



FINAL IMPORT MATERIAL CHARACTERIZATION REPORT

WHITMARSH LANDFILL REMEDIATION
ANACORTES, WASHINGTON
PROJECT US0041081.0037

Prepared for:

SKAGIT COUNTY

1800 Continental Place, Mount Vernon, Washington 98273

APRIL 30, 2025



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Prepared for:

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/kg	microgram per kilogram
COC	chemical of concern
dw	dry weight
Ecology	Washington Department of Ecology
Granite	Granite Construction
Miles	Miles Sand and Gravel
ng/kg	nanograms per kilogram
PQL	practical quantitation limit
TEQ	toxic equivalent quotient
TOC	total organic carbon
Work Plan	Import Material Characterization Work Plan
WSP	WSP USA Inc.

1 INTRODUCTION

WSP USA Inc. (WSP) prepared this report on behalf of Skagit County for the Whitmarsh Landfill Remediation project. The Washington Department of Ecology (Ecology) requested that some of the fill types be tested for chemicals of concern (COCs) prior to placement at the site. To reduce the time burden on the selected construction contractor, Skagit County requested identification and characterization of potential sources of fill prior to contractor selection. The goal of this work is to identify Ecology preapproved sources of fill that the construction contractor can use at the landfill without causing potential delays.

Construction of the remedial action will require the import of fill material for cap construction. Import material includes the following Washington Department of Transportation fill types:

- Sand-Backfill for Sand Drains;
- Crushed Rock-Select borrow, Crushed Surfacing Top Course, Ballast Surfacing Area;
- Cover Soil-Common borrow, Option 2;
- Topsoil-Type A topsoil (topsoil); and
- Compost

Ecology stipulated that crushed rock did not need to be characterized chemically due to its grain size; however, other material does need to be characterized for COCs. Ecology also stipulated that topsoil and compost cannot be derived from municipal recycling but must come from a “virgin” source. The topsoil, compost, and sand that will be placed below the high tide line (sand) must meet the chemical criteria identified in Table 1 for marine cleanup levels; once approved, the source will not need to be tested again. The cover soil placed above the high tide line must meet the Model Toxics Control Act Method A cleanup levels for Unrestricted Use, also shown in Table 1, and will need to be tested just prior to its import. WSP proposed to identify and characterize several sources of cover soil to make sure acceptable sources will be available; then during construction the actual material will be tested for verification.

In August 2024, Skagit County submitted to Ecology the Import Material Characterization Work Plan (Work Plan) (WSP 2024) for review and approval. Ecology approved the plan on August 27, 2024.

2 SAMPLE COLLECTION/ANALYSIS

The sampling procedure followed the process identified in the Work Plan. Three composite samples were collected from each potential source for chemical analysis. Each composite sample comprised five, equal-volume discrete samples. No two discrete samples were collected from the same location. Field staff collected samples using pre-cleaned stainless-steel spoons dedicated to each composite sample. To ensure an equal volume of material was collected for each discrete sample, the material was placed in a 15-ounce pre-cleaned measuring cup and put into a pre-cleaned stainless-steel bowl to homogenize the sample. Samples were placed on ice and transported or shipped to the laboratory under chain of custody protocols. Samples collected for chemical analysis were delivered to Analytical Resources, LLC, for chemical analysis.

Additionally, two 1-gallon composite samples were collected for soil health or geotechnical parameters testing. The 1-gallon compost samples comprised five equal-volume subsamples collected at discrete locations. Samples collected for soil health and geotechnical parameters testing were delivered to Materials Testing and Consulting, Inc. in Burlington, Washington, and the samples collected for soil health testing were shipped to SoilTest Farm Consultants, Inc. in Moses Lake, Washington, under chain of custody protocols. The summary of all the laboratory testing are presented on Tables 1 through 3. The laboratory test reports are included in Appendix A.

Each sample collected was analyzed for the Sediment Management Standards, Marine Sediment Cleanup Objectives COCs (as defined in Washington Administrative Code 173-204-562) or other criteria, as shown in Table 1. In addition, the laboratories analyzed selected samples for dioxins/furans and total petroleum hydrocarbons, as requested by Ecology. Nonionizable organic Marine Sediment COC concentrations are carbon normalized for

comparison to the Sediment Cleanup Objectives when the total organic carbon (TOC) in sediment is in the range of 0.5 to 3.5 percent. Outside of this TOC range, carbon normalization of the nonionizable COCs may not be appropriate. All TOC concentrations in sediment were less than 0.5 percent or greater than 3.5 percent (see Table 1); therefore, the dry-weight (dw) concentrations were used for all criteria comparisons (see Table 1).

The suitability of fill material is based on the following:

1. The lowest risk-based concentration (i.e., concentrations protective of benthic invertebrates, upper-trophic-level species, and human health).
2. Natural background.
3. Practical quantitation limit (PQL) values (shown in Table 1).

Site-specific, risk-based concentrations that are protective of human health or the health of upper-trophic-level species have not been developed for this site; therefore, the fill material criterion for bioaccumulative contaminants will default to the highest of (1) natural background or (2) PQL.

2.1 BACKFILL FOR SAND DRAINS/COMMON BORROW

WSP identified two vendors for the backfill for sand drains (sand) and common borrow (cover soil): Granite Construction (Granite) in Conway, Washington, and Miles Sand and Gravel (Miles) in Oak Harbor, Washington. Neither Granite nor Miles had the backfill drain sand at their facilities. Both vendors indicated that the backfill for sand drains derives from the same pits and material as the cover soil, except that it is sieved to provide the required grain-size distribution for the backfill for sand drains. Therefore, only the common borrow was analyzed and was assumed to represent the sand that would be sieved from the cover soil material. Analysis of the cover soil included all analytes for both the sand and cover soil (Table 1). Cover soil will be tested again by the contractor for the total petroleum hydrocarbons and Resource Conservation and Recovery Act metals prior to import to the site.

The cover soil was also tested for the geotechnical properties as shown in Table 3.

2.2 TYPE A TOPSOIL AND COMPOST

To reduce the potential of contaminants being present in topsoil or compost above concentrations of concern, Ecology required that topsoil and compost must come from a virgin source. A virgin source would be from a feedstock that would not be expected to contain anthropogenically generated chemical contamination (e.g., organic material derived from rural land clearing). Two local vendors were identified that could provide material from these sources: Growsource in Bellingham, Washington and Sunland Bark and Topsoil in Anacortes, Washington. Topsoil and compost samples from each vendor were analyzed for the COCs shown in Table 1. Topsoil was also tested by an agronomy laboratory, as shown in Table 2, to determine the suitability of the material for supporting plant growth.

3 QUALITY ASSURANCE/QUALITY CONTROL

An independent validator, Ms. Cari Sayler of Sayler Data Solutions, conducted a data quality review. The validation process followed the requirements as specified in the Work Plan. Results were evaluated based on criteria from the analytical methods, project documents, and current U.S. Environmental Protection Agency guidance documents. Ms. Saylor performed a stage 4 validation on the dioxin/furan analysis and a stage 2B validation on the remaining analyses. The full data validation report is provided in Appendix B. A summary of the validation is below.

3.1 SEMIVOLATILE ANALYSIS

Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance for most analytes. Estimated qualifiers were assigned based on high or low calibration verification and/or reporting limit standard recoveries. Quality control results demonstrate acceptable levels of accuracy and precision for most analytes, with estimated qualifiers added based on high surrogate or low internal standard recoveries. Semivolatile data are acceptable for use as qualified.

3.2 SEMIVOLATILE SIM ANALYSIS

Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance for most analytes. Estimated qualifiers were assigned based on high or low calibration verification recoveries. Quality control results demonstrate acceptable levels of accuracy and precision for most analytes, with estimated qualifiers added based on low matrix spike and low internal standard recoveries. Additional qualifiers were assigned based on laboratory blank contamination. Semivolatile SIM data are acceptable for use as qualified.

3.3 POLYCHLORINATED BIPHENYL ANALYSIS

Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance. Quality control results demonstrate acceptable levels of accuracy and precision. Polychlorinated biphenyl data are acceptable for use as reported.

3.4 GASOLINE RANGE HYDROCARBON ANALYSIS

Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance. Quality control results demonstrate acceptable levels of accuracy and precision. Gas data are acceptable for use as reported.

3.5 DIESEL RANGE HYDROCARBON ANALYSIS

Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance. Quality control results demonstrate acceptable levels of accuracy and precision. Diesel data are acceptable for use as reported.

3.6 DIOXIN/FURAN ANALYSIS

Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance for most analytes. Quality control results demonstrate acceptable levels of accuracy and precision for most analytes. Qualifiers were added for a high calibration verification recovery, lab blank contamination, and lab duplicate variability. Additional qualifiers were added based on chlorinated diphenyl ether interferences and EPA Region 10 guidelines on treatment of EMPCs. Dioxin/furan data are acceptable for use as qualified.

3.7 ICPMS METALS ANALYSIS

Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance. Laboratory quality control results demonstrate acceptable levels of accuracy and precision for most analytes. Qualifiers were added to arsenic and lead results for high lab duplicate variability. ICPMS metals data are acceptable for use as qualified.

3.8 MERCURY ANALYSIS

Documentation was found to be clear and complete. Instrument banks showed instrument drift at levels allowed by the method, however seven low concentration results and all non-detect results were qualified as estimated. Remaining calibration results demonstrate acceptable instrument performance. Laboratory quality control results demonstrate acceptable levels of accuracy and precision. Mercury data are acceptable for use as qualified.

3.9 TOTAL ORGANIC CARBON ANALYSIS

Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance. Some analysis dates did not meet the Quality Assurance Project Plan's target holding times, and replicate analysis indicated variability. All sample results were qualified as estimated. TOC data are acceptable for use as qualified.

4 RESULTS

This section presents the results of the analysis of samples collected from potential import material sources. The results of the chemical analysis are presented in Table 1.

4.1 BACKFILL FOR SAND DRAINS/COMMON BORROW

There were no detected exceedances of the screening criteria for the backfill for sand drains/common borrow material from either of the sources tested. Around 89 percent of the chemical analytes were not detected in the sand/common borrow material.

4.2 TYPE A TOPSOIL

There were no detected exceedances of the screening criteria for the topsoil from Growsource; about 81 percent of the chemical analytes were not detected.

About 75 percent of the chemical analytes were not detected in topsoil from Sunland Bark and Topsoil; however, in one of the three samples collected from the topsoil stockpile, the dioxin/furan screening criteria were exceeded. The toxicity equivalent quotient (TEQ) in the sample ranged from 6.50 to 8.46 nanograms per kilogram (ng/kg) TEQ as compared to the screening criteria of 5 ng/kg TEQ. The average of the three samples ranged from 3.35 to 4.71 ng/kg TEQ, which is below the screening criteria. Pyrene exceeded the screening criteria of 5 micrograms per kilogram ($\mu\text{g}/\text{kg}$) dry weight (dw) in all topsoil samples from Sunland Bark and Topsoil (10.3 to 27 $\mu\text{g}/\text{kg}$ dw) with an average of about 21 $\mu\text{g}/\text{kg}$ dw.

4.3 COMPOST

Approximately 81 percent of the screening analytes were not detected in the compost from Growsource; however, one of the three samples collected from the compost stockpile exceeded the screening criterion for pyrene (20.5 µg/kg dw); pyrene was not detected in the other two samples. No other analyte had a detection that exceeded the screening criteria.

Just under 74 percent of the screening analytes were not detected in compost sample from Sunland Bark and Topsoil. One of the three samples had a slight exceedance (0.85 mg/kg dw) of the screening criterion for cadmium (0.8 mg/kg dw). The average of the cadmium concentration in the three samples was 0.49 mg/kg dw, which is well below the screening criterion. Pyrene exceeded the screening criterion (5 µg/kg dw) in all three of the topsoil samples from Sunland Bark and Topsoil; the concentrations ranged from 27.1 to 39.8 µg/kg dw. The average dioxin/furan TEQ for the Sunland Bark and Topsoil samples ranged from 4.98 ng/kg TEQ (less than the screening criterion of 5 ng/kg TEQ) to 6.39 ng/kg TEQ.

5 RECOMMENDATIONS

The sand/common borrow material at both potential supplier's pits had no exceedances of the screening criteria; therefore, both Granite and Miles are acceptable vendors for the sand and cover soil.

There were few exceedances of the screening criteria for the tested topsoil and compost material. The analytes for which there were exceedances of the screening criteria were cadmium, pyrene, and dioxins/furans. The one sample that exceeded the cadmium screening criterion was the compost from Sunland Bark and Topsoil. The exceedance (0.85 mg/kg dw) was just over the criterion (0.8 mg/kg dw); however, the average of the three samples was well under the screening criterion.

Although there were some exceedances of the screening criteria for both pyrene and dioxins/furans, the screening criteria were based on the PQL. The PQLs do not represent a specific environmental or human health risk, and when used as a screening tool, can be overly conservative. For example, the PQL for pyrene is 5 µg/kg dw while the apparent effects threshold is 2,600 µg/kg dw.

Both Growsource and Sunland can be used as a source for the topsoil and compost.

6 REFERENCES

- AMEC Geomatrix, Inc. (AMEC Geomatrix). 2008. *Sediment Investigation Work Plan*. March Point (Whitmarsh Landfill), Anacortes, Washington. Prepared for Skagit County Public Works, Mount Vernon, WA. July.
- Washington Department of Ecology (Ecology). 2021. *Sediment Cleanup User's Manual (SCUM). Guidance for Implementing the Cleanup Provisions of the Sediment Management Standards, Chapter 173-204 WAC*. Prepared by Toxics Cleanup Program, Washington State Department of Ecology, Olympia, Washington. Publication No. 12-09-057. December.
- WSP USA Environment & Infrastructure Inc. (WSP). 2024. Import Material Characterization Work Plan. Whitmarsh Landfill Remediation, Anacortes, Washington. Prepared for Skagit County Public Works, Mount Vernon, Washington. September.

TABLES

Table 1: Chemicals of Concern Concentrations and Screening Criteria
Whitmarsh Landfill Remediation, Anacortes, Washington

Analyte	Screening Criteria	Growsource								Sunland Bark & Topsoil								Granite				Miles Sand & Gravel																					
		Type A Topsoil				Compost				Type A Topsoil				Compost				Common Borrow				Common Borrow																					
		20240911-GS-TAT-XX-1	20240911-GS-TAT-XX-2	20240911-GS-TAT-XX-3	20240911-GS-C-XX-1	20240911-GS-C-XX-2	20240911-SBT-TAT-XX-3	20240911-SBT-TAT-XX-1	20240911-SBT-TAT-XX-2	20240911-SBT-C-XX-1	20240911-SBT-C-XX-2	20240911-SBT-C-XX-3	20240911-Upland Screening Criteria	20240911-G-CB-XX-1	20240911-G-CB-XX-2	20240911-G-CB-XX-3	20240911-MSG-CB-XX-1	20240911-MSG-CB-XX-2	20240911-MSG-CB-XX-3	20240911-MSG-CB-XX-1	20240911-MSG-CB-XX-2	20240911-MSG-CB-XX-3																					
		Marine Sediment Quality Standards	AETs Marine Sediment Cleanup Objective (SCO)	1	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	MTCA Method A	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷																		
Conventional		Percent																																									
Total Organic Carbon		NA		NA		11.6	J	9.58	J	11.8	J	26.6	J	34.3	J	28.6	J	6.62	J	9.15	J	6.76	J	29.7	J	43.4	J	40	J														
Metals		mg/kg dw		mg/kg dw		mg/kg dw																																					
Arsenic		11 ³		11 ³		3.35	J	4.89	J	3.53	J	1.51	J	1.7	J	2.64	J	2.65	J	2.58	J	2.77	J	1.43	J	1.32	J	1.55	J	20	2.67	J	3.43	J	9.48	J	3.78	J	2.5	J	2.39	J	
Cadmium		0.8 ³		0.8 ³		0.18		0.2		0.17		0.13		0.17		0.17		0.13		0.17		0.12		0.31		0.32	0.85		2	0.13		0.09		0.08		0.1		0.08		0.09		J	
Chromium		260 ³		260 ³		14.9	D	16.2	D	13.9	D	9.3		8.9		14.1		22.6	D	19.1	D	24.7	D	10.5		12.1		11.4		2000	196	D	126	D	142	D	19.0	D	20.7	D	19.7	D	
Copper		390 ³		390 ³		32.8		35.7		36.5		35.8		43.5		44.4		21.1		20.9		21		31		30.2		32.6		31.9		29.4		30.9		21.5		25.9					
Lead		21 ³		21 ³		3.2	J	3.71	J	3.26	J	1.37	J	1.56	J	1.89	J	3.59	J	3.63	J	3.91	J	3.11	J	2.84	J	3.05	J	250	2.41	J	1.86	J	2	J	2.94	J	2.67	J	2.19	J	
Mercury		0.2 ³		0.2 ³		0.0666		0.0183	J	0.0256	J	0.0426	UJ	0.0438	UJ	0.0516	UJ	0.0207	J	0.0431		0.0217	J	0.0626	UJ	0.0091	J	0.0389	UJ	2	0.0549		0.0520		0.0458		0.0238	UJ	0.0106	J	0.00649	J	
Silver		6.1		6.1		0.09	J	0.1	J	0.1	J	0.05	J	0.07	J	0.08	J	0.07	J	0.07	J	0.06	J	0.07	J	0.08	J	0.06	J	0.04	J	0.04	J	0.08	J	0.05	J	0.05	J				
Zinc		410		410		82		91.3		84.5		106		128		135		55.5		62.9		60		158		167		219		50.7		36.6		43.4		41.4		37.3		37.7			
Organic and Chlorinated Organic Chemicals		µg/kg dw		µg/kg dw		µg/kg dw																																					
2,4-Dimethylphenol		29		29		20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	19.9	UJ	19.9	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	19.8	UJ	20	UJ								
2-Methylphenol		63		63		5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U						
4-Methylphenol		670		670		17.5		18.1		21.1		12.1		10.7		8.9		31.3		52.5		29.9		112		80		190		5	U	5	U	5	U	5	U	5	U	5	U		
Benzoic acid		650		650		200	UJ	99.9	UJ	99.9	UJ	99.8	UJ	99.9	UJ	99.9	UJ	99.5	U	99.7	U	99.8	UJ	100	UJ	99.8	UJ	99.8	UJ	99.8	UJ	99.2	U	100	UJ	99.9	U	100	U	99.7	U		
Benzyl alcohol		57		57		20	U	20	U	20	U	20	U	20	U	20	U	19.9	U	19.9	U	20	U	20	U	20	U	20	U	19.8	U	20	U	20	U	19.9	U	20	U	19.9	U		
Pentachlorophenol		355 ⁴		355 ⁴		11.7	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	11.4	U																								

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		20240911-GS-TAT-XX-1	20240911-GS-TAT-XX-2	20240911-GS-TAT-XX-3	20240911-GS-C-XX-1	20240911-GS-C-XX-2	20240911-SBT-TAT-XX-1	20240911-SBT-TAT-XX-2	20240911-SBT-TAT-XX-3	20240911-SBT-C-XX-1	20240911-SBT-C-XX-2	20240911-SBT-C-XX-3	Upland Screening Criteria	20240911-G-CB-XX-1	20240911-G-CB-XX-2	20240911-G-CB-XX-3	20240911-MSG-CB-XX-1	20240911-MSG-CB-XX-2	20240911-MSG-CB-XX-3	20240911-MSG-CB-XX-1	20240911-MSG-CB-XX-2	20240911-MSG-CB-XX-3															
		Marine Sediment Quality Standards	AETs Marine Sediment Cleanup Objective (SCO) 1	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	MTCA Method A	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷													
Polycyclic Aromatic Hydrocarbons		mg/kg OC	µg/kg dw	µg/kg dw																																	
Total LPAH		370	5200	120		120		120		120		120		119.4		119.4		120		121.5		126.1		120		120		119.4									
2-Methylnaphthalene		38	670	20	U	20	U	20	U	20	U	20	U	19.9	U	19.9	U	20	U	20	U	20	U	20	U	20	U	19.9	U								
Acenaphthene		16	500	20	U	20	U	20	U	20	U	20	U	19.9	U	19.9	U	20	U	20	U	20	U	20	U	20	U	19.9	U								
Acenaphthylene		66	1300	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	19.9	UJ	19.9	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	19.9	UJ								
Anthracene		220	960	20	U	20	U	20	U	20	U	20	U	19.9	U	19.9	U	20	U	20	U	20	U	20	U	20	U	19.9	U								
Fluorene		23	540	20	U	20	U	20	U	20	U	20	U	19.9	U	19.9	U	20	U	20	U	20	U	20	U	20	U	19.9	U								
Naphthalene		99	2100	20	U	20	U	20	U	20	U	20	U	19.9	U	19.9	U	20	U	20	U	20	U	20	U	20	U	19.9	U								
Phenanthrene		100	1500	20	U	20	U	20	U	20	U	20	U	19.9	U	19.9	U	20	U	21.5	J	26.1	J	20	U	19.8	U	20	U	19.9	U						
Total HPAH		960	12000	184.9		184.9		185		184.9		185		184.9		190.1		194.1		166.4		211.8		227.4		245.9		184.9		183.3		185		185		184.2	
Benz[a]anthracene		110	1300	20	U	20	U	20	U	20	U	20	U	19.9	U	19.9	U	20	UJ	20	UJ	20	UJ	20	U	20	U	20	U	19.9	U						
Benzo[a]pyrene		99	1600	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	19.9	UJ	19.9	UJ	20	UJ	20	UJ	20	UJ	20	U	20	U	20	U	19.9	U						
Benzo[g,h,i]perylene		31	670	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	19.9	UJ	19.9	UJ	20	UJ	20	UJ	20	UJ	20	U	20	U	20	U	20	U	19.9	U				
Chrysene		110	1400	20	U	20	U	20	U	20	U	20	U	19.9	U	19.9	U	20	UJ	20	UJ	20	UJ	20	U	20	U	20	U	19.9	U						
Dibenzo[a,h]anthracene		12	230	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ	5	UJ						
Fluoranthene		67 ⁴	67 ⁴	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	19.4	J	19.7	J	22.8	J	11.7	J	39.8	J	48.2	J	61.2	J	20	UJ	19.8	UJ	20	UJ	20	U	19.9	U
Indeno[1,2,3-c,d]pyrene		34	600	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	19.9	UJ	19.9	U	20	UJ	20	UJ	20	UJ	20	U	20	U	20	U	19.9	U						
Pyrene		5 ⁴	5 ⁴	20	U	20	U	20	U	20	U	20	U	20.5	J	25.4	J	27	J	10.3	J	27.1	J	34.2	J	39.8	J	20	UJ	19.8	UJ	20	UJ	20	UJ	19.9	UJ
Total benzofluoranthenes		230	3200	39.9	UJ	39.9	UJ	40	UJ	39.9	UJ	40	UJ	40	UJ	39.8	UJ	39.9	U	39.9	UJ	40	UJ	39.9	UJ	39.9	U	40	U	40	U	39.9	U				
Carcinogenic Polycyclic Aromatic Hydrocarbons (sum TEQ [µg/kg])		21 ³	ng/kg TEQ																						ng/kg dw												
ND=1/2 U			10.6		10.6		10.6		10.6		10.6		10.6		10.6		10.6		10.6		10.6		10.6		10.6		10.6		10.6		10.6						
Dioxins/Furans		5 ⁵	ng/kg TEQ																						ng/kg dw												
Dioxin/Furans Congeners (sum of TEQ [ng/kg])			1.05		1.63		1.14		1.60		1.31		1.17		2.81		8.46		2.86		6.51		5.42		7.23												
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC)			0.26		0.48		0.42		0.50		0.73		0.40		1.77		7.66		2.14		5.51		4.82		6.77												
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC)																																					

Table 1: Chemicals of Concern Concentrations and Screening Criteria
Whitmarsh Landfill Remediation, Anacortes, Washington

Analyte	Screening Criteria	Growsource						Sunland Bark & Topsoil						Granite			Miles Sand & Gravel					
		Type A Topsoil			Compost			Type A Topsoil			Compost			Common Borrow			Common Borrow					
		20240911-GS-TAT-XX-1	20240911-GS-TAT-XX-2	20240911-GS-TAT-XX-3	20240911-GS-C-XX-1	20240911-GS-C-XX-2	20240911-GS-C-XX-3	20240911-SBT-TAT-XX-1	20240911-SBT-TAT-XX-2	20240911-SBT-TAT-XX-3	20240911-SBT-C-XX-1	20240911-SBT-C-XX-2	20240911-SBT-C-XX-3	Upland Screening Criteria	20240911-G-CB-XX-1	20240911-G-CB-XX-2	20240911-G-CB-XX-3	20240911-MSG-CB-XX-1	20240911-MSG-CB-XX-2	20240911-MSG-CB-XX-3		
		Marine Sediment Quality Standards	AETs Marine Sediment Cleanup Objective (SCO) ¹	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	Value	Q ⁷	MTCA Method A	Value	Q ⁷		
Total Petroleum Hydrocarbons		mg/kg dw										mg/kg dw										
TPH-G		100 ⁶										100 ⁶										
TPH-D		2000 ⁶										2000 ⁶										

Note(s)

Red text indicates exceeded screening criteria values

 Highlight indicates the test was intended to characterize Sand/Backfill for Sand Drains

¹ From Table 8-1 in Sediment Cleanup User's Manual except where noted (SCUM; Ecology 2021); values are for protection of aquatic biota.

² Analytical method that will be used for the constituent analysis (from Appendix D: Table D-1 in Sediment Cleanup User's Manual (SCUM; Ecology 2021).

³ Number in parentheses is Natural background from Bold study (From Table 10-1 in Sediment Cleanup User's Manual [SCUM; Ecology 2021]).

⁴ The number in parentheses is the highest of the practical quantitation limits (from Appendix D: Table D-1 in Sediment Cleanup User's Manual [SCUM; Ecology 2021]).

⁵ Dioxin/Furan criterion is the practical quantitation limit from Table 11-1 in Sediment Cleanup User's Manual [SCUM; Ecology 2021].

⁶ Criterion from Table 740-1 (Method A Soil Cleanup Levels for Unrestricted Land Uses) in WAC 173-340.

⁷ Combined laboratory and data validation qualifier

Abbreviation(s)

µg/kg dw = microgram per kilogram dry weight

EPA = US Environmental Protection Agency

mg/kg dw = milligrams per kilogram dry weight

mg/kg OC = milligrams per kilogram organic carbon

NA = Not Applicable

ng/kg = nanogram per kilogram

SCO = Sediment Cleanup Objective

TEQ = toxicity equivalent quotient

Total HPAH = High molecular weight polycyclic aromatic hydrocarbons

Total LPAH = Low molecular weight polycyclic aromatic hydrocarbons

D = The reported value is from a dilution.

U = The material was analyzed for, but was not detected above the level of the associated value.

J = The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

**Table 2: Soil Health Parameter Sample Results from Soilttest Farm Consultants, Inc.
Whitmarsh Landfill Remediation, Anacortes, Washington**

Sample ID	pH 1:1	Electrical Conductivity (mmhos/cm)		Organic Matter (%)	Texture			USDA Texture
		Soil Water Extract 1:1	Saturated Paste		Sand (%)	Clay (%)	Silt (%)	
20240911-SBT-TAT-1	7	0.41	1.07	5.3	80	6	14	Loamy Sand
20240911-SBT-TAT-2	7.1	0.48	1.25	5.9	82	8	10	
20240911-GS-TAT-1	8	2.11	5.49	16.3	84	9	7	
20240911-GS-TAT-2	8.1	4.4	11.44	13.1	81	6	13	
20240911-SBT-C-1	7.5	6.47	16.82	39.4	76	9	15	
20240911-SBT-C-2	7.5	6.98	18.15	61.6	78	8	14	
20240911-GS-C-1	8.1	14.64	38.06	24.7	84	6	10	Loamy Sand
20240911-GS-C-2	8.1	14.2	36.92	22.6	86	4	10	Loamy Sand

Abbreviation(s)

C = Compost

GS = Growsource

ID = Identification

mmhos/cm = illimhos per centimeter

SBT = Sundland Bark & Topsoil

TAT = Type A Topsoil

USDA = U.S. Department of Agriculture

Table 3: Geotechnical Sample Results from Materials Testing and Consulting, Inc.
Whitmarsh Landfill Remediation, Anacortes, Washington

Sieve Size	Actual Cumulative Percent Passing (%)					
	20240912-MSG-CB-1	20240912-MSG-CB-2	20240912-MSG-CB-3	20240912-G-CB-1	20240912-G-CB-2	20240912-G-CB-3
2.00"	100	100	100	100	100	100
1.00"	99	100	100	100	100	100
3/4"	96	99	98	99	95	97
1/2"	85	89	88	87	85	88
3/8"	79	80	79	79	78	81
#4	62	58	55	58	62	64
#10	45	38	38	37	45	46
#20	--	--	--	20	--	--
#40	17	13	14	12	18	18
#60	--	--	--	8	--	--
#100	10	6	5	6	10	11
#200	7.4	4.4	4.1	4.6	7.7	8.4

Abbreviation(s)

C = Compost

CB = Common Borrow

G = Granite

GS = Growsource

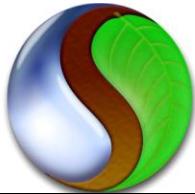
MSG = Miles Sand and Gravel

SBT = Sundland Bark & Topsoil

TAT = Type A Topsoil

APPENDIX A

LABORATORY TEST REPORTS



soiltest
farm consultants, inc.

2925 Driggs Dr., Moses Lake, Wa 98837 - www.soiltestlab.com
Office: (509)765-1622 - Fax:(509)765-0314 - (800)764-1622



SOILTEST FARM CONSULTANTS - 11

2925 DRIGGS DR

Moses Lake , WA 98837

Laboratory #: S24-21700

Date Received: 9/13/2024

Grower: WSP USA

Field: 20240911-SBT-TAT-1

Sampled By:

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1 7.0

E.C. 1:1 m.mhos/cm 0.41

Est Sat Paste E.C. m.mhos/cm 1.07

Effervescence

Lbs/Acre

Ammonium - N mg/kg

Organic Matter W.B. % 5.3 ENR: 107

Other Tests:

Texture: 80.0 % Sand, 6.0 % Clay, 14.0 % Silt

USDA TEXTURE: LOAMY SAND

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

This is your Invoice #: S24-21700 Account #: 101100 Reviewed by: K. Bair, PhD, C List Cost: \$58.00



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SOILTEST FARM CONSULTANTS - 11

2925 DRIGGS DR

Moses Lake , WA 98837

Laboratory #: S24-21701

Date Received: 9/13/2024

Grower: WSP USA

Field: 20240911-SBT-TAT-2

Sampled By:

Customer Account #:

Customer Sample ID:

Soil Test Results

pH 1:1	7.1	
E.C. 1:1	m.mhos/cm	0.48
Est Sat Paste E.C.	m.mhos/cm	1.25
Effervescence		
		<u>Lbs/Acre</u>
Ammonium - N	mg/kg	
Organic Matter W.B.	%	5.9 ENR: 117

Other Tests:

Texture: 82.0 % Sand, 8.0 % Clay, 10.0 % Silt

USDA TEXTURE: LOAMY SAND

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

This is your Invoice #: S24-21701 Account #: 101100 Reviewed by: K. Bair, PhD, C List Cost: \$58.00



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SOILTEST FARM CONSULTANTS - 11

2925 DRIGGS DR

Moses Lake , WA 98837

Laboratory #: S24-21702

Date Received: 9/13/2024

Grower: WSP USA

Field: 20240911-SBT-C-1

Sampled By:

Customer Account #:

Soil Test Results Customer Sample ID:

pH 1:1	7.5	
E.C. 1:1	m.mhos/cm	6.47
Est Sat Paste E.C.	m.mhos/cm	16.82
Effervescence		
		<u>Lbs/Acre</u>
Ammonium - N	mg/kg	
Organic Matter W.B.	%	39.4 ENR: 120

Other Tests:

Texture: 76.0 % Sand, 9.0 % Clay, 15.0 % Silt

USDA TEXTURE: SANDY LOAM

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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SOILTEST FARM CONSULTANTS - 11

2925 DRIGGS DR

Moses Lake , WA 98837

Laboratory #: S24-21703

Date Received: 9/13/2024

Grower: WSP USA

Field: 20240911-SBT-C-2

Sampled By:

Customer Account #:

Soil Test Results Customer Sample ID:

pH 1:1	7.5	
E.C. 1:1	m.mhos/cm	6.98
Est Sat Paste E.C.	m.mhos/cm	18.15
Effervescence		
		<u>Lbs/Acre</u>
Ammonium - N	mg/kg	
Organic Matter W.B.	%	61.6 ENR: 120

Other Tests:

Texture: 78.0 % Sand, 8.0 % Clay, 14.0 % Silt

USDA TEXTURE: SANDY LOAM

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

This is your Invoice #: S24-21703 Account #: 101100 Reviewed by: K. Bair, PhD, C List Cost: \$58.00



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SOILTEST FARM CONSULTANTS - 11

2925 DRIGGS DR

Moses Lake , WA 98837

Laboratory #: S24-21704

Date Received: 9/13/2024

Grower: WSP USA

Field: 20240911-GS-TAT-1

Sampled By:

Customer Account #:

Soil Test Results Customer Sample ID:

pH 1:1	8.0	
E.C. 1:1	m.mhos/cm	2.11
Est Sat Paste E.C.	m.mhos/cm	5.49
Effervescence		
		<u>Lbs/Acre</u>
Ammonium - N	mg/kg	
Organic Matter W.B.	%	16.3 ENR: 120

Other Tests:

Texture: 84.0 % Sand, 9.0 % Clay, 7.0 % Silt

USDA TEXTURE: LOAMY SAND

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

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SOILTEST FARM CONSULTANTS - 11

2925 DRIGGS DR

Moses Lake , WA 98837

Laboratory #: S24-21705

Date Received: 9/13/2024

Grower: WSP USA

Field: 20240911-GS-TAT-2

Sampled By:

Customer Account #:

Soil Test Results Customer Sample ID:

pH 1:1	8.1	
E.C. 1:1	m.mhos/cm	4.40
Est Sat Paste E.C.	m.mhos/cm	11.44
Effervescence		
		<u>Lbs/Acre</u>
Ammonium - N	mg/kg	
Organic Matter W.B.	%	13.1 ENR: 120

Other Tests:

Texture: 81.0 % Sand, 6.0 % Clay, 13.0 % Silt

USDA TEXTURE: LOAMY SAND

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

This is your Invoice #: S24-21705 Account #: 101100 Reviewed by: K. Bair, PhD, C List Cost: \$58.00



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SOILTEST FARM CONSULTANTS - 11

2925 DRIGGS DR

Moses Lake , WA 98837

Laboratory #: S24-21706

Date Received: 9/13/2024

Grower: WSP USA

Field: 20240911-GS-C-1

Sampled By:

Customer Account #:

Soil Test Results Customer Sample ID:

pH 1:1	8.1	
E.C. 1:1	m.mhos/cm	14.64
Est Sat Paste E.C.	m.mhos/cm	38.06
Effervescence		
		<u>Lbs/Acre</u>
Ammonium - N	mg/kg	
Organic Matter W.B.	%	24.7 ENR: 120

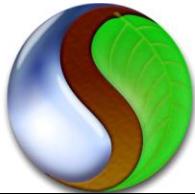
Other Tests:

Texture: 84.0 % Sand, 6.0 % Clay, 10.0 % Silt

USDA TEXTURE: LOAMY SAND

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

This is your Invoice #: S24-21706 Account #: 101100 Reviewed by: K. Bair, PhD, C List Cost: \$58.00



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SOILTEST FARM CONSULTANTS - 11

2925 DRIGGS DR

Moses Lake , WA 98837

Laboratory #: S24-21707

Date Received: 9/13/2024

Grower: WSP USA

Field: 20240911-GS-C-2

Sampled By:

Customer Account #:

Soil Test Results Customer Sample ID:

pH 1:1	8.1	
E.C. 1:1	m.mhos/cm	14.20
Est Sat Paste E.C.	m.mhos/cm	36.92
Effervescence		
		<u>Lbs/Acre</u>
Ammonium - N	mg/kg	
Organic Matter W.B.	%	22.6 ENR: 120

Other Tests:

Texture: 86.0 % Sand, 4.0 % Clay, 10.0 % Silt

USDA TEXTURE: LOAMY SAND

We make every effort to provide an accurate analysis of your sample. For reasonable cause we will repeat tests, but because of factors beyond our control in sampling procedures and the inherent variability of soil, our liability is limited to the price of the tests. Recommendations are to be used as general guides and should be modified for specific field conditions and situations. Note: "u" indicates that the element was analyzed for but not detected

This is your Invoice #: S24-21707 Account #: 101100 Reviewed by: K. Bair, PhD, C List Cost: \$58.00



Client: WSP USA, Inc.
Address: One Penn Plaza 4th Floor
New York, NY 10119
Attn: Korous Tahghighi
Revised On:

Date: September 19, 2024
Project: Q.C. Whitmarsh Landfill Remediation
Project #: 24B181
Sample #: B24-1500
Date sampled: September 12, 2024
Control No:

As requested and authorized by the Client, MTC has performed the following test(s) on the sample number referenced above. The testing was performed in accordance with current, applicable AASHTO, ASTM, and/or WSDOT standards, which are referenced on the correlating test report pages. The results obtained in our laboratory are as detailed below and/or on the following pages:

	Test(s) Performed:	Test Results	Test(s) Performed:	Test Results
X	Sieve Analysis	See Attached Report	Sulfate Soundness	
	Proctor		Bulk Density & Voids	
	Sand Equivalent		WSDOT Degradation	
	Fracture Count		LA Abrasion	
	Moisture Content		Cation Exchange Capacity	
	Specific Gravity, Coarse			
	Specific Gravity, Fine			
	Hydrometer Analysis			
X	Atterberg Limits	Non-Plastic		
	Specific Gravity of Soils			

If you have any questions concerning the test results, the procedures used, or if we can be of any further assistance please call the number below and ask to speak with your Project Manager or the Laboratory Manager.

Mark Peterson

Respectfully Submitted,
Name
WABO Supervising Laboratory Technician

Sieve Report

Project: Q.C. Whitmarsh Landfill Remediation Project #: 24B181 Client: WSP USA, Inc. Source: MSG-CB-2 Sample#: B24-1500		Date Received: 12-Sep-24 Sampled By: Client Date Tested: 18-Sep-24 Tested By: S. Boesenberg Control No.:	Unified Soil Classification System, ASTM-2487 SW, Well-graded Sand with Gravel Sample Color: Brown	
Method(s) ASTM D-2216, ASTM D-2419, ASTM D4318, ASTM D-5281				
Specifications No Specs Sample Meets Specs ? N/A		$D_{(5)} = 0.110$ mm % Gravel = 42.5% $D_{(10)} = 0.310$ mm % Sand = 53.1% $D_{(15)} = 0.547$ mm % Silt & Clay = 4.4% $D_{(30)} = 1.512$ mm Liquid Limit = 0.0% $D_{(50)} = 3.713$ mm Plasticity Index = 0.0% $D_{(60)} = 5.274$ mm Sand Equivalent = n/a $D_{(90)} = 13.111$ mm Fracture %, 1 Face = n/a Dust Ratio = 1/3 Fracture %, 2+ Faces = n/a Fracture %, 2+ Faces = n/a Req'd Fracture %, 1 Face = Req'd Fracture %, 2+ Faces = Req'd Fracture %, 2+ Faces =	Coeff. of Curvature, $C_C = 1.40$ Coeff. of Uniformity, $C_U = 17.02$ Fineness Modulus = 4.67 Plastic Limit = 0.0% Moisture %, as sampled = 5.0% Req'd Sand Equivalent = Req'd Fracture %, 1 Face = Req'd Fracture %, 2+ Faces =	
Method(s) ASTM C-136, ASTM D-6913, ASTM C-117				
Sieve Size	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing		
US	Metric	Specs Max	Specs Min	
12.00"	300.00	100%	0.0%	
10.00"	250.00	100%	0.0%	
8.00"	200.00	100%	0.0%	
6.00"	150.00	100%	0.0%	
4.00"	100.00	100%	0.0%	
3.00"	75.00	100%	0.0%	
2.50"	63.00	100%	0.0%	
2.00"	50.00	100%	0.0%	
1.75"	45.00	100%	0.0%	
1.50"	37.50	100%	0.0%	
1.25"	31.50	100%	0.0%	
1.00"	25.00	100%	0.0%	
3/4"	19.00	99%	0.0%	
5/8"	16.00	94%	0.0%	
1/2"	12.50	89%	0.0%	
3/8"	9.50	80%	0.0%	
1/4"	6.30	65%	0.0%	
#4	4.75	58%	0.0%	
#8	2.36	40%	0.0%	
#10	2.00	38%	0.0%	
#16	1.18	25%	0.0%	
#20	0.850	20%	0.0%	
#30	0.600	16%	0.0%	
#40	0.425	13%	0.0%	
#50	0.300	10%	0.0%	
#60	0.250	8%	0.0%	
#80	0.180	6%	0.0%	
#100	0.150	6%	0.0%	
#140	0.106	5%	0.0%	
#170	0.090	5%	0.0%	
#200	0.075	4.4%	0.0%	

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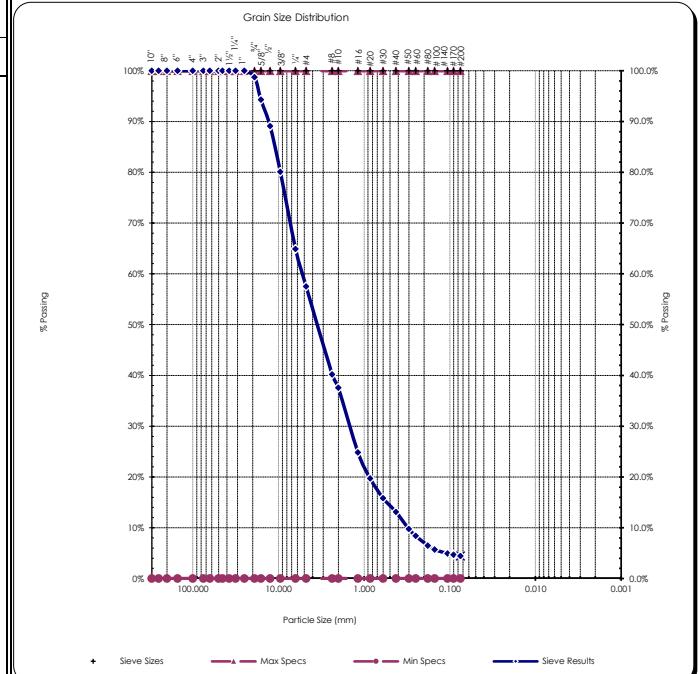
All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Comments: _____

Reviewed by: Mark Peterson

Name

WABO Supervising Laboratory Technician



ASTM D-4318 Liquid Limit, Plastic Limit & Plasticity Index of Soils

Project: Q.C. Whitmarsh Landfill Remed	Date Received: 12-Sep-24	Unified Soils Classification System, ASTM D-2487
Project #: 24B181	Sampled By: Client	SW, Well-graded Sand with Gravel
Client: WSP USA, Inc.	Date Tested: 18-Sep-24	Sample Color
Source: MSG-CB-2	Tested By: S. Boesenber	Brown
Sample #: B24-1500	Control No.:	

Liquid Limit Determination						
#1	#2	#3	#4	#5	#6	
Weight of Wet Soils + Pan:						
Weight of Dry Soils + Pan:	Can not test per limits given in ASTM D4318					
Weight of Pan:						
Weight of Dry Soils:						
Weight of Moisture:						
% Moisture:						
Number of Blows:						

Plastic Limit Determination						
#1	#2	#3	#4	#5	#6	
Weight of Wet Soils + Pan:						
Weight of Dry Soils + Pan:	Can not test per limits given in ASTM D4318					
Weight of Pan:						
Weight of Dry Soils:						
Weight of Moisture:						
% Moisture:						

Liquid Limit @ 25 Blows: N/A

Plastic Limit: N/A

Plasticity Index, I_p : N/A

Plasticity Chart

Liquid Limit

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All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Comments: Sample is non-plastic. Could not establish a liquid limit.

Reviewed by: Mark Peterson
Name
WABO Supervising Laboratory Technician



Client: WSP USA, Inc.
Address: One Penn Plaza 4th Floor
New York, NY 10119
Attn: Korous Tahghighi
Revised On:

Date: September 19, 2024
Project: Q.C. Whitmarsh Landfill Remediation
Project #: 24B181
Sample #: B24-1501
Date sampled: September 12, 2024
Control No:

As requested and authorized by the Client, MTC has performed the following test(s) on the sample number referenced above. The testing was performed in accordance with current, applicable AASHTO, ASTM, and/or WSDOT standards, which are referenced on the correlating test report pages. The results obtained in our laboratory are as detailed below and/or on the following pages:

	Test(s) Performed:	Test Results	Test(s) Performed:	Test Results
X	Sieve Analysis	See Attached Report	Sulfate Soundness	
	Proctor		Bulk Density & Voids	
	Sand Equivalent		WSDOT Degradation	
	Fracture Count		LA Abrasion	
	Moisture Content		Cation Exchange Capacity	
	Specific Gravity, Coarse			
	Specific Gravity, Fine			
	Hydrometer Analysis			
X	Atterberg Limits	Non-Plastic		
	Specific Gravity of Soils			

If you have any questions concerning the test results, the procedures used, or if we can be of any further assistance please call the number below and ask to speak with your Project Manager or the Laboratory Manager.

Mark Peterson

Respectfully Submitted,
Name
WABO Supervising Laboratory Technician

Sieve Report

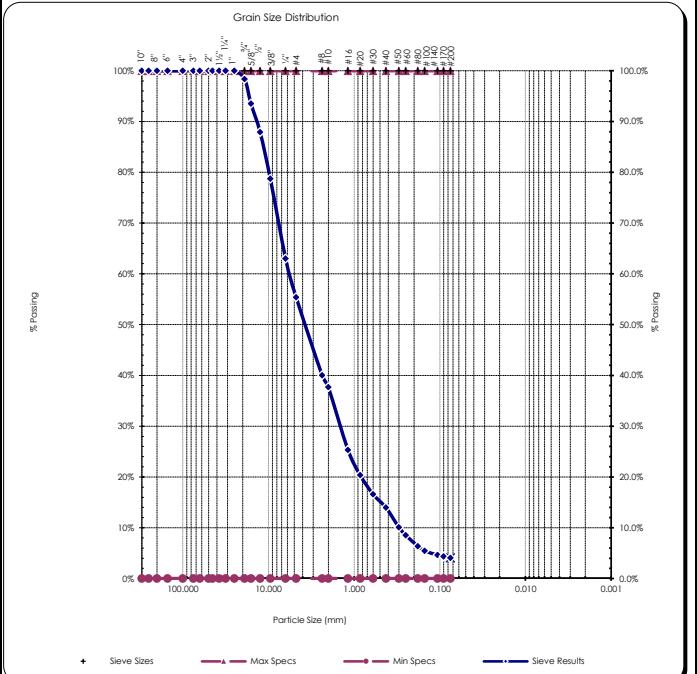
Project: Q.C. Whitmarsh Landfill Remediation Project #: 24B181 Client: WSP USA, Inc. Source: MSG-CB-3 Sample#: B24-1501		Date Received: 12-Sep-24 Sampled By: Client Date Tested: 18-Sep-24 Tested By: S. Boesenberg Control No.:	Unified Soil Classification System, ASTM-2487 SW, Well-graded Sand with Gravel Sample Color: Brown
Method(s) ASTM D-2216, ASTM D-2419, ASTM D4318, ASTM D-5281			
Specifications No Specs Sample Meets Specs ? N/A		D ₍₅₎ = 0.126 mm % Gravel = 44.6% D ₍₁₀₎ = 0.297 mm % Sand = 51.3% D ₍₁₅₎ = 0.494 mm % Silt & Clay = 4.1% D ₍₃₀₎ = 1.490 mm Liquid Limit = 0.0% D ₍₅₀₎ = 3.911 mm Plasticity Index = 0.0% D ₍₆₀₎ = 5.687 mm Sand Equivalent = n/a D ₍₉₀₎ = 13.809 mm Fracture %, 1 Face = n/a Dust Ratio = 7/24 Fracture %, 2+ Faces = n/a Fracture %, 1 Face = n/a Reqd Sand Equivalent = Reqd Fracture %, 1 Face = Reqd Fracture %, 2+ Faces =	Coeff. of Curvature, C _C = 1.31 Coeff. of Uniformity, C _U = 19.13 Fineness Modulus = 4.70 Plastic Limit = 0.0% Moisture %, as sampled = 5.0% Reqd Fracture %, 2+ Faces =
Method(s) ASTM C-136, ASTM D-6913, ASTM C-117			
Sieve Size	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	
US	Metric	Specs Max	Specs Min
12.00"	300.00	100%	100.0%
10.00"	250.00		100.0%
8.00"	200.00		100.0%
6.00"	150.00		100.0%
4.00"	100.00		100.0%
3.00"	75.00		100.0%
2.50"	63.00		100.0%
2.00"	50.00	100%	100.0%
1.75"	45.00		100.0%
1.50"	37.50		100.0%
1.25"	31.50		100.0%
1.00"	25.00	100%	100.0%
3/4"	19.00	98%	100.0%
5/8"	16.00		94%
1/2"	12.50	88%	100.0%
3/8"	9.50	79%	100.0%
1/4"	6.30		63%
#4	4.75	55%	100.0%
#8	2.36		40%
#10	2.00	38%	100.0%
#16	1.18		25%
#20	0.850		20%
#30	0.600		17%
#40	0.425	14%	100.0%
#50	0.300		10%
#60	0.250		9%
#80	0.180		6%
#100	0.150	5%	100.0%
#140	0.106		5%
#170	0.090		4%
#200	0.075	4.1%	100.0%

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Comments: _____

Reviewed by: Mark Peterson
 Name
 WABO Supervising Laboratory Technician



ASTM D-4318 Liquid Limit, Plastic Limit & Plasticity Index of Soils

Project: Q.C. Whitmarsh Landfill Remed	Date Received: 12-Sep-24	Unified Soils Classification System, ASTM D-2487
Project #: 24B181	Sampled By: Client	SW, Well-graded Sand with Gravel
Client: WSP USA, Inc.	Date Tested: 18-Sep-24	Sample Color
Source: MSG-CB-3	Tested By: S. Boesenber	Brown
Sample #: B24-1501	Control No.:	

Liquid Limit Determination						
#1	#2	#3	#4	#5	#6	
Weight of Wet Soils + Pan:						
Weight of Dry Soils + Pan:	Can Not Test per limit given in ASTM D4318					
Weight of Pan:						
Weight of Dry Soils:						
Weight of Moisture:						
% Moisture:						
Number of Blows:						

Plastic Limit Determination						
#1	#2	#3	#4	#5	#6	
Weight of Wet Soils + Pan:						
Weight of Dry Soils + Pan:	N/A					
Weight of Pan:						
Weight of Dry Soils:						
Weight of Moisture:						
% Moisture:						

Plasticity Chart

Liquid Limit

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All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Comments: Sample is non-plastic. Could not establish a liquid limit.

Reviewed by: Mark Peterson
Name
WABO Supervising Laboratory Technician



Client: WSP USA, Inc.
Address: One Penn Plaza 4th Floor
New York, NY 10119
Attn: Korous Tahghighi
Revised On:

Date: September 19, 2024
Project: Q.C. Whitmarsh Landfill Remediation
Project #: 24B181
Sample #: B24-1502
Date sampled: September 12, 2024
Control No:

As requested and authorized by the Client, MTC has performed the following test(s) on the sample number referenced above. The testing was performed in accordance with current, applicable AASHTO, ASTM, and/or WSDOT standards, which are referenced on the correlating test report pages. The results obtained in our laboratory are as detailed below and/or on the following pages:

	Test(s) Performed:	Test Results	Test(s) Performed:	Test Results
X	Sieve Analysis	See Attached Report	Sulfate Soundness	
	Proctor		Bulk Density & Voids	
	Sand Equivalent		WSDOT Degradation	
	Fracture Count		LA Abrasion	
	Moisture Content		Cation Exchange Capacity	
	Specific Gravity, Coarse			
	Specific Gravity, Fine			
	Hydrometer Analysis			
X	Atterberg Limits	Non-Plastic		
	Specific Gravity of Soils			

If you have any questions concerning the test results, the procedures used, or if we can be of any further assistance please call the number below and ask to speak with your Project Manager or the Laboratory Manager.

Mark Peterson

Respectfully Submitted,

Name

WABO Supervising Laboratory Technician

Sieve Report

Project: Q.C. Whitmarsh Landfill Remediation Project #: 24B181 Client: WSP USA, Inc. Source: MSG-CB-1 Sample#: B24-1502		Date Received: 12-Sep-24 Sampled By: Client Date Tested: 18-Sep-24 Tested By: S. Boesenberg Control No.:	Unified Soil Classification System, ASTM-2487 SW-SC, Well-graded Sand with Silty Clay and Gravel Sample Color: Brown		
Method(s) ASTM D-2216, ASTM D-2419, ASTM D4318, ASTM D-5281					
Specifications No Specs Sample Meets Specs ? N/A		$D_{(5)} = 0.051$ mm % Gravel = 37.6% $D_{(10)} = 0.154$ mm % Sand = 55.0% $D_{(15)} = 0.340$ mm % Silt & Clay = 7.4% $D_{(30)} = 1.139$ mm Liquid Limit = 0.0% $D_{(50)} = 2.749$ mm Plasticity Index = 0.0% $D_{(60)} = 4.360$ mm Sand Equivalent = n/a $D_{(90)} = 15.455$ mm Fracture %, 1 Face = n/a Dust Ratio = 3/7 Fracture %, 2+ Faces = n/a Fracture %, 2+ Faces = n/a Req'd Fracture %, 1 Face = Req'd Fracture %, 2+ Faces = Req'd Fracture %, 2+ Faces =			
Method(s) ASTM C-136, ASTM D-6913, ASTM C-117					
Sieve Size		Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	Specs Max	Specs Min
US	Metric				
12.00"	300.00		100%	100.0%	0.0%
10.00"	250.00		100%	100.0%	0.0%
8.00"	200.00		100%	100.0%	0.0%
6.00"	150.00		100%	100.0%	0.0%
4.00"	100.00		100%	100.0%	0.0%
3.00"	75.00		100%	100.0%	0.0%
2.50"	63.00		100%	100.0%	0.0%
2.00"	50.00	100%	100%	100.0%	0.0%
1.75"	45.00		100%	100.0%	0.0%
1.50"	37.50		99%	100.0%	0.0%
1.25"	31.50		99%	100.0%	0.0%
1.00"	25.00	99%	99%	100.0%	0.0%
3/4"	19.00	96%	96%	100.0%	0.0%
5/8"	16.00		91%	100.0%	0.0%
1/2"	12.50	85%	85%	100.0%	0.0%
3/8"	9.50	79%	79%	100.0%	0.0%
1/4"	6.30		68%	100.0%	0.0%
#4	4.75	62%	62%	100.0%	0.0%
#8	2.36		48%	100.0%	0.0%
#10	2.00	45%	45%	100.0%	0.0%
#16	1.18		31%	100.0%	0.0%
#20	0.850		25%	100.0%	0.0%
#30	0.600		20%	100.0%	0.0%
#40	0.425	17%	17%	100.0%	0.0%
#50	0.300		14%	100.0%	0.0%
#60	0.250		13%	100.0%	0.0%
#80	0.180		11%	100.0%	0.0%
#100	0.150	10%	10%	100.0%	0.0%
#140	0.106		8%	100.0%	0.0%
#170	0.090		8%	100.0%	0.0%
#200	0.075	7.4%	7.4%	100.0%	0.0%

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All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Comments: _____

Reviewed by: Mark Peterson
 Name
 WABO Supervising Laboratory Technician

ASTM D-4318 Liquid Limit, Plastic Limit & Plasticity Index of Soils

Project: Q.C. Whitmarsh Landfill Remed	Date Received: 12-Sep-24	Unified Soils Classification System, ASTM D-2487
Project #: 24B181	Sampled By: Client	SW-SC, Well-graded Sand with Silty Clay and Gravel
Client: WSP USA, Inc.	Date Tested: 18-Sep-24	Sample Color
Source: MSG-CB-1	Tested By: S. Boesenber	Brown
Sample #: B24-1502	Control No.:	

Liquid Limit Determination						
#1	#2	#3	#4	#5	#6	
Weight of Wet Soils + Pan:						
Weight of Dry Soils + Pan:	See Comments					
Weight of Pan:						
Weight of Dry Soils:						
Weight of Moisture:						
% Moisture:						
Number of Blows:						

Liquid Limit @ 25 Blows: N/A
Plastic Limit: N/A
Plasticity Index, I_p : N/A

Plastic Limit Determination						
#1	#2	#3	#4	#5	#6	
Weight of Wet Soils + Pan:						
Weight of Dry Soils + Pan:	N/A					
Weight of Pan:						
Weight of Dry Soils:						
Weight of Moisture:						
% Moisture:						

Plasticity Chart

Liquid Limit

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Comments: Sample is non-plastic. Could not establish a liquid limit.

Reviewed by: Mark Peterson
 Name
 WABO Supervising Laboratory Technician



Client: WSP USA, Inc.
Address: One Penn Plaza 4th Floor
New York, NY 10119
Attn: Korous Tahghighi
Revised On:

Date: September 19, 2024
Project: Q.C. Whitmarsh Landfill Remediation
Project #: 24B181
Sample #: B24-1503
Date sampled: September 12, 2024
Control No:

As requested and authorized by the Client, MTC has performed the following test(s) on the sample number referenced above. The testing was performed in accordance with current, applicable AASHTO, ASTM, and/or WSDOT standards, which are referenced on the correlating test report pages. The results obtained in our laboratory are as detailed below and/or on the following pages:

	Test(s) Performed:	Test Results	Test(s) Performed:	Test Results
X	Sieve Analysis	See Attached Report	Sulfate Soundness	
	Proctor		Bulk Density & Voids	
	Sand Equivalent		WSDOT Degradation	
	Fracture Count		LA Abrasion	
	Moisture Content		Cation Exchange Capacity	
	Specific Gravity, Coarse			
	Specific Gravity, Fine			
	Hydrometer Analysis			
X	Atterberg Limits	Non-Plastic		
	Specific Gravity of Soils			

If you have any questions concerning the test results, the procedures used, or if we can be of any further assistance please call the number below and ask to speak with your Project Manager or the Laboratory Manager.

Mark Peterson

Respectfully Submitted,
Name
WABO Supervising Laboratory Technician

Sieve Report

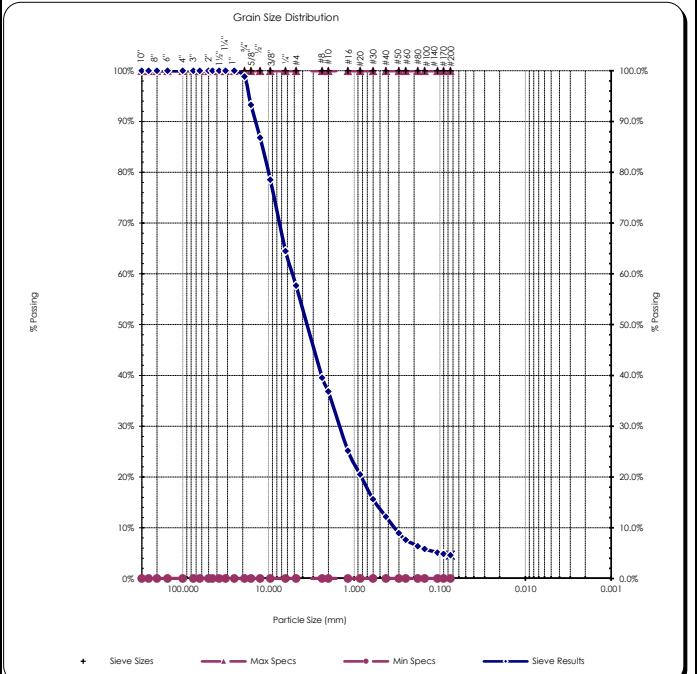
Project: Q.C. Whitmarsh Landfill Remediation Project #: 24B181 Client: WSP USA, Inc. Source: G-CB-1 Sample#: B24-1503		Date Received: 12-Sep-24 Sampled By: Client Date Tested: 18-Sep-24 Tested By: S. Boesenberg Control No.:	Unified Soil Classification System, ASTM-2487 SW, Well-graded Sand with Gravel Sample Color: Brown
Method(s) ASTM D-2216, ASTM D-2419, ASTM D4318, ASTM D-5281			
Specifications No Specs Sample Meets Specs ? N/A		D ₍₅₎ = 0.100 mm % Gravel = 42.3% D ₍₁₀₎ = 0.341 mm % Sand = 53.1% D ₍₁₅₎ = 0.569 mm % Silt & Clay = 4.6% D ₍₃₀₎ = 1.520 mm Liquid Limit = 0.0% D ₍₅₀₎ = 3.739 mm Plasticity Index = 0.0% D ₍₆₀₎ = 5.282 mm Sand Equivalent = n/a D ₍₉₀₎ = 14.228 mm Fracture %, 1 Face = n/a Dust Ratio = 17/45 Fracture %, 2+ Faces = n/a Fracture %, 1 Face = n/a Fracture %, 2+ Faces = n/a	Coeff. of Curvature, C _C = 1.28 Coeff. of Uniformity, C _U = 15.48 Fineness Modulus = 4.70 Plastic Limit = 0.0% Moisture %, as sampled = 4.8% Req'd Sand Equivalent = Req'd Fracture %, 1 Face = Req'd Fracture %, 2+ Faces =
Method(s) ASTM C-136, ASTM D-6913, ASTM C-117			
Sieve Size	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	
US	Metric	Specs Max	Specs Min
12.00"	300.00	100%	100.0%
10.00"	250.00	100%	100.0%
8.00"	200.00	100%	100.0%
6.00"	150.00	100%	100.0%
4.00"	100.00	100%	100.0%
3.00"	75.00	100%	100.0%
2.50"	63.00	100%	100.0%
2.00"	50.00	100%	100.0%
1.75"	45.00	100%	100.0%
1.50"	37.50	100%	100.0%
1.25"	31.50	100%	100.0%
1.00"	25.00	100%	100.0%
3/4"	19.00	99%	100.0%
5/8"	16.00	93%	100.0%
1/2"	12.50	87%	100.0%
3/8"	9.50	79%	100.0%
1/4"	6.30	64%	100.0%
#4	4.75	58%	100.0%
#8	2.36	40%	100.0%
#10	2.00	37%	100.0%
#16	1.18	25%	100.0%
#20	0.850	20%	100.0%
#30	0.600	16%	100.0%
#40	0.425	12%	100.0%
#50	0.300	9%	100.0%
#60	0.250	8%	100.0%
#80	0.180	6%	100.0%
#100	0.150	6%	100.0%
#140	0.106	5%	100.0%
#170	0.090	5%	100.0%
#200	0.075	4.6%	100.0%

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Comments: _____

Reviewed by: Mark Peterson
Name
WABO Supervising Laboratory Technician



ASTM D-4318 Liquid Limit, Plastic Limit & Plasticity Index of Soils

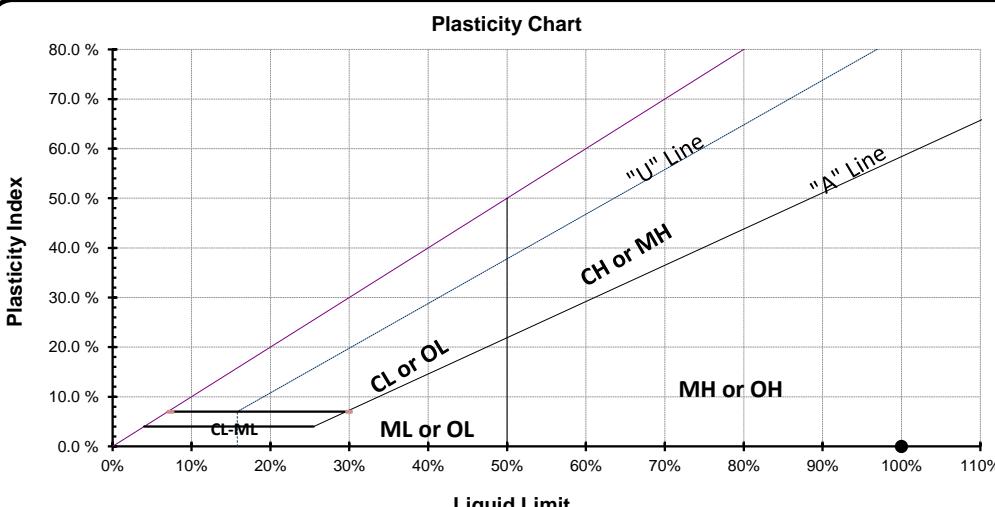
Project: Q.C. Whitmarsh Landfill Remed	Date Received: 12-Sep-24	Unified Soils Classification System, ASTM D-2487
Project #: 24B181	Sampled By: Client	SW, Well-graded Sand with Gravel
Client: WSP USA, Inc.	Date Tested: 18-Sep-24	Sample Color
Source: G-CB-1	Tested By: S. Boesenber	Brown
Sample #: B24-1503	Control No.:	

Liquid Limit Determination						
#1	#2	#3	#4	#5	#6	
Weight of Wet Soils + Pan:						
Weight of Dry Soils + Pan:	See Comments					
Weight of Pan:						
Weight of Dry Soils:						
Weight of Moisture:						
% Moisture:						
Number of Blows:						

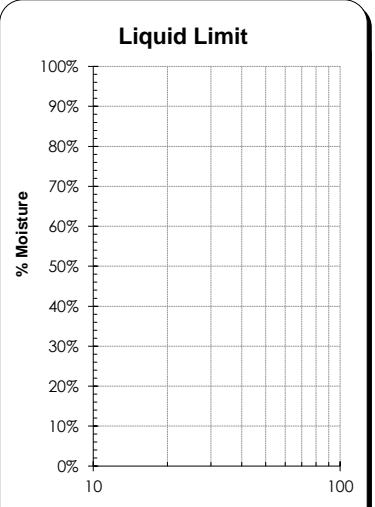
Liquid Limit @ 25 Blows: N/A
Plastic Limit: N/A
Plasticity Index, I_p : N/A

Plastic Limit Determination						
#1	#2	#3	#4	#5	#6	
Weight of Wet Soils + Pan:						
Weight of Dry Soils + Pan:	N/A					
Weight of Pan:						
Weight of Dry Soils:						
Weight of Moisture:						
% Moisture:						

Plasticity Chart



Liquid Limit



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Comments: Sample is non-plastic. Could not establish a liquid limit.

Reviewed by: Mark Peterson
 Name
 WABO Supervising Laboratory Technician



Client: WSP USA, Inc.
Address: One Penn Plaza 4th Floor
New York, NY 10119
Attn: Korous Tahghighi
Revised On:

Date: September 19, 2024
Project: Q.C. Whitmarsh Landfill Remediation
Project #: 24B181
Sample #: B24-1504
Date sampled: September 12, 2024
Control No:

As requested and authorized by the Client, MTC has performed the following test(s) on the sample number referenced above. The testing was performed in accordance with current, applicable AASHTO, ASTM, and/or WSDOT standards, which are referenced on the correlating test report pages. The results obtained in our laboratory are as detailed below and/or on the following pages:

	Test(s) Performed:	Test Results	Test(s) Performed:	Test Results
X	Sieve Analysis	See Attached Report	Sulfate Soundness	
	Proctor		Bulk Density & Voids	
	Sand Equivalent		WSDOT Degradation	
	Fracture Count		LA Abrasion	
	Moisture Content		Cation Exchange Capacity	
	Specific Gravity, Coarse			
	Specific Gravity, Fine			
	Hydrometer Analysis			
X	Atterberg Limits	Non-Plastic		
	Specific Gravity of Soils			

If you have any questions concerning the test results, the procedures used, or if we can be of any further assistance please call the number below and ask to speak with your Project Manager or the Laboratory Manager.

Mark Peterson

Respectfully Submitted,
Name
WABO Supervising Laboratory Technician

Sieve Report

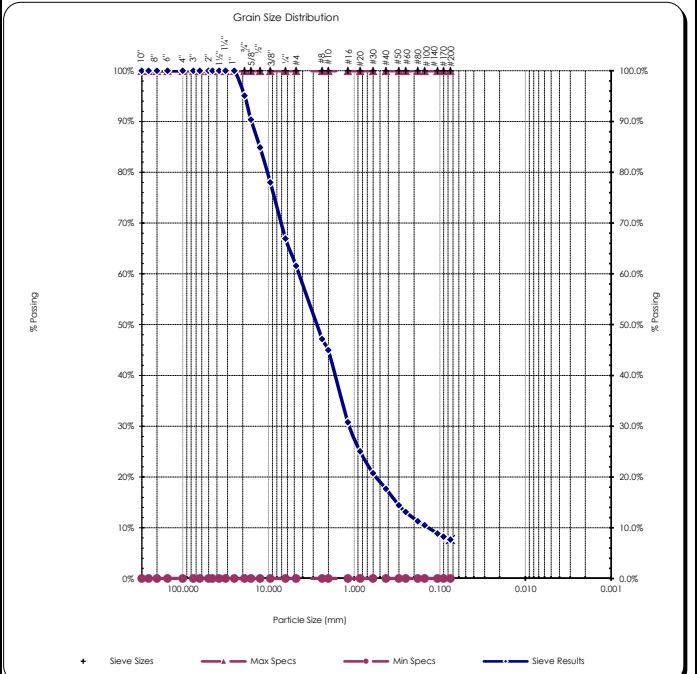
Project: Q.C. Whitmarsh Landfill Remediation Project #: 24B181 Client: WSP USA, Inc. Source: G-CB-2 Sample#: B24-1504		Date Received: 12-Sep-24 Sampled By: Client Date Tested: 18-Sep-24 Tested By: S. Boesenberg Control No.:	Unified Soil Classification System, ASTM-2487 SW-SC, Well-graded Sand with Silty Clay and Gravel Sample Color: Brown	
Method(s) ASTM D-2216, ASTM D-2419, ASTM D4318, ASTM D-5281				
Specifications No Specs Sample Meets Specs ? N/A		D ₍₅₎ = 0.049 mm % Gravel = 38.4% Coeff. of Curvature, C _C = 2.09 D ₍₁₀₎ = 0.137 mm % Sand = 53.9% Coeff. of Uniformity, C _U = 32.75 D ₍₁₅₎ = 0.323 mm % Silt & Clay = 7.7% Fineness Modulus = 4.42 D ₍₃₀₎ = 1.136 mm Liquid Limit = 0.0% Plastic Limit = 0.0% D ₍₅₀₎ = 2.832 mm Plasticity Index = 0.0% Moisture %, as sampled = 4.2% D ₍₆₀₎ = 4.491 mm Sand Equivalent = n/a Req'd Sand Equivalent = D ₍₉₀₎ = 15.767 mm Fracture %, 1 Face = n/a Req'd Fracture %, 1 Face = Dust Ratio = 43/99 Fracture %, 2+ Faces = n/a Req'd Fracture %, 2+ Faces =		
Method(s) ASTM C-136, ASTM D-6913, ASTM C-117				
Sieve Size	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing		
US	Metric		Specs Max	Specs Min
12.00"	300.00		100%	100.0%
10.00"	250.00		100%	100.0%
8.00"	200.00		100%	100.0%
6.00"	150.00		100%	100.0%
4.00"	100.00		100%	100.0%
3.00"	75.00		100%	100.0%
2.50"	63.00		100%	100.0%
2.00"	50.00	100%	100%	100.0%
1.75"	45.00		100%	100.0%
1.50"	37.50		100%	100.0%
1.25"	31.50		100%	100.0%
1.00"	25.00	100%	100%	100.0%
3/4"	19.00	95%	95%	100.0%
5/8"	16.00		90%	100.0%
1/2"	12.50	85%	85%	100.0%
3/8"	9.50	78%	78%	100.0%
1/4"	6.30		67%	100.0%
#4	4.75	62%	62%	100.0%
#8	2.36		47%	100.0%
#10	2.00	45%	45%	100.0%
#16	1.18		31%	100.0%
#20	0.850		25%	100.0%
#30	0.600		21%	100.0%
#40	0.425	18%	18%	100.0%
#50	0.300		14%	100.0%
#60	0.250		13%	100.0%
#80	0.180		11%	100.0%
#100	0.150	10%	10%	100.0%
#140	0.106		9%	100.0%
#170	0.090		8%	100.0%
#200	0.075	7.7%	7.7%	100.0%

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All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Comments: _____

Reviewed by: Mark Peterson
Name
WABO Supervising Laboratory Technician



ASTM D-4318 Liquid Limit, Plastic Limit & Plasticity Index of Soils

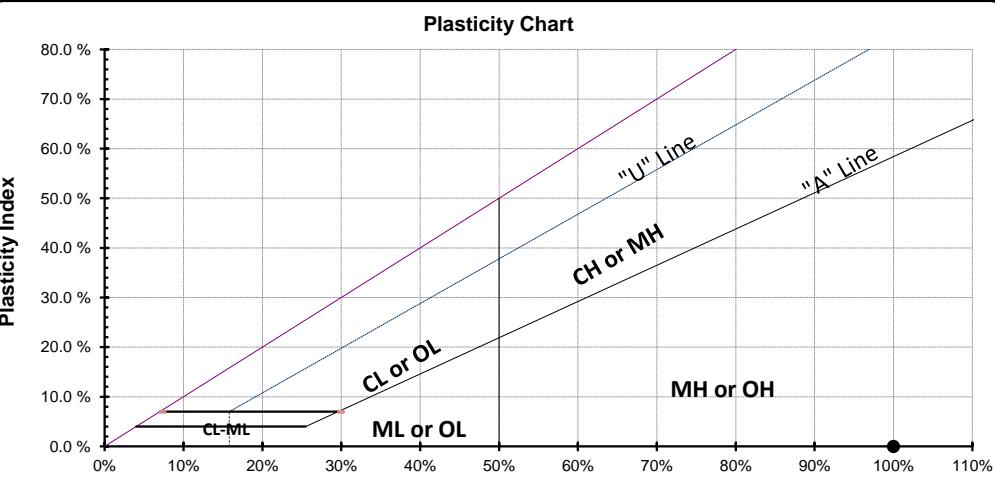
Project: Q.C. Whitmarsh Landfill Remed	Date Received: 12-Sep-24	Unified Soils Classification System, ASTM D-2487
Project #: 24B181	Sampled By: Client	SW-SC, Well-graded Sand with Silty Clay and Gravel
Client: WSP USA, Inc.	Date Tested: 18-Sep-24	Sample Color
Source: G-CB-2	Tested By: S. Boesenber	Brown
Sample #: B24-1504	Control No.:	

Liquid Limit Determination						
#1	#2	#3	#4	#5	#6	
Weight of Wet Soils + Pan:						
Weight of Dry Soils + Pan:	See Comments					
Weight of Pan:						
Weight of Dry Soils:						
Weight of Moisture:						
% Moisture:						
Number of Blows:						

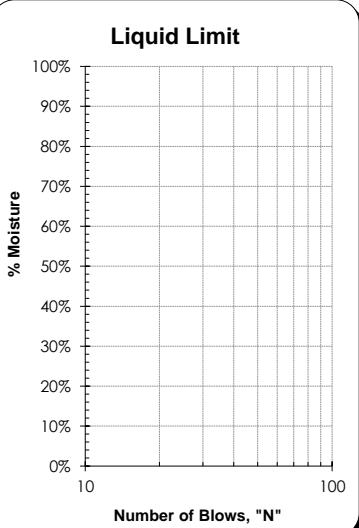
Liquid Limit @ 25 Blows: N/A
Plastic Limit: N/A
Plasticity Index, I_p : N/A

Plastic Limit Determination						
#1	#2	#3	#4	#5	#6	
Weight of Wet Soils + Pan:						
Weight of Dry Soils + Pan:	N/A					
Weight of Pan:						
Weight of Dry Soils:						
Weight of Moisture:						
% Moisture:						

Plasticity Chart



Liquid Limit



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All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Comments: Sample is non-plastic. Could not establish a liquid limit.

Reviewed by: Mark Peterson
 Name
 WABO Supervising Laboratory Technician



Client: WSP USA, Inc.
Address: One Penn Plaza 4th Floor
New York, NY 10119
Attn: Korous Tahghighi
Revised On:

Date: September 19, 2024
Project: Q.C. Whitmarsh Landfill Remediation
Project #: 24B181
Sample #: B24-1505
Date sampled: September 12, 2024
Control No:

As requested and authorized by the Client, MTC has performed the following test(s) on the sample number referenced above. The testing was performed in accordance with current, applicable AASHTO, ASTM, and/or WSDOT standards, which are referenced on the correlating test report pages. The results obtained in our laboratory are as detailed below and/or on the following pages:

	Test(s) Performed:	Test Results	Test(s) Performed:	Test Results
X	Sieve Analysis	See Attached Report	Sulfate Soundness	
	Proctor		Bulk Density & Voids	
	Sand Equivalent		WSDOT Degradation	
	Fracture Count		LA Abrasion	
	Moisture Content		Cation Exchange Capacity	
	Specific Gravity, Coarse			
	Specific Gravity, Fine			
	Hydrometer Analysis			
X	Atterberg Limits	Non-Plastic		
	Specific Gravity of Soils			

If you have any questions concerning the test results, the procedures used, or if we can be of any further assistance please call the number below and ask to speak with your Project Manager or the Laboratory Manager.

Mark Peterson

Respectfully Submitted,
Name
WABO Supervising Laboratory Technician

Sieve Report

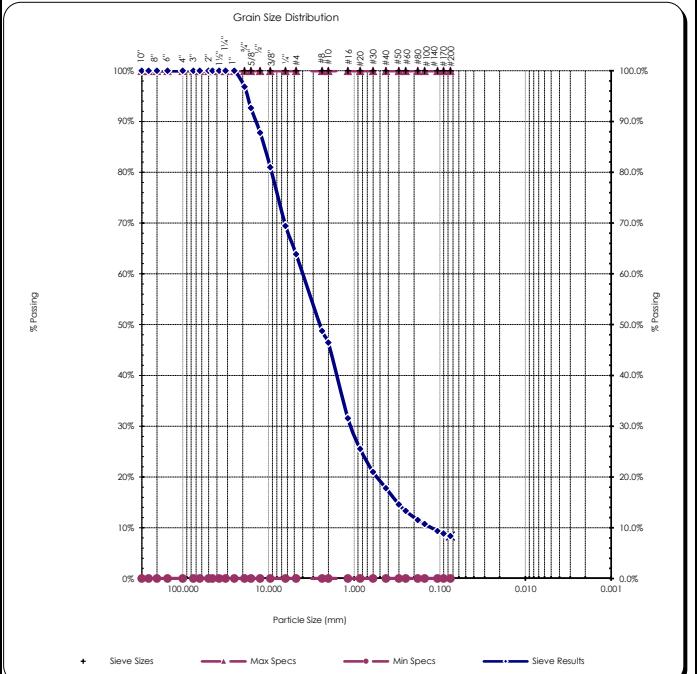
Project: Q.C. Whitmarsh Landfill Remediation Project #: 24B181 Client: WSP USA, Inc. Source: G-CB-3 Sample#: B24-1505		Date Received: 12-Sep-24 Sampled By: Others Date Tested: 18-Sep-24 Tested By: S. Boesenberg Control No.:	Unified Soil Classification System, ASTM-2487 SW-SC, Well-graded Sand with Silty Clay and Gravel Sample Color: Brown
Method(s) ASTM D-2216, ASTM D-2419, ASTM D4318, ASTM D-5281			
Specifications No Specs Sample Meets Specs ? N/A		D ₍₅₎ = 0.045 mm % Gravel = 36.1% Coeff. of Curvature, C _C = 2.29 D ₍₁₀₎ = 0.127 mm % Sand = 55.5% Coeff. of Uniformity, C _U = 32.63 D ₍₁₅₎ = 0.316 mm % Silt & Clay = 8.4% Fineness Modulus = 4.32 D ₍₃₀₎ = 1.096 mm Liquid Limit = 0.0% Plastic Limit = 0.0% D ₍₅₀₎ = 2.560 mm Plasticity Index = 0.0% Moisture %, as sampled = 4.1% D ₍₆₀₎ = 4.139 mm Sand Equivalent = n/a Req'd Sand Equivalent = D ₍₉₀₎ = 14.086 mm Fracture %, 1 Face = n/a Req'd Fracture %, 1 Face = Dust Ratio = 8/17 Fracture %, 2+ Faces = n/a Req'd Fracture %, 2+ Faces =	
Method(s) ASTM C-136, ASTM D-6913, ASTM C-117			
Sieve Size	Actual Cumulative Percent Passing	Interpolated Cumulative Percent Passing	
US	Metric	Specs Max	Specs Min
12.00"	300.00	100%	0.0%
10.00"	250.00	100%	0.0%
8.00"	200.00	100%	0.0%
6.00"	150.00	100%	0.0%
4.00"	100.00	100%	0.0%
3.00"	75.00	100%	0.0%
2.50"	63.00	100%	0.0%
2.00"	50.00	100%	0.0%
1.75"	45.00	100%	0.0%
1.50"	37.50	100%	0.0%
1.25"	31.50	100%	0.0%
1.00"	25.00	100%	0.0%
3/4"	19.00	97%	0.0%
5/8"	16.00	93%	0.0%
1/2"	12.50	88%	0.0%
3/8"	9.50	81%	0.0%
1/4"	6.30	69%	0.0%
#4	4.75	64%	0.0%
#8	2.36	49%	0.0%
#10	2.00	46%	0.0%
#16	1.18	32%	0.0%
#20	0.850	26%	0.0%
#30	0.600	21%	0.0%
#40	0.425	18%	0.0%
#50	0.300	15%	0.0%
#60	0.250	13%	0.0%
#80	0.180	11%	0.0%
#100	0.150	11%	0.0%
#140	0.106	9%	0.0%
#170	0.090	9%	0.0%
#200	0.075	8.4%	0.0%

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All results apply only to actual locations and materials tested. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Comments: _____

Reviewed by: Mark Peterson
Name
WABO Supervising Laboratory Technician



ASTM D-4318 Liquid Limit, Plastic Limit & Plasticity Index of Soils

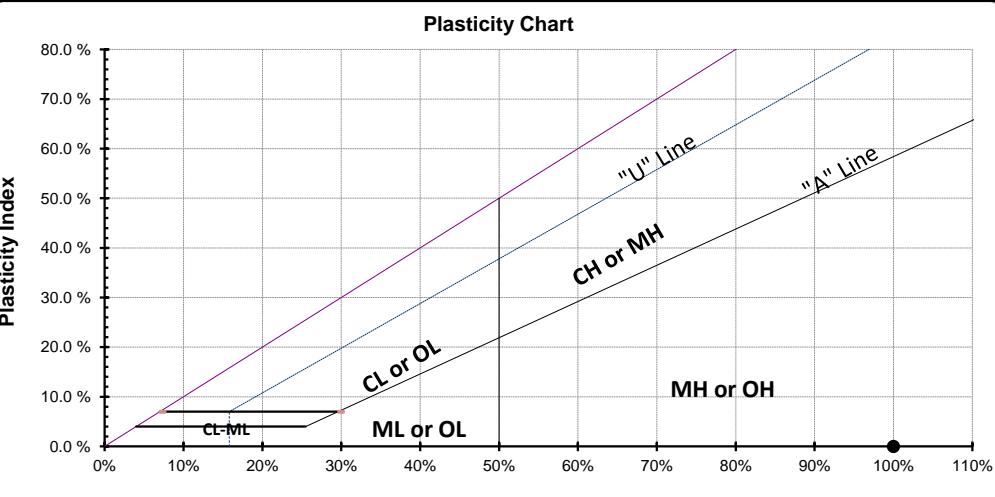
Project: Q.C. Whitmarsh Landfill Remed	Date Received: 12-Sep-24	Unified Soils Classification System, ASTM D-2487
Project #: 24B181	Sampled By: Others	SW-SC, Well-graded Sand with Silty Clay and Gravel
Client: WSP USA, Inc.	Date Tested: 18-Sep-24	Sample Color
Source: G-CB-3	Tested By: S. Boesenber	Brown
Sample #: B24-1505	Control No.:	

Liquid Limit Determination						
#1	#2	#3	#4	#5	#6	
Weight of Wet Soils + Pan:						
Weight of Dry Soils + Pan:	See Comments					
Weight of Pan:						
Weight of Dry Soils:						
Weight of Moisture:						
% Moisture:						
Number of Blows:						

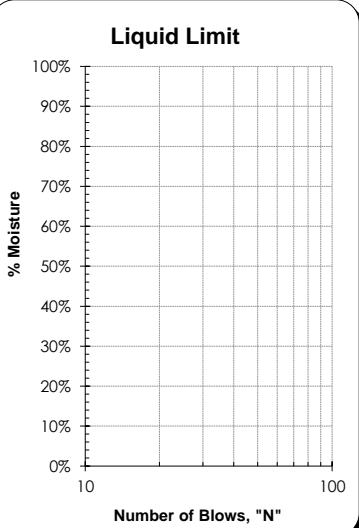
Liquid Limit @ 25 Blows: N/A
Plastic Limit: N/A
Plasticity Index, I_p : N/A

Plastic Limit Determination						
#1	#2	#3	#4	#5	#6	
Weight of Wet Soils + Pan:						
Weight of Dry Soils + Pan:	N/A					
Weight of Pan:						
Weight of Dry Soils:						
Weight of Moisture:						
% Moisture:						

Plasticity Chart



Liquid Limit



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Comments: Sample is non-plastic. Could not establish a liquid limit.

Reviewed by: Mark Peterson
 Name
 WABO Supervising Laboratory Technician



Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

06 November 2024

Accounts Payable
WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER, BRITISH COLUMBIA V6Z 2M1

RE: Whitmarsh (Whitmarsh)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)
24I0364

Associated SDG ID(s)
N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

A handwritten signature in blue ink that reads "Kelly Bottem".

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Cert# 100006-012

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 2410364	Turn-around Requested:
--	------------------------

ARI Client Company: WSP USA	Phone:
---------------------------------------	--------

Client Contact: ~~CHF, WHIMVS@WSP.COM (206) 300-0520~~
~~KOORVS.TANGHIGHI@WSP.COM (206) 641-6301~~

Client Project Name:
Import Material Sampling - Whitmarsh Landfill

Client Project #: **US-EI-PS21204410** Samplers: **Lindsey Wielick**

Page: **1** of **10**

Date: _____ Ice Present? _____

No. of Coolers: **3** Cooler Temps: **2.1, 3.3, 0.9**



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 Analytical Chemists and Consultants
 4611 South 134th Place, Suite 100
 Tukwila, WA 98168
 206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested								Notes/Comments
					EPA Lead	EPA TBT	EPA PCB	EPA Dioxin	EPA 8082	EPA PCBs/SVOC	EPA 8770	EPA Archive	
20240911-GS-TAT-D-1	09/11/24	11:25	S	1	X								
20240911-GS-TAT-A-1											X		
20240911-GS-TAT-PCB-1									X				
20240911-GS-TAT-TOC-1												X	
20240911-GS-TAT-M-1		▼			X								
20240911-GS-TAT-D-2		11:40				X							
20240911-GS-TAT-A-2										X			
20240911-GS-TAT-PCB-2								X					
20240911-GS-TAT-TOC-2											X		
20240911-GS-TAT-M-2	▼	▼	▼	▼	X								▼
Comments/Special Instructions				Relinquished by: (Signature) Lindsey Wielick	Received by: (Signature) JW	Relinquished by: (Signature)	Received by: (Signature)						
Please refer to API quote for analytical method				Lindsey Wielick	Savannah Wright								
See sent by API quote				Printed Name: Lindsey Wielick	Printed Name: Savannah Wright	Printed Name:	Printed Name:						
CLIFF Whitmarsh				Company: WSP USA	Company: Ari	Company:	Company:						
Date & Time: 09/12/24 16:26				Date & Time: 9-12-24 16:25	Date & Time:	Date & Time:	Date & Time:						

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 2416364	Turn-around Requested:
--	------------------------

ARI Client Company: WSP USA	Phone:
---------------------------------------	--------

Client Contact: ~~CHF.WHITMARSH@WSP.COM (206) 300-0520~~
~~KXORUS.TAHGHIGHI@WSP.COM (206) 441-0301~~

Client Project Name:
Import Material Sampling - Whitmarsh Landfill

Client Project #: **US-EI-PS21704410** Samplers: **Lindsey Wielick**

Sample ID	Date	Time	Matrix	No. Containers
-----------	------	------	--------	----------------

20240911-GS-TAT-D-3 09/11/24 11:55 S 1

20240911-GS-TAT-A-3

20240911-GS-TAT-PCB-3

20240911-GS-TAT-TOC-3

20240911-GS-TAT-M-3

20240911-GS-C-D-1 12:25

20240911-GS-C-A-1

20240911-GS-C-PCB-1

20240911-GS-C-TOC-1

20240911-GS-C-M-1

Comments/Special Instructions
 Relinquished by: **Lindsey Wielick** Received by: **JW** Relinquished by: Received by:
 (Signature) (Signature) (Signature)
 Printed Name: **Lindsey Wielick** Printed Name: **Swannah Wright** Printed Name: Printed Name:
 Company: **WSP USA** Company: **ARI** Company: Company:
 Date & Time: **09/12/24 16:28** Date & Time: **9-12-24 16:35** Date & Time: Date & Time:

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

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DETAILS

Page: **2** of **10**

Date: **Ice Present?**

No. of Coolers: **3** Cooler Temps: **21°F 33, 0.9**



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 Analytical Chemists and Consultants
 4611 South 134th Place, Suite 100
 Tukwila, WA 98168
 206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested							Notes/Comments	
					EPA Method 207	EPA Method 7471A	EPA Method 3020	PCB / SVOC	EPA Method 8270	EPA Method 8081	EPA Method 8270	EPA TOC	
20240911-GS-TAT-D-3	09/11/24	11:55	S	1	X								
20240911-GS-TAT-A-3												X	
20240911-GS-TAT-PCB-3												X	
20240911-GS-TAT-TOC-3												X	
20240911-GS-TAT-M-3					X								
20240911-GS-C-D-1		12:25				X							
20240911-GS-C-A-1										X			
20240911-GS-C-PCB-1									X				
20240911-GS-C-TOC-1											X		
20240911-GS-C-M-1					X								

25 JW 9/12

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 2910384	Turn-around Requested:	Page: 3 of 10												
ARI Client Company: WSP USA	Phone:	Date:	Ice Present?	Yes										
Client Contact: ctiff.whitmrus@wsp.com (206) 300-0520 koons.talaghiali@wsp.com (206) 641-0301	No. of Coolers: 3	Cooler Temps: 2.1, 3.3, 9												
Client Project Name: Import Material Sampling - Whitmarsh Landfill	Analysis Requested										Notes/Comments			
Client Project #: US-EI-PS2120441D	Samplers: Lindsey Wielick	EPA 6010/6020 Metals	EPA 7471A	EPA 110138 Dioxin	EPA 8082 PCB/SVOC	EPA 8270 Archive	EPA 8081	EPA 8264 PCP	EPA 8270 PCP	EPA 8270 PCP	EPA TOC	Refer to ARI quote for analysis		
Sample ID	Date	Time	Matrix	No. Containers										
20240911-GS-C-D-2	09/11/24	12:25 12:40	S	1			X							
20240911-GS-C-A-2									X					
20240911-GS-C-PCB-2								X						
20240911-GS-C-TOC-2										X				
20240911-GS-C-M-2					X	X								
20240911-GS-C-D-3		12:40 12:50					X							
20240911-GS-C-A-3								X						
20240911-GS-C-PCB-3								X						
20240911-GS-C-TOC-3										X				
20240911-GS-C-M-3					X									
Comments/Special Instructions	Relinquished by: (Signature) Lindsey Wielick	Received by: (Signature) JW	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)								
	Printed Name: Lindsey Wielick	Printed Name: Savannah Wright	Printed Name:	Printed Name:	Printed Name:	Printed Name:								
	Company: WSP USA	Company: Ari	Company:	Company:	Company:	Company:								
	Date & Time: 09/12/24 16:35	Date & Time: 9-12-24 16:3525	Date & Time:	Date & Time:	Date & Time:	Date & Time:								

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.



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4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: <i>2416364</i>	Turn-around Requested:
--	------------------------

ARI Client Company: <i>WSP USA</i>	Phone:
---------------------------------------	--------

Client Contact: *Giffi.Whitmarsh@wsp.com (206) 300-0520*
Koens.taihighighi@wsp.com (206) 641-4301

Client Project Name:
Import Material Sampling - Whitmarsh Landfill

Client Project #: *VS-EI-PS21204410* Samplers: *Lindsey Wielick*

Sample ID	Date	Time	Matrix	No. Containers	EPAT	WMA	EPAT	WSB	WUXIA	EPAT	SOXAC	PCB / SVOC	PCP	SVOC	EPAT	SS270	EPAT	SS270	EPAT	TCU	4000AM	Notes/Comments
20240911-SBT-C-D-1	09/11/24	15:10	S	1					X													
20240911-SBT-C-A-1																	X					
20240911-SBT-C-PCB-1																X						
20240911-SBT-C-TOC-1																			X			
20240911-SBT-C-M-1		↓							X													
20240911-SBT-C-D-2		15:20							X													
20240911-SBT-C-A-2																X						
20240911-SBT-C-PCB-2																X						
20240911-SBT-C-TOC-2																		X				
20240911-SBT-C-M-2	↓	↓	↓	↓					X													

Comments/Special Instructions	Relinquished by: (Signature) <i>Lindsey Wielick</i>	Received by: (Signature) <i>JW</i>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: <i>Lindsey Wielick</i>	Printed Name: <i>Savannah Wright</i>	Printed Name:	Printed Name:
	Company: <i>WSP USA</i>	Company: <i>Ari</i>	Company:	Company:
Date & Time: <i>09/12/24 16:25</i>	Date & Time: <i>9-12-24 16:25</i>	Date & Time:	Date & Time:	

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.



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 Analytical Chemists and Consultants
 4611 South 134th Place, Suite 100
 Tukwila, WA 98168
 206-695-6200 206-695-6201 (fax)

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 2410324	Turn-around Requested:	Page: 5 of 10												
ARI Client Company: WSP USA	Phone:	Date:	Ice Present? Yes											
Client Contact: CHEF.WHIMUS@WSP.COM (206) 300-0520 KOORUS.TAHGHIGHI@WSP.COM (206) 641-10301		No. of Coolers: 3	Cooler Temps: 21, 0, 9, 23											
Client Project Name: Import Material sampling - Whitmarsh Landfill														
Client Project #: US-EI-PS21204410	Samplers: Lindsey Wielick					Analysis Requested	Notes/Comments							
Sample ID	Date	Time	Matrix	No. Containers	EPA 10101 LW120 M100	EPA 10138 TAT14	EPA 10139 DIOXIN	EPA 8084 PCB/180C	EPA 8270 Archives	EPA 8084 TOC	EPA 8270 EPA 8270	EPA 8270 TOC	EPA 8270 OP	Refer to ARI quote for analysis
20240911-SBT-C-D-3	09/11/24	15:30	S	1	X									
20240911-SBT-C-A-3										X				
20240911-SBT-C-PCB-3									X					
20240911-SBT-C-TOC-3											X			
20240911-SBT-C-M-3		*			X									
20240911-SBT-TAT-D-1		16:00				X								
20240911-SBT-TAT-A-1									X					
20240911-SBT-TAT-PCB-1								X						
20240911-SBT-TAT-TOC-1										X				
20240911-SBT-TAT-M-1	*	*	*	*	X									*
Comments/Special Instructions	Relinquished by: (Signature) Lindsey Wielick		Received by: (Signature) JW			Relinquished by: (Signature)		Received by: (Signature)						
	Printed Name: Lindsey Wielick		Printed Name: Savannah Wright			Printed Name:		Printed Name:						
	Company: WSP USA		Company: Ari			Company:		Company:						
	Date & Time: 09/12/24 16:25		Date & Time: 9-12-24 16:25			Date & Time:		Date & Time:						

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

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Analytical Resources, LLC
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: <u>2410911</u>	Turn-around Requested:
ARI Client Company: <u>WSP USA</u>	Phone:

Client Contact: CUFF.Whitmarsh@wsp.com (206)300-0520
koorv.tahghighi@wsp.com (206)441-4301

Client Project Name:
Import Material Sampling - Whitmarsh Landfill

Client Project #: VS-EI-PS21204410 Samplers: Lindsey Wielick

Sample ID	Date	Time	Matrix	No. Containers
-----------	------	------	--------	----------------

20240911-SBT-TAT-D-2	09/11/24	16:10	S	1	X				
20240911-SBT-TAT-A-2							X		
20240911-SBT-TAT-PCB-2						X			
20240911-SBT-TAT-TOC-2								X	
20240911-SBT-TAT-M-2		↓			X				
20240911-SBT-TAT-D-3		16:20			X				
20240911-SBT-TAT-A-3							X		
20240911-SBT-TAT-PCB-3						X			
20240911-SBT-TAT-TOC-3								X	
20240911-SBT-TAT-M-3	↓	↓	↓	↓	X				↓

Comments/Special Instructions	Relinquished by: (Signature) <u>Lindsey W.</u>	Received by: (Signature) <u>JW</u>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: <u>Lindsey Wielick</u>	Printed Name: <u>Savannah Wright</u>	Printed Name:	Printed Name:
	Company: <u>WSP USA</u>	Company: <u>ARI</u>	Company:	Company:
	Date & Time: <u>09/12/24 16:25</u>	Date & Time: <u>9-12-24 16:25</u>	Date & Time:	Date & Time:

Page: 6 of 10

Date: 9-12-24 Ice Present? Yes

No. of Coolers: 3 Cooler Temps: 2.1, 3.3, 840.9



Analytical Resources, LLC
 Analytical Chemists and Consultants
 4611 South 134th Place, Suite 100
 Tukwila, WA 98168
 206-695-6200 206-695-6201 (fax)

Analysis Requested							Notes/Comments
<input checked="" type="checkbox"/>	Refer to ARI quote for analysis						

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Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **2410364**

Turn-around Requested:

ARI Client Company: **WSP USA**

Phone:

Client Contact:

Client Project Name:

Import Material Sampling - Whitmarsh Landfill

Client Project #: **US-EJ-W521204410**

Samplers:

LW

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested							Notes/Comments
					EPA TOC	EPA TPH	EPA 8270	EPA 8220	EPA 8265	NWTPH	EPA TOC	
20240912-G-BSD-TOC-3	09/12/24		S	1							X	
20240912-G-BSD-TM-3						X						
20240912-G-CB-Dx/A-1	09/12/24	08:35	S							X	X	
20240912-G-CB-Dx/A-1 TPHG		0		2								
20240912-G-CB-M-1					X		X					
20240912-G-CB-Dx/A-2		08:50								X	X	
20240912-G-CB-Dx/A-2 TPHG				2								
20240912-G-CB-M-2					X		X					
20240912-G-CB-Dx/A-3		09:10								X	X	
20240912-G-CB-Dx/A-3 TPHG-3				2	↓	↓	↓	↓	↓			↓

Comments/Special Instructions

Relinquished by:
(Signature) **Lindsey Welick**

Printed Name:
Lindsey Welick

Company:
WSP USA

Date & Time:
09/12/24 16:25

Received by:
(Signature) **SEW**

Printed Name:
Savannah Bright

Company:
ARI

Date & Time:
9-12-24 16:25

Relinquished by:
(Signature)

Printed Name:

Company:

Date & Time:

Received by:
(Signature)

Printed Name:

Company:

Date & Time:

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

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Analytical Resources, LLC
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: <i>2410384</i>	Turn-around Requested:
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ARI Client Company:	Phone:
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Client Contact:

Client Project Name:

Client Project #:	Samplers:
-------------------	-----------

Sample ID	Date	Time	Matrix	No. Containers
20240912-G1-CB-M-3	09/12/24	09:10	S	1

20240912-MSG-CB-Dx <i>1</i> -1		11:15		1
--------------------------------	--	-------	--	---

20240912-MSG-CB-TPHG-1				2
------------------------	--	--	--	---

20240912-MSG-CB-M-1		4		X
---------------------	--	---	--	---

20240912-MSG-CB-Dx <i>2</i> -2		11:35		
--------------------------------	--	-------	--	--

20240912-MSG-CB-TPHG-2			2	X
------------------------	--	--	---	---

20240912-MSG-CB-M-2		4	X	
---------------------	--	---	---	--

20240912-MSG-CB-Dx <i>3</i> -3		11:50		
--------------------------------	--	-------	--	--

20240912-MSG-CB-TPHG-3			2	X
------------------------	--	--	---	---

20240912-MSG-CB-M-3		4	X	
---------------------	--	---	---	--

Page: 8 of 10

Date: Ice Present? Yes

No. of Coolers: 3 Cooler Temps: 33, 21, 0, 9



Analytical Resources, LLC
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested					Notes/Comments
					MRP101	MRP102	MRP103	MRP104	MRP105	
20240912-G1-CB-M-3	09/12/24	09:10	S	1	X					
20240912-MSG-CB-Dx <i>1</i> -1		11:15		1						X
20240912-MSG-CB-TPHG-1				2						X
20240912-MSG-CB-M-1		4			X					
20240912-MSG-CB-Dx <i>2</i> -2		11:35								X
20240912-MSG-CB-TPHG-2				2						X
20240912-MSG-CB-M-2		4		X						
20240912-MSG-CB-Dx <i>3</i> -3		11:50								X
20240912-MSG-CB-TPHG-3				2						X
20240912-MSG-CB-M-3		4		X						

Comments/Special Instructions	Relinquished by: (Signature) <i>Lindsey W</i>	Received by: (Signature) <i>JW</i>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: <i>Lindsey Wielicki</i>	Printed Name: <i>Savannah Wright</i>	Printed Name:	Printed Name:
	Company: <i>WSP USA</i>	Company: <i>Ari</i>	Company:	Company:
	Date & Time: <i>09/12/24 16:25</i>	Date & Time: <i>9-12-24 16:24</i>	Date & Time:	Date & Time:

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

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Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: <u>2410344</u>	Turn-around Requested:	Page: <u>10</u> of <u>10</u>			 Analytical Resources, LLC Analytical Chemists and Consultants 4611 South 134th Place, Suite 100 Tukwila, WA 98168 206-695-6200 206-695-6201 (fax)				
ARI Client Company:	Phone:	Date:	Ice Present?						
Client Contact:		No. of Coolers: <u>3</u>	Cooler Temps: <u>33, 21, 0.9</u>						
Client Project Name:	Analysis Requested								
Client Project #:	Samplers:	EPA 600/1 Method 200 EPA 1610A	EPA 600/2 TOC 4000 A	PUB SVOC	Archive				Notes/Comments
Sample ID	Date	Time	Matrix	No. Containers					Refer to ARI quote for analysis
20240912-MSG1-CB-TOC-3		11:50	S	+	X				
20240912-MSG1-CB-TOC-3	09/12/24		S	+					
20240912-MSG1-CB-M-3				+	X				
20240912-MSG1-CB-PCB-1	09/12/24	11:15 08:35	S	1		X			
20240912-MSG1-CB-PCB-1		11:35				X			
20240912-MSG1-CB-PCB-3		08:50				X			
20240912-MSG1-CB-A-1		11:15				X			
20240912-MSG1-CB-A-2		11:35				X			
20240912-MSG1-CB-A-3		11:50				X			
20240912-MSG1-CB-TOC-1		11:15			X				
20240912-MSG1-CB-TOC-2	8	11:35		8	X				
Comments/Special Instructions	Relinquished by: (Signature) <u>Lindsey Wier</u>	Received by: (Signature) <u>SLW</u>	Relinquished by: (Signature)	Received by: (Signature)					
	Printed Name: <u>Lindsey Wierwille</u>	Printed Name: <u>Savannah Wright</u>	Printed Name:	Printed Name:					
	Company: <u>WSP USA</u>	Company: <u>Ari</u>	Company:	Company:					
Date & Time: <u>09/12/24 10:25</u>	Date & Time: <u>9-12-24 10:25</u>	Date & Time:	Date & Time:						

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

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Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: <i>241034</i>	Turn-around Requested:	Page: <i>10</i> of <i>10</i>			 Analytical Resources, LLC Analytical Chemists and Consultants 4611 South 134th Place, Suite 100 Tukwila, WA 98168 206-695-6200 206-695-6201 (fax)		
ARI Client Company: <i>WSP USA</i>	Phone:	Date: <i></i>	Ice Present? <i>Yes</i>				
Client Contact:	No. of Coolers: <i>3</i>	Cooler Temps: <i>33, 21, 29</i>					
Client Project Name:	Analysis Requested					Notes/Comments	
Client Project #:	Samplers:					TOC PCB/ SVOC	<i>Refer to ARI quote for analysis</i>
Sample ID	Date	Time	Matrix	No. Containers			
20240912-G1-CB-TUC-1	<i>09/12/24</i>	<i>08:35</i>	<i>S</i>	<i>1</i>	<i>X</i>		
20240912-G1-CB-TUC-2		<i>08:50</i>			<i>X</i>		
20240912-G1-CB-TUC-3		<i>09:10</i>			<i>X</i>		
20240912-G1-CB-PCB-1		<i>08:35</i>			<i>X</i>		
20240912-G1-CB-PCB-2		<i>08:50</i>			<i>X</i>		
20240912-G1-CB-PCB-3	<i>↓</i>	<i>09:10</i>	<i>↓</i>	<i>1</i>	<i>X</i>		
Trip Blank	<i>—</i>	<i>—</i>	<i>—</i>	<i>2</i>			
Comments/Special Instructions	Relinquished by: (Signature) <i>Lindsey W</i>	Received by: (Signature) <i>SLW</i>	Relinquished by: (Signature)	Received by: (Signature)			
	Printed Name: <i>Lindsey Welch</i>	Printed Name: <i>Savannah Wright</i>	Printed Name:	Printed Name:			
	Company: <i>WSP USA</i>	Company: <i>ARI</i>	Company:	Company:			
	Date & Time: <i>09/12/24 16:25</i>	Date & Time: <i>09-12-24 16:25</i>	Date & Time:	Date & Time:			

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WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
20240911-GS-TAT-D-1	24I0364-01	Solid	11-Sep-2024 11:25	12-Sep-2024 16:25
20240911-GS-TAT-PCB-1	24I0364-03	Solid	11-Sep-2024 11:25	12-Sep-2024 16:25
20240911-GS-TAT-TOC-1	24I0364-04	Solid	11-Sep-2024 11:25	12-Sep-2024 16:25
20240911-GS-TAT-M-1	24I0364-05	Solid	11-Sep-2024 11:25	12-Sep-2024 16:25
20240911-GS-TAT-D-2	24I0364-06	Solid	11-Sep-2024 11:40	12-Sep-2024 16:25
20240911-GS-TAT-PCB-2	24I0364-08	Solid	11-Sep-2024 11:40	12-Sep-2024 16:25
20240911-GS-TAT-TOC-2	24I0364-09	Solid	11-Sep-2024 11:40	12-Sep-2024 16:25
20240911-GS-TAT-M-2	24I0364-10	Solid	11-Sep-2024 11:40	12-Sep-2024 16:25
20240911-GS-TAT-D-3	24I0364-11	Solid	11-Sep-2024 11:55	12-Sep-2024 16:25
20240911-GS-TAT-PCB-3	24I0364-13	Solid	11-Sep-2024 11:55	12-Sep-2024 16:25
20240911-GS-TAT-TOC-3	24I0364-14	Solid	11-Sep-2024 11:55	12-Sep-2024 16:25
20240911-GS-TAT-M-3	24I0364-15	Solid	11-Sep-2024 11:55	12-Sep-2024 16:25
20240911-GS-C-D-1	24I0364-16	Solid	11-Sep-2024 12:25	12-Sep-2024 16:25
20240911-GS-C-PCB-1	24I0364-18	Solid	11-Sep-2024 12:25	12-Sep-2024 16:25
20240911-GS-C-TOC-1	24I0364-19	Solid	11-Sep-2024 12:25	12-Sep-2024 16:25
20240911-GS-C-M-1	24I0364-20	Solid	11-Sep-2024 12:25	12-Sep-2024 16:25
20240911-GS-C-D-2	24I0364-21	Solid	11-Sep-2024 12:40	12-Sep-2024 16:25
20240911-GS-C-PCB-2	24I0364-23	Solid	11-Sep-2024 12:40	12-Sep-2024 16:25
20240911-GS-C-TOC-2	24I0364-24	Solid	11-Sep-2024 12:40	12-Sep-2024 16:25
20240911-GS-C-M-2	24I0364-25	Solid	11-Sep-2024 12:40	12-Sep-2024 16:25
20240911-GS-C-D-3	24I0364-26	Solid	11-Sep-2024 12:50	12-Sep-2024 16:25
20240911-GS-C-PCB-3	24I0364-28	Solid	11-Sep-2024 12:50	12-Sep-2024 16:25
20240911-GS-C-TOC-3	24I0364-29	Solid	11-Sep-2024 12:50	12-Sep-2024 16:25
20240911-GS-C-M-3	24I0364-30	Solid	11-Sep-2024 12:50	12-Sep-2024 16:25
20240911-SBT-C-D-1	24I0364-31	Solid	11-Sep-2024 15:10	12-Sep-2024 16:25
20240911-SBT-C-PCB-1	24I0364-33	Solid	11-Sep-2024 15:10	12-Sep-2024 16:25
20240911-SBT-C-TOC-1	24I0364-34	Solid	11-Sep-2024 15:10	12-Sep-2024 16:25
20240911-SBT-C-M-1	24I0364-35	Solid	11-Sep-2024 15:10	12-Sep-2024 16:25
20240911-SBT-C-D-2	24I0364-36	Solid	11-Sep-2024 15:20	12-Sep-2024 16:25
20240911-SBT-C-PCB-2	24I0364-38	Solid	11-Sep-2024 15:20	12-Sep-2024 16:25
20240911-SBT-C-TOC-2	24I0364-39	Solid	11-Sep-2024 15:20	12-Sep-2024 16:25
20240911-SBT-C-M-2	24I0364-40	Solid	11-Sep-2024 15:20	12-Sep-2024 16:25
20240911-SBT-C-D-3	24I0364-41	Solid	11-Sep-2024 15:30	12-Sep-2024 16:25
20240911-SBT-C-PCB-3	24I0364-43	Solid	11-Sep-2024 15:30	12-Sep-2024 16:25
20240911-SBT-C-TOC-3	24I0364-44	Solid	11-Sep-2024 15:30	12-Sep-2024 16:25
20240911-SBT-C-M-3	24I0364-45	Solid	11-Sep-2024 15:30	12-Sep-2024 16:25
20240911-SBT-TAT-D-1	24I0364-46	Solid	11-Sep-2024 16:00	12-Sep-2024 16:25
20240911-SBT-TAT-PCB-1	24I0364-48	Solid	11-Sep-2024 16:00	12-Sep-2024 16:25
20240911-SBT-TAT-TOC-1	24I0364-49	Solid	11-Sep-2024 16:00	12-Sep-2024 16:25



WSP USA, Inc.	Project: Whitmarsh			
840 HOWE STREET, #1000	Project Number: Whitmarsh			Reported:
VANCOUVER BRITISH COLUMBIA, V6Z 2M1	Project Manager: Accounts Payable			06-Nov-2024 16:54
20240911-SBT-TAT-M-1	24I0364-50	Solid	11-Sep-2024 16:00	12-Sep-2024 16:25
20240911-SBT-TAT-D-2	24I0364-51	Solid	11-Sep-2024 16:10	12-Sep-2024 16:25
20240911-SBT-TAT-PCB-2	24I0364-53	Solid	11-Sep-2024 16:10	12-Sep-2024 16:25
20240911-SBT-TAT-TOC-2	24I0364-54	Solid	11-Sep-2024 16:10	12-Sep-2024 16:25
20240911-SBT-TAT-M-2	24I0364-55	Solid	11-Sep-2024 16:10	12-Sep-2024 16:25
20240911-SBT-TAT-D-3	24I0364-56	Solid	11-Sep-2024 16:20	12-Sep-2024 16:25
20240911-SBT-TAT-PCB-3	24I0364-58	Solid	11-Sep-2024 16:20	12-Sep-2024 16:25
20240911-SBT-TAT-TOC-3	24I0364-59	Solid	11-Sep-2024 16:20	12-Sep-2024 16:25
20240911-SBT-TAT-M-3	24I0364-60	Solid	11-Sep-2024 16:20	12-Sep-2024 16:25
20240912-G-CB-Dx/A-1	24I0364-61	Solid	12-Sep-2024 08:35	12-Sep-2024 16:25
20240912-G-CB-TPHG-1	24I0364-62	Solid	12-Sep-2024 08:35	12-Sep-2024 16:25
20240912-G-CB-M-1	24I0364-63	Solid	12-Sep-2024 08:35	12-Sep-2024 16:25
20240912-G-CB-Dx/A-2	24I0364-64	Solid	12-Sep-2024 08:50	12-Sep-2024 16:25
20240912-G-CB-TPHG-2	24I0364-65	Solid	12-Sep-2024 08:50	12-Sep-2024 16:25
20240912-G-CB-M-2	24I0364-66	Solid	12-Sep-2024 08:50	12-Sep-2024 16:25
20240912-G-CB-Dx/A-3	24I0364-67	Solid	12-Sep-2024 09:10	12-Sep-2024 16:25
20240912-G-CB-TPHG-3	24I0364-68	Solid	12-Sep-2024 09:10	12-Sep-2024 16:25
20240912-G-CB-M-3	24I0364-69	Solid	12-Sep-2024 09:10	12-Sep-2024 16:25
20240912-MSG-CB-Dx-1	24I0364-70	Solid	12-Sep-2024 11:15	12-Sep-2024 16:25
20240912-MSG-CB-TPHG-1	24I0364-71	Solid	12-Sep-2024 11:15	12-Sep-2024 16:25
20240912-MSG-CB-M-1	24I0364-72	Solid	12-Sep-2024 11:15	12-Sep-2024 16:25
20240912-MSG-CB-Dx-2	24I0364-73	Solid	12-Sep-2024 11:35	12-Sep-2024 16:25
20240912-MSG-CB-TPHG-2	24I0364-74	Solid	12-Sep-2024 11:35	12-Sep-2024 16:25
20240912-MSG-CB-M-2	24I0364-75	Solid	12-Sep-2024 11:35	12-Sep-2024 16:25
20240912-MSG-CB-Dx-3	24I0364-76	Solid	12-Sep-2024 11:50	12-Sep-2024 16:25
20240912-MSG-CB-TPHG-3	24I0364-77	Solid	12-Sep-2024 11:50	12-Sep-2024 16:25
20240912-MSG-CB-M-3	24I0364-78	Solid	12-Sep-2024 11:50	12-Sep-2024 16:25
20240912-MSG-CB-TOC-3	24I0364-79	Solid	12-Sep-2024 11:50	12-Sep-2024 16:25
20240912-MSG-CB-PCB-1	24I0364-80	Solid	12-Sep-2024 11:15	12-Sep-2024 16:25
20240912-MSG-CB-PCB-2	24I0364-81	Solid	12-Sep-2024 11:35	12-Sep-2024 16:25
20240912-MSG-CB-PCB-3	24I0364-82	Solid	12-Sep-2024 11:50	12-Sep-2024 16:25
20240912-MSG-CB-TOC-1	24I0364-86	Solid	12-Sep-2024 11:15	12-Sep-2024 16:25
20240912-MSG-CB-TOC-2	24I0364-87	Solid	12-Sep-2024 11:35	12-Sep-2024 16:25
20240912-G-CB-TOC-1	24I0364-88	Solid	12-Sep-2024 08:35	12-Sep-2024 16:25
20240912-G-CB-TOC-2	24I0364-89	Solid	12-Sep-2024 08:50	12-Sep-2024 16:25
20240912-G-CB-TOC-3	24I0364-90	Solid	12-Sep-2024 09:10	12-Sep-2024 16:25
20240912-G-CB-PCB-1	24I0364-91	Solid	12-Sep-2024 08:35	12-Sep-2024 16:25
20240912-G-CB-PCB-2	24I0364-92	Solid	12-Sep-2024 08:50	12-Sep-2024 16:25
20240912-G-CB-PCB-3	24I0364-93	Solid	12-Sep-2024 09:10	12-Sep-2024 16:25
Trip Blanks	24I0364-94	Water	11-Sep-2024 11:25	12-Sep-2024 16:25



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

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06-Nov-2024 16:54

Work Order Case Narrative

Client: WSP USA, Inc
Project: Whitmarsh
Work Order: 24I0364

Sample receipt

Samples as listed on the preceding page were received September 12, 2024 under ARI work order 24I0364. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Dioxin/Furans - EPA Method 1613

The sample(s) were extracted and analyzed within the recommended holding times. Analysis was performed using an application specific column developed by Restek. The RTX-Dioxin2 column has unique isomer separation for the 2378-TCDF, eliminating the need for confirmation analysis.

Initial and continuing calibrations were within method requirements.

Labeled internal standard areas were within limits.

The cleanup surrogate percent recoveries were within control limits.

The method blank(s) contained OCDD. Samples that contain OCDD have been flagged with a "B" qualifier.

The OPR (Ongoing Precision and Recovery) standard percent recoveries were within control limits.

The duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Gasoline by NWTPH-q (GC/MS)

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD)



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were within control limits.

Diesel/Heavy Oil Range Organics - WA-Ecology Method NW-TPHDx

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits with the exception of analytes flagged on the associated forms.

PCB Aroclors - EPA Method SW8082A

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements with the exception of aroclor 1260 which failed low on back column for ICV2 in SMJ0003.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits with the exception of surrogates flagged on the associated forms.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Semivolatiles - EPA Method SW8270E

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements except as flagged. Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene, Fluoranthene and Indeno(1,2,3-cd)pyrene which were out of control low and Acenaphthylene was out of control high in the initial calibration verification SMI0383-ICV1. Acenaphthylene, Benzyl Alcohol, Butylbenzylphthalate



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and Di-n-Butylphthalate which were out of control high in the initial calibration verification SMI 0411-ICV1. Benzoic acid, Fluoranthene, Pyrene and surrogate p-Terphenyl-d14 which were out of control low and Acenaphthylene was out of control high in initial calibration verification SMI0430-ICV1. All associated samples which contain analyte have been flagged with a "Q" qualifier. Benzo(g,h,i)perylene and surrogate Perylene-d12 which was out of control low and bis(2-Ethylhexyl)phthalate and Butylbenzylphthalate which was out of control high in the continuing calibration verification SMI0383-CCV1. Benzo(g,h,i)perylene, Dibenzo(a,h)anthracene and surrogate Perylene-d12 which were out of control low and Acenaphthylene, bis(2-Ethylhexyl)phthalate and Butylbenzylphthalate was out of control high in the continuing calibration verification SMI0411-CCV1.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits except p-Terphenyl-d14 was out of control high as flagged in samples and QC samples.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits except as flagged.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Semivolatiles - EPA Method SW8270E-SIM

The sample(s) were extracted and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements except as follows. Pentachlorophenol was out of control low and surrogate p-Terphenyl-d14 was out of control high in the initial calibration verification SMJ0155-ICV1 and SMJ0155-ICV2. Dibenzo(a,h)anthracene, N-Nitrosodiphenylamine, Pentachlorophenol and surrogate Perylene-d12 which were out of control low and Butylbenzylphthalate and surrogate p-Terphenyl-d14 which were out of control high in the initial calibration verification SMJ0155-ICV3. Dibenzo(a,h)anthracene and Pentachlorophenol were out of control low in the initial calibration verification SMJ0155-ICV4. Hexachlorobenzene was out of control low and surrogate p-Terphenyl-d14 which were out of control high in the initial calibration verification SMJ0157-ICV1. Hexachlorobenzene was out of control low and Diethyl Phthalate and surrogate p-Terphenyl-d14 which were out of control high in the initial calibration verification SMJ0157-ICV2. Dibenzo(a,h)anthracene and Hexachlorobenzene were out of control low and surrogate p-Terphenyl-d14 which were out of control high in the initial calibration verification SMJ0157-ICV3. All associated samples which contain analyte have been flagged with a "Q" qualifier. Butylbenzylphthalate and surrogate p-Terphenyl-d14 which were out of control high in the continuing calibration verification SMJ0155-CCV1. Dibenzo(a,h)anthracene and surrogate Perylene-d12 which were out of control low and surrogate p-Terphenyl-d14 was out of control high in the continuing calibration verification SMJ0157-CCV1.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits except p-Terphenyl-d14 was out of control high as flagged in samples and QC samples.



WSP USA, Inc.

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The method blank(s) were clean at the reporting limits except Diethyl Phthalate. All associate samples which contain analyte have been flagged with a "B" qualifier.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits except as flagged.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits except as flagged except as flagged.

SIM runs associated with full-scan runs for the same compounds will not be diluted for over-range results if detected and reported in the full-scan run.

Total Metals - EPA Method 6020B and 7471B

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations including interference checks were within method requirements for reported elements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The duplicate (DUP) relative percent difference (RPD) were within advisory control limits with the exception of analytes flagged on the associated forms. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

The reference material (SRM) percent recoveries were within control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The reference material (SRM) percent recoveries were within control limits.

The duplicate (DUP) relative percent difference (RPD) were within advisory control limits with the exception of analytes flagged on the associated forms. The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.



Cooler Receipt Form

ARI Client: WSP USA
COC No(s): _____ (NA)
Assigned ARI Job No: 2410364

Project Name: Import Material Sampling
Delivered by: Fed-Ex UPS Courier (Hand Delivered Other:)
Tracking No: _____ (NA)

Preliminary Examination Phase:

- Were intact, properly signed and dated custody seals attached to the outside of the cooler? YES NO
 Were custody papers included with the cooler? YES NO
 Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)

Time 16:25

2.1 3.3 8.9

Temp Gun ID#: 04

Cooler Accepted by: SA Date: 9-12-24 Time: 16:25

Complete custody forms and attach all shipping documents

Log-In Phase:

- Was a temperature blank included in the cooler? YES NO
 What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____
 Was sufficient ice used (if appropriate)? NA YES NO
 How were bottles sealed in plastic bags? Individually Grouped Not
 Did all bottles arrive in good condition (unbroken)? YES NO
 Were all bottle labels complete and legible? YES NO
 Did the number of containers listed on COC match with the number of containers received? YES NO
 Did all bottle labels and tags agree with custody papers? YES NO
 Were all bottles used correct for the requested analyses? YES NO
 Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ... NA YES NO
 Were all VOC vials free of air bubbles? NA YES NO
 Was sufficient amount of sample sent in each bottle? NA YES NO
 Date VOC Trip Blank was made at ARI..... NA 09/10/24 12/24

Were the sample(s) split by ARI? NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: E Date: 09/17/24 Time: 14:50 Labels checked by: E

**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By:

Date:



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-D-1
24I0364-01 (Solid)

Dioxins/Furans

Method: EPA 1613B	Sampled: 09/11/2024 11:25
Instrument: AUTOSPEC01 Analyst: pk	Analyzed: 11/01/2024 15:19
Sample Preparation: Preparation Method: EPA 1613 Preparation Batch: BMI0462 Prepared: 10/09/2024	Extract ID: 24I0364-01 A 01 Dry Weight: 10.01 g % Solids: 63.72
Sample Cleanup: Cleanup Method: Silica Gel Cleanup Batch: CMJ0076 Cleaned: 11-Oct-2024	Initial Volume: 20 uL Final Volume: 20 uL
Sample Cleanup: Cleanup Method: Sulfuric Acid Cleanup Batch: CMJ0075 Cleaned: 11-Oct-2024	Initial Volume: 20 uL Final Volume: 20 uL
Sample Cleanup: Cleanup Method: Florisil Cleanup Batch: CMJ0077 Cleaned: 11-Oct-2024	Initial Volume: 20 uL Final Volume: 20 uL

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting				
				EDL	Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	0.411	0.999	ND	ng/kg	U
2,3,7,8-TCDD			0.655-0.886	0.323	0.999	ND	ng/kg	U
1,2,3,7,8-PeCDF			1.318-1.783	0.357	0.999	ND	ng/kg	U
2,3,4,7,8-PeCDF			1.318-1.783	0.397	0.999	ND	ng/kg	U
1,2,3,7,8-PeCDD			1.318-1.783	0.665	0.999	ND	ng/kg	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.457	0.999	ND	ng/kg	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.429	0.999	ND	ng/kg	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.452	0.999	ND	ng/kg	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.648	0.999	ND	ng/kg	U
1,2,3,4,7,8-HxCDD			1.054-1.426	0.766	0.999	ND	ng/kg	U
1,2,3,6,7,8-HxCDD			1.054-1.426	0.747	0.999	ND	ng/kg	U
1,2,3,7,8,9-HxCDD			1.054-1.426	0.819	0.999	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDF	0.764	0.893-1.208		0.999	1.74	ng/kg		EMPC
1,2,3,4,7,8,9-HpCDF		0.893-1.208		0.686	0.999	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDD	1.063	0.893-1.208			2.50	19.2	ng/kg	
OCDF		0.951	0.757-1.024		2.50	3.65	ng/kg	
OCDD		0.897	0.757-1.024		9.99	151	ng/kg	B
Homologue groups								
Total TCDF				0.999	ND	ng/kg	U	
Total TCDD				0.999	ND	ng/kg	U	
Total PeCDF				0.999	0.577	ng/kg	J	
Total PeCDD				0.999	ND	ng/kg	U	
Total HxCDF				0.999	1.77	ng/kg		
Total HxCDD				0.999	ND	ng/kg	U	
Total HpCDF				0.999	4.15	ng/kg		



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
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20240911-GS-TAT-D-1

24I0364-01 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 11:25

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 15:19

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting			
				Limit	Result	Units	Notes
Total HpCDD				0.999	32.0	ng/kg	

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 1.05

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.26

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND): 1.05

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND): 0.24



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
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20240911-GS-TAT-D-1

24I0364-01 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 11:25

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 15:19

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.709	0.655-0.886	24-169 %	57.5	%	
<i>13C12-2,3,7,8-TCDD</i>		0.776	0.655-0.886	25-164 %	59.1	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.426	1.318-1.783	24-185 %	70.0	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.629	1.318-1.783	21-178 %	61.8	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.613	1.318-1.783	25-181 %	59.8	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.537	0.434-0.587	26-152 %	64.6	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.503	0.434-0.587	26-123 %	73.1	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.531	0.434-0.587	28-136 %	69.8	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.517	0.434-0.587	29-147 %	70.9	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.207	1.054-1.426	32-141 %	59.8	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.327	1.054-1.426	28-130 %	67.9	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.455	0.374-0.506	28-143 %	72.0	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.457	0.374-0.506	26-138 %	62.6	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.177	0.893-1.208	23-140 %	76.9	%	
<i>13C12-OCDD</i>		0.994	0.757-1.024	17-157 %	75.0	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	65.7	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
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20240911-GS-TAT-D-1

24I0364-01 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 11:25

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 15:19

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
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20240911-GS-TAT-D-1

24I0364-01 (Solid)

Extractions

Method: ASTM D2216

Sampled: 09/11/2024 11:25

Instrument: N/A Analyst: TW

Analyzed: 09/19/2024 05:05

Sample Preparation: Preparation Method: No Prep-Organics
Preparation Batch: BMI0417
Prepared: 09/18/2024

Sample Size: 1 g (wet)

Final Volume: 1 g

Extract ID: 24I0364-01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Total Solids			0.01	63.72	%	
Labeled compounds						



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
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20240911-GS-TAT-PCB-1

24I0364-03 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 11:25

Instrument: NT10 Analyst: RJL Analyzed: 09/25/2024 15:54

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-03 A 02
Preparation Batch: BMI0474 Sample Size: 15.86 g (wet) Dry Weight: 10.02 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 63.17

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	49.9	99.8	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.8	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	34.9	49.9	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	49.9	99.8	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	ND	ug/kg	U
Pyrene	129-00-0	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	39.9	49.9	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	29.9	39.9	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-1

24I0364-03 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/11/2024 11:25

Instrument: NT10 Analyst: RJL

Analyzed: 09/25/2024 15:54

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	20.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	91.5	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	87.8	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	108	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	93.0	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	96.9	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	92.3	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	113	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	151	%	*



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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24I0364-03 (Solid)

Semivolatile Organic Compounds - SIM

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-03 A 02
Preparation Batch: BMI0474 Sample Size: 15.86 g (wet) Dry Weight: 10.02 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 63.17

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	2.5	5.0	10.5	ug/kg	
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	49.9	99.8	71.2	ug/kg	J
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	17.5	ug/kg	
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	11.9	ug/kg	J, B
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	11.7	ug/kg	Q, J
Butylbenzylphthalate	85-68-7	1	2.5	5.0	4.8	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	93.3	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	122	%	*, Q



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24I0364-03 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/11/2024 11:25
Instrument:	ECD5 Analyst: AA	Analyzed: 09/30/2024 11:54
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-03 A 01 Dry Weight: 12.51 g % Solids: 63.17
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>				40-126 %	91.3	%	
<i>Surrogate: Tetrachlorometaxylene</i>				44-120 %	94.6	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>				40-126 %	107	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>				44-120 %	97.1	%	



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20240911-GS-TAT-PCB-1

24I0364-03RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 11:25
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 15:23

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-03RE1 A 02
Preparation Batch: BMI0474 Sample Size: 15.86 g (wet) Dry Weight: 10.02 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 63.17

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	5	49.9	99.8	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	5	49.9	99.8	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	5	49.9	99.8	ND	ug/kg	U
Benzyl Alcohol	100-51-6	5	99.8	99.8	ND	ug/kg	U
2-Methylphenol	95-48-7	5	49.9	99.8	ND	ug/kg	U
4-Methylphenol	106-44-5	5	74.9	99.8	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	5	250	499	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	5	49.9	99.8	ND	ug/kg	U
Naphthalene	91-20-3	5	49.9	99.8	ND	ug/kg	U
Benzoic acid	65-85-0	5	499	998	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	5	49.9	99.8	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	5	49.9	99.8	ND	ug/kg	U
Acenaphthylene	208-96-8	5	49.9	99.8	ND	ug/kg	U
Dimethylphthalate	131-11-3	5	49.9	99.8	ND	ug/kg	U
Acenaphthene	83-32-9	5	49.9	99.8	ND	ug/kg	U
Dibenzofuran	132-64-9	5	99.8	99.8	ND	ug/kg	U
Fluorene	86-73-7	5	99.8	99.8	ND	ug/kg	U
Diethyl phthalate	84-66-2	5	175	250	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	5	49.9	99.8	ND	ug/kg	U
Hexachlorobenzene	118-74-1	5	99.8	99.8	ND	ug/kg	U
Pentachlorophenol	87-86-5	5	250	499	ND	ug/kg	U
Phenanthrene	85-01-8	5	49.9	99.8	ND	ug/kg	U
Anthracene	120-12-7	5	49.9	99.8	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	5	49.9	99.8	ND	ug/kg	U
Fluoranthene	206-44-0	5	49.9	99.8	ND	ug/kg	U
Pyrene	129-00-0	5	49.9	99.8	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	5	49.9	99.8	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	5	49.9	99.8	ND	ug/kg	U
Chrysene	218-01-9	5	49.9	99.8	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	5	200	250	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	5	49.9	99.8	ND	ug/kg	U
Benzofluoranthenes, Total		5	150	200	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	5	49.9	99.8	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	5	99.8	99.8	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	5	99.8	99.8	ND	ug/kg	U



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20240911-GS-TAT-PCB-1

24I0364-03RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/11/2024 11:25

Instrument: NT10 Analyst: RJL

Analyzed: 09/26/2024 15:23

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	5	99.8	99.8	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	94.5	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	91.6	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	98.4	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	88.2	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	92.3	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	95.8	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	95.6	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	112	%	



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20240911-GS-TAT-TOC-1

24I0364-04 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/11/2024 11:25
Instrument: TOC Cube Analyst: ARR Analyzed: 09/23/2024 20:38

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-04 A
Preparation Batch: BMI0526 Sample Size: 0.0271 g (wet) Dry Weight: 0.02 g
Prepared: 09/20/2024 Final Volume: 0.0271 mL % Solids: 61.04

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	11.6	%	



Analytical Resources, LLC

Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
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Project Manager: Accounts Payable

Reported:
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20240911-GS-TAT-TOC-1

24I0364-04 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/11/2024 11:25
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-04
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 61.04

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids		1	0.04	0.04	61.04	%	



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20240911-GS-TAT-M-1

24I0364-05 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/11/2024 11:25
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 18:16

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-05 A 01
Preparation Batch: BMI0484 Sample Size: 1.047 g (wet) Dry Weight: 0.65 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 61.99

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.06	0.31	3.35	mg/kg		
Cadmium	7440-43-9	20	0.05	0.15	0.18	mg/kg		
Copper	7440-50-8	20	0.54	0.77	32.8	mg/kg		
Zinc	7440-66-6	20	4.5	9.2	82.0	mg/kg		



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24I0364-05 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/11/2024 11:25
Instrument: ICPMS1 Analyst: DOE Analyzed: 09/27/2024 20:10

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-05 A 01
Preparation Batch: BMI0484 Sample Size: 1.047 g (wet) Dry Weight: 0.65 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 61.99

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	100	2.00	3.85	14.9	mg/kg		D
Lead	7439-92-1	20	0.08	0.15	3.20	mg/kg		
Silver	7440-22-4	20	0.03	0.31	0.09	mg/kg		J



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24I0364-05 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/11/2024 11:25
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 13:43

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-05 A
Preparation Batch: BMI0650 Sample Size: 0.238 g (wet) Dry Weight: 0.15 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 61.99

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.00712	0.0339	0.0666	mg/kg	



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20240911-GS-TAT-D-2

24I0364-06 (Solid)

Dioxins/Furans

Method: EPA 1613B	Sampled: 09/11/2024 11:40
Instrument: AUTOSPEC01 Analyst: pk	Analyzed: 11/01/2024 16:08
Sample Preparation: Preparation Method: EPA 1613 Preparation Batch: BMI0462 Prepared: 10/09/2024	Extract ID: 24I0364-06 A 01 Dry Weight: 10.02 g % Solids: 65.33
Sample Cleanup: Cleanup Method: Silica Gel Cleanup Batch: CMJ0076 Cleaned: 11-Oct-2024	Extract ID: 24I0364-06 A 01
Sample Cleanup: Cleanup Method: Sulfuric Acid Cleanup Batch: CMJ0075 Cleaned: 11-Oct-2024	Extract ID: 24I0364-06 A 01
Sample Cleanup: Cleanup Method: Florisil Cleanup Batch: CMJ0077 Cleaned: 11-Oct-2024	Extract ID: 24I0364-06 A 01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting				
				EDL	Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	0.596	0.998	ND	ng/kg	U
2,3,7,8-TCDD			0.655-0.886	0.537	0.998	ND	ng/kg	U
1,2,3,7,8-PeCDF			1.318-1.783	0.612	0.998	ND	ng/kg	U
2,3,4,7,8-PeCDF			1.318-1.783	0.572	0.998	ND	ng/kg	U
1,2,3,7,8-PeCDD			1.318-1.783	1.00	0.998	ND	ng/kg	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.640	0.998	ND	ng/kg	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.570	0.998	ND	ng/kg	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.657	0.998	ND	ng/kg	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.955	0.998	ND	ng/kg	U
1,2,3,4,7,8-HxCDD			1.054-1.426	1.00	0.998	ND	ng/kg	U
1,2,3,6,7,8-HxCDD	1.652		1.054-1.426		0.998	0.943	ng/kg	EMPC, J
1,2,3,7,8,9-HxCDD			1.054-1.426	1.09	0.998	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDF	1.206		0.893-1.208		0.998	3.49	ng/kg	
1,2,3,4,7,8,9-HpCDF			0.893-1.208	0.923	0.998	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDD	1.095		0.893-1.208		2.50	29.4	ng/kg	
OCDF		0.980	0.757-1.024		2.50	3.65	ng/kg	
OCDD		0.924	0.757-1.024		9.98	199	ng/kg	B
Homologue groups								
Total TCDF					0.998	ND	ng/kg	U
Total TCDD					0.998	ND	ng/kg	U
Total PeCDF					0.998	0.645	ng/kg	J
Total PeCDD					0.998	ND	ng/kg	U
Total HxCDF					0.998	ND	ng/kg	U
Total HxCDD					0.998	ND	ng/kg	U
Total HpCDF					0.998	3.49	ng/kg	
Total HpCDD					0.998	46.5	ng/kg	



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20240911-GS-TAT-D-2

24I0364-06 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 11:40

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 16:08

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):				1.63			
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):				0.48			
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):				1.58			
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):				0.39			



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20240911-GS-TAT-D-2

24I0364-06 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 11:40

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 16:08

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.715	0.655-0.886	24-169 %	49.8	%	
<i>13C12-2,3,7,8-TCDD</i>		0.818	0.655-0.886	25-164 %	57.7	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.572	1.318-1.783	24-185 %	60.5	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.605	1.318-1.783	21-178 %	58.3	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.600	1.318-1.783	25-181 %	59.9	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.495	0.434-0.587	26-152 %	63.7	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.467	0.434-0.587	26-123 %	74.8	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.520	0.434-0.587	28-136 %	62.1	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.566	0.434-0.587	29-147 %	62.9	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.246	1.054-1.426	32-141 %	57.0	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.283	1.054-1.426	28-130 %	63.5	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.446	0.374-0.506	28-143 %	69.8	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.461	0.374-0.506	26-138 %	67.5	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.011	0.893-1.208	23-140 %	76.8	%	
<i>13C12-OCDD</i>		0.849	0.757-1.024	17-157 %	70.6	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	73.1	%	



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Reported:
06-Nov-2024 16:54

20240911-GS-TAT-D-2

24I0364-06 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 11:40

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 16:08

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
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20240911-GS-TAT-D-2

24I0364-06 (Solid)

Extractions

Method: ASTM D2216

Sampled: 09/11/2024 11:40

Instrument: N/A Analyst: TW

Analyzed: 09/19/2024 05:05

Sample Preparation: Preparation Method: No Prep-Organics
Preparation Batch: BMI0417
Prepared: 09/18/2024

Sample Size: 1 g (wet)

Final Volume: 1 g

Extract ID: 24I0364-06

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Total Solids			0.01	65.33	%	
Labeled compounds						



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-2

24I0364-08 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 11:40
Instrument: NT10 Analyst: RJL Analyzed: 09/25/2024 16:34

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-08 A 02
Preparation Batch: BMI0474 Sample Size: 14.51 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 69.01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	16.1	ug/kg	J
2,4-Dimethylphenol	105-67-9	1	49.9	99.9	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.9	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	35.0	49.9	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	49.9	99.9	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	ND	ug/kg	U
Pyrene	129-00-0	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	39.9	49.9	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	30.0	39.9	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



WSP USA, Inc.
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Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-2

24I0364-08 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/11/2024 11:40

Instrument: NT10 Analyst: RJL

Analyzed: 09/25/2024 16:34

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	20.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	92.8	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	87.4	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	99.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	91.2	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	95.4	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	91.9	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	119	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	145	%	*



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-2

24I0364-08 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 09/11/2024 11:40
Instrument: NT14 Analyst: RJL Analyzed: 10/11/2024 20:50

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 2410364-08 A 02
Preparation Batch: BMI0474 Sample Size: 14.51 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 69.01

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	1	2.5	5.0	5.0	ug/kg	
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	49.9	99.9	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	18.1	ug/kg	
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	10.4	ug/kg	J, B
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	4.2	ug/kg	J
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	89.3	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	123	%	*, Q



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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-2

24I0364-08 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/11/2024 11:40
Instrument:	ECD5 Analyst: AA	Analyzed: 09/30/2024 12:14
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-08 A 01 Dry Weight: 12.53 g % Solids: 69.01
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	89.4	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	91.8	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	105	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	90.9	%		



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-2

24I0364-08RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 11:40:00
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 16:03:00

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-08RE1 A 02
Preparation Batch: BMI0474 Sample Size: 14.51 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 69.01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	5	49.9	99.9	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	5	49.9	99.9	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	5	49.9	99.9	ND	ug/kg	U
Benzyl Alcohol	100-51-6	5	99.9	99.9	ND	ug/kg	U
2-Methylphenol	95-48-7	5	49.9	99.9	ND	ug/kg	U
4-Methylphenol	106-44-5	5	74.9	99.9	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	5	250	499	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	5	49.9	99.9	ND	ug/kg	U
Naphthalene	91-20-3	5	49.9	99.9	ND	ug/kg	U
Benzoic acid	65-85-0	5	499	999	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	5	49.9	99.9	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	5	49.9	99.9	ND	ug/kg	U
Acenaphthylene	208-96-8	5	49.9	99.9	ND	ug/kg	U
Dimethylphthalate	131-11-3	5	49.9	99.9	ND	ug/kg	U
Acenaphthene	83-32-9	5	49.9	99.9	ND	ug/kg	U
Dibenzofuran	132-64-9	5	99.9	99.9	ND	ug/kg	U
Fluorene	86-73-7	5	99.9	99.9	ND	ug/kg	U
Diethyl phthalate	84-66-2	5	175	250	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	5	49.9	99.9	ND	ug/kg	U
Hexachlorobenzene	118-74-1	5	99.9	99.9	ND	ug/kg	U
Pentachlorophenol	87-86-5	5	250	499	ND	ug/kg	U
Phenanthrene	85-01-8	5	49.9	99.9	ND	ug/kg	U
Anthracene	120-12-7	5	49.9	99.9	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	5	49.9	99.9	ND	ug/kg	U
Fluoranthene	206-44-0	5	49.9	99.9	ND	ug/kg	U
Pyrene	129-00-0	5	49.9	99.9	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	5	49.9	99.9	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	5	49.9	99.9	ND	ug/kg	U
Chrysene	218-01-9	5	49.9	99.9	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	5	200	250	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	5	49.9	99.9	ND	ug/kg	U
Benzofluoranthenes, Total		5	150	200	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	5	49.9	99.9	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	5	99.9	99.9	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	5	99.9	99.9	ND	ug/kg	U



Analytical Resources, LLC

Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-2
24I0364-08RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 11:40
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 16:03

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	5	99.9	99.9	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	92.1	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	92.8	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	97.1	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	87.6	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	91.2	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	90.8	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	91.6	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	107	%	



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-TOC-2

24I0364-09 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/11/2024 11:40
Instrument: TOC Cube Analyst: ARR Analyzed: 09/24/2024 03:12

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-09 A
Preparation Batch: BMI0526 Sample Size: 0.0301 g (wet) Dry Weight: 0.02 g
Prepared: 09/20/2024 Final Volume: 0.0301 mL % Solids: 66.90

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	9.58	%	



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840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-TOC-2

24I0364-09 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/11/2024 11:40
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-09
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 66.90

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids			1	0.04	0.04	66.90	%



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-M-2

24I0364-10 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/11/2024 11:40
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:08

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-10 A 01
Preparation Batch: BMI0484 Sample Size: 1.088 g (wet) Dry Weight: 0.73 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 67.51

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.05	0.27	4.89	mg/kg		
Cadmium	7440-43-9	20	0.04	0.14	0.20	mg/kg		
Copper	7440-50-8	20	0.24	0.68	35.7	mg/kg		
Zinc	7440-66-6	20	4.0	8.2	91.3	mg/kg		



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Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-M-2

24I0364-10 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/11/2024 11:40
Instrument: ICPMS1 Analyst: DOE Analyzed: 09/27/2024 18:52

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-10 A 01
Preparation Batch: BMI0484 Sample Size: 1.088 g (wet) Dry Weight: 0.73 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 67.51

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	100	1.77	3.40	16.2	mg/kg	D	
Lead	7439-92-1	20	0.07	0.14	3.71	mg/kg		
Silver	7440-22-4	20	0.03	0.27	0.10	mg/kg	J	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-M-2

24I0364-10 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/11/2024 11:40
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 13:55

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-10 A
Preparation Batch: BMI0650 Sample Size: 0.207 g (wet) Dry Weight: 0.14 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 67.51

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Mercury	7439-97-6	1	0.00751	0.0358	0.0183	mg/kg	J	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-D-3

24I0364-11 (Solid)

Dioxins/Furans

Method: EPA 1613B	Sampled: 09/11/2024 11:55
Instrument: AUTOSPEC01 Analyst: pk	Analyzed: 11/01/2024 16:58
Sample Preparation: Preparation Method: EPA 1613 Preparation Batch: BMI0462 Prepared: 10/09/2024	Extract ID: 24I0364-11 A 01 Dry Weight: 10.01 g % Solids: 65.84
Sample Cleanup: Cleanup Method: Silica Gel Cleanup Batch: CMJ0076 Cleaned: 11-Oct-2024	Extract ID: 24I0364-11 A 01
Sample Cleanup: Cleanup Method: Sulfuric Acid Cleanup Batch: CMJ0075 Cleaned: 11-Oct-2024	Extract ID: 24I0364-11 A 01
Sample Cleanup: Cleanup Method: Florisil Cleanup Batch: CMJ0077 Cleaned: 11-Oct-2024	Extract ID: 24I0364-11 A 01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting				
				EDL	Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	0.414	0.999	ND	ng/kg	U
2,3,7,8-TCDD			0.655-0.886	0.338	0.999	ND	ng/kg	U
1,2,3,7,8-PeCDF			1.318-1.783	0.430	0.999	ND	ng/kg	U
2,3,4,7,8-PeCDF			1.318-1.783	0.410	0.999	ND	ng/kg	U
1,2,3,7,8-PeCDD			1.318-1.783	0.590	0.999	ND	ng/kg	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.413	0.999	ND	ng/kg	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.367	0.999	ND	ng/kg	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.435	0.999	ND	ng/kg	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.576	0.999	ND	ng/kg	U
1,2,3,4,7,8-HxCDD			1.054-1.426	0.671	0.999	ND	ng/kg	U
1,2,3,6,7,8-HxCDD	1.288		1.054-1.426		0.999	0.910	ng/kg	J
1,2,3,7,8,9-HxCDD			1.054-1.426	0.729	0.999	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDF	1.391		0.893-1.208		0.999	2.48	ng/kg	EMPC
1,2,3,4,7,8,9-HpCDF			0.893-1.208	0.552	0.999	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDD	1.022		0.893-1.208		2.50	25.6	ng/kg	
OCDF		0.685	0.757-1.024		2.50	3.07	ng/kg	EMPC
OCDD		0.873	0.757-1.024		9.99	171	ng/kg	B
Homologue groups								
Total TCDF					0.999	ND	ng/kg	U
Total TCDD					0.999	ND	ng/kg	U
Total PeCDF					0.999	ND	ng/kg	U
Total PeCDD					0.999	ND	ng/kg	U
Total HxCDF					0.999	1.80	ng/kg	
Total HxCDD					0.999	0.910	ng/kg	J
Total HpCDF					0.999	4.56	ng/kg	
Total HpCDD					0.999	25.6	ng/kg	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-D-3

24I0364-11 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 11:55

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 16:58

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
				Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	1.14		
				Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.42		
				Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	1.13		
				Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	0.40		



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-D-3

24I0364-11 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 11:55

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 16:58

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.763	0.655-0.886	24-169 %	62.5	%	
<i>13C12-2,3,7,8-TCDD</i>		0.827	0.655-0.886	25-164 %	64.0	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.710	1.318-1.783	24-185 %	68.2	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.633	1.318-1.783	21-178 %	64.2	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.541	1.318-1.783	25-181 %	62.4	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.531	0.434-0.587	26-152 %	84.0	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.503	0.434-0.587	26-123 %	90.8	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.559	0.434-0.587	28-136 %	88.2	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.507	0.434-0.587	29-147 %	79.8	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.287	1.054-1.426	32-141 %	75.5	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.202	1.054-1.426	28-130 %	83.0	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.449	0.374-0.506	28-143 %	78.8	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.434	0.374-0.506	26-138 %	75.7	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		0.951	0.893-1.208	23-140 %	85.2	%	
<i>13C12-OCDD</i>		1.008	0.757-1.024	17-157 %	94.0	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	72.0	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-D-3

24I0364-11 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 11:55

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 16:58

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
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20240911-GS-TAT-D-3

24I0364-11 (Solid)

Extractions

Method: ASTM D2216

Sampled: 09/11/2024 11:55

Instrument: N/A Analyst: TW

Analyzed: 09/19/2024 05:05

Sample Preparation: Preparation Method: No Prep-Organics
Preparation Batch: BMI0417
Prepared: 09/18/2024

Sample Size: 1 g (wet)

Final Volume: 1 g

Extract ID: 24I0364-11

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Total Solids			0.01	65.84	%	
Labeled compounds						



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-3

24I0364-13 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 11:55
Instrument: NT10 Analyst: RJL Analyzed: 09/25/2024 17:14

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-13 A 02
Preparation Batch: BMI0474 Sample Size: 14.94 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 66.98%

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	16.3	ug/kg	J
2,4-Dimethylphenol	105-67-9	1	50.0	99.9	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.9	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	35.0	50.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	50.0	99.9	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	ND	ug/kg	U
Pyrene	129-00-0	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	40.0	50.0	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	30.0	40.0	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-3

24I0364-13 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/11/2024 11:55

Instrument: NT10 Analyst: RJL

Analyzed: 09/25/2024 17:14

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	20.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	92.7	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	89.7	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	108	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	94.4	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	99.6	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	97.4	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	118	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	147	%	*



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-3

24I0364-13 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM

Sampled: 09/11/2024 11:55

Instrument: NT14 Analyst: RJL

Analyzed: 10/11/2024 21:28

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 14.94 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-13 A 02
Dry Weight: 10.01 g
% Solids: 66.98

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	2.5	5.0	5.8	ug/kg	
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	50.0	99.9	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	21.1	ug/kg	
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	8.1	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	98.5	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	146	%	*, Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-3

24I0364-13 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/11/2024 11:55
Instrument:	ECD5 Analyst: AA	Analyzed: 09/30/2024 12:35
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-13 A 01 Dry Weight: 12.52 g % Solids: 66.98
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	91.4	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	101	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	107	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	100	%		



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-3

24I0364-13RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 11:55
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 16:42

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-13RE1 A 02
Preparation Batch: BMI0474 Sample Size: 14.94 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 66.98

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	5	50.0	99.9	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	5	50.0	99.9	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	5	50.0	99.9	ND	ug/kg	U
Benzyl Alcohol	100-51-6	5	99.9	99.9	ND	ug/kg	U
2-Methylphenol	95-48-7	5	50.0	99.9	ND	ug/kg	U
4-Methylphenol	106-44-5	5	74.9	99.9	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	5	250	500	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	5	50.0	99.9	ND	ug/kg	U
Naphthalene	91-20-3	5	50.0	99.9	ND	ug/kg	U
Benzoic acid	65-85-0	5	500	999	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	5	50.0	99.9	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	5	50.0	99.9	ND	ug/kg	U
Acenaphthylene	208-96-8	5	50.0	99.9	ND	ug/kg	U
Dimethylphthalate	131-11-3	5	50.0	99.9	ND	ug/kg	U
Acenaphthene	83-32-9	5	50.0	99.9	ND	ug/kg	U
Dibenzofuran	132-64-9	5	99.9	99.9	ND	ug/kg	U
Fluorene	86-73-7	5	99.9	99.9	ND	ug/kg	U
Diethyl phthalate	84-66-2	5	175	250	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	5	50.0	99.9	ND	ug/kg	U
Hexachlorobenzene	118-74-1	5	99.9	99.9	ND	ug/kg	U
Pentachlorophenol	87-86-5	5	250	500	ND	ug/kg	U
Phenanthrene	85-01-8	5	50.0	99.9	ND	ug/kg	U
Anthracene	120-12-7	5	50.0	99.9	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	5	50.0	99.9	ND	ug/kg	U
Fluoranthene	206-44-0	5	50.0	99.9	ND	ug/kg	U
Pyrene	129-00-0	5	50.0	99.9	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	5	50.0	99.9	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	5	50.0	99.9	ND	ug/kg	U
Chrysene	218-01-9	5	50.0	99.9	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	5	200	250	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	5	50.0	99.9	ND	ug/kg	U
Benzofluoranthenes, Total		5	150	200	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	5	50.0	99.9	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	5	99.9	99.9	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	5	99.9	99.9	ND	ug/kg	U



Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-3
24I0364-13RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 11:55
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 16:42

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	5	99.9	99.9	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	101	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	100	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	109	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	98.2	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	103	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	103	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	101	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	116	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-PCB-3

24I0364-13RE1 (Solid)

Semivolatile Organic Compounds - SIM

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-13RE1 A 02
Preparation Batch: BMI0474 Sample Size: 14.94 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 66.98

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	5	12.5	25.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	5	12.5	25.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	5	12.5	25.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	5	50.0	99.9	ND	ug/kg	U
Benzoic acid	65-85-0	5	250	500	ND	ug/kg	U
2-Methylphenol	95-48-7	5	12.5	25.0	ND	ug/kg	U
4-Methylphenol	106-44-5	5	12.5	25.0	17.8	ug/kg	J, D
2,4-Dimethylphenol	105-67-9	5	50.0	99.9	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	5	25.0	25.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	5	12.5	25.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	5	12.5	25.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	5	50.0	99.9	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	5	12.5	25.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	5	12.5	25.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	5	50.0	99.9	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	5	12.5	25.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	5	12.5	25.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	102	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	136	%	*, Q



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-TOC-3

24I0364-14 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/11/2024 11:55
Instrument: TOC Cube Analyst: ARR Analyzed: 09/24/2024 03:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-14 A
Preparation Batch: BMI0526 Sample Size: 0.0293 g (wet) Dry Weight: 0.02 g
Prepared: 09/20/2024 Final Volume: 0.0293 mL % Solids: 64.35

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Organic Carbon			1	0.02	0.02	11.8	%



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840 HOWE STREET, #1000
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Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-TOC-3

24I0364-14 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/11/2024 11:55
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-14
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 64.35

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids		1	0.04	0.04	64.35	%	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240911-GS-TAT-M-3

24I0364-15 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/11/2024 11:55
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:13

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-15 A 01
Preparation Batch: BMI0484 Sample Size: 1.031 g (wet) Dry Weight: 0.70 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 67.46

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.05	0.29	3.53	mg/kg		
Cadmium	7440-43-9	20	0.04	0.14	0.17	mg/kg		
Copper	7440-50-8	20	0.25	0.72	36.5	mg/kg		
Zinc	7440-66-6	20	4.2	8.6	84.5	mg/kg		



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Reported:
06-Nov-2024 16:54

20240911-GS-TAT-M-3

24I0364-15 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/11/2024 11:55
Instrument: ICPMS1 Analyst: DOE Analyzed: 09/27/2024 18:58

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-15 A 01
Preparation Batch: BMI0484 Sample Size: 1.031 g (wet) Dry Weight: 0.70 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 67.46

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Chromium	7440-47-3	100	1.87	3.59	13.9	mg/kg	D
Lead	7439-92-1	20	0.07	0.14	3.26	mg/kg	
Silver	7440-22-4	20	0.03	0.29	0.10	mg/kg	J



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WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-TAT-M-3

24I0364-15 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/11/2024 11:55
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 13:57

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-15 A
Preparation Batch: BMI0650 Sample Size: 0.214 g (wet) Dry Weight: 0.14 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 67.46

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.00727	0.0346	0.0256	mg/kg	J



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-D-1

24I0364-16 (Solid)

Dioxins/Furans

Method: EPA 1613B	Sampled: 09/11/2024 12:25
Instrument: AUTOSPEC01 Analyst: pk	Analyzed: 11/01/2024 17:48
Sample Preparation: Preparation Method: EPA 1613 Preparation Batch: BMI0462 Prepared: 10/09/2024	Sample Size: 20.02 g (wet) Final Volume: 20 uL Extract ID: 24I0364-16 A 01 Dry Weight: 10.00 g % Solids: 49.95
Sample Cleanup: Cleanup Method: Silica Gel Cleanup Batch: CMJ0076 Cleaned: 11-Oct-2024	Initial Volume: 20 uL Final Volume: 20 uL Extract ID: 24I0364-16 A 01
Sample Cleanup: Cleanup Method: Sulfuric Acid Cleanup Batch: CMJ0075 Cleaned: 11-Oct-2024	Initial Volume: 20 uL Final Volume: 20 uL Extract ID: 24I0364-16 A 01
Sample Cleanup: Cleanup Method: Florisil Cleanup Batch: CMJ0077 Cleaned: 11-Oct-2024	Initial Volume: 20 uL Final Volume: 20 uL Extract ID: 24I0364-16 A 01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting				
				EDL	Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	0.591	1.00	ND	ng/kg	U
2,3,7,8-TCDD			0.655-0.886	0.515	1.00	ND	ng/kg	U
1,2,3,7,8-PeCDF			1.318-1.783	0.616	1.00	ND	ng/kg	U
2,3,4,7,8-PeCDF			1.318-1.783	0.656	1.00	ND	ng/kg	U
1,2,3,7,8-PeCDD			1.318-1.783	0.825	1.00	ND	ng/kg	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.794	1.00	ND	ng/kg	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.704	1.00	ND	ng/kg	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.766	1.00	ND	ng/kg	U
1,2,3,7,8,9-HxCDF			1.054-1.426	1.09	1.00	ND	ng/kg	U
1,2,3,4,7,8-HxCDD			1.054-1.426	1.13	1.00	ND	ng/kg	U
1,2,3,6,7,8-HxCDD	1.425		1.054-1.426		1.00	0.790	ng/kg	J
1,2,3,7,8,9-HxCDD			1.054-1.426	1.22	1.00	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDF	1.170		0.893-1.208		1.00	2.69	ng/kg	
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.15	1.00	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDD	0.905		0.893-1.208		2.50	32.5	ng/kg	
OCDF		1.155	0.757-1.024		2.50	3.09	ng/kg	EMPC
OCDD		0.912	0.757-1.024		10.0	239	ng/kg	B
Homologue groups								
Total TCDF					1.00	ND	ng/kg	U
Total TCDD					1.00	ND	ng/kg	U
Total PeCDF					1.00	ND	ng/kg	U
Total PeCDD					1.00	ND	ng/kg	U
Total HxCDF					1.00	2.17	ng/kg	
Total HxCDD					1.00	2.22	ng/kg	
Total HpCDF					1.00	7.47	ng/kg	
Total HpCDD					1.00	54.4	ng/kg	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-D-1

24I0364-16 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 12:25

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 17:48

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	1.60						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.50						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	1.60						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	0.50						



WSP USA, Inc.
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Reported:
06-Nov-2024 16:54

20240911-GS-C-D-1

24I0364-16 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 12:25

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 17:48

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.842	0.655-0.886	24-169 %	44.1	%	
<i>13C12-2,3,7,8-TCDD</i>		0.864	0.655-0.886	25-164 %	47.2	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.674	1.318-1.783	24-185 %	55.3	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.701	1.318-1.783	21-178 %	51.6	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.756	1.318-1.783	25-181 %	47.0	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.548	0.434-0.587	26-152 %	53.2	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.469	0.434-0.587	26-123 %	64.4	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.499	0.434-0.587	28-136 %	55.4	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.507	0.434-0.587	29-147 %	53.6	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.260	1.054-1.426	32-141 %	48.7	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.256	1.054-1.426	28-130 %	53.9	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.439	0.374-0.506	28-143 %	64.1	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.491	0.374-0.506	26-138 %	57.5	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.114	0.893-1.208	23-140 %	66.3	%	
<i>13C12-OCDD</i>		0.982	0.757-1.024	17-157 %	61.5	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	77.6	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-D-1

24I0364-16 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 12:25

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 17:48

Extractions

Method: ASTM D2216

Sampled: 09/11/2024 12:25

Instrument: N/A Analyst: TW

Sample Preparation: Preparation Method: No Prep-Organics Extract ID: 24I0364-16
Preparation Batch: BMI0417 Sample Size: 1 g (wet)
Prepared: 09/18/2024 Final Volume: 1 g

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Total Solids			0.01	49.95	%	
Labeled compounds						



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840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-1

24I0364-18 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 12:25

Instrument: NT10 Analyst: RJL Analyzed: 09/25/2024 17:54

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-18 A 02
Preparation Batch: BMI0474 Sample Size: 20.6 g (wet) Dry Weight: 10.02 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 48.62

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	49.9	99.8	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.8	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	34.9	49.9	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	49.9	99.8	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	ND	ug/kg	U
Pyrene	129-00-0	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	39.9	49.9	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	30.0	39.9	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-1

24I0364-18 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/11/2024 12:25

Instrument: NT10 Analyst: RJL

Analyzed: 09/25/2024 17:54

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	20.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>			27-120 %	79.0	%		
<i>Surrogate: Phenol-d5</i>			29-120 %	73.2	%		
<i>Surrogate: 2-Chlorophenol-d4</i>			31-120 %	85.1	%		
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			32-120 %	80.8	%		
<i>Surrogate: Nitrobenzene-d5</i>			30-120 %	85.3	%		
<i>Surrogate: 2-Fluorobiphenyl</i>			35-120 %	81.1	%		
<i>Surrogate: 2,4,6-Tribromophenol</i>			24-134 %	102	%		
<i>Surrogate: p-Terphenyl-d14</i>			37-120 %	128	%		*



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-1

24I0364-18 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM

Sampled: 09/11/2024 12:25

Instrument: NT14 Analyst: RJL

Analyzed: 10/11/2024 22:06

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 20.6 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-18 A 02
Dry Weight: 10.02 g
% Solids: 48.62

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	2.5	5.0	7.7	ug/kg	
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	49.9	99.8	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	12.1	ug/kg	
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	24.7	ug/kg	B
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	9.4	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	84.0	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	143	%	*, Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-1

24I0364-18 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/11/2024 12:25
Instrument:	ECD5 Analyst: AA	Analyzed: 09/30/2024 12:56
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-18 A 01 Dry Weight: 12.51 g % Solids: 48.62
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	92.0	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	94.8	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	106	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	94.5	%		



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
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20240911-GS-C-PCB-1

24I0364-18RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 12:25
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 17:22

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-18RE1 A 02
Preparation Batch: BMI0474 Sample Size: 20.6 g (wet) Dry Weight: 10.02 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 48.62

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	5	49.9	99.8	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	5	49.9	99.8	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	5	49.9	99.8	ND	ug/kg	U
Benzyl Alcohol	100-51-6	5	99.8	99.8	ND	ug/kg	U
2-Methylphenol	95-48-7	5	49.9	99.8	ND	ug/kg	U
4-Methylphenol	106-44-5	5	74.9	99.8	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	5	250	499	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	5	49.9	99.8	ND	ug/kg	U
Naphthalene	91-20-3	5	49.9	99.8	ND	ug/kg	U
Benzoic acid	65-85-0	5	499	998	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	5	49.9	99.8	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	5	49.9	99.8	ND	ug/kg	U
Acenaphthylene	208-96-8	5	49.9	99.8	ND	ug/kg	U
Dimethylphthalate	131-11-3	5	49.9	99.8	ND	ug/kg	U
Acenaphthene	83-32-9	5	49.9	99.8	ND	ug/kg	U
Dibenzofuran	132-64-9	5	99.8	99.8	ND	ug/kg	U
Fluorene	86-73-7	5	99.8	99.8	ND	ug/kg	U
Diethyl phthalate	84-66-2	5	175	250	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	5	49.9	99.8	ND	ug/kg	U
Hexachlorobenzene	118-74-1	5	99.8	99.8	ND	ug/kg	U
Pentachlorophenol	87-86-5	5	250	499	ND	ug/kg	U
Phenanthrene	85-01-8	5	49.9	99.8	ND	ug/kg	U
Anthracene	120-12-7	5	49.9	99.8	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	5	49.9	99.8	ND	ug/kg	U
Fluoranthene	206-44-0	5	49.9	99.8	ND	ug/kg	U
Pyrene	129-00-0	5	49.9	99.8	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	5	49.9	99.8	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	5	49.9	99.8	ND	ug/kg	U
Chrysene	218-01-9	5	49.9	99.8	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	5	200	250	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	5	49.9	99.8	ND	ug/kg	U
Benzofluoranthenes, Total		5	150	200	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	5	49.9	99.8	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	5	99.8	99.8	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	5	99.8	99.8	ND	ug/kg	U



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
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20240911-GS-C-PCB-1

24I0364-18RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 12:25
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 17:22

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	5	99.8	99.8	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	88.6	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	85.9	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	93.7	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	87.4	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	94.1	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	92.0	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	83.2	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	104	%	



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Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-1

24I0364-18RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM

Sampled: 09/11/2024 12:25

Instrument: NT14 Analyst: RJL

Analyzed: 10/13/2024 04:15

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 20.6 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-18RE1 A 02
Dry Weight: 10.02 g
% Solids: 48.62

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	5	12.5	25.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	5	12.5	25.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	5	12.5	25.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	5	49.9	99.8	ND	ug/kg	U
Benzoic acid	65-85-0	5	250	499	ND	ug/kg	U
2-Methylphenol	95-48-7	5	12.5	25.0	ND	ug/kg	U
4-Methylphenol	106-44-5	5	12.5	25.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	5	49.9	99.8	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	5	25.0	25.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	5	12.5	25.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	5	12.5	25.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	5	49.9	99.8	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	5	12.5	25.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	5	12.5	25.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	5	49.9	99.8	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	5	12.5	25.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	5	12.5	25.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	86.6	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	116	%	Q



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Project: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240911-GS-C-TOC-1

24I0364-19 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/11/2024 12:25
Instrument: TOC Cube Analyst: ARR Analyzed: 09/24/2024 04:13

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-19 A
Preparation Batch: BMI0526 Sample Size: 0.0261 g (wet) Dry Weight: 0.01 g
Prepared: 09/20/2024 Final Volume: 0.0261 mL % Solids: 51.29

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Organic Carbon			1	0.02	0.02	26.6	%



Analytical Resources, LLC

Analytical Chemists and Consultants

Analytical Report

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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

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Project Number: Whitmarsh
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20240911-GS-C-TOC-1

24I0364-19 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/11/2024 12:25
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-19
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 51.29

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids			1	0.04	0.04	51.29	%



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20240911-GS-C-M-1

24I0364-20 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/11/2024 12:25
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:18

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-20 A 01
Preparation Batch: BMI0484 Sample Size: 1.033 g (wet) Dry Weight: 0.52 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 50.41

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.07	0.38	1.51	mg/kg		
Cadmium	7440-43-9	20	0.06	0.19	0.13	mg/kg	J	
Copper	7440-50-8	20	0.33	0.96	35.8	mg/kg		
Zinc	7440-66-6	20	5.6	11.5	106	mg/kg		



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24I0364-20 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/11/2024 12:25
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:18

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-20 A 01
Preparation Batch: BMI0484 Sample Size: 1.033 g (wet) Dry Weight: 0.52 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 50.41

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	20	0.50	0.96	9.31	mg/kg		
Lead	7439-92-1	20	0.10	0.19	1.37	mg/kg		
Silver	7440-22-4	20	0.04	0.38	0.05	mg/kg	J	



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Analytical Report

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Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
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20240911-GS-C-M-1

24I0364-20 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/11/2024 12:25
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:00

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-20 A
Preparation Batch: BMI0650 Sample Size: 0.233 g (wet) Dry Weight: 0.12 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 50.41

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.00894	0.0426	ND	mg/kg	U



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Project: Whitmarsh
Project Number: Whitmarsh
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Reported:
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20240911-GS-C-D-2

24I0364-21 (Solid)

Dioxins/Furans

Method: EPA 1613B	Sampled: 09/11/2024 12:40
Instrument: AUTOSPEC01 Analyst: pk	Analyzed: 11/01/2024 18:37
Sample Preparation: Preparation Method: EPA 1613	Extract ID: 24I0364-21 A 01
Preparation Batch: BMI0462	Dry Weight: 10.01 g
Prepared: 10/09/2024	% Solids: 43.24
Sample Cleanup: Cleanup Method: Silica Gel	Extract ID: 24I0364-21 A 01
Cleanup Batch: CMJ0076	Initial Volume: 20 uL
Cleaned: 11-Oct-2024	Final Volume: 20 uL
Sample Cleanup: Cleanup Method: Sulfuric Acid	Extract ID: 24I0364-21 A 01
Cleanup Batch: CMJ0075	Initial Volume: 20 uL
Cleaned: 11-Oct-2024	Final Volume: 20 uL
Sample Cleanup: Cleanup Method: Florisil	Extract ID: 24I0364-21 A 01
Cleanup Batch: CMJ0077	Initial Volume: 20 uL
Cleaned: 11-Oct-2024	Final Volume: 20 uL

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting				
				EDL	Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	0.348	0.999	ND	ng/kg	U
2,3,7,8-TCDD			0.655-0.886	0.293	0.999	ND	ng/kg	U
1,2,3,7,8-PeCDF			1.318-1.783	0.342	0.999	ND	ng/kg	U
2,3,4,7,8-PeCDF			1.318-1.783	0.326	0.999	ND	ng/kg	U
1,2,3,7,8-PeCDD			1.318-1.783	0.417	0.999	ND	ng/kg	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.377	0.999	ND	ng/kg	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.365	0.999	ND	ng/kg	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.475	0.999	ND	ng/kg	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.564	0.999	ND	ng/kg	U
1,2,3,4,7,8-HxCDD			1.054-1.426	0.653	0.999	ND	ng/kg	U
1,2,3,6,7,8-HxCDD	2.161		1.054-1.426		0.999	1.37	ng/kg	EMPC
1,2,3,7,8,9-HxCDD			1.054-1.426	0.693	0.999	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDF	0.873	0.893-1.208			0.999	3.54	ng/kg	EMPC
1,2,3,4,7,8,9-HpCDF		0.893-1.208		0.637	0.999	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDD	0.943	0.893-1.208			2.50	45.5	ng/kg	
OCDF		0.843	0.757-1.024		2.50	3.20	ng/kg	
OCDD		0.838	0.757-1.024		9.99	328	ng/kg	B
Homologue groups								
Total TCDF					0.999	ND	ng/kg	U
Total TCDD					0.999	ND	ng/kg	U
Total PeCDF					0.999	ND	ng/kg	U
Total PeCDD					0.999	ND	ng/kg	U
Total HxCDF					0.999	2.82	ng/kg	
Total HxCDD					0.999	ND	ng/kg	U
Total HpCDF					0.999	6.06	ng/kg	
Total HpCDD					0.999	73.3	ng/kg	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240911-GS-C-D-2

24I0364-21 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 12:40

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 18:37

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):				1.31			
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):				0.73			
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):				1.23			
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):				0.55			



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06-Nov-2024 16:54

20240911-GS-C-D-2

24I0364-21 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 12:40

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 18:37

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.805	0.655-0.886	24-169 %	61.6	%	
<i>13C12-2,3,7,8-TCDD</i>		0.724	0.655-0.886	25-164 %	72.7	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.740	1.318-1.783	24-185 %	76.1	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.601	1.318-1.783	21-178 %	73.4	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.647	1.318-1.783	25-181 %	74.4	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.538	0.434-0.587	26-152 %	78.8	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.500	0.434-0.587	26-123 %	84.2	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.571	0.434-0.587	28-136 %	66.9	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.543	0.434-0.587	29-147 %	80.1	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.247	1.054-1.426	32-141 %	67.1	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.189	1.054-1.426	28-130 %	72.0	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.452	0.374-0.506	28-143 %	84.4	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.471	0.374-0.506	26-138 %	78.4	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.064	0.893-1.208	23-140 %	94.0	%	
<i>13C12-OCDD</i>		0.989	0.757-1.024	17-157 %	88.5	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	74.3	%	



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-D-2

24I0364-21 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 12:40

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 18:37

Extractions

Method: ASTM D2216

Sampled: 09/11/2024 12:40

Instrument: N/A Analyst: TW

Analyzed: 09/19/2024 05:05

Sample Preparation: Preparation Method: No Prep-Organics
Preparation Batch: BMI0417
Prepared: 09/18/2024

Sample Size: 1 g (wet)
Final Volume: 1 g

Extract ID: 24I0364-21

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Total Solids			0.01	43.24	%	
Labeled compounds						



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-2

24I0364-23 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 12:40
Instrument: NT10 Analyst: RJL Analyzed: 09/25/2024 18:34

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-23 A 02
Preparation Batch: BMI0474 Sample Size: 22.83 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 43.84

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	50.0	99.9	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.9	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	35.0	50.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	50.0	99.9	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	ND	ug/kg	U
Pyrene	129-00-0	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	40.0	50.0	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	30.0	40.0	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-2

24I0364-23 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/11/2024 12:40

Instrument: NT10 Analyst: RJL

Analyzed: 09/25/2024 18:34

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	20.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	87.0	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	79.7	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	99.1	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	87.3	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	93.8	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	88.5	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	126	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	143	%	*



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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-2

24I0364-23 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM	Sampled: 09/11/2024 12:40
Instrument: NT14 Analyst: RJL	Analyzed: 10/11/2024 22:44

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)	Extract ID: 24I0364-23 A 02
	Preparation Batch: BMI0474	Dry Weight: 10.01 g
	Prepared: 09/23/2024	% Solids: 43.84

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	1	2.5	5.0	6.4	ug/kg	
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	50.0	99.9	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	10.7	ug/kg	
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	15.0	ug/kg	J, B
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	9.9	ug/kg	
Dibeno(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>			27-120 %		91.5	%	
<i>Surrogate: p-Terphenyl-d14</i>			37-120 %		147	%	* , Q



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Project: Whitmarsh
Project Number: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-2

24I0364-23 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/11/2024 12:40
Instrument:	ECD5 Analyst: AA	Analyzed: 09/30/2024 13:17
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-23 A 01 Dry Weight: 12.51 g % Solids: 43.84
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	87.6	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	95.2	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	97.5	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	92.1	%		



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-2

24I0364-23RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 12:40
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 18:02

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-23RE1 A 02
Preparation Batch: BMI0474 Sample Size: 22.83 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 43.84

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	5	50.0	99.9	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	5	50.0	99.9	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	5	50.0	99.9	ND	ug/kg	U
Benzyl Alcohol	100-51-6	5	99.9	99.9	ND	ug/kg	U
2-Methylphenol	95-48-7	5	50.0	99.9	ND	ug/kg	U
4-Methylphenol	106-44-5	5	74.9	99.9	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	5	250	500	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	5	50.0	99.9	ND	ug/kg	U
Naphthalene	91-20-3	5	50.0	99.9	ND	ug/kg	U
Benzoic acid	65-85-0	5	500	999	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	5	50.0	99.9	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	5	50.0	99.9	ND	ug/kg	U
Acenaphthylene	208-96-8	5	50.0	99.9	ND	ug/kg	U
Dimethylphthalate	131-11-3	5	50.0	99.9	ND	ug/kg	U
Acenaphthene	83-32-9	5	50.0	99.9	ND	ug/kg	U
Dibenzofuran	132-64-9	5	99.9	99.9	ND	ug/kg	U
Fluorene	86-73-7	5	99.9	99.9	ND	ug/kg	U
Diethyl phthalate	84-66-2	5	175	250	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	5	50.0	99.9	ND	ug/kg	U
Hexachlorobenzene	118-74-1	5	99.9	99.9	ND	ug/kg	U
Pentachlorophenol	87-86-5	5	250	500	ND	ug/kg	U
Phenanthrene	85-01-8	5	50.0	99.9	ND	ug/kg	U
Anthracene	120-12-7	5	50.0	99.9	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	5	50.0	99.9	ND	ug/kg	U
Fluoranthene	206-44-0	5	50.0	99.9	ND	ug/kg	U
Pyrene	129-00-0	5	50.0	99.9	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	5	50.0	99.9	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	5	50.0	99.9	ND	ug/kg	U
Chrysene	218-01-9	5	50.0	99.9	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	5	200	250	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	5	50.0	99.9	ND	ug/kg	U
Benzofluoranthenes, Total		5	150	200	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	5	50.0	99.9	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	5	99.9	99.9	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	5	99.9	99.9	ND	ug/kg	U



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-2

24I0364-23RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 12:40
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 18:02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	5	99.9	99.9	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	90.1	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	88.4	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	95.3	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	86.2	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	92.3	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	91.8	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	85.9	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	102	%	



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-2

24I0364-23RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM

Sampled: 09/11/2024 12:40

Instrument: NT14 Analyst: RJL

Analyzed: 10/13/2024 04:53

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 22.83 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-23RE1 A 02
Dry Weight: 10.01 g
% Solids: 43.84

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	5	12.5	25.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	5	12.5	25.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	5	12.5	25.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	5	50.0	99.9	ND	ug/kg	U
Benzoic acid	65-85-0	5	250	500	ND	ug/kg	U
2-Methylphenol	95-48-7	5	12.5	25.0	ND	ug/kg	U
4-Methylphenol	106-44-5	5	12.5	25.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	5	50.0	99.9	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	5	25.0	25.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	5	12.5	25.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	5	12.5	25.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	5	50.0	99.9	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	5	12.5	25.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	5	12.5	25.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	5	50.0	99.9	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	5	12.5	25.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	5	12.5	25.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	90.9	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	120	%	Q



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Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:

20240911-GS-C-TOC-2

24I0364-24 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/11/2024 12:40
Instrument: TOC Cube Analyst: ARR Analyzed: 09/26/2024 16:29

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-24 A
Preparation Batch: BMI0526 Sample Size: 0.0257 g (wet) Dry Weight: 0.01 g
Prepared: 09/20/2024 Final Volume: 0.0257 mL % Solids: 45.42

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Organic Carbon		1	0.02	0.02	34.3	%	



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WSP USA, Inc.
840 HOWE STREET, #1000
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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-TOC-2

24I0364-24 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/11/2024 12:40
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-24
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 45.42

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids			1	0.04	0.04	45.42	%



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Reported:
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20240911-GS-C-M-2

24I0364-25 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/11/2024 12:40
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:23

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-25 A 01
Preparation Batch: BMI0484 Sample Size: 1.015 g (wet) Dry Weight: 0.46 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 45.80

Analyte	CAS Number	Dilution	Detection Limit		Reporting Limit		Result	Units	Notes
			Limit	Limit	Limit	Result			
Arsenic	7440-38-2	20	0.08	0.43	1.70	mg/kg			
Cadmium	7440-43-9	20	0.06	0.22	0.17	mg/kg	J		
Copper	7440-50-8	20	0.37	1.08	43.5	mg/kg			
Zinc	7440-66-6	20	6.3	12.9	128	mg/kg			



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-M-2

24I0364-25 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/11/2024 12:40
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:23

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-25 A 01
Preparation Batch: BMI0484 Sample Size: 1.015 g (wet) Dry Weight: 0.46 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 45.80

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	20	0.56	1.08	8.87	mg/kg		
Lead	7439-92-1	20	0.11	0.22	1.56	mg/kg		
Silver	7440-22-4	20	0.05	0.43	0.07	mg/kg	J	



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Project: Whitmarsh
Project Number: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240911-GS-C-M-2

24I0364-25 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/11/2024 12:40
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:02

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-25 A
Preparation Batch: BMI0650 Sample Size: 0.249 g (wet) Dry Weight: 0.11 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 45.80

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Mercury	7439-97-6	1	0.00921	0.0438	ND	mg/kg	U	



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Project: Whitmarsh
Project Number: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240911-GS-C-D-3

24I0364-26 (Solid)

Dioxins/Furans

Method: EPA 1613B	Sampled: 09/11/2024 12:50
Instrument: AUTOSPEC01 Analyst: pk	Analyzed: 11/01/2024 19:27
Sample Preparation: Preparation Method: EPA 1613 Preparation Batch: BMI0462 Prepared: 10/09/2024	Sample Size: 20.76 g (wet) Final Volume: 20 uL Extract ID: 24I0364-26 A 01 Dry Weight: 10.00 g % Solids: 48.17
Sample Cleanup: Cleanup Method: Silica Gel Cleanup Batch: CMJ0076 Cleaned: 11-Oct-2024	Initial Volume: 20 uL Final Volume: 20 uL Extract ID: 24I0364-26 A 01
Sample Cleanup: Cleanup Method: Sulfuric Acid Cleanup Batch: CMJ0075 Cleaned: 11-Oct-2024	Initial Volume: 20 uL Final Volume: 20 uL Extract ID: 24I0364-26 A 01
Sample Cleanup: Cleanup Method: Florisil Cleanup Batch: CMJ0077 Cleaned: 11-Oct-2024	Initial Volume: 20 uL Final Volume: 20 uL Extract ID: 24I0364-26 A 01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting				
				EDL	Limit	Result	Units	Notes
2,3,7,8-TCDF			0.655-0.886	0.335	1.00	ND	ng/kg	U
2,3,7,8-TCDD			0.655-0.886	0.321	1.00	ND	ng/kg	U
1,2,3,7,8-PeCDF			1.318-1.783	0.421	1.00	ND	ng/kg	U
2,3,4,7,8-PeCDF			1.318-1.783	0.425	1.00	ND	ng/kg	U
1,2,3,7,8-PeCDD			1.318-1.783	0.607	1.00	ND	ng/kg	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.434	1.00	ND	ng/kg	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.418	1.00	ND	ng/kg	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.454	1.00	ND	ng/kg	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.569	1.00	ND	ng/kg	U
1,2,3,4,7,8-HxCDD			1.054-1.426	0.794	1.00	ND	ng/kg	U
1,2,3,6,7,8-HxCDD			1.054-1.426	0.754	1.00	ND	ng/kg	U
1,2,3,7,8,9-HxCDD			1.054-1.426	0.838	1.00	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDF	1.273	0.893-1.208			1.00	2.06	ng/kg	EMPC
1,2,3,4,7,8,9-HpCDF		0.893-1.208		0.923	1.00	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDD	1.134	0.893-1.208			2.50	31.8	ng/kg	
OCDF		0.777	0.757-1.024		2.50	3.04	ng/kg	
OCDD		0.957	0.757-1.024		10.0	216	ng/kg	B
Homologue groups								
Total TCDF					1.00	ND	ng/kg	U
Total TCDD					1.00	ND	ng/kg	U
Total PeCDF					1.00	ND	ng/kg	U
Total PeCDD					1.00	ND	ng/kg	U
Total HxCDF					1.00	0.965	ng/kg	J
Total HxCDD					1.00	3.30	ng/kg	
Total HpCDF					1.00	4.19	ng/kg	
Total HpCDD					1.00	51.6	ng/kg	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-D-3

24I0364-26 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 12:50

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 19:27

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
				Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	1.17		
				Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	0.40		
				Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	1.16		
				Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	0.38		



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-D-3

24I0364-26 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 12:50

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 19:27

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.831	0.655-0.886	24-169 %	49.6	%	
<i>13C12-2,3,7,8-TCDD</i>		0.839	0.655-0.886	25-164 %	52.6	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.671	1.318-1.783	24-185 %	57.3	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.618	1.318-1.783	21-178 %	50.5	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.628	1.318-1.783	25-181 %	51.6	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.535	0.434-0.587	26-152 %	60.4	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.562	0.434-0.587	26-123 %	66.6	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.560	0.434-0.587	28-136 %	59.1	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.516	0.434-0.587	29-147 %	62.9	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.212	1.054-1.426	32-141 %	53.7	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.244	1.054-1.426	28-130 %	60.0	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.475	0.374-0.506	28-143 %	57.9	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.415	0.374-0.506	26-138 %	56.8	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.131	0.893-1.208	23-140 %	61.7	%	
<i>13C12-OCDD</i>		0.900	0.757-1.024	17-157 %	68.8	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	68.1	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-D-3
24I0364-26 (Solid)

Dioxins/Furans

Method: EPA 1613B Sampled: 09/11/2024 12:50
Instrument: AUTOSPEC01 Analyst: pk Analyzed: 11/01/2024 19:27

Extractions

Method: ASTM D2216 Sampled: 09/11/2024 12:50
Instrument: N/A Analyst: TW Analyzed: 09/19/2024 05:05

Sample Preparation: Preparation Method: No Prep-Organics Extract ID: 24I0364-26
Preparation Batch: BMI0417 Sample Size: 1 g (wet)
Prepared: 09/18/2024 Final Volume: 1 g

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Total Solids			0.01	48.17	%	
Labeled compounds						



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-3

24I0364-28 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 12:50
Instrument: NT10 Analyst: RJL Analyzed: 09/25/2024 19:13

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-28 A 02
Preparation Batch: BMI0474 Sample Size: 22.92 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 43.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	50.0	99.9	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.9	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	35.0	50.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	50.0	99.9	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	19.4	ug/kg	J
Pyrene	129-00-0	1	10.0	20.0	20.5	ug/kg	
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	40.0	50.0	52.3	ug/kg	
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	30.0	40.0	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-3

24I0364-28 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/11/2024 12:50

Instrument: NT10 Analyst: RJL

Analyzed: 09/25/2024 19:13

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	ND	ug/kg	U	
<i>Surrogate: 2-Fluorophenol</i>			27-120 %	82.7	%		
<i>Surrogate: Phenol-d5</i>			29-120 %	75.8	%		
<i>Surrogate: 2-Chlorophenol-d4</i>			31-120 %	95.4	%		
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			32-120 %	86.4	%		
<i>Surrogate: Nitrobenzene-d5</i>			30-120 %	90.1	%		
<i>Surrogate: 2-Fluorobiphenyl</i>			35-120 %	83.9	%		
<i>Surrogate: 2,4,6-Tribromophenol</i>			24-134 %	115	%		
<i>Surrogate: p-Terphenyl-d14</i>			37-120 %	139	%	*	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-3

24I0364-28 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM

Sampled: 09/11/2024 12:50

Instrument: NT14 Analyst: RJL

Analyzed: 10/11/2024 23:23

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 22.92 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-28 A 02
Dry Weight: 10.01 g
% Solids: 43.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	2.5	5.0	5.0	ug/kg	J
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	50.0	99.9	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	8.9	ug/kg	
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	7.2	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	88.4	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	160	%	*, Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-3

24I0364-28 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/11/2024 12:50
Instrument:	ECD5 Analyst: AA	Analyzed: 09/30/2024 13:37
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-28 A 01 Dry Weight: 12.52 g % Solids: 43.66
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	89.1	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	90.5	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	93.8	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	95.3	%		



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-3

24I0364-28RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 12:50
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 18:41

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-28RE1 A 02
Preparation Batch: BMI0474 Sample Size: 22.92 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 43.66

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	5	50.0	99.9	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	5	50.0	99.9	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	5	50.0	99.9	ND	ug/kg	U
Benzyl Alcohol	100-51-6	5	99.9	99.9	ND	ug/kg	U
2-Methylphenol	95-48-7	5	50.0	99.9	ND	ug/kg	U
4-Methylphenol	106-44-5	5	74.9	99.9	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	5	250	500	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	5	50.0	99.9	ND	ug/kg	U
Naphthalene	91-20-3	5	50.0	99.9	ND	ug/kg	U
Benzoic acid	65-85-0	5	500	999	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	5	50.0	99.9	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	5	50.0	99.9	ND	ug/kg	U
Acenaphthylene	208-96-8	5	50.0	99.9	ND	ug/kg	U
Dimethylphthalate	131-11-3	5	50.0	99.9	ND	ug/kg	U
Acenaphthene	83-32-9	5	50.0	99.9	ND	ug/kg	U
Dibenzofuran	132-64-9	5	99.9	99.9	ND	ug/kg	U
Fluorene	86-73-7	5	99.9	99.9	ND	ug/kg	U
Diethyl phthalate	84-66-2	5	175	250	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	5	50.0	99.9	ND	ug/kg	U
Hexachlorobenzene	118-74-1	5	99.9	99.9	ND	ug/kg	U
Pentachlorophenol	87-86-5	5	250	500	ND	ug/kg	U
Phenanthrene	85-01-8	5	50.0	99.9	ND	ug/kg	U
Anthracene	120-12-7	5	50.0	99.9	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	5	50.0	99.9	ND	ug/kg	U
Fluoranthene	206-44-0	5	50.0	99.9	ND	ug/kg	U
Pyrene	129-00-0	5	50.0	99.9	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	5	50.0	99.9	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	5	50.0	99.9	ND	ug/kg	U
Chrysene	218-01-9	5	50.0	99.9	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	5	200	250	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	5	50.0	99.9	ND	ug/kg	U
Benzofluoranthenes, Total		5	150	200	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	5	50.0	99.9	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	5	99.9	99.9	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	5	99.9	99.9	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-3

24I0364-28RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/11/2024 12:50

Instrument: NT10 Analyst: RJL

Analyzed: 09/26/2024 18:41

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	5	99.9	99.9	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	82.8	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	80.1	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	87.8	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	82.8	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	88.0	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	87.6	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	82.0	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	101	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-PCB-3

24I0364-28RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM

Sampled: 09/11/2024 12:50

Instrument: NT14 Analyst: RJL

Analyzed: 10/13/2024 05:31

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 22.92 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-28RE1 A 02
Dry Weight: 10.01 g
% Solids: 43.66

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	5	12.5	25.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	5	12.5	25.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	5	12.5	25.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	5	50.0	99.9	ND	ug/kg	U
Benzoic acid	65-85-0	5	250	500	ND	ug/kg	U
2-Methylphenol	95-48-7	5	12.5	25.0	ND	ug/kg	U
4-Methylphenol	106-44-5	5	12.5	25.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	5	50.0	99.9	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	5	25.0	25.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	5	12.5	25.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	5	12.5	25.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	5	50.0	99.9	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	5	12.5	25.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	5	12.5	25.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	5	50.0	99.9	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	5	12.5	25.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	5	12.5	25.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	90.1	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	120	%	Q



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Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-TOC-3

24I0364-29 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/11/2024 12:50
Instrument: TOC Cube Analyst: ARR Analyzed: 09/26/2024 18:00

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-29 A
Preparation Batch: BMI0526 Sample Size: 0.0235 g (wet) Dry Weight: 0.01 g
Prepared: 09/20/2024 Final Volume: 0.0235 mL % Solids: 38.96

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Organic Carbon			1	0.02	0.02	28.6	%



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Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-TOC-3

24I0364-29 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/11/2024 12:50
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-29
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 38.96

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids			1	0.04	0.04	38.96	%



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-M-3

24I0364-30 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/11/2024 12:50
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:27

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-30 A 01
Preparation Batch: BMI0484 Sample Size: 1.014 g (wet) Dry Weight: 0.45 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 44.02

Analyte	CAS Number	Dilution	Detection Limit		Reporting Limit		Units	Notes
			Limit	Result	Limit			
Arsenic	7440-38-2	20	0.09	0.45	2.64	mg/kg		
Cadmium	7440-43-9	20	0.07	0.22	0.17	mg/kg	J	
Copper	7440-50-8	20	0.39	1.12	44.4	mg/kg		
Zinc	7440-66-6	20	6.5	13.4	135	mg/kg		



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-M-3

24I0364-30 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/11/2024 12:50
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:27

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-30 A 01
Preparation Batch: BMI0484 Sample Size: 1.014 g (wet) Dry Weight: 0.45 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 44.02

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	20	0.58	1.12	14.1	mg/kg		
Lead	7439-92-1	20	0.12	0.22	1.89	mg/kg		
Silver	7440-22-4	20	0.05	0.45	0.08	mg/kg	J	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-GS-C-M-3

24I0364-30 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/11/2024 12:50
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:04

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-30 A
Preparation Batch: BMI0650 Sample Size: 0.22 g (wet) Dry Weight: 0.10 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 44.02

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.0108	0.0516	ND	mg/kg	U



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-D-1

24I0364-31 (Solid)

Dioxins/Furans

Method: EPA 1613B	Sampled: 09/11/2024 15:10
Instrument: AUTOSPEC01 Analyst: pk	Analyzed: 11/01/2024 22:01
Sample Preparation: Preparation Method: EPA 1613	Extract ID: 24I0364-31 A 01
Preparation Batch: BMI0462	Dry Weight: 10.00 g
Prepared: 10/09/2024	% Solids: 42.95
Sample Cleanup: Cleanup Method: Silica Gel	Extract ID: 24I0364-31 A 01
Cleanup Batch: CMJ0076	Initial Volume: 20 uL
Cleaned: 11-Oct-2024	Final Volume: 20 uL
Sample Cleanup: Cleanup Method: Sulfuric Acid	Extract ID: 24I0364-31 A 01
Cleanup Batch: CMJ0075	Initial Volume: 20 uL
Cleaned: 11-Oct-2024	Final Volume: 20 uL
Sample Cleanup: Cleanup Method: Florisil	Extract ID: 24I0364-31 A 01
Cleanup Batch: CMJ0077	Initial Volume: 20 uL
Cleaned: 11-Oct-2024	Final Volume: 20 uL

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting				
				EDL	Limit	Result	Units	Notes
2,3,7,8-TCDF		0.911	0.655-0.886		1.00	1.93	ng/kg	X, EMPC
2,3,7,8-TCDD			0.655-0.886	0.412	1.00	ND	ng/kg	U
1,2,3,7,8-PeCDF		1.329	1.318-1.783		1.00	0.756	ng/kg	J
2,3,4,7,8-PeCDF			1.318-1.783	0.722	1.00	ND	ng/kg	U
1,2,3,7,8-PeCDD			1.318-1.783	1.05	1.00	ND	ng/kg	U
1,2,3,4,7,8-HxCDF		0.655	1.054-1.426		1.00	1.01	ng/kg	EMPC
1,2,3,6,7,8-HxCDF		1.806	1.054-1.426		1.00	0.933	ng/kg	EMPC, J
2,3,4,6,7,8-HxCDF			1.054-1.426	0.726	1.00	ND	ng/kg	U
1,2,3,7,8,9-HxCDF			1.054-1.426	1.07	1.00	ND	ng/kg	U
1,2,3,4,7,8-HxCDD			1.054-1.426	1.24	1.00	ND	ng/kg	U
1,2,3,6,7,8-HxCDD		1.387	1.054-1.426		1.00	15.4	ng/kg	
1,2,3,7,8,9-HxCDD		1.701	1.054-1.426		1.00	4.52	ng/kg	EMPC
1,2,3,4,6,7,8-HpCDF		1.079	0.893-1.208		1.00	39.2	ng/kg	
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.43	1.00	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDD		1.125	0.893-1.208		2.50	232	ng/kg	
OCDF		0.963	0.757-1.024		2.50	44.9	ng/kg	
OCDD		0.954	0.757-1.024		10.0	1280	ng/kg	B
Homologue groups								
Total TCDF					1.00	2.52	ng/kg	
Total TCDD					1.00	8.78	ng/kg	
Total PeCDF					1.00	9.88	ng/kg	
Total PeCDD					1.00	1.74	ng/kg	
Total HxCDF					1.00	58.5	ng/kg	
Total HxCDD					1.00	110	ng/kg	
Total HpCDF					1.00	111	ng/kg	
Total HpCDD					1.00	413	ng/kg	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-D-1
24I0364-31 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 15:10

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 22:01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
				Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	6.51		
				Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	5.51		
				Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	6.09		
				Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	4.67		



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240911-SBT-C-D-1

24I0364-31 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 15:10

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 22:01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.763	0.655-0.886	24-169 %	53.0	%	
<i>13C12-2,3,7,8-TCDD</i>		0.794	0.655-0.886	25-164 %	57.9	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.615	1.318-1.783	24-185 %	59.5	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.593	1.318-1.783	21-178 %	55.5	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.674	1.318-1.783	25-181 %	55.6	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.535	0.434-0.587	26-152 %	69.1	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.536	0.434-0.587	26-123 %	76.5	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.534	0.434-0.587	28-136 %	71.3	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.586	0.434-0.587	29-147 %	69.6	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.265	1.054-1.426	32-141 %	61.7	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.266	1.054-1.426	28-130 %	71.3	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.396	0.374-0.506	28-143 %	74.5	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.427	0.374-0.506	26-138 %	67.2	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.026	0.893-1.208	23-140 %	72.9	%	
<i>13C12-OCDD</i>		1.006	0.757-1.024	17-157 %	82.4	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	69.9	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-D-1

24I0364-31 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 15:10

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 22:01

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
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20240911-SBT-C-D-1

24I0364-31 (Solid)

Extractions

Method: ASTM D2216

Sampled: 09/11/2024 15:10

Instrument: N/A Analyst: TW

Analyzed: 09/19/2024 05:05

Sample Preparation: Preparation Method: No Prep-Organics
Preparation Batch: BMI0417
Prepared: 09/18/2024

Sample Size: 1 g (wet)

Final Volume: 1 g

Extract ID: 24I0364-31

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Total Solids			0.01	42.95	%	
Labeled compounds						



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-1

24I0364-33 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 15:10
Instrument: NT10 Analyst: RJL Analyzed: 09/25/2024 19:53

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-33 A 02
Preparation Batch: BMI0474 Sample Size: 25.06 g (wet) Dry Weight: 10.02 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 40.00

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	33.9	ug/kg	
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	105	ug/kg	
2,4-Dimethylphenol	105-67-9	1	49.9	99.8	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.8	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	34.9	49.9	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	49.9	99.8	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	39.8	ug/kg	Q
Pyrene	129-00-0	1	10.0	20.0	27.1	ug/kg	
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	39.9	49.9	346	ug/kg	
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	29.9	39.9	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-1

24I0364-33 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 15:10
Instrument: NT10 Analyst: RJL Analyzed: 09/25/2024 19:53

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	20.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	65.6	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	59.5	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	68.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	67.1	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	69.3	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	64.2	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	98.8	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	163	%	*



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-1

24I0364-33 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 09/11/2024 15:10
Instrument: NT14 Analyst: RJL Analyzed: 10/12/2024 00:01

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 2410364-33 A 02
Preparation Batch: BMI0474 Sample Size: 25.06 g (wet) Dry Weight: 10.02 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 40.00

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	1	2.5	5.0	28.6	ug/kg	
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	49.9	99.8	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	112	ug/kg	
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	12.4	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	66.9	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	199	%	*, Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-1

24I0364-33 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/11/2024 15:10
Instrument:	ECD5 Analyst: AA	Analyzed: 09/30/2024 13:58
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-33 A 01 Dry Weight: 12.50 g % Solids: 40.00
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	89.5	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	95.5	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	106	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	81.8	%		



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Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-1

24I0364-33RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 15:10
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 19:21

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-33RE1 A 02
Preparation Batch: BMI0474 Sample Size: 25.06 g (wet) Dry Weight: 10.02 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 40.00

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	10	99.8	200	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	10	99.8	200	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	10	99.8	200	ND	ug/kg	U
Benzyl Alcohol	100-51-6	10	200	200	ND	ug/kg	U
2-Methylphenol	95-48-7	10	99.8	200	ND	ug/kg	U
4-Methylphenol	106-44-5	10	150	200	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	10	499	998	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	10	99.8	200	ND	ug/kg	U
Naphthalene	91-20-3	10	99.8	200	ND	ug/kg	U
Benzoic acid	65-85-0	10	998	2000	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	10	99.8	200	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	10	99.8	200	ND	ug/kg	U
Acenaphthylene	208-96-8	10	99.8	200	ND	ug/kg	U
Dimethylphthalate	131-11-3	10	99.8	200	ND	ug/kg	U
Acenaphthene	83-32-9	10	99.8	200	ND	ug/kg	U
Dibenzofuran	132-64-9	10	200	200	ND	ug/kg	U
Fluorene	86-73-7	10	200	200	ND	ug/kg	U
Diethyl phthalate	84-66-2	10	349	499	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	10	99.8	200	ND	ug/kg	U
Hexachlorobenzene	118-74-1	10	200	200	ND	ug/kg	U
Pentachlorophenol	87-86-5	10	499	998	ND	ug/kg	U
Phenanthrene	85-01-8	10	99.8	200	ND	ug/kg	U
Anthracene	120-12-7	10	99.8	200	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	10	99.8	200	ND	ug/kg	U
Fluoranthene	206-44-0	10	99.8	200	ND	ug/kg	U
Pyrene	129-00-0	10	99.8	200	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	10	99.8	200	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	10	99.8	200	ND	ug/kg	U
Chrysene	218-01-9	10	99.8	200	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	10	399	499	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	10	99.8	200	ND	ug/kg	U
Benzofluoranthenes, Total		10	299	399	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	10	99.8	200	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	10	200	200	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	10	200	200	ND	ug/kg	U



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-1

24I0364-33RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 15:10
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 19:21

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	10	200	200	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	66.6	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	64.3	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	71.4	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	66.6	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	67.3	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	71.2	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	58.9	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	85.3	%	



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

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Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-1

24I0364-33RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM

Sampled: 09/11/2024 15:10

Instrument: NT14 Analyst: RJL

Analyzed: 10/13/2024 06:08

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 25.06 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-33RE1 A 02
Dry Weight: 10.02 g
% Solids: 40.00

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	10	24.9	49.9	27.9	ug/kg	J, D
1,4-Dichlorobenzene	106-46-7	10	24.9	49.9	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	10	24.9	49.9	ND	ug/kg	U
Benzyl Alcohol	100-51-6	10	99.8	200	ND	ug/kg	U
Benzoic acid	65-85-0	10	499	998	ND	ug/kg	U
2-Methylphenol	95-48-7	10	24.9	49.9	ND	ug/kg	U
4-Methylphenol	106-44-5	10	24.9	49.9	110	ug/kg	D
2,4-Dimethylphenol	105-67-9	10	99.8	200	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	10	49.9	49.9	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	10	24.9	49.9	ND	ug/kg	U
Dimethylphthalate	131-11-3	10	24.9	49.9	ND	ug/kg	U
Diethyl phthalate	84-66-2	10	99.8	200	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	10	24.9	49.9	ND	ug/kg	U
Hexachlorobenzene	118-74-1	10	24.9	49.9	ND	ug/kg	U
Pentachlorophenol	87-86-5	10	99.8	200	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	10	24.9	49.9	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	10	24.9	49.9	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	71.5	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	98.7	%	Q



Analytical Resources, LLC

Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-TOC-1

24I0364-34 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/11/2024 15:10
Instrument: TOC Cube Analyst: ARR Analyzed: 09/26/2024 18:31

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-34 A
Preparation Batch: BMI0526 Sample Size: 0.0226 g (wet) Dry Weight: 0.01 g
Prepared: 09/20/2024 Final Volume: 0.0226 mL % Solids: 38.83

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	29.7	%	



Analytical Resources, LLC

Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-TOC-1

24I0364-34 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/11/2024 15:10
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-34
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 38.83

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids			1	0.04	0.04	38.83	%



WSP USA, Inc.
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Project: Whitmarsh
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Reported:
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20240911-SBT-C-M-1

24I0364-35 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/11/2024 15:10
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:32

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-35 A 01
Preparation Batch: BMI0484 Sample Size: 1.003 g (wet) Dry Weight: 0.39 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 39.36

Analyte	CAS Number	Dilution	Detection Limit		Reporting Limit		Result	Units	Notes
			Limit	Limit	Limit	Result			
Arsenic	7440-38-2	20	0.10	0.51	1.43	mg/kg			
Cadmium	7440-43-9	20	0.08	0.25	0.31	mg/kg			
Copper	7440-50-8	20	0.44	1.27	31.0	mg/kg			
Zinc	7440-66-6	20	7.4	15.2	158	mg/kg			



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
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20240911-SBT-C-M-1

24I0364-35 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/11/2024 15:10
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:32

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-35 A 01
Preparation Batch: BMI0484 Sample Size: 1.003 g (wet) Dry Weight: 0.39 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 39.36

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	20	0.66	1.27	10.5	mg/kg		
Lead	7439-92-1	20	0.13	0.25	3.11	mg/kg		
Silver	7440-22-4	20	0.06	0.51	0.06	mg/kg	J	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240911-SBT-C-M-1

24I0364-35 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/11/2024 15:10
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:11

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-35 A
Preparation Batch: BMI0650 Sample Size: 0.203 g (wet) Dry Weight: 0.08 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 39.36

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.0131	0.0626	ND	mg/kg	U



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Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-D-2

24I0364-36 (Solid)

Dioxins/Furans

Method: EPA 1613B	Sampled: 09/11/2024 15:20
Instrument: AUTOSPEC01 Analyst: pk	Analyzed: 11/01/2024 22:50
Sample Preparation: Preparation Method: EPA 1613	Extract ID: 24I0364-36 A 01
Preparation Batch: BMI0462	Dry Weight: 10.01 g
Prepared: 10/09/2024	% Solids: 50.57
Sample Cleanup: Cleanup Method: Silica Gel	Extract ID: 24I0364-36 A 01
Cleanup Batch: CMJ0076	Initial Volume: 20 uL
Cleaned: 11-Oct-2024	Final Volume: 20 uL
Sample Cleanup: Cleanup Method: Sulfuric Acid	Extract ID: 24I0364-36 A 01
Cleanup Batch: CMJ0075	Initial Volume: 20 uL
Cleaned: 11-Oct-2024	Final Volume: 20 uL
Sample Cleanup: Cleanup Method: Florisil	Extract ID: 24I0364-36 A 01
Cleanup Batch: CMJ0077	Initial Volume: 20 uL
Cleaned: 11-Oct-2024	Final Volume: 20 uL

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting					Notes
				EDL	Limit	Result	Units		
2,3,7,8-TCDF		0.847	0.655-0.886		0.999	1.79	ng/kg		
2,3,7,8-TCDD			0.655-0.886	0.353	0.999	ND	ng/kg	U	
1,2,3,7,8-PeCDF		1.508	1.318-1.783		0.999	0.805	ng/kg	J	
2,3,4,7,8-PeCDF		1.114	1.318-1.783		0.999	0.860	ng/kg	EMPC, J	
1,2,3,7,8-PeCDD			1.318-1.783	0.680	0.999	ND	ng/kg	U	
1,2,3,4,7,8-HxCDF		0.990	1.054-1.426		0.999	0.695	ng/kg	EMPC, J	
1,2,3,6,7,8-HxCDF		0.834	1.054-1.426		0.999	0.650	ng/kg	EMPC, J	
2,3,4,6,7,8-HxCDF		1.220	1.054-1.426		0.999	1.64	ng/kg		
1,2,3,7,8,9-HxCDF			1.054-1.426	0.706	0.999	ND	ng/kg	U	
1,2,3,4,7,8-HxCDD			1.054-1.426	0.840	0.999	ND	ng/kg	U	
1,2,3,6,7,8-HxCDD		1.215	1.054-1.426		0.999	10.0	ng/kg		
1,2,3,7,8,9-HxCDD		1.031	1.054-1.426		0.999	2.89	ng/kg	EMPC	
1,2,3,4,6,7,8-HpCDF		1.021	0.893-1.208		0.999	21.1	ng/kg		
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.10	0.999	ND	ng/kg	U	
1,2,3,4,6,7,8-HpCDD		1.173	0.893-1.208		2.50	218	ng/kg		
OCDF		0.872	0.757-1.024		2.50	29.2	ng/kg		
OCDD		0.882	0.757-1.024		9.99	1240	ng/kg	B	

Homologue groups

Total TCDF	0.999	5.70	ng/kg
Total TCDD	0.999	6.18	ng/kg
Total PeCDF	0.999	9.32	ng/kg
Total PeCDD	0.999	4.62	ng/kg
Total HxCDF	0.999	31.3	ng/kg
Total HxCDD	0.999	28.9	ng/kg
Total HpCDF	0.999	61.4	ng/kg
Total HpCDD	0.999	343	ng/kg



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-D-2

24I0364-36 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 15:20

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 22:50

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	5.42						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	4.82						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	5.08						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	4.14						



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Project: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240911-SBT-C-D-2

24I0364-36 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 15:20

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 22:50

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.838	0.655-0.886	24-169 %	74.0	%	
<i>13C12-2,3,7,8-TCDD</i>		0.860	0.655-0.886	25-164 %	73.6	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.732	1.318-1.783	24-185 %	87.3	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.567	1.318-1.783	21-178 %	79.6	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.640	1.318-1.783	25-181 %	76.9	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.518	0.434-0.587	26-152 %	87.5	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.548	0.434-0.587	26-123 %	93.8	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.513	0.434-0.587	28-136 %	86.8	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.502	0.434-0.587	29-147 %	87.9	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.258	1.054-1.426	32-141 %	74.9	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.244	1.054-1.426	28-130 %	82.7	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.464	0.374-0.506	28-143 %	88.7	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.484	0.374-0.506	26-138 %	89.3	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		0.979	0.893-1.208	23-140 %	99.4	%	
<i>13C12-OCDD</i>		0.976	0.757-1.024	17-157 %	97.2	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	79.5	%	



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-D-2

24I0364-36 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 15:20

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 22:50

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
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20240911-SBT-C-D-2

24I0364-36 (Solid)

Extractions

Method: ASTM D2216

Sampled: 09/11/2024 15:20

Instrument: N/A Analyst: TW

Analyzed: 09/19/2024 05:05

Sample Preparation: Preparation Method: No Prep-Organics
Preparation Batch: BMI0417
Prepared: 09/18/2024

Sample Size: 1 g (wet)

Final Volume: 1 g

Extract ID: 24I0364-36

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Total Solids			0.01	50.57	%	
Labeled compounds						



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840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-2

24I0364-38 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 15:20
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 20:01

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-38 A 02
Preparation Batch: BMI0474 Sample Size: 20.96 g (wet) Dry Weight: 10.00 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 47.71

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	22.0	ug/kg	
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	76.0	ug/kg	
2,4-Dimethylphenol	105-67-9	1	50.0	100	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	100	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	35.0	50.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	50.0	100	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	21.5	ug/kg	
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	48.2	ug/kg	
Pyrene	129-00-0	1	10.0	20.0	34.2	ug/kg	
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	40.0	50.0	428	ug/kg	
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	30.0	40.0	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



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Project: Whitmarsh
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Project Manager: Accounts Payable

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06-Nov-2024 16:54

20240911-SBT-C-PCB-2

24I0364-38 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 15:20
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 20:01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	20.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	74.3	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	70.7	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	78.0	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	74.1	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	82.5	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	78.7	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	98.9	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	155	%	*



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06-Nov-2024 16:54

20240911-SBT-C-PCB-2

24I0364-38 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM	Sampled: 09/11/2024 15:20
Instrument: NT14 Analyst: RJL	Analyzed: 10/12/2024 00:39

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)	Extract ID: 24I0364-38 A 02
	Preparation Batch: BMI0474	Dry Weight: 10.00 g
	Prepared: 09/23/2024	% Solids: 47.71

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	1	2.5	5.0	18.7	ug/kg	
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	50.0	100	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	7.5	ug/kg	
4-Methylphenol	106-44-5	1	2.5	5.0	80.0	ug/kg	
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	ND	ug/kg	U
Dibeno(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	73.5	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	207	%	* , Q



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20240911-SBT-C-PCB-2

24I0364-38 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/11/2024 15:20
Instrument:	ECD5 Analyst: AA	Analyzed: 09/30/2024 14:19
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-38 A 01 Dry Weight: 12.50 g % Solids: 47.71
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Extract ID: 24I0364-38 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Extract ID: 24I0364-38 A 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	92.7	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	120	%	P1	
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	106	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	81.2	%	P1	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-2

24I0364-38RE1 (Solid)

Semivolatile Organic Compounds

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-38RE1 A 02
Preparation Batch: BMI0474 Sample Size: 20.96 g (wet) Dry Weight: 10.00 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 47.71

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	10	100	200	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	10	100	200	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	10	100	200	ND	ug/kg	U
Benzyl Alcohol	100-51-6	10	200	200	ND	ug/kg	U
2-Methylphenol	95-48-7	10	100	200	ND	ug/kg	U
4-Methylphenol	106-44-5	10	150	200	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	10	500	1000	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	10	100	200	ND	ug/kg	U
Naphthalene	91-20-3	10	100	200	ND	ug/kg	U
Benzoic acid	65-85-0	10	1000	2000	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	10	100	200	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	10	100	200	ND	ug/kg	U
Acenaphthylene	208-96-8	10	100	200	ND	ug/kg	U
Dimethylphthalate	131-11-3	10	100	200	ND	ug/kg	U
Acenaphthene	83-32-9	10	100	200	ND	ug/kg	U
Dibenzofuran	132-64-9	10	200	200	ND	ug/kg	U
Fluorene	86-73-7	10	200	200	ND	ug/kg	U
Diethyl phthalate	84-66-2	10	350	500	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	10	100	200	ND	ug/kg	U
Hexachlorobenzene	118-74-1	10	200	200	ND	ug/kg	U
Pentachlorophenol	87-86-5	10	500	1000	ND	ug/kg	U
Phenanthrene	85-01-8	10	100	200	ND	ug/kg	U
Anthracene	120-12-7	10	100	200	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	10	100	200	ND	ug/kg	U
Fluoranthene	206-44-0	10	100	200	ND	ug/kg	U
Pyrene	129-00-0	10	100	200	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	10	100	200	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	10	100	200	ND	ug/kg	U
Chrysene	218-01-9	10	100	200	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	10	400	500	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	10	100	200	ND	ug/kg	U
Benzofluoranthenes, Total		10	300	400	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	10	100	200	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	10	200	200	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	10	200	200	ND	ug/kg	U



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
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20240911-SBT-C-PCB-2

24I0364-38RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/11/2024 15:20

Instrument: NT10 Analyst: RJL

Analyzed: 09/27/2024 16:19

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	10	200	200	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	66.6	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	59.5	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	66.8	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	68.9	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	71.0	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	74.9	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	50.2	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	74.8	%	Q



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20240911-SBT-C-PCB-2

24I0364-38RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM

Sampled: 09/11/2024 15:20

Instrument: NT14 Analyst: RJL

Analyzed: 10/13/2024 06:46

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 20.96 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-38RE1 A 02

Dry Weight:10.00 g

% Solids: 47.71

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	10	25.0	50.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	10	25.0	50.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	10	25.0	50.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	10	100	200	ND	ug/kg	U
Benzoic acid	65-85-0	10	500	1000	ND	ug/kg	U
2-Methylphenol	95-48-7	10	25.0	50.0	ND	ug/kg	U
4-Methylphenol	106-44-5	10	25.0	50.0	71.8	ug/kg	D
2,4-Dimethylphenol	105-67-9	10	100	200	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	10	50.0	50.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	10	25.0	50.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	10	25.0	50.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	10	100	200	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	10	25.0	50.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	10	25.0	50.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	10	100	200	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	10	25.0	50.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	10	25.0	50.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	74.6	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	100	%	Q



Analytical Resources, LLC

Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-TOC-2

24I0364-39 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/11/2024 15:20
Instrument: TOC Cube Analyst: ARR Analyzed: 09/26/2024 19:01

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-39 A
Preparation Batch: BMI0526 Sample Size: 0.0297 g (wet) Dry Weight: 0.01 g
Prepared: 09/20/2024 Final Volume: 0.0297 mL % Solids: 48.34

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	43.4	%	



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-TOC-2

24I0364-39 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/11/2024 15:20
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-39
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 48.34

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids			1	0.04	0.04	48.34	%



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Reported:
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20240911-SBT-C-M-2

24I0364-40 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/11/2024 15:20
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:37

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-40 A 01
Preparation Batch: BMI0484 Sample Size: 1.015 g (wet) Dry Weight: 0.53 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 52.27

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.07	0.38	1.32	mg/kg		
Cadmium	7440-43-9	20	0.06	0.19	0.32	mg/kg		
Copper	7440-50-8	20	0.33	0.94	30.2	mg/kg		
Zinc	7440-66-6	20	1.8	11.3	167	mg/kg		



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Reported:
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20240911-SBT-C-M-2

24I0364-40 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/11/2024 15:20
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:37

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-40 A 01
Preparation Batch: BMI0484 Sample Size: 1.015 g (wet) Dry Weight: 0.53 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 52.27

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	20	0.45	0.94	12.1	mg/kg		
Lead	7439-92-1	20	0.10	0.19	2.84	mg/kg		
Silver	7440-22-4	20	0.04	0.38	0.07	mg/kg	J	



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06-Nov-2024 16:54

20240911-SBT-C-M-2

24I0364-40 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/11/2024 15:20
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:14

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-40 A
Preparation Batch: BMI0650 Sample Size: 0.258 g (wet) Dry Weight: 0.13 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 52.27

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.00779	0.0371	0.00905	mg/kg	J



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-D-3

24I0364-41 (Solid)

Dioxins/Furans

Method: EPA 1613B	Sampled: 09/11/2024 15:30
Instrument: AUTOSPEC01 Analyst: pk	Analyzed: 11/01/2024 23:40
Sample Preparation: Preparation Method: EPA 1613 Preparation Batch: BMI0462 Prepared: 10/09/2024	Sample Size: 18.97 g (wet) Final Volume: 20 uL Extract ID: 24I0364-41 A 01 Dry Weight: 10.01 g % Solids: 52.75
Sample Cleanup: Cleanup Method: Silica Gel Cleanup Batch: CMJ0076 Cleaned: 11-Oct-2024	Initial Volume: 20 uL Final Volume: 20 uL Extract ID: 24I0364-41 A 01
Sample Cleanup: Cleanup Method: Sulfuric Acid Cleanup Batch: CMJ0075 Cleaned: 11-Oct-2024	Initial Volume: 20 uL Final Volume: 20 uL Extract ID: 24I0364-41 A 01
Sample Cleanup: Cleanup Method: Florisil Cleanup Batch: CMJ0077 Cleaned: 11-Oct-2024	Initial Volume: 20 uL Final Volume: 20 uL Extract ID: 24I0364-41 A 01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting				
				EDL	Limit	Result	Units	Notes
2,3,7,8-TCDF		0.744	0.655-0.886		0.999	2.14	ng/kg	X
2,3,7,8-TCDD			0.655-0.886	0.395	0.999	ND	ng/kg	U
1,2,3,7,8-PeCDF			1.318-1.783	0.929	0.999	ND	ng/kg	U
2,3,4,7,8-PeCDF			1.318-1.783	0.993	0.999	ND	ng/kg	U
1,2,3,7,8-PeCDD		1.535	1.318-1.783		0.999	0.681	ng/kg	J
1,2,3,4,7,8-HxCDF		1.839	1.054-1.426		0.999	0.754	ng/kg	EMPC, J
1,2,3,6,7,8-HxCDF		0.866	1.054-1.426		0.999	0.888	ng/kg	EMPC, J
2,3,4,6,7,8-HxCDF		1.329	1.054-1.426		0.999	3.67	ng/kg	
1,2,3,7,8,9-HxCDF			1.054-1.426	0.918	0.999	ND	ng/kg	U
1,2,3,4,7,8-HxCDD			1.054-1.426	0.973	0.999	ND	ng/kg	U
1,2,3,6,7,8-HxCDD		1.300	1.054-1.426		0.999	15.2	ng/kg	
1,2,3,7,8,9-HxCDD		1.049	1.054-1.426		0.999	4.65	ng/kg	EMPC
1,2,3,4,6,7,8-HpCDF		1.080	0.893-1.208		0.999	41.5	ng/kg	
1,2,3,4,7,8,9-HpCDF		2.678	0.893-1.208		0.999	2.05	ng/kg	EMPC
1,2,3,4,6,7,8-HpCDD		1.004	0.893-1.208		2.50	252	ng/kg	
OCDF		0.924	0.757-1.024		2.50	43.2	ng/kg	
OCDD		0.912	0.757-1.024		9.99	1310	ng/kg	B
Homologue groups								
Total TCDF					0.999	5.46	ng/kg	
Total TCDD					0.999	6.72	ng/kg	
Total PeCDF					0.999	6.70	ng/kg	
Total PeCDD					0.999	0.681	ng/kg	J
Total HxCDF					0.999	62.0	ng/kg	
Total HxCDD					0.999	115	ng/kg	
Total HpCDF					0.999	117	ng/kg	
Total HpCDD					0.999	415	ng/kg	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-D-3

24I0364-41 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 15:30

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 23:40

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	7.23						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	6.77						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	6.90						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	6.12						



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-D-3

24I0364-41 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 15:30

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 23:40

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.859	0.655-0.886	24-169 %	61.0	%	
<i>13C12-2,3,7,8-TCDD</i>		0.774	0.655-0.886	25-164 %	62.1	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.443	1.318-1.783	24-185 %	73.8	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.454	1.318-1.783	21-178 %	69.5	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.625	1.318-1.783	25-181 %	70.4	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.525	0.434-0.587	26-152 %	77.6	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.512	0.434-0.587	26-123 %	78.5	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.549	0.434-0.587	28-136 %	73.5	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.506	0.434-0.587	29-147 %	80.5	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.294	1.054-1.426	32-141 %	67.9	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.184	1.054-1.426	28-130 %	70.1	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.495	0.374-0.506	28-143 %	69.4	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.487	0.374-0.506	26-138 %	74.3	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.083	0.893-1.208	23-140 %	81.6	%	
<i>13C12-OCDD</i>		0.903	0.757-1.024	17-157 %	75.2	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	69.7	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-D-3

24I0364-41 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 15:30

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/01/2024 23:40

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
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20240911-SBT-C-D-3

24I0364-41 (Solid)

Extractions

Method: ASTM D2216

Sampled: 09/11/2024 15:30

Instrument: N/A Analyst: TW

Analyzed: 09/19/2024 05:05

Sample Preparation: Preparation Method: No Prep-Organics
Preparation Batch: BMI0417
Prepared: 09/18/2024

Sample Size: 1 g (wet)

Final Volume: 1 g

Extract ID: 24I0364-41

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Total Solids			0.01	52.75	%	
Labeled compounds						



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-3

24I0364-43 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 15:30
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 20:40

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-43 A 02
Preparation Batch: BMI0474 Sample Size: 18.9 g (wet) Dry Weight: 10.02 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 53.00

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	41.9	ug/kg	
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	184	ug/kg	
2,4-Dimethylphenol	105-67-9	1	49.9	99.8	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.8	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	34.9	49.9	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	49.9	99.8	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	26.1	ug/kg	
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	61.2	ug/kg	
Pyrene	129-00-0	1	10.0	20.0	39.8	ug/kg	
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	39.9	49.9	481	ug/kg	
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	29.9	39.9	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



Analytical Resources, LLC

Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-3

24I0364-43 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/11/2024 15:30

Instrument: NT10 Analyst: RJL

Analyzed: 09/26/2024 20:40

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	20.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	73.3	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	68.3	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	77.7	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	73.3	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	74.9	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	72.2	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	92.4	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	166	%	*



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-3

24I0364-43 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 09/11/2024 15:30
Instrument: NT14 Analyst: RJL Analyzed: 10/12/2024 01:17

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-43 A 02
Preparation Batch: BMI0474 Sample Size: 18.9 g (wet) Dry Weight: 10.02 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 53.00

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	1	2.5	5.0	38.6	ug/kg	
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	49.9	99.8	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	190	ug/kg	
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	15.1	ug/kg	
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	73.4	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	250	%	*, Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-3

24I0364-43 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/11/2024 15:30
Instrument:	ECD5 Analyst: AA	Analyzed: 09/27/2024 20:04
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-43 A 01 Dry Weight: 12.34 g % Solids: 53.00
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.1	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.1	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.1	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.1	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.1	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.1	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.1	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.1	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.1	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>				40-126 %	89.8	%	
<i>Surrogate: Tetrachlorometaxylene</i>				44-120 %	104	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>				40-126 %	108	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>				44-120 %	84.2	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-3

24I0364-43RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 15:30
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 16:59

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-43RE1 A 02
Preparation Batch: BMI0474 Sample Size: 18.9 g (wet) Dry Weight: 10.02 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 53.00

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	10	99.8	200	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	10	99.8	200	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	10	99.8	200	ND	ug/kg	U
Benzyl Alcohol	100-51-6	10	200	200	ND	ug/kg	U
2-Methylphenol	95-48-7	10	99.8	200	ND	ug/kg	U
4-Methylphenol	106-44-5	10	150	200	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	10	499	998	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	10	99.8	200	ND	ug/kg	U
Naphthalene	91-20-3	10	99.8	200	ND	ug/kg	U
Benzoic acid	65-85-0	10	998	2000	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	10	99.8	200	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	10	99.8	200	ND	ug/kg	U
Acenaphthylene	208-96-8	10	99.8	200	ND	ug/kg	U
Dimethylphthalate	131-11-3	10	99.8	200	ND	ug/kg	U
Acenaphthene	83-32-9	10	99.8	200	ND	ug/kg	U
Dibenzofuran	132-64-9	10	200	200	ND	ug/kg	U
Fluorene	86-73-7	10	200	200	ND	ug/kg	U
Diethyl phthalate	84-66-2	10	349	499	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	10	99.8	200	ND	ug/kg	U
Hexachlorobenzene	118-74-1	10	200	200	ND	ug/kg	U
Pentachlorophenol	87-86-5	10	499	998	ND	ug/kg	U
Phenanthrene	85-01-8	10	99.8	200	ND	ug/kg	U
Anthracene	120-12-7	10	99.8	200	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	10	99.8	200	ND	ug/kg	U
Fluoranthene	206-44-0	10	99.8	200	ND	ug/kg	U
Pyrene	129-00-0	10	99.8	200	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	10	99.8	200	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	10	99.8	200	ND	ug/kg	U
Chrysene	218-01-9	10	99.8	200	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	10	399	499	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	10	99.8	200	ND	ug/kg	U
Benzofluoranthenes, Total		10	299	399	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	10	99.8	200	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	10	200	200	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	10	200	200	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-3

24I0364-43RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 15:30
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 16:59

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	10	200	200	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	65.2	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	56.0	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	65.6	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	70.1	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	69.9	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	73.7	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	56.3	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	70.8	%	Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-PCB-3

24I0364-43RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM

Sampled: 09/11/2024 15:30

Instrument: NT14 Analyst: RJL

Analyzed: 10/13/2024 07:24

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 18.9 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-43RE1 A 02
Dry Weight: 10.02 g
% Solids: 53.00

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	10	25.0	49.9	35.2	ug/kg	J, D
1,4-Dichlorobenzene	106-46-7	10	25.0	49.9	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	10	25.0	49.9	ND	ug/kg	U
Benzyl Alcohol	100-51-6	10	99.8	200	ND	ug/kg	U
Benzoic acid	65-85-0	10	499	998	ND	ug/kg	U
2-Methylphenol	95-48-7	10	25.0	49.9	ND	ug/kg	U
4-Methylphenol	106-44-5	10	25.0	49.9	172	ug/kg	D
2,4-Dimethylphenol	105-67-9	10	99.8	200	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	10	49.9	49.9	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	10	25.0	49.9	ND	ug/kg	U
Dimethylphthalate	131-11-3	10	25.0	49.9	ND	ug/kg	U
Diethyl phthalate	84-66-2	10	99.8	200	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	10	25.0	49.9	ND	ug/kg	U
Hexachlorobenzene	118-74-1	10	25.0	49.9	ND	ug/kg	U
Pentachlorophenol	87-86-5	10	99.8	200	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	10	25.0	49.9	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	10	25.0	49.9	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	72.3	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	99.0	%	Q



Analytical Resources, LLC

Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-TOC-3

24I0364-44 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/11/2024 15:30
Instrument: TOC Cube Analyst: ARR Analyzed: 09/26/2024 19:32

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-44 A
Preparation Batch: BMI0526 Sample Size: 0.0239 g (wet) Dry Weight: 0.01 g
Prepared: 09/20/2024 Final Volume: 0.0239 mL % Solids: 52.88

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Organic Carbon		1	0.02	0.02	40.0	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-TOC-3

24I0364-44 (Solid)

Wet Chemistry

Method: SM 2540 G-11

Sampled: 09/11/2024 15:30

Instrument: BAL2 Analyst: LM

Analyzed: 09/23/2024 09:43

Sample Preparation:	Preparation Method: No Prep Wet Chem	Extract ID: 24I0364-44
	Preparation Batch: BMI0559	
	Prepared: 09/23/2024	% Solids: 52.88

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Solids		1	0.04	0.04	52.88	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-M-3

24I0364-45 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/11/2024 15:30
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:42

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-45 A 01
Preparation Batch: BMI0484 Sample Size: 1.062 g (wet) Dry Weight: 0.67 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 62.74

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.06	0.30	1.55	mg/kg		
Cadmium	7440-43-9	20	0.05	0.15	0.85	mg/kg		
Copper	7440-50-8	20	0.26	0.75	32.6	mg/kg		
Zinc	7440-66-6	20	1.4	9.0	219	mg/kg		



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-M-3

24I0364-45 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/11/2024 15:30
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 20:42

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-45 A 01
Preparation Batch: BMI0484 Sample Size: 1.062 g (wet) Dry Weight: 0.67 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 62.74

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	20	0.39	0.75	11.4	mg/kg		
Lead	7439-92-1	20	0.08	0.15	3.05	mg/kg		
Silver	7440-22-4	20	0.03	0.30	0.08	mg/kg	J	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-C-M-3

24I0364-45 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/11/2024 15:30
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:16

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-45 A
Preparation Batch: BMI0650 Sample Size: 0.205 g (wet) Dry Weight: 0.13 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 62.74

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.00816	0.0389	ND	mg/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-D-1

24I0364-46 (Solid)

Dioxins/Furans

Method: EPA 1613B	Sampled: 09/11/2024 16:00
Instrument: AUTOSPEC01 Analyst: pk	Analyzed: 11/02/2024 00:29
Sample Preparation: Preparation Method: EPA 1613 Preparation Batch: BMI0462 Prepared: 10/09/2024	Extract ID: 24I0364-46 A 01 Dry Weight: 10.00 g % Solids: 75.78
Sample Cleanup: Cleanup Method: Silica Gel Cleanup Batch: CMJ0076 Cleaned: 11-Oct-2024	Extract ID: 24I0364-46 A 01
Sample Cleanup: Cleanup Method: Sulfuric Acid Cleanup Batch: CMJ0075 Cleaned: 11-Oct-2024	Extract ID: 24I0364-46 A 01
Sample Cleanup: Cleanup Method: Florisil Cleanup Batch: CMJ0077 Cleaned: 11-Oct-2024	Extract ID: 24I0364-46 A 01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting				
				EDL	Limit	Result	Units	Notes
2,3,7,8-TCDF		0.736	0.655-0.886		1.00	0.598	ng/kg	X, J
2,3,7,8-TCDD			0.655-0.886	0.611	1.00	ND	ng/kg	U
1,2,3,7,8-PeCDF			1.318-1.783	0.573	1.00	ND	ng/kg	U
2,3,4,7,8-PeCDF			1.318-1.783	0.546	1.00	ND	ng/kg	U
1,2,3,7,8-PeCDD			1.318-1.783	0.843	1.00	ND	ng/kg	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.528	1.00	ND	ng/kg	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.515	1.00	ND	ng/kg	U
2,3,4,6,7,8-HxCDF			1.054-1.426	0.590	1.00	ND	ng/kg	U
1,2,3,7,8,9-HxCDF			1.054-1.426	0.856	1.00	ND	ng/kg	U
1,2,3,4,7,8-HxCDD			1.054-1.426	0.938	1.00	ND	ng/kg	U
1,2,3,6,7,8-HxCDD	1.182		1.054-1.426		1.00	7.45	ng/kg	
1,2,3,7,8,9-HxCDD			1.054-1.426	0.977	1.00	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDF	1.265		0.893-1.208		1.00	20.8	ng/kg	EMPC
1,2,3,4,7,8,9-HpCDF			0.893-1.208	1.54	1.00	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDD	0.919		0.893-1.208		2.50	61.8	ng/kg	
OCDF		0.861	0.757-1.024		2.50	28.7	ng/kg	
OCDD		0.982	0.757-1.024		10.0	421	ng/kg	B
Homologue groups								
Total TCDF					1.00	0.598	ng/kg	J
Total TCDD					1.00	1.52	ng/kg	
Total PeCDF					1.00	3.85	ng/kg	
Total PeCDD					1.00	1.58	ng/kg	
Total HxCDF					1.00	21.5	ng/kg	
Total HxCDD					1.00	48.7	ng/kg	
Total HpCDF					1.00	30.7	ng/kg	
Total HpCDD					1.00	103	ng/kg	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-D-1

24I0364-46 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 16:00

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/02/2024 00:29

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	2.81						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	1.77						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	2.71						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	1.56						



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-D-1

24I0364-46 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 16:00

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/02/2024 00:29

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.795	0.655-0.886	24-169 %	41.4	%	
<i>13C12-2,3,7,8-TCDD</i>		0.833	0.655-0.886	25-164 %	41.1	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.724	1.318-1.783	24-185 %	46.0	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.569	1.318-1.783	21-178 %	45.3	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.698	1.318-1.783	25-181 %	46.7	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.532	0.434-0.587	26-152 %	57.6	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.517	0.434-0.587	26-123 %	60.3	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.529	0.434-0.587	28-136 %	55.7	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.540	0.434-0.587	29-147 %	52.7	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.195	1.054-1.426	32-141 %	49.5	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.214	1.054-1.426	28-130 %	54.1	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.419	0.374-0.506	28-143 %	51.0	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.441	0.374-0.506	26-138 %	45.7	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.074	0.893-1.208	23-140 %	57.5	%	
<i>13C12-OCDD</i>		0.967	0.757-1.024	17-157 %	58.6	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	61.0	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-D-1

24I0364-46 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 16:00

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/02/2024 00:29

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
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20240911-SBT-TAT-D-1

24I0364-46 (Solid)

Extractions

Method: ASTM D2216

Sampled: 09/11/2024 16:00

Instrument: N/A Analyst: TW

Analyzed: 09/19/2024 05:05

Sample Preparation: Preparation Method: No Prep-Organics
Preparation Batch: BMI0417
Prepared: 09/18/2024

Sample Size: 1 g (wet)

Final Volume: 1 g

Extract ID: 24I0364-46

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Total Solids			0.01	75.78	%	
Labeled compounds						



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-PCB-1

24I0364-48 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 16:00
Instrument: NT10 Analyst: RJL Analyzed: 09/26/2024 21:20

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-48 A 02
Preparation Batch: BMI0474 Sample Size: 13.1 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 76.43

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	31.3	ug/kg	
2,4-Dimethylphenol	105-67-9	1	49.9	99.9	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.9	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	35.0	49.9	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	49.9	99.9	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	19.7	ug/kg	J
Pyrene	129-00-0	1	10.0	20.0	25.4	ug/kg	
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	40.0	49.9	129	ug/kg	
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	30.0	40.0	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-PCB-1

24I0364-48 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/11/2024 16:00

Instrument: NT10 Analyst: RJL

Analyzed: 09/26/2024 21:20

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	20.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	90.1	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	86.9	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	97.6	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	91.3	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	91.0	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	94.1	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	103	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	171	%	*



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-PCB-1

24I0364-48 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM

Sampled: 09/11/2024 16:00

Instrument: NT14 Analyst: RJL

Analyzed: 10/12/2024 01:55

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 13.1 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-48 A 02
Dry Weight: 10.01 g
% Solids: 76.43

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	2.5	5.0	5.2	ug/kg	
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	49.9	99.9	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	30.5	ug/kg	
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	88.8	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	268	%	*, Q



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Project Manager: Accounts Payable

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20240911-SBT-TAT-PCB-1

24I0364-48 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/11/2024 16:00
Instrument:	ECD5 Analyst: AA	Analyzed: 09/27/2024 20:25
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-48 A 01 Dry Weight: 12.54 g % Solids: 76.43
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>				40-126 %	99.0	%	
<i>Surrogate: Tetrachlorometaxylene</i>				44-120 %	93.5	%	
<i>Surrogate: Decachlorobiphenyl [2C]</i>				40-126 %	109	%	
<i>Surrogate: Tetrachlorometaxylene [2C]</i>				44-120 %	91.9	%	



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20240911-SBT-TAT-PCB-1

24I0364-48RE1 (Solid)

Semivolatile Organic Compounds

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-48RE1 A 02
Preparation Batch: BMI0474 Sample Size: 13.1 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 76.43

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	10	99.9	200	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	10	99.9	200	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	10	99.9	200	ND	ug/kg	U
Benzyl Alcohol	100-51-6	10	200	200	ND	ug/kg	U
2-Methylphenol	95-48-7	10	99.9	200	ND	ug/kg	U
4-Methylphenol	106-44-5	10	150	200	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	10	499	999	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	10	99.9	200	ND	ug/kg	U
Naphthalene	91-20-3	10	99.9	200	ND	ug/kg	U
Benzoic acid	65-85-0	10	999	2000	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	10	99.9	200	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	10	99.9	200	ND	ug/kg	U
Acenaphthylene	208-96-8	10	99.9	200	ND	ug/kg	U
Dimethylphthalate	131-11-3	10	99.9	200	ND	ug/kg	U
Acenaphthene	83-32-9	10	99.9	200	ND	ug/kg	U
Dibenzofuran	132-64-9	10	200	200	ND	ug/kg	U
Fluorene	86-73-7	10	200	200	ND	ug/kg	U
Diethyl phthalate	84-66-2	10	350	499	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	10	99.9	200	ND	ug/kg	U
Hexachlorobenzene	118-74-1	10	200	200	ND	ug/kg	U
Pentachlorophenol	87-86-5	10	499	999	ND	ug/kg	U
Phenanthrene	85-01-8	10	99.9	200	ND	ug/kg	U
Anthracene	120-12-7	10	99.9	200	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	10	99.9	200	ND	ug/kg	U
Fluoranthene	206-44-0	10	99.9	200	ND	ug/kg	U
Pyrene	129-00-0	10	99.9	200	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	10	99.9	200	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	10	99.9	200	ND	ug/kg	U
Chrysene	218-01-9	10	99.9	200	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	10	400	499	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	10	99.9	200	ND	ug/kg	U
Benzofluoranthenes, Total		10	300	400	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	10	99.9	200	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	10	200	200	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	10	200	200	ND	ug/kg	U



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20240911-SBT-TAT-PCB-1

24I0364-48RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 16:00
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 17:39

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	10	200	200	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	86.7	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	74.1	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	84.2	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	86.7	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	87.0	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	94.9	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	68.4	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	86.5	%	Q



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06-Nov-2024 16:54

20240911-SBT-TAT-PCB-1

24I0364-48RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM

Sampled: 09/11/2024 16:00

Instrument: NT14 Analyst: RJL

Analyzed: 10/13/2024 08:02

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 13.1 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-48RE1 A 02

Dry Weight:10.01 g

% Solids: 76.43

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	10	25.0	49.9	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	10	25.0	49.9	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	10	25.0	49.9	ND	ug/kg	U
Benzyl Alcohol	100-51-6	10	99.9	200	ND	ug/kg	U
Benzoic acid	65-85-0	10	499	999	ND	ug/kg	U
2-Methylphenol	95-48-7	10	25.0	49.9	ND	ug/kg	U
4-Methylphenol	106-44-5	10	25.0	49.9	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	10	99.9	200	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	10	49.9	49.9	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	10	25.0	49.9	ND	ug/kg	U
Dimethylphthalate	131-11-3	10	25.0	49.9	ND	ug/kg	U
Diethyl phthalate	84-66-2	10	99.9	200	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	10	25.0	49.9	ND	ug/kg	U
Hexachlorobenzene	118-74-1	10	25.0	49.9	ND	ug/kg	U
Pentachlorophenol	87-86-5	10	99.9	200	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	10	25.0	49.9	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	10	25.0	49.9	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	87.2	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	116	%	Q



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Analytical Report

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Project Number: Whitmarsh
Project Manager: Accounts Payable

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20240911-SBT-TAT-TOC-1

24I0364-49 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/11/2024 16:00
Instrument: TOC Cube Analyst: ARR Analyzed: 09/26/2024 20:02

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-49 A
Preparation Batch: BMI0526 Sample Size: 0.0491 g (wet) Dry Weight: 0.04 g
Prepared: 09/20/2024 Final Volume: 0.0491 mL % Solids: 77.43

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	6.62	%	



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20240911-SBT-TAT-TOC-1

24I0364-49 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/11/2024 16:00
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-49
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 77.43

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids			1	0.04	0.04	77.43	%



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20240911-SBT-TAT-M-1

24I0364-50 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/11/2024 16:00
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 21:22

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-50 A 01
Preparation Batch: BMI0484 Sample Size: 1.009 g (wet) Dry Weight: 0.75 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 74.20

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.05	0.27	2.65	mg/kg		
Cadmium	7440-43-9	20	0.04	0.13	0.13	mg/kg	J	
Copper	7440-50-8	20	0.23	0.67	21.1	mg/kg		
Zinc	7440-66-6	20	3.9	8.0	55.5	mg/kg		



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24I0364-50 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/11/2024 16:00
Instrument: ICPMS1 Analyst: DOE Analyzed: 09/27/2024 19:02

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-50 A 01
Preparation Batch: BMI0484 Sample Size: 1.009 g (wet) Dry Weight: 0.75 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 74.20

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	100	1.74	3.34	22.6	mg/kg	D	
Lead	7439-92-1	20	0.07	0.13	3.59	mg/kg		
Silver	7440-22-4	20	0.03	0.27	0.07	mg/kg	J	



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20240911-SBT-TAT-M-1

24I0364-50 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/11/2024 16:00
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:18

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-50 A
Preparation Batch: BMI0650 Sample Size: 0.28 g (wet) Dry Weight: 0.21 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 74.20

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.00505	0.0241	0.0207	mg/kg	J



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20240911-SBT-TAT-D-2

24I0364-51 (Solid)

Dioxins/Furans

Method: EPA 1613B	Sampled: 09/11/2024 16:10
Instrument: AUTOSPEC01 Analyst: pk	Analyzed: 11/02/2024 01:18
Sample Preparation: Preparation Method: EPA 1613 Preparation Batch: BMI0462 Prepared: 10/09/2024	Extract ID: 24I0364-51 A 01 Dry Weight: 10.00 g % Solids: 73.96
Sample Cleanup: Cleanup Method: Silica Gel Cleanup Batch: CMJ0076 Cleaned: 11-Oct-2024	Extract ID: 24I0364-51 A 01
Sample Cleanup: Cleanup Method: Sulfuric Acid Cleanup Batch: CMJ0075 Cleaned: 11-Oct-2024	Extract ID: 24I0364-51 A 01
Sample Cleanup: Cleanup Method: Florisil Cleanup Batch: CMJ0077 Cleaned: 11-Oct-2024	Extract ID: 24I0364-51 A 01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting				
				EDL	Limit	Result	Units	Notes
2,3,7,8-TCDF		0.501	0.655-0.886		1.00	1.54	ng/kg	X, EMPC
2,3,7,8-TCDD			0.655-0.886	0.312	1.00	ND	ng/kg	U
1,2,3,7,8-PeCDF			1.318-1.783	0.545	1.00	ND	ng/kg	U
2,3,4,7,8-PeCDF			1.318-1.783	0.546	1.00	ND	ng/kg	U
1,2,3,7,8-PeCDD			1.318-1.783	0.909	1.00	ND	ng/kg	U
1,2,3,4,7,8-HxCDF		0.707	1.054-1.426		1.00	1.54	ng/kg	EMPC
1,2,3,6,7,8-HxCDF		1.138	1.054-1.426		1.00	1.39	ng/kg	
2,3,4,6,7,8-HxCDF		1.309	1.054-1.426		1.00	3.82	ng/kg	
1,2,3,7,8,9-HxCDF			1.054-1.426	0.831	1.00	ND	ng/kg	U
1,2,3,4,7,8-HxCDD			1.054-1.426	1.07	1.00	ND	ng/kg	U
1,2,3,6,7,8-HxCDD		1.194	1.054-1.426		1.00	26.0	ng/kg	
1,2,3,7,8,9-HxCDD		1.321	1.054-1.426		1.00	7.67	ng/kg	
1,2,3,4,6,7,8-HpCDF		1.271	0.893-1.208		1.00	85.4	ng/kg	EMPC
1,2,3,4,7,8,9-HpCDF		0.961	0.893-1.208		1.00	2.51	ng/kg	
1,2,3,4,6,7,8-HpCDD		0.958	0.893-1.208		2.50	217	ng/kg	
OCDF		0.952	0.757-1.024		2.50	85.4	ng/kg	
OCDD		0.898	0.757-1.024		10.0	1300	ng/kg	B
Homologue groups								
Total TCDF					1.00	1.26	ng/kg	
Total TCDD					1.00	0.787	ng/kg	J
Total PeCDF					1.00	7.78	ng/kg	
Total PeCDD					1.00	24.7	ng/kg	
Total HxCDF					1.00	69.5	ng/kg	
Total HxCDD					1.00	179	ng/kg	
Total HpCDF					1.00	141	ng/kg	
Total HpCDD					1.00	356	ng/kg	



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20240911-SBT-TAT-D-2

24I0364-51 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 16:10

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/02/2024 01:18

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	8.46						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	7.66						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	7.88						
Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	6.50						



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20240911-SBT-TAT-D-2

24I0364-51 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 16:10

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/02/2024 01:18

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.685	0.655-0.886	24-169 %	51.7	%	
<i>13C12-2,3,7,8-TCDD</i>		0.786	0.655-0.886	25-164 %	52.9	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.700	1.318-1.783	24-185 %	55.7	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.747	1.318-1.783	21-178 %	53.4	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.680	1.318-1.783	25-181 %	53.0	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.546	0.434-0.587	26-152 %	61.4	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.553	0.434-0.587	26-123 %	64.9	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.516	0.434-0.587	28-136 %	61.8	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.536	0.434-0.587	29-147 %	69.0	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.216	1.054-1.426	32-141 %	54.0	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.218	1.054-1.426	28-130 %	60.9	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.420	0.374-0.506	28-143 %	67.0	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.448	0.374-0.506	26-138 %	61.9	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.047	0.893-1.208	23-140 %	60.5	%	
<i>13C12-OCDD</i>		0.967	0.757-1.024	17-157 %	71.8	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	73.0	%	



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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-D-2

24I0364-51 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 16:10

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/02/2024 01:18

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
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20240911-SBT-TAT-D-2

24I0364-51 (Solid)

Extractions

Method: ASTM D2216

Sampled: 09/11/2024 16:10

Instrument: N/A Analyst: TW

Analyzed: 09/19/2024 05:05

Sample Preparation: Preparation Method: No Prep-Organics
Preparation Batch: BMI0417
Prepared: 09/18/2024

Sample Size: 1 g (wet)

Final Volume: 1 g

Extract ID: 24I0364-51

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Total Solids			0.01	73.96	%	
Labeled compounds						



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840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-PCB-2

24I0364-53 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E	Sampled: 09/11/2024 16:10
Instrument: NT10 Analyst: RJL	Analyzed: 09/26/2024 22:00

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)	Extract ID: 24I0364-53 A 02
	Preparation Batch: BMI0474	Dry Weight: 10.05 g
	Prepared: 09/23/2024	% Solids: 74.35

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	9.9	19.9	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	9.9	19.9	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	9.9	19.9	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	19.9	19.9	ND	ug/kg	U
2-Methylphenol	95-48-7	1	9.9	19.9	ND	ug/kg	U
4-Methylphenol	106-44-5	1	14.9	19.9	52.5	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	49.7	99.5	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	9.9	19.9	ND	ug/kg	U
Naphthalene	91-20-3	1	9.9	19.9	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.5	199	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	9.9	19.9	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	9.9	19.9	ND	ug/kg	U
Acenaphthylene	208-96-8	1	9.9	19.9	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	9.9	19.9	ND	ug/kg	U
Acenaphthene	83-32-9	1	9.9	19.9	ND	ug/kg	U
Dibenzofuran	132-64-9	1	19.9	19.9	ND	ug/kg	U
Fluorene	86-73-7	1	19.9	19.9	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	34.8	49.7	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	9.9	19.9	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	19.9	19.9	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	49.7	99.5	ND	ug/kg	U
Phenanthrene	85-01-8	1	9.9	19.9	ND	ug/kg	U
Anthracene	120-12-7	1	9.9	19.9	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	9.9	19.9	ND	ug/kg	U
Fluoranthene	206-44-0	1	9.9	19.9	22.8	ug/kg	
Pyrene	129-00-0	1	9.9	19.9	27.0	ug/kg	
Butylbenzylphthalate	85-68-7	1	9.9	19.9	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	9.9	19.9	ND	ug/kg	U
Chrysene	218-01-9	1	9.9	19.9	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	39.8	49.7	103	ug/kg	
Di-n-Octylphthalate	117-84-0	1	9.9	19.9	ND	ug/kg	U
Benzofluoranthenes, Total		1	29.8	39.8	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	9.9	19.9	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	19.9	19.9	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	19.9	19.9	ND	ug/kg	U



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-PCB-2

24I0364-53 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/11/2024 16:10

Instrument: NT10 Analyst: RJL

Analyzed: 09/26/2024 22:00

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	19.9	19.9	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	86.4	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	82.9	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	93.1	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	85.7	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	86.6	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	88.6	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	106	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	173	%	*



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Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-PCB-2

24I0364-53 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 09/11/2024 16:10
Instrument: NT14 Analyst: RJL Analyzed: 10/12/2024 04:26

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 2410364-53 A 02
Preparation Batch: BMI0474 Sample Size: 13.52 g (wet) Dry Weight: 10.05 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 74.35

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	1	2.5	5.0	5.4	ug/kg	
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	9.9	19.9	ND	ug/kg	U
Benzoic acid	65-85-0	1	49.7	99.5	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	45.0	ug/kg	
2,4-Dimethylphenol	105-67-9	1	9.9	19.9	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	9.9	19.9	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	9.9	19.9	11.4	ug/kg	Q, J
Butylbenzylphthalate	85-68-7	1	2.5	5.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	80.3	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	237	%	*, Q



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Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-PCB-2

24I0364-53 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/11/2024 16:10
Instrument:	ECD5 Analyst: AA	Analyzed: 09/27/2024 20:45
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-53 A 01 Dry Weight: 12.55 g % Solids: 74.35
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	92.0	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	84.5	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	103	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	87.9	%		



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-PCB-2

24I0364-53RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 16:10
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 18:19

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-53RE1 A 02
Preparation Batch: BMI0474 Sample Size: 13.52 g (wet) Dry Weight: 10.05 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 74.35

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	5	49.7	99.5	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	5	49.7	99.5	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	5	49.7	99.5	ND	ug/kg	U
Benzyl Alcohol	100-51-6	5	99.5	99.5	ND	ug/kg	U
2-Methylphenol	95-48-7	5	49.7	99.5	ND	ug/kg	U
4-Methylphenol	106-44-5	5	74.6	99.5	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	5	249	497	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	5	49.7	99.5	ND	ug/kg	U
Naphthalene	91-20-3	5	49.7	99.5	ND	ug/kg	U
Benzoic acid	65-85-0	5	497	995	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	5	49.7	99.5	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	5	49.7	99.5	ND	ug/kg	U
Acenaphthylene	208-96-8	5	49.7	99.5	ND	ug/kg	U
Dimethylphthalate	131-11-3	5	49.7	99.5	ND	ug/kg	U
Acenaphthene	83-32-9	5	49.7	99.5	ND	ug/kg	U
Dibenzofuran	132-64-9	5	99.5	99.5	ND	ug/kg	U
Fluorene	86-73-7	5	99.5	99.5	ND	ug/kg	U
Diethyl phthalate	84-66-2	5	174	249	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	5	49.7	99.5	ND	ug/kg	U
Hexachlorobenzene	118-74-1	5	99.5	99.5	ND	ug/kg	U
Pentachlorophenol	87-86-5	5	249	497	ND	ug/kg	U
Phenanthrene	85-01-8	5	49.7	99.5	ND	ug/kg	U
Anthracene	120-12-7	5	49.7	99.5	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	5	49.7	99.5	ND	ug/kg	U
Fluoranthene	206-44-0	5	49.7	99.5	ND	ug/kg	U
Pyrene	129-00-0	5	49.7	99.5	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	5	49.7	99.5	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	5	49.7	99.5	ND	ug/kg	U
Chrysene	218-01-9	5	49.7	99.5	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	5	199	249	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	5	49.7	99.5	ND	ug/kg	U
Benzofluoranthenes, Total		5	149	199	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	5	49.7	99.5	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	5	99.5	99.5	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	5	99.5	99.5	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-PCB-2

24I0364-53RE1 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/11/2024 16:10

Instrument: NT10 Analyst: RJL

Analyzed: 09/27/2024 18:19

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	5	99.5	99.5	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	79.0	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	71.8	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	80.1	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	82.0	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	83.5	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	88.6	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	76.7	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	89.8	%	Q



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-PCB-2

24I0364-53RE1 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 09/11/2024 16:10
Instrument: NT14 Analyst: RJL Analyzed: 10/13/2024 08:40

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-53RE1 A 02
Preparation Batch: BMI0474 Sample Size: 13.52 g (wet) Dry Weight: 10.05 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 74.35

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	5	12.4	24.9	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	5	12.4	24.9	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	5	12.4	24.9	ND	ug/kg	U
Benzyl Alcohol	100-51-6	5	49.7	99.5	ND	ug/kg	U
Benzoic acid	65-85-0	5	249	497	ND	ug/kg	U
2-Methylphenol	95-48-7	5	12.4	24.9	ND	ug/kg	U
4-Methylphenol	106-44-5	5	12.4	24.9	47.8	ug/kg	D
2,4-Dimethylphenol	105-67-9	5	49.7	99.5	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	5	24.9	24.9	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	5	12.4	24.9	ND	ug/kg	U
Dimethylphthalate	131-11-3	5	12.4	24.9	ND	ug/kg	U
Diethyl phthalate	84-66-2	5	49.7	99.5	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	5	12.4	24.9	ND	ug/kg	U
Hexachlorobenzene	118-74-1	5	12.4	24.9	ND	ug/kg	U
Pentachlorophenol	87-86-5	5	49.7	99.5	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	5	12.4	24.9	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	5	12.4	24.9	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	85.3	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	113	%	Q



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-TOC-2

24I0364-54 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/11/2024 16:10
Instrument: TOC Cube Analyst: ARR Analyzed: 09/26/2024 20:33

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-54 A
Preparation Batch: BMI0526 Sample Size: 0.0372 g (wet) Dry Weight: 0.02 g
Prepared: 09/20/2024 Final Volume: 0.0372 mL % Solids: 66.38

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Organic Carbon		1	0.02	0.02	9.15	%	



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-TOC-2

24I0364-54 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/11/2024 16:10
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-54
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 66.38

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids			1	0.04	0.04	66.38	%



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-M-2

24I0364-55 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/11/2024 16:10
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 21:26

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-55 A 01
Preparation Batch: BMI0484 Sample Size: 1.033 g (wet) Dry Weight: 0.74 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 71.80

Analyte	CAS Number	Dilution	Detection Limit		Reporting Limit		Result	Units	Notes
			Limit	Limit	Limit	Result			
Arsenic	7440-38-2	20	0.05	0.27	2.58	mg/kg			
Cadmium	7440-43-9	20	0.04	0.13	0.20	mg/kg			
Copper	7440-50-8	20	0.23	0.67	20.9	mg/kg			
Zinc	7440-66-6	20	3.9	8.1	62.9	mg/kg			



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-M-2

24I0364-55 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/11/2024 16:10
Instrument: ICPMS1 Analyst: DOE Analyzed: 09/27/2024 19:07

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-55 A 01
Preparation Batch: BMI0484 Sample Size: 1.033 g (wet) Dry Weight: 0.74 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 71.80

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	100	1.75	3.37	19.1	mg/kg	D	
Lead	7439-92-1	20	0.07	0.13	3.63	mg/kg		
Silver	7440-22-4	20	0.03	0.27	0.08	mg/kg	J	



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-M-2

24I0364-55 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/11/2024 16:10
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:21

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-55 A
Preparation Batch: BMI0650 Sample Size: 0.257 g (wet) Dry Weight: 0.18 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 71.80

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.00569	0.0271	0.0431	mg/kg	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-D-3

24I0364-56 (Solid)

Dioxins/Furans

Method: EPA 1613B	Sampled: 09/11/2024 16:20
Instrument: AUTOSPEC01 Analyst: pk	Analyzed: 11/02/2024 02:08
Sample Preparation: Preparation Method: EPA 1613 Preparation Batch: BMI0462 Prepared: 10/09/2024	Extract ID: 24I0364-56 A 01 Dry Weight: 10.01 g % Solids: 73.78
Sample Cleanup: Cleanup Method: Silica Gel Cleanup Batch: CMJ0076 Cleaned: 11-Oct-2024	Extract ID: 24I0364-56 A 01
Sample Cleanup: Cleanup Method: Sulfuric Acid Cleanup Batch: CMJ0075 Cleaned: 11-Oct-2024	Extract ID: 24I0364-56 A 01
Sample Cleanup: Cleanup Method: Florisil Cleanup Batch: CMJ0077 Cleaned: 11-Oct-2024	Extract ID: 24I0364-56 A 01

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting				
				EDL	Limit	Result	Units	Notes
2,3,7,8-TCDF		0.782	0.655-0.886		0.999	0.444	ng/kg	J
2,3,7,8-TCDD			0.655-0.886	0.264	0.999	ND	ng/kg	U
1,2,3,7,8-PeCDF			1.318-1.783	0.390	0.999	ND	ng/kg	U
2,3,4,7,8-PeCDF			1.318-1.783	0.418	0.999	ND	ng/kg	U
1,2,3,7,8-PeCDD			1.318-1.783	0.815	0.999	ND	ng/kg	U
1,2,3,4,7,8-HxCDF			1.054-1.426	0.457	0.999	ND	ng/kg	U
1,2,3,6,7,8-HxCDF			1.054-1.426	0.444	0.999	ND	ng/kg	U
2,3,4,6,7,8-HxCDF	1.709		1.054-1.426		0.999	1.49	ng/kg	EMPC
1,2,3,7,8,9-HxCDF			1.054-1.426	0.661	0.999	ND	ng/kg	U
1,2,3,4,7,8-HxCDD			1.054-1.426	0.675	0.999	ND	ng/kg	U
1,2,3,6,7,8-HxCDD	1.295		1.054-1.426		0.999	7.18	ng/kg	
1,2,3,7,8,9-HxCDD	1.285		1.054-1.426		0.999	2.29	ng/kg	
1,2,3,4,6,7,8-HpCDF	1.164		0.893-1.208		0.999	22.2	ng/kg	
1,2,3,4,7,8,9-HpCDF			0.893-1.208	0.827	0.999	ND	ng/kg	U
1,2,3,4,6,7,8-HpCDD	1.183		0.893-1.208		2.50	63.7	ng/kg	
OCDF		0.894	0.757-1.024		2.50	29.0	ng/kg	
OCDD		0.862	0.757-1.024		9.99	439	ng/kg	B
Homologue groups								
Total TCDF					0.999	0.444	ng/kg	J
Total TCDD					0.999	ND	ng/kg	U
Total PeCDF					0.999	ND	ng/kg	U
Total PeCDD					0.999	2.42	ng/kg	
Total HxCDF					0.999	22.4	ng/kg	
Total HxCDD					0.999	49.7	ng/kg	
Total HpCDF					0.999	58.1	ng/kg	
Total HpCDD					0.999	103	ng/kg	



WSP USA, Inc.
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Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-D-3

24I0364-56 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 16:20

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/02/2024 02:08

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
					Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC):	2.86	
					Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC):	2.14	
					Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC = ND):	2.79	
					Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, EMPC = ND):	1.99	



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Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-D-3

24I0364-56 (Solid)

Dioxins/Furans

Method: EPA 1613B

Sampled: 09/11/2024 16:20

Instrument: AUTOSPEC01 Analyst: pk

Analyzed: 11/02/2024 02:08

Analyte	DF/Split	Ion Ratio	Ratio Limits	Reporting Limit	Result	Units	Notes
Labeled compounds							
<i>13C12-2,3,7,8-TCDF</i>		0.672	0.655-0.886	24-169 %	54.4	%	
<i>13C12-2,3,7,8-TCDD</i>		0.817	0.655-0.886	25-164 %	55.5	%	
<i>13C12-1,2,3,7,8-PeCDF</i>		1.589	1.318-1.783	24-185 %	73.4	%	
<i>13C12-2,3,4,7,8-PeCDF</i>		1.636	1.318-1.783	21-178 %	60.9	%	
<i>13C12-1,2,3,7,8-PeCDD</i>		1.598	1.318-1.783	25-181 %	61.9	%	
<i>13C12-1,2,3,4,7,8-HxCDF</i>		0.525	0.434-0.587	26-152 %	70.3	%	
<i>13C12-1,2,3,6,7,8-HxCDF</i>		0.500	0.434-0.587	26-123 %	70.7	%	
<i>13C12-2,3,4,6,7,8-HxCDF</i>		0.533	0.434-0.587	28-136 %	71.2	%	
<i>13C12-1,2,3,7,8,9-HxCDF</i>		0.507	0.434-0.587	29-147 %	68.9	%	
<i>13C12-1,2,3,4,7,8-HxCDD</i>		1.246	1.054-1.426	32-141 %	61.9	%	
<i>13C12-1,2,3,6,7,8-HxCDD</i>		1.265	1.054-1.426	28-130 %	65.6	%	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>		0.485	0.374-0.506	28-143 %	73.6	%	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>		0.402	0.374-0.506	26-138 %	81.8	%	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>		1.096	0.893-1.208	23-140 %	88.4	%	
<i>13C12-OCDD</i>		0.934	0.757-1.024	17-157 %	89.2	%	
<i>37Cl4-2,3,7,8-TCDD</i>				35-197 %	63.9	%	



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840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-D-3

24I0364-56 (Solid)

Dioxins/Furans

Method: EPA 1613B Sampled: 09/11/2024 16:20
Instrument: AUTOSPEC01 Analyst: pk Analyzed: 11/02/2024 02:08

Analyte	DF/Split	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	Notes
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20240911-SBT-TAT-D-3

24I0364-56 (Solid)

Extractions

Method: ASTM D2216 Sampled: 09/11/2024 16:20
Instrument: N/A Analyst: TW Analyzed: 09/19/2024 05:05

Sample Preparation: Preparation Method: No Prep-Organics Extract ID: 24I0364-56
Preparation Batch: BMI0417 Sample Size: 1 g (wet)
Prepared: 09/18/2024 Final Volume: 1 g

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Total Solids			0.01	73.78	%	
Labeled compounds						



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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-PCB-3

24I0364-58 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 16:20
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 18:58

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-58 A 02
Preparation Batch: BMI0474 Sample Size: 13.58 g (wet) Dry Weight: 10.03 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 73.84

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	19.9	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	10.0	19.9	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	19.9	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	19.9	19.9	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	19.9	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	19.9	22.2	ug/kg	
2,4-Dimethylphenol	105-67-9	1	49.9	99.7	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	19.9	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	19.9	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.7	199	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	19.9	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	19.9	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	19.9	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	19.9	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	19.9	ND	ug/kg	U
Dibenzofuran	132-64-9	1	19.9	19.9	ND	ug/kg	U
Fluorene	86-73-7	1	19.9	19.9	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	34.9	49.9	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	19.9	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	19.9	19.9	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	49.9	99.7	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	19.9	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	19.9	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	19.9	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	19.9	11.7	ug/kg	J
Pyrene	129-00-0	1	10.0	19.9	10.3	ug/kg	J
Butylbenzylphthalate	85-68-7	1	10.0	19.9	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	19.9	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	19.9	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	39.9	49.9	44.0	ug/kg	J
Di-n-Octylphthalate	117-84-0	1	10.0	19.9	ND	ug/kg	U
Benzofluoranthenes, Total		1	29.9	39.9	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	19.9	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	19.9	19.9	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	19.9	19.9	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-PCB-3

24I0364-58 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/11/2024 16:20
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 18:58

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	19.9	19.9	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	79.5	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	71.0	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	81.0	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	84.1	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	92.9	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	91.9	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	108	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	101	%	Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-PCB-3

24I0364-58 (Solid)

Semivolatile Organic Compounds - SIM

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-58 A 02
Preparation Batch: BMI0474 Sample Size: 13.58 g (wet) Dry Weight: 10.03 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 73.84

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	1	2.5	5.0	4.4	ug/kg	J
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	19.9	ND	ug/kg	U
Benzoic acid	65-85-0	1	49.9	99.7	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	29.9	ug/kg	
2,4-Dimethylphenol	105-67-9	1	10.0	19.9	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	19.9	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	19.9	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	87.6	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	115	%	Q



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06-Nov-2024 16:54

20240911-SBT-TAT-PCB-3

24I0364-58 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/11/2024 16:20
Instrument:	ECD5 Analyst: AA	Analyzed: 09/27/2024 21:06
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-58 A 01 Dry Weight: 12.54 g % Solids: 73.84
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	86.4	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	83.4	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	94.4	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	84.9	%		



Analytical Resources, LLC

Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-TOC-3

24I0364-59 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/11/2024 16:20
Instrument: TOC Cube Analyst: ARR Analyzed: 09/26/2024 21:03

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-59 A
Preparation Batch: BMI0526 Sample Size: 0.0316 g (wet) Dry Weight: 0.02 g
Prepared: 09/20/2024 Final Volume: 0.0316 mL % Solids: 74.08

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Organic Carbon		1	0.02	0.02	6.76	%	



Analytical Resources, LLC

Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-TOC-3

24I0364-59 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/11/2024 16:20
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-59
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 74.08

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids		1	0.04	0.04	74.08	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-M-3

24I0364-60 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/11/2024 16:20
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 21:31

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-60 A 01
Preparation Batch: BMI0484 Sample Size: 1.085 g (wet) Dry Weight: 0.80 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 73.44

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.05	0.25	2.77	mg/kg		
Cadmium	7440-43-9	20	0.04	0.13	0.12	mg/kg	J	
Copper	7440-50-8	20	0.22	0.63	21.0	mg/kg		
Zinc	7440-66-6	20	3.7	7.5	60.0	mg/kg		



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Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-M-3

24I0364-60 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/11/2024 16:20
Instrument: ICPMS1 Analyst: DOE Analyzed: 09/27/2024 19:12

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-60 A 01
Preparation Batch: BMI0484 Sample Size: 1.085 g (wet) Dry Weight: 0.80 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 73.44

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	100	1.63	3.14	24.7	mg/kg	D	
Lead	7439-92-1	20	0.07	0.13	3.91	mg/kg		
Silver	7440-22-4	20	0.03	0.25	0.07	mg/kg	J	



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Analytical Report

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840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

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Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240911-SBT-TAT-M-3

24I0364-60 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/11/2024 16:20
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:23

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-60 A
Preparation Batch: BMI0650 Sample Size: 0.223 g (wet) Dry Weight: 0.16 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 73.44

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.00641	0.0305	0.0217	mg/kg	J



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840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-Dx/A-1

24I0364-61 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx Sampled: 09/12/2024 08:35
Instrument: FID4 Analyst: NRB Analyzed: 09/20/2024 18:57

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-61 A 01
Preparation Batch: BMI0426 Sample Size: 10 g (wet) Dry Weight: 9.44 g
Prepared: 09/19/2024 Final Volume: 1 mL % Solids: 94.37

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.30	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.6	ND	mg/kg	U
<i>Surrogate: o-Terphenyl</i>			50-150 %	80.7	%	



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-TPHG-1
24I0364-62 (Solid)

Volatile Organic Compounds

Method: NWTPHg Sampled: 09/12/2024 08:35
Instrument: NT3 Analyst: LH Analyzed: 09/19/2024 14:39

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) Extract ID: 24I0364-62 A
Preparation Batch: BMI0464 Sample Size: 4.647 g (wet) Dry Weight: 4.02 g
Prepared: 09/19/2024 Final Volume: 5 mL % Solids: 86.52

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	7000	ND	ug/kg	U
<i>Surrogate: Toluene-d8</i>			80-120 %	96.6	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			78-123 %	98.4	%	



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840 HOWE STREET, #1000
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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-M-1

24I0364-63 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/12/2024 08:35
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 21:36

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-63 A 01
Preparation Batch: BMI0484 Sample Size: 1.095 g (wet) Dry Weight: 0.95 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 86.52

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.04	0.21	2.67	mg/kg		
Cadmium	7440-43-9	20	0.03	0.11	0.13	mg/kg		
Copper	7440-50-8	20	0.18	0.53	31.9	mg/kg		
Zinc	7440-66-6	20	3.1	6.3	50.7	mg/kg		



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-M-1
24I0364-63 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/12/2024 08:35
Instrument: ICPMS1 Analyst: DOE Analyzed: 10/01/2024 13:53

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-63 A 01
Preparation Batch: BMI0484 Sample Size: 1.095 g (wet) Dry Weight: 0.95 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 86.52

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	200	2.74	5.28	196	mg/kg	D	
Lead	7439-92-1	20	0.05	0.11	2.41	mg/kg		
Silver	7440-22-4	20	0.02	0.21	0.06	mg/kg	J	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-M-1

24I0364-63 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/12/2024 08:35
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:25

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-63 A
Preparation Batch: BMI0650 Sample Size: 0.233 g (wet) Dry Weight: 0.20 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 86.52

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.00521	0.0248	0.0549	mg/kg	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-Dx/A-2

24I0364-64 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx			Sampled: 09/12/2024 08:50
Instrument: FID4 Analyst: NRB			Analyzed: 09/20/2024 19:18
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0426 Prepared: 09/19/2024	Sample Size: 10 g (wet) Final Volume: 1 mL	Extract ID: 24I0364-64 A 01 Dry Weight: 9.51 g % Solids: 95.12
Analyte	CAS Number	Dilution	Reporting Limit Result Units Notes
Diesel Range Organics (C12-C24)	DRO	1	5.26 ND mg/kg U
Motor Oil Range Organics (C24-C38)	RRO	1	10.5 ND mg/kg U
<i>Surrogate: o-Terphenyl</i>		50-150 %	87.2 %



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-TPHG-2

24I0364-65 (Solid)

Volatile Organic Compounds

Method: NWTPHg Sampled: 09/12/2024 08:50
Instrument: NT3 Analyst: LH Analyzed: 09/19/2024 15:01

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) Extract ID: 24I0364-65 A
Preparation Batch: BMI0464 Sample Size: 4.166 g (wet) Dry Weight: 3.97 g
Prepared: 09/19/2024 Final Volume: 5 mL % Solids: 95.33

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	6540	ND	ug/kg	U
<i>Surrogate: Toluene-d8</i>			80-120 %	98.4	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			78-123 %	99.6	%	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-M-2

24I0364-66 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/12/2024 08:50
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 21:41

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-66 A 01
Preparation Batch: BMI0484 Sample Size: 1.011 g (wet) Dry Weight: 0.96 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 95.33

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.04	0.21	3.43	mg/kg		
Cadmium	7440-43-9	20	0.03	0.10	0.09	mg/kg	J	
Copper	7440-50-8	20	0.18	0.52	29.4	mg/kg		
Zinc	7440-66-6	20	3.0	6.2	36.6	mg/kg		



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-M-2

24I0364-66 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/12/2024 08:50
Instrument: ICPMS1 Analyst: DOE Analyzed: 09/27/2024 19:22

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-66 A 01
Preparation Batch: BMI0484 Sample Size: 1.011 g (wet) Dry Weight: 0.96 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 95.33

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	100	1.35	2.59	126	mg/kg	D	
Lead	7439-92-1	20	0.05	0.10	1.86	mg/kg		
Silver	7440-22-4	20	0.02	0.21	0.04	mg/kg	J	



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Project: Whitmarsh
Project Number: Whitmarsh
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20240912-G-CB-M-2

24I0364-66 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B			Sampled: 09/12/2024 08:50
Instrument: HYDRA	Analyst: ML		Analyzed: 10/01/2024 14:28
Sample Preparation:	Preparation Method: SMM EPA 7471B Preparation Batch: BMI0650 Prepared: 09/26/2024	Sample Size: 0.263 g (wet) Final Volume: 50 mL	Extract ID: 24I0364-66 A Dry Weight: 0.25 g % Solids: 95.33
Analyte	CAS Number	Dilution	Detection Limit Reporting Limit Result Units Notes
Mercury	7439-97-6	1	0.00419 0.0199 0.0520 mg/kg



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Project Manager: Accounts Payable

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20240912-G-CB-Dx/A-3

24I0364-67 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx Sampled: 09/12/2024 09:10
Instrument: FID4 Analyst: NRB Analyzed: 09/20/2024 19:38

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-67 A 01
Preparation Batch: BMI0426 Sample Size: 10 g (wet) Dry Weight: 9.55 g
Prepared: 09/19/2024 Final Volume: 1 mL % Solids: 95.50

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.24	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.5	ND	mg/kg	U
<i>Surrogate: o-Terphenyl</i>			50-150 %	92.7	%	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-TPHG-3

24I0364-68 (Solid)

Volatile Organic Compounds

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) Extract ID: 24I0364-68 A
Preparation Batch: BMI0464 Sample Size: 2.703 g (wet) Dry Weight: 2.57 g
Prepared: 09/19/2024 Final Volume: 5 mL % Solids: 95.17

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	9970	ND	ug/kg	U
<i>Surrogate: Toluene-d8</i>			80-120 %	96.9	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			78-123 %	98.9	%	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-M-3

24I0364-69 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/12/2024 09:10
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 21:45

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-69 A 01
Preparation Batch: BMI0484 Sample Size: 1.042 g (wet) Dry Weight: 0.99 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 95.17

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.04	0.20	9.48	mg/kg		
Cadmium	7440-43-9	20	0.03	0.10	0.08	mg/kg	J	
Copper	7440-50-8	20	0.18	0.50	30.9	mg/kg		
Zinc	7440-66-6	20	2.9	6.1	43.4	mg/kg		



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840 HOWE STREET, #1000
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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
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20240912-G-CB-M-3

24I0364-69 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/12/2024 09:10
Instrument: ICPMS1 Analyst: DOE Analyzed: 09/27/2024 19:27

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-69 A 01
Preparation Batch: BMI0484 Sample Size: 1.042 g (wet) Dry Weight: 0.99 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 95.17

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	100	1.31	2.52	142	mg/kg	D	
Lead	7439-92-1	20	0.05	0.10	2.00	mg/kg		
Silver	7440-22-4	20	0.02	0.20	0.04	mg/kg	J	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

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06-Nov-2024 16:54

20240912-G-CB-M-3

24I0364-69 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/12/2024 09:10
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:30

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-69 A
Preparation Batch: BMI0650 Sample Size: 0.247 g (wet) Dry Weight: 0.24 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 95.17

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.00447	0.0213	0.0458	mg/kg	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-Dx-1

24I0364-70 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx Sampled: 09/12/2024 11:15
Instrument: FID4 Analyst: NRB Analyzed: 09/20/2024 19:58

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-70 A 01
Preparation Batch: BMI0426 Sample Size: 10 g (wet) Dry Weight: 9.43 g
Prepared: 09/19/2024 Final Volume: 1 mL % Solids: 94.31

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.30	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.6	ND	mg/kg	U
<i>Surrogate: o-Terphenyl</i>			50-150 %	78.8	%	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-TPHG-1

24I0364-71 (Solid)

Volatile Organic Compounds

Method: NWTPHg Sampled: 09/12/2024 11:15
Instrument: NT3 Analyst: LH Analyzed: 09/19/2024 15:46

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) Extract ID: 24I0364-71 A
Preparation Batch: BMI0464 Sample Size: 6.03 g (wet) Dry Weight: 5.74 g
Prepared: 09/19/2024 Final Volume: 5 mL % Solids: 95.14

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	4610	ND	ug/kg	U
<i>Surrogate: Toluene-d8</i>			80-120 %	99.6	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			78-123 %	98.4	%	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-M-1

24I0364-72 (Solid)

Metals and Metallic Compounds

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-72 A 01
Preparation Batch: BMI0484 Sample Size: 1.002 g (wet) Dry Weight: 0.95 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 95.14

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.04	0.21	3.78	mg/kg		
Cadmium	7440-43-9	20	0.03	0.10	0.10	mg/kg		
Copper	7440-50-8	20	0.18	0.52	21.5	mg/kg		
Zinc	7440-66-6	20	3.1	6.3	41.4	mg/kg		



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Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-M-1

24I0364-72 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/12/2024 11:15
Instrument: ICPMS1 Analyst: DOE Analyzed: 09/27/2024 19:55

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-72 A 01
Preparation Batch: BMI0484 Sample Size: 1.002 g (wet) Dry Weight: 0.95 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 95.14

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	100	1.36	2.62	19.0	mg/kg	D	
Lead	7439-92-1	20	0.05	0.10	2.94	mg/kg		
Silver	7440-22-4	20	0.02	0.21	0.08	mg/kg	J	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-M-1

24I0364-72 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/12/2024 11:15
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:32

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-72 A
Preparation Batch: BMI0650 Sample Size: 0.221 g (wet) Dry Weight: 0.21 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 95.14

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.00499	0.0238	ND	mg/kg	U



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-Dx-2

24I0364-73 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx

Sampled: 09/12/2024 11:35

Instrument: FID4 Analyst: NRB

Analyzed: 09/20/2024 20:18

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-73 A 01
Preparation Batch: BMI0426 Sample Size: 10 g (wet) Dry Weight: 9.51 g
Prepared: 09/19/2024 Final Volume: 1 mL % Solids: 95.10

Analyte	CAS Number	Dilution	Reporting			
			Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.26	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.5	ND	mg/kg	U
<i>Surrogate: o-Terphenyl</i>			50-150 %	76.0	%	



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840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-TPHG-2

24I0364-74 (Solid)

Volatile Organic Compounds

Method: NWTPHg Sampled: 09/12/2024 11:35
Instrument: NT3 Analyst: LH Analyzed: 09/19/2024 16:08

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) Extract ID: 24I0364-74 A
Preparation Batch: BMI0464 Sample Size: 5.731 g (wet) Dry Weight: 5.37 g
Prepared: 09/19/2024 Final Volume: 5 mL % Solids: 93.73

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	4990	ND	ug/kg	U
<i>Surrogate: Toluene-d8</i>			80-120 %	96.5	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			78-123 %	96.3	%	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-M-2

24I0364-75 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/12/2024 11:35
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 21:55

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-75 A 01
Preparation Batch: BMI0484 Sample Size: 1.063 g (wet) Dry Weight: 1.00 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 93.73

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.04	0.20	2.50	mg/kg		
Cadmium	7440-43-9	20	0.03	0.10	0.08	mg/kg	J	
Copper	7440-50-8	20	0.17	0.50	21.5	mg/kg		
Zinc	7440-66-6	20	2.9	6.0	37.3	mg/kg		



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-M-2

24I0364-75 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/12/2024 11:35
Instrument: ICPMS1 Analyst: DOE Analyzed: 09/27/2024 20:00

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-75 A 01
Preparation Batch: BMI0484 Sample Size: 1.063 g (wet) Dry Weight: 1.00 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 93.73

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	100	1.30	2.51	20.7	mg/kg	D	
Lead	7439-92-1	20	0.05	0.10	2.67	mg/kg		
Silver	7440-22-4	20	0.02	0.20	0.05	mg/kg	J	



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Reported:
06-Nov-2024 16:54

20240912-MSG-CB-M-2

24I0364-75 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/12/2024 11:35
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:39

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-75 A
Preparation Batch: BMI0650 Sample Size: 0.222 g (wet) Dry Weight: 0.21 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 93.73

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.00505	0.0240	0.0106	mg/kg	J



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Project: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240912-MSG-CB-Dx-3

24I0364-76 (Solid)

Petroleum Hydrocarbons

Method: NWTPH-Dx

Sampled: 09/12/2024 11:50

Instrument: FID4 Analyst: NRB

Analyzed: 09/20/2024 20:38

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-76 A 01
Preparation Batch: BMI0426 Sample Size: 10 g (wet) Dry Weight: 9.44 g
Prepared: 09/19/2024 Final Volume: 1 mL % Solids: 94.42

Analyte	CAS Number	Dilution	Reporting			
			Limit	Result	Units	Notes
Diesel Range Organics (C12-C24)	DRO	1	5.30	ND	mg/kg	U
Motor Oil Range Organics (C24-C38)	RRO	1	10.6	ND	mg/kg	U
<i>Surrogate: o-Terphenyl</i>			50-150 %	96.2	%	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-TPHG-3

24I0364-77 (Solid)

Volatile Organic Compounds

Method: NWTPHg Sampled: 09/12/2024 11:50
Instrument: NT3 Analyst: LH Analyzed: 09/19/2024 16:30

Sample Preparation: Preparation Method: EPA 5035 (Methanol Extraction) Extract ID: 24I0364-77 A
Preparation Batch: BMI0464 Sample Size: 5.334 g (wet) Dry Weight: 5.09 g
Prepared: 09/19/2024 Final Volume: 5 mL % Solids: 95.37

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	50	5160	ND	ug/kg	U
<i>Surrogate: Toluene-d8</i>			80-120 %	98.4	%	
<i>Surrogate: 4-Bromofluorobenzene</i>			78-123 %	97.2	%	



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Project: Whitmarsh
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Reported:
06-Nov-2024 16:54

20240912-MSG-CB-M-3

24I0364-78 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B UCT-KED Sampled: 09/12/2024 11:50
Instrument: ICPMS1 Analyst: HAL Analyzed: 09/23/2024 22:00

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-78 A 01
Preparation Batch: BMI0484 Sample Size: 1.064 g (wet) Dry Weight: 1.01 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 95.37

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Arsenic	7440-38-2	20	0.04	0.20	2.39	mg/kg		
Cadmium	7440-43-9	20	0.03	0.10	0.09	mg/kg	J	
Copper	7440-50-8	20	0.17	0.49	25.9	mg/kg		
Zinc	7440-66-6	20	2.9	5.9	37.7	mg/kg		



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-M-3

24I0364-78 (Solid)

Metals and Metallic Compounds

Method: EPA 6020B Sampled: 09/12/2024 11:50
Instrument: ICPMS1 Analyst: DOE Analyzed: 09/27/2024 20:05

Sample Preparation: Preparation Method: SWN EPA 3050B Extract ID: 24I0364-78 A 01
Preparation Batch: BMI0484 Sample Size: 1.064 g (wet) Dry Weight: 1.01 g
Prepared: 09/20/2024 Final Volume: 50 mL % Solids: 95.37

Analyte	CAS Number	Dilution	Detection	Reporting		Result	Units	Notes
			Limit	Limit				
Chromium	7440-47-3	100	1.28	2.46	19.7	mg/kg	D	
Lead	7439-92-1	20	0.05	0.10	2.19	mg/kg		
Silver	7440-22-4	20	0.02	0.20	0.05	mg/kg	J	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
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20240912-MSG-CB-M-3

24I0364-78 (Solid)

Metals and Metallic Compounds

Method: EPA 7471B Sampled: 09/12/2024 11:50
Instrument: HYDRA Analyst: ML Analyzed: 10/01/2024 14:42

Sample Preparation: Preparation Method: SMM EPA 7471B Extract ID: 24I0364-78 A
Preparation Batch: BMI0650 Sample Size: 0.227 g (wet) Dry Weight: 0.22 g
Prepared: 09/26/2024 Final Volume: 50 mL % Solids: 95.37

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Mercury	7439-97-6	1	0.00485	0.0231	0.00649	mg/kg	J



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-TOC-3

24I0364-79 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/12/2024 11:50
Instrument: TOC Cube Analyst: ARR Analyzed: 09/26/2024 21:33

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-79 A
Preparation Batch: BMI0526 Sample Size: 0.2679 g (wet) Dry Weight: 0.25 g
Prepared: 09/20/2024 Final Volume: 0.2679 mL % Solids: 94.15

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Organic Carbon		1	0.02	0.02	0.06	%	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-TOC-3

24I0364-79 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/12/2024 11:50
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-79
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 94.15

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids		1	0.04	0.04	94.15	%	



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-PCB-1

24I0364-80 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/12/2024 11:15
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 19:38

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-80 A 02
Preparation Batch: BMI0474 Sample Size: 10.58 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 94.59

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	50.0	99.9	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.9	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	35.0	50.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	50.0	99.9	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	ND	ug/kg	U
Pyrene	129-00-0	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	40.0	50.0	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	30.0	40.0	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-PCB-1

24I0364-80 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/12/2024 11:15

Instrument: NT10 Analyst: RJL

Analyzed: 09/27/2024 19:38

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	20.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	89.7	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	73.0	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	78.7	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	96.4	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	89.6	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	100	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	106	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	102	%	Q



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840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-PCB-1

24I0364-80 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 09/12/2024 11:15
Instrument: NT14 Analyst: RJL Analyzed: 10/12/2024 19:24

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 2410364-80 A 02
Preparation Batch: BMI0474 Sample Size: 10.58 g (wet) Dry Weight: 10.01 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 94.59

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	1	2.5	5.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	50.0	99.9	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	10.5	ug/kg	J, B
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	100	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	165	%	*, Q



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-PCB-1

24I0364-80 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/12/2024 11:15
Instrument:	ECD5 Analyst: AA	Analyzed: 09/27/2024 21:26
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-80 A 01 Dry Weight: 12.54 g % Solids: 94.59
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	95.5	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	87.1	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	105	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	91.8	%		



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-PCB-2

24I0364-81 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/12/2024 11:35
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 20:18

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-81 A 02
Preparation Batch: BMI0474 Sample Size: 10.58 g (wet) Dry Weight: 10.00 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 94.52

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	50.0	100	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	100	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	35.0	50.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	50.0	100	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	ND	ug/kg	U
Pyrene	129-00-0	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	40.0	50.0	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	30.0	40.0	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-PCB-2

24I0364-81 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/12/2024 11:35
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 20:18

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	20.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	88.4	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	78.8	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	90.1	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	94.9	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	99.2	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	99.4	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	104	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	98.5	%	Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-PCB-2

24I0364-81 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 09/12/2024 11:35
Instrument: NT14 Analyst: RJL Analyzed: 10/12/2024 20:02

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 2410364-81 A 02
Preparation Batch: BMI0474 Sample Size: 10.58 g (wet) Dry Weight: 10.00 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 94.52

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	1	2.5	5.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	50.0	100	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	11.2	ug/kg	J, B
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	99.8	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	157	%	*, Q



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-PCB-2

24I0364-81 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/12/2024 11:35
Instrument:	ECD5 Analyst: AA	Analyzed: 09/27/2024 21:47
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-81 A 01 Dry Weight: 12.53 g % Solids: 94.52
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	92.3	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	85.8	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	103	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	89.9	%		



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840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-PCB-3

24I0364-82 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/12/2024 11:50
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 20:57

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-82 A 02
Preparation Batch: BMI0474 Sample Size: 10.57 g (wet) Dry Weight: 10.03 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 94.93

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	19.9	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	10.0	19.9	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	19.9	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	19.9	19.9	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	19.9	ND	ug/kg	U
4-Methylphenol	106-44-5	1	14.9	19.9	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	49.8	99.7	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	19.9	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	19.9	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.7	199	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	19.9	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	19.9	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	19.9	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	19.9	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	19.9	ND	ug/kg	U
Dibenzofuran	132-64-9	1	19.9	19.9	ND	ug/kg	U
Fluorene	86-73-7	1	19.9	19.9	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	34.9	49.8	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	19.9	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	19.9	19.9	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	49.8	99.7	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	19.9	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	19.9	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	19.9	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	19.9	ND	ug/kg	U
Pyrene	129-00-0	1	10.0	19.9	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	10.0	19.9	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	19.9	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	19.9	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	39.9	49.8	54.9	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	10.0	19.9	ND	ug/kg	U
Benzofluoranthenes, Total		1	29.9	39.9	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	19.9	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	19.9	19.9	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	19.9	19.9	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-PCB-3

24I0364-82 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/12/2024 11:50
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 20:57

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	19.9	19.9	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	85.7	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	78.6	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	87.9	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	88.7	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	95.6	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	101	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	98.7	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	95.5	%	Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-PCB-3

24I0364-82 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM Sampled: 09/12/2024 11:50
Instrument: NT14 Analyst: RJL Analyzed: 10/12/2024 20:40

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 2410364-82 A 02
Preparation Batch: BMI0474 Sample Size: 10.57 g (wet) Dry Weight: 10.03 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 94.93

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	1	2.5	5.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	19.9	ND	ug/kg	U
Benzoic acid	65-85-0	1	49.8	99.7	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	10.0	19.9	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	19.9	10.2	ug/kg	J, B
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	19.9	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	97.5	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	139	%	Q, *



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-PCB-3

24I0364-82 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/12/2024 11:50
Instrument:	ECD5 Analyst: AA	Analyzed: 09/27/2024 22:08
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-82 A 01 Dry Weight: 12.50 g % Solids: 94.93
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	92.7	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	90.3	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	101	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	93.6	%		



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-TOC-1

24I0364-86 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/12/2024 11:15
Instrument: TOC Cube Analyst: ARR Analyzed: 09/26/2024 22:04

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-86 A
Preparation Batch: BMI0526 Sample Size: 0.2354 g (wet) Dry Weight: 0.22 g
Prepared: 09/20/2024 Final Volume: 0.2354 mL % Solids: 94.15

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	0.05	%	



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-TOC-1

24I0364-86 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/12/2024 11:15
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-86
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 94.15

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids			1	0.04	0.04	94.15	%



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WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-TOC-2

24I0364-87 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/12/2024 11:35
Instrument: TOC Cube Analyst: ARR Analyzed: 09/26/2024 22:34

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-87 A
Preparation Batch: BMI0526 Sample Size: 0.3291 g (wet) Dry Weight: 0.31 g
Prepared: 09/20/2024 Final Volume: 0.3291 mL % Solids: 94.04

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Total Organic Carbon		1	0.02	0.02	0.17	%	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-MSG-CB-TOC-2

24I0364-87 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/12/2024 11:35
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-87
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 94.04

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids		1	0.04	0.04	94.04	%	



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840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-TOC-1

24I0364-88 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/12/2024 08:35
Instrument: TOC Cube Analyst: ARR Analyzed: 09/27/2024 00:05

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-88 A
Preparation Batch: BMI0526 Sample Size: 0.2139 g (wet) Dry Weight: 0.20 g
Prepared: 09/20/2024 Final Volume: 0.2139 mL % Solids: 94.95

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Organic Carbon			1	0.02	0.02	0.11	%



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-TOC-1

24I0364-88 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/12/2024 08:35
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-88
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 94.95

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids			1	0.04	0.04	94.95	%



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-TOC-2

24I0364-89 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/12/2024 08:50
Instrument: TOC Cube Analyst: ARR Analyzed: 09/27/2024 00:36

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-89 A
Preparation Batch: BMI0526 Sample Size: 0.2202 g (wet) Dry Weight: 0.21 g
Prepared: 09/20/2024 Final Volume: 0.2202 mL % Solids: 96.09

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Organic Carbon			1	0.02	0.02	0.07	%



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Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-TOC-2

24I0364-89 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/12/2024 08:50
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-89
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 96.09

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids			1	0.04	0.04	96.09	%



Analytical Resources, LLC
Analytical Chemists and Consultants

Analytical Report

WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-TOC-3

24I0364-90 (Solid)

Wet Chemistry

Method: EPA 9060A m Sampled: 09/12/2024 09:10
Instrument: TOC Cube Analyst: ARR Analyzed: 09/27/2024 01:06

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-90 A
Preparation Batch: BMI0526 Sample Size: 0.2166 g (wet) Dry Weight: 0.21 g
Prepared: 09/20/2024 Final Volume: 0.2166 mL % Solids: 95.77

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Organic Carbon			1	0.02	0.02	0.06	%



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-TOC-3

24I0364-90 (Solid)

Wet Chemistry

Method: SM 2540 G-11 Sampled: 09/12/2024 09:10
Instrument: BAL2 Analyst: LM Analyzed: 09/23/2024 09:43

Sample Preparation: Preparation Method: No Prep Wet Chem Extract ID: 24I0364-90
Preparation Batch: BMI0559 Sample Size: 5 g (wet)
Prepared: 09/23/2024 Final Volume: 5 mL % Solids: 95.77

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Total Solids			1	0.04	0.04	95.77	%



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-PCB-1

24I0364-91 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/12/2024 08:35
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 21:36

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-91 A 02
Preparation Batch: BMI0474 Sample Size: 10.62 g (wet) Dry Weight: 10.02 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 94.32

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	49.9	99.8	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.8	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	34.9	49.9	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	49.9	99.8	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	ND	ug/kg	U
Pyrene	129-00-0	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	39.9	49.9	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	29.9	39.9	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-PCB-1

24I0364-91 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/12/2024 08:35
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 21:36

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	20.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	85.3	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	78.3	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	88.4	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	90.7	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	95.1	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	96.8	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	96.3	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	93.3	%	Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-PCB-1

24I0364-91 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM

Sampled: 09/12/2024 08:35

Instrument: NT14 Analyst: RJL

Analyzed: 10/12/2024 21:18

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 10.62 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-91 A 02

Dry Weight:10.02 g

% Solids: 94.32

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	2.5	5.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	49.9	99.8	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	16.2	ug/kg	J, B
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	95.0	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	152	%	*, Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-PCB-1

24I0364-91 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/12/2024 08:35
Instrument:	ECD5 Analyst: AA	Analyzed: 09/27/2024 22:29
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-91 A 01 Dry Weight: 12.50 g % Solids: 94.32
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	96.2	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	90.4	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	104	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	93.3	%		



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-PCB-2

24I0364-92 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/12/2024 08:50
Instrument: NT10 Analyst: RJL Analyzed: 09/27/2024 22:16

Sample Preparation: Preparation Method: EPA 3546 (Microwave) Extract ID: 24I0364-92 A 02
Preparation Batch: BMI0474 Sample Size: 10.59 g (wet) Dry Weight: 10.08 g
Prepared: 09/23/2024 Final Volume: 1 mL % Solids: 95.23

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	1	9.9	19.8	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	9.9	19.8	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	9.9	19.8	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	19.8	19.8	ND	ug/kg	U
2-Methylphenol	95-48-7	1	9.9	19.8	ND	ug/kg	U
4-Methylphenol	106-44-5	1	14.9	19.8	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	49.6	99.2	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	9.9	19.8	ND	ug/kg	U
Naphthalene	91-20-3	1	9.9	19.8	ND	ug/kg	U
Benzoic acid	65-85-0	1	99.2	198	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	9.9	19.8	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	9.9	19.8	ND	ug/kg	U
Acenaphthylene	208-96-8	1	9.9	19.8	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	9.9	19.8	ND	ug/kg	U
Acenaphthene	83-32-9	1	9.9	19.8	ND	ug/kg	U
Dibenzofuran	132-64-9	1	19.8	19.8	ND	ug/kg	U
Fluorene	86-73-7	1	19.8	19.8	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	34.7	49.6	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	9.9	19.8	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	19.8	19.8	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	49.6	99.2	ND	ug/kg	U
Phenanthrene	85-01-8	1	9.9	19.8	ND	ug/kg	U
Anthracene	120-12-7	1	9.9	19.8	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	9.9	19.8	ND	ug/kg	U
Fluoranthene	206-44-0	1	9.9	19.8	ND	ug/kg	U
Pyrene	129-00-0	1	9.9	19.8	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	9.9	19.8	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	9.9	19.8	ND	ug/kg	U
Chrysene	218-01-9	1	9.9	19.8	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	39.7	49.6	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	9.9	19.8	ND	ug/kg	U
Benzofluoranthenes, Total		1	29.7	39.7	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	9.9	19.8	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	19.8	19.8	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	19.8	19.8	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-PCB-2

24I0364-92 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/12/2024 08:50

Instrument: NT10 Analyst: RJL

Analyzed: 09/27/2024 22:16

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	19.8	19.8	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>			27-120 %	80.1	%		
<i>Surrogate: Phenol-d5</i>			29-120 %	73.6	%		
<i>Surrogate: 2-Chlorophenol-d4</i>			31-120 %	81.5	%		
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>			32-120 %	85.4	%		
<i>Surrogate: Nitrobenzene-d5</i>			30-120 %	88.7	%		
<i>Surrogate: 2-Fluorobiphenyl</i>			35-120 %	90.6	%		
<i>Surrogate: 2,4,6-Tribromophenol</i>			24-134 %	93.6	%		
<i>Surrogate: p-Terphenyl-d14</i>			37-120 %	89.6	%		Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-PCB-2

24I0364-92 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM	Sampled: 09/12/2024 08:50
Instrument: NT14 Analyst: RJL	Analyzed: 10/12/2024 21:56

Sample Preparation:	Preparation Method: EPA 3546 (Microwave)	Extract ID: 24I0364-92 A 02
	Preparation Batch: BMI0474	Dry Weight: 10.08 g
	Prepared: 09/23/2024	% Solids: 95.23

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Phenol	108-95-2	1	2.5	5.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	9.9	19.8	ND	ug/kg	U
Benzoic acid	65-85-0	1	49.6	99.2	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	9.9	19.8	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	9.9	19.8	10.7	ug/kg	J, B
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	9.9	19.8	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	ND	ug/kg	U
Dibeno(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>			27-120 %		92.9	%	
<i>Surrogate: p-Terphenyl-d14</i>			37-120 %		140	%	* , Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-PCB-2

24I0364-92 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled:	09/12/2024 08:50
Instrument:	ECD5 Analyst: AA	Analyzed:	09/27/2024 22:50
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Sample Size: 13.14 g (wet) Final Volume: 2.5 mL	Extract ID: 24I0364-92 A 01 Dry Weight: 12.51 g % Solids: 95.23
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL	Extract ID: 24I0364-92 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Initial Volume: 2.5 uL Final Volume: 2.5 uL	Extract ID: 24I0364-92 A 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	95.7	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	87.3	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	106	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	85.5	%		



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-PCB-3

24I0364-93 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E Sampled: 09/12/2024 09:10

Instrument: NT10 Analyst: RJL

Sampled: 09/12/2024 09:10

Analyzed: 09/27/2024 22:55

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 10.49 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-93 A 02

Dry Weight:10.00 g

% Solids: 95.29

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	10.0	20.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	10.0	20.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	10.0	20.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	20.0	20.0	ND	ug/kg	U
2-Methylphenol	95-48-7	1	10.0	20.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	15.0	20.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	50.0	100	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	10.0	20.0	ND	ug/kg	U
Naphthalene	91-20-3	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	100	200	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	10.0	20.0	ND	ug/kg	U
2-Methylnaphthalene	91-57-6	1	10.0	20.0	ND	ug/kg	U
Acenaphthylene	208-96-8	1	10.0	20.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	10.0	20.0	ND	ug/kg	U
Acenaphthene	83-32-9	1	10.0	20.0	ND	ug/kg	U
Dibenzofuran	132-64-9	1	20.0	20.0	ND	ug/kg	U
Fluorene	86-73-7	1	20.0	20.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	35.0	50.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	10.0	20.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	20.0	20.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	50.0	100	ND	ug/kg	U
Phenanthrene	85-01-8	1	10.0	20.0	ND	ug/kg	U
Anthracene	120-12-7	1	10.0	20.0	ND	ug/kg	U
Di-n-Butylphthalate	84-74-2	1	10.0	20.0	ND	ug/kg	U
Fluoranthene	206-44-0	1	10.0	20.0	ND	ug/kg	U
Pyrene	129-00-0	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	10.0	20.0	ND	ug/kg	U
Benzo(a)anthracene	56-55-3	1	10.0	20.0	ND	ug/kg	U
Chrysene	218-01-9	1	10.0	20.0	ND	ug/kg	U
bis(2-Ethylhexyl)phthalate	117-81-7	1	40.0	50.0	ND	ug/kg	U
Di-n-Octylphthalate	117-84-0	1	10.0	20.0	ND	ug/kg	U
Benzofluoranthenes, Total		1	30.0	40.0	ND	ug/kg	U
Benzo(a)pyrene	50-32-8	1	10.0	20.0	ND	ug/kg	U
Indeno(1,2,3-cd)pyrene	193-39-5	1	20.0	20.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	20.0	20.0	ND	ug/kg	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-PCB-3

24I0364-93 (Solid)

Semivolatile Organic Compounds

Method: EPA 8270E

Sampled: 09/12/2024 09:10

Instrument: NT10 Analyst: RJL

Analyzed: 09/27/2024 22:55

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Benzo(g,h,i)perylene	191-24-2	1	20.0	20.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	81.7	%	
<i>Surrogate: Phenol-d5</i>				29-120 %	73.7	%	
<i>Surrogate: 2-Chlorophenol-d4</i>				31-120 %	81.5	%	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>				32-120 %	84.8	%	
<i>Surrogate: Nitrobenzene-d5</i>				30-120 %	89.1	%	
<i>Surrogate: 2-Fluorobiphenyl</i>				35-120 %	92.4	%	
<i>Surrogate: 2,4,6-Tribromophenol</i>				24-134 %	92.5	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	88.7	%	Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-PCB-3

24I0364-93 (Solid)

Semivolatile Organic Compounds - SIM

Method: EPA 8270E-SIM

Sampled: 09/12/2024 09:10

Instrument: NT14 Analyst: RJL

Analyzed: 10/12/2024 22:34

Sample Preparation: Preparation Method: EPA 3546 (Microwave)
Preparation Batch: BMI0474
Prepared: 09/23/2024

Sample Size: 10.49 g (wet)
Final Volume: 1 mL

Extract ID: 24I0364-93 A 02

Dry Weight:10.00 g

% Solids: 95.29

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Phenol	108-95-2	1	2.5	5.0	ND	ug/kg	U
1,4-Dichlorobenzene	106-46-7	1	2.5	5.0	ND	ug/kg	U
1,2-Dichlorobenzene	95-50-1	1	2.5	5.0	ND	ug/kg	U
Benzyl Alcohol	100-51-6	1	10.0	20.0	ND	ug/kg	U
Benzoic acid	65-85-0	1	50.0	100	ND	ug/kg	U
2-Methylphenol	95-48-7	1	2.5	5.0	ND	ug/kg	U
4-Methylphenol	106-44-5	1	2.5	5.0	ND	ug/kg	U
2,4-Dimethylphenol	105-67-9	1	10.0	20.0	ND	ug/kg	U
1,2,4-Trichlorobenzene	120-82-1	1	5.0	5.0	ND	ug/kg	U
Hexachlorobutadiene	87-68-3	1	2.5	5.0	ND	ug/kg	U
Dimethylphthalate	131-11-3	1	2.5	5.0	ND	ug/kg	U
Diethyl phthalate	84-66-2	1	10.0	20.0	ND	ug/kg	U
N-Nitrosodiphenylamine	86-30-6	1	2.5	5.0	ND	ug/kg	U
Hexachlorobenzene	118-74-1	1	2.5	5.0	ND	ug/kg	U
Pentachlorophenol	87-86-5	1	10.0	20.0	ND	ug/kg	U
Butylbenzylphthalate	85-68-7	1	2.5	5.0	ND	ug/kg	U
Dibenzo(a,h)anthracene	53-70-3	1	2.5	5.0	ND	ug/kg	U
<i>Surrogate: 2-Fluorophenol</i>				27-120 %	94.3	%	
<i>Surrogate: p-Terphenyl-d14</i>				37-120 %	156	%	*, Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

20240912-G-CB-PCB-3

24I0364-93 (Solid)

Aroclor PCB

Method:	EPA 8082A	Sampled: 09/12/2024 09:10
Instrument:	ECD5 Analyst: AA	Analyzed: 09/27/2024 23:10
Sample Preparation:	Preparation Method: EPA 3546 (Microwave) Preparation Batch: BMI0473 Prepared: 09/23/2024	Extract ID: 24I0364-93 A 01 Dry Weight: 12.50 g % Solids: 95.29
Sample Cleanup:	Cleanup Method: Sulfuric Acid Cleanup Batch: CMI0161 Cleaned: 26-Sep-2024	Extract ID: 24I0364-93 A 01
Sample Cleanup:	Cleanup Method: Sulfur Cleanup Batch: CMI0162 Cleaned: 26-Sep-2024	Extract ID: 24I0364-93 A 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Aroclor 1016	12674-11-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1221	11104-28-2	1	2.0	4.0	ND	ug/kg	U
Aroclor 1232	11141-16-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1242	53469-21-9	1	2.0	4.0	ND	ug/kg	U
Aroclor 1248	12672-29-6	1	2.0	4.0	ND	ug/kg	U
Aroclor 1254	11097-69-1	1	2.0	4.0	ND	ug/kg	U
Aroclor 1260	11096-82-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1262	37324-23-5	1	2.0	4.0	ND	ug/kg	U
Aroclor 1268	11100-14-4	1	2.0	4.0	ND	ug/kg	U
<i>Surrogate: Decachlorobiphenyl</i>			40-126 %	95.6	%		
<i>Surrogate: Tetrachlorometaxylene</i>			44-120 %	92.2	%		
<i>Surrogate: Decachlorobiphenyl [2C]</i>			40-126 %	106	%		
<i>Surrogate: Tetrachlorometaxylene [2C]</i>			44-120 %	95.7	%		



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Trip Blanks
4I0364-94 (Water)

Volatile Organic Compounds

Method: NWTPHg Sampled: 09/11/2024 11:25
Instrument: NT3 Analyst: LH Analyzed: 09/20/2024 11:32

Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap) Extract ID: 24I0364-94 A
Preparation Batch: BMI0501 Sample Size: 10 mL
Prepared: 09/20/2024 Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Gasoline Range Organics (Tol-Nap)	GRO	1	100	ND	ug/L	U
Surrogate: Toluene-d8			80-120 %	98.4	%	
Surrogate: 4-Bromofluorobenzene			80-120 %	99.7	%	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMI0464 - NWTPHg

Instrument: NT3 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
Blank (BMI0464-BLK1) Prepared: 19-Sep-2024 Analyzed: 19-Sep-2024 09:04										
Gasoline Range Organics (Tol-Nap)	ND	5000	ug/kg							U
Surrogate: Toluene-d8	4.92		ug/kg	5.00		98.4	80-120			
Surrogate: 4-Bromofluorobenzene	5.02		ug/kg	5.00		100	78-123			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMI0464 - NWTPHg

Instrument: NT3 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
LCS (BMI0464-BS1) Prepared: 19-Sep-2024 Analyzed: 19-Sep-2024 07:13										
Gasoline Range Organics (Tol-Nap)	56900	5000	ug/kg	50000		114	70-121			
Surrogate: Toluene-d8	4.92		ug/kg	5.00		98.4	80-120			
Surrogate: 4-Bromofluorobenzene	5.00		ug/kg	5.00		100	78-123			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMI0464 - NWTPHg

Instrument: NT3 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
LCS Dup (BMI0464-BSD1) Prepared: 19-Sep-2024 Analyzed: 19-Sep-2024 07:57										
Gasoline Range Organics (Tol-Nap)	48600	5000	ug/kg	50000		97.3	70-121	15.60	30	
Surrogate: Toluene-d8	4.98		ug/kg	5.00		99.6	80-120			
Surrogate: 4-Bromofluorobenzene	5.15		ug/kg	5.00		103	78-123			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Volatile Organic Compounds - Quality Control

Batch BMI0501 - NWTPHg

Instrument: NT3 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Blank (BMI0501-BLK1) Prepared: 20-Sep-2024 Analyzed: 20-Sep-2024 09:58										
Gasoline Range Organics (Tol-Nap)	ND	100	ug/L							U
<i>Surrogate: Toluene-d8</i>	4.84		ug/L	5.00		96.8	80-120			
<i>Surrogate: 4-Bromofluorobenzene</i>	4.88		ug/L	5.00		97.6	80-120			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMI0501 - NWTPHg

Instrument: NT3 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
LCS (BMI0501-BS1) Prepared: 20-Sep-2024 Analyzed: 20-Sep-2024 07:23										
Gasoline Range Organics (Tol-Nap)	1140	100	ug/L	1000		114	72-128			
Surrogate: Toluene-d8	4.94		ug/L	5.00		98.8	80-120			
Surrogate: 4-Bromofluorobenzene	5.02		ug/L	5.00		100	80-120			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BMI0501 - NWTPHg

Instrument: NT3 Analyst: LH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
LCS Dup (BMI0501-BSD1) Prepared: 20-Sep-2024 Analyzed: 20-Sep-2024 08:07										
Gasoline Range Organics (Tol-Nap)	1090	100	ug/L	1000		109	72-128	4.39	30	
Surrogate: Toluene-d8	4.94		ug/L	5.00		98.7	80-120			
Surrogate: 4-Bromofluorobenzene	4.96		ug/L	5.00		99.3	80-120			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BMI0474 - EPA 8270E

Instrument: NT10 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Blank (BMI0474-BLK1)											
Phenol	ND	10.0	20.0	ug/kg							U
1,4-Dichlorobenzene	ND	10.0	20.0	ug/kg							U
1,2-Dichlorobenzene	ND	10.0	20.0	ug/kg							U
Benzyl Alcohol	ND	20.0	20.0	ug/kg							U
2-Methylphenol	ND	10.0	20.0	ug/kg							U
4-Methylphenol	ND	15.0	20.0	ug/kg							U
2,4-Dimethylphenol	ND	50.0	100	ug/kg							U
1,2,4-Trichlorobenzene	ND	10.0	20.0	ug/kg							U
Naphthalene	ND	10.0	20.0	ug/kg							U
Benzoic acid	ND	100	200	ug/kg							U
Hexachlorobutadiene	ND	10.0	20.0	ug/kg							U
2-Methylnaphthalene	ND	10.0	20.0	ug/kg							U
Acenaphthylene	ND	10.0	20.0	ug/kg							U
Dimethylphthalate	ND	10.0	20.0	ug/kg							U
Acenaphthene	ND	10.0	20.0	ug/kg							U
Dibenzofuran	ND	20.0	20.0	ug/kg							U
Fluorene	ND	20.0	20.0	ug/kg							U
Diethyl phthalate	ND	35.0	50.0	ug/kg							U
N-Nitrosodiphenylamine	ND	10.0	20.0	ug/kg							U
Hexachlorobenzene	ND	20.0	20.0	ug/kg							U
Pentachlorophenol	ND	50.0	100	ug/kg							U
Phenanthrene	ND	10.0	20.0	ug/kg							U
Anthracene	ND	10.0	20.0	ug/kg							U
Di-n-Butylphthalate	ND	10.0	20.0	ug/kg							U
Fluoranthene	ND	10.0	20.0	ug/kg							U
Pyrene	ND	10.0	20.0	ug/kg							U
Butylbenzylphthalate	ND	10.0	20.0	ug/kg							U
Benzo(a)anthracene	ND	10.0	20.0	ug/kg							U
Chrysene	ND	10.0	20.0	ug/kg							U
bis(2-Ethylhexyl)phthalate	ND	40.0	50.0	ug/kg							U
Di-n-Octylphthalate	ND	10.0	20.0	ug/kg							U
Benzofluoranthenes, Total	ND	30.0	40.0	ug/kg							U
Benzo(a)pyrene	ND	10.0	20.0	ug/kg							U
Indeno(1,2,3-cd)pyrene	ND	20.0	20.0	ug/kg							U
Dibenzo(a,h)anthracene	ND	20.0	20.0	ug/kg							U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BMI0474 - EPA 8270E

Instrument: NT10 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Blank (BMI0474-BLK1) Prepared: 23-Sep-2024 Analyzed: 25-Sep-2024 12:33											
Benzo(g,h,i)perylene	ND	20.0	20.0	ug/kg							U
<i>Surrogate: 2-Fluorophenol</i>	674			ug/kg	750		89.9	27-120			
<i>Surrogate: Phenol-d5</i>	632			ug/kg	750		84.3	29-120			
<i>Surrogate: 2-Chlorophenol-d4</i>	681			ug/kg	750		90.7	31-120			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	448			ug/kg	500		89.6	32-120			
<i>Surrogate: Nitrobenzene-d5</i>	460			ug/kg	500		92.1	30-120			
<i>Surrogate: 2-Fluorobiphenyl</i>	437			ug/kg	500		87.5	35-120			
<i>Surrogate: 2,4,6-Tribromophenol</i>	613			ug/kg	750		81.7	24-134			
<i>Surrogate: p-Terphenyl-d14</i>	470			ug/kg	500		94.0	37-120			



WSP USA, Inc.
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06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BMI0474 - EPA 8270E

Instrument: NT10 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
LCS (BMI0474-BS1)											
Phenol	400	10.0	20.0	ug/kg	500	80.0	80.0	31-120			
1,4-Dichlorobenzene	469	10.0	20.0	ug/kg	500	93.8	93.8	39-120			
1,2-Dichlorobenzene	428	10.0	20.0	ug/kg	500	85.5	85.5	40-120			
Benzyl Alcohol	530	20.0	20.0	ug/kg	500	106	106	19-120			
2-Methylphenol	419	10.0	20.0	ug/kg	500	83.8	83.8	11-120			
4-Methylphenol	444	15.0	20.0	ug/kg	500	88.7	88.7	29-120			
2,4-Dimethylphenol	574	50.0	100	ug/kg	1500	38.2	38.2	10-120			
1,2,4-Trichlorobenzene	419	10.0	20.0	ug/kg	500	83.8	83.8	35-120			
Naphthalene	434	10.0	20.0	ug/kg	500	86.9	86.9	41-120			
Benzoic acid	1300	100	200	ug/kg	2250	57.6	57.6	10-120			
Hexachlorobutadiene	432	10.0	20.0	ug/kg	500	86.5	86.5	37-120			
2-Methylnaphthalene	475	10.0	20.0	ug/kg	500	95.0	95.0	43-120			
Acenaphthylene	482	10.0	20.0	ug/kg	500	96.3	96.3	42-120			Q
Dimethylphthalate	519	10.0	20.0	ug/kg	500	104	104	43-120			
Acenaphthene	461	10.0	20.0	ug/kg	500	92.2	92.2	45-120			
Dibenzofuran	492	20.0	20.0	ug/kg	500	98.4	98.4	43-120			
Fluorene	457	20.0	20.0	ug/kg	500	91.4	91.4	40-120			
Diethyl phthalate	555	35.0	50.0	ug/kg	500	111	111	43-140			
N-Nitrosodiphenylamine	463	10.0	20.0	ug/kg	500	92.7	92.7	17-120			
Hexachlorobenzene	493	20.0	20.0	ug/kg	500	98.6	98.6	33-120			
Pentachlorophenol	1390	50.0	100	ug/kg	1500	92.9	92.9	33-133			
Phenanthrene	464	10.0	20.0	ug/kg	500	92.8	92.8	49-120			
Anthracene	464	10.0	20.0	ug/kg	500	92.8	92.8	37-120			
Di-n-Butylphthalate	604	10.0	20.0	ug/kg	500	121	121	48-126			
Fluoranthene	375	10.0	20.0	ug/kg	500	75.0	75.0	38-127			Q
Pyrene	393	10.0	20.0	ug/kg	500	78.7	78.7	39-122			
Butylbenzylphthalate	591	10.0	20.0	ug/kg	500	118	118	45-132			
Benzo(a)anthracene	493	10.0	20.0	ug/kg	500	98.6	98.6	44-120			
Chrysene	485	10.0	20.0	ug/kg	500	97.1	97.1	47-120			
bis(2-Ethylhexyl)phthalate	636	40.0	50.0	ug/kg	500	127	127	10-130			
Di-n-Octylphthalate	476	10.0	20.0	ug/kg	500	95.2	95.2	10-124			
Benzofluoranthenes, Total	1080	30.0	40.0	ug/kg	1000	108	108	30-160			
Benzo(a)pyrene	500	10.0	20.0	ug/kg	500	99.9	99.9	37-120			
Indeno(1,2,3-cd)pyrene	356	20.0	20.0	ug/kg	500	71.3	71.3	30-160			Q
Dibenzo(a,h)anthracene	360	20.0	20.0	ug/kg	500	72.1	72.1	30-160			Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BMI0474 - EPA 8270E

Instrument: NT10 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
LCS (BMI0474-BS1) Prepared: 23-Sep-2024 Analyzed: 25-Sep-2024 13:14											
Benzo(g,h,i)perylene	305	20.0	20.0	ug/kg	500	61.0	10-150				Q
<i>Surrogate: 2-Fluorophenol</i>	701			ug/kg	750	93.5	27-120				
<i>Surrogate: Phenol-d5</i>	705			ug/kg	750	94.0	29-120				
<i>Surrogate: 2-Chlorophenol-d4</i>	701			ug/kg	750	93.5	31-120				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	448			ug/kg	500	89.6	32-120				
<i>Surrogate: Nitrobenzene-d5</i>	503			ug/kg	500	101	30-120				
<i>Surrogate: 2-Fluorobiphenyl</i>	490			ug/kg	500	98.1	35-120				
<i>Surrogate: 2,4,6-Tribromophenol</i>	744			ug/kg	750	99.2	24-134				
<i>Surrogate: p-Terphenyl-d14</i>	487			ug/kg	500	97.5	37-120				



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
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Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BMI0474 - EPA 8270E

Instrument: NT10 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
LCS Dup (BMI0474-BSD1)											
Phenol	426	10.0	20.0	ug/kg	500	85.1	31-120	6.21	30		
1,4-Dichlorobenzene	519	10.0	20.0	ug/kg	500	104	39-120	10.20	30		
1,2-Dichlorobenzene	465	10.0	20.0	ug/kg	500	93.0	40-120	8.43	30		
Benzyl Alcohol	574	20.0	20.0	ug/kg	500	115	19-120	8.01	30		
2-Methylphenol	475	10.0	20.0	ug/kg	500	95.0	11-120	12.50	30		
4-Methylphenol	486	15.0	20.0	ug/kg	500	97.2	29-120	9.12	30		
2,4-Dimethylphenol	994	50.0	100	ug/kg	1500	66.3	10-120	53.60	30	*	
1,2,4-Trichlorobenzene	444	10.0	20.0	ug/kg	500	88.9	35-120	5.91	30		
Naphthalene	469	10.0	20.0	ug/kg	500	93.9	41-120	7.75	30		
Benzoic acid	1250	100	200	ug/kg	2250	55.3	10-120	4.08	30		
Hexachlorobutadiene	461	10.0	20.0	ug/kg	500	92.3	37-120	6.50	30		
2-Methylnaphthalene	512	10.0	20.0	ug/kg	500	102	43-120	7.50	30		
Acenaphthylene	598	10.0	20.0	ug/kg	500	120	42-120	21.50	30	Q	
Dimethylphthalate	535	10.0	20.0	ug/kg	500	107	43-120	3.06	30		
Acenaphthene	485	10.0	20.0	ug/kg	500	97.0	45-120	5.14	30		
Dibenzofuran	516	20.0	20.0	ug/kg	500	103	43-120	4.85	30		
Fluorene	480	20.0	20.0	ug/kg	500	96.0	40-120	4.93	30		
Diethyl phthalate	575	35.0	50.0	ug/kg	500	115	43-140	3.48	30		
N-Nitrosodiphenylamine	500	10.0	20.0	ug/kg	500	100	17-120	7.59	30		
Hexachlorobenzene	525	20.0	20.0	ug/kg	500	105	33-120	6.30	30		
Pentachlorophenol	1490	50.0	100	ug/kg	1500	99.4	33-133	6.74	30		
Phenanthrene	482	10.0	20.0	ug/kg	500	96.4	49-120	3.81	30		
Anthracene	491	10.0	20.0	ug/kg	500	98.1	37-120	5.59	30		
Di-n-Butylphthalate	594	10.0	20.0	ug/kg	500	119	48-126	1.63	30		
Fluoranthene	377	10.0	20.0	ug/kg	500	75.3	38-127	0.48	30	Q	
Pyrene	394	10.0	20.0	ug/kg	500	78.8	39-122	0.11	30		
Butylbenzylphthalate	591	10.0	20.0	ug/kg	500	118	45-132	0.13	30		
Benzo(a)anthracene	517	10.0	20.0	ug/kg	500	103	44-120	4.73	30		
Chrysene	506	10.0	20.0	ug/kg	500	101	47-120	4.12	30		
bis(2-Ethylhexyl)phthalate	613	40.0	50.0	ug/kg	500	123	10-130	3.67	30		
Di-n-Octylphthalate	497	10.0	20.0	ug/kg	500	99.4	10-124	4.34	30		
Benzofluoranthenes, Total	1160	30.0	40.0	ug/kg	1000	116	30-160	7.23	30		
Benzo(a)pyrene	535	10.0	20.0	ug/kg	500	107	37-120	6.85	30		
Indeno(1,2,3-cd)pyrene	372	20.0	20.0	ug/kg	500	74.4	30-160	4.23	30	Q	
Dibenzo(a,h)anthracene	376	20.0	20.0	ug/kg	500	75.1	30-160	4.12	30	Q	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BMI0474 - EPA 8270E

Instrument: NT10 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
LCS Dup (BMI0474-BSD1) Prepared: 23-Sep-2024 Analyzed: 25-Sep-2024 13:53											
Benzo(g,h,i)perylene	310	20.0	20.0	ug/kg	500	62.0	10-150	1.69	30	Q	
<i>Surrogate: 2-Fluorophenol</i>	730			ug/kg	750	97.4	27-120				
<i>Surrogate: Phenol-d5</i>	715			ug/kg	750	95.3	29-120				
<i>Surrogate: 2-Chlorophenol-d4</i>	725			ug/kg	750	96.7	31-120				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	459			ug/kg	500	91.9	32-120				
<i>Surrogate: Nitrobenzene-d5</i>	500			ug/kg	500	100	30-120				
<i>Surrogate: 2-Fluorobiphenyl</i>	484			ug/kg	500	96.9	35-120				
<i>Surrogate: 2,4,6-Tribromophenol</i>	795			ug/kg	750	106	24-134				
<i>Surrogate: p-Terphenyl-d14</i>	465			ug/kg	500	93.0	37-120				



WSP USA, Inc.
840 HOWE STREET, #1000
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06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BMI0474 - EPA 8270E

Instrument: NT10 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Matrix Spike (BMI0474-MS1)											
		Source: 24I0364-93			Prepared: 23-Sep-2024		Analyzed: 27-Sep-2024 23:35				
Phenol	323	10.0	20.0	ug/kg	500	ND	64.5	31-120			
1,4-Dichlorobenzene	441	10.0	20.0	ug/kg	500	ND	88.2	39-120			
1,2-Dichlorobenzene	365	10.0	20.0	ug/kg	500	ND	73.1	40-120			
Benzyl Alcohol	391	20.0	20.0	ug/kg	500	ND	78.1	19-120			
2-Methylphenol	346	10.0	20.0	ug/kg	500	ND	69.1	11-120			
4-Methylphenol	346	15.0	20.0	ug/kg	500	ND	69.2	29-120			
2,4-Dimethylphenol	857	50.0	100	ug/kg	1500	ND	57.1	10-120			
1,2,4-Trichlorobenzene	373	10.0	20.0	ug/kg	500	ND	74.6	35-120			
Naphthalene	382	10.0	20.0	ug/kg	500	ND	76.4	41-120			
Benzoic acid	782	100	200	ug/kg	2250	ND	34.7	10-120			Q
Hexachlorobutadiene	398	10.0	20.0	ug/kg	500	ND	79.5	37-120			
2-Methylnaphthalene	405	10.0	20.0	ug/kg	500	ND	81.0	43-120			
Acenaphthylene	237	10.0	20.0	ug/kg	500	ND	47.4	42-120			Q
Dimethylphthalate	483	10.0	20.0	ug/kg	500	ND	96.5	43-120			
Acenaphthene	419	10.0	20.0	ug/kg	500	ND	83.9	45-120			
Dibenzofuran	446	20.0	20.0	ug/kg	500	ND	89.1	43-120			
Fluorene	424	20.0	20.0	ug/kg	500	ND	84.7	40-120			
Diethyl phthalate	514	35.0	50.0	ug/kg	500	ND	103	43-140			
N-Nitrosodiphenylamine	428	10.0	20.0	ug/kg	500	ND	85.5	17-120			
Hexachlorobenzene	446	20.0	20.0	ug/kg	500	ND	89.2	33-120			
Pentachlorophenol	1380	50.0	100	ug/kg	1500	ND	92.2	33-133			
Phenanthrene	430	10.0	20.0	ug/kg	500	ND	85.9	49-120			
Anthracene	423	10.0	20.0	ug/kg	500	ND	84.6	37-120			
Di-n-Butylphthalate	573	10.0	20.0	ug/kg	500	ND	115	48-126			
Fluoranthene	334	10.0	20.0	ug/kg	500	ND	66.7	38-127			Q
Pyrene	385	10.0	20.0	ug/kg	500	ND	77.0	39-122			Q
Butylbenzylphthalate	515	10.0	20.0	ug/kg	500	ND	103	45-132			
Benzo(a)anthracene	440	10.0	20.0	ug/kg	500	ND	88.0	44-120			
Chrysene	435	10.0	20.0	ug/kg	500	ND	87.0	47-120			
bis(2-Ethylhexyl)phthalate	508	40.0	50.0	ug/kg	500	ND	102	10-130			
Di-n-Octylphthalate	427	10.0	20.0	ug/kg	500	ND	85.4	10-124			
Benzofluoranthenes, Total	983	30.0	40.0	ug/kg	1000	ND	98.3	30-160			
Benzo(a)pyrene	461	10.0	20.0	ug/kg	500	ND	92.1	37-120			
Indeno(1,2,3-cd)pyrene	365	20.0	20.0	ug/kg	500	ND	72.9	30-160			
Dibenzo(a,h)anthracene	374	20.0	20.0	ug/kg	500	ND	74.7	30-160			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BMI0474 - EPA 8270E

Instrument: NT10 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Matrix Spike (BMI0474-MS1) Source: 24I0364-93 Prepared: 23-Sep-2024 Analyzed: 27-Sep-2024 23:35											
Benzo(g,h,i)perylene	304	20.0	20.0	ug/kg	500	ND	60.7	10-150			
<i>Surrogate: 2-Fluorophenol</i>	546			ug/kg	750	613	72.7	27-120			
<i>Surrogate: Phenol-d5</i>	518			ug/kg	750	553	69.0	29-120			
<i>Surrogate: 2-Chlorophenol-d4</i>	541			ug/kg	750	611	72.1	31-120			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	370			ug/kg	500	424	74.0	32-120			
<i>Surrogate: Nitrobenzene-d5</i>	412			ug/kg	500	446	82.4	30-120			
<i>Surrogate: 2-Fluorobiphenyl</i>	431			ug/kg	500	462	86.1	35-120			
<i>Surrogate: 2,4,6-Tribromophenol</i>	675			ug/kg	750	694	89.9	24-134			
<i>Surrogate: p-Terphenyl-d14</i>	409			ug/kg	500	444	81.9	37-120			<i>Q</i>

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
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06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BMI0474 - EPA 8270E

Instrument: NT10 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Matrix Spike Dup (BMI0474-MSD1)											
		Source: 24I0364-93			Prepared: 23-Sep-2024		Analyzed: 28-Sep-2024 00:14				
Phenol	401	10.0	20.0	ug/kg	500	ND	80.2	31-120	21.60	30	
1,4-Dichlorobenzene	525	10.0	20.0	ug/kg	500	ND	105	39-120	17.30	30	
1,2-Dichlorobenzene	481	10.0	20.0	ug/kg	500	ND	96.1	40-120	27.30	30	
Benzyl Alcohol	467	20.0	20.0	ug/kg	500	ND	93.4	19-120	17.80	30	
2-Methylphenol	477	10.0	20.0	ug/kg	500	ND	95.3	11-120	31.90	30	
4-Methylphenol	424	15.0	20.0	ug/kg	500	ND	84.8	29-120	20.20	30	
2,4-Dimethylphenol	1080	50.0	100	ug/kg	1500	ND	71.8	10-120	22.70	30	
1,2,4-Trichlorobenzene	470	10.0	20.0	ug/kg	500	ND	94.0	35-120	23.00	30	
Naphthalene	488	10.0	20.0	ug/kg	500	ND	97.6	41-120	24.40	30	
Benzoic acid	1220	100	200	ug/kg	2250	ND	54.2	10-120	43.80	30	Q
Hexachlorobutadiene	504	10.0	20.0	ug/kg	500	ND	101	37-120	23.60	30	
2-Methylnaphthalene	497	10.0	20.0	ug/kg	500	ND	99.4	43-120	20.50	30	
Acenaphthylene	272	10.0	20.0	ug/kg	500	ND	54.3	42-120	13.60	30	Q
Dimethylphthalate	535	10.0	20.0	ug/kg	500	ND	107	43-120	10.20	30	
Acenaphthene	503	10.0	20.0	ug/kg	500	ND	101	45-120	18.20	30	
Dibenzofuran	536	20.0	20.0	ug/kg	500	ND	107	43-120	18.40	30	
Fluorene	507	20.0	20.0	ug/kg	500	ND	101	40-120	17.90	30	
Diethyl phthalate	586	35.0	50.0	ug/kg	500	ND	117	43-140	13.10	30	
N-Nitrosodiphenylamine	480	10.0	20.0	ug/kg	500	ND	95.9	17-120	11.50	30	
Hexachlorobenzene	506	20.0	20.0	ug/kg	500	ND	101	33-120	12.60	30	
Pentachlorophenol	1680	50.0	100	ug/kg	1500	ND	112	33-133	19.60	30	
Phenanthrene	503	10.0	20.0	ug/kg	500	ND	101	49-120	15.70	30	
Anthracene	499	10.0	20.0	ug/kg	500	ND	99.8	37-120	16.50	30	
Di-n-Butylphthalate	686	10.0	20.0	ug/kg	500	ND	137	48-126	17.90	30	*
Fluoranthene	418	10.0	20.0	ug/kg	500	ND	83.6	38-127	22.50	30	Q
Pyrene	439	10.0	20.0	ug/kg	500	ND	87.7	39-122	12.90	30	Q
Butylbenzylphthalate	644	10.0	20.0	ug/kg	500	ND	129	45-132	22.20	30	
Benzo(a)anthracene	532	10.0	20.0	ug/kg	500	ND	106	44-120	19.00	30	
Chrysene	530	10.0	20.0	ug/kg	500	ND	106	47-120	19.60	30	
bis(2-Ethylhexyl)phthalate	608	40.0	50.0	ug/kg	500	ND	122	10-130	17.90	30	
Di-n-Octylphthalate	504	10.0	20.0	ug/kg	500	ND	101	10-124	16.60	30	
Benzofluoranthenes, Total	1190	30.0	40.0	ug/kg	1000	ND	119	30-160	19.00	30	
Benzo(a)pyrene	562	10.0	20.0	ug/kg	500	ND	112	37-120	19.80	30	
Indeno(1,2,3-cd)pyrene	438	20.0	20.0	ug/kg	500	ND	87.6	30-160	18.30	30	
Dibenzo(a,h)anthracene	446	20.0	20.0	ug/kg	500	ND	89.2	30-160	17.70	30	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BMI0474 - EPA 8270E

Instrument: NT10 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Matrix Spike Dup (BMI0474-MSD1) Source: 24I0364-93 Prepared: 23-Sep-2024 Analyzed: 28-Sep-2024 00:14											
Benzo(g,h,i)perylene	370	20.0	20.0	ug/kg	500	ND	73.9	10-150	19.60	30	
<i>Surrogate: 2-Fluorophenol</i>	713			ug/kg	750	613	95.0	27-120			
<i>Surrogate: Phenol-d5</i>	664			ug/kg	750	553	88.5	29-120			
<i>Surrogate: 2-Chlorophenol-d4</i>	693			ug/kg	750	611	92.3	31-120			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	492			ug/kg	500	424	98.4	32-120			
<i>Surrogate: Nitrobenzene-d5</i>	589			ug/kg	500	446	118	30-120			
<i>Surrogate: 2-Fluorobiphenyl</i>	537			ug/kg	500	462	107	35-120			
<i>Surrogate: 2,4,6-Tribromophenol</i>	836			ug/kg	750	694	111	24-134			
<i>Surrogate: p-Terphenyl-d14</i>	520			ug/kg	500	444	104	37-120			<i>Q</i>

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - Quality Control

Batch BMI0474 - EPA 8270E

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BMI0474 - EPA 8270E-SIM

Instrument: NT14 Analyst: RJL/FL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Blank (BMI0474-BLK2) Prepared: 23-Sep-2024 Analyzed: 11-Oct-2024 18:17											
Phenol	ND	2.5	5.0	ug/kg							U
1,4-Dichlorobenzene	ND	2.5	5.0	ug/kg							U
1,2-Dichlorobenzene	ND	2.5	5.0	ug/kg							U
Benzyl Alcohol	ND	10.0	20.0	ug/kg							U
Benzoic acid	61.5	50.0	100	ug/kg							J
2-Methylphenol	ND	2.5	5.0	ug/kg							U
4-Methylphenol	ND	2.5	5.0	ug/kg							U
2,4-Dimethylphenol	ND	10.0	20.0	ug/kg							U
1,2,4-Trichlorobenzene	ND	5.0	5.0	ug/kg							U
Hexachlorobutadiene	ND	2.5	5.0	ug/kg							U
Dimethylphthalate	ND	2.5	5.0	ug/kg							U
Diethyl phthalate	25.1	10.0	20.0	ug/kg							
N-Nitrosodiphenylamine	ND	2.5	5.0	ug/kg							U
Hexachlorobenzene	ND	2.5	5.0	ug/kg							U
Pentachlorophenol	ND	10.0	20.0	ug/kg							U
Butylbenzylphthalate	ND	2.5	5.0	ug/kg							U
Dibenz(a,h)anthracene	ND	2.5	5.0	ug/kg							U
<i>Surrogate: 2-Fluorophenol</i>	838			ug/kg	750		112	27-120			
<i>Surrogate: p-Terphenyl-d14</i>	909			ug/kg	500		182	37-120			*, Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BMI0474 - EPA 8270E-SIM

Instrument: NT14 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
Blank (BMI0474-BLK3) Prepared: 23-Sep-2024 Analyzed: 12-Oct-2024 18:08											
Phenol	ND	2.5	5.0	ug/kg							U
1,4-Dichlorobenzene	ND	2.5	5.0	ug/kg							U
1,2-Dichlorobenzene	ND	2.5	5.0	ug/kg							U
Benzyl Alcohol	ND	10.0	20.0	ug/kg							U
Benzoic acid	80.3	50.0	100	ug/kg							J
2-Methylphenol	ND	2.5	5.0	ug/kg							U
4-Methylphenol	ND	2.5	5.0	ug/kg							U
2,4-Dimethylphenol	ND	10.0	20.0	ug/kg							U
1,2,4-Trichlorobenzene	ND	5.0	5.0	ug/kg							U
Hexachlorobutadiene	ND	2.5	5.0	ug/kg							U
Dimethylphthalate	ND	2.5	5.0	ug/kg							U
Diethyl phthalate	28.6	10.0	20.0	ug/kg							
N-Nitrosodiphenylamine	ND	2.5	5.0	ug/kg							U
Hexachlorobenzene	ND	2.5	5.0	ug/kg							U
Pentachlorophenol	10.3	10.0	20.0	ug/kg							J
Butylbenzylphthalate	ND	2.5	5.0	ug/kg							U
Dibenzo(a,h)anthracene	ND	2.5	5.0	ug/kg							U
<i>Surrogate: 2-Fluorophenol</i>	847			ug/kg	750		113	27-120			
<i>Surrogate: p-Terphenyl-d14</i>	859			ug/kg	500		172	37-120			* , Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BMI0474 - EPA 8270E-SIM

Instrument: NT14 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Blank (BMI0474-BLK4) Prepared: 23-Sep-2024 Analyzed: 13-Oct-2024 02:59											
Phenol	ND	2.5	5.0	ug/kg							U
1,4-Dichlorobenzene	ND	2.5	5.0	ug/kg							U
1,2-Dichlorobenzene	ND	2.5	5.0	ug/kg							U
Benzyl Alcohol	ND	10.0	20.0	ug/kg							U
Benzoic acid	57.6	50.0	100	ug/kg							J
2-Methylphenol	ND	2.5	5.0	ug/kg							U
4-Methylphenol	ND	2.5	5.0	ug/kg							U
2,4-Dimethylphenol	ND	10.0	20.0	ug/kg							U
1,2,4-Trichlorobenzene	ND	5.0	5.0	ug/kg							U
Hexachlorobutadiene	ND	2.5	5.0	ug/kg							U
Dimethylphthalate	ND	2.5	5.0	ug/kg							U
Diethyl phthalate	28.2	10.0	20.0	ug/kg							
N-Nitrosodiphenylamine	ND	2.5	5.0	ug/kg							U
Hexachlorobenzene	ND	2.5	5.0	ug/kg							U
Pentachlorophenol	11.5	10.0	20.0	ug/kg							J
Butylbenzylphthalate	ND	2.5	5.0	ug/kg							U
Dibenzo(a,h)anthracene	ND	2.5	5.0	ug/kg							U
<i>Surrogate: 2-Fluorophenol</i>	855			ug/kg	750		114	27-120			
<i>Surrogate: p-Terphenyl-d14</i>	865			ug/kg	500		173	37-120			* , Q



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BMI0474 - EPA 8270E-SIM

Instrument: NT14 Analyst: RJL/FL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
LCS (BMI0474-BS2)											
Phenol	396	2.5	5.0	ug/kg	500		79.2	30-160			
1,4-Dichlorobenzene	445	2.5	5.0	ug/kg	500		89.0	36-120			
1,2-Dichlorobenzene	412	2.5	5.0	ug/kg	500		82.4	36-120			
Benzyl Alcohol	480	10.0	20.0	ug/kg	500		96.1	25-123			
Benzoic acid	1240	50.0	100	ug/kg	2250		54.9	10-160			
2-Methylphenol	431	2.5	5.0	ug/kg	500		86.3	26-120			
4-Methylphenol	474	2.5	5.0	ug/kg	500		94.9	30-160			
2,4-Dimethylphenol	623	10.0	20.0	ug/kg	1500		41.5	10-120			
1,2,4-Trichlorobenzene	413	5.0	5.0	ug/kg	500		82.6	35-120			
Hexachlorobutadiene	429	2.5	5.0	ug/kg	500		85.8	34-120			
Dimethylphthalate	527	2.5	5.0	ug/kg	500		105	38-120			
Diethyl phthalate	568	10.0	20.0	ug/kg	500		114	55-120			B
N-Nitrosodiphenylamine	510	2.5	5.0	ug/kg	500		102	27-120			
Hexachlorobenzene	489	2.5	5.0	ug/kg	500		97.8	32-120			
Pentachlorophenol	1280	10.0	20.0	ug/kg	1500		85.2	26-120			Q, E
Butylbenzylphthalate	513	2.5	5.0	ug/kg	500		103	32-142			
Dibenzo(a,h)anthracene	510	2.5	5.0	ug/kg	500		102	28-125			
<i>Surrogate: 2-Fluorophenol</i>	745			ug/kg	750		99.3	27-120			
<i>Surrogate: p-Terphenyl-d14</i>	703			ug/kg	500		141	37-120			* , Q



WSP USA, Inc.
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06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BMI0474 - EPA 8270E-SIM

Instrument: NT14 Analyst: RJL/FL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
LCS Dup (BMI0474-BSD2)											
Phenol	384	2.5	5.0	ug/kg	500	76.8	30-160	3.07	30		
1,4-Dichlorobenzene	451	2.5	5.0	ug/kg	500	90.2	36-120	1.35	30		
1,2-Dichlorobenzene	416	2.5	5.0	ug/kg	500	83.3	36-120	1.07	30		
Benzyl Alcohol	472	10.0	20.0	ug/kg	500	94.3	25-123	1.83	30		
Benzoic acid	1050	50.0	100	ug/kg	2250	46.9	10-160	15.80	30		
2-Methylphenol	451	2.5	5.0	ug/kg	500	90.2	26-120	4.44	30		
4-Methylphenol	478	2.5	5.0	ug/kg	500	95.7	30-160	0.85	30		
2,4-Dimethylphenol	912	10.0	20.0	ug/kg	1500	60.8	10-120	37.80	30	*	
1,2,4-Trichlorobenzene	417	5.0	5.0	ug/kg	500	83.4	35-120	1.00	30		
Hexachlorobutadiene	431	2.5	5.0	ug/kg	500	86.2	34-120	0.44	30		
Dimethylphthalate	535	2.5	5.0	ug/kg	500	107	38-120	1.55	30		
Diethyl phthalate	578	10.0	20.0	ug/kg	500	116	55-120	1.59	30	B	
N-Nitrosodiphenylamine	514	2.5	5.0	ug/kg	500	103	27-120	0.95	30		
Hexachlorobenzene	487	2.5	5.0	ug/kg	500	97.4	32-120	0.42	30		
Pentachlorophenol	1280	10.0	20.0	ug/kg	1500	85.4	26-120	0.23	30	Q, E	
Butylbenzylphthalate	519	2.5	5.0	ug/kg	500	104	32-142	1.28	30		
Dibenz(a,h)anthracene	550	2.5	5.0	ug/kg	500	110	28-125	7.58	30		
<i>Surrogate: 2-Fluorophenol</i>	694			ug/kg	750	92.6	27-120				
<i>Surrogate: p-Terphenyl-d14</i>	719			ug/kg	500	144	37-120			*, Q	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BMI0474 - EPA 8270E-SIM

Instrument: NT14 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Matrix Spike (BMI0474-MS2)											
Phenol	369	2.6	5.2	ug/kg	525	ND	70.3	30-160			
1,4-Dichlorobenzene	381	2.6	5.2	ug/kg	525	ND	72.7	36-120			
1,2-Dichlorobenzene	350	2.6	5.2	ug/kg	525	ND	66.7	36-120			
Benzyl Alcohol	475	10.5	21.0	ug/kg	525	ND	90.5	25-123			
Benzoic acid	351	52.5	105	ug/kg	2360	ND	14.9	10-160			
2-Methylphenol	440	2.6	5.2	ug/kg	525	ND	83.8	26-120			
4-Methylphenol	467	2.6	5.2	ug/kg	525	ND	89.0	30-160			
2,4-Dimethylphenol	901	10.5	21.0	ug/kg	1570	ND	57.3	10-120			
1,2,4-Trichlorobenzene	356	5.2	5.2	ug/kg	525	ND	67.8	35-120			
Hexachlorobutadiene	336	2.6	5.2	ug/kg	525	ND	64.1	34-120			
Dimethylphthalate	497	2.6	5.2	ug/kg	525	ND	94.7	38-120			
Diethyl phthalate	564	10.5	21.0	ug/kg	525	ND	107	55-120			Q, B
N-Nitrosodiphenylamine	454	2.6	5.2	ug/kg	525	ND	86.5	27-120			
Hexachlorobenzene	271	2.6	5.2	ug/kg	525	ND	51.6	32-120			Q
Pentachlorophenol	1120	10.5	21.0	ug/kg	1570	ND	71.0	26-120			E
Butylbenzylphthalate	507	2.6	5.2	ug/kg	525	ND	96.7	32-142			
Dibenzo(a,h)anthracene	330	2.6	5.2	ug/kg	525	ND	63.0	28-125			
<i>Surrogate: 2-Fluorophenol</i>	646			ug/kg	787	707	82.1	27-120			
<i>Surrogate: p-Terphenyl-d14</i>	664			ug/kg	525	782	126	37-120			* , Q

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Semivolatile Organic Compounds - SIM - Quality Control

Batch BMI0474 - EPA 8270E-SIM

Instrument: NT14 Analyst: RJL

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Matrix Spike Dup (BMI0474-MSD2) Source: 24I0364-93 Prepared: 23-Sep-2024 Analyzed: 12-Oct-2024 23:50											
Phenol	451	2.6	5.2	ug/kg	525	ND	85.9	30-160	19.90	30	
1,4-Dichlorobenzene	502	2.6	5.2	ug/kg	525	ND	95.6	36-120	27.30	30	
1,2-Dichlorobenzene	461	2.6	5.2	ug/kg	525	ND	87.8	36-120	27.20	30	
Benzyl Alcohol	583	10.5	21.0	ug/kg	525	ND	111	25-123	20.50	30	
Benzoic acid	1430	52.5	105	ug/kg	2360	ND	60.5	10-160	121.00	30	*
2-Methylphenol	549	2.6	5.2	ug/kg	525	ND	105	26-120	22.10	30	
4-Methylphenol	576	2.6	5.2	ug/kg	525	ND	110	30-160	20.80	30	
2,4-Dimethylphenol	1140	10.5	21.0	ug/kg	1570	ND	72.4	10-120	23.30	30	E
1,2,4-Trichlorobenzene	445	5.2	5.2	ug/kg	525	ND	84.8	35-120	22.20	30	
Hexachlorobutadiene	409	2.6	5.2	ug/kg	525	ND	77.9	34-120	19.40	30	
Dimethylphthalate	595	2.6	5.2	ug/kg	525	ND	113	38-120	18.00	30	
Diethyl phthalate	675	10.5	21.0	ug/kg	525	ND	129	55-120	18.00	30	*, Q, B
N-Nitrosodiphenylamine	566	2.6	5.2	ug/kg	525	ND	108	27-120	22.00	30	
Hexachlorobenzene	299	2.6	5.2	ug/kg	525	ND	57.0	32-120	9.86	30	Q
Pentachlorophenol	1360	10.5	21.0	ug/kg	1570	ND	86.4	26-120	19.50	30	E
Butylbenzylphthalate	605	2.6	5.2	ug/kg	525	ND	115	32-142	17.60	30	
Dibenz(a,h)anthracene	397	2.6	5.2	ug/kg	525	ND	75.6	28-125	18.30	30	
<i>Surrogate: 2-Fluorophenol</i>	819			ug/kg	787	707	104	27-120			
<i>Surrogate: p-Terphenyl-d14</i>	815			ug/kg	525	782	155	37-120			*, Q

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BMI0426 - NWTPH-Dx

Instrument: FID4 Analyst: NRB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
Blank (BMI0426-BLK1) Prepared: 19-Sep-2024 Analyzed: 20-Sep-2024 17:17										
Diesel Range Organics (C12-C24)	ND	5.00	mg/kg							U
Motor Oil Range Organics (C24-C38)	ND	10.0	mg/kg							U
Surrogate: <i>o-Terphenyl</i>	8.63		mg/kg	11.3		76.7	50-150			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BMI0426 - NWTPH-Dx

Instrument: FID4 Analyst: NRB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
LCS (BMI0426-BS1) Prepared: 19-Sep-2024 Analyzed: 20-Sep-2024 17:37										
Diesel Range Organics (C12-C24)	109	5.00	mg/kg	150		72.6	63-120			
Surrogate: <i>o-Terphenyl</i>	7.80		mg/kg	11.3		69.3	50-150			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

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06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BMI0426 - NWTPH-Dx

Instrument: FID4 Analyst: NRB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
LCS Dup (BMI0426-BSD1) Prepared: 19-Sep-2024 Analyzed: 20-Sep-2024 17:57										
Diesel Range Organics (C12-C24)	111	5.00	mg/kg	150		74.1	63-120	2.02	30	
Surrogate: <i>o-Terphenyl</i>	8.07		mg/kg	11.3		71.7	50-150			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BMI0426 - NWTPH-Dx

Instrument: FID4 Analyst: NRB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
Matrix Spike (BMI0426-MS1) Source: 24I0364-76 Prepared: 19-Sep-2024 Analyzed: 20-Sep-2024 18:17										
Diesel Range Organics (C12-C24)	124	5.30	mg/kg	159	ND	77.8	63-120			
Surrogate: <i>o-Terphenyl</i>	8.50		mg/kg	11.9	11.5	71.4	50-150			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Petroleum Hydrocarbons - Quality Control

Batch BMI0426 - NWTPH-Dx

Instrument: FID4 Analyst: NRB

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
Matrix Spike Dup (BMI0426-MSD1) Source: 24I0364-76 Prepared: 19-Sep-2024 Analyzed: 20-Sep-2024 18:37										
Diesel Range Organics (C12-C24)	99.3	5.30	mg/kg	159	ND	62.5	63-120	21.80	30	*
Surrogate: <i>o-Terphenyl</i>	7.25		mg/kg	11.9	11.5	60.9	50-150			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Aroclor PCB - Quality Control

Batch BMI0473 - EPA 8082A

Instrument: ECD5 Analyst: AA

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
Blank (BMI0473-BLK1) Prepared: 23-Sep-2024 Analyzed: 30-Sep-2024 10:09											
Aroclor 1016	ND	2.0	4.0	ug/kg							U
Aroclor 1221	ND	2.0	4.0	ug/kg							U
Aroclor 1232	ND	2.0	4.0	ug/kg							U
Aroclor 1242	ND	2.0	4.0	ug/kg							U
Aroclor 1248	ND	2.0	4.0	ug/kg							U
Aroclor 1254	ND	2.0	4.0	ug/kg							U
Aroclor 1260	ND	2.0	4.0	ug/kg							U
Aroclor 1262	ND	2.0	4.0	ug/kg							U
Aroclor 1268	ND	2.0	4.0	ug/kg							U
<i>Surrogate: Decachlorobiphenyl</i>	8.92			ug/kg	8.00		111	40-126			
<i>Surrogate: Tetrachlorometaxylene</i>	8.71			ug/kg	8.00		109	44-120			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	10.0			ug/kg	8.00		125	40-126			
<i>Surrogate: Tetrachlorometaxylene [2C]</i>	8.80			ug/kg	8.00		110	44-120			



WSP USA, Inc.
840 HOWE STREET, #1000
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Project: Whitmarsh
Project Number: Whitmarsh
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Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Aroclor PCB - Quality Control

Batch BMI0473 - EPA 8082A

Instrument: ECD5 Analyst: AA

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
LCS (BMI0473-BS1)											
Aroclor 1016 [2C]	91.7	2.0	4.0	ug/kg	101		90.9	56-120			
Aroclor 1260 [2C]	114	2.0	4.0	ug/kg	101		113	58-120			
<i>Surrogate: Decachlorobiphenyl</i>											
	9.49			ug/kg	8.00		119	40-126			
<i>Surrogate: Tetrachlorometaxylene</i>											
	8.93			ug/kg	8.00		112	44-120			
<i>Surrogate: Decachlorobiphenyl [2C]</i>											
	10.6			ug/kg	8.00		133	40-126			*
<i>Surrogate: Tetrachlorometaxylene [2C]</i>											
	8.83			ug/kg	8.00		110	44-120			



WSP USA, Inc.
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06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Aroclor PCB - Quality Control

Batch BMI0473 - EPA 8082A

Instrument: ECD5 Analyst: AA

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
LCS Dup (BMI0473-BSD1)											
Aroclor 1016	90.1	2.0	4.0	ug/kg	101		89.3	56-120	1.11	30	
Aroclor 1260 [2C]	106	2.0	4.0	ug/kg	101		105	58-120	7.80	30	
<i>Surrogate: Decachlorobiphenyl</i>											
	8.83			ug/kg	8.00		110	40-126			
<i>Surrogate: Tetrachlorometaxylene</i>											
	8.39			ug/kg	8.00		105	44-120			
<i>Surrogate: Decachlorobiphenyl [2C]</i>											
	10.0			ug/kg	8.00		125	40-126			
<i>Surrogate: Tetrachlorometaxylene [2C]</i>											
	8.40			ug/kg	8.00		105	44-120			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

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06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Aroclor PCB - Quality Control

Batch BMI0473 - EPA 8082A

Instrument: ECD5 Analyst: AA

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
Matrix Spike (BMI0473-MS1) Source: 24I0364-91 Prepared: 23-Sep-2024 Analyzed: 30-Sep-2024 11:12											
Aroclor 1016	85.2	2.0	4.0	ug/kg	101	ND	84.5	56-120			
Aroclor 1260	91.3	2.0	4.0	ug/kg	101	ND	90.5	58-120			
<i>Surrogate: Decachlorobiphenyl</i> 8.42 ug/kg 8.00 105 40-126											
<i>Surrogate: Tetrachlorometaxylene</i> 8.18 ug/kg 8.00 102 44-120											
<i>Surrogate: Decachlorobiphenyl [2C]</i> 9.35 ug/kg 8.00 117 40-126											
<i>Surrogate: Tetrachlorometaxylene [2C]</i> 8.15 ug/kg 8.00 102 44-120											

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Aroclor PCB - Quality Control

Batch BMI0473 - EPA 8082A

Instrument: ECD5 Analyst: AA

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
Matrix Spike Dup (BMI0473-MSD1) Source: 24I0364-91 Prepared: 23-Sep-2024 Analyzed: 30-Sep-2024 11:33											
Aroclor 1016	83.8	2.0	4.0	ug/kg	101	ND	83.0	56-120	1.76	30	
Aroclor 1260	95.8	2.0	4.0	ug/kg	101	ND	94.9	58-120	4.82	30	
<i>Surrogate: Decachlorobiphenyl</i> 8.39 ug/kg 8.00 105 40-126											
<i>Surrogate: Tetrachlorometaxylene</i> 7.84 ug/kg 8.00 98.0 44-120											
<i>Surrogate: Decachlorobiphenyl [2C]</i> 9.37 ug/kg 8.00 117 40-126											
<i>Surrogate: Tetrachlorometaxylene [2C]</i> 7.71 ug/kg 8.00 96.3 44-120											

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BMI0462 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD RPD Limit	Notes
Blank (BMI0462-BLK1)										
2,3,7,8-TCDF		0.655-0.886	0.615	0.999	ND	ng/kg				U
2,3,7,8-TCDD		0.655-0.886	0.552	0.999	ND	ng/kg				U
1,2,3,7,8-PeCDF		1.318-1.783	0.542	0.999	ND	ng/kg				U
2,3,4,7,8-PeCDF		1.318-1.783	0.575	0.999	ND	ng/kg				U
1,2,3,7,8-PeCDD		1.318-1.783	0.903	0.999	ND	ng/kg				U
1,2,3,4,7,8-HxCDF		1.054-1.426	0.440	0.999	ND	ng/kg				U
1,2,3,6,7,8-HxCDF		1.054-1.426	0.411	0.999	ND	ng/kg				U
2,3,4,6,7,8-HxCDF		1.054-1.426	0.461	0.999	ND	ng/kg				U
1,2,3,7,8,9-HxCDF		1.054-1.426	0.601	0.999	ND	ng/kg				U
1,2,3,4,7,8-HxCDD		1.054-1.426	0.768	0.999	ND	ng/kg				U
1,2,3,6,7,8-HxCDD		1.054-1.426	0.767	0.999	ND	ng/kg				U
1,2,3,7,8,9-HxCDD		1.054-1.426	0.833	0.999	ND	ng/kg				U
1,2,3,4,6,7,8-HpCDF		0.893-1.208	0.352	0.999	ND	ng/kg				U
1,2,3,4,7,8,9-HpCDF		0.893-1.208	0.614	0.999	ND	ng/kg				U
1,2,3,4,6,7,8-HpCDD		0.893-1.208	0.849	2.50	ND	ng/kg				U
OCDF		0.757-1.024	0.793	2.50	ND	ng/kg				U
OCDD	1.546	0.757-1.024		9.99	0.708	ng/kg				EMPC, J
Homologue group										
Total TCDF				0.999	ND	ng/kg				U
Total TCDD				0.999	ND	ng/kg				U
Total PeCDF				0.999	ND	ng/kg				U
Total PeCDD				0.999	ND	ng/kg				U
Total HxCDF				0.999	ND	ng/kg				U
Total HxCDD				0.999	ND	ng/kg				U
Total HpCDF				0.999	ND	ng/kg				U
Total HpCDD				0.999	ND	ng/kg				U

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, Including EMPC): 0.54

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0, Including EMPC): 0.00

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=1/2 EDL, EMPC=ND): 0.54

Total 2,3,7,8-TCDD Equivalence (WHO2005, ND=0 EDL, EMPC=ND): 0.00

Labeled compounds

<i>13C12-2,3,7,8-TCDF</i>	0.775	0.655-0.886	60.0	24-169 %
<i>13C12-2,3,7,8-TCDD</i>	0.837	0.655-0.886	59.2	25-164 %
<i>13C12-1,2,3,7,8-PeCDF</i>	1.667	1.318-1.783	66.8	24-185 %
<i>13C12-2,3,4,7,8-PeCDF</i>	1.619	1.318-1.783	56.9	21-178 %



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BMI0462 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD RPD Limit	Notes
Blank (BMI0462-BLK1)										
<i>13C12-1,2,3,7,8-PeCDD</i>	1.637	1.318-1.783				58.4			25-181 %	
<i>13C12-1,2,3,4,7,8-HxCDF</i>	0.518	0.434-0.587				72.7			26-152 %	
<i>13C12-1,2,3,6,7,8-HxCDF</i>	0.555	0.434-0.587				83.2			26-123 %	
<i>13C12-2,3,4,6,7,8-HxCDF</i>	0.577	0.434-0.587				75.1			28-136 %	
<i>13C12-1,2,3,7,8,9-HxCDF</i>	0.531	0.434-0.587				69.6			29-147 %	
<i>13C12-1,2,3,4,7,8-HxCDD</i>	1.238	1.054-1.426				64.1			32-141 %	
<i>13C12-1,2,3,6,7,8-HxCDD</i>	1.229	1.054-1.426				73.0			28-130 %	
<i>13C12-1,2,3,4,6,7,8-HpCDF</i>	0.482	0.374-0.506				83.5			28-143 %	
<i>13C12-1,2,3,4,7,8,9-HpCDF</i>	0.394	0.374-0.506				73.3			26-138 %	
<i>13C12-1,2,3,4,6,7,8-HpCDD</i>	1.031	0.893-1.208				89.3			23-140 %	
<i>13C12-OCDD</i>	0.843	0.757-1.024				89.2			17-157 %	
<i>37Cl4-2,3,7,8-TCDD</i>						65.0			35-197 %	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BMI0462 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD RPD Limit	Notes
LCS (BMI0462-BS1)										
2,3,7,8-TCDF	0.725	0.655-0.886		1.00	17.4	ng/kg	86.9	75-158 %		
2,3,7,8-TCDD	0.688	0.655-0.886		1.00	18.1	ng/kg	90.6	67-158 %		
1,2,3,7,8-PeCDF	1.585	1.318-1.783		1.00	100	ng/kg	100	80-134 %		
2,3,4,7,8-PeCDF	1.743	1.318-1.783		1.00	95.1	ng/kg	95.1	68-160 %		
1,2,3,7,8-PeCDD	1.435	1.318-1.783		1.00	95.1	ng/kg	95.1	70-142 %		
1,2,3,4,7,8-HxCDF	1.198	1.054-1.426		1.00	96.6	ng/kg	96.6	72-134 %		
1,2,3,6,7,8-HxCDF	1.083	1.054-1.426		1.00	99.1	ng/kg	99.1	84-130 %		
2,3,4,6,7,8-HxCDF	1.200	1.054-1.426		1.00	96.4	ng/kg	96.4	70-156 %		
1,2,3,7,8,9-HxCDF	1.217	1.054-1.426		1.00	99.6	ng/kg	99.6	78-130 %		
1,2,3,4,7,8-HxCDD	1.243	1.054-1.426		1.00	111	ng/kg	111	70-164 %		
1,2,3,6,7,8-HxCDD	1.420	1.054-1.426		1.00	112	ng/kg	112	76-134 %		
1,2,3,7,8,9-HxCDD	1.376	1.054-1.426		1.00	118	ng/kg	118	64-162 %		
1,2,3,4,6,7,8-HpCDF	0.935	0.893-1.208		1.00	95.5	ng/kg	95.5	82-122 %		
1,2,3,4,7,8,9-HpCDF	1.046	0.893-1.208		1.00	94.7	ng/kg	94.7	78-138 %		
1,2,3,4,6,7,8-HpCDD	1.050	0.893-1.208		2.50	93.4	ng/kg	93.4	70-140 %		
OCDF	0.823	0.757-1.024		2.50	179	ng/kg	89.6	63-170 %		
OCDD	0.900	0.757-1.024		10.0	204	ng/kg	102	78-144 %		B
Labeled compounds										
13C12-2,3,7,8-TCDF	0.760	0.655-0.886			57.6					24-169 %
13C12-2,3,7,8-TCDD	0.757	0.655-0.886			60.5					25-164 %
13C12-1,2,3,7,8-PeCDF	1.593	1.318-1.783			66.4					24-185 %
13C12-2,3,4,7,8-PeCDF	1.702	1.318-1.783			73.0					21-178 %
13C12-1,2,3,7,8-PeCDD	1.620	1.318-1.783			71.5					25-181 %
13C12-1,2,3,4,7,8-HxCDF	0.522	0.434-0.587			76.3					26-152 %
13C12-1,2,3,6,7,8-HxCDF	0.519	0.434-0.587			90.0					26-123 %
13C12-2,3,4,6,7,8-HxCDF	0.527	0.434-0.587			82.5					28-136 %
13C12-1,2,3,7,8,9-HxCDF	0.505	0.434-0.587			80.6					29-147 %
13C12-1,2,3,4,7,8-HxCDD	1.273	1.054-1.426			69.7					32-141 %
13C12-1,2,3,6,7,8-HxCDD	1.229	1.054-1.426			79.9					28-130 %
13C12-1,2,3,4,6,7,8-HpCDF	0.479	0.374-0.506			82.1					28-143 %
13C12-1,2,3,4,7,8,9-HpCDF	0.402	0.374-0.506			86.2					26-138 %
13C12-1,2,3,4,6,7,8-HpCDD	1.003	0.893-1.208			96.2					23-140 %
13C12-OCDD	0.856	0.757-1.024			83.8					17-157 %
37Cl4-2,3,7,8-TCDD					61.8					35-197 %



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BMI0462 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Duplicate (BMI0462-DUP1)											
		Source: 24I0364-01		Prepared: 09-Oct-2024	Analyzed: 01-Nov-2024 13:41						
2,3,7,8-TCDF		0.655-0.886	0.558	1.00	ND	ng/kg					U
2,3,7,8-TCDD		0.655-0.886	0.365	1.00	ND	ng/kg					U
1,2,3,7,8-PeCDF		1.318-1.783	0.440	1.00	ND	ng/kg					U
2,3,4,7,8-PeCDF		1.318-1.783	0.411	1.00	ND	ng/kg					U
1,2,3,7,8-PeCDD		1.318-1.783	0.716	1.00	ND	ng/kg					U
1,2,3,4,7,8-HxCDF		1.054-1.426	0.635	1.00	ND	ng/kg					U
1,2,3,6,7,8-HxCDF		1.054-1.426	0.551	1.00	ND	ng/kg					U
2,3,4,6,7,8-HxCDF		1.054-1.426	0.680	1.00	ND	ng/kg					U
1,2,3,7,8,9-HxCDF		1.054-1.426	0.898	1.00	ND	ng/kg					U
1,2,3,4,7,8-HxCDD		1.054-1.426	1.00	1.00	ND	ng/kg					U
1,2,3,6,7,8-HxCDD		1.054-1.426	0.957	1.00	ND	ng/kg					U
1,2,3,7,8,9-HxCDD		1.054-1.426	1.06	1.00	ND	ng/kg					U
1,2,3,4,6,7,8-HpCDF	1.129	0.893-1.208		1.00	1.81	ng/kg			4.35	25	
1,2,3,4,7,8,9-HpCDF		0.893-1.208	0.574	1.00	ND	ng/kg					U
1,2,3,4,6,7,8-HpCDD	0.963	0.893-1.208		2.50	22.0	ng/kg			13.70	25	
OCDF		0.757-1.024	0.927	2.50	ND	ng/kg					U
OCDD	0.869	0.757-1.024		10.0	150	ng/kg			1.04	25	B
Homologue group											
Total TCDF				1.00	ND	ng/kg					U
Total TCDD				1.00	ND	ng/kg					U
Total PeCDF				1.00	ND	ng/kg					U
Total PeCDD				1.00	ND	ng/kg					U
Total HxCDF				1.00	1.39	ng/kg			24.30	200	
Total HxCDD				1.00	ND	ng/kg					U
Total HpCDF				1.00	1.81	ng/kg			78.30	200	
Total HpCDD				1.00	33.7	ng/kg			5.39	200	
Labeled compounds											
<i>13C12-2,3,7,8-TCDF</i>	0.822	0.655-0.886			60.1				24-169 %		
<i>13C12-2,3,7,8-TCDD</i>	0.776	0.655-0.886			60.5				25-164 %		
<i>13C12-1,2,3,7,8-PeCDF</i>	1.579	1.318-1.783			76.8				24-185 %		
<i>13C12-2,3,4,7,8-PeCDF</i>	1.557	1.318-1.783			73.1				21-178 %		
<i>13C12-1,2,3,7,8-PeCDD</i>	1.725	1.318-1.783			71.5				25-181 %		
<i>13C12-1,2,3,4,7,8-HxCDF</i>	0.517	0.434-0.587			66.5				26-152 %		
<i>13C12-1,2,3,6,7,8-HxCDF</i>	0.464	0.434-0.587			80.4				26-123 %		
<i>13C12-2,3,4,6,7,8-HxCDF</i>	0.513	0.434-0.587			70.0				28-136 %		
<i>13C12-1,2,3,7,8,9-HxCDF</i>	0.542	0.434-0.587			72.9				29-147 %		



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Dioxins/Furans - Quality Control

Batch BMI0462 - EPA 1613B

Instrument: AUTOSPEC01 Analyst: pl

QC Sample/Analyte	Ion Ratio	Ratio Limits	EDL	Reporting Limit	Result	Units	%REC	%REC Limits	RPD RPD Limit	Notes
Duplicate (BMI0462-DUP1)										
		Source: 24I0364-01			Prepared: 09-Oct-2024		Analyzed: 01-Nov-2024 13:41			
13C12-1,2,3,4,7,8-HxCDD	1.249	1.054-1.426			60.0				32-141 %	
13C12-1,2,3,6,7,8-HxCDD	1.230	1.054-1.426			68.0				28-130 %	
13C12-1,2,3,4,6,7,8-HpCDF	0.428	0.374-0.506			69.4				28-143 %	
13C12-1,2,3,4,7,8,9-HpCDF	0.465	0.374-0.506			72.8				26-138 %	
13C12-1,2,3,4,6,7,8-HpCDD	1.015	0.893-1.208			81.8				23-140 %	
13C12-OCDD	0.893	0.757-1.024			84.3				17-157 %	
37Cl4-2,3,7,8-TCDD					72.0				35-197 %	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BMI0484 - EPA 6020B

Instrument: ICPMS1 Analyst: HAL

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Blank (BMI0484-BLK1)												
Chromium	52	ND	0.26	0.50	mg/kg							U
Chromium	53	ND	0.24	0.50	mg/kg							U
Lead	208	ND	0.05	0.10	mg/kg							U
Silver	107	ND	0.02	0.20	mg/kg							U
Arsenic	75a	ND	0.04	0.20	mg/kg							U
Cadmium	111	ND	0.03	0.10	mg/kg							U
Copper	63	ND	0.17	0.50	mg/kg							U
Copper	65	ND	0.35	0.50	mg/kg							U
Zinc	66	ND	2.9	6.0	mg/kg							U
Zinc	67	ND	0.9	6.0	mg/kg							U
LCS (BMI0484-BS1)												
Chromium	52	24.7	0.26	0.50	mg/kg	25.0	98.9	80-120				
Chromium	53	25.2	0.24	0.50	mg/kg	25.0	101	80-120				
Lead	208	24.6	0.05	0.10	mg/kg	25.0	98.4	80-120				
Silver	107	24.2	0.02	0.20	mg/kg	25.0	96.7	80-120				
Arsenic	75a	24.0	0.04	0.20	mg/kg	25.0	96.0	80-120				
Cadmium	111	24.1	0.03	0.10	mg/kg	25.0	96.3	80-120				
Copper	63	26.0	0.17	0.50	mg/kg	25.0	104	80-120				
Copper	65	25.5	0.35	0.50	mg/kg	25.0	102	80-120				
Zinc	66	78.9	2.9	6.0	mg/kg	80.0	98.6	80-120				
Zinc	67	74.4	0.9	6.0	mg/kg	80.0	93.0	80-120				
Duplicate (BMI0484-DUP1)												
Lead	208	4.41	0.08	0.15	mg/kg	3.20		31.90	20	*		
Silver	107	0.11	0.03	0.31	mg/kg	0.09		24.20	20	L, J		
Arsenic	75a	4.18	0.06	0.31	mg/kg	3.35		22.10	20	*		
Cadmium	111	0.25	0.05	0.15	mg/kg	0.18		35.10	20	L		
Copper	65	38.1	0.54	0.77	mg/kg	32.8		14.80	20			
Zinc	66	90.7	4.5	9.2	mg/kg	82.0		10.10	20			
Duplicate (BMI0484-DUP2)												
Chromium	52	20.1	2.00	3.85	mg/kg	14.9		29.80	20	*, D		
Matrix Spike (BMI0484-MS1)												
Lead	208	40.1	0.08	0.15	mg/kg	38.5	3.20	95.8	75-125			
Silver	107	34.2	0.03	0.31	mg/kg	38.5	0.09	88.7	75-125			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BMI0484 - EPA 6020B UCT-KED

Instrument: ICPMS1 Analyst: HAL

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD RPD	RPD Limit	Notes
Matrix Spike (BMI0484-MS1) Source: 24I0364-05 Prepared: 20-Sep-2024 Analyzed: 23-Sep-2024 18:25												
Arsenic	75a	41.4	0.06	0.31	mg/kg	38.5	3.35	98.9	75-125			
Cadmium	111	38.4	0.05	0.15	mg/kg	38.5	0.18	99.3	75-125			
Copper	65	78.5	0.54	0.77	mg/kg	38.5	32.8	119	75-125			
Zinc	66	218	4.5	9.2	mg/kg	123	82.0	110	75-125			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike (BMI0484-MS2)	Source: 24I0364-05	Prepared: 20-Sep-2024	Analyzed: 27-Sep-2024 20:20
Chromium	52	44.8	2.00 3.85 mg/kg 38.5 14.9 77.6 75-125 D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BMI0484-MSD1)	Source: 24I0364-05	Prepared: 20-Sep-2024	Analyzed: 23-Sep-2024 18:30							
Lead	208	39.9	0.08	0.15	mg/kg	38.5	3.20	95.4	75-125 0.38	20
Silver	107	35.9	0.03	0.31	mg/kg	38.5	0.09	93.1	75-125 4.75	20
Arsenic	75a	41.4	0.06	0.31	mg/kg	38.5	3.35	98.9	75-125 0.02	20
Cadmium	111	38.0	0.05	0.15	mg/kg	38.5	0.18	98.3	75-125 0.95	20
Copper	65	77.4	0.54	0.77	mg/kg	38.5	32.8	116	75-125 1.43	20
Zinc	66	214	4.5	9.2	mg/kg	123	82.0	107	75-125 1.84	20

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BMI0484-MSD2)	Source: 24I0364-05	Prepared: 20-Sep-2024	Analyzed: 27-Sep-2024 20:25
Chromium	52	49.9	2.00 3.85 mg/kg 38.5 14.9 90.9 75-125 10.80 20 D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Reference (BMI0484-SRM1)		Prepared: 20-Sep-2024	Analyzed: 23-Sep-2024 18:40						
Chromium	52	175	0.65	1.24	mg/kg	154	113	70-125	D
Chromium	53	177	0.60	1.24	mg/kg	154	115	70-125	D
Lead	208	216	0.13	0.25	mg/kg	217	99.7	0-200	D
Silver	107	58.6	0.05	0.50	mg/kg	57.4	102	0-200	D
Arsenic	75a	161	0.09	0.50	mg/kg	144	112	0-200	D
Cadmium	111	185	0.07	0.25	mg/kg	163	113	0-200	D
Copper	63	201	0.43	1.24	mg/kg	185	109	0-200	D
Copper	65	204	0.87	1.24	mg/kg	185	110	0-200	D
Zinc	66	241	7.3	14.9	mg/kg	227	106	0-200	D
Zinc	67	252	2.3	14.9	mg/kg	227	111	0-200	D



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BMI0650 - EPA 7471B

Instrument: HYDRA Analyst: ML

QC Sample/Analyte	Detection Result	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes
Blank (BMI0650-BLK1) Prepared: 26-Sep-2024 Analyzed: 01-Oct-2024 12:31										
Mercury	ND	0.00525	0.0250	mg/kg						U
LCS (BMI0650-BS1) Prepared: 26-Sep-2024 Analyzed: 01-Oct-2024 12:33										
Mercury	0.462	0.00525	0.0250	mg/kg	0.500	92.4	80-120			
Duplicate (BMI0650-DUP1) Source: 24I0364-05 Prepared: 26-Sep-2024 Analyzed: 01-Oct-2024 13:46										
Mercury	0.0146	0.00715	0.0340	mg/kg	0.0666			128.00	20	* , J
Matrix Spike (BMI0650-MS1) Source: 24I0364-05 Prepared: 26-Sep-2024 Analyzed: 01-Oct-2024 13:48										
Mercury	0.361	0.00709	0.0337	mg/kg	0.337	0.0666	87.2	75-125		
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BMI0650-MSD1) Source: 24I0364-05 Prepared: 26-Sep-2024 Analyzed: 01-Oct-2024 13:50										
Mercury	0.380	0.00721	0.0343	mg/kg	0.343	0.0666	91.3	75-125	5.14	20
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Reference (BMI0650-SRM1) Prepared: 26-Sep-2024 Analyzed: 01-Oct-2024 13:53										
Mercury	17.2	0.102	0.485	mg/kg	20.0	86.3	70-125			D



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Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BMI0526 - EPA 9060A m

Instrument: TOC Cube Analyst: ARR

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes					
Blank (BMI0526-BLK1)						Prepared: 20-Sep-2024 Analyzed: 23-Sep-2024 18:07										
Total Organic Carbon	ND	0.02	0.02	%							U					
LCS (BMI0526-BS1)						Prepared: 20-Sep-2024 Analyzed: 23-Sep-2024 19:07										
Total Organic Carbon	45.5	0.02	0.02	%	44.4	102	80-120									
Duplicate (BMI0526-DUP1)		Source: 24I0364-04				Prepared: 20-Sep-2024 Analyzed: 23-Sep-2024 21:08										
Total Organic Carbon	6.86	0.02	0.02	%	11.6	51.10	20	*								
Duplicate (BMI0526-DUP2)		Source: 24I0364-04				Prepared: 20-Sep-2024 Analyzed: 23-Sep-2024 21:39										
Total Organic Carbon	15.6	0.02	0.02	%	11.6	29.50	20	*								
Duplicate (BMI0526-DUP3)		Source: 24I0364-04				Prepared: 20-Sep-2024 Analyzed: 03-Oct-2024 21:29										
Total Organic Carbon	8.89	0.02	0.02	%	11.6	26.20	20	*								
Duplicate (BMI0526-DUP4)		Source: 24I0364-04				Prepared: 20-Sep-2024 Analyzed: 03-Oct-2024 21:59										
Total Organic Carbon	11.7	0.02	0.02	%	11.6	1.15	20									
Matrix Spike (BMI0526-MS1)		Source: 24I0364-04				Prepared: 20-Sep-2024 Analyzed: 23-Sep-2024 22:09										
Total Organic Carbon	31.9	0.02	0.02	%	20.2	11.6	101	75-125								
Recovery limits for target analytes in MS/MSD QC samples are advisory only.																
Matrix Spike Dup (BMI0526-MSD1)		Source: 24I0364-04				Prepared: 20-Sep-2024 Analyzed: 23-Sep-2024 22:39										
Total Organic Carbon	33.8	0.02	0.02	%	20.6	11.6	108	75-125	5.80	20						
Recovery limits for target analytes in MS/MSD QC samples are advisory only.																
Reference (BMI0526-SRM1)						Prepared: 20-Sep-2024 Analyzed: 23-Sep-2024 20:08										
Total Organic Carbon	4.53	0.02	0.02	%	4.46	102	50-150									



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Project: Whitmarsh
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Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BMI0559 - SM 2540 G-11

Instrument: BAL2 Analyst: LM

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD RPD	RPD Limit	Notes					
Blank (BMI0559-BLK1)						Prepared: 23-Sep-2024 Analyzed: 23-Sep-2024 09:43										
Total Solids	ND	0.04	0.04	%							U					
Duplicate (BMI0559-DUP1)	Source: 24I0364-04			Prepared: 23-Sep-2024 Analyzed: 23-Sep-2024 09:43												
Total Solids	58.94	0.04	0.04	%		61.04			3.50	20						
Duplicate (BMI0559-DUP2)	Source: 24I0364-04			Prepared: 23-Sep-2024 Analyzed: 23-Sep-2024 09:43												
Total Solids	62.04	0.04	0.04	%		61.04			1.63	20						



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06-Nov-2024 16:54

Certified Analyses included in this Report

Analyte	Certifications
EPA 1613B in Solid	
2,3,7,8-TCDF	DoD-ELAP,NELAP,WADOE
2,3,7,8-TCDD	DoD-ELAP,NELAP,WADOE
1,2,3,7,8-PeCDF	DoD-ELAP,NELAP,WADOE
2,3,4,7,8-PeCDF	DoD-ELAP,NELAP,WADOE
1,2,3,7,8-PeCDD	DoD-ELAP,NELAP,WADOE
1,2,3,4,7,8-HxCDF	DoD-ELAP,NELAP,WADOE
1,2,3,6,7,8-HxCDF	DoD-ELAP,NELAP,WADOE
2,3,4,6,7,8-HxCDF	DoD-ELAP,NELAP,WADOE
1,2,3,7,8,9-HxCDF	DoD-ELAP,NELAP,WADOE
1,2,3,4,7,8-HxCDD	DoD-ELAP,NELAP,WADOE
1,2,3,6,7,8-HxCDD	DoD-ELAP,NELAP,WADOE
1,2,3,7,8,9-HxCDD	DoD-ELAP,NELAP,WADOE
1,2,3,4,6,7,8-HpCDF	DoD-ELAP,NELAP,WADOE
1,2,3,4,7,8,9-HpCDF	DoD-ELAP,NELAP,WADOE
1,2,3,4,6,7,8-HpCDD	DoD-ELAP,NELAP,WADOE
OCDF	DoD-ELAP,NELAP,WADOE
OCDD	DoD-ELAP,NELAP,WADOE
Total TCDF	DoD-ELAP,NELAP,WADOE
Total TCDD	DoD-ELAP,NELAP,WADOE
Total PeCDF	DoD-ELAP,NELAP,WADOE
Total PeCDD	DoD-ELAP,NELAP,WADOE
Total HxCDF	DoD-ELAP,NELAP,WADOE
Total HxCDD	DoD-ELAP,NELAP,WADOE
Total HpCDF	DoD-ELAP,NELAP,WADOE
Total HpCDD	DoD-ELAP,NELAP,WADOE
13C12-2,3,7,8-TCDF	DoD-ELAP
13C12-2,3,7,8-TCDD	DoD-ELAP
13C12-1,2,3,7,8-PeCDF	DoD-ELAP
13C12-2,3,4,7,8-PeCDF	DoD-ELAP
13C12-1,2,3,7,8-PeCDD	DoD-ELAP



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13C12-1,2,3,4,7,8-HxCDF	DoD-ELAP
13C12-1,2,3,6,7,8-HxCDF	DoD-ELAP
13C12-2,3,4,6,7,8-HxCDF	DoD-ELAP
13C12-1,2,3,7,8,9-HxCDF	DoD-ELAP
13C12-1,2,3,4,7,8-HxCDD	DoD-ELAP
13C12-1,2,3,6,7,8-HxCDD	DoD-ELAP
13C12-1,2,3,4,6,7,8-HpCDF	DoD-ELAP
13C12-1,2,3,4,7,8,9-HpCDF	DoD-ELAP
13C12-1,2,3,4,6,7,8-HpCDD	DoD-ELAP
13C12-OCDD	DoD-ELAP
37Cl4-2,3,7,8-TCDD	DoD-ELAP

EPA 6020B in Solid

Silver-107	NELAP,DoD-ELAP,WADOE
Chromium-52	NELAP,DoD-ELAP,WADOE,ADEC
Chromium-53	NELAP,DoD-ELAP,WADOE,ADEC
Lead-208	NELAP,DoD-ELAP,WADOE,ADEC

EPA 6020B UCT-KED in Solid

Arsenic-75a	NELAP,DoD-ELAP,WADOE,ADEC
Cadmium-111	NELAP,DoD-ELAP,WADOE,ADEC
Copper-63	NELAP,DoD-ELAP,WADOE
Copper-65	NELAP,DoD-ELAP,WADOE
Zinc-66	NELAP,DoD-ELAP,WADOE
Zinc-67	NELAP,DoD-ELAP,WADOE

EPA 7471B in Solid

Mercury	WADOE,NELAP,DoD-ELAP
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EPA 8082A in Solid

Aroclor 1016	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1016 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1221	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1221 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1232 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1242	WADOE,DoD-ELAP,NELAP,ADEC



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Aroclor 1242 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1248 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1254	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1254 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1260 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1262	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1262 [2C]	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1268	WADOE,DoD-ELAP,NELAP,ADEC
Aroclor 1268 [2C]	WADOE,DoD-ELAP,NELAP,ADEC

EPA 8270E in Solid

Phenol	DoD-ELAP,NELAP,WADOE
1,4-Dichlorobenzene	DoD-ELAP,NELAP,WADOE
1,2-Dichlorobenzene	DoD-ELAP,NELAP,WADOE
Benzyl Alcohol	DoD-ELAP,NELAP,WADOE
2-Methylphenol	DoD-ELAP,NELAP,WADOE
4-Methylphenol	DoD-ELAP,NELAP,WADOE
2,4-Dimethylphenol	DoD-ELAP,NELAP,WADOE
1,2,4-Trichlorobenzene	DoD-ELAP,NELAP,WADOE
Naphthalene	DoD-ELAP,NELAP,WADOE,ADEC
Benzoic acid	DoD-ELAP,NELAP,WADOE
Hexachlorobutadiene	DoD-ELAP,NELAP,WADOE
2-Methylnaphthalene	DoD-ELAP,NELAP,WADOE,ADEC
Acenaphthylene	DoD-ELAP,NELAP,WADOE,ADEC
Dimethylphthalate	DoD-ELAP,NELAP,WADOE
Acenaphthene	DoD-ELAP,NELAP,WADOE,ADEC
Dibenzofuran	DoD-ELAP,NELAP,WADOE,ADEC
Fluorene	DoD-ELAP,NELAP,WADOE,ADEC
Diethyl phthalate	DoD-ELAP,NELAP,WADOE
N-Nitrosodiphenylamine	DoD-ELAP,NELAP,WADOE
Hexachlorobenzene	DoD-ELAP,NELAP,WADOE
Pentachlorophenol	DoD-ELAP,NELAP,WADOE



WSP USA, Inc.
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Project: Whitmarsh
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Phenanthrene	DoD-ELAP,NELAP,WADOE,ADEC
Anthracene	DoD-ELAP,NELAP,WADOE,ADEC
Di-n-Butylphthalate	DoD-ELAP,NELAP,WADOE
Fluoranthene	DoD-ELAP,NELAP,WADOE,ADEC
Pyrene	DoD-ELAP,NELAP,WADOE,ADEC
Butylbenzylphthalate	DoD-ELAP,NELAP,WADOE
Benzo(a)anthracene	DoD-ELAP,NELAP,WADOE,ADEC
Chrysene	DoD-ELAP,NELAP,WADOE,ADEC
bis(2-Ethylhexyl)phthalate	DoD-ELAP,NELAP,WADOE
Di-n-Octylphthalate	DoD-ELAP,NELAP,WADOE
Benzofluoranthenes, Total	WADOE,ADEC
Benzo(a)pyrene	DoD-ELAP,NELAP,WADOE,ADEC
Indeno(1,2,3-cd)pyrene	DoD-ELAP,NELAP,WADOE,ADEC
Dibenzo(a,h)anthracene	DoD-ELAP,NELAP,WADOE,ADEC
Benzo(g,h,i)perylene	DoD-ELAP,NELAP,WADOE,ADEC

EPA 8270E-SIM in Solid

Phenol	NELAP,WADOE
1,4-Dichlorobenzene	NELAP,WADOE
1,2-Dichlorobenzene	NELAP,WADOE
Benzyl Alcohol	NELAP,WADOE
2-Methylphenol	NELAP,WADOE
4-Methylphenol	NELAP,WADOE
2,4-Dimethylphenol	NELAP,WADOE
1,2,4-Trichlorobenzene	NELAP,WADOE
Hexachlorobutadiene	NELAP,WADOE
Dimethylphthalate	NELAP,WADOE
Diethyl phthalate	NELAP,WADOE
N-Nitrosodiphenylamine	NELAP,WADOE
Hexachlorobenzene	NELAP,WADOE
Pentachlorophenol	NELAP,WADOE
Butylbenzylphthalate	NELAP,WADOE
Dibenzo(a,h)anthracene	NELAP,WADOE

EPA 9060A m in Solid



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Total Organic Carbon NELAP,WADOE

NWTPH-Dx in Solid

Diesel Range Organics (C12-C2) DoD-ELAP,NELAP,WADOE
Motor Oil Range Organics (C24-) DoD-ELAP,NELAP,WADOE

NWTPHg in Solid

Gasoline Range Organics (Tol-N) DoD-ELAP

NWTPHg in Water

Gasoline Range Organics (Tol-N) WADOE,DoD-ELAP

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	03/28/2025
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	02/28/2025
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2025
WADOE	WA Dept of Ecology	C558	06/30/2025
WA-DW	Ecology - Drinking Water	C558	06/30/2025



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Whitmarsh
Project Number: Whitmarsh
Project Manager: Accounts Payable

Reported:
06-Nov-2024 16:54

Notes and Definitions

- * Flagged value is not within established control limits.
- B This analyte was detected in the method blank.
- D The reported value is from a dilution
- E The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL)
- EMPC Estimated Maximum Possible Concentration qualifier for HRGCMS Dioxin
- H Hold time violation - Hold time was exceeded.
- J Estimated concentration value detected below the reporting limit.
- L Analyte concentration is <=5 times the reporting limit and the replicate control limit defaults to +/- RL instead of 20% RPD
- P1 The reported value is greater than 40% difference between the concentrations determined on two GC columns where applicable.
- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20% RSD, <20% drift or minimum RRF)
- U This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
- X Indicates possible CDPE interference.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- [2C] Indicates this result was quantified on the second column on a dual column analysis.

APPENDIX B

DATA VALIDATION REPORT



14257 93rd Court NE

Kirkland, Washington 98034

(425) 820-7504

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DATA VALIDATION REPORT

Whitmarsh Landfill Import Material Characterization, September 2024 Data

Prepared for:

WSP Environment and Infrastructure, Inc.
3500 188th Street SW, Suite 601
Lynnwood, WA 98037-4763

December 11, 2024

1.0 Introduction

Data set: Data were received in one laboratory sample delivery group (SDG). Data were submitted by Analytical Resources LLC, in Tukwila Washington. Data submissions included both laboratory reports and electronic data deliverable (EDD) as follows:

SDG	EDD File Name	Report File Name	Report Date
24I0364	24I0364 FINAL_11082024.txt	24I0364 CLPLIKE (Rev0).PDF	11/06/24

* The EDD includes 2 files per SDG and date, utilizing .txt and _standards.txt suffixes.

Analytical methods: Analyses were performed by the following methods:

Analysis	Analysis Method	Preparation Method
Semivolatile Organics Analysis (SV)	SW8270E	SW3546
Semivolatile Organics by SIM Analysis (SV-SIM)	SW8270E-SIM	SW3546
Polychlorinated Biphenyl Aroclors Analysis (PCBa)	SW8082A	SW3546/3660/3665
Gasoline Range Hydrocarbons Analysis (TPHG)	WATPH-G	SW5035
Diesel Range Hydrocarbons Analysis (TPHDx)	NWTPH-Dx	SW3546
Dioxins/Furans Analysis (Dxn)	E1613B	METHOD
ICPMS Metals Analysis (ICPMS)	SW6020B	SW3050B
Mercury Analysis (Hg)	SW7471B	METHOD
Total Solids Analysis (TS)	SM2540G	NONE
Dioxin Total Solids Analysis (TS-D)	D2216	NONE
Total Organic Carbon Analysis (TOC)	SW9060A	NONE

Analytical Schedule: The following sediment samples and field QC samples were included in this review:

Sample ID	Sample Date/Time	Lab IDs	Analyses
20240911-GS-TAT-D-1	09/11/2024 11:25	24I0364-01	Dxn, TS-D
20240911-GS-TAT-PCB-1	09/11/2024 11:25	24I0364-03	SV, SV-SIM, PCBa
20240911-GS-TAT-TOC-1	09/11/2024 11:25	24I0364-04	TOC, TS
20240911-GS-TAT-M-1	09/11/2024 11:25	24I0364-05	ICPMS, Hg
20240911-GS-TAT-D-2	09/11/2024 11:40	24I0364-06	Dxn, TS-D
20240911-GS-TAT-PCB-2	09/11/2024 11:40	24I0364-08	SV, SV-SIM, PCBa
20240911-GS-TAT-TOC-2	09/11/2024 11:40	24I0364-09	TOC, TS
20240911-GS-TAT-M-2	09/11/2024 11:40	24I0364-10	ICPMS, Hg
20240911-GS-TAT-D-3	09/11/2024 11:55	24I0364-11	Dxn, TS-D
20240911-GS-TAT-PCB-3	09/11/2024 11:55	24I0364-13	SV, SV-SIM, PCBa

Sample ID	Sample Date/Time	Lab IDs	Analyses
20240911-GS-TAT-TOC-3	09/11/2024 11:55	24I0364-14	TOC, TS
20240911-GS-TAT-M-3	09/11/2024 11:55	24I0364-15	ICPMS, Hg
20240911-GS-C-D-1	09/11/2024 12:25	24I0364-16	Dxn, TS-D
20240911-GS-C-PCB-1	09/11/2024 12:25	24I0364-18	SV, SV-SIM, PCBa
20240911-GS-C-TOC-1	09/11/2024 12:25	24I0364-19	TOC, TS
20240911-GS-C-M-1	09/11/2024 12:25	24I0364-20	ICPMS, Hg
20240911-GS-C-D-2	09/11/2024 12:40	24I0364-21	Dxn, TS-D
20240911-GS-C-PCB-2	09/11/2024 12:40	24I0364-23	SV, SV-SIM, PCBa
20240911-GS-C-TOC-2	09/11/2024 12:40	24I0364-24	TOC, TS
20240911-GS-C-M-2	09/11/2024 12:40	24I0364-25	ICPMS, Hg
20240911-GS-C-D-3	09/11/2024 12:50	24I0364-26	Dxn, TS-D
20240911-GS-C-PCB-3	09/11/2024 12:50	24I0364-28	SV, SV-SIM, PCBa
20240911-GS-C-TOC-3	09/11/2024 12:50	24I0364-29	TOC, TS
20240911-GS-C-M-3	09/11/2024 12:50	24I0364-30	ICPMS, Hg
20240911-SBT-C-D-1	09/11/2024 15:10	24I0364-31	Dxn, TS-D
20240911-SBT-C-PCB-1	09/11/2024 15:10	24I0364-33	SV, SV-SIM, PCBa
20240911-SBT-C-TOC-1	09/11/2024 15:10	24I0364-34	TOC, TS
20240911-SBT-C-M-1	09/11/2024 15:10	24I0364-35	ICPMS, Hg
20240911-SBT-C-D-2	09/11/2024 15:20	24I0364-36	Dxn, TS-D
20240911-SBT-C-PCB-2	09/11/2024 15:20	24I0364-38	SV, SV-SIM, PCBa
20240911-SBT-C-TOC-2	09/11/2024 15:20	24I0364-39	TOC, TS
20240911-SBT-C-M-2	09/11/2024 15:20	24I0364-40	ICPMS, Hg
20240911-SBT-C-D-3	09/11/2024 15:30	24I0364-41	Dxn, TS-D
20240911-SBT-C-PCB-3	09/11/2024 15:30	24I0364-43	SV, SV-SIM, PCBa
20240911-SBT-C-TOC-3	09/11/2024 15:30	24I0364-44	TOC, TS
20240911-SBT-C-M-3	09/11/2024 15:30	24I0364-45	ICPMS, Hg
20240911-SBT-TAT-D-1	09/11/2024 16:00	24I0364-46	Dxn, TS-D
20240911-SBT-TAT-PCB-1	09/11/2024 16:00	24I0364-48	SV, SV-SIM, PCBa
20240911-SBT-TAT-TOC-1	09/11/2024 16:00	24I0364-49	TOC, TS
20240911-SBT-TAT-M-1	09/11/2024 16:00	24I0364-50	ICPMS, Hg
20240911-SBT-TAT-D-2	09/11/2024 16:10	24I0364-51	Dxn, TS-D
20240911-SBT-TAT-PCB-2	09/11/2024 16:10	24I0364-53	SV, SV-SIM, PCBa
20240911-SBT-TAT-TOC-2	09/11/2024 16:10	24I0364-54	TOC, TS
20240911-SBT-TAT-M-2	09/11/2024 16:10	24I0364-55	ICPMS, Hg
20240911-SBT-TAT-D-3	09/11/2024 16:20	24I0364-56	Dxn, TS-D
20240911-SBT-TAT-PCB-3	09/11/2024 16:20	24I0364-58	SV, SV-SIM, PCBa
20240911-SBT-TAT-TOC-3	09/11/2024 16:20	24I0364-59	TOC, TS
20240911-SBT-TAT-M-3	09/11/2024 16:20	24I0364-60	ICPMS, Hg
20240912-G-CB-Dx/A-1	09/12/2024 08:35	24I0364-61	TPHDx
20240912-G-CB-TPHG-1	09/12/2024 08:35	24I0364-62	TPHG
20240912-G-CB-M-1	09/12/2024 08:35	24I0364-63	ICPMS, Hg
20240912-G-CB-Dx/A-2	09/12/2024 08:50	24I0364-64	TPHDx
20240912-G-CB-TPHG-2	09/12/2024 08:50	24I0364-65	TPHG
20240912-G-CB-M-2	09/12/2024 08:50	24I0364-66	ICPMS, Hg
20240912-G-CB-Dx/A-3	09/12/2024 09:10	24I0364-67	TPHDx
20240912-G-CB-TPHG-3	09/12/2024 09:10	24I0364-68	TPHG
20240912-G-CB-M-3	09/12/2024 09:10	24I0364-69	ICPMS, Hg
20240912-MSG-CB-Dx-1	09/12/2024 11:15	24I0364-70	TPHDx
20240912-MSG-CB-TPHG-1	09/12/2024 11:15	24I0364-71	TPHG
20240912-MSG-CB-M-1	09/12/2024 11:15	24I0364-72	ICPMS, Hg
20240912-MSG-CB-Dx-2	09/12/2024 11:35	24I0364-73	TPHDx
20240912-MSG-CB-TPHG-2	09/12/2024 11:35	24I0364-74	TPHG
20240912-MSG-CB-M-2	09/12/2024 11:35	24I0364-75	ICPMS, Hg
20240912-MSG-CB-Dx-3	09/12/2024 11:50	24I0364-76	TPHDx
20240912-MSG-CB-TPHG-3	09/12/2024 11:50	24I0364-77	TPHG
20240912-MSG-CB-M-3	09/12/2024 11:50	24I0364-78	ICPMS, Hg
20240912-MSG-CB-TOC-3	09/12/2024 11:50	24I0364-79	TOC, TS
20240912-MSG-CB-PCB-1	09/12/2024 11:15	24I0364-80	SV, SV-SIM, PCBa

Sample ID	Sample Date/Time	Lab IDs	Analyses
20240912-MSG-CB-PCB-2	09/12/2024 11:35	24I0364-81	SV, SV-SIM, PCBa
20240912-MSG-CB-PCB-3	09/12/2024 11:50	24I0364-82	SV, SV-SIM, PCBa
20240912-MSG-CB-TOC-1	09/12/2024 11:15	24I0364-86	TOC, TS
20240912-MSG-CB-TOC-2	09/12/2024 11:35	24I0364-87	TOC, TS
20240912-G-CB-TOC-1	09/12/2024 08:35	24I0364-88	TOC, TS
20240912-G-CB-TOC-2	09/12/2024 08:50	24I0364-89	TOC, TS
20240912-G-CB-TOC-3	09/12/2024 09:10	24I0364-90	TOC, TS
20240912-G-CB-PCB-1	09/12/2024 08:35	24I0364-91	SV, SV-SIM, PCBa
20240912-G-CB-PCB-2	09/12/2024 08:50	24I0364-92	SV, SV-SIM, PCBa
20240912-G-CB-PCB-3	09/12/2024 09:10	24I0364-93	SV, SV-SIM, PCBa
Trip Blanks	09/11/2024 11:25	24I0364-94	TPHG

2.0 Validation

Results were evaluated based on criteria from the analytical methods, project documents, and current EPA guidance documents. References for these documents are listed in section 7.0 of this report. The criteria gathered from the above documents are briefly summarized in the Appendix "Data Validation Criteria" at the end of this report.

A stage 4 validation was performed on the dioxin/furan analysis and a stage 2B validation was performed on the remaining analyses. Validation included both the laboratory report and electronic data deliverable (EDD), earning EPA OSWER validation label code S4VEM or S2BVEM. All validation was performed by Cari Sayler.

Data qualifiers are summarized in section 5.0 of this report and added to the validated EDD.

3.0 Validation Findings

Data validation criteria specified in the appendix were met except as noted below:

Issues resulting in qualification:

- One initial calibration RSD exceeded the control limit in the semivolatile analysis. Associated positive and non-detect results are qualified as estimated. The specific exceedance is shown below:

Analysis	Standard ID	Analysis Date/Time	Analyte	Column	RSD	Control Limit
SV	HI00071	09/19/2024 09:00	Acenaphthylene	1C	38.8	20

- % Recoveries for individual standards in the semivolatile and semivolatile SIM initial calibration standards were not tabulated by the laboratory and could not be reviewed. Relative response factors were evaluated to identify potential problems, and individual recoveries for Pentachlorophenol in the semivolatile calibration were manually calculated, with two individual recovery exceedances noted. Associated non-detect sample results and detected sample results within two times the reporting limit are qualified as estimated. Specific exceedances are shown below:

Analysis	Standard ID	Analysis Date/Time	Analyte	% Recovery	Std Type	Control Limit
SV	SMI0299-CAL3	09/19/2024 16:35	Pentachlorophenol	30.5	ICAL	50-150
SV	SMI0299-CAL4	09/19/2024 15:55	Pentachlorophenol	66.8	ICAL	70-130

- Sample holding times exceeded the QAPP-specified holding time of 14 days for total organic carbon. The affected sample results are qualified as estimated. The specific exceedances are shown below:

Analysis	Sample ID	Days, Sample to Analysis	Analysis Hold time
TOC	20240912-G-CB-TOC-3	15	14
TOC	20240912-G-CB-TOC-2	15	14
TOC	20240912-G-CB-TOC-1	15	14
TOC	20240911-SBT-TAT-TOC-3	15	14
TOC	20240911-SBT-TAT-TOC-2	15	14
TOC	20240911-SBT-TAT-TOC-1	15	14
TOC	20240911-SBT-C-TOC-3	15	14
TOC	20240911-SBT-C-TOC-2	15	14
TOC	20240911-SBT-C-TOC-1	15	14
TOC	20240911-GS-C-TOC-3	15	14
TOC	20240911-GS-C-TOC-2	15	14

- Calibration verification % recoveries were outside of limits in the semivolatile, semivolatile SIM, and dioxin/furan analyses. Both detect and non-detect sample results associated with low instrument responses are qualified as estimated. Detected sample results associated with high instrument responses are qualified as estimated, and non-detect sample results are considered unaffected. Specific exceedances are shown below:

Analysis	Standard ID	Analysis Date/Time	Analyte	% Recovery	Std Type	Control Limit
SV	SMI0299-SCV1	09/19/2024 19:14	2,4-dimethylphenol	69.4	ICV	70-130
SV	SMI0299-SCV1	09/19/2024 19:14	Benzoic Acid	63.8	ICV	70-130
SV	SMI0299-SCV1	09/19/2024 19:14	Pentachlorophenol	54.4	ICV	70-130
SV	SMI0383-CCV1	09/25/2024 20:33	Benzo(g,h,i)perylene	47.8	CCVe	50-150
SV	SMI0383-CCV1	09/25/2024 20:33	Bis(2-ethylhexyl) phthalate	164.5	CCVe	50-150
SV	SMI0383-ICV1	09/25/2024 11:09	Benzo(g,h,i)perylene	65.4	CCV	80-120
SV	SMI0383-ICV1	09/25/2024 11:09	Dibeno(a,h)anthracene	75.1	CCV	80-120
SV	SMI0383-ICV1	09/25/2024 11:09	Fluoranthene	78.3	CCV	80-120
SV	SMI0383-ICV1	09/25/2024 11:09	Indeno(1,2,3-cd)pyrene	75.2	CCV	80-120
SV	SMI0411-CCV1	09/26/2024 22:39	Benzo(g,h,i)perylene	43.6	CCVe	50-150
SV	SMI0411-CCV1	09/26/2024 22:39	Bis(2-ethylhexyl) phthalate	155.6	CCVe	50-150
SV	SMI0411-CCV1	09/26/2024 22:39	Dibeno(a,h)anthracene	49	CCVe	50-150
SV	SMI0430-ICV1	09/27/2024 13:34	Benzoic Acid	77.7	CCV	80-120
SV	SMI0430-ICV1	09/27/2024 13:34	Fluoranthene	62.9	CCV	80-120
SV	SMI0430-ICV1	09/27/2024 13:34	Pyrene	66.6	CCV	80-120
SV-SIM	SMI0439-SCV1	09/27/2024 22:15	2,4-dimethylphenol	68.3	ICV	70-130
SV-SIM	SMJ0155-ICV1	10/11/2024 16:23	Pentachlorophenol	79	CCV	80-120
SV-SIM	SMJ0155-ICV2	10/11/2024 17:01	Pentachlorophenol	73.4	CCV	80-120
SV-SIM	SMJ0155-ICV3	10/12/2024 02:33	Butyl benzyl phthalate	175.9	CCV	80-120
SV-SIM	SMJ0155-ICV3	10/12/2024 02:33	Dibenzo(a,h)anthracene	59.9	CCV	80-120
SV-SIM	SMJ0155-ICV3	10/12/2024 02:33	N-nitrosodiphenylamine	78	CCV	80-120
SV-SIM	SMJ0155-ICV3	10/12/2024 02:33	Pentachlorophenol	73.4	CCV	80-120
SV-SIM	SMJ0155-ICV4	10/12/2024 03:11	Butyl benzyl phthalate	213	CCV	80-120
SV-SIM	SMJ0155-ICV4	10/12/2024 03:11	Dibenzo(a,h)anthracene	66.6	CCV	80-120
SV-SIM	SMJ0155-ICV4	10/12/2024 03:11	Diethyl Phthalate	122.5	CCV	80-120
SV-SIM	SMJ0155-ICV4	10/12/2024 03:11	Pentachlorophenol	70.7	CCV	80-120
SV-SIM	SMJ0157-CCV1	10/13/2024 09:17	Dibenzo(a,h)anthracene	47.8	CCVe	50-150
SV-SIM	SMJ0157-ICV1	10/12/2024 16:12	Hexachlorobenzene	72	CCV	80-120

Analysis	Standard ID	Analysis Date/Time	Analyte	% Recovery	Std Type	Control Limit
SV-SIM	SMJ0157-ICV2	10/12/2024 16:51	Diethyl Phthalate	121.8	CCV	80-120
SV-SIM	SMJ0157-ICV2	10/12/2024 16:51	Hexachlorobenzene	76.4	CCV	80-120
SV-SIM	SMJ0157-ICV3	10/13/2024 00:28	Dibenzo(a,h)anthracene	59.1	CCV	80-120
SV-SIM	SMJ0157-ICV3	10/13/2024 00:28	Hexachlorobenzene	57.2	CCV	80-120
SV-SIM	SMJ0157-ICV4	10/13/2024 01:06	Dibenzo(a,h)anthracene	65.8	CCV	80-120
SV-SIM	SMJ0157-ICV4	10/13/2024 01:06	Diethyl Phthalate	122	CCV	80-120
SV-SIM	SMJ0157-ICV4	10/13/2024 01:06	Hexachlorobenzene	60.9	CCV	80-120
SV-SIM	SMJ0157-ICV4	10/13/2024 01:06	Pentachlorophenol	78.2	CCV	80-120
Dxn	SMK0032-CCV2	11/02/2024 06:15	OCDD	121.9	CCV	-

➤ Reporting limit standard % recoveries were outside of limits in the semivolatile and semivolatile SIM analyses. Associated detected sample results within two times the reporting limit and non-detect sample results qualified as estimated. Specific exceedances are shown below:

Analysis	Standard ID	Analysis Date/Time	Analyte	% Recovery	Std Type	Control Limit
SV	SMI0383-LCV1	09/25/2024 11:53	Benzo(g,h,i)perylene	44	LCV	50-150
SV	SMI0383-LCV1	09/25/2024 11:53	Dibenzo(a,h)anthracene	44.8	LCV	50-150
SV	SMI0383-LCV1	09/25/2024 11:53	Indeno(1,2,3-cd)pyrene	43.9	LCV	50-150
SV-SIM	SMJ0155-LCV1	10/11/2024 17:39	Benzoic Acid	45.7	LCV	50-150
SV-SIM	SMJ0155-LCV1	10/11/2024 17:39	Butyl benzyl phthalate	42.3	LCV	50-150
SV-SIM	SMJ0155-LCV2	10/12/2024 03:48	Butyl benzyl phthalate	262	LCV	50-150
SV-SIM	SMJ0157-LCV3	10/13/2024 02:22	Benzyl Alcohol	45.6	LCV	50-150

➤ Instrument drift was observed in the calibration blanks of the mercury analysis, with concentrations between the negative MDL and negative RL. Associated detected sample results within five times the blank level and non-detect sample results are qualified as estimated. Specific exceedances are shown below:

Analysis	Blank ID	Analysis Date/Time	Analyte	Concentration	MDL (mg/L)	RL (mg/L)
Hg	SMJ0017-CCB3	10/01/2024 13:41	Mercury	-0.000022	0.000021	0.000100
Hg	SMJ0017-CCB5	10/01/2024 14:37	Mercury	-0.000023	0.000021	0.000100
Hg	SMJ0017-CCB6	10/01/2024 15:05	Mercury	-0.000025	0.000021	0.000100
Hg	SMJ0017-CCB7	10/01/2024 15:37	Mercury	-0.000025	0.000021	0.000100
Hg	SMJ0017-CCB8	10/01/2024 16:05	Mercury	-0.000025	0.000021	0.000100
Hg	SMJ0017-CCB9	10/01/2024 16:21	Mercury	-0.000023	0.000021	0.000100

➤ Blank contamination above 10% of the lowest associated sample concentration was reported in the semivolatile SIM analysis. Associated sample results below five times the blank concentration should be considered not detected. Sample results both below five times the blank concentration and below the reporting limit should be considered not detected and estimated at the reported value. Sample results between five and ten times the blank concentration are qualified as estimated. Specific contamination levels are shown below:

Analysis	Lab Blank ID	Analyte	Concentration	RL	Units
SV-SIM	BMI0474-BLK2	Diethyl phthalate	25.1	20	ug/kg
SV-SIM	BMI0474-BLK3	Diethyl phthalate	28.6	20	ug/kg
SV-SIM	BMI0474-BLK3	Pentachlorophenol	10.3 J	20	ug/kg
SV-SIM	BMI0474-BLK4	Diethyl phthalate	28.2	20	ug/kg
SV-SIM	BMI0474-BLK4	Pentachlorophenol	11.5 J	20	ug/kg

- One MS recovery was below the work plan control limit in the semivolatile SIM analysis. Both detected and non-results are qualified as estimated in the native sample. The specific exceedance is shown below:

Analysis	QC ID	Analyte	% Recovery	WP Control Limit
SV-SIM	20240912-G-CB-PCB-3MS2	Benzoic acid	14.9	30 - 160

- Laboratory duplicate RPDs exceeded control limits in the ICPMS metals analysis. Detected results are qualified as estimated in the associated samples, and non-detect results are considered unaffected. Specific exceedances are shown below:

Analysis	QC ID	Analyte	RPD	WP Control Limit
ICPMS	20240911-GS-TAT-M-1LD	Arsenic	22.1	20
ICPMS	20240911-GS-TAT-M-1LD	Lead	31.9	20

- Laboratory duplicate absolute differences exceeded 2 times the RL in the dioxin/furan analysis. Both detected and non-detect results in the native samples are qualified as estimated. The specific exceedance is shown below:

Analysis	QC ID	Analyte	Dup Result (ng/kg)	Sample Result (ng/kg)	RL (ng/kg)
Dxn	20240911-GS-TAT-D-1LD	Total HpCDF	1.81	4.15	1

- The laboratory analyzed 4 total organic carbon duplicates of the same sample and reported four separate RPDs. A replicate RSD of 30.2 was manually calculated as shown below. This value exceeded the control limit of <20% and associated results are qualified as estimated.

Analysis	Sample ID	Sample Result	Dup1 Result	Dup2 Result	Dup3 Result	Dup4 Result	RSD	Control Limit
TOC	20240911-GS-TAT-TOC-1D	11.6	6.86	15.6	8.89	11.7	30.2	<20

- Surrogate recoveries for p-terphenyl-d14 were above laboratory control limits in the semivolatile and semivolatile SIM analyses. Associated detected results are qualified as estimated and non-detect results are considered unaffected. Specific recoveries are listed below:

Analysis	Sample ID	Surrogate	% Recovery	Lab Control Limit
SV	20240911-SBT-TAT-PCB-2	p-terphenyl-d14	173	37 - 120
SV	20240911-SBT-TAT-PCB-1	p-terphenyl-d14	171	37 - 120
SV	20240911-SBT-C-PCB-3	p-terphenyl-d14	166	37 - 120
SV	20240911-SBT-C-PCB-2	p-terphenyl-d14	155	37 - 120
SV	20240911-SBT-C-PCB-1	p-terphenyl-d14	163	37 - 120
SV	20240911-GS-C-PCB-3	p-terphenyl-d14	139	37 - 120
SV-SIM	20240912-G-CB-PCB-2	p-terphenyl-d14	140	37 - 120
SV-SIM	20240912-G-CB-PCB-1	p-terphenyl-d14	152	37 - 120
SV-SIM	20240912-MSG-CB-PCB-3	p-terphenyl-d14	139	37 - 120
SV-SIM	20240912-MSG-CB-PCB-2	p-terphenyl-d14	157	37 - 120
SV-SIM	20240912-MSG-CB-PCB-1	p-terphenyl-d14	165	37 - 120
SV-SIM	20240911-GS-C-PCB-2	p-terphenyl-d14	147	37 - 120
SV-SIM	20240911-GS-C-PCB-1	p-terphenyl-d14	143	37 - 120
SV-SIM	20240911-GS-TAT-PCB-2	p-terphenyl-d14	123	37 - 120
SV-SIM	20240911-GS-TAT-PCB-1	p-terphenyl-d14	122	37 - 120

- Internal standard recoveries were below control limits in the semivolatile and semivolatile SIM analyses. Both detect and non-detect results associated with low internal standard areas are qualified as estimated. The specific exceedances are shown below:

Analysis	Sample ID	Internal Standard	% Recovery	Control Limit
SV	20240911-SBT-C-PCB-1	Perylene-d12	10.5	50-200
SV	20240911-SBT-TAT-PCB-1	Di-n-Octyl phthalate-d4	49.9	50-200
SV	20240911-SBT-C-PCB-3	Di-n-Octyl phthalate-d4	30.4	50-200
SV	20240911-SBT-C-PCB-3	Chrysene-d12	38	50-200
SV	20240911-SBT-C-PCB-3	Perylene-d12	12.2	50-200
SV	20240911-SBT-C-PCB-2	Chrysene-d12	45.3	50-200
SV	20240911-SBT-C-PCB-2	Perylene-d12	15.7	50-200
SV	20240911-GS-TAT-PCB-1	Perylene-d12	18.5	50-200
SV	20240911-SBT-C-PCB-1	Chrysene-d12	42.6	50-200
SV	20240911-SBT-TAT-PCB-2	Perylene-d12	19.3	50-200
SV	20240911-SBT-C-PCB-1	Di-n-Octyl phthalate-d4	39	50-200
SV	20240911-GS-C-PCB-3	Perylene-d12	19.3	50-200
SV	20240911-GS-TAT-PCB-3	Perylene-d12	20.6	50-200
SV	20240911-GS-TAT-PCB-2	Perylene-d12	21.6	50-200
SV	20240911-GS-C-PCB-2	Perylene-d12	20.7	50-200
SV	20240911-GS-C-PCB-1	Perylene-d12	21.2	50-200
SV	20240911-SBT-C-PCB-2	Di-n-Octyl phthalate-d4	35.5	50-200
SV	20240911-SBT-TAT-PCB-1	Perylene-d12	18	50-200
SV-SIM	20240911-SBT-C-PCB-2	Chrysene-d12	33.3	50-200
SV-SIM	20240911-SBT-C-PCB-3	Perylene-d12	41.4	50-200
SV-SIM	20240911-SBT-C-PCB-2	Perylene-d12	44.9	50-200
SV-SIM	20240911-SBT-TAT-PCB-2	Perylene-d12	16	50-200
SV-SIM	20240911-SBT-TAT-PCB-2	Chrysene-d12	47.1	50-200
SV-SIM	20240911-SBT-TAT-PCB-1	Chrysene-d12	41.3	50-200
SV-SIM	20240911-SBT-TAT-PCB-1	Perylene-d12	14.5	50-200
SV-SIM	20240911-GS-TAT-PCB-3	Perylene-d12	46.3	50-200
SV-SIM	20240911-SBT-C-PCB-3	Chrysene-d12	28.6	50-200
SV-SIM	20240911-SBT-C-PCB-2	Perylene-d12	13.9	50-200
SV-SIM	20240911-SBT-C-PCB-1	Perylene-d12	16.9	50-200
SV-SIM	20240911-SBT-C-PCB-1	Chrysene-d12	46	50-200
SV-SIM	20240911-GS-C-PCB-3	Perylene-d12	32.4	50-200
SV-SIM	20240911-GS-C-PCB-2	Perylene-d12	38	50-200
SV-SIM	20240911-GS-C-PCB-1	Perylene-d12	36.3	50-200
SV-SIM	20240911-SBT-TAT-PCB-2	Perylene-d12	49	50-200
SV-SIM	20240911-SBT-C-PCB-3	Perylene-d12	12.4	50-200

- Chlorinated diphenyl ether interferences were present in the dioxin analysis and the amount of interference was evaluated. Results with an interference amount less than 25% of the total concentration are qualified as estimated. Results with an interference amount more than 25% of the total concentration are qualified "UJ" and should be considered not detected and estimated at the level reported.

Analysis	SDG	Sample ID	Analyte	Interference Amount
Dxn	24I0364	20240911-SBT-C-D-1	2,3,7,8-TCDF	<25%
Dxn	24I0364	20240911-SBT-C-D-3	2,3,7,8-TCDF	<25%
Dxn	24I0364	20240911-SBT-TAT-D-1	2,3,7,8-TCDF	>25%
Dxn	24I0364	20240911-SBT-TAT-D-2	2,3,7,8-TCDF	>25%

- Ion abundance ratios were outside of control limits in the dioxin analysis. The laboratory appropriately flagged these as estimated maximum possible concentrations (EMPCs). According to region 10 guidelines, EMPCs below the reporting limit should be considered not

detected, and are qualified "EMPC,U" and EMPCs above the reporting limit are qualified as estimated.

- Two sets of results were reported for eleven semivolatile samples and nine semivolatile SIM samples. The best result to report was selected according to the guidelines listed in the Data Validation Criteria Appendix. The results not selected as the best result to report are qualified R1, rejected due to the availability of a more accurate, precise or conservative result.

Please note: In the validation qualifier table shown in section 4.0, an 'RE' suffix was added to the client ID with the later analysis date to distinguish the two sets of results.

- Seventeen compounds were reported in both the semivolatile and semivolatile SIM analysis. The best result to report was again selected according to the guidelines listed in the Data Validation Criteria Appendix. The results not selected as the best result to report are qualified R2, replaced by a result from another method.

Issues not resulting in qualification:

- Dioxin/Furan toxicity equivalent quantity (TEQ): Region 10 guidelines indicates that three TEQs should be calculated, with the full value of detections in each case and the value of non-detects calculated at full, half and zero percent of their TEQ respectively. For the purposes of TEQ calculation, EMPCs below the RL are treated as non-detects, and EMPCs above the RL are treated as detections.

Recalculation of the TEQ was performed as follows:

Analysis	Sample ID	Lab Sample ID	TEQ-1	TEQ-1/2	TEQ-0
Dxn	20240911-GS-TAT-D-1	24I0364-01	1.850	1.050	0.256
Dxn	20240911-GS-TAT-D-2	24I0364-06	2.770	1.580	0.390
Dxn	20240911-GS-TAT-D-3	24I0364-11	1.850	1.140 J	0.424 J
Dxn	20240911-GS-C-D-1	24I0364-16	2.700	1.600	0.504 J
Dxn	20240911-GS-C-D-2	24I0364-21	1.900	1.310 J	0.727 J
Dxn	20240911-GS-C-D-3	24I0364-26	1.940	1.170	0.404
Dxn	20240911-SBT-C-D-1	24I0364-31	7.510 J	6.460 J	5.420 J
Dxn	20240911-SBT-C-D-2	24I0364-36	6.020 J	5.220 J	4.430 J
Dxn	20240911-SBT-C-D-3	24I0364-41	7.680 J	7.150 J	6.610 J
Dxn	20240911-SBT-TAT-D-1	24I0364-46	3.860 J	2.780 J	1.710 J
Dxn	20240911-SBT-TAT-D-2	24I0364-51	9.250 J	8.380 J	7.510 J
Dxn	20240911-SBT-TAT-D-3	24I0364-56	3.590	2.860 J	2.140 J

Where:

TEQ-1 = TEQ with 2005 WHO TEFs including full values of both EDLs and EMPCs.

TEQ-½ = TEQ with 2005 WHO TEFs including ½ values of both EDLs and EMPCs.

TEQ-0 = TEQ with 2005 WHO TEFs excluding EDLs and EMPCs.

- In the dioxin/furan analysis, the laboratory utilized the 3 times signal to noise ratio specified in CLP high resolution superfund methods rather than the 2.5 times signal to noise ratio specified in method 1613B for calculating estimated detection limits (EDLs). This is considered an acceptable method modification.

- Various calibration verification recoveries were outside of limits, but were not associated with reported samples or were limited to surrogate analytes. Additional calibration recoveries were outside of limits high, but associated with non-detect results. In each case, data quality was judged to have been unaffected and no qualifiers were assigned.

- Relative Response factors between 0.01 and 0.05 were present in several semivolatile standards. Qualifiers were assigned based on recoveries rather relative response factors in these cases.
- Various surrogate or spike recoveries and RPDs were outside of limits high, but associated with non-detect results. In each case, data quality was judged to have been unaffected and no qualifiers were assigned.
- Except for 2,4-dimethylphenol and hexachlorobutadiene, laboratory default reporting limits met work plan sediment cleanup objectives. Additional elevated reporting limits were present where samples were analyzed at a dilution or with a reduced sample amount. No qualifiers are assigned on the basis of elevated reporting limits.
- The dioxin total solids analysis did not include analysis of a duplicate. No qualifiers are assigned based on the absence of QC information.

4.0 Overall Assessment

Semivolatile Analysis: Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance for most analytes. Estimated qualifiers were assigned based on high or low calibration verification and/or RL standard recoveries. Quality control results demonstrate acceptable levels of accuracy and precision for most analytes, with estimated qualifiers added based on high surrogate or low internal standard recoveries. Semivolatile data are acceptable for use as qualified.

Semivolatile SIM Analysis: Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance for most analytes. Estimated qualifiers were assigned based on high or low calibration verification recoveries. Quality control results demonstrate acceptable levels of accuracy and precision for most analytes, with estimated qualifiers added based on low matrix spike and low internal standard recoveries. Additional qualifiers were assigned based on laboratory blank contamination. Semivolatile SIM data are acceptable for use as qualified.

Polychlorinated Biphenyl Analysis: Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance. Quality control results demonstrate acceptable levels of accuracy and precision. PCB data are acceptable for use as reported.

Gasoline Range Hydrocarbon Analysis: Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance. Quality control results demonstrate acceptable levels of accuracy and precision. Gas data are acceptable for use as reported.

Diesel Range Hydrocarbon Analysis: Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance. Quality control results demonstrate acceptable levels of accuracy and precision. Diesel data are acceptable for use as reported.

Dioxin/Furan Analysis: Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance for most analytes. Quality control results demonstrate acceptable levels of accuracy and precision for most analytes. Qualifiers were added for a high calibration verification recovery, lab blank contamination, and lab duplicate

variability. Additional qualifiers were added based on chlorinated diphenyl ether interferences and region 10 guidelines on treatment of EMPCs. Dioxin/furan data are acceptable for use as qualified.

ICPMS Metals Analysis: Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance. Laboratory quality control results demonstrate acceptable levels of accuracy and precision for most analytes. Qualifiers were added to arsenic and lead results for high lab duplicate variability. ICPMS metals data are acceptable for use as qualified.

Mercury Analysis: Documentation was found to be clear and complete. Instrument banks showed instrument drift at levels allowed by the method, however seven low concentration results and all non-detect results were qualified as estimated. Remaining calibration results demonstrate acceptable instrument performance. Laboratory quality control results demonstrate acceptable levels of accuracy and precision. Mercury data are acceptable for use as qualified.

Total Organic Carbon Analysis: Documentation was found to be clear and complete. Calibration results demonstrate acceptable instrument performance. Some analysis dates did not meet QAPP target holding times and replicate analysis indicated variability. All sample results were qualified as estimated. TOC data are acceptable for use as qualified.

Total Solids Analysis: Documentation was found to be clear and complete. Quality control results demonstrate acceptable levels of precision. Total solids data are acceptable for use as reported.

Dioxin/Furan Total Solids Analysis: Documentation was found to be clear and complete. Recalculated results match reported results. Dioxin/Furan total solids data are acceptable for use as reported.

5.0 Validation Qualifiers

Client ID	Analyte(s)	Qualifier	Reason
Semivolatile Analysis			
20240911-GS-C-PCB-1	4-Methylphenol, Phenol	R2	Detected result available from another method
20240911-GS-C-PCB-1	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R2	Lower detection limit result available from another method
20240911-GS-C-PCB-1	Acenaphthylene	UJ	High ICAL RSD
20240911-GS-C-PCB-1	Fluoranthene	UJ	Low CCV recovery
20240911-GS-C-PCB-1	Benzo(a)pyrene, Total benzofluoranthenes	UJ	Low IS recovery
20240911-GS-C-PCB-1	Benzo(g,h,i)perylene	UJ	Low LCV recovery, Low CCV recovery, Low CCVe recovery, Low IS recovery
20240911-GS-C-PCB-1	Indeno(1,2,3-cd)pyrene	UJ	Low LCV recovery, Low CCV recovery, Low IS recovery
20240911-GS-C-PCB-1 RE	All	R1	Lower detection limit result available
20240911-GS-C-PCB-2	4-Methylphenol, Phenol	R2	Detected result available from another method

Client ID	Analyte(s)	Qualifier	Reason
20240911-GS-C-PCB-2	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R2	Lower detection limit result available from another method
20240911-GS-C-PCB-2	Acenaphthylene	UJ	High ICAL RSD
20240911-GS-C-PCB-2	Fluoranthene	UJ	Low CCV recovery
20240911-GS-C-PCB-2	Benzo(a)pyrene, Total benzofluoranthenes	UJ	Low IS recovery
20240911-GS-C-PCB-2	Benzo(g,h,i)perylene	UJ	Low LCV recovery, Low CCV recovery, Low CCVe recovery, Low IS recovery
20240911-GS-C-PCB-2	Indeno(1,2,3-cd)pyrene	UJ	Low LCV recovery, Low CCV recovery, Low IS recovery
20240911-GS-C-PCB-2 RE	All	R1	Lower detection limit result available
20240911-GS-C-PCB-3	Bis(2-ethylhexyl) phthalate	J	High CCVe recovery, High surrogate recovery
20240911-GS-C-PCB-3	Pyrene	J	High surrogate recovery
20240911-GS-C-PCB-3	Fluoranthene	J	Low CCV recovery, High surrogate recovery
20240911-GS-C-PCB-3	4-Methylphenol, Phenol	R2	Detected result available from another method
20240911-GS-C-PCB-3	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R2	Lower detection limit result available from another method
20240911-GS-C-PCB-3	Acenaphthylene	UJ	High ICAL RSD
20240911-GS-C-PCB-3	Benzo(a)pyrene, Total benzofluoranthenes	UJ	Low IS recovery
20240911-GS-C-PCB-3	Benzo(g,h,i)perylene	UJ	Low LCV recovery, Low CCV recovery, Low CCVe recovery, Low IS recovery
20240911-GS-C-PCB-3	Indeno(1,2,3-cd)pyrene	UJ	Low LCV recovery, Low CCV recovery, Low IS recovery
20240911-GS-C-PCB-3 RE	Bis(2-ethylhexyl) phthalate, Fluoranthene, Pyrene	R1	Detected result available
20240911-GS-C-PCB-3 RE	All except Bis(2-ethylhexyl) phthalate, Fluoranthene, Pyrene	R1	Lower detection limit result available
20240911-GS-TAT-PCB-1	4-Methylphenol, Phenol	R2	Detected result available from another method
20240911-GS-TAT-PCB-1	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzyl alcohol, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R2	Lower detection limit result available from another method
20240911-GS-TAT-PCB-1	Acenaphthylene	UJ	High ICAL RSD
20240911-GS-TAT-PCB-1	Fluoranthene	UJ	Low CCV recovery
20240911-GS-TAT-PCB-1	Benzoic acid	UJ	Low ICV recovery
20240911-GS-TAT-PCB-1	Benzo(a)pyrene, Total benzofluoranthenes	UJ	Low IS recovery
20240911-GS-TAT-PCB-1	Benzo(g,h,i)perylene	UJ	Low LCV recovery, Low CCV recovery, Low CCVe recovery, Low IS recovery
20240911-GS-TAT-PCB-1	Indeno(1,2,3-cd)pyrene	UJ	Low LCV recovery, Low CCV recovery, Low IS recovery
20240911-GS-TAT-PCB-1 RE	All	R1	Lower detection limit result available

Client ID	Analyte(s)	Qualifier	Reason
20240911-GS-TAT-PCB-2	Phenol	R2	Detected result available from another method
20240911-GS-TAT-PCB-2	4-Methylphenol	R2	Higher concentration result available from another method
20240911-GS-TAT-PCB-2	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Dibenz(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R2	Lower detection limit result available from another method
20240911-GS-TAT-PCB-2	Acenaphthylene	UJ	High ICAL RSD
20240911-GS-TAT-PCB-2	Fluoranthene	UJ	Low CCV recovery
20240911-GS-TAT-PCB-2	Benzo(a)pyrene, Total benzofluoranthenes	UJ	Low IS recovery
20240911-GS-TAT-PCB-2	Benzo(g,h,i)perylene	UJ	Low LCV recovery, Low CCV recovery, Low CCVe recovery, Low IS recovery
20240911-GS-TAT-PCB-2	Indeno(1,2,3-cd)pyrene	UJ	Low LCV recovery, Low CCV recovery, Low IS recovery
20240911-GS-TAT-PCB-2 RE	4-Methylphenol	R1	Detected result available
20240911-GS-TAT-PCB-2 RE	All except 4-Methylphenol	R1	Lower detection limit result available
20240911-GS-TAT-PCB-3	Phenol	R2	Detected result available from another method
20240911-GS-TAT-PCB-3	4-Methylphenol	R2	Higher concentration result available from another method
20240911-GS-TAT-PCB-3	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Benzyl alcohol, Dibenz(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R2	Lower detection limit result available from another method
20240911-GS-TAT-PCB-3	Acenaphthylene	UJ	High ICAL RSD
20240911-GS-TAT-PCB-3	Fluoranthene	UJ	Low CCV recovery
20240911-GS-TAT-PCB-3	Benzo(a)pyrene, Total benzofluoranthenes	UJ	Low IS recovery
20240911-GS-TAT-PCB-3	Benzo(g,h,i)perylene	UJ	Low LCV recovery, Low CCV recovery, Low CCVe recovery, Low IS recovery
20240911-GS-TAT-PCB-3	Indeno(1,2,3-cd)pyrene	UJ	Low LCV recovery, Low CCV recovery, Low IS recovery
20240911-GS-TAT-PCB-3 RE	4-Methylphenol	R1	Detected result available
20240911-GS-TAT-PCB-3 RE	All except 4-Methylphenol	R1	Lower detection limit result available
20240911-SBT-C-PCB-1	Bis(2-ethylhexyl) phthalate	J	High CCVe recovery, High surrogate recovery, Low IS recovery
20240911-SBT-C-PCB-1	Pyrene	J	High surrogate recovery, Low IS recovery
20240911-SBT-C-PCB-1	Fluoranthene	J	Low CCV recovery, High surrogate recovery
20240911-SBT-C-PCB-1	Butyl benzyl phthalate	R2	Detected result available from another method
20240911-SBT-C-PCB-1	4-Methylphenol	R2	Higher concentration result available from another method
20240911-SBT-C-PCB-1	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Benzyl alcohol, Dibenz(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R2	Lower detection limit result available from another method

Client ID	Analyte(s)	Qualifier	Reason
20240911-SBT-C-PCB-1	Acenaphthylene	UJ	High ICAL RSD
20240911-SBT-C-PCB-1	Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Di-n-octyl phthalate, Total benzofluoranthenes	UJ	Low IS recovery
20240911-SBT-C-PCB-1	Benzo(g,h,i)perylene	UJ	Low LCV recovery, Low CCV recovery, Low CCVe recovery, Low IS recovery
20240911-SBT-C-PCB-1	Indeno(1,2,3-cd)pyrene	UJ	Low LCV recovery, Low CCV recovery, Low IS recovery
20240911-SBT-C-PCB-1 RE	4-Methylphenol, Bis(2-ethylhexyl) phthalate, Fluoranthene, Phenol, Pyrene	R1	Detected result available
20240911-SBT-C-PCB-1 RE	All except 4-Methylphenol, Bis(2-ethylhexyl) phthalate, Fluoranthene, Phenol, Pyrene	R1	Lower detection limit result available
20240911-SBT-C-PCB-2	Bis(2-ethylhexyl) phthalate	J	High CCVe recovery, High surrogate recovery, Low IS recovery
20240911-SBT-C-PCB-2	Fluoranthene, Phenanthrene	J	High surrogate recovery
20240911-SBT-C-PCB-2	Pyrene	J	High surrogate recovery, Low IS recovery
20240911-SBT-C-PCB-2	2-Methylphenol	R2	Detected result available from another method
20240911-SBT-C-PCB-2	4-Methylphenol	R2	Higher concentration result available from another method
20240911-SBT-C-PCB-2	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, Benzoic acid, Benzyl alcohol, Butyl benzyl phthalate, Dibenz(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R2	Lower detection limit result available from another method
20240911-SBT-C-PCB-2	Acenaphthylene	UJ	High ICAL RSD
20240911-SBT-C-PCB-2	Benzo(g,h,i)perylene	UJ	Low CCVe recovery, Low IS recovery
20240911-SBT-C-PCB-2	Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Di-n-octyl phthalate, Indeno(1,2,3-cd)pyrene, Total benzofluoranthenes	UJ	Low IS recovery
20240911-SBT-C-PCB-2 RE	4-Methylphenol, Bis(2-ethylhexyl) phthalate, Fluoranthene, Phenanthrene, Phenol, Pyrene	R1	Detected result available
20240911-SBT-C-PCB-2 RE	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylnaphthalene, 2-Methylphenol, Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(g,h,i)perylene, Benzoic acid, Benzyl alcohol, Butyl benzyl phthalate, Chrysene, Dibenz(a,h)anthracene, Dibenzofuran, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, Di-n-octyl phthalate, Fluorene, Hexachlorobenzene, Hexachlorobutadiene, Indeno(1,2,3-cd)pyrene, Naphthalene, n-Nitrosodiphenylamine, Pentachlorophenol, Total benzofluoranthenes	R1	Lower detection limit result available
20240911-SBT-C-PCB-3	Bis(2-ethylhexyl) phthalate	J	High CCVe recovery, High surrogate recovery, Low IS recovery
20240911-SBT-C-PCB-3	Fluoranthene, Phenanthrene	J	High surrogate recovery
20240911-SBT-C-PCB-3	Pyrene	J	High surrogate recovery, Low IS recovery
20240911-SBT-C-PCB-3	Butyl benzyl phthalate	R2	Detected result available from another method
20240911-SBT-C-PCB-3	4-Methylphenol	R2	Higher concentration result available from another method
20240911-SBT-C-PCB-3	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Benzyl alcohol, Dibenz(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R2	Lower detection limit result available from another method
20240911-SBT-C-PCB-3	Acenaphthylene	UJ	High ICAL RSD

Client ID	Analyte(s)	Qualifier	Reason
20240911-SBT-C-PCB-3	Benzo(g,h,i)perylene	UJ	Low CCVe recovery, Low IS recovery
20240911-SBT-C-PCB-3	Benzo(a)anthracene, Benzo(a)pyrene, Chrysene, Di-n-octyl phthalate, Indeno(1,2,3-cd)pyrene, Total benzofluoranthenes	UJ	Low IS recovery
20240911-SBT-C-PCB-3 RE	4-Methylphenol, Bis(2-ethylhexyl) phthalate, Fluoranthene, Phenanthrene, Phenol, Pyrene	R1	Detected result available
20240911-SBT-C-PCB-3 RE	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylnaphthalene, 2-Methylphenol, Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(g,h,i)perylene, Benzoic acid, Benzyl alcohol, Butyl benzyl phthalate, Chrysene, Dibenzo(a,h)anthracene, Dibenzofuran, Diethyl phthalate, Dimethyl phthalate, Di-n-butyl phthalate, Di-n-octyl phthalate, Fluorene, Hexachlorobenzene, Hexachlorobutadiene, Indeno(1,2,3-cd)pyrene, Naphthalene, n-Nitrosodiphenylamine, Pentachlorophenol, Total benzofluoranthenes	R1	Lower detection limit result available
20240911-SBT-TAT-PCB-1	Bis(2-ethylhexyl) phthalate	J	High CCVe recovery, High surrogate recovery, Low IS recovery
20240911-SBT-TAT-PCB-1	Fluoranthene, Pyrene	J	High surrogate recovery
20240911-SBT-TAT-PCB-1	Phenol	R2	Detected result available from another method
20240911-SBT-TAT-PCB-1	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Benzyl alcohol, Butyl benzyl phthalate, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R2	Lower detection limit result available from another method
20240911-SBT-TAT-PCB-1	Acenaphthylene	UJ	High ICAL RSD
20240911-SBT-TAT-PCB-1	Benzo(g,h,i)perylene	UJ	Low CCVe recovery, Low IS recovery
20240911-SBT-TAT-PCB-1	Benzo(a)pyrene, Di-n-octyl phthalate, Indeno(1,2,3-cd)pyrene, Total benzofluoranthenes	UJ	Low IS recovery
20240911-SBT-TAT-PCB-1 RE	4-Methylphenol, Bis(2-ethylhexyl) phthalate, Fluoranthene, Pyrene	R1	Detected result available
20240911-SBT-TAT-PCB-1 RE	All except 4-Methylphenol, Bis(2-ethylhexyl) phthalate, Fluoranthene, Pyrene	R1	Lower detection limit result available
20240911-SBT-TAT-PCB-2	Bis(2-ethylhexyl) phthalate	J	High CCVe recovery, High surrogate recovery
20240911-SBT-TAT-PCB-2	Fluoranthene, Pyrene	J	High surrogate recovery
20240911-SBT-TAT-PCB-2	Phenol	R2	Detected result available from another method
20240911-SBT-TAT-PCB-2	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Butyl benzyl phthalate, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R2	Lower detection limit result available from another method
20240911-SBT-TAT-PCB-2	Acenaphthylene	UJ	High ICAL RSD
20240911-SBT-TAT-PCB-2	Benzo(g,h,i)perylene	UJ	Low CCVe recovery, Low IS recovery
20240911-SBT-TAT-PCB-2	Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Total benzofluoranthenes	UJ	Low IS recovery
20240911-SBT-TAT-PCB-2 RE	4-Methylphenol, Bis(2-ethylhexyl) phthalate, Fluoranthene, Pyrene	R1	Detected result available
20240911-SBT-TAT-PCB-2 RE	All except 4-Methylphenol, Bis(2-ethylhexyl) phthalate, Fluoranthene, Pyrene	R1	Lower detection limit result available
20240911-SBT-TAT-PCB-3	Fluoranthene, Pyrene	J	Low CCV recovery
20240911-SBT-TAT-PCB-3	Phenol	R2	Detected result available from another method
20240911-SBT-TAT-PCB-3	4-Methylphenol	R2	Higher concentration result available from another method

Client ID	Analyte(s)	Qualifier	Reason
20240911-SBT-TAT-PCB-3	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Butyl benzyl phthalate, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R2	Lower detection limit result available from another method
20240911-SBT-TAT-PCB-3	Acenaphthylene	UJ	High ICAL RSD
20240912-G-CB-PCB-1	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, 4-Methylphenol, Benzoic acid, Butyl benzyl phthalate, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol, Phenol	R2	Lower detection limit result available from another method
20240912-G-CB-PCB-1	Acenaphthylene	UJ	High ICAL RSD
20240912-G-CB-PCB-1	Fluoranthene, Pyrene	UJ	Low CCV recovery
20240912-G-CB-PCB-2	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, 4-Methylphenol, Benzoic acid, Butyl benzyl phthalate, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol, Phenol	R2	Lower detection limit result available from another method
20240912-G-CB-PCB-2	Acenaphthylene	UJ	High ICAL RSD
20240912-G-CB-PCB-2	Fluoranthene, Pyrene	UJ	Low CCV recovery
20240912-G-CB-PCB-3	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, 4-Methylphenol, Benzoic acid, Butyl benzyl phthalate, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol, Phenol	R2	Lower detection limit result available from another method
20240912-G-CB-PCB-3	Acenaphthylene	UJ	High ICAL RSD
20240912-G-CB-PCB-3	Fluoranthene, Pyrene	UJ	Low CCV recovery
20240912-MSG-CB-PCB-1	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, 4-Methylphenol, Benzoic acid, Benzyl alcohol, Butyl benzyl phthalate, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol, Phenol	R2	Lower detection limit result available from another method
20240912-MSG-CB-PCB-1	Acenaphthylene	UJ	High ICAL RSD
20240912-MSG-CB-PCB-1	Fluoranthene, Pyrene	UJ	Low CCV recovery
20240912-MSG-CB-PCB-2	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, 4-Methylphenol, Benzoic acid, Benzyl alcohol, Butyl benzyl phthalate, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol, Phenol	R2	Lower detection limit result available from another method
20240912-MSG-CB-PCB-2	Acenaphthylene	UJ	High ICAL RSD
20240912-MSG-CB-PCB-2	Fluoranthene, Pyrene	UJ	Low CCV recovery
20240912-MSG-CB-PCB-3	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, 4-Methylphenol, Benzoic acid, Benzyl alcohol, Butyl benzyl phthalate, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol, Phenol	R2	Lower detection limit result available from another method
20240912-MSG-CB-PCB-3	Acenaphthylene	UJ	High ICAL RSD
20240912-MSG-CB-PCB-3	Fluoranthene, Pyrene	UJ	Low CCV recovery

Client ID	Analyte(s)	Qualifier	Reason
Semivolatile SIM Analysis			
20240911-GS-C-PCB-1	Butyl benzyl phthalate	R1	Lower detection limit result available
20240911-GS-C-PCB-1	Benzyl alcohol	R2	Lower detection limit result available from another method
20240911-GS-C-PCB-1	Diethyl phthalate	UJ	High CCV recovery, Lab blank contamination, High surrogate recovery
20240911-GS-C-PCB-1	n-Nitrosodiphenylamine, Pentachlorophenol	UJ	Low CCV recovery
20240911-GS-C-PCB-1	Dibenzo(a,h)anthracene	UJ	Low CCV recovery, Low IS response
20240911-GS-C-PCB-1	2,4-Dimethylphenol	UJ	Low ICV recovery
20240911-GS-C-PCB-1	Benzoic acid	UJ	Low LCV recovery
20240911-GS-C-PCB-1 RE	4-Methylphenol, Phenol	R1	Detected result available
20240911-GS-C-PCB-1 RE	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Benzyl alcohol, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R1	Lower detection limit result available
20240911-GS-C-PCB-1 RE	Butyl benzyl phthalate	R2	Lower detection limit result available from another method
20240911-GS-C-PCB-2	Butyl benzyl phthalate	R1	Lower detection limit result available
20240911-GS-C-PCB-2	Benzyl alcohol	R2	Lower detection limit result available from another method
20240911-GS-C-PCB-2	Diethyl phthalate	UJ	High CCV recovery, Lab blank contamination, High surrogate recovery
20240911-GS-C-PCB-2	n-Nitrosodiphenylamine, Pentachlorophenol	UJ	Low CCV recovery
20240911-GS-C-PCB-2	Dibenzo(a,h)anthracene	UJ	Low CCV recovery, Low IS response
20240911-GS-C-PCB-2	2,4-Dimethylphenol	UJ	Low ICV recovery
20240911-GS-C-PCB-2	Benzoic acid	UJ	Low LCV recovery
20240911-GS-C-PCB-2 RE	4-Methylphenol, Phenol	R1	Detected result available
20240911-GS-C-PCB-2 RE	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Benzyl alcohol, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R1	Lower detection limit result available
20240911-GS-C-PCB-2 RE	Butyl benzyl phthalate	R2	Lower detection limit result available from another method
20240911-GS-C-PCB-3	Butyl benzyl phthalate	R1	Lower detection limit result available
20240911-GS-C-PCB-3	Benzyl alcohol	R2	Lower detection limit result available from another method
20240911-GS-C-PCB-3	n-Nitrosodiphenylamine, Pentachlorophenol	UJ	Low CCV recovery
20240911-GS-C-PCB-3	Dibenzo(a,h)anthracene	UJ	Low CCV recovery, Low IS response
20240911-GS-C-PCB-3	2,4-Dimethylphenol	UJ	Low ICV recovery
20240911-GS-C-PCB-3	Benzoic acid	UJ	Low LCV recovery
20240911-GS-C-PCB-3 RE	4-Methylphenol, Phenol	R1	Detected result available

Client ID	Analyte(s)	Qualifier	Reason
20240911-GS-C-PCB-3 RE	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Benzyl alcohol, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R1	Lower detection limit result available
20240911-GS-C-PCB-3 RE	Butyl benzyl phthalate	R2	Lower detection limit result available from another method
20240911-GS-TAT-PCB-1	Benzoic acid, Butyl benzyl phthalate	R2	Lower detection limit result available from another method
20240911-GS-TAT-PCB-1	Diethyl phthalate	UJ	High CCV recovery, Lab blank contamination, High surrogate recovery
20240911-GS-TAT-PCB-1	Dibenzo(a,h)anthracene, n-Nitrosodiphenylamine	UJ	Low CCV recovery
20240911-GS-TAT-PCB-1	Pentachlorophenol	UJ	Low CCV recovery, Lab blank contamination
20240911-GS-TAT-PCB-1	2,4-Dimethylphenol	UJ	Low ICV recovery
20240911-GS-TAT-PCB-2	Benzyl alcohol, Butyl benzyl phthalate	R2	Lower detection limit result available from another method
20240911-GS-TAT-PCB-2	Diethyl phthalate	UJ	High CCV recovery, Lab blank contamination, High surrogate recovery
20240911-GS-TAT-PCB-2	Dibenzo(a,h)anthracene, n-Nitrosodiphenylamine, Pentachlorophenol	UJ	Low CCV recovery
20240911-GS-TAT-PCB-2	2,4-Dimethylphenol	UJ	Low ICV recovery
20240911-GS-TAT-PCB-2	Benzoic acid	UJ	Low LCV recovery
20240911-GS-TAT-PCB-3	Butyl benzyl phthalate	R1	Lower detection limit result available
20240911-GS-TAT-PCB-3	n-Nitrosodiphenylamine, Pentachlorophenol	UJ	Low CCV recovery
20240911-GS-TAT-PCB-3	Dibenzo(a,h)anthracene	UJ	Low CCV recovery, Low IS response
20240911-GS-TAT-PCB-3	2,4-Dimethylphenol	UJ	Low ICV recovery
20240911-GS-TAT-PCB-3	Benzoic acid	UJ	Low LCV recovery
20240911-GS-TAT-PCB-3 RE	Phenol	R1	Detected result available
20240911-GS-TAT-PCB-3 RE	4-Methylphenol	R1	Higher concentration result available
20240911-GS-TAT-PCB-3 RE	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Benzyl alcohol, Dibenzo(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R1	Lower detection limit result available
20240911-GS-TAT-PCB-3 RE	Butyl benzyl phthalate	R2	Lower detection limit result available from another method
20240911-SBT-C-PCB-1	Butyl benzyl phthalate	J	High CCV recovery
20240911-SBT-C-PCB-1	Phenol	R2	Higher concentration result available from another method
20240911-SBT-C-PCB-1	n-Nitrosodiphenylamine, Pentachlorophenol	UJ	Low CCV recovery
20240911-SBT-C-PCB-1	Dibenzo(a,h)anthracene	UJ	Low CCV recovery, Low IS response
20240911-SBT-C-PCB-1	2,4-Dimethylphenol	UJ	Low ICV recovery
20240911-SBT-C-PCB-1	Benzoic acid	UJ	Low LCV recovery
20240911-SBT-C-PCB-1 RE	Butyl benzyl phthalate	R1	Detected result available

Client ID	Analyte(s)	Qualifier	Reason
20240911-SBT-C-PCB-1 RE	4-Methylphenol, Phenol	R1	Higher concentration result available
20240911-SBT-C-PCB-1 RE	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Benzyl alcohol, Dibenz(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R1	Lower detection limit result available
20240911-SBT-C-PCB-2	Phenol	R2	Higher concentration result available from another method
20240911-SBT-C-PCB-2	n-Nitrosodiphenylamine, Pentachlorophenol	UJ	Low CCV recovery
20240911-SBT-C-PCB-2	Dibenz(a,h)anthracene	UJ	Low CCV recovery, Low IS response
20240911-SBT-C-PCB-2	2,4-Dimethylphenol	UJ	Low ICV recovery
20240911-SBT-C-PCB-2	Benzoic acid	UJ	Low LCV recovery
20240911-SBT-C-PCB-2	Butyl benzyl phthalate	UJ	Low LCV recovery, Low IS response
20240911-SBT-C-PCB-2 RE	2-Methylphenol, Phenol	R1	Detected result available
20240911-SBT-C-PCB-2 RE	4-Methylphenol	R1	Higher concentration result available
20240911-SBT-C-PCB-2 RE	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, Benzoic acid, Benzyl alcohol, Butyl benzyl phthalate, Dibenz(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R1	Lower detection limit result available
20240911-SBT-C-PCB-3	Butyl benzyl phthalate	J	High CCV recovery
20240911-SBT-C-PCB-3	Phenol	R2	Higher concentration result available from another method
20240911-SBT-C-PCB-3	n-Nitrosodiphenylamine, Pentachlorophenol	UJ	Low CCV recovery
20240911-SBT-C-PCB-3	Dibenz(a,h)anthracene	UJ	Low CCV recovery, Low IS response
20240911-SBT-C-PCB-3	2,4-Dimethylphenol	UJ	Low ICV recovery
20240911-SBT-C-PCB-3	Benzoic acid	UJ	Low LCV recovery
20240911-SBT-C-PCB-3 RE	Butyl benzyl phthalate	R1	Detected result available
20240911-SBT-C-PCB-3 RE	4-Methylphenol, Phenol	R1	Higher concentration result available
20240911-SBT-C-PCB-3 RE	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Benzyl alcohol, Dibenz(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R1	Lower detection limit result available
20240911-SBT-TAT-PCB-1	4-Methylphenol	R2	Higher concentration result available from another method
20240911-SBT-TAT-PCB-1	n-Nitrosodiphenylamine, Pentachlorophenol	UJ	Low CCV recovery
20240911-SBT-TAT-PCB-1	Dibenz(a,h)anthracene	UJ	Low CCV recovery, Low IS response
20240911-SBT-TAT-PCB-1	2,4-Dimethylphenol	UJ	Low ICV recovery
20240911-SBT-TAT-PCB-1	Benzoic acid	UJ	Low LCV recovery
20240911-SBT-TAT-PCB-1	Butyl benzyl phthalate	UJ	Low LCV recovery, Low IS response
20240911-SBT-TAT-PCB-1 RE	4-Methylphenol, Phenol	R1	Detected result available

Client ID	Analyte(s)	Qualifier	Reason
20240911-SBT-TAT-PCB-1 RE	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Benzyl alcohol, Butyl benzyl phthalate, Dibeno(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R1	Lower detection limit result available
20240911-SBT-TAT-PCB-2	4-Methylphenol	R1	Higher concentration result available
20240911-SBT-TAT-PCB-2	Benzyl alcohol	R2	Lower detection limit result available from another method
20240911-SBT-TAT-PCB-2	n-Nitrosodiphenylamine	UJ	Low CCV recovery
20240911-SBT-TAT-PCB-2	Pentachlorophenol	UJ	Low CCV recovery, Lab blank contamination
20240911-SBT-TAT-PCB-2	Dibeno(a,h)anthracene	UJ	Low CCV recovery, Low IS response
20240911-SBT-TAT-PCB-2	2,4-Dimethylphenol	UJ	Low ICV recovery
20240911-SBT-TAT-PCB-2	Butyl benzyl phthalate	UJ	Low IS response
20240911-SBT-TAT-PCB-2 RE	Phenol	R1	Detected result available
20240911-SBT-TAT-PCB-2 RE	1,2,4-Trichlorobenzene, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, 2,4-Dimethylphenol, 2-Methylphenol, Benzoic acid, Benzyl alcohol, Butyl benzyl phthalate, Dibeno(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Hexachlorobenzene, Hexachlorobutadiene, n-Nitrosodiphenylamine, Pentachlorophenol	R1	Lower detection limit result available
20240911-SBT-TAT-PCB-2 RE	4-Methylphenol	R2	Higher concentration result available from another method
20240911-SBT-TAT-PCB-3	Benzyl alcohol	R2	Lower detection limit result available from another method
20240911-SBT-TAT-PCB-3	Dibeno(a,h)anthracene, Hexachlorobenzene, Pentachlorophenol	UJ	Low CCV recovery
20240911-SBT-TAT-PCB-3	2,4-Dimethylphenol	UJ	Low ICV recovery
20240912-G-CB-PCB-1	Benzyl alcohol	R2	Lower detection limit result available from another method
20240912-G-CB-PCB-1	Diethyl phthalate	UJ	High CCV recovery, Lab blank contamination, High surrogate recovery
20240912-G-CB-PCB-1	Dibeno(a,h)anthracene, Hexachlorobenzene, Pentachlorophenol	UJ	Low CCV recovery
20240912-G-CB-PCB-1	2,4-Dimethylphenol	UJ	Low ICV recovery
20240912-G-CB-PCB-2	Benzyl alcohol	R2	Lower detection limit result available from another method
20240912-G-CB-PCB-2	Diethyl phthalate	UJ	High CCV recovery, Lab blank contamination, High surrogate recovery
20240912-G-CB-PCB-2	Dibeno(a,h)anthracene, Hexachlorobenzene, Pentachlorophenol	UJ	Low CCV recovery
20240912-G-CB-PCB-2	2,4-Dimethylphenol	UJ	Low ICV recovery
20240912-G-CB-PCB-3	Benzyl alcohol	R2	Lower detection limit result available from another method
20240912-G-CB-PCB-3	Dibeno(a,h)anthracene, Hexachlorobenzene, Pentachlorophenol	UJ	Low CCV recovery
20240912-G-CB-PCB-3	2,4-Dimethylphenol	UJ	Low ICV recovery
20240912-G-CB-PCB-3	Benzoic acid	UJ	Low MS recovery
20240912-MSG-CB-PCB-1	Diethyl phthalate	UJ	High CCV recovery, Lab blank contamination, High surrogate recovery
20240912-MSG-CB-PCB-1	Dibeno(a,h)anthracene, Hexachlorobenzene, Pentachlorophenol	UJ	Low CCV recovery

Client ID	Analyte(s)	Qualifier	Reason
20240912-MSG-CB-PCB-1	2,4-Dimethylphenol	UJ	Low ICV recovery
20240912-MSG-CB-PCB-1	Benzyl alcohol	UJ	Low LCV recovery
20240912-MSG-CB-PCB-2	Diethyl phthalate	UJ	High CCV recovery, Lab blank contamination, High surrogate recovery
20240912-MSG-CB-PCB-2	Dibenzo(a,h)anthracene, Hexachlorobenzene, Pentachlorophenol	UJ	Low CCV recovery
20240912-MSG-CB-PCB-2	2,4-Dimethylphenol	UJ	Low ICV recovery
20240912-MSG-CB-PCB-2	Benzyl alcohol	UJ	Low LCV recovery
20240912-MSG-CB-PCB-3	Diethyl phthalate	UJ	High CCV recovery, Lab blank contamination, High surrogate recovery
20240912-MSG-CB-PCB-3	Dibenzo(a,h)anthracene, Hexachlorobenzene, Pentachlorophenol	UJ	Low CCV recovery
20240912-MSG-CB-PCB-3	2,4-Dimethylphenol	UJ	Low ICV recovery
20240912-MSG-CB-PCB-3	Benzyl alcohol	UJ	Low LCV recovery
Dioxin/Furan Analysis			
20240911-GS-C-D-1	OCDF	J	Region 10 guidelines for EMPC >RL
20240911-GS-C-D-2	1,2,3,4,6,7,8-HxCDF, 1,2,3,6,7,8-HxCDD	J	Region 10 guidelines for EMPC >RL
20240911-GS-C-D-3	1,2,3,4,6,7,8-HxCDF	J	Region 10 guidelines for EMPC >RL
20240911-GS-TAT-D-1	Total HpCDF	J	High lab duplicate difference
20240911-GS-TAT-D-1	1,2,3,4,6,7,8-HxCDF	J	Region 10 guidelines for EMPC >RL
20240911-GS-TAT-D-2	1,2,3,6,7,8-HxCDD	EMPC,U	Region 10 guidelines for EMPC <RL
20240911-GS-TAT-D-3	1,2,3,4,6,7,8-HxCDF, OCDF	J	Region 10 guidelines for EMPC >RL
20240911-SBT-C-D-1	1,2,3,6,7,8-HxCDF	EMPC,U	Region 10 guidelines for EMPC <RL
20240911-SBT-C-D-1	OCDD	J	High CCV recovery
20240911-SBT-C-D-1	2,3,7,8-TCDF	J	Minimal interferences present (RL)
20240911-SBT-C-D-1	1,2,3,4,7,8-HxCDF, 1,2,3,7,8,9-HxCDD	J	Region 10 guidelines for EMPC >RL
20240911-SBT-C-D-2	1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, 2,3,4,7,8-PeCDF	EMPC,U	Region 10 guidelines for EMPC <RL
20240911-SBT-C-D-2	OCDD	J	High CCV recovery
20240911-SBT-C-D-2	1,2,3,7,8,9-HxCDD	J	Region 10 guidelines for EMPC >RL
20240911-SBT-C-D-3	1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF	EMPC,U	Region 10 guidelines for EMPC <RL
20240911-SBT-C-D-3	OCDD	J	High CCV recovery
20240911-SBT-C-D-3	2,3,7,8-TCDF	J	Minimal interferences present (<25%)
20240911-SBT-C-D-3	1,2,3,4,7,8,9-HxCDF, 1,2,3,7,8,9-HxCDD	J	Region 10 guidelines for EMPC >RL
20240911-SBT-TAT-D-1	OCDD	J	High CCV recovery
20240911-SBT-TAT-D-1	1,2,3,4,6,7,8-HxCDF	J	Region 10 guidelines for EMPC >RL
20240911-SBT-TAT-D-1	2,3,7,8-TCDF	UJ	Interferences present (>25%)
20240911-SBT-TAT-D-2	OCDD	J	High CCV recovery

Client ID	Analyte(s)	Qualifier	Reason
20240911-SBT-TAT-D-2	1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8-HxCDF	J	Region 10 guidelines for EMPC >RL
20240911-SBT-TAT-D-2	2,3,7,8-TCDF	UJ	Interferences present (>25%)
20240911-SBT-TAT-D-3	OCDD	J	High CCV recovery
20240911-SBT-TAT-D-3	2,3,4,6,7,8-HxCDF	J	Region 10 guidelines for EMPC >RL
ICPMS Metals Analysis			
20240911-GS-C-M-1	Arsenic, Lead	J	High lab duplicate RPD
20240911-GS-C-M-2	Arsenic, Lead	J	High lab duplicate RPD
20240911-GS-C-M-3	Arsenic, Lead	J	High lab duplicate RPD
20240911-GS-TAT-M-1	Arsenic, Lead	J	High lab duplicate RPD
20240911-GS-TAT-M-2	Arsenic, Lead	J	High lab duplicate RPD
20240911-GS-TAT-M-3	Arsenic, Lead	J	High lab duplicate RPD
20240911-SBT-C-M-1	Arsenic, Lead	J	High lab duplicate RPD
20240911-SBT-C-M-2	Arsenic, Lead	J	High lab duplicate RPD
20240911-SBT-C-M-3	Arsenic, Lead	J	High lab duplicate RPD
20240911-SBT-TAT-M-1	Arsenic, Lead	J	High lab duplicate RPD
20240911-SBT-TAT-M-2	Arsenic, Lead	J	High lab duplicate RPD
20240911-SBT-TAT-M-3	Arsenic, Lead	J	High lab duplicate RPD
20240912-G-CB-M-1	Arsenic, Lead	J	High lab duplicate RPD
20240912-G-CB-M-2	Arsenic, Lead	J	High lab duplicate RPD
20240912-G-CB-M-3	Arsenic, Lead	J	High lab duplicate RPD
20240912-MSG-CB-M-1	Arsenic, Lead	J	High lab duplicate RPD
20240912-MSG-CB-M-2	Arsenic, Lead	J	High lab duplicate RPD
20240912-MSG-CB-M-3	Arsenic, Lead	J	High lab duplicate RPD
Mercury Analysis			
20240911-GS-C-M-1	Mercury	UJ	CCB Drift below (-MDL)
20240911-GS-C-M-2	Mercury	UJ	CCB Drift below (-MDL)
20240911-GS-C-M-3	Mercury	UJ	CCB Drift below (-MDL)
20240911-GS-TAT-M-2	Mercury	J	CCB Drift below (-MDL)
20240911-GS-TAT-M-3	Mercury	J	CCB Drift below (-MDL)
20240911-SBT-C-M-1	Mercury	UJ	CCB Drift below (-MDL)
20240911-SBT-C-M-2	Mercury	J	CCB Drift below (-MDL)
20240911-SBT-C-M-3	Mercury	UJ	CCB Drift below (-MDL)
20240911-SBT-TAT-M-1	Mercury	J	CCB Drift below (-MDL)
20240911-SBT-TAT-M-3	Mercury	J	CCB Drift below (-MDL)

Client ID	Analyte(s)	Qualifier	Reason
20240912-MSG-CB-M-1	Mercury	UJ	CCB Drift below (-MDL)
20240912-MSG-CB-M-2	Mercury	J	CCB Drift below (-MDL)
20240912-MSG-CB-M-3	Mercury	J	CCB Drift below (-MDL)
Total Organic Carbon Analysis			
20240911-GS-C-TOC-1	Total Organic Carbon	J	High replicate RSD
20240911-GS-C-TOC-2	Total Organic Carbon	J	High replicate RSD, Analysis hold time exceeded
20240911-GS-C-TOC-3	Total Organic Carbon	J	High replicate RSD, Analysis hold time exceeded
20240911-GS-TAT-TOC-1	Total Organic Carbon	J	High replicate RSD
20240911-GS-TAT-TOC-2	Total Organic Carbon	J	High replicate RSD
20240911-GS-TAT-TOC-3	Total Organic Carbon	J	High replicate RSD
20240911-SBT-C-TOC-1	Total Organic Carbon	J	High replicate RSD, Analysis hold time exceeded
20240911-SBT-C-TOC-2	Total Organic Carbon	J	High replicate RSD, Analysis hold time exceeded
20240911-SBT-C-TOC-3	Total Organic Carbon	J	High replicate RSD, Analysis hold time exceeded
20240911-SBT-TAT-TOC-1	Total Organic Carbon	J	High replicate RSD, Analysis hold time exceeded
20240911-SBT-TAT-TOC-2	Total Organic Carbon	J	High replicate RSD, Analysis hold time exceeded
20240911-SBT-TAT-TOC-3	Total Organic Carbon	J	High replicate RSD, Analysis hold time exceeded
20240912-G-CB-TOC-1	Total Organic Carbon	J	High replicate RSD, Analysis hold time exceeded
20240912-G-CB-TOC-2	Total Organic Carbon	J	High replicate RSD, Analysis hold time exceeded
20240912-G-CB-TOC-3	Total Organic Carbon	J	High replicate RSD, Analysis hold time exceeded
20240912-MSG-CB-TOC-1	Total Organic Carbon	J	High replicate RSD
20240912-MSG-CB-TOC-2	Total Organic Carbon	J	High replicate RSD
20240912-MSG-CB-TOC-3	Total Organic Carbon	J	High replicate RSD

6.0 Common Abbreviations and Definitions

DV Qualifier	Definition
U	The material was analyzed for, but was not detected above the level of the associated value.
UY	The reporting limit was elevated due to chromatographic overlap with related compounds. The material was analyzed for, but was not detected above the level of the associated value.
J	The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a tentative identification.
UJ	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample result is rejected. The presence or absence of the analyte cannot be verified and data are not usable.

<u>DV Qualifier</u>	<u>Definition</u>
R1	This sample result has been rejected in favor of a more accurate, precise or conservative result.
R2	This sample result has been rejected in favor of a more accurate, precise or conservative result from another analytical method.
<u>QC Element</u>	<u>Definition</u>
ICAL	Initial calibration
ICV	Initial calibration verification
CCV	Continuing calibration verification
LCS	Laboratory control sample
LCSD	Laboratory control sample
MS	Matrix spike
MSD	Matrix spike duplicate
SRM	Standard reference material
RRM	Regional reference material
FD	Field duplicate
FB	Field blank
RB	Rinse blank
TB	Trip blank
IS	Internal standard
RT	Retention time
RRT	Relative retention time
RPD	Relative percent difference
<u>Abbreviation</u>	<u>Definition</u>
CRDL	Contract required detection limit
DV	Data validation
EDL	Estimated detection limit
EMPC	Estimated maximum possible concentration
KED	Kinetic energy discrimination in collision/reaction cell
MDL	Method detection limit
NA	Not applicable
QAPP	Quality Assurance Project Plan
RL	Reporting limit
RSD	Relative standard deviations
SAP	Sampling and Analysis Plan
SDG	Sample delivery group
SIM	Selective ion monitoring
SRM	Selective reaction monitoring
UCT	Universal cell technology

7.0 References

National Functional Guidelines for Organic Superfund Methods Data Review, Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency. November 2020, EPA-540-R-20-005.

National Functional Guidelines for Inorganic Superfund Methods Data Review, Office of Superfund Remediation and Technology Innovation, U.S. Environmental Protection Agency, November 2020, EPA-542-R-20-006.

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USEPA Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, January 2009, EPA 540-R-08-005.

Method 3660B: *Sulfur Cleanup*. SW-846, US Environmental Protection Agency, Office of Solid Waste, Revision 2 December 1996.

Method 3665A: *Sulfuric Acid/Permanganate Cleanup*. SW-846, US Environmental Protection Agency, Office of Solid Waste, Revision 1 December 1996.

Method 6020B: Inductively Coupled Plasma – Mass Spectrometry, SW-846, US Environmental Protection Agency, Office of Solid Waste, Revision 2 July 2014.

Method 7471B: Mercury in Solid Or Semisolid Waste (Manual Cold-Vapor Technique), SW-846, US Environmental Protection Agency, Office of Solid Waste, Revision 2 February 2007.

Method 8000D: Determinative Chromatographic Separations, SW-846, US Environmental Protection Agency, Office of Solid Waste, Revision 5 March 2018.

Method 8082A: Polychlorinated Biphenyls (PCBs) by Gas Chromatography, SW-846, US Environmental Protection Agency, Office of Solid Waste, Revision 1 November 2000.

Method 8270E: Semivolatile Organic compounds by Gas Chromatography/Mass Spectrometry (GC/MS), SW-846, US Environmental Protection Agency, Office of Solid Waste, Revision 6 June 2018.

Method NWTPH-Gx: Volatile Petroleum Products Method for Soil and Water, Analytical Methods for Petroleum Hydrocarbons, WA State Department of Ecology ECY 97-0-02, June 1997.

Method NWTPH-Dx: Semi-Volatile Petroleum Products Method for Soil and Water, Analytical Methods for Petroleum Hydrocarbons, WA State Department of Ecology ECY 97-0-02, June 1997.

Import Material Characterization Work Plan, Whitmarsh Landfill Remediation, Anacortes, Washington. Prepared by: WSP USA Environment and Infrastructure Inc. Prepared for: Skagit County. September 13, 2024.

APPENDIX – DATA VALIDATION CRITERIA

Data Package Completeness and Sample Integrity

QC Element	Criteria
Completeness	Laboratory report includes the appropriate level of detail as described in the EPA Guidance documents (USEPA, January 2009)
Sample ID transcription	Chain of custodies and/or sample log-in documentation are present for all samples reported and match sample IDs used in the laboratory report and electronic data deliverable (EDD).
Sample receipt condition	Sample containers are intact upon receipt at the laboratory and preservation and storage requirements meet method specific guidelines.
Requested analysis and method	Analyses completed for each analysis requested on the chain of custody. Appropriate methods or acceptable substitutions used. Table 1 of the work plan specifies the following EPA methods 6010, 7471A, 8270D, 8082,8081/PSEP, and 1613B and 9060.
Requested analytes and reporting limits	Reporting limits meet target levels for requested analytes. Table 1 of the work plan lists the required analytes for each method and their sediment cleanup objective.
Laboratory Narrative	The laboratory narrative, data flags and corrective action documentation detailing any preparation or analytical anomalies are evaluated for impact on data usability.

Notes:

- Newer versions of published analytical methods are considered acceptable substitutions.
- Method substitutions utilizing different instrumentation are also considered acceptable, e.g. method 200.8 (ICP-MS) for method 200.7 (ICP-AES) if desired reporting limits are met.
- Data referencing older versions of published analytical methods may be assessed based on numerical criteria present in newer versions.
- RPD criteria in the tables below do not apply to low concentration results. Where either concentration is below 5 times the RL, The absolute difference must be less than 2 times the RL for soil/solid samples and less than the RL for water samples. This applies to all methods, however does not typically apply to spike duplicates due to the spike concentration relative to RL.

Selection of Reportable Results

Where multiple results are available for the same sample and analyte, the following guidelines are used to select the best result to report:

- 1) Data rejected as unusable based on other validation criteria are excluded from consideration.
- 2) If all results are non-detects, the lowest reporting limit is selected.
- 3) If both non-detect and detected results are available, the detection is selected.
- 4) If both results are detections, the following additional criteria are applied:
 - a) If one result meets all identification criteria, and the other doesn't, the result meeting all criteria is selected.
 - b) If one result is off-scale and one is on-scale, the on-scale result is selected.
 - c) If associated QC results indicated high bias, the lower concentration result is selected.
 - d) If associated QC results indicated no, low, or mixed biases, the higher concentration result is selected.

This approach is conservative, and is considered most protective of the environment. The results not selected as the best result to report are qualified R1 if from the same analytical method, and R2 if from a different analytical method.

Semivolatile Organic Compounds—SW846 Method 8270E

QC Element	Frequency	Criteria	Stage
Holding times	Each sample	Soil and solid samples must be extracted within 14 days if refrigerated and 1 year if frozen. Extracts must be analyzed within 40 days of extraction.	2A
Instrument performance	Prior to initial calibration	Ion abundance ratios in decafluorotriphenylphosphate (DFTPP) or instrument manufacturer criteria.	2B
Initial calibration (ICAL) Initial Calibration	Prior to analyzing samples, and after CCV criteria exceeded.	<ul style="list-style-type: none"> Utilizes ≥ 5 points for average response factor (RF) model and ≥ 6 points for regression models. RF Relative standard deviation (RSD) $\leq 20\%$ if average RF model. Coefficient of Determination (R^2) ≥ 0.99 if regression model. Individual recoveries within 50-150% for the low standard and individual recoveries within 70-130% for the remaining standards. 	2B
Initial calibration verification (ICV)	After each ICAL prior to samples	Recoveries within 70-130%.	2B
Continuing calibration (CCV)	Once every 12 hours, before sample analysis	Recoveries within 80-120%	2B
Ending calibration verification (CCVe)	Not required. If performed, after sample analysis.	Recoveries within 50-150%	2B
Reporting limit calibration verification (RL Std)	Not required.	Recoveries within 50-150%	2B

Semivolatile Organic Compounds—SW846 Method 8270E

QC Element	Frequency	Criteria	Stage
Laboratory blank (LB)	One per preparation (prep) batch of ≤ 20 samples	< 10% of concentration in field samples.	2A
Laboratory control sample (LCS)	One per prep batch of ≤ 20 samples.	Recoveries within 30-160%.	2A
Matrix spike (MS)	One per batch of ≤ 20 samples.	Recoveries within 30-160%.	2A
Duplicates	MS dup (MSD) per batch of ≤ 20 samples.	RPD < 40%.	2A
Surrogates	Each sample and QC sample	Recovery meeting performance-based control limits.	2A
Internal standards (IS)	If used, must be in each sample and QC sample	<ul style="list-style-type: none"> IS response within 50-200% of CCV IS RT with ± 10 seconds of CCV 	2B

Notes: The above criteria applies to both 8270 and 8270-SIM methods.

Polychlorinated Biphenyl Aroclors—SW846 Method 8082A

QC Element	Frequency	Criteria	Stage
Holding times*	Each sample	Soil and solid samples must be extracted within 14 days if refrigerated and 1 year if frozen. Extracts must be analyzed within 40 days of extraction.	2A
Initial calibration (ICAL)	Prior to analyzing samples, and after CCV criteria exceeded.	<ul style="list-style-type: none"> Utilizes ≥ 5 points for average response factor for 1016 and 1260, and single point calibration standards for the remaining Aroclors Relative standard deviation (RSD) $\leq 20\%$ if average response Coefficient of determination (R^2) ≥ 0.99 if regression. 	2B
Initial calibration verification (ICV)	Not required. After ICAL, if analyzed	Recoveries within 70-130%.	2B
Continuing calibration (CCV)	Once every 20 samples	Recoveries within 75-125%.	2B
Laboratory blank (LB)	One per preparation (prep) batch of ≤ 20 samples	< 10% of concentration in field samples.	2A
Laboratory control sample (LCS)	One per prep batch of ≤ 20 samples.	Recoveries within 37-116%.	2A
Matrix spike (MS)	One per batch of ≤ 20 samples.	Recoveries 37-116%.	2A
Duplicates	MS dup (MSD) per batch of ≤ 20 samples.	RPD < 50%.	2A
Surrogates	Each sample and QC sample	Recovery within 34-141 and meeting performance-based control limits.	2A
Internal standards (IS)	If used, must be in each sample and QC sample	<ul style="list-style-type: none"> IS response within 50-200% of CCV IS RT with ± 30 seconds of CCV 	2B

Note: Functional guidelines does not require qualification for holding times if soil and sediment samples are extracted within 1 year and analyzed within 40 days of extraction.

Gasoline Range Petroleum Hydrocarbons—Method NWTPH-G

QC Element	Frequency	Criteria	Stage
Holding times	Each sample	Soil and solid samples must be analyzed within 14 days. Transportation and storage temperatures should be below 6°C.	2A
Initial calibration (ICAL)	Prior to analyzing samples, and after CCV criteria exceeded.	<ul style="list-style-type: none"> Utilizes ≥ 5 points for average response factor (RF) model and ≥ 6 points for regression models. RF Relative standard deviation (RSD) $\leq 20\%$ if average RF model. Coefficient of Determination (R^2) ≥ 0.99 if regression model. 	2B
Initial calibration verification (ICV)	After each ICAL prior to samples	Recoveries within 70-130%.	2B
Continuing calibration (CCV)	Daily	Recoveries within 85-115%.	2B
Laboratory blank (LB)	One per preparation (prep) batch of ≤ 20 samples	< 10% of concentration in field samples.	2A
Laboratory control sample (LCS)	One per prep batch of ≤ 20 samples.	Meets performance-based control limits for % recovery and relative % difference (RPD) if applicable.	2A
Duplicates	Sample dup once per 10 samples.	Meets performance-based control limits for RPD. LCS duplicate if insufficient sample volume provided.	2A

Gasoline Range Petroleum Hydrocarbons—Method NWTPH-G

QC Element	Frequency	Criteria	Stage
Surrogates	Each sample and QC sample	Recoveries within 50-150% and meeting performance based limits.	2A

Diesel Range Petroleum Hydrocarbons—Method NWTPH-Dx

QC Element	Frequency	Criteria	Stage
Holding times	Each sample	Soil and solid samples must be extracted within 14 days and analyzed within 40 days of extraction. Transportation and storage temperatures should be below 6°C.	2A
Initial calibration (ICAL)	Prior to analyzing samples, and after CCV criteria exceeded.	<ul style="list-style-type: none"> Utilizes ≥ 5 points Coefficient of determination ($R^2 \geq 0.99$) Individual standard recoveries $\pm 15\%$ of true value 	2B
Continuing calibration (CCV)	Before and after sample analysis each day.	Recoveries within $\pm 15\%$ of true value	2B
Laboratory blank (LB)	One per preparation (prep) batch of ≤ 20 samples	< 10% of concentration in field samples.	2A
Laboratory control sample (LCS)	One per prep batch of ≤ 20 samples.	Recoveries within 50-150% or meeting performance based limits.	2A
Matrix Spike (MS)	One per batch of ≤ 20 samples.	Meets performance-based control limits for % recovery. Not required if insufficient sample volume provided.	2A
Duplicates	Matrix duplicate per batch of ≤ 10 samples.	RPDs < 35%.	2A
Surrogates	Each sample and QC sample	Recoveries within 50-150% or meeting performance based limits.	2A

Notes: RSD of <20 is accepted in lieu of R^2 /individual recoveries to demonstrate calibration linearity.

Dioxin and Furans—Method 1613

QC Element	Frequency	Criteria	Stage
Holding times	Each sample	Samples must be extracted within 1 year and analyzed within 40 days of extraction. Transportation and storage temperatures should be below 6°C. Extract storage time may be extended to 1 year if extracts stored frozen and in the dark.	2A
System performance checks	Prior to initial calibration	<ul style="list-style-type: none"> The tune must demonstrate a resolving power $>10,000$ at m/z 380.9760 and an acceptable mass calibration peak profile. The isomer specificity check must and demonstrate a valley $<25\%$ for all peaks near 2,3,7,8-TCDD and 2,3,7,8-TCDF. 	4
Initial calibration (ICAL)	Prior to analyzing samples, and after CCV criteria exceeded.	<ul style="list-style-type: none"> Utilizes ≥ 5 standards. Relative standard deviation (RSD) $\leq 20\%$ for unlabeled compounds with an isotopically labeled analog, and $\leq 35\%$ for 1,2,3,7,8,9-HxCDD, OCDF, and labeled compounds. Ion abundance ratios within $\pm 15\%$ of theoretical. Signal to noise ratios >10. 	2B
Continuing calibration (CCV)	Once every 12 hours	<ul style="list-style-type: none"> % Difference $\leq 20\%$ for unlabeled compounds with an isotopically labeled analog, and $\leq 35\%$ for 1,2,3,7,8,9-HxCDD, OCDF, and labeled compounds. Ion abundance ratios within $\pm 15\%$ of theoretical. Signal to noise ratios >10. 	2B
Laboratory blank (LB)	One per preparation batch of ≤ 20 samples	< 5% of concentration in field samples.	2A
Ongoing precision and recovery (OPR/LCS)	One per preparation batch of ≤ 20 samples	Meets method-specified control limits for % recovery.	2A
Labeled compound recoveries	Each sample and QC sample	Meets method-specified control limits for % recovery.	2A
Second column confirmation	Each sample with a detection of 2,3,7,8-TCDF on a DB-5 column.	Analysis on dissimilar column to confirm identification of 2,3,7,8-TCDF. Second column confirmation is not required if resolution is achieved using an alternate column, such as RTX Dioxin-2.	2B

QC Element	Frequency	Criteria	Stage
Compound quantitation	Each sample	<ul style="list-style-type: none"> A representative number of concentrations are recalculated from instrument responses An example EDL, RL, RF, and RSD is recalculated from instrument responses. A limited number of standard and labeled compound recoveries, and one RPD are recalculated from reported concentrations. A labeled compound and/or OPR true value is recalculated from laboratory bench sheets. 	3
Compound identification	Each sample	<p>A representative number of results are evaluated for:</p> <ul style="list-style-type: none"> Characteristic ion signals maximize within the same 2 seconds. Signal to noise ratio > 2.5. Ion abundance ratios within $\pm 15\%$ of theoretical, or $\pm 10\%$ of the CCV, or result flagged as EMPC RT within RT Window. Free from PCDE interferences 	4

ICP-MS Metals—SW846 Method 6020B

QC Element	Frequency	Criteria	Stage
Holding times	Each sample	Samples must analyzed within 6 months if refrigerated and 2 years if frozen. Samples should be preserved with nitric acid.	2A
Initial calibration (ICAL)	Daily, prior to analyzing samples and after CCV criteria exceeded	<ul style="list-style-type: none"> Single point standard and blank or ≥ 3 standards and a blank. Coefficient of determination (R^2) ≥ 0.995 if multipoint calibration 	2B
Calibration verification (ICV/CCV)	After ICAL and after each 10 samples	Recoveries within 90-110%.	2B
Reporting Limit Standard (RL Std)	After single point ICAL	Recoveries within 80-120% and within 1 RL of the true value.	2B
Calibration blank (ICB/CCB)	After each ICV and CCV	Concentrations $>$ negative MDL and $< 10\%$ of concentrations in field samples.	2B
Laboratory blank (LB)	One per preparation (prep) batch of ≤ 20 samples	Concentrations $< 10\%$ of concentrations in field samples.	2A
Laboratory control sample (LCS)	One per prep batch of ≤ 20 samples.	Recoveries within 80-120% and meeting performance-based control limits.	2A
Matrix spike (MS)	One per 20 samples	Recoveries within 75-125% and meeting performance-based control limits.	2A
Post-digestion spike (PS)	For each failing MS.	Recoveries within 75-125%.	2B
Serial Dilution	For each failing MS if high concentrations	Recoveries within 90-110% where original sample concentration $> 50 \times$ MDL.	2B
Duplicates	Matrix duplicate (LD) or MS dup (MSD) per 20 samples.	RPD $< 20\%$ and meeting performance-based control limits.	2A

Note: ICP-MS mass spectral tuning information and internal standard %relative abundance information are not provided on summary forms. Therefore, these are considered Stage 3 checks.

Mercury—SW846 Method 7471B

QC Element	Frequency	Criteria	Stage
Holding times	Each sample	Samples must analyzed within 28 days. Transportation temperatures should be below 6°C.	2A
Initial calibration (ICAL)	Prior to analyzing samples, and after CCV criteria exceeded.	<ul style="list-style-type: none"> Utilizes ≥ 3 standards and a blank. Coefficient of determination (R^2) ≥ 0.995 	2B
Initial calibration verification (ICV)	After ICAL	Recoveries within 90-110%.	2B
Continuing calibration verification (CCV)	After each 10 samples	Recoveries within 80-120%	2B
Continuing calibration blank (ICB/CCB)	After each ICV and CCV	$< 10\%$ of concentrations in field samples.	2B
Laboratory blank (LB)	One per preparation (prep) batch of ≤ 20 samples	$< 10\%$ of concentrations in field samples.	2A

QC Element	Frequency	Criteria	Stage
Laboratory control sample (LCS)	One per prep batch of ≤20 samples.	Recoveries within 80-120%.	2A
Matrix spike (MS)	One per 20 samples	Recoveries within 80-120%.	2A
Duplicates	Matrix duplicate (LD) or MS dup (MSD) per 20 samples.	RPD < 20%.	2A
Post-digestion spikes (PS)	For each failing MS.	Recoveries within 85-115%.	2B

Note: 2021 SCUM/DMMP extended frozen mercury holding times to 1 year for sites without known or potential elemental mercury releases. However, prior approval/documentation in the SAP is required.

Total Organic Carbon—SW846 Method 9060A

QC Element	Frequency	Criteria	Stage
Holding times	Each sample	Samples must analyzed within 14 days if refrigerated and 6 months if frozen.	2A
Initial calibration (ICAL)	Prior to analyzing samples	Coefficient of determination (R^2) ≥0.99.	2B
Calibration verification (ICV/CCV)	Every 15 samples	% difference <±10%.	2B
Laboratory blank (LB)	One per batch of ≤20 samples	< 10% of concentrations in field samples.	2A
Laboratory control sample (LCS) or SRM	One per batch of ≤20 samples.	Recoveries within 80-120% and meeting performance-based control limits.	2A
Matrix spike (MS)	One per batch of ≤20 samples.	Recoveries within 75-125% and meeting performance-based control limits.	2A
Matrix replicate	One per batch of ≤20 samples.	RSD ≤ 20% and meeting performance-based control limit	2A

Total Solids—Standard Methods SM2540 G

QC Element	Frequency	Criteria	Stage
Holding times	Each sample	Samples must analyzed within 14 days if refrigerated and 6 months if frozen.	2A
Triplet	One per batch of ≤ 20 samples	RSD ≤20% and within performance-based control limit.	2A

Dioxin Total Solids—Method D2216

QC Element	Frequency	Criteria	Stage
Holding times	Each sample	Samples must be analyzed within 1 year, preferably within 14 days of dioxin sample extraction.	2A
Duplicate	Not specified	If performed, RSD ≤20%	2A