	0.04	0.0393	98.4	13.3	20	80.9-119	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Volatile Organic Compounds

Method : SW-846 8260C

Reporting Units : mg/L

QC Batch ID : Qb240905113 **Created Date :** 09/05/24

Created By : PNaidu

Samples in This QC Batch : 24090063.05,06

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
1,1-Dichloroethylene	0.04	0.0341	85.2	0.04	0.0376	94	9.9	20	80.7-119	
1,1-Dichloropropene	0.04	0.0341	85.2	0.04	0.0364	90.9	6.6	20	82.4-120	
1,2,3-trichlorobenzene	0.04	0.0357	89.3	0.04	0.0382	95.6	6.7	20	70.9-135	
1,2,3-Trichloropropane	0.04	0.0363	90.8	0.04	0.0398	99.6	9.1	20	81.2-125	
1,2,4-Trichlorobenzene	0.04	0.0364	91	0.04	0.0395	98.7	8.2	20	70-136	
1,2,4-Trimethylbenzene	0.04	0.0341	85.3	0.04	0.0391	97.8	13.6	20	82.8-119	
1,2-Dibromo-3-chloropropa	0.04	0.0342	85.4	0.04	0.0375	93.8	9.3	20	76-130	
1,2-Dibromoethane	0.04	0.0355	88.8	0.04	0.0400	99.9	11.9	20	87.9-118	
1,2-Dichlorobenzene	0.04	0.0349	87.2	0.04	0.0386	96.5	10.1	20	84.1-118	
1,2-Dichloroethane	0.04	0.0361	90.1	0.04	0.0408	102	12.3	20	83-121	
1,2-Dichloropropane	0.04	0.0349	87.3	0.04	0.0394	98.6	12	20	85.2-117	
1,3,5-Trimethylbenzene	0.04	0.0338	84.6	0.04	0.0401	100	16.9	20	83.5-118	
1,3-Dichlorobenzene	0.04	0.0355	88.9	0.04	0.0400	99.9	11.8	20	83.6-118	
1,3-Dichloropropane	0.04	0.0351	87.7	0.04	0.0386	96.5	9.6	20	82.4-122	
1,4-Dichlorobenzene	0.04	0.0352	88.1	0.04	0.0382	95.5	8.1	20	83.8-118	
1,4-Dioxane	1.28	1.12	87.3	1.28	1.27	99.2	12.8	20	66.5-136	
2,2-Dichloropropane	0.04	0.0345	86.3	0.04	0.0380	95.1	9.6	20	78.9-125	
2-Chlorotoluene	0.04	0.0342	85.5	0.04	0.0388	96.9	12.6	20	82.5-118	
4-Chlorotoluene	0.04	0.0341	85.4	0.04	0.0396	99	14.8	20	82.9-119	
4-Isopropyltoluene	0.04	0.0341	85.1	0.04	0.0391	97.7	13.8	20	81.7-120	
Benzene	0.04	0.0336	84	0.04	0.0379	94.6	12	20	84.7-114	L4
Bromobenzene	0.04	0.0351	87.7	0.04	0.0396	99	12.1	20	83.2-117	
Bromochloromethane	0.04	0.0337	84.3	0.04	0.0390	97.4	14.6	20	80.8-123	
Bromodichloromethane	0.04	0.0353	88.2	0.04	0.0403	101	13.3	20	86.1-118	
Bromoform	0.04	0.0379	94.8	0.04	0.0427	107	11.9	20	81.9-124	
Bromomethane	0.04	0.0326	81.4	0.04	0.0351	87.7	7.5	20	72.1-134	
Carbon disulfide	0.04	0.0334	83.5	0.04	0.0365	91.3	8.9	20	83.5-116	
Carbon tetrachloride	0.04	0.0372	92.9	0.04	0.0402	101	7.8	20	82-118	
Chlorobenzene	0.04	0.0351	87.7	0.04	0.0387	96.6	9.8	20	87.4-115	
Chloroethane	0.04	0.0339	84.6	0.04	0.0384	96	12.6	20	74.5-123	
Chloroform	0.04	0.0345	86.2	0.04	0.0387	96.8	11.6	20	83.8-118	
Chloromethane	0.04	0.0336	84.1	0.04	0.0380	94.9	12.2	20	72-120	
cis-1,2-Dichloroethylene	0.04	0.0346	86.6	0.04	0.0385	96.3	10.5	20	82-120	
cis-1,3-Dichloropropene	0.04	0.0350	87.6	0.04	0.0409	102	15.4	20	87-117	
Dibromochloromethane	0.04	0.0380	95	0.04	0.0403	101	5.9	20	85.3-119	
Dibromomethane	0.04	0.0359	89.8	0.04	0.0413	103	13.9	20	84.9-119	
Dichlorodifluoromethane	0.04	0.0382	95.4	0.04	0.0325	81.2	16.1	20	63.3-118	
Ethylbenzene	0.04	0.0347	86.7	0.04	0.0378	94.5	8.6	20	85.1-115	
Hexachlorobutadiene	0.04	0.0352	87.9	0.04	0.0388	96.9	9.8	20	81.1-121	
Isopropylbenzene	0.04	0.0352	87.9	0.04	0.0387	96.7	9.6	20	85.4-117	
m- & p-Xylenes	0.08	0.0697	87.1	0.08	0.0772	96.5	10.2	20	84.7-115	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Volatile Organic Compounds

Method : SW-846 8260C

Reporting Units : mg/L

QC Batch ID : Qb240905113 **Created Date :** 09/05/24

Created By : PNaidu

Samples in This QC Batch : 24090063.05,06

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
MEK	0.04	0.0313	78.2	0.04	0.0381	95.3	19.6	20	69-135	
Methylene chloride	0.04	0.0358	89.5	0.04	0.0413	103	14.3	20	72.5-130	
MTBE	0.04	0.0354	88.5	0.04	0.0393	98.2	10.4	20	80.3-124	
Naphthalene	0.04	0.0339	84.9	0.04	0.0366	91.6	7.5	20	75-135	
n-Butylbenzene	0.04	0.0353	88.3	0.04	0.0383	95.8	8.1	20	80-126	
n-Propylbenzene	0.04	0.0334	83.5	0.04	0.0383	95.7	13.7	20	82.1-120	
o-Xylene	0.04	0.0350	87.5	0.04	0.0386	96.5	9.8	20	85.4-115	
sec-Butylbenzene	0.04	0.0341	85.4	0.04	0.0388	97.1	12.8	20	82-120	
Styrene	0.04	0.0357	89.3	0.04	0.0390	97.6	8.8	20	86.5-116	
t-butylbenzene	0.04	0.0343	85.6	0.04	0.0395	98.7	14.2	20	84.3-118	
Tetrachloroethylene	0.04	0.0340	85	0.04	0.0369	92.3	8.2	20	73.2-129	
Toluene	0.04	0.0338	84.4	0.04	0.0377	94.3	11	20	85.1-114	L4
trans-1,2-Dichloroethylene	0.04	0.0332	83	0.04	0.0379	94.8	13.2	20	81.1-119	
trans-1,3-Dichloropropene	0.04	0.0341	85.3	0.04	0.0381	95.2	11	20	85.7-118	L4
Trichloroethylene	0.04	0.0355	88.7	0.04	0.0387	96.7	8.6	20	84-118	
Trichlorofluoromethane	0.04	0.0348	87	0.04	0.0373	93.1	6.9	20	78.4-120	
Vinyl Chloride	0.04	0.0322	80.6	0.04	0.0345	86.3	6.8	20	73.5-121	
Xylenes	0.12	0.105	87.2	0.12	0.116	96.5	10.3	20	85.1-115	

QC Type: MS and MSD											
QC Sample ID: 24083438.01											
Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
1,1,1,2-Tetrachloroethane	BRL	0.04	0.0412	103						72-139	
1,1,1-Trichloroethane	BRL	0.04	0.0395	98.7						70.6-135	
1,1,2,2-Tetrachloroethane	BRL	0.04	0.0413	103						55-149	
1,1,2-Trichloroethane	BRL	0.04	0.0388	97.1						68-139	
1,1-Dichloroethane	BRL	0.04	0.0374	93.5						78-134	
1,1-Dichloroethylene	BRL	0.04	0.0382	95.6						65-141	
1,1-Dichloropropene	BRL	0.04	0.0383	95.8						79-136	
1,2,3-trichlorobenzene	BRL	0.04	0.0367	91.7						54-144	
1,2,3-Trichloropropane	BRL	0.04	0.0386	96.6						58-156	
1,2,4-Trichlorobenzene	BRL	0.04	0.0379	94.7						69-127	
1,2,4-Trimethylbenzene	BRL	0.04	0.0373	93.2						80-131	
1,2-Dibromo-3-chloropropane	BRL	0.04	0.0379	94.7						61-145	
1,2-Dibromoethane	BRL	0.04	0.0406	101						68-140	
1,2-Dichlorobenzene	BRL	0.04	0.0382	95.4						70-138	
1,2-Dichloroethane	BRL	0.04	0.0379	94.7						67-152	
1,2-Dichloropropane	BRL	0.04	0.0396	99.1						79-135	
1,3,5-Trimethylbenzene	BRL	0.04	0.0375	93.8						79-133	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Volatile Organic Compounds

Method : SW-846 8260C

Reporting Units : mg/L

QC Batch ID : Qb240905113 **Created Date :** 09/05/24

Created By : PNaidu

Samples in This QC Batch : 24090063.05,06

QC Type: MS and MSD											
QC Sample ID: 24083438.01											
Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
1,3-Dichlorobenzene	BRL	0.04	0.0383	95.7						79-128	
1,3-Dichloropropane	BRL	0.04	0.0383	95.8						70-147	
1,4-Dichlorobenzene	BRL	0.04	0.0373	93.3						76-127	
1,4-Dioxane	BRL	1.28	1.36	106						70-125	
2,2-Dichloropropane	BRL	0.04	0.0373	93.3						60-129	
2-Chlorotoluene	BRL	0.04	0.0375	93.7						83-130	
4-Chlorotoluene	BRL	0.04	0.0367	91.7						82-129	
4-Isopropyltoluene	BRL	0.04	0.0370	92.5						78-129	
Benzene	BRL	0.04	0.0384	96						73-129	
Bromobenzene	BRL	0.04	0.0387	96.7						76-132	
Bromochloromethane	BRL	0.04	0.0389	97.3						76-135	
Bromodichloromethane	BRL	0.04	0.0394	98.4						80-136	
Bromoform	BRL	0.04	0.0417	104						65-139	
Bromomethane	BRL	0.04	0.0363	90.8						65-150	
Carbon disulfide	0.0646	0.04	0.0902	64.1						70-125	M2
Carbon tetrachloride	BRL	0.04	0.0422	105						70-136	
Chlorobenzene	BRL	0.04	0.0401	100						69-123	
Chloroethane	BRL	0.04	0.0406	101						74-145	
Chloroform	BRL	0.04	0.0400	99.9						41.8-164	
Chloromethane	BRL	0.04	0.0396	99						42.2-160	
cis-1,2-Dichloroethylene	BRL	0.04	0.0376	94.1						71-134	
cis-1,3-Dichloropropene	BRL	0.04	0.0383	95.7						74-128	
Dibromochloromethane	BRL	0.04	0.0408	102						67-141	
Dibromomethane	BRL	0.04	0.0403	101						63.1-135	
Dichlorodifluoromethane	BRL	0.04	0.0344	85.9						62-146	
Ethylbenzene	BRL	0.04	0.0409	102						80-132	
Hexachlorobutadiene	BRL	0.04	0.0396	98.9						70-130	
Isopropylbenzene	BRL	0.04	0.0412	103						78-137	
m- & p-Xylenes	BRL	0.08	0.0812	102						74-127	
MEK	0.0250	0.04	0.0654	101						52-148	
Methylene chloride	BRL	0.04	0.0390	97.4						68-131	
MTBE	BRL	0.04	0.0389	97.2						70-130	
Naphthalene	BRL	0.04	0.0368	92						61-116	
n-Butylbenzene	BRL	0.04	0.0364	91						73-140	
n-Propylbenzene	BRL	0.04	0.0376	93.9						75-127	
o-Xylene	BRL	0.04	0.0406	102						74-126	
sec-Butylbenzene	BRL	0.04	0.0372	93						75-129	
Styrene	BRL	0.04	0.0397	99.2						77-123	
t-butylbenzene	BRL	0.04	0.0390	97.6						75-126	
Tetrachloroethylene	BRL	0.04	0.0375	93.8						27.6-194	

ab-q213-0321

Refer to the Definition page for terms.

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Volatile Organic Compounds

Method : SW-846 8260C

Reporting Units : mg/L

QC Batch ID : Qb240905113 **Created Date :** 09/05/24

Created By : PNaidu

Samples in This QC Batch : 24090063.05,06

QC Type: MS and MSD											
QC Sample ID: 24083438.01											
Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
Toluene	BRL	0.04	0.0389	97.2						72-121	
trans-1,2-Dichloroethylene	BRL	0.04	0.0377	94.3						73-138	
trans-1,3-Dichloropropene	BRL	0.04	0.0382	95.5						66-131	
Trichloroethylene	BRL	0.04	0.0394	98.4						70-130	
Trichlorofluoromethane	BRL	0.04	0.0401	100						67-148	
Vinyl Chloride	BRL	0.04	0.0366	91.6						59.4-140	
Xylenes	BRL	0.12	0.122	102						73-127	

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Total Metals - Mercury **Method :** SW-846 7470A **Reporting Units :** mg/L

QC Batch ID : Qb240905128 **Created Date :** 09/05/24 **Created By :** MSenarath

Samples in This QC Batch : 24090063.05,06

Digestion : PB24090530 **Prep Method :** SW-846 7470A **Prep Date :** 09/05/24 08:00 **Prep By :** MSenarath

QC Type: Method Blank									
Parameter	CAS #	Result	Units	D.F.	MQL	MDL			Qual
Mercury	7439-97-6T	< MDL	mg/L	1	0.0002	0.00006			

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Mercury	0.005	0.00449	89.8	0.005	0.00549	110	20	20	80-120	

QC Type: MS and MSD											
QC Sample ID: 24090063.05											
Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
Mercury	0.000550	0.005	0.00539	96.8						82-115	

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Total Metals - Mercury **Method :** SW-846 7471B **Reporting Units :** mg/Kg

QC Batch ID : Qb240905131 **Created Date :** 09/05/24 **Created By :** MSenarath

Samples in This QC Batch : 24090063.02,03,04

Digestion : PB24090534 **Prep Method :** SW-846 7471B **Prep Date :** 09/05/24 11:45 **Prep By :** MSenarath

QC Type: Method Blank

Parameter	CAS #	Result	Units	D.F.	MQL	MDL	Qual
Mercury	7439-97-6T	< MDL	mg/Kg	1	0.004	0.00141	

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Mercury	0.1	0.0975	97.5	0.1	0.0934	93.4	4.3	20	80-120	

QC Type: MS and MSD

QC Sample ID: 24090028.01

Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
Mercury	BRL	0.1	0.104	104	0.1	0.104	104	0.7	20	80-120	

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Total Metals - Mercury **Method :** SW-846 7471B **Reporting Units :** mg/Kg

QC Batch ID : Qb240906133 **Created Date :** 09/06/24 **Created By :** MSenarath

Samples in This QC Batch : 24090063.01

Digestion : PB24090650 **Prep Method :** SW-846 7471B **Prep Date :** 09/06/24 11:00 **Prep By :** MSenarath

QC Type: Method Blank

Parameter	CAS #	Result	Units	D.F.	MQL	MDL	Qual
Mercury	7439-97-6T	< MDL	mg/Kg	1	0.004	0.00141	

QC Type: LCS and LCSD

Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Mercury	0.1	0.0873	87.3	0.1	0.0940	94.1	7.4	20	80-120	

QC Type: MS and MSD

QC Sample ID: 24090063.01

Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual
Mercury	BRL	0.1	0.109	109	0.1	0.108	108	0.7	20	80-120	

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Metals by ICP/MS **Method :** SW-846 6020B **Reporting Units :** mg/Kg

QC Batch ID : Qb240906134 **Created Date :** 09/06/24 **Created By :** YWZhang

Samples in This QC Batch : 24090063.01,02,03,04

Digestion : PB24090659 **Prep Method :** SW-846 3050B **Prep Date :** 09/06/24 09:40 **Prep By :** JYou

QC Type: Method Blank								
Parameter	CAS #	Result	Units	D.F.	MQL	MDL		Qual
Arsenic	7440-38-2T	< MDL	mg/Kg	1	0.125	0.05162		
Barium	7440-39-3T	< MDL	mg/Kg	1	0.25	0.17493		
Cadmium	7440-43-9	< MDL	mg/Kg	1	0.125	0.07806		
Chromium	7440-47-3T	< MDL	mg/Kg	1	0.125	0.03517		
Lead	7439-92-1T	< MDL	mg/Kg	1	0.125	0.02873		
Selenium	7782-49-2	< MDL	mg/Kg	1	0.5	0.402		
Silver	7440-22-4	< MDL	mg/Kg	1	0.125	0.08032		

QC Type: Duplicate						
QC Sample ID: 24090063.01						
Parameter	QCSample Result	Sample Result	Units	RPD	RPD CtrlLimit	Qual
Arsenic	0.927	0.936	mg/Kg	1	20	
Barium	33.6	33.4	mg/Kg	0.6	20	
Cadmium	BRL	BRL	mg/Kg	0	20	
Chromium	7.59	7.66	mg/Kg	0.9	20	
Lead	4.79	4.83	mg/Kg	0.9	20	
Selenium	0.578	0.604	mg/Kg	4.4	20	
Silver	BRL	BRL	mg/Kg	0	20	

QC Type: LCS and LCSD										
Parameter	LCS Spk Added	LCS Result	LCS % Rec	LCSD Spk Added	LCSD Result	LCSD % Rec	RPD	RPD CtrlLimit	%Recovery CtrlLimit	Qual
Arsenic	25	26.2	105	25	26.0	104	0.7	20	80-120	
Barium	25	26.3	105	25	26.2	105	0.2	20	80-120	
Cadmium	25	26.9	107	25	26.9	108	0.2	20	80-120	
Chromium	25	26.4	106	25	26.2	105	0.8	20	80-120	
Lead	25	26.3	105	25	26.7	107	1.6	20	80-120	
Selenium	25	25.8	103	25	25.9	103	0.2	20	80-120	
Silver	25	27.5	110	25	28.0	112	1.9	20	80-120	

QC Type: MS and MSD											
QC Sample ID: 24090063.01											
Parameter	Sample Result	MS Spk Added	MS Result	MS % Rec	MSD Spk Added	MSD Result	MSD % Rec	RPD	RPD CtrlLimit	%Rec CtrlLimit	Qual

QUALITY CONTROL CERTIFICATE



Job ID : 24090063

Date : 9/6/2024

Analysis : Corrosivity, pH

Method : SW-846 9045D

Reporting Units : s.u.

QC Batch ID : Qb24090683

Created Date : 09/06/24

Created By : BRose

Samples in This QC Batch : 24090063.01,02,03,04

QC Type: Duplicate

QC Sample ID: 24083304.01

Parameter	QCSample Result	Sample Result	Units	RPD	RPD CtrLimit	Qual
pH	6.2	6.2	s.u.	0	5	

QC Type: LCS and LCSD

Parameter	LCS Assigned	LCS Result	LCSD Assigned	LCSD Result	RPD	RPD CtrLimit	Tolerance	Qual
pH	4.0	4.00					98.75-101.25	

LABORATORY TERM AND QUALIFIER DEFINITION REPORT



Job ID : 24090063

Date: 9/6/2024

General Term Definition

Back-Wt	Back Weight	Post-Wt	Post Weight
BRL	Below Reporting Limit	ppm	parts per million
cfu	colony-forming units	Pre-Wt	Previous Weight
Conc.	Concentration	Q	Qualifier
D.F.	Dilution Factor	RegLimit	Regulatory Limit
Front-Wt	Front Weight	RLU	Relative Light Unit
J	Estimation. Below calibration range but above MDL	RPD	Relative Percent Difference
LCS	Laboratory Check Standard	RptLimit	Reporting Limit
LCSD	Laboratory Check Standard Duplicate	SDL	Sample Detection Limit
LOD	Limit of detection adjusted for %M + DF	SQL	Below calibration range but above MDL
LOQ	Limit of Quantitation adjusted for %M + DF	surr	Surrogate
MS	Matrix Spike	T	Time
MSD	Matrix Spike Duplicate	TNTC	Too numerous to count
MW	Molecular Weight	UQL	Unadjusted Upper Quantitation Limit
MQL	Unadjusted Minimum Quantitation Limit		

Qualifier Definition

D3	Sample dilution required due to insufficient sample.
H	Exceeds recommended hold time between sampling and analysis.
H3	Sample was received and analyzed past holding time.
J	Estimation. Below calibration range but above MDL.
L1	Associated LCS and/or LCSD recovery is above acceptance limits for flagged analyte. Bias may be high.
L2	Associated LCS and/or LCSD recovery is below acceptance limits for flagged analyte. Bias may be low.
L4	Associated LCS and/or LCSD recovery is out of laboratory statistical acceptance limits but within method control limits for flagged parameter.
M1	Matrix Spike and/or Matrix Spike Duplicate recovery is above laboratory control limits due to matrix interference. "The sample randomly selected as QC for this batch was not part of your project. Therefore, this sample matrix is not applicable to your project samples."
M2	Matrix Spike and/or Matrix Spike Duplicate recovery is below laboratory control limits due to matrix interference. "The sample randomly selected as QC for this batch was not part of your project. Therefore, this sample matrix is not applicable to your project samples."
S8	Target compounds caused elevation of baseline. Surrogate may be biased high.
U	Undetected at SDL (Sample Detection Limit).
V1	CCV recovery is above acceptance limits. This target analyte was not detected in the sample.

***Job ID:24090063**



09/03/2024 Phase Engineering, LLC ANA

abiads.com

A&B JOB ID #

5. Project # 202408109

6. Project Name/Location

11685 Arrowwood Circle Houston, TX 77063

7. Reporting Requirement:

TRRP Limits only TRRP Rpt. Package See Attached Standard Level II PST MDL EDD

8. Sampler's Name & Company (PLEASE PRINT)

Sampler's Signature & Date

Jade Mehaffie Phase Engineering

Jade Mehaffie 9/3/24

9. Sample ID and Description

10. Sampling 11. 12. Matrix

LAB USE ONLY	Date	Time 24hr	Comp.	Grab	Matrix										
					Water	Soil	Sludge	Oil	Drinking Water	Air	Other				
01AG	SB-1	5-7'	9/3/24	848	X	X									
02AG	SB-2	3-5'	9/3/24	922	X	X									
03AG	SB-3	3-5'	9/3/24	950	X	X									
04AG	SB-4	1-3'	9/3/24	1022	X	X									

13. No. of Containers	14. Containers*	5035	5035	402	402	402			
	15. Preservatives**	C	C	C	C	C			
	16. PH-Lab Only								
17. Analyses/Methods	<u>VOAs / 50260 (Soil)</u> <u>TRH / TX100S (Soil)</u> <u>BPAA metals / 6022 TX77 (Soil)</u> <u>SVOCs (Soil)</u> <u>% Moisture (Soil)</u>								
18. REMARKS									

19. RELINQUISHED BY

DATE

TIME

20. RECEIVED BY

DATE

TIME

21. KNOWN HAZARDS/COMMENTS

1 Jade Mehaffie

9/3/24

1200

Mary Cofz

9/3/24

1200

Temperature: 1.2 °C

Thermometer ID 127

Intact: 0 of N Initials MC

*Containers: VOA - 40 ml vial
4 oz/8 oz - glass wide mouth

A/G - Amber/Glass 1 Liter
P/O - Plastic/other

**Preservatives: C - Cool H - HCl N - HNO₃ S - H₂SO₄
OH - NaOH T - NA₂S₂O₃ X - Other

METHOD OF SHIPMENT

BILL OF LADING/TRACKING #

LAB USE ONLY SAMPLING _____ RENTAL _____ P/U _____ Supplies _____ Field Work _____

A&B cannot accept verbal changes
Please FAX written changes to 713-453-6091

Samples will be disposed of after 30 days
A&B reserves the right to return samples



10100 East Fwy (I-10)
Suite 100
Houston, TX 77029
713-453-6060
1-877-478-6060 Toll Free
713-453-6091 Fax
ablabs.com

A&B JOB ID #

5. Project # 202408109

6. Project Name/Location
11605 Arrowwood Circle Houston, TX 77063

7. Reporting Requirement:
 TRRP Limits only TRRP Rpt. Package See Attached Standard Level II PST MDL EDD

8. Sampler's Name & Company (PLEASE PRINT) Jade Mehaffie Phase Engineering
Sampler's Signature & Date Jade Mehaffie 9/3/24

LAB USE ONLY	9. Sample ID and Description	10. Sampling		11. 12. Matrix												
		Date	Time 24hr	Comp.	Grab	Water	Soil	Sludge	Oil	Drinking Water	Air	Other				
<u>OSAH</u>	<u>TMW-1</u>	<u>9/3/24</u>	<u>1035</u>			<u>X</u>										
<u>OLAH</u>	<u>TMW-2</u>	<u>9/3/24</u>	<u>1052</u>			<u>X</u>										

2. INVOICE TO:
Company: Same as report to
Address:
Contact: Claudia Pedrosa
Phone:
Fax:
E-mail: claudia@phaseengineering.com

3. PO #
3a. A&B Quote #
4. Turnaround Time (Business Days)
 1 Day* Other:
 2 Days*
 3 Days* 7 Days - Standard
*Surcharge applies

No. of Containers	13. 14. Containers*				15. Preservatives**				16. PH-Lab Only				17. 18. REMARKS
	S635	S675	Q16	Q16	C	C	C	C					
	17. <u>Analyses/Methods</u> <u>VOCS / 8260 (water)</u> <u>TPH / TX 1005 (water)</u> <u>PCAA metals (water)</u> <u>SVOCs (water)</u>												

19. RELINQUISHED BY		DATE	TIME	20. RECEIVED BY		DATE	TIME
1	<u>Jade Mehaffie</u>	<u>9/3/24</u>	<u>1200</u>	<u>Muey Clog</u>	<u>9/3/24</u>	<u>1200</u>	
2							
3							

21. KNOWN HAZARDS/COMMENTS
Temperature: 1.2 °C
Thermometer ID 127
Intact: Y or N Initials mc
A&B cannot accept verbal changes
Please FAX written changes to 713-453-6091
Samples will be disposed of after 30 days
A&B reserves the right to return samples

*Containers: VOA - 40 ml vial 4 oz/8 oz - glass wide mouth
A/G - Amber/Glass 1 Liter
P/O - Plastic/other
**Preservatives: C - Cool H - HCl N - HNO₃ S - H₂SO₄
OH - NaOH T - NA₂S₂O₃ X - Other
METHOD OF SHIPMENT BILL OF LADING/TRACKING #
LAB USE ONLY SAMPLING RENTAL P/U Supplies Field Work



Sample Condition Checklist

A&B JobID : 24090063	Date Received : 09/03/2024	Time Received : 12:00PM																						
Client Name : Phase Engineering, LLC																								
Temperature : 1.2°C	Sample pH : <2 Metals																							
Thermometer ID : IR7	pH Paper ID : 206524																							
Perservative :	Lot# :																							
	Check Points	Yes No N/A																						
1.	Cooler Seal present and signed.	X																						
2.	Sample(s) in a cooler.	X																						
3.	If yes, ice in cooler.	X																						
4.	Sample(s) received with chain-of-custody.	X																						
5.	C-O-C signed and dated.	X																						
6.	Sample(s) received with signed sample custody seal.	X																						
7.	Sample containers arrived intact. (If No comment)	X																						
8.	Matrix: <table style="display: inline-table; border: none; vertical-align: middle;"> <tr> <td style="padding: 0 5px;">Water</td> <td style="padding: 0 5px;">Soil</td> <td style="padding: 0 5px;">Liquid</td> <td style="padding: 0 5px;">Sludge</td> <td style="padding: 0 5px;">Solid</td> <td style="padding: 0 5px;">Cassette</td> <td style="padding: 0 5px;">Tube</td> <td style="padding: 0 5px;">Bulk</td> <td style="padding: 0 5px;">Badge</td> <td style="padding: 0 5px;">Food</td> <td style="padding: 0 5px;">Other</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Water	Soil	Liquid	Sludge	Solid	Cassette	Tube	Bulk	Badge	Food	Other	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Water	Soil	Liquid	Sludge	Solid	Cassette	Tube	Bulk	Badge	Food	Other														
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														
9.	Samples were received in appropriate container(s)	X																						
10.	Sample(s) were received with Proper preservative	X																						
11.	All samples were tagged or labeled.	X																						
12.	Sample ID labels match C-O-C ID's.	X																						
13.	Bottle count on C-O-C matches bottles found.	X																						
14.	Sample volume is sufficient for analyses requested.	X																						
15.	Samples were received with in the hold time.	X																						
16.	VOA vials completely filled.	X																						
17.	Sample accepted.	X																						
18.	Has client been contacted about sub-out	X																						

Comments : Include actions taken to resolve discrepancies/problem:
 SX01-4 = Soil, SX05, 06 = Water. ~MC 09/03/2024. Add pH to all soil samples per client email. -ANA 9/4/24.

Brought by : Client
 Received by : MClotfelter

Check in by/date : MClotfelter / 09/03/2024

ab-s005-1123

APPENDIX V

PHOTO GALLERY



1. View south of SB-1 drilling activities



2. View northwest of SB-2 drilling activities



3. View northeast of SB-3 drilling activities



4. View west of SB-4 drilling activities

APPENDIX VI

AGREEMENT FOR SERVICES

AGREEMENT FOR PROFESSIONAL ENVIRONMENTAL CONSULTING SERVICES

Section 1 – General Terms and Conditions

1.1 Definitions

“Agreement” means this Agreement for Professional Environmental Consulting Services.

“Party” (or collectively, “Parties”) means Phase and Client, unless expressly stated otherwise in this Agreement.

“Phase” means Phase Engineering, LLC

“Engagement Letter” the instrument delivered by Phase to the Parties

“Services” has the meaning set forth in Section 1.2 below.

Any capitalized terms not otherwise defined in this Agreement have the meanings given to them under the Engagement Letter.

1.2 Services

The professional environmental consulting services to be provided by Phase for the Client are set forth in the Engagement Letter, and such services, including subsequent services, changed, altered or additional services are hereinafter called the “Services”.

1.3 Standard of Care

Phase shall perform the services under this agreement with that degree of care, skill and diligence generally accepted as typical of the industry in the performance of such services as contemplated by the Agreement at the time and location such services are rendered. Phase shall employ only competent staff and sub-contractors who will be under the supervision of a senior member of Phase's staff.

1.4 Rights of Entry, Site Information and Utilities

The Client shall provide right of entry for Phase and its subcontractors to carry out the Services, unless specified otherwise in the Engagement Letter. The Client warrants that it has furnished to Phase all information known to, or in possession or control of, the Client relating to the past and existing conditions of the site, including but not limited to soil and geologic data, contaminants, wastes, petroleum products, controlled substances, hazardous materials, and subsurface utilities. The Client shall extend use and reliance of this information to Phase, unless stated otherwise and to the extent permitted by law. Such information shall be and remain confidential as between the Client and Phase and Phase shall not disclose same to any third party unless required by law.

1.5 Safety

1.5.1 Phase maintains a General Health and Safety Plan, a copy of which will be provided to the Client on written request and will fall under Section 1.8 Subsequent Changes of this Agreement unless this service is included in the Engagement Letter.

1.5.2 Phase shall take every precaution reasonable in the circumstances for the protection of the workers providing any of the Services.

When required and prior to any field work being carried out, Phase shall provide the Client with a comprehensive site-specific safety plan for providing the Services. Such request must be made in writing by the Client prior to commencement of the Services by Phase and will fall under Section 1.9 Subsequent Changes of this Agreement unless included in the Engagement Letter.

1.6 Investigations and Reports

1.6.1 Findings: The findings of any investigation undertaken as part of the Services will be based upon information generated as a result of the specific scope of the Services as described in the Engagement Letter.

1.6.2 Restoration: The Client accepts that in the normal course of the Services some damage to existing ground or other surface finishes may occur, the restoration of which shall be the responsibility of the client or as specified in the Engagement Letter.

1.6.3 Investigations: The parties acknowledge and accept that unique risks exist whenever engineering or related disciplines are applied to identify environmental conditions and even a comprehensive sampling and testing program may fail to detect certain conditions. Because of the inherent uncertainties in environmental evaluations, changed or unanticipated conditions may occur or become known subsequent to Phase's investigation that could affect conclusions, recommendations, total Project cost and/or execution. Changes in conditions are subject to amendments to the Scope of Services.

1.6.4 Confidentiality and Reliance: Any Final Report or draft reports and the information contained therein shall be treated as confidential and, unless otherwise agreed to by Phase and the Client, the information, sampling data, analysis, findings, conclusions and recommendations (if any), may be used and relied upon only by the Client, its officers, directors and employees and professional advisors in the performance of their obligations for or on behalf of the Client. Any such use and reliance shall be subject to the limitations set forth in this agreement. In addition, the Client may submit any report to a regulatory authority or lender for the purpose of obtaining financing on a property.

1.6.5 Third Party Reliance: This Agreement and the Services provided are for Consultant and Client's sole benefit and exclusive use with no third party beneficiaries intended. Reliance upon the Services and any work product is limited to Client, and is not intended for third parties. In the event Phase agrees, in its sole and absolute discretion, to make the Report available to a third party not mentioned in Paragraph 1.6.4, the Third Party shall be required to obtain the original Client's release, sign Phase's standard Authorized User Agreement (AUA) and pay Phase a fee of not less than \$350.00. Any such use shall be subject to the terms, conditions and limitations set forth in this Agreement, the Report and the AUA.

1.7 Ownership of Records/Reports:

All documents or records created or prepared by Phase in the performance of the Services are considered Phase's professional work product and shall remain the copyright property of Phase, subject to any reasonable disclosure request from the Client as may be necessary and for which reasonable reimbursement for copies is provided.

1.8 Disposal and Samples

1.8.1 Disposal of all wastes generated from the subject property shall be the responsibility of the Client.

1.8.2 Phase shall be responsible for appropriate disposal of sample material and sample residuals after 30 days following submission of the FinalReport unless the Client specifically requests otherwise.

1.9 Subsequent Changes

With the consent of Phase, the Client may in writing at any time after the execution of this Agreement or the commencement of the Services delete, extend, increase, vary or otherwise alter the Services. The Parties further agree that such changes shall alter the Services, schedule and/or the costs. Any such changes shall be made in writing with reference to this Agreement, and accepted in writing by both Parties.

1.10 Delays

Neither Party shall be liable or penalized for delays or failure to perform its Services if the same is caused directly or indirectly by circumstances beyond a Party's reasonable control. The Client shall not hold Phase responsible for damages or delays in performance caused by the Client, acts of God, acts and/or omissions of governmental authorities and regulatory agencies or other events which are beyond the reasonable control of the Parties.

1.11 Payment

- 1.11.1 Phase shall invoice the Client in accordance with the provisions set forth in the Engagement Letter. Except as stated in the Engagement Letter, the Client shall pay to Phase at its corporate office each invoice within 30 days of the date of the invoice without holdback. Interest at a rate of 10% per year or the maximum rate allowed by law, whichever is lower, may be charged on all overdue amounts.
- 1.11.2 In the event of a disputed billing, only the disputed portion will be withheld from payment, and the undisputed portion will be paid. The Client shall exercise reasonableness in disputing any bill or portion thereof. No interest will accrue on any disputed portion of the billing until mutually resolved.
- 1.11.3 If the Client fails to make payment of any sum due hereunder within a reasonable time period, Client acknowledges and agrees that the subject Invoice will be referred to legal collections, and any amount in aggregate less than Ten Thousand Dollars U.S. (\$10,000) will be referred to small claims court in Harris County, Texas.

1.12 Suspension or Termination

The Client may at any time by notice in writing to Phase, suspend or terminate the Services or any portion thereof at any stage of the Project. Upon receipt of such written notice by the Client, Phase shall perform no further Services other than those reasonably necessary to close out its Services. In such an event, Phase shall invoice the Client for the portion of the Services completed and shall be entitled to payment in accordance with Section 1.9. Once the Services are completed the Client assumes the risk of Frustration of Purpose.

1.13 Insurance

- 1.13.1 Phase agrees to carry and maintain the following **minimum** insurance coverages for the term of this Agreement:
 - Worker's Compensation Insurance: Statutory requirement amounts
 - Commercial General Liability: \$1,000,000 per occurrence
 - Automobile Liability Insurance: \$1,000,000 per occurrence for both owned and non-owned vehicles
 - Umbrella Liability (including Professional Liability and Contractors Professional Insurance): \$10,000,000 aggregate
- 1.13.2 Phase's current Certificate of Insurance is provided with the Engagement Letter. If the Client requests to be a named as a certificate holder,
 - this request must be made in writing to Phase prior to commencement of the Services.
- 1.13.3 Phase will renew the Professional Liability Insurance at or above the minimum coverage for period of two (2) years after completion of the Services.
- 1.13.4 If the Client requests that Phase increase the amount of insurance coverage or obtain other special insurance for the Project, Phase shall endeavor forthwith to obtain such increased or special insurance at the Client's expense.
- 1.13.5 Each of Phase and Client waive all claims, losses, damages and rights of recovery against the other to extent of the limits of coverage under any commercial general liability or property insurance policy actually obtained by a Party to this Agreement (or, in the case of Phase, to the extent obtained or required to be obtained by Phase under this Agreement). In addition, each Party shall exercise commercially reasonable efforts to cause to waive subrogation under its commercial general liability and property insurance policies and provide any necessary endorsements thereto.

1.14 Indemnity/Statute of Limitations.

EACH OF Phase AND CLIENT SHALL INDEMNIFY AND HOLD HARMLESS THE OTHER AND THEIR RESPECTIVE AGENTS, EMPLOYEES, SUCCESSORS AND ASSIGNS FROM AND AGAINST LEGAL LIABILITY FOR CLAIMS, LOSSES, DAMAGES, AND EXPENSES TO THE EXTENT SUCH CLAIMS, LOSSES, DAMAGES, OR EXPENSES ARE LEGALLY DETERMINED TO BE CAUSED BY THEIR NEGLIGENT ACTS, ERRORS, OR OMISSIONS. IN THE EVENT SUCH CLAIMS, LOSSES, DAMAGES, OR EXPENSES ARE LEGALLY DETERMINED TO BE CAUSED BY THE JOINT OR CONCURRENT NEGLIGENCE OF Phase AND CLIENT, THE PARTIES SHALL BEAR LIABILITY IN PROPORTION TO ITS OWN NEGLIGENCE UNDER COMPARATIVE FAULT PRINCIPLES. NEITHER PARTY SHALL HAVE A DUTY TO DEFEND THE OTHER PARTY, AND NO DUTY TO DEFEND IS HEREBY CREATED BY THIS INDEMNITY PROVISION AND SUCH DUTY IS EXPLICITLY WAIVED UNDER THIS AGREEMENT. CAUSES OF ACTION ARISING OUT OF Phase's SERVICES OR THIS AGREEMENT, REGARDLESS OF CAUSE OR THE THEORY OF LIABILITY, INCLUDING NEGLIGENCE, INDEMNITY OR OTHER RECOVERY, SHALL BE DEEMED TO HAVE ACCRUED AND THE APPLICABLE STATUTE OF LIMITATIONS SHALL COMMENCE TO RUN NO LATER THAN THE DATE OF Phase's SUBSTANTIAL COMPLETION OF SERVICES ON THE PROJECT.

1.15 Limitation of Liability.

- 1.15.1 Notwithstanding any other provisions contained herein, it is understood and agreed that Phase's liability to the Client for all claims arising out of this Agreement, or in any way relating to the Services, will be limited to direct damages and/or to the specific performance of any Services not meeting the Standard of Care set forth herein and such liability will, in the aggregate, not exceed the sum of the coverages shown on Phase's Certificate of Insurance in effect at the time of the claim.
- 1.15.2 No claim may be brought against Phase more than Two (2) years after the Services were completed under this Agreement, or as negotiated between Phase and the Client.

1.15.3. TO THE FULLEST EXTENT PERMITTED BY LAW, THE TOTAL AGGREGATE LIABILITY OF Phase (AND ITS DIRECTORS, EMPLOYEES, AGENTS AND AFFILIATES) TO CLIENT AND THIRD PARTIES GRANTED RELIANCE IS LIMITED TO THE GREATER OF \$50,000 OR Phase's FEE FOR ANY AND ALL INJURIES, DAMAGES, CLAIMS, LOSSES, OR EXPENSES (INCLUDING ATTORNEY AND EXPERT FEES) ARISING OUT OF Phase's SERVICES OR THIS AGREEMENT. THIS LIMITATION SHALL APPLY REGARDLESS OF AVAILABLE PROFESSIONAL LIABILITY INSURANCE COVERAGE, CAUSE OR THE THEORY OF LIABILITY, INCLUDING NEGLIGENCE, INDEMNITY, OR OTHER RECOVERY; PROVIDED, HOWEVER, THAT THIS LIMITATION SHALL NOT APPLY TO THE EXTENT OF ANY AVAILABLE COVERAGE UNDER Phase's COMMERCIAL GENERAL LIABILITY POLICY.

1.16 Consequential Damages.

EXCEPT AS EXPRESSLY PROVIDED IN THIS AGREEMENT, NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR LOSS OF PROFITS OR REVENUE, LOSS OF USE OR OPPORTUNITY, LOSS OF GOOD WILL, COST OF SUBSTITUTE FACILITIES, GOODS, OR SERVICES, COST OF CAPITAL, OR FOR ANY SPECIAL, CONSEQUENTIAL, INDIRECT, PUNITIVE, OR EXEMPLARY DAMAGES.

1.17 Regulatory Reporting Requirements

Client recognizes that hazardous substances or contaminants may be discovered at the subject property in the course of provision of the Services by Phase under conditions that may be reportable to Federal or State environmental regulatory agencies. The "duty to report" is ultimately the responsibility of the landowner unless the condition represents an acute threat to human health or the environment. Phase will notify the Client of any such reportable condition. The Client will notify the Landowner, or under mutual agreement, authorize Phase to perform such notification to the landowner.

Section 2 – MISCELLANEOUS PROVISIONS

2.1 Notices:

All notices under this Agreement shall be in writing. It shall be sufficient in all respects if the Notice is delivered by hand, sent by any electronic means, including email or facsimile transmission, with confirmation ("Transmission") during normal business hours, or sent by registered mail, postage prepaid, addressed to the Parties shown on the Engagement Letter or to such other address as either Party shall designate by written notice to the other Party. Any notice so given shall be deemed to have been given and to have been received on the day of delivery, if so delivered, on the third Business Day (excluding each day during which there exists any interruption of postal services due to strike, lockout or other cause) following the mailing thereof, if so mailed, and on the day that notice was sent by Transmission, provided such day is a Business Day (a Business Day being any day of the week save and except for Saturday and Sunday) and if not, on the first Business Day thereafter.

2.2 Entire Agreement, Modifications, Headings, Severability:

The Parties acknowledge that this Agreement and the Engagement Letter constitutes the entire agreement between them and supersedes all prior representations, warranties, agreements, and understandings, oral or written, between the Parties with respect to its subject matter. Unless stated otherwise in this Agreement, this Agreement may not be modified except in writing signed by both Parties. The headings to this Agreement are for convenience and reference purposes only and shall not constitute a part of the Agreement. If any element of this Agreement is later held to violate the law or a regulation, it shall be deemed void, and all remaining provisions shall continue in force.

2.3 Effect:

This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns provided that it may not be assigned by either Party without the consent of the other, which consent shall not be unreasonably withheld.

2.4 Survival:

All representations and obligations (including without limitation the mutual obligations of indemnification) shall survive the termination of this Agreement and expire five (5) years from the date of completion of Services.

2.5 Waiver of Rights:

Any waiver of, or consent to depart from, the requirements of any provision of this Agreement shall be effective only if made in writing and signed by the Party granting such waiver or consent, and is valid only in the specific instance and for the specific purpose for which it has been granted. No failure on the part of any Party to exercise, and no delay in exercising, any right under this Agreement shall operate as a waiver of such right. No single or partial exercise of any such right shall preclude any other or further exercise of such right or the exercise of any other right.

2.6 Applicable Law:

This Agreement shall be governed by, and interpreted and enforced in accordance with, the laws in the State of Texas and the laws of The United States of America, as applicable.

2.7 Dispute Resolution:

Excepting Section 1.11 for the purpose of this Agreement, any disagreement arising between the Parties to this Agreement with reference to the interpretation of this Agreement or any matter arising hereunder and upon which the Parties cannot agree shall be referred to mediation. Reference to mediation shall be to a single mediator and in accordance with the laws of mediation in the State of Texas. The costs of the mediator shall be shared equally by the Parties on an interim basis as may be necessary provided however that the mediator shall have the discretion to award costs of the proceeding, including costs of the mediator. The venue for such mediation is agreed to be Harris County, Texas

2.8 Contract Documents:

The Contract Documents consist of the documents listed. If there is a conflict with the Contract Documents, the conflicting terms will be governed in the order of priority set forth as follows: 1. Agreement 2. Engagement Letter