



**Appendix 7-H: Report on Sediment Sampling in the Hudson River for  
the Champlain Hudson Power Express Project (Voluntary Sediment  
Study)**

# **REPORT ON SEDIMENT SAMPLING IN THE HUDSON RIVER FOR THE CHAMPLAIN HUDSON POWER EXPRESS PROJECT**

## **EXECUTIVE SUMMARY**

CHPE LLC (“CHPE”) and the Hudson River Drinking Water Intermunicipal Council (“Hudson 7”) developed a set of studies, above and beyond those required by our permits, to determine the potential impact of the Champlain Hudson Power Express project’s jet plow installation on the public water systems located within the Hudson River.

One of these studies involved the collection of sediment data in the vicinity of the five intakes, to understand the potential contaminants that might be mobilized by the jet plow and reach the intakes. Five sediment samples were collected along the proposed route for all of the intakes except for Esopus. Laboratory analysis was collected on the upper (A-series) and lower (B-series) portions of the cores collected.

Laboratory analysis found that there were no detectable concentrations of pesticides or volatiles (i.e., benzene, ethylbenzene, toluene, and xylenes) in the samples collected from the upper portion of the cores. There were no exceedances of the New York State reference values for metals, mercury, or semi-volatiles. The Hyde Park sample 1A showed an exceedance of the reference values for dioxin and PCBs which would not impact drinking water, but rather the sludge material that results from water purification and would thus require a different method of disposal. In addition, the Hyde Park water intake is a significant distance from the proposed route (approximately 1,100 feet) and the results of the pump study, which are discussed in a separate report, suggest that construction activities will not result in elevated values at the intake.

# INTRODUCTION

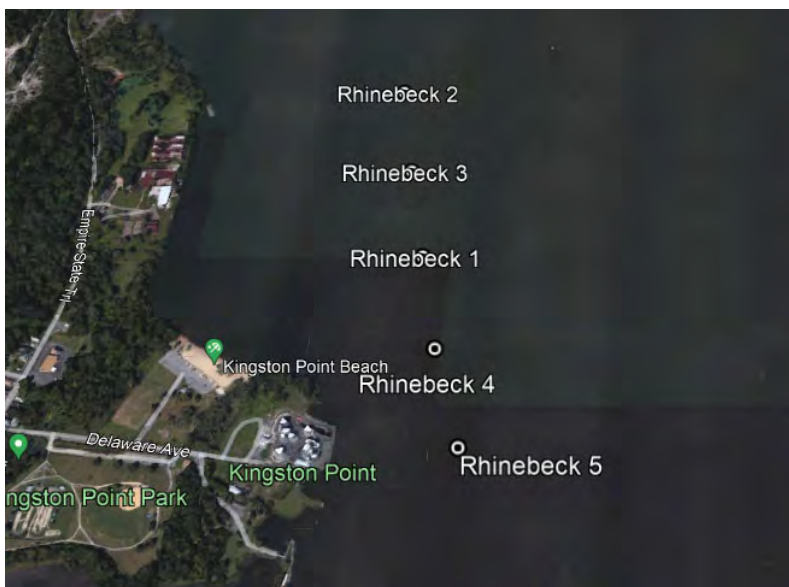
In September of 2022, Normandeau Associates, Inc. (“Normandeau”) completed sediment sampling near five municipal drinking water intakes in the Hudson River. The protocol for this work was developed to better understand the likely impacts, if any, associated with the installation of the Champlain Hudson Power Express (“CHPE”) project and in direct consultation with the Hudson River Drinking Water Intermunicipal Council (“the Hudson 7”). This document summarizes the field sampling activities completed and provide a brief review of laboratory results for the sediment core sampling conducted.

## FIELD SUMMARY

Normandeau performed sediment core sampling near the five drinking water intakes in the Hudson River (Highland, Poughkeepsie, Hyde Park, Port Ewen, and Rhinebeck) from September 20<sup>th</sup> through September 28, 2022. Normandeau deployed a 21-foot coring barge vessel with a Rossfelder P-3 submersible vibracore unit and 3- inch clear, semi-rigid, cellulose acetate butyrate (“CAB”) tubes to conduct the sediment core sampling.

At each intake site, five sediment cores were collected at the closest point along the proposed CHPE transmission route to each drinking water intake, and ¼ mile and ¼ mile both upriver and downriver of the intake, as possible. The only exception to this sample design was the Port Ewen site, which did not include a sediment core from the Port Ewen intake due to uncertainty as to the exact location of the Port Ewen water pipe (as the route currently crosses between the intake and the shoreline). The sample collected closest to the intakes was designated sample 1 (e.g., Rhinebeck 1). The samples then were labelled from north to south, wherein sample 2 was ¼ mile to the north and sample 5 was ¼ mile to the south of the intake. This nomenclature pattern is illustrated in Figure 1 below. Table 1 summarizes the sample collection locations and associated data.

Figure 1: Sample Nomenclature Pattern.



**TABLE 1. SEDIMENT CORE SAMPLE COLLECTION SUMMARY.**

Station Name	Planned GPS		Actual GPS		Date	Time (EDT)	Water Depth at time of collection
	Longitude	Latitude	Longitude	Latitude			
Rhinebeck 1	-73.960536590	41.931922330	-73.960536230	41.931916590	09/28/2022	943	31'
Rhinebeck 2	-73.961472920	41.935475680	-73.961484000	41.935475520	09/28/2022	1043	33'
Rhinebeck 3	-73.961031540	41.933694660	-73.961039800	41.933694810	09/28/2022	1010	32'
Rhinebeck 4	-73.960041660	41.930150010	-73.960031740	41.930149290	09/28/2022	903	32'
Rhinebeck 5	-73.959332640	41.928413780	-73.959331250	41.928407720	09/28/2022	834	33'
Port Ewen 1 <sup>i</sup>	-73.956724080	41.888052158	N/A <sup>i</sup>				
Port Ewen 2	-73.959404030	41.891070111	-73.959407010	41.891077058	09/26/2022	1111	37'
Port Ewen 3	-73.958164390	41.889508379	-73.958164080	41.889514289	09/26/2022	1030	35'
Port Ewen 4	-73.955283830	41.886595911	-73.955284660	41.886589951	09/26/2022	1000	33'
Port Ewen 5	-73.953843490	41.885139500	-73.953844630	41.885147350	09/26/2022	935	31'
Hyde Park 1	-73.952609910	41.775038941	-73.952608940	41.775045918	09/24/2022	952	56'
Hyde Park 2	-73.952905130	41.778653765	-73.952895860	41.778652965	09/24/2022	1057	49'
Hyde Park 3	-73.952757550	41.776846674	-73.952746170	41.776846127	09/24/2022	1025	52'
Hyde Park 4	-73.952462280	41.773231209	-73.952457220	41.773231329	09/24/2022	921	61'
Hyde Park 5	-73.952311700	41.771423783	-73.952313670	41.771409136	09/24/2022	853	70'
Poughkeepsie 1	-73.942433350	41.723147379	-73.942442390	41.723145845	09/22/2022	1323	53'
Poughkeepsie 2	-73.941762011	41.726734336	-73.941750820	41.726733669	09/22/2022	1422	51'
Poughkeepsie 3	-73.942097761	41.724940464	-73.942095409	41.724932087	09/22/2022	1349	52'
Poughkeepsie 4	-73.942764269	41.721353761	-73.942754479	41.721353788	09/22/2022	1255	54'
Poughkeepsie 5	-73.942789839	41.719535277	-73.942781020	41.719534636	09/22/2022	1225	58'
Highland 1 <sup>ii</sup>	-73.944316050	41.712147947	-73.944114181	41.712846294	09/20/2022	1106	58'
Highland 2	-73.943211730	41.715674099	-73.943217540	41.715666215	09/20/2022	1237	54'
Highland 3	-73.943764060	41.713910509	-73.943775051	41.713910402	09/20/2022	1203	55'
Highland 4	-73.944868019	41.710385398	-73.944871469	41.710378434	09/20/2022	1020	56'
Highland 5 <sup>iii</sup>	-73.945342899	41.708608948	-73.945625210	41.707614916	09/20/2022	922	55'

<sup>i</sup>Station was not sampled following TDI request due to unknown location of Port Ewen intake.<sup>ii</sup>Station was moved slightly north due to gas line crossing (per signs posted on riverbank).<sup>iii</sup>Station was moved slightly south to avoid submerged cable crossing (per signs posted on riverbank).

Sediment cores were sampled to a depth of up to nine feet. Onboard the sampling vessel, each sediment core collected was capped and taped on both ends and stored for transportation. During sediment sample processing, the uppermost 4 feet of the core was subsampled as the “upper” core sample (denoted sample “A” from each station), and the lower section of the sediment core from 4 feet down to 9 feet was subsampled as the “lower” core sample (denoted sample “B” from each station). After subsampling the cores, each sediment sample was placed into sample jars and shipped to analytical chemistry laboratories for chemical analyses. The chain of custody paperwork is provided in Appendix 1. Each sample was analyzed for the chemical parameters summarized in Table 2.

**TABLE 2. ANALYTICAL METHODS FOR SEDIMENT CORE ANALYSES.**

Parameter	SW-846 Analysis Method <sup>1</sup>
Dioxins / Furans	1613B
Petroleum Compounds (i.e., Volatiles)	8260C
Polycyclic Aromatic Hydrocarbons (PAHs) - Benz(a)anthracene - Pyrene - Phenanthrene - Naphthalene	8270D
Pesticides (4, 4 DDE)	8081B
Polychlorinated Biphenyls (PCBs)	8270E-SIM/680(M) (NOAA 22 Congeners)
Metals (As, Cd, Cu, Pb)	6010D
Mercury	7471B

<sup>1</sup>United States Environmental Protection Agency (“USEPA”) Hazard Waste Test Methods (USEPA 2015).

## FINDINGS

PDF copies of the laboratory results, field data sheets, soil boring logs, and sediment core photos are provided as follows:

- Attachment A – Highland
- Attachment B – Poughkeepsie
- Attachment C – Hyde Park
- Attachment D – Port Ewen
- Attachment E – Rhinebeck

Table 3 provides a summary of the 1A samples for four of the sites (Highland, Poughkeepsie, Hyde Park and Rhinebeck), which represent the upper portion of the sample collected closest to the intake and therefore those sediments most likely to be disturbed by the jet plow operation. For Port Ewen, where a sample was not collected along the route near the intake, the results from sample 3A are presented. Sample 3A is the upper portion of the sample collected ¼ of a mile upriver from the intake. For each result, the Reporting Detection Limit (RDL) or, in the case of dioxins, the Method Reporting Limit (MRL) is provided.<sup>1</sup>

One of the selection criteria for where the pilot study was completed was the existence of historic soil sampling

<sup>1</sup> Certain results, indicated with a “J” are below the RDL and MDL. These represent estimates between the Method Detection Limit and the Practical Quantification Limit for the testing method.

data that was considered “representative” of sediments along the route within the vicinity of the five intakes. The intent was to compare sediment conditions at the pilot study with those at the actual intakes in order to allow for an extrapolation of the results of the simulated intake study. The laboratory results from the sediment sample collected in 2010 where the pilot study was completed (HR 93) are also provided in Table 3 as available.

In order to provide context for the laboratory values, three New York State standards were applied. First, the Hudson 7 indicated that a primary concern for sediment was the potential for contamination of the water treatment plant sludge so that it could no longer be used for composting. The 6 NYCRR 361-3.9 standards<sup>2</sup> were applied to metals and mercury.

There are no compost standards for pesticides, semi-volatiles, volatiles, and PCB so the 6 NYCRR 375-6.8<sup>3</sup> Unrestricted Use standard was applied for these parameters. The Unrestricted Use standards are primarily concerned with dermal exposure or vapor intrusion with sensitive receptors (e.g., kindergarten, playground) so they should be considered extremely conservative. However, in the absence of another standard, the Hudson 7 recommended this standard be applied. Finally, there is no Unrestricted Use standard for dioxin so the Class A threshold for toxic equivalency (TEQ) from the New York State’s Technical & Operational Guidance Series (TOGS) 5.1.9<sup>4</sup> was applied. Again, this standard is designed to applied to situations where there would be no restrictions where materials are disposed.

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<https://govt.westlaw.com/nycrr/Document/Id4d62f37dfe911e7aa6b9b71698a280b?viewType=Fu&transitionType=Default&contextData=%28sc.Default%29>

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<https://govt.westlaw.com/nycrr/Document/I4eadfca8cd1711dda432a117e6e0f345?contextData=%28sc.Default%29&bhcup=1&transitionType=Default>

<sup>4</sup> [https://www.dec.ny.gov/docs/water\\_pdf/togs519.pdf](https://www.dec.ny.gov/docs/water_pdf/togs519.pdf)

**TABLE 3. SUMMARY TABLE OF LABORATORY RESULTS**

		Highland 1A		Poughkeepsie 1A		Hyde Park 1A		Port Ewen 3A		Rhinebeck 1A			HR 93 Results	NY Standards
		Result	RDL	Result	RDL	Result	RDL	Result	RDL	Result	RDL			
<b>METALS / MERCURY<sup>1</sup></b>														
Arsenic, Total	mg/kg	5.5	3.3	6	3.3	13.4	3.6	9.8	3.1	3.2	2.5		5.3	41
Cadmium, Total	mg/kg	ND	0.82	0.28J	0.82	1.5	0.89	0.31J	0.78	ND	0.63		0.367	10
Copper, Total	mg/kg	11.7	3.3	14.9	3.3	64.5	3.6	19.5	3.1	7.6	2.5		15.6	1,500
Lead, Total	mg/kg	9.1	3.3	14.4	3.3	83.6	3.6	27.9	2.1	6.4	2.5		13.5	300
Mercury, Total	mg/kg	ND	0.081	0.064J	0.092	0.68	0.08	0.24	0.73	0.031J	0.059		0.077	10
<b>PESTICIDES<sup>2</sup></b>														
4,4'-DDD	ug/kg	ND	13.8	ND	15.7	ND	15.1	ND	13.5	ND	11.6		ND	3.3
4,4'-DDE	ug/kg	ND	13.8	ND	15.7	ND	15.1	ND	13.5	ND	11.6		ND	3.3
4,4'-DDT	ug/kg	ND	13.8	ND	15.7	ND	15.1	ND	13.5	ND	11.6		ND	3.3
Chlordane	ug/kg	ND	284	ND	322	ND	311	ND	278	ND	239		N/A	N/A
Dieldrin	ug/kg	ND	13.8	ND	15.7	ND	15.1	ND	13.5	ND	11.6		ND	5
Mirex	ug/kg	ND	13.8	ND	15.7	ND	15.1	ND	13.5	ND	11.6		N/A	N/A
<b>SEMI-VOLATILES<sup>2</sup></b>														
Acenaphthene	ug/kg	ND	69.1	ND	84.4	ND	88.3	ND	27.9	ND	20.7		ND	20000
Acenaphthylene	ug/kg	ND	69.1	ND	84.4	62.7J	88.3	ND	27.9	ND	20.7		ND	100000
Anthracene	ug/kg	ND	69.1	ND	84.4	79.0J	88.3	ND	27.9	ND	20.7		ND	100000
Benzo(a)anthracene	ug/kg	ND	69.1	45.8J	84.4	187	88.3	59.1J	27.9	71.4	20.7		0	1000
Benzo(a)pyrene	ug/kg	411	69.1	54.7J	84.4	271	88.3	65.9J	27.9	97.2	20.7		0	1000
Benzo(b)fluoranthene	ug/kg	ND	69.1	35.3J	84.4	157	88.3	36.5J	27.9	107	20.7		N/A	1000
Benzo(g,h,i)perylene	ug/kg	ND	69.1	41.0J	84.4	148	88.3	45.2J	27.9	54.5J	20.7		N/A	100000
Benzo(k)fluoranthene	ug/kg	ND	69.1	40.4J	84.4	173	88.3	43.8J	27.9	41.0J	20.7		N/A	800
Chrysene	ug/kg	ND	69.1	31.1J	84.4	223	88.3	56.8J	27.9	72.6	20.7		0	1000
Dibenzo(a,h)anthracene	ug/kg	ND	69.1	ND	84.4	39.2J	88.3	ND	27.9	ND	20.7		ND	330
Fluoranthene	ug/kg	ND	69.1	47.9J	84.4	205	88.3	87.4	27.9	151	20.7		0	10000
Fluorene	ug/kg	ND	69.1	ND	84.4	36.4J	88.3	ND	27.9	ND	20.7		ND	30000
Indeno(1,2,3-cd)pyrene	ug/kg	ND	69.1	ND	84.4	161	88.3	40.7J	27.9	75.5	20.7		N/A	500
Naphthalene	ug/kg	ND	69.1	ND	84.4	55.4J	88.3	ND	27.9	42.6J	20.7		ND	12000
Phenanthrene	ug/kg	ND	69.1	34.8J	84.4	165	88.3	60.1J	27.9	85.7	20.7		0	100000
Pyrene	ug/kg	ND	69.1	68.3J	84.4	290	88.3	101	27.9	91.9	20.7		0	100000

<sup>1</sup> 6 NYCRR 361-3.9

<sup>2</sup> 6 NYCRR 375-6.8

<sup>3</sup> Technical Operational Guidance Series 5.1.9

		Highland 1A		Poughkeepsie 1A		Hyde Park 1A		Port Ewen 3A		Rhinebeck 1A			HR 93	NY
		Result	RDL	Result	RDL	Result	RDL	Result	RDL	Result	RDL		Results	Standards
<b>VOLATILES<sup>2</sup></b>														
Benzene	ug/kg	ND	4.6	ND	3.8	ND	3.2	ND	2.6	ND	2.9		N/A	60
Ethylbenzene	ug/kg	ND	4.6	ND	3.8	ND	3.2	ND	2.6	ND	2.9		N/A	1000
Toluene	ug/kg	ND	4.6	ND	3.8	ND	3.2	ND	2.6	ND	2.9		N/A	700
Total Xylenes	ug/kg	ND	13.7	ND	11.3	ND	9.7	ND	7.8	ND	8.6		N/A	260
<b>PCBS<sup>2</sup></b>														
Cl2-BZ#8	ug/kg	ND	0.677	0.712J	0.756	21.2	0.655	ND	0.596	2.33	0.545		0	N/A
Cl3-BZ#18	ug/kg	ND	0.677	1.35	0.756	74.1	0.655	ND	0.596	1.85	0.545		0	N/A
Cl3-BZ#28	ug/kg	ND	0.677	1.67	0.756	82.6	0.655	ND	0.596	1.49	0.545		0	N/A
Cl4-BZ#44	ug/kg	ND	0.677	0.906	0.756	31.1	0.655	ND	0.596	0.456J	0.545		0	N/A
Cl4-BZ#49	ug/kg	ND	0.677	1.11	0.756	57.2	0.655	ND	0.596	1.04	0.545		0	N/A
Cl4-BZ#52	ug/kg	ND	0.677	1.74	0.756	67.7	0.655	ND	0.596	1.21	0.545		0	N/A
Cl4-BZ#66	ug/kg	ND	0.677	0.723J	0.756	39.6	0.655	ND	0.596	0.504J	0.545		0	N/A
Cl5-BZ#87	ug/kg	ND	0.677	ND	0.756	7.79	0.655	ND	0.596	ND	0.545		ND	N/A
Cl5-BZ#101	ug/kg	ND	0.677	1.29	0.756	35.9	0.655	ND	0.596	0.273J	0.545		0	N/A
Cl5-BZ#105	ug/kg	ND	0.677	ND	0.756	7.51	0.655	ND	0.596	ND	0.545		ND	N/A
Cl5-BZ#118	ug/kg	ND	0.677	0.412J	0.756	23.9	0.655	ND	0.596	ND	0.545		0	N/A
Cl6-BZ#128	ug/kg	ND	0.677	0.555J	0.756	6.48	0.655	ND	0.596	ND	0.545		ND	N/A
Cl6-BZ#138	ug/kg	ND	0.677	0.503J	0.756	24.6	0.655	ND	0.596	ND	0.545		0	N/A
Cl6-BZ#153	ug/kg	ND	0.677	ND	0.756	19.4	0.655	ND	0.596	ND	0.545		0	N/A
Cl7-BZ#170	ug/kg	ND	0.677	ND	0.756	4.79	0.655	ND	0.596	ND	0.545		ND	N/A
Cl7-BZ#180	ug/kg	ND	0.677	ND	0.756	6.24	0.655	ND	0.596	ND	0.545		ND	N/A
Cl7-BZ#183	ug/kg	ND	0.677	ND	0.756	1.85	0.655	ND	0.596	ND	0.545		ND	N/A
Cl7-BZ#184	ug/kg	ND	0.677	ND	0.756	ND	0.655	ND	0.596	ND	0.545		ND	N/A
Cl7-BZ#187	ug/kg	ND	0.677	ND	0.756	4.3	0.655	ND	0.596	ND	0.545		ND	N/A
Cl8-BZ#195	ug/kg	ND	0.677	ND	0.756	0.789	0.655	ND	0.596	ND	0.545		ND	N/A
Cl9-BZ#206	ug/kg	ND	0.677	0.413J	0.756	1.62	0.655	ND	0.596	ND	0.545		ND	N/A
Cl10-BZ#209	ug/kg	ND	0.677	0.572J	0.756	1.36	0.655	ND	0.596	ND	0.545		ND	N/A
<b>Total</b>	ug/kg	0	0.677	11.956	0.756	520.029	0.655	0	0.596	0	0.545		0	100
<b>DIOXINS<sup>3</sup></b>														
Total TEQ	ng/kg	0.286		1.5		24.6		0.548		0.0329			N/A	4.5

<sup>1</sup> 6 NYCRR 361-3.9

<sup>2</sup> 6 NYCRR 375-6.8

<sup>3</sup> Technical Operational Guidance Series 5.1.9



## DISCUSSION

There were no detectable concentrations of pesticides or volatiles (i.e., benzene, ethylbenzene, toluene, and xylenes) in the samples collected from the upper portion of the cores. There were no exceedances of the New York State reference values for metals, mercury, or semi-volatiles.

For the Hyde Park sample 1A, there was an exceedance of the reference value for two constituents:

- Total PCBs: 520 ug/kg compared to standard of 100 ug/kg.
- Toxic Equivalency (TEQ): 24.6 ng/kg compared to standard of 4.5 ng/kg.

While dioxin and PCBs have low toxicity standards, they are both hydrophobic and rarely dissolve into surface water. Therefore, the risk would not be to drinking water but rather elevated levels in sludge material. In addition, this water intake is a significant distance from the route (approximately 1,100 feet). The results of the pilot study, where a simulated intake was placed 160 feet from the jet plow trial, suggest that if elevated levels of total suspended solids occur it will be when the jet plow is operating in close proximity to the intake. CHPE LLC believes that they can work with Hyde Park to develop appropriate precautionary measures to ensure that the plant's sludge can be disposed of with no additional cost to the residents.

The sediment quality results for the sample along the pilot study route (HR 93) are largely comparable to those collected at the intake locations. It has been suggested that a soil sample should be collected at this same location and the upper four feet of the core be subjected to the same laboratory sampling. However, the laboratory results for HR 93 are based on the analysis of the four (4) to five (5) foot section of the core, as shown on the core log (see Appendix 2). Moreover, the laboratory results at the intakes suggest that the sediment quality is generally within regulatory standards, so any disturbance would not trigger any non-compliance issues.

A core sample was not obtained in the direct vicinity of the Port Ewan intake because the protocols called for collection along the route and the route as of the time of the study crossed the intake pipe. However, as shown in Table 4, the laboratory results for the Port Ewan 2A, 3A, 4A and 5A samples show similar values and there are no exceedances of the New York standards recommended by the Hudson 7. Therefore, there is no reason to assume that a core sample collected directly in the vicinity of the Port Ewan intake would produce different results.

## CONCLUSION

A sediment sampling study was completed near five municipal drinking water intakes in the Hudson River, based on a protocol developed in consultation with the Hudson 7. The laboratory results from this sampling were compared with certain New York State standards, even if those standards should be considered conservative. The results showed that, with the exception of two constituents at one intake, there were no exceedances of these metrics. The nature of the two exceptions, as well as the current distance between the installation route and the associated intake, suggest that there will be no compliance issues.

**TABLE 4. COMPARISONS OF PORT EWAN LABORATORY RESULTS**

		Port Ewan 2A		Port Ewan 3A		Port Ewan 4A		Port Ewan 5A			HR 93	NY
		Result	RDL	Result	RDL	Result	RDL	Result	RDL			
<b>METALS / MERCURY<sup>1</sup></b>												
Arsenic, Total	mg/kg	6.7	2.9	9.8	3.1	13	3.3	15.7	3.0		5.3	41
Cadmium, Total	mg/kg	0.30J	0.72	0.31J	0.78	0.36J	0.82	0.58J	0.76		0.367	10
Copper, Total	mg/kg	18.8	2.9	19.5	3.1	24.7	3.3	40.2	3.0		15.6	1,500
Lead, Total	mg/kg	24	2.9	27.9	2.1	35.9	3.3	57.1	3.0		13.5	300
Mercury, Total	mg/kg	0.096	0.77	0.24	0.73	0.036	0.084	0.42	0.074		0.077	10
<b>PESTICIDES<sup>2</sup></b>												
4,4'-DDD	ug/kg	ND	13.1	ND	13.5	ND	13.4	ND	14.3		ND	3.3
4,4'-DDE	ug/kg	ND	13.1	ND	13.5	ND	13.4	ND	14.3		ND	3.3
4,4'-DDT	ug/kg	ND	13.1	ND	13.5	ND	13.4	ND	14.3		ND	3.3
Chlordane	ug/kg	ND	270	ND	278	ND	276	ND	295		N/A	N/A
Dieldrin	ug/kg	ND	13.1	ND	13.5	ND	13.4	ND	14.3		ND	5
Mirex	ug/kg	ND	13.1	ND	13.5	ND	13.4	ND	14.3		N/A	N/A
<b>SEMI-VOLATILES<sup>2</sup></b>												
Acenaphthene	ug/kg	ND	79.1	ND	27.9	ND	75.0	ND	78.1		ND	20000
Acenaphthylene	ug/kg	ND	79.1	ND	27.9	26.2J	75.0	53.3J	78.1		ND	100000
Anthracene	ug/kg	ND	79.1	ND	27.9	44.9J	75.0	99.3	78.1		ND	100000
Benzo(a)anthracene	ug/kg	30.8J	79.1	59.1J	27.9	154	75.0	205	78.1		0	1000
Benzo(a)pyrene	ug/kg	ND	79.1	65.9J	27.9	203	75.0	302	78.1		0	1000
Benzo(b)fluoranthene	ug/kg	ND	79.1	36.5J	27.9	136	75.0	170	78.1		N/A	1000
Benzo(g,h,i)perylene	ug/kg	ND	79.1	45.2J	27.9	123	75.0	187	78.1		N/A	100000
Benzo(k)fluoranthene	ug/kg	ND	79.1	43.8J	27.9	101	75.0	166	78.1		N/A	800
Chrysene	ug/kg	ND	79.1	56.8J	27.9	155	75.0	243	78.1		0	1000
Dibenzo(a,h)anthracene	ug/kg	ND	79.1	ND	27.9	26.1J	75.0	49.3J	78.1		ND	330
Fluoranthene	ug/kg	40.9J	79.1	87.4	27.9	192	75.0	244	78.1		0	10000
Fluorene	ug/kg	ND	79.1	ND	27.9	ND	75.0	44.9J	78.1		ND	30000
Indeno(1,2,3-cd)pyrene	ug/kg	ND	79.1	40.7J	27.9	124	75.0	173	78.1		N/A	500
Naphthalene	ug/kg	ND	79.1	ND	27.9	ND	75.0	54.1J	78.1		ND	12000
Phenanthrene	ug/kg	ND	79.1	60.1J	27.9	ND	75.0	216	78.1		0	100000
Pyrene	ug/kg	44.9J	79.1	101	27.9	249	75.0	325	78.1		0	100000

<sup>1</sup> 6 NYCRR 361-3.9<sup>2</sup> 6 NYCRR 375-6.8<sup>3</sup> Technical Operational Guidance Series 5.1.9

		Port Ewan 2A		Port Ewan 3A		Port Ewan 4A		Port Ewan 5A			HR 93	NY
		Result	RDL	Result	RDL	Result	RDL	Result	RDL		Results	Standards
<b>VOLATILES<sup>2</sup></b>												
Benzene	ug/kg	ND	2.6	ND	2.6	ND	4.2	ND	2.6		N/A	60
Ethylbenzene	ug/kg	ND	2.6	ND	2.6	ND	4.2	ND	2.6		N/A	1000
Toluene	ug/kg	ND	2.6	ND	2.6	ND	4.2	ND	2.6		N/A	700
Total Xylenes	ug/kg	ND	7.8	ND	7.8	ND	12.5	ND	7.7		N/A	260
<b>PCBS<sup>2</sup></b>												
Cl2-BZ#8	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		0	N/A
Cl3-BZ#18	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		0	N/A
Cl3-BZ#28	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		0	N/A
Cl4-BZ#44	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		0	N/A
Cl4-BZ#49	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		0	N/A
Cl4-BZ#52	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		0	N/A
Cl4-BZ#66	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		0	N/A
Cl5-BZ#87	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		ND	N/A
Cl5-BZ#101	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		0	N/A
Cl5-BZ#105	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		ND	N/A
Cl5-BZ#118	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		0	N/A
Cl6-BZ#128	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		ND	N/A
Cl6-BZ#138	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		0	N/A
Cl6-BZ#153	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		0	N/A
Cl7-BZ#170	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		ND	N/A
Cl7-BZ#180	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		ND	N/A
Cl7-BZ#183	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		ND	N/A
Cl7-BZ#184	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		ND	N/A
Cl7-BZ#187	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		ND	N/A
Cl8-BZ#195	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		ND	N/A
Cl9-BZ#206	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		ND	N/A
Cl10-BZ#209	ug/kg	ND	0.602	ND	0.596	ND	0.627	ND	0.631		ND	N/A
<b>Total</b>	ug/kg	0	0.602	0	0.596	0	0.627	0	0.631		ND	100
<b>DIOXINS<sup>3</sup></b>												
Total TEQ	ng/kg	0.336		0.548		1.06		0.695			N/A	4.5

<sup>1</sup> 6 NYCRR 361-3.9

<sup>2</sup> 6 NYCRR 375-6.8

<sup>3</sup> Technical Operational Guidance Series 5.1.9

## APPENDIX 1

### LABORATORY RESULTS

# **Attachment A**

## **Highland Sediment Cores**

### **Laboratory Results**



301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | [www.alsglobal.com](http://www.alsglobal.com)

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618  
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

**Normandeu Associates Inc.-Stowe**

Project [CHPE Hudson/24711](#)

Workorder [3264939](#)

Report ID [203607 on 10/28/2022](#)

### Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Sep 22, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Sarah Leung (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.  
ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):

Don Nazario - Normandeu Associates, Inc.-Stowe  
Michael Mettler - Normandeu Associates, Inc.

*Sarah Leung*

**Sarah Leung**  
Project Coordinator

(ALS Digital Signature)

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*



### Sample Summary

<u>Lab ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>	<u>Collector</u>	<u>Collection Company</u>
3264939001	High 1A	Solid	09/21/2022 10:30	09/22/2022 08:52	CBC	Collected By Client
3264939002	High 1B	Solid	09/21/2022 10:35	09/22/2022 08:52	CBC	Collected By Client
3264939003	High 2A	Solid	09/21/2022 12:00	09/22/2022 08:52	CBC	Collected By Client
3264939004	High 2B	Solid	09/21/2022 12:05	09/22/2022 08:52	CBC	Collected By Client



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## Reference

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### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

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### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

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### Project Notations

### Sample Notations

Lab ID	Sample ID		
3264939001	High 1A	<b>S1</b>	This sample was analyzed at a dilution in the 8081 pesticide analysis. Reporting limits were adjusted accordingly.
3264939002	High 1B	<b>S2</b>	This sample was analyzed at a dilution in the 8081 pesticide analysis. Reporting limits were adjusted accordingly.
3264939003	High 2A	<b>S3</b>	This sample was analyzed at a dilution in the 8081 pesticide analysis. Reporting limits were adjusted accordingly.
3264939004	High 2B	<b>S4</b>	This sample was analyzed at a dilution in the 8081 pesticide analysis. Reporting limits were adjusted accordingly.

### Result Notations

Notation Ref.	
1	See attached subcontract Dioxin results from ALS Houston. SLW 10/28/2022
2	Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This compound was biased high 41% in the bracketing CCV.
3	Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This compound was biased high 32% in the bracketing CCV.
4	Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This compound was biased low 58% in the bracketing CCV.
5	See attached subcontract PCB results from Alpha Analytical. SLW 10/07/2022



**Detected Results Summary**

Client Sample ID	<b>High 1A</b>	Collected	<b>09/21/2022 10:30</b>
Lab Sample ID	<b>3264939001</b>	Lab Receipt	<b>09/22/2022 08:52</b>

<u>Compound</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Flag</u>
<b>METALS</b>						
Arsenic, Total	5.5	mg/kg	3.3	1.1	SW846 6010D	#
Copper, Total	11.7	mg/kg	3.3	1.1	SW846 6010D	#
Lead, Total	9.1	mg/kg	3.3	1.1	SW846 6010D	#
<b>SEMIVOLATILES</b>						
Benzo(a)pyrene	411	ug/kg	69.1	23.5	SW846 8270D	#
<b>SUBCONTRACTED ANALYSIS</b>						
Subcontracted Analysis	See attached				Subcontract	#
<b>Sub'd-CASH Labs</b>						
Dioxin	See attached				ug/L EPA 1613B	#
<b>WET CHEMISTRY</b>						
Moisture	39.7	%	0.1	0.01	S2540G-11	#
Total Solids	60.3	%	0.1	0.01	S2540G-11	#



### Detected Results Summary

Client Sample ID	<b>High 1B</b>	Collected	<b>09/21/2022 10:35</b>
Lab Sample ID	<b>3264939002</b>	Lab Receipt	<b>09/22/2022 08:52</b>

Compound	Result	Units	RDL	MDL	Method	Flag	
<b>METALS</b>							
Arsenic, Total	6.0	mg/kg	3.2	1.1	SW846 6010D	#	
Copper, Total	11.8	mg/kg	3.2	1.1	SW846 6010D	#	
Lead, Total	9.1	mg/kg	3.2	1.1	SW846 6010D	#	
<b>SUBCONTRACTED ANALYSIS</b>							
Subcontracted Analysis	See attached				Subcontract	#	
<b>Sub'd-CASH Labs</b>							
Dioxin	See attached				ug/L	EPA 1613B	#
<b>WET CHEMISTRY</b>							
Moisture	40.8	%	0.1	0.01	S2540G-11	#	
Total Solids	59.2	%	0.1	0.01	S2540G-11	#	



**Detected Results Summary**

Client Sample ID	<b>High 2A</b>	Collected	<b>09/21/2022 12:00</b>
Lab Sample ID	<b>3264939003</b>	Lab Receipt	<b>09/22/2022 08:52</b>

<u>Compound</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Flag</u>
<b>METALS</b>						
Arsenic, Total	5.2	mg/kg	3.6	1.2	SW846 6010D	#
Copper, Total	13.2	mg/kg	3.6	1.2	SW846 6010D	#
Lead, Total	11.0	mg/kg	3.6	1.2	SW846 6010D	#
Mercury, Total	0.042J	mg/kg	0.090	0.029	SW846 7471B	#
<b>SUBCONTRACTED ANALYSIS</b>						
Subcontracted Analysis	See attached				Subcontract	#
<b>Sub'd-CASH Labs</b>						
Dioxin	See attached				ug/L EPA 1613B	#
<b>WET CHEMISTRY</b>						
Moisture	45.9	%	0.1	0.01	S2540G-11	#
Total Solids	54.1	%	0.1	0.01	S2540G-11	#



**Detected Results Summary**

Client Sample ID	<b>High 2B</b>	Collected	<b>09/21/2022 12:05</b>
Lab Sample ID	<b>3264939004</b>	Lab Receipt	<b>09/22/2022 08:52</b>

<u>Compound</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Flag</u>	
<b>METALS</b>							
Arsenic, Total	5.8	mg/kg	3.3	1.1	SW846 6010D	#	
Copper, Total	12.3	mg/kg	3.3	1.1	SW846 6010D	#	
Lead, Total	10.1	mg/kg	3.3	1.1	SW846 6010D	#	
<b>SUBCONTRACTED ANALYSIS</b>							
Subcontracted Analysis	See attached				Subcontract	#	
<b>Sub'd-CASH Labs</b>							
Dioxin	See attached				ug/L	EPA 1613B	#
<b>WET CHEMISTRY</b>							
Moisture	41.1	%	0.1	0.01	S2540G-11	#	
Total Solids	58.9	%	0.1	0.01	S2540G-11	#	



## Results

Client Sample ID	High 1A	Collected	09/21/2022 10:30
Lab Sample ID	3264939001	Lab Receipt	09/22/2022 08:52

### METALS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Arsenic, Total	5.5	S1	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:46	A1S	E1
Cadmium, Total	ND	ND,S1	mg/kg	0.82	0.27	SW846 6010D	1	10/18/2022 14:46	A1S	E1
Copper, Total	11.7	S1	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:46	A1S	E1
Lead, Total	9.1	S1	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:46	A1S	E1
Mercury, Total	ND	ND,S1	mg/kg	0.081	0.026	SW846 7471B	1	09/28/2022 13:59	WDA	E

### PESTICIDES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
4,4'-DDD	ND	ND,2,S1	ug/kg	13.8	8.9	SW846 8081B	5	09/28/2022 18:59	KJH	E
4,4'-DDE	ND	ND,3,S1	ug/kg	13.8	4.5	SW846 8081B	5	09/28/2022 18:59	KJH	E
4,4'-DDT	ND	ND,4,S1	ug/kg	13.8	4.0	SW846 8081B	5	09/28/2022 18:59	KJH	E
Chlordane	ND	ND,S1	ug/kg	284	47.9	SW846 8081B	5	09/28/2022 18:59	KJH	E
Dieldrin	ND	ND,S1	ug/kg	13.8	5.4	SW846 8081B	5	09/28/2022 18:59	KJH	E
Mirex	ND	ND,S1	ug/kg	13.8	4.3	SW846 8081B	5	09/28/2022 18:59	KJH	E

### SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
Decachlorobiphenyl	2051-24-3	44.9%	30 – 135	09/28/2022 18:59	
Tetrachloro-m-xylene	877-09-8	48.6%	30 – 111	09/28/2022 18:59	

### SEMIVOLATILES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acenaphthene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Acenaphthylene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Anthracene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Benzo(a)anthracene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Benzo(a)pyrene	411	S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Benzo(b)fluoranthene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Benzo(g,h,i)perylene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Benzo(k)fluoranthene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Chrysene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Dibenzo(a,h)anthracene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Fluoranthene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Fluorene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Indeno(1,2,3-cd)pyrene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Naphthalene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Phenanthrene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E
Pyrene	ND	ND,S1	ug/kg	69.1	23.5	SW846 8270D	1	09/26/2022 11:25	S7M	E



## Results

Client Sample ID	High 1A	Collected	09/21/2022 10:30
Lab Sample ID	3264939001	Lab Receipt	09/22/2022 08:52

### SEMIVOLATILES (cont.)

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>										
Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
2,4,6-Tribromophenol	118-79-6			78%		19 – 132		09/26/2022 11:25		
2-Fluorobiphenyl	321-60-8			69.2%		40 – 110		09/26/2022 11:25		
2-Fluorophenol	367-12-4			66.5%		26 – 116		09/26/2022 11:25		
Nitrobenzene-d5	4165-60-0			67.8%		38 – 112		09/26/2022 11:25		
Phenol-d5	4165-62-2			69.4%		35 – 111		09/26/2022 11:25		
Terphenyl-d14	98904-43-9			77.9%		45 – 126		09/26/2022 11:25		

### SUBCONTRACTED ANALYSIS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Subcontracted Analysis	See attached	5,S1				Subcontract	1	10/07/2022 15:16	SUB	G

### Sub'd-CASH Labs

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dioxin	See attached	1,S1	ug/L			EPA 1613B	1	10/28/2022 13:59	SUB	F

### VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Benzene	ND	ND,S1	ug/kg	4.6	1.1	SW846 8260C	1	09/26/2022 14:10	TMP	B
Ethylbenzene	ND	ND,S1	ug/kg	4.6	1.6	SW846 8260C	1	09/26/2022 14:10	TMP	B
Toluene	ND	ND,S1	ug/kg	4.6	1.5	SW846 8260C	1	09/26/2022 14:10	TMP	B
Total Xylenes	ND	ND,S1	ug/kg	13.7	3.2	SW846 8260C	1	09/26/2022 14:10	TMP	B

### *SURROGATES*

Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			94.8%		56 – 124		09/26/2022 14:10		
4-Bromofluorobenzene	460-00-4			99.2%		51 – 128		09/26/2022 14:10		
Dibromofluoromethane	1868-53-7			104%		62 – 123		09/26/2022 14:10		
Toluene-d8	2037-26-5			97.7%		59 – 131		09/26/2022 14:10		

### WET CHEMISTRY

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	39.7	S1	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D
Total Solids	60.3	S1	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D

**Project** CHPE Hudson/24711  
**Workorder** 3264939



## Results

Client Sample ID	High 1A	Collected	09/21/2022 10:30
Lab Sample ID	3264939001	Lab Receipt	09/22/2022 08:52

### WET CHEMISTRY (cont.)

<u>Compound</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Dilution</u>	<u>Analysis Date/Time</u>	<u>By</u>	<u>Cntr</u>
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## Results

Client Sample ID	<b>High 1B</b>	Collected	<b>09/21/2022 10:35</b>
Lab Sample ID	<b>3264939002</b>	Lab Receipt	<b>09/22/2022 08:52</b>

### METALS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Arsenic, Total	6.0	S2	mg/kg	3.2	1.1	SW846 6010D	1	10/18/2022 14:47	A1S	E1
Cadmium, Total	ND	ND,S2	mg/kg	0.80	0.27	SW846 6010D	1	10/18/2022 14:47	A1S	E1
Copper, Total	11.8	S2	mg/kg	3.2	1.1	SW846 6010D	1	10/18/2022 14:47	A1S	E1
Lead, Total	9.1	S2	mg/kg	3.2	1.1	SW846 6010D	1	10/18/2022 14:47	A1S	E1
Mercury, Total	ND	ND,S2	mg/kg	0.073	0.024	SW846 7471B	1	09/28/2022 14:03	WDA	E

### PESTICIDES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
4,4'-DDD	ND	ND,2,S2	ug/kg	14.1	9.1	SW846 8081B	5	09/28/2022 19:09	KJH	E
4,4'-DDE	ND	ND,3,S2	ug/kg	14.1	4.6	SW846 8081B	5	09/28/2022 19:09	KJH	E
4,4'-DDT	ND	ND,4,S2	ug/kg	14.1	4.1	SW846 8081B	5	09/28/2022 19:09	KJH	E
Chlordane	ND	ND,S2	ug/kg	290	48.9	SW846 8081B	5	09/28/2022 19:09	KJH	E
Dieldrin	ND	ND,S2	ug/kg	14.1	5.5	SW846 8081B	5	09/28/2022 19:09	KJH	E
Mirex	ND	ND,S2	ug/kg	14.1	4.4	SW846 8081B	5	09/28/2022 19:09	KJH	E

### SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
Decachlorobiphenyl	2051-24-3	52.8%	30 – 135	09/28/2022 19:09	
Tetrachloro-m-xylene	877-09-8	47.6%	30 – 111	09/28/2022 19:09	

### SEMIVOLATILES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acenaphthene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Acenaphthylene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Anthracene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Benzo(a)anthracene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Benzo(a)pyrene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Benzo(b)fluoranthene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Benzo(g,h,i)perylene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Benzo(k)fluoranthene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Chrysene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Dibenzo(a,h)anthracene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Fluoranthene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Fluorene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Indeno(1,2,3-cd)pyrene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Naphthalene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Phenanthrene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E
Pyrene	ND	ND,S2	ug/kg	81.2	27.6	SW846 8270D	1	09/26/2022 11:50	S7M	E



## Results

Client Sample ID	High 1B	Collected	09/21/2022 10:35
Lab Sample ID	3264939002	Lab Receipt	09/22/2022 08:52

### SEMIVOLATILES (cont.)

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>										
Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
2,4,6-Tribromophenol	118-79-6			84.3%		19 – 132		09/26/2022 11:50		
2-Fluorobiphenyl	321-60-8			74.6%		40 – 110		09/26/2022 11:50		
2-Fluorophenol	367-12-4			70.6%		26 – 116		09/26/2022 11:50		
Nitrobenzene-d5	4165-60-0			72.4%		38 – 112		09/26/2022 11:50		
Phenol-d5	4165-62-2			73.2%		35 – 111		09/26/2022 11:50		
Terphenyl-d14	98904-43-9			82.7%		45 – 126		09/26/2022 11:50		

### SUBCONTRACTED ANALYSIS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Subcontracted Analysis	See attached	5,S2				Subcontract	1	10/07/2022 15:17	SUB	G

### Sub'd-CASH Labs

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dioxin	See attached	1,S2	ug/L			EPA 1613B	1	10/28/2022 14:00	SUB	F

### VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Benzene	ND	ND,S2	ug/kg	3.3	0.83	SW846 8260C	1	09/26/2022 14:34	TMP	B
Ethylbenzene	ND	ND,S2	ug/kg	3.3	1.1	SW846 8260C	1	09/26/2022 14:34	TMP	B
Toluene	ND	ND,S2	ug/kg	3.3	1.1	SW846 8260C	1	09/26/2022 14:34	TMP	B
Total Xylenes	ND	ND,S2	ug/kg	10	2.3	SW846 8260C	1	09/26/2022 14:34	TMP	B

### *SURROGATES*

Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			94.3%		56 – 124		09/26/2022 14:34		
4-Bromofluorobenzene	460-00-4			98.3%		51 – 128		09/26/2022 14:34		
Dibromofluoromethane	1868-53-7			104%		62 – 123		09/26/2022 14:34		
Toluene-d8	2037-26-5			98.8%		59 – 131		09/26/2022 14:34		

### WET CHEMISTRY

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	40.8	S2	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D
Total Solids	59.2	S2	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D



**Project** CHPE Hudson/24711

**Workorder** 3264939

### Results

Client Sample ID	<b>High 1B</b>	Collected	<b>09/21/2022 10:35</b>
Lab Sample ID	<b>3264939002</b>	Lab Receipt	<b>09/22/2022 08:52</b>

### WET CHEMISTRY (cont.)

<u>Compound</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Dilution</u>	<u>Analysis Date/Time</u>	<u>By</u>	<u>Cntr</u>
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## Results

Client Sample ID	High 2A	Collected	09/21/2022 12:00
Lab Sample ID	3264939003	Lab Receipt	09/22/2022 08:52

### METALS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Arsenic, Total	5.2	S3	mg/kg	3.6	1.2	SW846 6010D	1	10/18/2022 14:48	A1S	E1
Cadmium, Total	ND	ND,S3	mg/kg	0.90	0.30	SW846 6010D	1	10/18/2022 14:48	A1S	E1
Copper, Total	13.2	S3	mg/kg	3.6	1.2	SW846 6010D	1	10/18/2022 14:48	A1S	E1
Lead, Total	11.0	S3	mg/kg	3.6	1.2	SW846 6010D	1	10/18/2022 14:48	A1S	E1
Mercury, Total	0.042J	J,S3	mg/kg	0.090	0.029	SW846 7471B	1	09/28/2022 14:06	WDA	E

### PESTICIDES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
4,4'-DDD	ND	ND,2,S3	ug/kg	15.2	9.8	SW846 8081B	5	09/28/2022 19:20	KJH	E
4,4'-DDE	ND	ND,3,S3	ug/kg	15.2	4.9	SW846 8081B	5	09/28/2022 19:20	KJH	E
4,4'-DDT	ND	ND,4,S3	ug/kg	15.2	4.4	SW846 8081B	5	09/28/2022 19:20	KJH	E
Chlordane	ND	ND,S3	ug/kg	313	52.8	SW846 8081B	5	09/28/2022 19:20	KJH	E
Dieldrin	ND	ND,S3	ug/kg	15.2	5.9	SW846 8081B	5	09/28/2022 19:20	KJH	E
Mirex	ND	ND,S3	ug/kg	15.2	4.7	SW846 8081B	5	09/28/2022 19:20	KJH	E

### SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
Decachlorobiphenyl	2051-24-3	48.3%	30 – 135	09/28/2022 19:20	
Tetrachloro-m-xylene	877-09-8	48.3%	30 – 111	09/28/2022 19:20	

### SEMIVOLATILES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acenaphthene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Acenaphthylene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Anthracene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Benzo(a)anthracene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Benzo(a)pyrene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Benzo(b)fluoranthene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Benzo(g,h,i)perylene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Benzo(k)fluoranthene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Chrysene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Dibenzo(a,h)anthracene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Fluoranthene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Fluorene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Indeno(1,2,3-cd)pyrene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Naphthalene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Phenanthrene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E
Pyrene	ND	ND,S3	ug/kg	88.9	30.2	SW846 8270D	1	09/26/2022 12:15	S7M	E



## Results

Client Sample ID	High 2A	Collected	09/21/2022 12:00
Lab Sample ID	3264939003	Lab Receipt	09/22/2022 08:52

### SEMIVOLATILES (cont.)

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>										
Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
2,4,6-Tribromophenol	118-79-6			84.2%		19 – 132		09/26/2022 12:15		
2-Fluorobiphenyl	321-60-8			76.7%		40 – 110		09/26/2022 12:15		
2-Fluorophenol	367-12-4			77.2%		26 – 116		09/26/2022 12:15		
Nitrobenzene-d5	4165-60-0			78.1%		38 – 112		09/26/2022 12:15		
Phenol-d5	4165-62-2			78.4%		35 – 111		09/26/2022 12:15		
Terphenyl-d14	98904-43-9			82.6%		45 – 126		09/26/2022 12:15		

### SUBCONTRACTED ANALYSIS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Subcontracted Analysis	See attached	5,S3				Subcontract	1	10/07/2022 15:18	SUB	G

### Sub'd-CASH Labs

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dioxin	See attached	1,S3	ug/L			EPA 1613B	1	10/28/2022 14:00	SUB	F

### VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Benzene	ND	ND,S3	ug/kg	4.6	1.1	SW846 8260C	1	09/26/2022 14:59	TMP	B
Ethylbenzene	ND	ND,S3	ug/kg	4.6	1.6	SW846 8260C	1	09/26/2022 14:59	TMP	B
Toluene	ND	ND,S3	ug/kg	4.6	1.5	SW846 8260C	1	09/26/2022 14:59	TMP	B
Total Xylenes	ND	ND,S3	ug/kg	13.7	3.2	SW846 8260C	1	09/26/2022 14:59	TMP	B

### *SURROGATES*

Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			87.5%		56 – 124		09/26/2022 14:59		
4-Bromofluorobenzene	460-00-4			104%		51 – 128		09/26/2022 14:59		
Dibromofluoromethane	1868-53-7			101%		62 – 123		09/26/2022 14:59		
Toluene-d8	2037-26-5			102%		59 – 131		09/26/2022 14:59		

### WET CHEMISTRY

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	45.9	S3	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D
Total Solids	54.1	S3	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D



**Project** CHPE Hudson/24711

**Workorder** 3264939

### Results

Client Sample ID	High 2A	Collected	09/21/2022 12:00
Lab Sample ID	3264939003	Lab Receipt	09/22/2022 08:52

### WET CHEMISTRY (cont.)

<u>Compound</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Dilution</u>	<u>Analysis Date/Time</u>	<u>By</u>	<u>Cntr</u>
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## Results

Client Sample ID	<b>High 2B</b>	Collected	<b>09/21/2022 12:05</b>
Lab Sample ID	<b>3264939004</b>	Lab Receipt	<b>09/22/2022 08:52</b>

### METALS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Arsenic, Total	5.8	S4	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:49	A1S	E1
Cadmium, Total	ND	ND,S4	mg/kg	0.82	0.28	SW846 6010D	1	10/18/2022 14:49	A1S	E1
Copper, Total	12.3	S4	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:49	A1S	E1
Lead, Total	10.1	S4	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:49	A1S	E1
Mercury, Total	ND	ND,S4	mg/kg	0.069	0.022	SW846 7471B	1	09/28/2022 14:07	WDA	E

### PESTICIDES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
4,4'-DDD	ND	ND,2,S4	ug/kg	38.0	24.6	SW846 8081B	5	09/28/2022 19:30	KJH	E
4,4'-DDE	ND	ND,3,S4	ug/kg	38.0	12.3	SW846 8081B	5	09/28/2022 19:30	KJH	E
4,4'-DDT	ND	ND,4,S4	ug/kg	38.0	11.0	SW846 8081B	5	09/28/2022 19:30	KJH	E
Chlordane	ND	ND,S4	ug/kg	782	132	SW846 8081B	5	09/28/2022 19:30	KJH	E
Dieldrin	ND	ND,S4	ug/kg	38.0	14.8	SW846 8081B	5	09/28/2022 19:30	KJH	E
Mirex	ND	ND,S4	ug/kg	38.0	11.8	SW846 8081B	5	09/28/2022 19:30	KJH	E

### SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
Decachlorobiphenyl	2051-24-3	52.7%	30 – 135	09/28/2022 19:30	
Tetrachloro-m-xylene	877-09-8	50.3%	30 – 111	09/28/2022 19:30	

### SEMIVOLATILES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acenaphthene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Acenaphthylene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Anthracene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Benzo(a)anthracene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Benzo(a)pyrene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Benzo(b)fluoranthene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Benzo(g,h,i)perylene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Benzo(k)fluoranthene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Chrysene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Dibenzo(a,h)anthracene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Fluoranthene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Fluorene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Indeno(1,2,3-cd)pyrene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Naphthalene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Phenanthrene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E
Pyrene	ND	ND,S4	ug/kg	81.7	27.8	SW846 8270D	1	09/26/2022 12:39	S7M	E



## Results

Client Sample ID	High 2B	Collected	09/21/2022 12:05
Lab Sample ID	3264939004	Lab Receipt	09/22/2022 08:52

### SEMIVOLATILES (cont.)

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>										
Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
2,4,6-Tribromophenol	118-79-6			86.1%		19 – 132		09/26/2022 12:39		
2-Fluorobiphenyl	321-60-8			79.5%		40 – 110		09/26/2022 12:39		
2-Fluorophenol	367-12-4			76.4%		26 – 116		09/26/2022 12:39		
Nitrobenzene-d5	4165-60-0			78.8%		38 – 112		09/26/2022 12:39		
Phenol-d5	4165-62-2			78.3%		35 – 111		09/26/2022 12:39		
Terphenyl-d14	98904-43-9			86.7%		45 – 126		09/26/2022 12:39		

### SUBCONTRACTED ANALYSIS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Subcontracted Analysis	See attached	5,S4				Subcontract	1	10/07/2022 15:18	SUB	G

### Sub'd-CASH Labs

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dioxin	See attached	1,S4	ug/L			EPA 1613B	1	10/28/2022 14:01	SUB	F

### VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Benzene	ND	ND,S4	ug/kg	3.4	0.86	SW846 8260C	1	09/26/2022 15:23	TMP	B
Ethylbenzene	ND	ND,S4	ug/kg	3.4	1.2	SW846 8260C	1	09/26/2022 15:23	TMP	B
Toluene	ND	ND,S4	ug/kg	3.4	1.1	SW846 8260C	1	09/26/2022 15:23	TMP	B
Total Xylenes	ND	ND,S4	ug/kg	10.3	2.4	SW846 8260C	1	09/26/2022 15:23	TMP	B

### *SURROGATES*

Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			96.6%		56 – 124		09/26/2022 15:23		
4-Bromofluorobenzene	460-00-4			99.9%		51 – 128		09/26/2022 15:23		
Dibromofluoromethane	1868-53-7			106%		62 – 123		09/26/2022 15:23		
Toluene-d8	2037-26-5			100%		59 – 131		09/26/2022 15:23		

### WET CHEMISTRY

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	41.1	S4	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D
Total Solids	58.9	S4	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D





**Project** CHPE Hudson/24711

**Workorder** 3264939

### Results

Client Sample ID	<b>High 2B</b>	Collected	<b>09/21/2022 12:05</b>
Lab Sample ID	<b>3264939004</b>	Lab Receipt	<b>09/22/2022 08:52</b>

### WET CHEMISTRY (cont.)

<u>Compound</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Dilution</u>	<u>Analysis Date/Time</u>	<u>By</u>	<u>Cntr</u>
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### Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3264939001	High 1A	EPA 1613B	N/A	
		SW846 6010D	SW846 3051A	
		SW846 7471B	SW846 7471B	
		Subcontract	N/A	
		SW846 8081B	SW846 3546	
		SW846 8270D	SW846 3546	
		SW846 8260C	SW846 5035A	
		S2540G-11	N/A	
3264939002	High 1B	EPA 1613B	N/A	
		SW846 6010D	SW846 3051A	
		SW846 7471B	SW846 7471B	
		Subcontract	N/A	
		SW846 8081B	SW846 3546	
		SW846 8270D	SW846 3546	
		SW846 8260C	SW846 5035A	
		S2540G-11	N/A	
3264939003	High 2A	EPA 1613B	N/A	
		SW846 6010D	SW846 3051A	
		SW846 7471B	SW846 7471B	
		Subcontract	N/A	
		SW846 8081B	SW846 3546	
		SW846 8270D	SW846 3546	
		SW846 8260C	SW846 5035A	
		S2540G-11	N/A	
3264939004	High 2B	EPA 1613B	N/A	
		SW846 6010D	SW846 3051A	
		SW846 7471B	SW846 7471B	
		Subcontract	N/A	
		SW846 8081B	SW846 3546	
		SW846 8270D	SW846 3546	
		SW846 8260C	SW846 5035A	
		S2540G-11	N/A	



**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3264939001	High 1A	N/A	N/A	N/A		EPA 1613B	
		SW846 3051A	882890	09/26/2022 15:00	JSE	SW846 6010D	891275
		SW846 7471B	884167	09/27/2022 11:00	WDA	SW846 7471B	884713
		N/A	N/A	N/A		Subcontract	
		SW846 3546	882840	09/22/2022 17:15	RXS	SW846 8081B	884677
		SW846 3546	882841	09/22/2022 17:00	J1H	SW846 8270D	884132
		SW846 5035A	884099	09/21/2022 10:30	TMP	SW846 8260C	884100
3264939002	High 1B	N/A	N/A	N/A		EPA 1613B	
		SW846 3051A	882890	09/26/2022 15:00	JSE	SW846 6010D	891275
		SW846 7471B	884167	09/27/2022 11:00	WDA	SW846 7471B	884713
		N/A	N/A	N/A		Subcontract	
		SW846 3546	882840	09/22/2022 17:15	RXS	SW846 8081B	884677
		SW846 3546	882841	09/22/2022 17:00	J1H	SW846 8270D	884132
		SW846 5035A	884099	09/21/2022 10:35	TMP	SW846 8260C	884100
3264939003	High 2A	N/A	N/A	N/A		EPA 1613B	
		SW846 3051A	882890	09/26/2022 15:00	JSE	SW846 6010D	891275
		SW846 7471B	884167	09/27/2022 11:00	WDA	SW846 7471B	884713
		N/A	N/A	N/A		Subcontract	
		SW846 3546	882840	09/22/2022 17:15	RXS	SW846 8081B	884677
		SW846 3546	882841	09/22/2022 17:00	J1H	SW846 8270D	884132
		SW846 5035A	884099	09/21/2022 12:00	TMP	SW846 8260C	884100
3264939004	High 2B	N/A	N/A	N/A		EPA 1613B	
		SW846 3051A	882890	09/26/2022 15:00	JSE	SW846 6010D	891275
		SW846 7471B	884167	09/27/2022 11:00	WDA	SW846 7471B	884713
		N/A	N/A	N/A		Subcontract	
		SW846 3546	882840	09/22/2022 17:15	RXS	SW846 8081B	884677
		SW846 3546	882841	09/22/2022 17:00	J1H	SW846 8270D	884132
		SW846 5035A	884099	09/21/2022 12:05	TMP	SW846 8260C	884100
		N/A	N/A	N/A		S2540G-11	883090

10/28/2022 2:55 PM



301 Fulling Mill Rd, Suite A  
Middletown, PA 17057  
P. 717-944-5541

### CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /  
SAMPLER. INSTRUCTIONS ON THE BACK.

COC #:



3264939

Logged By: KSB  
PM: SSL



of

ALS Quote #

Client Name: <u>Normandeau Associates</u>			Container Type: <u>VOA Glass Glass</u>			Temp Taken By: <u>KSB</u> Therm ID: <u>570</u> WO Temp (°C) <u>0</u>		
Address: <u>400 Old Reading Pike Building A, Suite 101 Stowe, PA 19464</u>			Container Size: <u>40ml 8oz 8oz</u>			Receipt Info completed by: <u>KSB</u> WV Containers 0-6°C Y N NA		
Contact: <u>Don Nazario</u>			Preservative: <u>MeOH - -</u>			Cooler Custody Seals Intact <u>Y</u> N NA		
Phone#: <u>(717) 617-7076</u>			<b>ANALYSES/METHOD REQUESTED</b> VOA S / % moist Dioxin PAH, Pest, PCB Cong Metals			Sample Custody Seal Intact <u>Y</u> N <u>NA</u>		
Project Name/ #: <u>CHPE Hudson / 24711</u>						Received on Ice <u>Y</u> N NA		
Bill To:						Coolers & Samples Intact <u>Y</u> N		
Purchase Order #: <u>24711.001</u>						Correct Containers Provided <u>Y</u> N		
TAT <input checked="" type="checkbox"/> Normal-Standard TAT is 10-12 business days. <input type="checkbox"/> Rush-Subject to ALS approval and surcharges.						Sample Label/COC Agree <u>Y</u> N		
Date Required: <u>Approved?</u>			Adequate Sample Volumes <u>Y</u> N			Deviations? NO YES		
Email? <input checked="" type="checkbox"/> Y <u>DNAZARIO@Normandeau.com</u>			VOA only: Headspace Present <u>Y</u> N <u>NA</u>			If YES, list below:		
SDWA Sample Type (see key)			VOA only: Trip Blank <u>Y</u> N <u>NA</u>			Client contact:		
Date Collected			NJ ≤ 4 days? <u>Y</u> N			Date/Tech:		
Time			Courier/Tracking #: <u>8121 9740 3295</u>			Sample(s) for Radiation testing? <u>Y</u> N <u>NA</u>		
Sample Description/Location			Enter Number of Containers Per Sample or Field Results Below.			Reportable SDWA Sample(s)? <u>Y</u> N		
(as it will appear on the lab report)			PWSID #			Rad Screen (uCi)		
1 High 1A 9/21/22 1030 G S 4 1 1			PWS Contact: PWS Phone #:			New Source? Y N		
2 High 1B 1035 G S 4 1 1			SDWA Sample Type Key: D=Distribution E=Entry Point			New Source Contact:		
3 High 2A 1200 G S 4 1 1			R=Raw P=Plant C=Check S=Special A=Annual Startup			Sample/COC Remarks		
4 High 2B 1205 G S 4 1 1			Contains Short Hold Testing YES NO			Internal Use: If less than 48 hours - notify lab upon receipt		
5			Data Deliverables			State Samples Collected In		
6			<input type="checkbox"/> Standard Lvl 1 <input type="checkbox"/> CLP-like <input type="checkbox"/> HSCA			<input type="checkbox"/> NY		
7			<input type="checkbox"/> Standard Lvl 2 <input type="checkbox"/> DOD <input type="checkbox"/> Landfill			<input type="checkbox"/> NJ		
8			<input type="checkbox"/> Standard Lvl 3 <input type="checkbox"/> NJ RED <input type="checkbox"/> NJ GW			<input type="checkbox"/> PA		
9			<input type="checkbox"/> Standard Lvl 4 <input type="checkbox"/> NJ Full <input type="checkbox"/>			<input type="checkbox"/> WV		
10			<input type="checkbox"/> Excel Summary <input type="checkbox"/> Equis <input type="checkbox"/> Custom			<input type="checkbox"/> FL		
SAMPLED BY (Please Print, if MD include Sampler #): <u>DON NAZARIO</u>			Comments:			Sample Disposal Lab <input type="checkbox"/> Special <input type="checkbox"/>		
Date: <u>9/21/22</u> Time: <u>1500</u>			Relinquished By / Company Name: <u>Don Nazario / Normandeau</u>			EDDS: Format Type		
Date: <u>9/21/22</u> Time: <u>852</u>			Received By / Company Name: <u>Fedex</u>			other		
			Date: <u>9/21/22</u> Time: <u>852</u>					
			Date: <u>9/21/22</u> Time: <u>852</u>					
			Date: <u>9/21/22</u> Time: <u>852</u>					
			Date: <u>9/21/22</u> Time: <u>852</u>					
			Date: <u>9/21/22</u> Time: <u>852</u>					
			Date: <u>9/21/22</u> Time: <u>852</u>					
			Date: <u>9/21/22</u> Time: <u>852</u>					

\* G=Grab; C=Composite

\*\* Matrix - A=Air; D=Drinking Water; GW=Groundwater; O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Suite A, Middletown, PA 17057

23 of 101



## ANALYTICAL REPORT

Lab Number:	L2253136
Client:	ALS 301 Fulling Mill Road Middletown, PA 17057
ATTN:	Sarah Leung
Phone:	(717) 702-2248
Project Name:	3264939
Project Number:	Not Specified
Report Date:	10/06/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L2253136-01	3264939001 (HIGH 1A)	SEDIMENT	NY	09/21/22 10:30	09/27/22
L2253136-02	3264939002 (HIGH 1B)	SEDIMENT	NY	09/21/22 10:35	09/27/22
L2253136-03	3264939003 (HIGH 2A)	SEDIMENT	NY	09/21/22 12:00	09/27/22
L2253136-04	3264939004 (HIGH 2B)	SEDIMENT	NY	09/21/22 12:05	09/27/22

**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

**HOLD POLICY** - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

---

**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22


### Case Narrative (continued)

#### Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Elizabeth Porta

Title: Technical Director/Representative

Date: 10/06/22



# ORGANICS

# PCBS

**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

Lab ID: L2253136-01  
 Client ID: 3264939001 (HIGH 1A)  
 Sample Location: NY

Date Collected: 09/21/22 10:30  
 Date Received: 09/27/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 105,8270E-SIM/680(M)  
 Analytical Date: 10/04/22 15:48  
 Analyst: PS  
 Percent Solids: 59%

Extraction Method: EPA 3570  
 Extraction Date: 09/28/22 21:00  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/29/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	ND		ug/kg	0.677	0.338	1
CI3-BZ#18	ND		ug/kg	0.677	0.338	1
CI3-BZ#28	ND		ug/kg	0.677	0.338	1
CI4-BZ#44	ND		ug/kg	0.677	0.338	1
CI4-BZ#49	ND		ug/kg	0.677	0.338	1
CI4-BZ#52	ND		ug/kg	0.677	0.338	1
CI4-BZ#66	ND		ug/kg	0.677	0.338	1
CI5-BZ#87	ND		ug/kg	0.677	0.338	1
CI5-BZ#101	ND		ug/kg	0.677	0.338	1
CI5-BZ#105	ND		ug/kg	0.677	0.338	1
CI5-BZ#118	ND		ug/kg	0.677	0.338	1
CI6-BZ#128	ND		ug/kg	0.677	0.338	1
CI6-BZ#138	ND		ug/kg	0.677	0.338	1
CI6-BZ#153	ND		ug/kg	0.677	0.338	1
CI7-BZ#170	ND		ug/kg	0.677	0.338	1
CI7-BZ#180	ND		ug/kg	0.677	0.338	1
CI7-BZ#183	ND		ug/kg	0.677	0.338	1
CI7-BZ#184	ND		ug/kg	0.677	0.338	1
CI7-BZ#187	ND		ug/kg	0.677	0.338	1
CI8-BZ#195	ND		ug/kg	0.677	0.338	1
CI9-BZ#206	ND		ug/kg	0.677	0.338	1
CI10-BZ#209	ND		ug/kg	0.677	0.338	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	91		50-125
BZ 198	112		50-125



**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

Lab ID: L2253136-02  
 Client ID: 3264939002 (HIGH 1B)  
 Sample Location: NY

Date Collected: 09/21/22 10:35  
 Date Received: 09/27/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 105,8270E-SIM/680(M)  
 Analytical Date: 10/04/22 16:16  
 Analyst: PS  
 Percent Solids: 60%

Extraction Method: EPA 3570  
 Extraction Date: 09/28/22 21:00  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/29/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	ND		ug/kg	0.651	0.325	1
CI3-BZ#18	ND		ug/kg	0.651	0.325	1
CI3-BZ#28	ND		ug/kg	0.651	0.325	1
CI4-BZ#44	ND		ug/kg	0.651	0.325	1
CI4-BZ#49	ND		ug/kg	0.651	0.325	1
CI4-BZ#52	ND		ug/kg	0.651	0.325	1
CI4-BZ#66	ND		ug/kg	0.651	0.325	1
CI5-BZ#87	ND		ug/kg	0.651	0.325	1
CI5-BZ#101	ND		ug/kg	0.651	0.325	1
CI5-BZ#105	ND		ug/kg	0.651	0.325	1
CI5-BZ#118	ND		ug/kg	0.651	0.325	1
CI6-BZ#128	ND		ug/kg	0.651	0.325	1
CI6-BZ#138	ND		ug/kg	0.651	0.325	1
CI6-BZ#153	ND		ug/kg	0.651	0.325	1
CI7-BZ#170	ND		ug/kg	0.651	0.325	1
CI7-BZ#180	ND		ug/kg	0.651	0.325	1
CI7-BZ#183	ND		ug/kg	0.651	0.325	1
CI7-BZ#184	ND		ug/kg	0.651	0.325	1
CI7-BZ#187	ND		ug/kg	0.651	0.325	1
CI8-BZ#195	ND		ug/kg	0.651	0.325	1
CI9-BZ#206	ND		ug/kg	0.651	0.325	1
CI10-BZ#209	ND		ug/kg	0.651	0.325	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	95		50-125
BZ 198	110		50-125



**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

**Lab ID:** L2253136-03  
**Client ID:** 3264939003 (HIGH 2A)  
**Sample Location:** NY

**Date Collected:** 09/21/22 12:00  
**Date Received:** 09/27/22  
**Field Prep:** Not Specified

**Sample Depth:**

**Matrix:** Sediment  
**Analytical Method:** 105,8270E-SIM/680(M)  
**Analytical Date:** 10/04/22 16:43  
**Analyst:** PS  
**Percent Solids:** 64%

**Extraction Method:** EPA 3570  
**Extraction Date:** 09/28/22 21:00  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 09/29/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	ND		ug/kg	0.613	0.306	1
CI3-BZ#18	3.21		ug/kg	0.613	0.306	1
CI3-BZ#28	4.12		ug/kg	0.613	0.306	1
CI4-BZ#44	2.52		ug/kg	0.613	0.306	1
CI4-BZ#49	3.84		ug/kg	0.613	0.306	1
CI4-BZ#52	4.32		ug/kg	0.613	0.306	1
CI4-BZ#66	1.37		ug/kg	0.613	0.306	1
CI5-BZ#87	1.71		ug/kg	0.613	0.306	1
CI5-BZ#101	5.75		ug/kg	0.613	0.306	1
CI5-BZ#105	1.08		ug/kg	0.613	0.306	1
CI5-BZ#118	2.97		ug/kg	0.613	0.306	1
CI6-BZ#128	2.31		ug/kg	0.613	0.306	1
CI6-BZ#138	13.0		ug/kg	0.613	0.306	1
CI6-BZ#153	9.72		ug/kg	0.613	0.306	1
CI7-BZ#170	4.94		ug/kg	0.613	0.306	1
CI7-BZ#180	7.42		ug/kg	0.613	0.306	1
CI7-BZ#183	1.77		ug/kg	0.613	0.306	1
CI7-BZ#184	ND		ug/kg	0.613	0.306	1
CI7-BZ#187	3.67		ug/kg	0.613	0.306	1
CI8-BZ#195	ND		ug/kg	0.613	0.306	1
CI9-BZ#206	ND		ug/kg	0.613	0.306	1
CI10-BZ#209	ND		ug/kg	0.613	0.306	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	93		50-125
BZ 198	119		50-125



**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

Lab ID: L2253136-04  
 Client ID: 3264939004 (HIGH 2B)  
 Sample Location: NY

Date Collected: 09/21/22 12:05  
 Date Received: 09/27/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 105,8270E-SIM/680(M)  
 Analytical Date: 10/04/22 17:11  
 Analyst: PS  
 Percent Solids: 60%

Extraction Method: EPA 3570  
 Extraction Date: 09/28/22 21:00  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/29/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	ND		ug/kg	0.647	0.323	1
CI3-BZ#18	ND		ug/kg	0.647	0.323	1
CI3-BZ#28	ND		ug/kg	0.647	0.323	1
CI4-BZ#44	ND		ug/kg	0.647	0.323	1
CI4-BZ#49	ND		ug/kg	0.647	0.323	1
CI4-BZ#52	ND		ug/kg	0.647	0.323	1
CI4-BZ#66	ND		ug/kg	0.647	0.323	1
CI5-BZ#87	ND		ug/kg	0.647	0.323	1
CI5-BZ#101	ND		ug/kg	0.647	0.323	1
CI5-BZ#105	ND		ug/kg	0.647	0.323	1
CI5-BZ#118	ND		ug/kg	0.647	0.323	1
CI6-BZ#128	ND		ug/kg	0.647	0.323	1
CI6-BZ#138	ND		ug/kg	0.647	0.323	1
CI6-BZ#153	ND		ug/kg	0.647	0.323	1
CI7-BZ#170	ND		ug/kg	0.647	0.323	1
CI7-BZ#180	ND		ug/kg	0.647	0.323	1
CI7-BZ#183	ND		ug/kg	0.647	0.323	1
CI7-BZ#184	ND		ug/kg	0.647	0.323	1
CI7-BZ#187	ND		ug/kg	0.647	0.323	1
CI8-BZ#195	ND		ug/kg	0.647	0.323	1
CI9-BZ#206	ND		ug/kg	0.647	0.323	1
CI10-BZ#209	ND		ug/kg	0.647	0.323	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	89		50-125
BZ 198	111		50-125



**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 105,8270E-SIM/680(M)  
Analytical Date: 10/04/22 09:17  
Analyst: PS

Extraction Method: EPA 3570  
Extraction Date: 09/28/22 21:00  
Cleanup Method: EPA 3630  
Cleanup Date: 09/29/22

Parameter	Result	Qualifier	Units	RL	MDL
<b>PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-04 Batch: WG1693135-1</b>					
CI2-BZ#8	ND		ug/kg	0.400	0.200
CI3-BZ#18	ND		ug/kg	0.400	0.200
CI3-BZ#28	ND		ug/kg	0.400	0.200
CI4-BZ#44	ND		ug/kg	0.400	0.200
CI4-BZ#49	ND		ug/kg	0.400	0.200
CI4-BZ#52	ND		ug/kg	0.400	0.200
CI4-BZ#66	ND		ug/kg	0.400	0.200
CI5-BZ#87	ND		ug/kg	0.400	0.200
CI5-BZ#101	ND		ug/kg	0.400	0.200
CI5-BZ#105	ND		ug/kg	0.400	0.200
CI5-BZ#118	ND		ug/kg	0.400	0.200
CI6-BZ#128	ND		ug/kg	0.400	0.200
CI6-BZ#138	ND		ug/kg	0.400	0.200
CI6-BZ#153	ND		ug/kg	0.400	0.200
CI7-BZ#170	ND		ug/kg	0.400	0.200
CI7-BZ#180	ND		ug/kg	0.400	0.200
CI7-BZ#183	ND		ug/kg	0.400	0.200
CI7-BZ#184	ND		ug/kg	0.400	0.200
CI7-BZ#187	ND		ug/kg	0.400	0.200
CI8-BZ#195	ND		ug/kg	0.400	0.200
CI9-BZ#206	ND		ug/kg	0.400	0.200
CI10-BZ#209	ND		ug/kg	0.400	0.200

Surrogate	%Recovery	Qualifier	Acceptance Criteria
DBOB	93		50-125
BZ 198	112		50-125



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-04 Batch: WG1693135-2 WG1693135-3								
Cl2-BZ#8	74		74		40-140	0		30
Cl3-BZ#18	75		74		40-140	1		30
Cl3-BZ#28	72		73		40-140	1		30
Cl4-BZ#44	80		81		40-140	1		30
Cl4-BZ#49	77		76		40-140	1		30
Cl4-BZ#52	77		79		40-140	3		30
Cl4-BZ#66	79		79		40-140	0		30
Cl5-BZ#87	80		81		40-140	1		30
Cl5-BZ#101	77		78		40-140	1		30
Cl5-BZ#105	79		79		40-140	0		30
Cl5-BZ#118	77		77		40-140	0		30
Cl6-BZ#128	82		83		40-140	1		30
Cl6-BZ#138	79		80		40-140	1		30
Cl6-BZ#153	79		80		40-140	1		30
Cl7-BZ#170	96		96		40-140	0		30
Cl7-BZ#180	78		79		40-140	1		30
Cl7-BZ#183	76		76		40-140	0		30
Cl7-BZ#184	80		81		40-140	1		30
Cl7-BZ#187	83		85		40-140	2		30
Cl8-BZ#195	88		87		40-140	1		30
Cl9-BZ#206	85		86		40-140	1		30
Cl10-BZ#209	80		84		40-140	5		30



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-04 Batch: WG1693135-2 WG1693135-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
DBOB	87		87		50-125
BZ 198	101		103		50-125

# INORGANICS & MISCELLANEOUS

**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

**Lab ID:** L2253136-01  
**Client ID:** 3264939001 (HIGH 1A)  
**Sample Location:** NY

**Date Collected:** 09/21/22 10:30  
**Date Received:** 09/27/22  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	58.7		%	0.100	0.100	1	-	09/30/22 13:10	121,2540G	VM



**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

**Lab ID:** L2253136-02  
**Client ID:** 3264939002 (HIGH 1B)  
**Sample Location:** NY

**Date Collected:** 09/21/22 10:35  
**Date Received:** 09/27/22  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	60.3		%	0.100	0.100	1	-	09/30/22 13:10	121,2540G	VM



**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

**Lab ID:** L2253136-03  
**Client ID:** 3264939003 (HIGH 2A)  
**Sample Location:** NY

**Date Collected:** 09/21/22 12:00  
**Date Received:** 09/27/22  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	63.7		%	0.100	0.100	1	-	09/30/22 13:10	121,2540G	VM



**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

**Lab ID:** L2253136-04  
**Client ID:** 3264939004 (HIGH 2B)  
**Sample Location:** NY

**Date Collected:** 09/21/22 12:05  
**Date Received:** 09/27/22  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	60.0		%	0.100	0.100	1	-	09/30/22 13:10	121,2540G	VM



## Lab Duplicate Analysis

*Batch Quality Control*

**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1694116-1 QC Sample: L2253205-22 Client ID: DUP Sample						
Solids, Total	87.8	87.6	%	0		10

**Project Name:** 3264939  
**Project Number:** Not Specified

### Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

#### Cooler Information

Cooler	Custody Seal
A	Absent

#### Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2253136-01A	Glass 250ml/8oz unpreserved	A	NA		1.9	Y	Absent		A2-TS(7),A2-PCBCONG-8270-NOAA(14)
L2253136-02A	Glass 250ml/8oz unpreserved	A	NA		1.9	Y	Absent		A2-TS(7),A2-PCBCONG-8270-NOAA(14)
L2253136-03A	Glass 250ml/8oz unpreserved	A	NA		1.9	Y	Absent		A2-TS(7),A2-PCBCONG-8270-NOAA(14)
L2253136-04A	Glass 250ml/8oz unpreserved	A	NA		1.9	Y	Absent		A2-TS(7),A2-PCBCONG-8270-NOAA(14)



**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

## GLOSSARY

### Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)  Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

#### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

#### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Chlordane:** The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

**Difference:** With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Gasoline Range Organics (GRO):** Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**PAH Total:** With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

**PFAS Total:** With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

#### Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

#### Data Qualifiers

Identified Compounds (TICs).

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers



**Project Name:** 3264939  
**Project Number:** Not Specified

**Lab Number:** L2253136  
**Report Date:** 10/06/22

## REFERENCES

- 105 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997 in conjunction with NOAA Technical Memorandum NMFS-NWFSC-59: Extraction, Cleanup and GC/MS Analysis of Sediments and Tissues for Organic Contaminants, March 2004 and the Determination of Pesticides and PCBs in Water and Oil/Sediment by GC/MS: Method 680, EPA 01A0005295, November 1985.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624/624.1:** m/p-xylene, o-xylene, Naphthalene

**EPA 625/625.1:** alpha-Terpineol

**EPA 8260C/8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270D/8270E:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### Mansfield Facility

**SM 2540D:** TSS

**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

**EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**

**EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LCHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

**SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**

**EPA 624.1:** Volatile Halocarbons & Aromatics,

**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**

**EPA 522, EPA 537.1.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

**EPA 245.1 Hg.**

**SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



301 Fulling Mill Road  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430

### CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

**ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /  
SAMPLER. INSTRUCTIONS ON THE BACK.**

COC #:	1
ALS Quote #:	of 1

Client Name: ALS			Container Type	G											Receipt Information (completed by Receiving Lab)																																																																																																		
Address: 301 Fulling Mill Road Middletown PA 17057			Container Size	4oz											W.O. Temp: _____ Therm ID: _____																																																																																																		
Contact: Sarah Leung			Preservative	None											Courier/Tracking #:																																																																																																		
Phone#: (717) 702-2248			ANALYSES/METHOD REQUESTED													Purchase Order #: 3264939																																																																																																	
Project Name/ #: 3264939			<table border="1"> <tr> <td>*G or C</td> <td>**Matrix</td> <td>NOAA 22, PCBs 8270D</td> <td>Alpha Quote 19994</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td colspan="19">Enter Number of Containers Per Sample or Field Results Below.</td> </tr> <tr> <td colspan="19">Sample/COC Comments</td> </tr> <tr> <td colspan="19">Subcontract: Alpha Analytical</td> </tr> <tr> <td colspan="19">ALS Field Services: <input type="checkbox"/> Pickup <input type="checkbox"/> Labor <input type="checkbox"/> Composite Sampling <input type="checkbox"/> Rental Equipment Other: _____</td> </tr> </table>													*G or C	**Matrix	NOAA 22, PCBs 8270D	Alpha Quote 19994																Enter Number of Containers Per Sample or Field Results Below.																			Sample/COC Comments																			Subcontract: Alpha Analytical																			ALS Field Services: <input type="checkbox"/> Pickup <input type="checkbox"/> Labor <input type="checkbox"/> Composite Sampling <input type="checkbox"/> Rental Equipment Other: _____																			Project Comments:		
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Email? <input checked="" type="checkbox"/> -Y namdt.subcontract@alsglobal.com																																																																																																																	
Fax? <input type="checkbox"/> -Y No.:																																																																																																																	
Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	NOAA 22, PCBs 8270D	Alpha Quote 19994																																																																																																											
1	3264939001 (High 1A)	9/21/22	1030	G S	1																																																																																																												
2	3264939002 (High 1B)	9/21/22	1035	G S	1																																																																																																												
3	3264939003 (High 2A)	9/21/22	1200	G S	1																																																																																																												
4	3264939004 (High 2B)	9/21/22	1205	G S	1																																																																																																												
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Relinquished By / Company Name			Date	Time	Received By / Company Name			Date	Time	Reportable to PADEP? Yes <input type="checkbox"/> No <input type="checkbox"/>			Sample Disposal: Lab <input type="checkbox"/> Special <input type="checkbox"/>			PWSID # _____																																																																																																	
1 <i>SLW</i>			9/21/22	10:00	2 <i>FEDEX</i>					Yes <input type="checkbox"/> No <input type="checkbox"/>			Lab <input type="checkbox"/> Special <input type="checkbox"/>			PWSID # _____																																																																																																	
3 <i>FEDEX</i>			9/21/22	10:03	4 <i>Alpha Analytical</i>			9/21/22	10:03	Yes <input type="checkbox"/> No <input type="checkbox"/>			Lab <input type="checkbox"/> Special <input type="checkbox"/>			PWSID # _____																																																																																																	
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\* G=Grab, C=Composite \*\*Matrix - A=Air, DW=Drinking Water; GW=Groundwater; OI=Oil, OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe, WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Middletown, PA 17057

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits. see current FedEx Service Guide.

Serial\_No:10062212:03

After printing this label:  
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 1. Fold the printed page along the horizontal line  
 2. Place label in shipping pouch and affix it to your shipment

ORIGIN ID:MDTA (717) 944-5541  
 STACEY WELK  
 ALS GLOBAL  
 301 FILLING MILL RD  
 MIDDLETOWN, PA 17057  
 UNITED STATES US

SHIP DATE: 28SEP22  
 ACT WGT: 29.00 LB MAN  
 CAD: 0402022/CNFE3916  
 BILL THIRD PARTY

TO **SAMPLE RECEIVING**  
**ALPHA ANALYTICAL MANSFIELD**  
**320 FORBES BLVD**

**MANSFIELD MA 02048**  
 (000) 000-0000 REF  
 INV  
 P02



TRK# 5857 1123 5878  
 0201

TUE - 27 SEP 4:30P  
 STANDARD OVERNIGHT

**EM PYMA**

02048  
 MA-US BOS





October 25, 2022

Service Request No:E2200924

Sarah Leung  
ALS Environmental - Middletown  
301 Fulling Mill Road  
Middletown, PA 17057

**Laboratory Results for: 3264939**

Dear Sarah,

Enclosed are the results of the sample(s) submitted to our laboratory September 27, 2022  
For your reference, these analyses have been assigned our service request number **E2200924**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2188. You may also contact me via email at [James.Guin@alsglobal.com](mailto:James.Guin@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**



James Guin

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099  
PHONE +1 281 530 5656 | FAX +1 281 530 5887  
ALS Group USA, Corp.  
dba ALS Environmental





# Certificate of Analysis

**ALS Environmental - Houston HRMS**  
10450 Stancliff Rd, Suite 210, Houston TX 77099  
Phone (713)266-1599 Fax (713)266-0130  
[www.alsglobal.com](http://www.alsglobal.com)

**ALS Environmental**

**Client:** ALS Environmental – Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request No.:** E2200924  
**Date Received:** 09/27/22

**CASE NARRATIVE**

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

**Sample Receipt**

Four samples were received for analysis at ALS Environmental in Houston on 09/27/22.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

**Data Validation Notes and Discussion**

**Precision and Accuracy:**

EQ2200432-02/03: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS/DLCS passed quality control ranges.

**B flags – Method Blanks**

The Method Blank EQ2200432-01 contained low levels of target compounds below the Method Reporting Limit (MRL). The associated compounds in the samples are flagged with ‘B’ flags where the sample result is less than ten times the level detected in the method blank.

**2378-TCDF**

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

**Y flags – Cleanup Standard**

The recoveries for the cleanup standard, 37Cl-2,3,7,8-TCDD are below control limits. The sample results are not affected since this labeled standard is provided as a means of demonstrating that both the sample extraction and subsequent cleanup steps performed as expected and is not used in quantitation of target analytes.

**Y flags – Labeled Standards**

Quantification of the native 2,3,7,8-substituted congeners is based on isotopic dilution, which automatically corrects for variation in extraction efficiency and provides accurate values even with poor recovery. Samples that had recoveries of labeled standards outside the acceptance limits are qualified with ‘Y’ flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1 and detection limits were below the Method Reporting Limits.

### **K flags**

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

### **Detection Limits**

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

### **The TEQ Summary results for each sample have been calculated by ALS/Houston to include:**

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- Non-detected compounds are not included in the 'Total'

*The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.*

*Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.*

**Client:** ALS Environmental - Middletown  
**Project:** 3264939

**Service Request:**E2200924

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E2200924-001	3264939001 (High 1A)	9/21/2022	1030
E2200924-002	3264939002 (High 1B)	9/21/2022	1035
E2200924-003	3264939003 (High 2A)	9/21/2022	1200
E2200924-004	3264939004 (High 2B)	9/21/2022	1205

## Service Request Summary

**Folder #:** E2200924  
**Client Name:** ALS Environmental - Middletown  
**Project Name:** 3264939  
**Project Number:**  
**Report To:** Sarah Leung  
 ALS Environmental - Middletown  
 301 Fulling Mill Road  
 Middletown, PA 17057  
 USA  
**Phone Number:** 717-944-5541  
**Cell Number:**  
**Fax Number:**  
**E-mail:** sarah.leung@alsglobal.com

**Project Chemist:** James Guin  
**Originating Lab:** HOUSTON  
**Logged By:** CGRANDITS  
**Date Received:** 09/27/22  
**Internal Due Date:** 11/1/2022  
**QAP:** LAB QAP  
**Qualifier Set:** HRMS Qualifier Set  
**Formset:** Lab Standard  
**Merged?:** Y  
**Report to MDL?:** Y  
**P.O. Number:** 40-3264939  
**EDD:** BASIC\_WQC\_CASNo

4 8 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved  
**Location:** EHRMS-WIC 7E  
**Pressure Gas:**

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON	
				PCDD PCDF/8290A	Total Solids/ALS SOP
E2200924-001	3264939001 (High 1A)	Soil	09/21/22 1030		
E2200924-002	3264939002 (High 1B)	Soil	09/21/22 1035		
E2200924-003	3264939003 (High 2A)	Soil	09/21/22 1200		
E2200924-004	3264939004 (High 2B)	Soil	09/21/22 1205		

## Service Request Summary

**Folder #:** E2200924  
**Client Name:** ALS Environmental - Middletown  
**Project Name:** 3264939  
**Project Number:**  
**Report To:** Sarah Leung  
ALS Environmental - Middletown  
301 Fulling Mill Road  
Middletown, PA 17057  
USA  
**Phone Number:** 717-944-5541  
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**E-mail:** sarah.leung@alsglobal.com

**Project Chemist:** James Guin  
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**Logged By:** CGRANDITS  
**Date Received:** 09/27/22  
**Internal Due Date:** 11/1/2022  
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**Qualifier Set:** HRMS Qualifier Set  
**Formset:** Lab Standard  
**Merged?:** Y  
**Report to MDL?:** Y  
**P.O. Number:** 40-3264939  
**EDD:** BASIC\_WQC\_CASNo

4 8 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved  
**Location:** EHRMS-WIC 7E  
**Pressure Gas:**

## Data Qualifiers

### HRMS Qualifier Set

- B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
- E Estimated value. The reported concentration is above the calibration range of the instrument.
- H Sample extracted and/or analyzed out of suggested holding time.
- J Estimated value. The reported concentration is below the MRL.
- K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits. The concentration of this analyte should be considered as an estimate.
- P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
- Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
- S Signal saturated detector. Result reported from dilution.
- U Compound was analyzed for, but was not detected (ND).
- X See Case Narrative.
- Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-noise ratios are greater than 10:1, making the recoveries acceptable.
  - i The MDL/MRL have been elevated due to a matrix interference.

# ALS Laboratory Group

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## Acronyms

Cal	Calibration
Conc	CONCEntration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient



### State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Department of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Conservation	04016-2022	4/30/2023
Texas Commission on Environmental Quality	T104704231-22-29	4/30/2023
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Health	C819-2022	11/14/2022

ALS ENVIRONMENTAL – Houston  
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID

DB-5MSUI

SPB-Octyl

**First Level - Data Processing - to be filled by person generating the forms**

Date:	Analyst:	Samples:
10/25/22	LKL	001-003

**Second Level - Data Review – to be filled by person doing peer review**

Date:	Analyst:	Samples:
10/29/22	SL	001, 002, 003

ALS ENVIRONMENTAL – Houston  
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E7200924

DB-5MSUI

SPB-Octyl

**First Level - Data Processing - to be filled by person generating the forms**

Date:	10/20/22	Analyst:	Jc	Samples:	004

**Second Level - Data Review – to be filled by person doing peer review**

Date:	10/20/22	Analyst:	sl	Samples:	004



# Chain of Custody

**ALS Environmental - Houston HRMS**  
10450 Stancliff Rd, Suite 210, Houston TX 77099  
Phone (713)266-1599 Fax (713)266-0130  
[www.alsglobal.com](http://www.alsglobal.com)



301 Fulling Mill Road  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430

### CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /  
SAMPLER. INSTRUCTIONS ON THE BACK.

COC #:	1
ALS Quote #:	of 1

Client Name: ALS				Container Type	G											Receipt Information (completed by Receiving Lab)			
Address: 301 Fulling Mill Road Middletown PA 17057				Container Size	8oz											W.O. Temp: _____ Therm ID: _____			
Contact: Sarah Leung				Preservative	None											Courier/Tracking #:			
Phone#: (717) 702-2248				ANALYSES/METHOD REQUESTED												Purchase Order #: 3264939			
Project Name#: 3264939				*G or C	**Matrix	DIOXIN METHOD 8290											Project Comments:		
Bill To:																	Subcontract: ALS Houston		
TAT <input checked="" type="checkbox"/> Normal-Standard TAT is 10-12 business days. <input type="checkbox"/> Rush-Subject to ALS approval and surcharges.																	ALS Field Services: <input type="checkbox"/> Pickup <input type="checkbox"/> Labor		
Date Required: _____ Approved?																	<input type="checkbox"/> Composite Sampling <input type="checkbox"/> Rental Equipment		
Email? <input checked="" type="checkbox"/> -Y namdt.subcontract@alsglobal.com																	Other: _____		
Fax? <input type="checkbox"/> -Y No.:				Enter Number of Containers Per Sample or Field Results Below.												Sample/COC Comments			
Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix											Sample/COC Comments				
1 3264939001 (High 1A)	9/21/22	1030	G	S	1														
2 3264939002 (High 1B)	9/21/22	1035	G	S	1														
3 3264939003 (High 2A)	9/21/22	1200	G	S	1														
4 3264939004 (High 2B)	9/21/22	1205	G	S	1														
5																			
6																			
7																			
8																			
9																			
10																			
SAMPLED BY (Please Print):				Sampler Comments:										Data Deliverables		Special Processing		State Samples Collected In	
Relinquished By / Company Name				Date	Time	Received By / Company Name				Date	Time	<input type="checkbox"/> Standard	USACE <input type="checkbox"/>		NY <input checked="" type="checkbox"/>				
1 <i>SLW</i>				9/20/22	1600	2 <i>ALS</i>				10/27/22	14:58	<input type="checkbox"/> CLP-like	Navy <input type="checkbox"/>		NJ <input type="checkbox"/>				
3						4						<input type="checkbox"/> USACE/DOD			PA <input type="checkbox"/>				
5						6						<input checked="" type="checkbox"/> Level 2			NC <input type="checkbox"/>				
7						8						Reportable to PADEP?	Sample Disposal		MD <input type="checkbox"/>				
9						10						Yes <input type="checkbox"/> No <input type="checkbox"/>	Lab <input type="checkbox"/>		other				
												PWSID # _____	Special <input type="checkbox"/>						
												EDDS: Format Type- Excel							

\*G=Grab; C=Composite

\*\*Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Middletown, PA 17057



# Cooler Receipt Form

Project Chemist CL

Client/Project AL5-MT Thermometer ID 1071

Date/Time Received: 9/27/22 Initials: PG Date/Time Logged in: 9/27/22 Initials CL

1. Method of delivery:  US Mail  Fed Ex  UPS  DHL  Courier  Client

2. Samples received in:  Cooler  Box  Envelope  Other \_\_\_\_\_

3. Were custody seals on coolers?  Yes  No  
If yes, how many and where?   
Were they intact?  Yes  No  N/A  
Were they signed and dated?  Yes  No  N/A

4. Packing Material:  Inserts  Baggies  Bubble Wrap  Gel Packs  Wet Ice  Sleeves  Other \_\_\_\_\_

5. Foreign or Regulated Soil?  Yes  No Location of Sampling: \_\_\_\_\_

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
5857 1123 5904		9/27/22	1448	PG	2.0	<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

6. Were custody papers properly filled out (Ink, signed, dated, etc)?  Yes  No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)?  Yes  No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)?  Yes  No

9. Were appropriate bottles/containers and volumes received for the requested tests?  Yes  No

10. Did sample labels and tags agree with custody documents?  Yes  No

Notes, Discrepancies, & Resolutions:

Service request Label:



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10450 Stancliff Rd., Suite 210  
Houston, TX 77099  
T: +1 713 266 1599  
F: +1 713 266 1599  
[www.alsglobal.com](http://www.alsglobal.com)

## SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

### **Cooler Custody Seals (desirable, mandatory if specified in SAP):**

- ✓ Intact on outside of cooler, signed and dated

### **Chain-of-Custody (COC) documentation (mandatory):**

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

### **Sample Integrity (mandatory):**

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

### **Temperature Requirement (varies by sample matrix):**

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



# Preparation Information Benchsheets

**ALS Environmental - Houston HRMS**  
10450 Stancliff Rd., Suite 210, Houston, TX 77099  
Phone (713)266-1599 Fax (713)266-0130  
[www.alsglobal.com](http://www.alsglobal.com)



# Preparation Information Benchsheet

Prep Run#: 407191  
 Team: Semivoa GCMS/TWOODS

Prep WorkFlow: OrgExtDioxS(30)  
 Prep Method: Method

Status: Prepped  
 Prep Date/Time: 9/28/22 11:07

10/28/2022 2:55 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200883-001	22-09-0069 Ash Box #8909	.01	8290A/PCDD PCDF			Soil	10.000g	
2	E2200883-002	22-09-0070 Slag Box #1506	.01	8290A/PCDD PCDF			Soil	10.278g	
3	E2200883-003	22-09-0071 Filtercake Box #N-35289	.01	8290A/PCDD PCDF			Soil	10.166g	
4	E2200887-001	MW3 (0-2)	.01	8290/PCDD PCDF			Soil	10.001g	
5	E2200900-001	Filter Cake	.02	8290A/PCDD PCDF			Solid	10.361g	
6	E2200904-001	SWT Filtercake 2209152616	.01	8290/PCDD PCDF			Solid	10.380g	black soil
7	E2200923-001	3264940001 (High 3A)	.01	8290A/PCDD PCDF			Soil	10.002g	
8	E2200923-002	3264940002 (High 3B)	.01	8290A/PCDD PCDF			Soil	10.318g	
9	E2200923-003	3264940003 (High 4A)	.01	8290A/PCDD PCDF			Soil	10.011g	
10	E2200923-004	3264940004 (High 4B)	.01	8290A/PCDD PCDF			Soil	10.361g	
11	E2200923-005	3264940005 (High 5A)	.01	8290A/PCDD PCDF			Soil	10.129g	
12	E2200923-006	3264940006 (High 5B)	.01	8290A/PCDD PCDF			Soil	10.183g	
13	E2200924-001	3264939001 (High 1A)	.01	8290A/PCDD PCDF			Soil	10.215g	
14	E2200924-002	3264939002 (High 1B)	.01	8290A/PCDD PCDF			Soil	10.006g	
15	E2200924-003	3264939003 (High 2A)	.01	8290A/PCDD PCDF			Soil	10.109g	
16	E2200924-004	3264939004 (High 2B)	.01	8290A/PCDD PCDF			Soil	10.206g	
17	EQ2200432-01	MB		8290A/PCDD PCDF			Solid	10.087g	
18	EQ2200432-02	LCS		8290A/PCDD PCDF			Solid	10.087g	
19	EQ2200432-03	DLCS		8290A/PCDD PCDF			Solid	10.144g	

## Spiking Solutions

Name:	1613B Matrix Working Standard	Inventory ID	224666	Logbook Ref:	tw 08/25/22 224666	Expires On:	02/21/2023
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EQ2200432-02 100.00µL    EQ2200432-02 100.00µL    EQ2200432-03 100.00µL    EQ2200432-03 100.00µL

Name:	8290/1613B Cleanup Working Standard	Inventory ID	225095	Logbook Ref:	NB 225095 09/22/2022 8.000ngML	Expires On:	02/28/2023
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E2200883-001 100.00µL    E2200883-002 100.00µL    E2200883-003 100.00µL    E2200887-001 100.00µL    E2200900-001 100.00µL    E2200904-001 100.00µL  
 E2200923-001 100.00µL    E2200923-002 100.00µL    E2200923-003 100.00µL    E2200923-004 100.00µL    E2200923-005 100.00µL    E2200923-006 100.00µL  
 E2200924-001 100.00µL    E2200924-002 100.00µL    E2200924-003 100.00µL    E2200924-004 100.00µL    EQ2200432-01 100.00µL    EQ2200432-01 100.00µL  
 EQ2200432-02 100.00µL    EQ2200432-02 100.00µL    EQ2200432-03 100.00µL    EQ2200432-03 100.00µL

Name:	1613B Labeled Working Standard	Inventory ID	225177	Logbook Ref:	tw 09/28/22 225177	Expires On:	03/26/2023
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E2200883-001 1,000.00µL    E2200883-002 1,000.00µL    E2200883-003 1,000.00µL    E2200887-001 1,000.00µL    E2200900-001 1,000.00µL    E2200904-001 1,000.00µL  
 E2200923-001 1,000.00µL    E2200923-002 1,000.00µL    E2200923-003 1,000.00µL    E2200923-004 1,000.00µL    E2200923-005 1,000.00µL    E2200923-006 1,000.00µL  
 E2200924-001 1,000.00µL    E2200924-002 1,000.00µL    E2200924-003 1,000.00µL    E2200924-004 1,000.00µL    EQ2200432-01 1,000.00µL    EQ2200432-01 1,000.00µL

# Preparation Information Benchsheet

10/28/2022 2:55 PM

Prep Run#: 407191  
Team: Semivoa GCMS/TWOODS

Prep Workflow: OrgExtDioxS(30)

Prep Method: Method

Status: Prepped  
Prep Date/Time: 9/28/22 11:07

EQ2200432-02 1,000.00µL      EQ2200432-02 1,000.00µL      EQ2200432-03 1,000.00µL      EQ2200432-03 1,000.00µL

## Preparation Steps

Step: Extraction	Step: Acid Clean	Step: Silica Gel Clean	Step: Final Volume
Started: 9/28/22 11:07	Started: 10/4/22 09:00	Started: 10/4/22 10:00	Started: 10/5/22 12:00
Finished: 9/29/22 09:00	Finished: 10/4/22 10:00	Finished: 10/4/22 13:00	Finished: 10/5/22 15:00
By: TWOODS	By: TWOODS	By: TWOODS	By: TWOODS
Comments	Comments	Comments	Comments

Comments: \_\_\_\_\_

Reviewed By:     TW          Date:     09/28/22    

## Chain of Custody

Relinquished By: _____	Date: _____	<u>Extracts Examined</u>
Received By: _____	Date: _____	Yes      No



# Analytical Results

**ALS Environmental - Houston HRMS**  
10450 Stancliff Rd., Suite 210, Houston, TX 77099  
Phone (713)266-1599 Fax (713)266-0130  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil  
**Sample Name:** 3264939001 (High 1A)  
**Lab Code:** E2200924-001

**Service Request:** E2200924  
**Date Collected:** 09/21/22 10:30  
**Date Received:** 09/27/22 14:58  
**Units:** ng/Kg  
**Basis:** Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.215g  
**Data File Name:** P539717  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 05:39  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539713

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.259	0.848			1
1,2,3,7,8-PeCDD	ND	U	0.149	4.24			1
1,2,3,6,7,8-HxCDD	0.382J		0.103	4.24	1.17	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	0.108	4.24			1
1,2,3,7,8,9-HxCDD	0.305JK		0.106	4.24	0.86	1.006	1
1,2,3,4,6,7,8-HpCDD	7.80		0.0890	4.24	0.96	1.000	1
OCDD	204		1.04	8.48	0.89	1.000	1
2,3,7,8-TCDF	ND	U	0.296	0.848			1
1,2,3,7,8-PeCDF	ND	U	0.222	4.24			1
2,3,4,7,8-PeCDF	ND	U	0.139	4.24			1
1,2,3,6,7,8-HxCDF	ND	U	0.183	4.24			1
1,2,3,7,8,9-HxCDF	ND	U	0.255	4.24			1
1,2,3,4,7,8-HxCDF	0.372BJ		0.184	4.24	1.39	1.000	1
2,3,4,6,7,8-HxCDF	ND	U	0.176	4.24			1
1,2,3,4,6,7,8-HpCDF	2.74JK		0.302	4.24	0.87	1.000	1
1,2,3,4,7,8,9-HpCDF	0.417BJK		0.348	4.24	0.70	1.000	1
OCDF	32.4		0.438	8.48	0.80	1.005	1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil  
**Sample Name:** 3264939001 (High 1A)  
**Lab Code:** E2200924-001

**Service Request:** E2200924  
**Date Collected:** 09/21/22 10:30  
**Date Received:** 09/27/22 14:58  
**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.215g  
**Data File Name:** P539717  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 05:39  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539713

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	ND	U	0.259	0.848			1
Total Penta-Dioxins	0.175J		0.149	4.24	1.73		1
Total Hexa-Dioxins	1.57J		0.105	4.24	1.26		1
Total Hepta-Dioxins	21.2		0.0890	4.24	0.99		1
Total Tetra-Furans	ND	U	0.296	0.848			1
Total Penta-Furans	ND	U	0.172	4.24			1
Total Hexa-Furans	0.372J		0.196	4.24	1.39		1
Total Hepta-Furans	3.02J		0.324	4.24	1.08		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** 09/21/22 10:30  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264939001 (High 1A)  
**Lab Code:** E2200924-001

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.215g

**Date Analyzed:** 10/19/22 05:39  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539713

**Data File Name:** P539717  
**ICAL Date:** 01/18/22

**Labeled Standard Results**

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1397.105	70		40-135	0.80	1.023
13C-1,2,3,7,8-PeCDD	2000	1289.714	64		40-135	1.61	1.201
13C-1,2,3,4,7,8-HxCDD	2000	1295.340	65		40-135	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1305.821	65		40-135	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1133.789	57		40-135	1.07	1.067
13C-OCDD	4000	1709.225	43		40-135	0.89	1.139
13C-2,3,7,8-TCDF	2000	1211.268	61		40-135	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	1443.392	72		40-135	1.60	1.156
13C-2,3,4,7,8-PeCDF	2000	2258.186	113		40-135	1.56	1.190
13C-1,2,3,4,7,8-HxCDF	2000	1373.724	69		40-135	0.51	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1297.595	65		40-135	0.51	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1242.380	62		40-135	0.52	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1511.005	76		40-135	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1026.392	51		40-135	0.44	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1180.814	59		40-135	0.43	1.080
37Cl-2,3,7,8-TCDD	800	505.508	63		40-135	NA	1.024

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** 09/21/22 10:30  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264939001 (High 1A)  
**Lab Code:** E2200924-001

**Units:** ng/Kg  
**Basis:** Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

**Analysis Method:** 8290A  
**Prep Method:** Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.259	0.848	1	1	
1,2,3,7,8-PeCDD	ND	0.149	4.24	1	1	
1,2,3,6,7,8-HxCDD	<b>0.382</b>	0.103	4.24	1	0.1	0.0382
1,2,3,4,7,8-HxCDD	ND	0.108	4.24	1	0.1	
1,2,3,7,8,9-HxCDD	<b>0.305</b>	0.106	4.24	1	0.1	0.0305
1,2,3,4,6,7,8-HpCDD	<b>7.80</b>	0.0890	4.24	1	0.01	0.0780
OCDD	<b>204</b>	1.04	8.48	1	0.0003	0.0612
2,3,7,8-TCDF	ND	0.296	0.848	1	0.1	
1,2,3,7,8-PeCDF	ND	0.222	4.24	1	0.03	
2,3,4,7,8-PeCDF	ND	0.139	4.24	1	0.3	
1,2,3,6,7,8-HxCDF	ND	0.183	4.24	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.255	4.24	1	0.1	
1,2,3,4,7,8-HxCDF	<b>0.372</b>	0.184	4.24	1	0.1	0.0372
2,3,4,6,7,8-HxCDF	ND	0.176	4.24	1	0.1	
1,2,3,4,6,7,8-HpCDF	<b>2.74</b>	0.302	4.24	1	0.01	0.0274
1,2,3,4,7,8,9-HpCDF	<b>0.417</b>	0.348	4.24	1	0.01	0.00417
OCDF	<b>32.4</b>	0.438	8.48	1	0.0003	0.00972
Total TEQ						0.286

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Middletown  
Project: 3264939  
Sample Matrix: Soil  
Sample Name: 3264939001 (High 1A)  
Lab Code: E2200924-001

Service Request: E2200924  
Date Collected: 09/21/22 10:30  
Date Received: 09/27/22 14:58  
Units: Percent  
Basis: As Received

Total Solids

Analysis Method: ALS SOP  
7.0478g

Date Analyzed: 10/21/22 11:10  
NA  
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	57.7		-	-			1



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** 09/21/22 10:35  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264939002 (High 1B)  
**Lab Code:** E2200924-002

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.006g  
  
**Data File Name:** P539718  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 06:27  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539713

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.314	0.833			1
1,2,3,7,8-PeCDD	ND	U	0.233	4.16			1
1,2,3,6,7,8-HxCDD	0.287JK		0.178	4.16	0.52	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	0.196	4.16			1
1,2,3,7,8,9-HxCDD	ND	U	0.187	4.16			1
1,2,3,4,6,7,8-HpCDD	6.11		0.216	4.16	1.05	1.000	1
OCDD	69.5		1.14	8.33	0.85	1.000	1
2,3,7,8-TCDF	ND	U	0.510	0.833			1
1,2,3,7,8-PeCDF	ND	U	0.417	4.16			1
2,3,4,7,8-PeCDF	ND	U	0.257	4.16			1
1,2,3,6,7,8-HxCDF	ND	U	0.387	4.16			1
1,2,3,7,8,9-HxCDF	ND	U	0.556	4.16			1
1,2,3,4,7,8-HxCDF	ND	U	0.392	4.16			1
2,3,4,6,7,8-HxCDF	ND	U	0.357	4.16			1
1,2,3,4,6,7,8-HpCDF	5.13P		0.376	4.16	0.90	1.000	1
1,2,3,4,7,8,9-HpCDF	ND	U	0.428	4.16			1
OCDF	47.3		0.708	8.33	0.82	1.005	1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** 09/21/22 10:35  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264939002 (High 1B)  
**Lab Code:** E2200924-002

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.006g  
  
**Data File Name:** P539718  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 06:27  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539713

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	ND	U	0.314	0.833			1
Total Penta-Dioxins	ND	U	0.233	4.16			1
Total Hexa-Dioxins	ND	U	0.187	4.16			1
Total Hepta-Dioxins	11.4		0.216	4.16	0.93		1
Total Tetra-Furans	ND	U	0.510	0.833			1
Total Penta-Furans	ND	U	0.320	4.16			1
Total Hexa-Furans	1.01J		0.412	4.16	1.06		1
Total Hepta-Furans	10.7		0.401	4.16	0.90		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** 09/21/22 10:35  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264939002 (High 1B)  
**Lab Code:** E2200924-002

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.006g  
**Data File Name:** P539718  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 06:27  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539713

**Labeled Standard Results**

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	966.498	48		40-135	0.79	1.023
13C-1,2,3,7,8-PeCDD	2000	900.267	45		40-135	1.60	1.201
13C-1,2,3,4,7,8-HxCDD	2000	865.979	43		40-135	1.25	0.991
13C-1,2,3,6,7,8-HxCDD	2000	943.822	47		40-135	1.29	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	754.642	38	Y	40-135	1.06	1.067
13C-OCDD	4000	988.159	25	Y	40-135	0.90	1.139
13C-2,3,7,8-TCDF	2000	860.083	43		40-135	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	1002.525	50		40-135	1.58	1.156
13C-2,3,4,7,8-PeCDF	2000	1589.073	79		40-135	1.57	1.190
13C-1,2,3,4,7,8-HxCDF	2000	952.404	48		40-135	0.51	0.970
13C-1,2,3,6,7,8-HxCDF	2000	939.329	47		40-135	0.51	0.973
13C-1,2,3,7,8,9-HxCDF	2000	827.748	41		40-135	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1067.932	53		40-135	0.50	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	668.077	33	Y	40-135	0.42	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	746.063	37	Y	40-135	0.43	1.080
37Cl-2,3,7,8-TCDD	800	392.757	49		40-135	NA	1.024

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** 09/21/22 10:35  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264939002 (High 1B)  
**Lab Code:** E2200924-002

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method

**Toxicity Equivalency Quotient**

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.314	0.833	1	1	
1,2,3,7,8-PeCDD	ND	0.233	4.16	1	1	
1,2,3,6,7,8-HxCDD	<b>0.287</b>	0.178	4.16	1	0.1	0.0287
1,2,3,4,7,8-HxCDD	ND	0.196	4.16	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.187	4.16	1	0.1	
1,2,3,4,6,7,8-HpCDD	<b>6.11</b>	0.216	4.16	1	0.01	0.0611
OCDD	<b>69.5</b>	1.14	8.33	1	0.0003	0.0209
2,3,7,8-TCDF	ND	0.510	0.833	1	0.1	
1,2,3,7,8-PeCDF	ND	0.417	4.16	1	0.03	
2,3,4,7,8-PeCDF	ND	0.257	4.16	1	0.3	
1,2,3,6,7,8-HxCDF	ND	0.387	4.16	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.556	4.16	1	0.1	
1,2,3,4,7,8-HxCDF	ND	0.392	4.16	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.357	4.16	1	0.1	
1,2,3,4,6,7,8-HpCDF	<b>5.13</b>	0.376	4.16	1	0.01	0.0513
1,2,3,4,7,8,9-HpCDF	ND	0.428	4.16	1	0.01	
OCDF	<b>47.3</b>	0.708	8.33	1	0.0003	0.0142
<b>Total TEQ</b>						<b>0.176</b>

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Middletown  
Project: 3264939  
Sample Matrix: Soil  
Sample Name: 3264939002 (High 1B)  
Lab Code: E2200924-002

Service Request: E2200924  
Date Collected: 09/21/22 10:35  
Date Received: 09/27/22 14:58  
Units: Percent  
Basis: As Received

Total Solids

Analysis Method: ALS SOP  
5.9236g

Date Analyzed: 10/21/22 11:10  
NA  
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	60.0		-	-			1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** 09/21/22 12:00  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264939003 (High 2A)  
**Lab Code:** E2200924-003

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.109g  
  
**Data File Name:** P539719  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 07:16  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539713

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.360	1.10			1
1,2,3,7,8-PeCDD	0.340JK		0.140	5.48	1.84	1.002	1
1,2,3,6,7,8-HxCDD	2.06J		0.192	5.48	1.19	1.000	1
1,2,3,4,7,8-HxCDD	0.731J		0.208	5.48	1.27	1.000	1
1,2,3,7,8,9-HxCDD	1.14JK		0.200	5.48	0.98	1.007	1
1,2,3,4,6,7,8-HpCDD	36.4		0.210	5.48	1.09	1.000	1
OCDD	505		1.46	11.0	0.88	1.000	1
2,3,7,8-TCDF	1.11		0.411	1.10	0.65	1.002	1
1,2,3,7,8-PeCDF	1.75JK		0.542	5.48	1.28	1.001	1
2,3,4,7,8-PeCDF	0.376JK		0.323	5.48	0.89	1.002	1
1,2,3,6,7,8-HxCDF	2.23J		0.328	5.48	1.28	1.000	1
1,2,3,7,8,9-HxCDF	0.885BJK		0.441	5.48	0.81	1.001	1
1,2,3,4,7,8-HxCDF	9.04		0.322	5.48	1.18	1.000	1
2,3,4,6,7,8-HxCDF	0.983J		0.303	5.48	1.29	1.000	1
1,2,3,4,6,7,8-HpCDF	180		0.748	5.48	0.97	1.000	1
1,2,3,4,7,8,9-HpCDF	16.4		0.854	5.48	1.11	1.000	1
OCDF	4360		7.83	11.0	0.85	1.005	1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil  
**Sample Name:** 3264939003 (High 2A)  
**Lab Code:** E2200924-003

**Service Request:** E2200924  
**Date Collected:** 09/21/22 12:00  
**Date Received:** 09/27/22 14:58  
**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.109g  
**Data File Name:** P539719  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 07:16  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539713

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	0.499J		0.360	1.10	0.72		1
Total Penta-Dioxins	1.43J		0.140	5.48	1.55		1
Total Hexa-Dioxins	19.6		0.200	5.48	1.10		1
Total Hepta-Dioxins	80.5		0.210	5.48	1.05		1
Total Tetra-Furans	0.473J		0.411	1.10	0.75		1
Total Penta-Furans	4.76J		0.138	5.48	1.76		1
Total Hexa-Furans	31.8		0.342	5.48	1.38		1
Total Hepta-Furans	246		0.800	5.48	0.97		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** 09/21/22 12:00  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264939003 (High 2A)  
**Lab Code:** E2200924-003

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.109g  
  
**Data File Name:** P539719  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 07:16  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539713

**Labeled Standard Results**

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1270.111	64		40-135	0.80	1.023
13C-1,2,3,7,8-PeCDD	2000	1193.793	60		40-135	1.60	1.201
13C-1,2,3,4,7,8-HxCDD	2000	1129.456	56		40-135	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1216.252	61		40-135	1.30	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1066.183	53		40-135	1.07	1.067
13C-OCDD	4000	1605.162	40		40-135	0.90	1.139
13C-2,3,7,8-TCDF	2000	1132.186	57		40-135	0.79	0.991
13C-1,2,3,7,8-PeCDF	2000	1280.120	64		40-135	1.57	1.156
13C-2,3,4,7,8-PeCDF	2000	2115.748	106		40-135	1.59	1.190
13C-1,2,3,4,7,8-HxCDF	2000	1310.463	66		40-135	0.51	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1235.009	62		40-135	0.51	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1188.030	59		40-135	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1469.232	73		40-135	0.52	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1002.597	50		40-135	0.44	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1146.415	57		40-135	0.43	1.080
37Cl-2,3,7,8-TCDD	800	469.480	59		40-135	NA	1.024



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** 09/21/22 12:00  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264939003 (High 2A)  
**Lab Code:** E2200924-003

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method

**Toxicity Equivalency Quotient**

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.360	1.10	1	1	
1,2,3,7,8-PeCDD	<b>0.340</b>	0.140	5.48	1	1	0.340
1,2,3,6,7,8-HxCDD	<b>2.06</b>	0.192	5.48	1	0.1	0.206
1,2,3,4,7,8-HxCDD	<b>0.731</b>	0.208	5.48	1	0.1	0.0731
1,2,3,7,8,9-HxCDD	<b>1.14</b>	0.200	5.48	1	0.1	0.114
1,2,3,4,6,7,8-HpCDD	<b>36.4</b>	0.210	5.48	1	0.01	0.364
OCDD	<b>505</b>	1.46	11.0	1	0.0003	0.152
2,3,7,8-TCDF	<b>1.11</b>	0.411	1.10	1	0.1	0.111
1,2,3,7,8-PeCDF	<b>1.75</b>	0.542	5.48	1	0.03	0.0525
2,3,4,7,8-PeCDF	<b>0.376</b>	0.323	5.48	1	0.3	0.113
1,2,3,6,7,8-HxCDF	<b>2.23</b>	0.328	5.48	1	0.1	0.223
1,2,3,7,8,9-HxCDF	<b>0.885</b>	0.441	5.48	1	0.1	0.0885
1,2,3,4,7,8-HxCDF	<b>9.04</b>	0.322	5.48	1	0.1	0.904
2,3,4,6,7,8-HxCDF	<b>0.983</b>	0.303	5.48	1	0.1	0.0983
1,2,3,4,6,7,8-HpCDF	<b>180</b>	0.748	5.48	1	0.01	1.80
1,2,3,4,7,8,9-HpCDF	<b>16.4</b>	0.854	5.48	1	0.01	0.164
OCDF	<b>4360</b>	7.83	11.0	1	0.0003	1.31
Total TEQ						6.11

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Middletown  
Project: 3264939  
Sample Matrix: Soil  
Sample Name: 3264939003 (High 2A)  
Lab Code: E2200924-003

Service Request: E2200924  
Date Collected: 09/21/22 12:00  
Date Received: 09/27/22 14:58  
Units: Percent  
Basis: As Received

Total Solids

Analysis Method: ALS SOP  
5.1138g

Date Analyzed: 10/21/22 11:10  
NA  
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	45.1		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil  
**Sample Name:** 3264939004 (High 2B)  
**Lab Code:** E2200924-004

**Service Request:** E2200924  
**Date Collected:** 09/21/22 12:05  
**Date Received:** 09/27/22 14:58  
**Units:** ng/Kg  
**Basis:** Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.206g  
**Data File Name:** P539735  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 20:49  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.383	0.828			1
1,2,3,7,8-PeCDD	ND	U	0.304	4.14			1
1,2,3,6,7,8-HxCDD	0.415J		0.277	4.14	1.08	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	0.303	4.14			1
1,2,3,7,8,9-HxCDD	ND	U	0.290	4.14			1
1,2,3,4,6,7,8-HpCDD	4.71		0.302	4.14	0.90	1.000	1
OCDD	35.1		0.906	8.28	0.90	1.000	1
2,3,7,8-TCDF	ND	U	0.503	0.828			1
1,2,3,7,8-PeCDF	ND	U	0.299	4.14			1
2,3,4,7,8-PeCDF	ND	U	0.179	4.14			1
1,2,3,6,7,8-HxCDF	ND	U	0.217	4.14			1
1,2,3,7,8,9-HxCDF	ND	U	0.288	4.14			1
1,2,3,4,7,8-HxCDF	ND	U	0.221	4.14			1
2,3,4,6,7,8-HxCDF	ND	U	0.208	4.14			1
1,2,3,4,6,7,8-HpCDF	4.24		0.329	4.14	1.06	1.000	1
1,2,3,4,7,8,9-HpCDF	0.607BJ		0.404	4.14	1.18	1.000	1
OCDF	51.3		0.779	8.28	0.77	1.005	1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** 09/21/22 12:05  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264939004 (High 2B)  
**Lab Code:** E2200924-004

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.206g  
  
**Data File Name:** P539735  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 20:49  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	ND	U	0.383	0.828			1
Total Penta-Dioxins	ND	U	0.304	4.14			1
Total Hexa-Dioxins	0.415J		0.289	4.14	1.08		1
Total Hepta-Dioxins	8.71		0.302	4.14	1.20		1
Total Tetra-Furans	ND	U	0.503	0.828			1
Total Penta-Furans	ND	U	0.225	4.14			1
Total Hexa-Furans	1.20J		0.230	4.14	1.21		1
Total Hepta-Furans	11.9		0.365	4.14	1.06		1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** 09/21/22 12:05  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264939004 (High 2B)  
**Lab Code:** E2200924-004

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.206g

**Date Analyzed:** 10/19/22 20:49  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Data File Name:** P539735  
**ICAL Date:** 01/18/22

**Labeled Standard Results**

<b>Labeled Compounds</b>	<b>Spike Conc.(pg)</b>	<b>Conc. Found (pg)</b>	<b>% Rec</b>	<b>Q</b>	<b>Control Limits</b>	<b>Ion Ratio</b>	<b>RRT</b>
13C-2,3,7,8-TCDD	2000	705.812	35	Y	40-135	0.80	1.023
13C-1,2,3,7,8-PeCDD	2000	687.276	34	Y	40-135	1.61	1.201
13C-1,2,3,4,7,8-HxCDD	2000	620.719	31	Y	40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	675.297	34	Y	40-135	1.27	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	603.920	30	Y	40-135	1.07	1.067
13C-OCDD	4000	902.777	23	Y	40-135	0.88	1.139
13C-2,3,7,8-TCDF	2000	622.534	31	Y	40-135	0.81	0.991
13C-1,2,3,7,8-PeCDF	2000	717.680	36	Y	40-135	1.59	1.156
13C-2,3,4,7,8-PeCDF	2000	1189.819	59		40-135	1.57	1.190
13C-1,2,3,4,7,8-HxCDF	2000	653.975	33	Y	40-135	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	656.939	33	Y	40-135	0.51	0.973
13C-1,2,3,7,8,9-HxCDF	2000	640.810	32	Y	40-135	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	750.656	38	Y	40-135	0.50	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	521.181	26	Y	40-135	0.42	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	555.454	28	Y	40-135	0.44	1.080
37Cl-2,3,7,8-TCDD	800	385.420	48		40-135	NA	1.024

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** 09/21/22 12:05  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264939004 (High 2B)  
**Lab Code:** E2200924-004

**Units:** ng/Kg  
**Basis:** Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

**Analysis Method:** 8290A  
**Prep Method:** Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.383	0.828	1	1	
1,2,3,7,8-PeCDD	ND	0.304	4.14	1	1	
1,2,3,6,7,8-HxCDD	<b>0.415</b>	0.277	4.14	1	0.1	0.0415
1,2,3,4,7,8-HxCDD	ND	0.303	4.14	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.290	4.14	1	0.1	
1,2,3,4,6,7,8-HpCDD	<b>4.71</b>	0.302	4.14	1	0.01	0.0471
OCDD	<b>35.1</b>	0.906	8.28	1	0.0003	0.0105
2,3,7,8-TCDF	ND	0.503	0.828	1	0.1	
1,2,3,7,8-PeCDF	ND	0.299	4.14	1	0.03	
2,3,4,7,8-PeCDF	ND	0.179	4.14	1	0.3	
1,2,3,6,7,8-HxCDF	ND	0.217	4.14	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.288	4.14	1	0.1	
1,2,3,4,7,8-HxCDF	ND	0.221	4.14	1	0.1	
2,3,4,6,7,8-HxCDF	ND	0.208	4.14	1	0.1	
1,2,3,4,6,7,8-HpCDF	<b>4.24</b>	0.329	4.14	1	0.01	0.0424
1,2,3,4,7,8,9-HpCDF	<b>0.607</b>	0.404	4.14	1	0.01	0.00607
OCDF	<b>51.3</b>	0.779	8.28	1	0.0003	0.0154
Total TEQ						0.163

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Middletown  
Project: 3264939  
Sample Matrix: Soil  
Sample Name: 3264939004 (High 2B)  
Lab Code: E2200924-004

Service Request: E2200924  
Date Collected: 09/21/22 12:05  
Date Received: 09/27/22 14:58  
Units: Percent  
Basis: As Received

Total Solids

Analysis Method: ALS SOP  
8.2452g

Date Analyzed: 10/21/22 11:10  
NA  
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	59.2		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Method Blank  
**Lab Code:** EQ2200432-01

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.087g  
  
**Data File Name:** P539703  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/18/22 18:06  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539700

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.115	0.496			1
1,2,3,7,8-PeCDD	ND	U	0.0579	2.48			1
1,2,3,6,7,8-HxCDD	ND	U	0.0480	2.48			1
1,2,3,4,7,8-HxCDD	ND	U	0.0546	2.48			1
1,2,3,7,8,9-HxCDD	ND	U	0.0511	2.48			1
1,2,3,4,6,7,8-HpCDD	0.189 <b>JK</b>		0.0424	2.48	0.74	1.000	1
OCDD	0.436 <b>JK</b>		0.106	4.96	0.67	1.000	1
2,3,7,8-TCDF	ND	U	0.199	0.496			1
1,2,3,7,8-PeCDF	ND	U	0.0659	2.48			1
2,3,4,7,8-PeCDF	ND	U	0.0397	2.48			1
1,2,3,6,7,8-HxCDF	0.0515 <b>J</b>		0.0219	2.48	1.15	1.001	1
1,2,3,7,8,9-HxCDF	0.0985 <b>JK</b>		0.0318	2.48	0.89	1.001	1
1,2,3,4,7,8-HxCDF	0.0532 <b>J</b>		0.0234	2.48	1.19	1.001	1
2,3,4,6,7,8-HxCDF	0.0428 <b>J</b>		0.0214	2.48	1.35	1.000	1
1,2,3,4,6,7,8-HpCDF	0.0924 <b>J</b>		0.0200	2.48	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	0.107 <b>J</b>		0.0257	2.48	1.04	1.000	1
OCDF	0.273 <b>J</b>		0.0850	4.96	0.94	1.005	1



**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Method Blank  
**Lab Code:** EQ2200432-01

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.087g

**Date Analyzed:** 10/18/22 18:06  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539700

**Data File Name:** P539703  
**ICAL Date:** 01/18/22

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	ND	U	0.115	0.496			1
Total Penta-Dioxins	ND	U	0.0579	2.48			1
Total Hexa-Dioxins	ND	U	0.0510	2.48			1
Total Hepta-Dioxins	0.165J		0.0424	2.48	0.89		1
Total Tetra-Furans	ND	U	0.199	0.496			1
Total Penta-Furans	ND	U	0.0501	2.48			1
Total Hexa-Furans	0.186J		0.0240	2.48	1.32		1
Total Hepta-Furans	0.199J		0.0227	2.48	0.99		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Method Blank  
**Lab Code:** EQ2200432-01

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.087g  
  
**Data File Name:** P539703  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/18/22 18:06  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539700

**Labeled Standard Results**

<b>Labeled Compounds</b>	<b>Spike Conc.(pg)</b>	<b>Conc. Found (pg)</b>	<b>% Rec</b>	<b>Q</b>	<b>Control Limits</b>	<b>Ion Ratio</b>	<b>RRT</b>
13C-2,3,7,8-TCDD	2000	1416.529	71		40-135	0.79	1.023
13C-1,2,3,7,8-PeCDD	2000	1362.405	68		40-135	1.59	1.201
13C-1,2,3,4,7,8-HxCDD	2000	1222.307	61		40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1479.849	74		40-135	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1303.371	65		40-135	1.06	1.067
13C-OCDD	4000	2307.930	58		40-135	0.89	1.139
13C-2,3,7,8-TCDF	2000	1096.466	55		40-135	0.80	0.992
13C-1,2,3,7,8-PeCDF	2000	1385.811	69		40-135	1.56	1.156
13C-2,3,4,7,8-PeCDF	2000	2195.157	110		40-135	1.57	1.190
13C-1,2,3,4,7,8-HxCDF	2000	1318.052	66		40-135	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1381.234	69		40-135	0.50	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1257.628	63		40-135	0.48	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1505.711	75		40-135	0.51	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1180.359	59		40-135	0.44	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1166.262	58		40-135	0.43	1.080
37Cl-2,3,7,8-TCDD	800	419.499	52		40-135	NA	1.024



# Accuracy & Precision

**ALS Environmental - Houston HRMS**  
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Phone (713)266-1599 Fax (713)266-0130  
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ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Analyzed:** 10/19/22  
**Date Extracted:** 09/28/22

**Duplicate Lab Control Sample Summary**  
**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method

**Units:** ng/Kg  
**Basis:** Dry  
**Analysis Lot:** 782082

**Lab Control Sample**  
**EQ2200432-02**

**Duplicate Lab Control Sample**  
**EQ2200432-03**

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1,2,3,4,6,7,8-HpCDD	106	99.1	107	104	98.6	105	70-130	2	25
1,2,3,4,7,8-HxCDD	95.4	99.1	96	95.3	98.6	97	70-130	<1	25
1,2,3,6,7,8-HxCDD	86.0	99.1	87	85.2	98.6	86	70-130	<1	25
1,2,3,7,8,9-HxCDD	89.3	99.1	90	87.3	98.6	89	70-130	2	25
1,2,3,7,8-PeCDD	89.6	99.1	90	90.2	98.6	91	70-130	<1	25
2,3,7,8-TCDD	15.2	19.8	76	14.4	19.7	73	70-130	5	25
OCDD	221	198	111	219	197	111	70-130	<1	25
1,2,3,4,6,7,8-HpCDF	93.2	99.1	94	102	98.6	103	70-130	9	25
1,2,3,4,7,8,9-HpCDF	85.8	99.1	87	87.3	98.6	89	70-130	2	25
1,2,3,4,7,8-HxCDF	81.0	99.1	82	81.4	98.6	83	70-130	<1	25
1,2,3,6,7,8-HxCDF	87.2	99.1	88	88.8	98.6	90	70-130	2	25
1,2,3,7,8,9-HxCDF	81.5	99.1	82	83.2	98.6	84	70-130	2	25
1,2,3,7,8-PeCDF	82.5	99.1	83	84.5	98.6	86	70-130	2	25
2,3,4,6,7,8-HxCDF	73.2	99.1	74	74.6	98.6	76	70-130	2	25
2,3,4,7,8-PeCDF	80.3	99.1	81	80.3	98.6	81	70-130	<1	25
2,3,7,8-TCDF	18.4	19.8	93	17.6	19.7	89	70-130	4	25
OCDF	206	198	104	251	197	127	70-130	20	25

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Lab Control Sample  
**Lab Code:** EQ2200432-02

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.087g  
  
**Data File Name:** P539737  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 22:26  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	15.2		0.250	0.496	0.74	1.001	1
1,2,3,7,8-PeCDD	89.6		0.0935	2.48	1.60	1.001	1
1,2,3,6,7,8-HxCDD	86.0		0.0824	2.48	1.30	1.000	1
1,2,3,4,7,8-HxCDD	95.4		0.0949	2.48	1.27	1.000	1
1,2,3,7,8,9-HxCDD	89.3		0.0883	2.48	1.29	1.007	1
1,2,3,4,6,7,8-HpCDD	106		0.133	2.48	1.08	1.000	1
OCDD	221		0.604	4.96	0.88	1.000	1
2,3,7,8-TCDF	18.4		0.297	0.496	0.72	1.001	1
1,2,3,7,8-PeCDF	82.5		0.350	2.48	1.48	1.001	1
2,3,4,7,8-PeCDF	80.3		0.308	2.48	1.50	1.001	1
1,2,3,6,7,8-HxCDF	87.2		0.0970	2.48	1.19	1.000	1
1,2,3,7,8,9-HxCDF	81.5		0.125	2.48	1.21	1.000	1
1,2,3,4,7,8-HxCDF	81.0		0.0922	2.48	1.16	1.000	1
2,3,4,6,7,8-HxCDF	73.2		0.0816	2.48	1.12	1.000	1
1,2,3,4,6,7,8-HpCDF	93.2		0.261	2.48	0.98	1.000	1
1,2,3,4,7,8,9-HpCDF	85.8		0.315	2.48	0.98	1.000	1
OCDF	206		0.338	4.96	0.86	1.005	1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Lab Control Sample  
**Lab Code:** EQ2200432-02

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.087g  
  
**Data File Name:** P539737  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 22:26  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	15.3		0.250	0.496	0.74		1
Total Penta-Dioxins	89.6		0.0935	2.48	1.60		1
Total Hexa-Dioxins	271		0.0881	2.48	1.27		1
Total Hepta-Dioxins	112		0.133	2.48	1.16		1
Total Tetra-Furans	18.4		0.297	0.496	0.72		1
Total Penta-Furans	163		0.328	2.48	1.48		1
Total Hexa-Furans	323		0.0969	2.48	1.16		1
Total Hepta-Furans	189		0.287	2.48	0.98		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Lab Control Sample  
**Lab Code:** EQ2200432-02

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.087g  
  
**Data File Name:** P539737  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 22:26  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Labeled Standard Results**

<b>Labeled Compounds</b>	<b>Spike Conc.(pg)</b>	<b>Conc. Found (pg)</b>	<b>% Rec</b>	<b>Q</b>	<b>Control Limits</b>	<b>Ion Ratio</b>	<b>RRT</b>
13C-2,3,7,8-TCDD	2000	960.480	48		40-135	0.80	1.023
13C-1,2,3,7,8-PeCDD	2000	1246.614	62		40-135	1.62	1.201
13C-1,2,3,4,7,8-HxCDD	2000	1425.066	71		40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1674.563	84		40-135	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1448.269	72		40-135	1.05	1.067
13C-OCDD	4000	2352.184	59		40-135	0.89	1.139
13C-2,3,7,8-TCDF	2000	783.299	39	Y	40-135	0.78	0.991
13C-1,2,3,7,8-PeCDF	2000	1204.089	60		40-135	1.60	1.156
13C-2,3,4,7,8-PeCDF	2000	1349.061	67		40-135	1.62	1.191
13C-1,2,3,4,7,8-HxCDF	2000	1521.205	76		40-135	0.50	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1381.483	69		40-135	0.52	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1436.295	72		40-135	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1763.113	88		40-135	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1285.936	64		40-135	0.42	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1382.826	69		40-135	0.43	1.080
37Cl-2,3,7,8-TCDD	800	328.607	41		40-135	NA	1.024

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Duplicate Lab Control Sample  
**Lab Code:** EQ2200432-03

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.144g  
**Data File Name:** P539711  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 00:33  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539700

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	14.4		0.214	0.493	0.73	1.001	1
1,2,3,7,8-PeCDD	90.2		0.107	2.46	1.60	1.001	1
1,2,3,6,7,8-HxCDD	85.2		0.0556	2.46	1.26	1.000	1
1,2,3,4,7,8-HxCDD	95.3		0.0617	2.46	1.27	1.000	1
1,2,3,7,8,9-HxCDD	87.3		0.0585	2.46	1.27	1.007	1
1,2,3,4,6,7,8-HpCDD	104		0.263	2.46	1.06	1.000	1
OCDD	219		0.474	4.93	0.89	1.000	1
2,3,7,8-TCDF	17.6		0.376	0.493	0.67	1.001	1
1,2,3,7,8-PeCDF	84.5		0.301	2.46	1.47	1.001	1
2,3,4,7,8-PeCDF	80.3		0.254	2.46	1.48	1.000	1
1,2,3,6,7,8-HxCDF	88.8		0.206	2.46	1.15	1.000	1
1,2,3,7,8,9-HxCDF	83.2		0.249	2.46	1.20	1.000	1
1,2,3,4,7,8-HxCDF	81.4		0.194	2.46	1.20	1.000	1
2,3,4,6,7,8-HxCDF	74.6		0.172	2.46	1.20	1.000	1
1,2,3,4,6,7,8-HpCDF	102		1.04	2.46	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	87.3		1.20	2.46	1.03	1.000	1
OCDF	251		0.839	4.93	0.86	1.005	1



**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Duplicate Lab Control Sample  
**Lab Code:** EQ2200432-03

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.144g  
  
**Data File Name:** P539711  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 00:33  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539700

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	14.4		0.214	0.493	0.73		1
Total Penta-Dioxins	90.3		0.107	2.46	1.60		1
Total Hexa-Dioxins	268		0.0584	2.46	1.27		1
Total Hepta-Dioxins	111		0.263	2.46	1.04		1
Total Tetra-Furans	17.6		0.376	0.493	0.67		1
Total Penta-Furans	165		0.276	2.46	1.47		1
Total Hexa-Furans	329		0.202	2.46	1.20		1
Total Hepta-Furans	200		1.11	2.46	0.99		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264939  
**Sample Matrix:** Soil

**Service Request:** E2200924  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Duplicate Lab Control Sample  
**Lab Code:** EQ2200432-03

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.144g  
  
**Data File Name:** P539711  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 00:33  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539700

**Labeled Standard Results**

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	956.753	48		40-135	0.79	1.023
13C-1,2,3,7,8-PeCDD	2000	1378.746	69		40-135	1.61	1.201
13C-1,2,3,4,7,8-HxCDD	2000	1504.502	75		40-135	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1691.513	85		40-135	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1548.613	77		40-135	1.05	1.067
13C-OCDD	4000	2648.285	66		40-135	0.89	1.139
13C-2,3,7,8-TCDF	2000	801.003	40		40-135	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	1270.218	64		40-135	1.59	1.156
13C-2,3,4,7,8-PeCDF	2000	1485.878	74		40-135	1.59	1.191
13C-1,2,3,4,7,8-HxCDF	2000	1484.182	74		40-135	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1354.693	68		40-135	0.49	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1452.866	73		40-135	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1746.948	87		40-135	0.51	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1304.527	65		40-135	0.42	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1429.412	71		40-135	0.42	1.080
37Cl-2,3,7,8-TCDD	800	312.119	39	Y	40-135	NA	1.024



301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | [www.alsglobal.com](http://www.alsglobal.com)

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618  
 State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

Analytical Results Report For

**Normandeu Associates Inc.-Stowe**

Project [CHPE Hudson/24711](#)  
 Workorder [3264940](#)  
 Report ID [203605 on 10/28/2022](#)

**Certificate of Analysis**

Enclosed are the analytical results for samples received by the laboratory on Sep 22, 2022.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Sarah Leung (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at [www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads](http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads).

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 ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):  
 Don Nazario - Normandeu Associates, Inc.-Stowe  
 Michael Mettler - Normandeu Associates, Inc.

*Sarah Leung*

**Sarah Leung**  
 Project Coordinator

(ALS Digital Signature)

*This page is included as part of the Analytical Report and must be retained as a permanent record thereof.*



## Sample Summary

<u>Lab ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>	<u>Collector</u>	<u>Collection Company</u>
3264940001	High 3A	Solid	09/21/2022 11:20	09/22/2022 08:52	CBC	Collected By Client
3264940002	High 3B	Solid	09/21/2022 11:25	09/22/2022 08:52	CBC	Collected By Client
3264940003	High 4A	Solid	09/21/2022 09:55	09/22/2022 08:52	CBC	Collected By Client
3264940004	High 4B	Solid	09/21/2022 09:58	09/22/2022 08:52	CBC	Collected By Client
3264940005	High 5A	Solid	09/21/2022 09:05	09/22/2022 08:52	CBC	Collected By Client
3264940006	High 5B	Solid	09/21/2022 09:12	09/22/2022 08:52	CBC	Collected By Client



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## Reference

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### Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

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### Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits
#	Please reference the result in the Results Section for analyte-level flags.

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### Project Notations

### Sample Notations

Lab ID	Sample ID		
3264940001	High 3A	S1	This sample was analyzed at a dilution in the 8081 pesticide analysis. Reporting limits were adjusted accordingly.
3264940002	High 3B	S2	This sample was analyzed at a dilution in the 8081 pesticide analysis. Reporting limits were adjusted accordingly.
3264940003	High 4A	S3	This sample was analyzed at a dilution in the 8081 pesticide analysis. Reporting limits were adjusted accordingly.
3264940004	High 4B	S4	This sample was analyzed at a dilution in the 8081 pesticide analysis. Reporting limits were adjusted accordingly.
3264940005	High 5A	S5	This sample was analyzed at a dilution in the 8081 pesticide analysis. Reporting limits were adjusted accordingly.
3264940006	High 5B	S6	This sample was analyzed at a dilution in the 8081 pesticide analysis. Reporting limits were adjusted accordingly.

### Result Notations

Notation Ref.	
1	See attached subcontract Dioxin results from ALS Houston. SLW 10/28/2022
2	Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This compound was biased high 41% in the bracketing CCV.
3	Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This compound was biased high 32% in the bracketing CCV.
4	Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This compound was biased low 58% in the bracketing CCV.
5	See attached subcontract PCB results from Alpha Analytical. SLW 10/07/2022
6	The surrogate Tetrachloro-m-xylene for method SW846 8081B was outside of control limits. The % Recovery was reported as 8.2 and the control limits were 30 to 111. This result was reported at a dilution of 5.
7	The surrogate Decachlorobiphenyl for method SW846 8081B was outside of control limits. The % Recovery was reported as 10.9 and the control limits were 30 to 135. This result was reported at a dilution of 5.
8	Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This compound was biased high 22% in the bracketing CCV.
9	Method criteria requires continuing calibration verification (CCV) standards be less than or equal to 20% of the initial calibration for the 8081 analysis. This compound was biased low 35% in the bracketing CCV.



### Detected Results Summary

Client Sample ID	High 3A	Collected	09/21/2022 11:20
Lab Sample ID	3264940001	Lab Receipt	09/22/2022 08:52

Compound	Result	Units	RDL	MDL	Method	Flag	
<b>METALS</b>							
Arsenic, Total	5.0	mg/kg	3.2	1.1	SW846 6010D	#	
Copper, Total	11.6	mg/kg	3.2	1.1	SW846 6010D	#	
Lead, Total	8.6	mg/kg	3.2	1.1	SW846 6010D	#	
<b>SUBCONTRACTED ANALYSIS</b>							
Subcontracted Analysis	See attached				Subcontract	#	
<b>Sub'd-CASH Labs</b>							
Dioxin	See attached				ug/L	EPA 1613B	#
<b>WET CHEMISTRY</b>							
Moisture	39.0	%	0.1	0.01	S2540G-11	#	
Total Solids	61.0	%	0.1	0.01	S2540G-11	#	



### Detected Results Summary

Client Sample ID	<b>High 3B</b>	Collected	<b>09/21/2022 11:25</b>
Lab Sample ID	<b>3264940002</b>	Lab Receipt	<b>09/22/2022 08:52</b>

Compound	Result	Units	RDL	MDL	Method	Flag	
<b>METALS</b>							
Arsenic, Total	6.3	mg/kg	3.3	1.1	SW846 6010D	#	
Copper, Total	13.1	mg/kg	3.3	1.1	SW846 6010D	#	
Lead, Total	10.0	mg/kg	3.3	1.1	SW846 6010D	#	
<b>SUBCONTRACTED ANALYSIS</b>							
Subcontracted Analysis	See attached				Subcontract	#	
<b>Sub'd-CASH Labs</b>							
Dioxin	See attached				ug/L	EPA 1613B	#
<b>WET CHEMISTRY</b>							
Moisture	43.1	%	0.1	0.01	S2540G-11	#	
Total Solids	56.9	%	0.1	0.01	S2540G-11	#	





**Detected Results Summary**

Client Sample ID	<b>High 4A</b>	Collected	<b>09/21/2022 09:55</b>
Lab Sample ID	<b>3264940003</b>	Lab Receipt	<b>09/22/2022 08:52</b>

<u>Compound</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Flag</u>	
<b>METALS</b>							
Arsenic, Total	5.5	mg/kg	3.3	1.1	SW846 6010D	#	
Copper, Total	12.1	mg/kg	3.3	1.1	SW846 6010D	#	
Lead, Total	9.1	mg/kg	3.3	1.1	SW846 6010D	#	
<b>SUBCONTRACTED ANALYSIS</b>							
Subcontracted Analysis	See attached				Subcontract	#	
<b>Sub'd-CASH Labs</b>							
Dioxin	See attached				ug/L	EPA 1613B	#
<b>WET CHEMISTRY</b>							
Moisture	39.8	%	0.1	0.01	S2540G-11	#	
Total Solids	60.2	%	0.1	0.01	S2540G-11	#	



**Detected Results Summary**

Client Sample ID	<b>High 4B</b>	Collected	<b>09/21/2022 09:58</b>
Lab Sample ID	<b>3264940004</b>	Lab Receipt	<b>09/22/2022 08:52</b>

<u>Compound</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Flag</u>
<b>METALS</b>						
Arsenic, Total	6.7	mg/kg	3.3	1.1	SW846 6010D	#
Copper, Total	13.7	mg/kg	3.3	1.1	SW846 6010D	#
Lead, Total	10.3	mg/kg	3.3	1.1	SW846 6010D	#
Mercury, Total	0.032J	mg/kg	0.079	0.025	SW846 7471B	#
<b>SUBCONTRACTED ANALYSIS</b>						
Subcontracted Analysis	See attached				Subcontract	#
<b>Sub'd-CASH Labs</b>						
Dioxin	See attached				ug/L EPA 1613B	#
<b>WET CHEMISTRY</b>						
Moisture	40.5	%	0.1	0.01	S2540G-11	#
Total Solids	59.5	%	0.1	0.01	S2540G-11	#



### Detected Results Summary

Client Sample ID	High 5A	Collected	09/21/2022 09:05
Lab Sample ID	3264940005	Lab Receipt	09/22/2022 08:52

Compound	Result	Units	RDL	MDL	Method	Flag
<b>METALS</b>						
Arsenic, Total	5.3	mg/kg	3.5	1.2	SW846 6010D	#
Copper, Total	12.6	mg/kg	3.5	1.2	SW846 6010D	#
Lead, Total	10.1	mg/kg	3.5	1.2	SW846 6010D	#
<b>SEMIVOLATILES</b>						
Benzo(a)pyrene	327	ug/kg	83.9	28.5	SW846 8270D	#
<b>SUBCONTRACTED ANALYSIS</b>						
Subcontracted Analysis	See attached				Subcontract	#
<b>Sub'd-CASH Labs</b>						
Dioxin	See attached				ug/L EPA 1613B	#
<b>WET CHEMISTRY</b>						
Moisture	44.8	%	0.1	0.01	S2540G-11	#
Total Solids	55.2	%	0.1	0.01	S2540G-11	#



### Detected Results Summary

Client Sample ID	<b>High 5B</b>	Collected	<b>09/21/2022 09:12</b>
Lab Sample ID	<b>3264940006</b>	Lab Receipt	<b>09/22/2022 08:52</b>

Compound	Result	Units	RDL	MDL	Method	Flag
<b>METALS</b>						
Arsenic, Total	7.0	mg/kg	3.1	1.0	SW846 6010D	#
Copper, Total	13.2	mg/kg	3.1	1.0	SW846 6010D	#
Lead, Total	10.1	mg/kg	3.1	1.0	SW846 6010D	#
<b>SUBCONTRACTED ANALYSIS</b>						
Subcontracted Analysis	See attached				Subcontract	#
<b>Sub'd-CASH Labs</b>						
Dioxin	See attached				ug/L EPA 1613B	#
<b>WET CHEMISTRY</b>						
Moisture	38.4	%	0.1	0.01	S2540G-11	#
Total Solids	61.6	%	0.1	0.01	S2540G-11	#



## Results

Client Sample ID	<b>High 3A</b>	Collected	<b>09/21/2022 11:20</b>
Lab Sample ID	<b>3264940001</b>	Lab Receipt	<b>09/22/2022 08:52</b>

### METALS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Arsenic, Total	5.0	S1	mg/kg	3.2	1.1	SW846 6010D	1	10/18/2022 14:50	A1S	E1
Cadmium, Total	ND	ND,S1	mg/kg	0.79	0.26	SW846 6010D	1	10/18/2022 14:50	A1S	E1
Copper, Total	11.6	S1	mg/kg	3.2	1.1	SW846 6010D	1	10/18/2022 14:50	A1S	E1
Lead, Total	8.6	S1	mg/kg	3.2	1.1	SW846 6010D	1	10/18/2022 14:50	A1S	E1
Mercury, Total	ND	ND,S1	mg/kg	0.077	0.025	SW846 7471B	1	09/28/2022 14:09	WDA	E

### PESTICIDES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
4,4'-DDD	ND	ND,2,S1	ug/kg	13.4	8.7	SW846 8081B	5	09/28/2022 19:41	KJH	E
4,4'-DDE	ND	ND,3,S1	ug/kg	13.4	4.3	SW846 8081B	5	09/28/2022 19:41	KJH	E
4,4'-DDT	ND	ND,4,S1	ug/kg	13.4	3.9	SW846 8081B	5	09/28/2022 19:41	KJH	E
Chlordane	ND	ND,S1	ug/kg	276	46.5	SW846 8081B	5	09/28/2022 19:41	KJH	E
Dieldrin	ND	ND,S1	ug/kg	13.4	5.2	SW846 8081B	5	09/28/2022 19:41	KJH	E
Mirex	ND	ND,S1	ug/kg	13.4	4.2	SW846 8081B	5	09/28/2022 19:41	KJH	E

### SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
Decachlorobiphenyl	2051-24-3	51.7%	30 – 135	09/28/2022 19:41	
Tetrachloro-m-xylene	877-09-8	53.5%	30 – 111	09/28/2022 19:41	

### SEMIVOLATILES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acenaphthene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Acenaphthylene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Anthracene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Benzo(a)anthracene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Benzo(a)pyrene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Benzo(b)fluoranthene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Benzo(g,h,i)perylene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Benzo(k)fluoranthene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Chrysene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Dibenzo(a,h)anthracene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Fluoranthene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Fluorene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Indeno(1,2,3-cd)pyrene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Naphthalene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Phenanthrene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E
Pyrene	ND	ND,S1	ug/kg	74.5	25.3	SW846 8270D	1	09/26/2022 13:04	S7M	E



## Results

Client Sample ID	High 3A	Collected	09/21/2022 11:20
Lab Sample ID	3264940001	Lab Receipt	09/22/2022 08:52

### SEMIVOLATILES (cont.)

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>										
Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
2,4,6-Tribromophenol	118-79-6			82.5%		19 – 132		09/26/2022 13:04		
2-Fluorobiphenyl	321-60-8			78.3%		40 – 110		09/26/2022 13:04		
2-Fluorophenol	367-12-4			74.2%		26 – 116		09/26/2022 13:04		
Nitrobenzene-d5	4165-60-0			78.3%		38 – 112		09/26/2022 13:04		
Phenol-d5	4165-62-2			76.6%		35 – 111		09/26/2022 13:04		
Terphenyl-d14	98904-43-9			83.6%		45 – 126		09/26/2022 13:04		

### SUBCONTRACTED ANALYSIS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Subcontracted Analysis	See attached	5,S1				Subcontract	1	10/07/2022 15:13	SUB	G

### Sub'd-CASH Labs

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dioxin	See attached	1,S1	ug/L			EPA 1613B	1	10/28/2022 13:57	SUB	F

### VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Benzene	ND	ND,S1	ug/kg	5.9	1.5	SW846 8260C	1	09/26/2022 15:47	TMP	B
Ethylbenzene	ND	ND,S1	ug/kg	5.9	2.0	SW846 8260C	1	09/26/2022 15:47	TMP	B
Toluene	ND	ND,S1	ug/kg	5.9	2.0	SW846 8260C	1	09/26/2022 15:47	TMP	B
Total Xylenes	ND	ND,S1	ug/kg	17.6	4.1	SW846 8260C	1	09/26/2022 15:47	TMP	B

### *SURROGATES*

Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			89.8%		56 – 124		09/26/2022 15:47		
4-Bromofluorobenzene	460-00-4			102%		51 – 128		09/26/2022 15:47		
Dibromofluoromethane	1868-53-7			106%		62 – 123		09/26/2022 15:47		
Toluene-d8	2037-26-5			100%		59 – 131		09/26/2022 15:47		

### WET CHEMISTRY

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	39.0	S1	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D
Total Solids	61.0	S1	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D

**Project** CHPE Hudson/24711  
**Workorder** 3264940



### Results

Client Sample ID	High 3A	Collected	09/21/2022 11:20
Lab Sample ID	3264940001	Lab Receipt	09/22/2022 08:52

### WET CHEMISTRY (cont.)

<u>Compound</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Dilution</u>	<u>Analysis Date/Time</u>	<u>By</u>	<u>Cntr</u>
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## Results

Client Sample ID	<b>High 3B</b>	Collected	<b>09/21/2022 11:25</b>
Lab Sample ID	<b>3264940002</b>	Lab Receipt	<b>09/22/2022 08:52</b>

### METALS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Arsenic, Total	6.3	S2	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:51	A1S	E1
Cadmium, Total	ND	ND,S2	mg/kg	0.83	0.28	SW846 6010D	1	10/18/2022 14:51	A1S	E1
Copper, Total	13.1	S2	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:51	A1S	E1
Lead, Total	10.0	S2	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:51	A1S	E1
Mercury, Total	ND	ND,S2	mg/kg	0.080	0.026	SW846 7471B	1	09/28/2022 14:10	WDA	E

### PESTICIDES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
4,4'-DDD	ND	ND,2,S2	ug/kg	14.5	9.4	SW846 8081B	5	09/28/2022 19:51	KJH	E
4,4'-DDE	ND	ND,3,S2	ug/kg	14.5	4.7	SW846 8081B	5	09/28/2022 19:51	KJH	E
4,4'-DDT	ND	ND,4,S2	ug/kg	14.5	4.2	SW846 8081B	5	09/28/2022 19:51	KJH	E
Chlordane	ND	ND,S2	ug/kg	299	50.5	SW846 8081B	5	09/28/2022 19:51	KJH	E
Dieldrin	ND	ND,S2	ug/kg	14.5	5.6	SW846 8081B	5	09/28/2022 19:51	KJH	E
Mirex	ND	ND,S2	ug/kg	14.5	4.5	SW846 8081B	5	09/28/2022 19:51	KJH	E

### SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
Decachlorobiphenyl	2051-24-3	57.6%	30 – 135	09/28/2022 19:51	
Tetrachloro-m-xylene	877-09-8	56.3%	30 – 111	09/28/2022 19:51	

### SEMIVOLATILES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acenaphthene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Acenaphthylene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Anthracene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Benzo(a)anthracene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Benzo(a)pyrene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Benzo(b)fluoranthene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Benzo(g,h,i)perylene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Benzo(k)fluoranthene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Chrysene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Dibenzo(a,h)anthracene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Fluoranthene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Fluorene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Indeno(1,2,3-cd)pyrene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Naphthalene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Phenanthrene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E
Pyrene	ND	ND,S2	ug/kg	82.8	28.2	SW846 8270D	1	09/26/2022 13:29	S7M	E





## Results

Client Sample ID	High 3B	Collected	09/21/2022 11:25
Lab Sample ID	3264940002	Lab Receipt	09/22/2022 08:52

### SEMIVOLATILES (cont.)

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>										
Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
2,4,6-Tribromophenol	118-79-6			75.2%		19 – 132		09/26/2022 13:29		
2-Fluorobiphenyl	321-60-8			69.7%		40 – 110		09/26/2022 13:29		
2-Fluorophenol	367-12-4			67.4%		26 – 116		09/26/2022 13:29		
Nitrobenzene-d5	4165-60-0			68.9%		38 – 112		09/26/2022 13:29		
Phenol-d5	4165-62-2			69.8%		35 – 111		09/26/2022 13:29		
Terphenyl-d14	98904-43-9			78%		45 – 126		09/26/2022 13:29		

### SUBCONTRACTED ANALYSIS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Subcontracted Analysis	See attached	5,S2				Subcontract	1	10/07/2022 15:14	SUB	G

### Sub'd-CASH Labs

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dioxin	See attached	1,S2	ug/L			EPA 1613B	1	10/28/2022 13:57	SUB	F

### VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Benzene	ND	ND,S2	ug/kg	3.3	0.83	SW846 8260C	1	09/26/2022 16:12	TMP	B
Ethylbenzene	ND	ND,S2	ug/kg	3.3	1.1	SW846 8260C	1	09/26/2022 16:12	TMP	B
Toluene	ND	ND,S2	ug/kg	3.3	1.1	SW846 8260C	1	09/26/2022 16:12	TMP	B
Total Xylenes	ND	ND,S2	ug/kg	10	2.3	SW846 8260C	1	09/26/2022 16:12	TMP	B

### *SURROGATES*

Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			93.9%		56 – 124		09/26/2022 16:12		
4-Bromofluorobenzene	460-00-4			99.2%		51 – 128		09/26/2022 16:12		
Dibromofluoromethane	1868-53-7			102%		62 – 123		09/26/2022 16:12		
Toluene-d8	2037-26-5			96.8%		59 – 131		09/26/2022 16:12		

### WET CHEMISTRY

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	43.1	S2	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D
Total Solids	56.9	S2	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D



**Project** CHPE Hudson/24711

**Workorder** 3264940

### Results

Client Sample ID	<b>High 3B</b>	Collected	<b>09/21/2022 11:25</b>
Lab Sample ID	<b>3264940002</b>	Lab Receipt	<b>09/22/2022 08:52</b>

### WET CHEMISTRY (cont.)

<u>Compound</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Dilution</u>	<u>Analysis Date/Time</u>	<u>By</u>	<u>Cntr</u>
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## Results

Client Sample ID	<b>High 4A</b>	Collected	<b>09/21/2022 09:55</b>
Lab Sample ID	<b>3264940003</b>	Lab Receipt	<b>09/22/2022 08:52</b>

### METALS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Arsenic, Total	5.5	S3	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:55	A1S	E1
Cadmium, Total	ND	ND,S3	mg/kg	0.82	0.27	SW846 6010D	1	10/18/2022 14:55	A1S	E1
Copper, Total	12.1	S3	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:55	A1S	E1
Lead, Total	9.1	S3	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:55	A1S	E1
Mercury, Total	ND	ND,S3	mg/kg	0.072	0.023	SW846 7471B	1	09/28/2022 14:11	WDA	E

### PESTICIDES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
4,4'-DDD	ND	ND,2,S3	ug/kg	13.9	9.0	SW846 8081B	5	09/28/2022 20:02	KJH	E
4,4'-DDE	ND	ND,3,S3	ug/kg	13.9	4.5	SW846 8081B	5	09/28/2022 20:02	KJH	E
4,4'-DDT	ND	ND,4,S3	ug/kg	13.9	4.0	SW846 8081B	5	09/28/2022 20:02	KJH	E
Chlordane	ND	ND,S3	ug/kg	287	48.3	SW846 8081B	5	09/28/2022 20:02	KJH	E
Dieldrin	ND	ND,S3	ug/kg	13.9	5.4	SW846 8081B	5	09/28/2022 20:02	KJH	E
Mirex	ND	ND,S3	ug/kg	13.9	4.3	SW846 8081B	5	09/28/2022 20:02	KJH	E

### SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
Decachlorobiphenyl	2051-24-3	64.4%	30 – 135	09/28/2022 20:02	
Tetrachloro-m-xylene	877-09-8	61%	30 – 111	09/28/2022 20:02	

### SEMIVOLATILES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acenaphthene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Acenaphthylene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Anthracene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Benzo(a)anthracene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Benzo(a)pyrene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Benzo(b)fluoranthene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Benzo(g,h,i)perylene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Benzo(k)fluoranthene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Chrysene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Dibenzo(a,h)anthracene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Fluoranthene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Fluorene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Indeno(1,2,3-cd)pyrene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Naphthalene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Phenanthrene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E
Pyrene	ND	ND,S3	ug/kg	79.8	27.1	SW846 8270D	1	09/26/2022 13:54	S7M	E



## Results

Client Sample ID	High 4A	Collected	09/21/2022 09:55
Lab Sample ID	3264940003	Lab Receipt	09/22/2022 08:52

### SEMIVOLATILES (cont.)

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>										
Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
2,4,6-Tribromophenol	118-79-6			85.9%		19 – 132		09/26/2022 13:54		
2-Fluorobiphenyl	321-60-8			79.7%		40 – 110		09/26/2022 13:54		
2-Fluorophenol	367-12-4			79.4%		26 – 116		09/26/2022 13:54		
Nitrobenzene-d5	4165-60-0			83.2%		38 – 112		09/26/2022 13:54		
Phenol-d5	4165-62-2			80.9%		35 – 111		09/26/2022 13:54		
Terphenyl-d14	98904-43-9			80.4%		45 – 126		09/26/2022 13:54		

### SUBCONTRACTED ANALYSIS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Subcontracted Analysis	See attached	5,S3				Subcontract	1	10/07/2022 15:15	SUB	G

### Sub'd-CASH Labs

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dioxin	See attached	1,S3	ug/L			EPA 1613B	1	10/28/2022 13:58	SUB	F

### VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Benzene	ND	ND,S3	ug/kg	4.7	1.2	SW846 8260C	1	09/26/2022 16:36	TMP	B
Ethylbenzene	ND	ND,S3	ug/kg	4.7	1.6	SW846 8260C	1	09/26/2022 16:36	TMP	B
Toluene	ND	ND,S3	ug/kg	4.7	1.6	SW846 8260C	1	09/26/2022 16:36	TMP	B
Total Xylenes	ND	ND,S3	ug/kg	14.2	3.3	SW846 8260C	1	09/26/2022 16:36	TMP	B

### *SURROGATES*

Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			88.8%		56 – 124		09/26/2022 16:36		
4-Bromofluorobenzene	460-00-4			98.6%		51 – 128		09/26/2022 16:36		
Dibromofluoromethane	1868-53-7			103%		62 – 123		09/26/2022 16:36		
Toluene-d8	2037-26-5			99.2%		59 – 131		09/26/2022 16:36		

### WET CHEMISTRY

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	39.8	S3	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D
Total Solids	60.2	S3	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D



**Project** CHPE Hudson/24711

**Workorder** 3264940

### Results

Client Sample ID	High 4A	Collected	09/21/2022 09:55
Lab Sample ID	3264940003	Lab Receipt	09/22/2022 08:52

### WET CHEMISTRY (cont.)

<u>Compound</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Dilution</u>	<u>Analysis Date/Time</u>	<u>By</u>	<u>Cntr</u>
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## Results

Client Sample ID	<b>High 4B</b>	Collected	<b>09/21/2022 09:58</b>
Lab Sample ID	<b>3264940004</b>	Lab Receipt	<b>09/22/2022 08:52</b>

### METALS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Arsenic, Total	6.7	S4	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:56	A1S	E1
Cadmium, Total	ND	ND,S4	mg/kg	0.83	0.28	SW846 6010D	1	10/18/2022 14:56	A1S	E1
Copper, Total	13.7	S4	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:56	A1S	E1
Lead, Total	10.3	S4	mg/kg	3.3	1.1	SW846 6010D	1	10/18/2022 14:56	A1S	E1
Mercury, Total	0.032J	J,S4	mg/kg	0.079	0.025	SW846 7471B	1	09/28/2022 14:12	WDA	E

### PESTICIDES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
4,4'-DDD	ND	ND,2,S4	ug/kg	14.0	9.1	SW846 8081B	5	09/28/2022 20:12	KJH	E
4,4'-DDE	ND	ND,3,S4	ug/kg	14.0	4.5	SW846 8081B	5	09/28/2022 20:12	KJH	E
4,4'-DDT	ND	ND,4,S4	ug/kg	14.0	4.0	SW846 8081B	5	09/28/2022 20:12	KJH	E
Chlordane	ND	ND,S4	ug/kg	288	48.6	SW846 8081B	5	09/28/2022 20:12	KJH	E
Dieldrin	ND	ND,S4	ug/kg	14.0	5.4	SW846 8081B	5	09/28/2022 20:12	KJH	E
Mirex	ND	ND,S4	ug/kg	14.0	4.4	SW846 8081B	5	09/28/2022 20:12	KJH	E

### SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
Decachlorobiphenyl	2051-24-3	54.8%	30 – 135	09/28/2022 20:12	
Tetrachloro-m-xylene	877-09-8	56%	30 – 111	09/28/2022 20:12	

### SEMIVOLATILES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acenaphthene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Acenaphthylene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Anthracene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Benzo(a)anthracene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Benzo(a)pyrene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Benzo(b)fluoranthene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Benzo(g,h,i)perylene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Benzo(k)fluoranthene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Chrysene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Dibenzo(a,h)anthracene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Fluoranthene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Fluorene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Indeno(1,2,3-cd)pyrene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Naphthalene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Phenanthrene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E
Pyrene	ND	ND,S4	ug/kg	71.2	24.2	SW846 8270D	1	09/26/2022 14:18	S7M	E



## Results

Client Sample ID	High 4B	Collected	09/21/2022 09:58
Lab Sample ID	3264940004	Lab Receipt	09/22/2022 08:52

### SEMIVOLATILES (cont.)

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>										
Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
2,4,6-Tribromophenol	118-79-6			71.8%		19 – 132		09/26/2022 14:18		
2-Fluorobiphenyl	321-60-8			69.1%		40 – 110		09/26/2022 14:18		
2-Fluorophenol	367-12-4			68.2%		26 – 116		09/26/2022 14:18		
Nitrobenzene-d5	4165-60-0			68%		38 – 112		09/26/2022 14:18		
Phenol-d5	4165-62-2			68.8%		35 – 111		09/26/2022 14:18		
Terphenyl-d14	98904-43-9			74.2%		45 – 126		09/26/2022 14:18		

### SUBCONTRACTED ANALYSIS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Subcontracted Analysis	See attached	5,S4				Subcontract	1	10/07/2022 15:15	SUB	G

### Sub'd-CASH Labs

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dioxin	See attached	1,S4	ug/L			EPA 1613B	1	10/28/2022 13:58	SUB	F

### VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Benzene	ND	ND,S4	ug/kg	3.4	0.85	SW846 8260C	1	09/26/2022 17:00	TMP	B
Ethylbenzene	ND	ND,S4	ug/kg	3.4	1.1	SW846 8260C	1	09/26/2022 17:00	TMP	B
Toluene	ND	ND,S4	ug/kg	3.4	1.1	SW846 8260C	1	09/26/2022 17:00	TMP	B
Total Xylenes	ND	ND,S4	ug/kg	10.1	2.4	SW846 8260C	1	09/26/2022 17:00	TMP	B

### *SURROGATES*

Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			93.6%		56 – 124		09/26/2022 17:00		
4-Bromofluorobenzene	460-00-4			96.4%		51 – 128		09/26/2022 17:00		
Dibromofluoromethane	1868-53-7			104%		62 – 123		09/26/2022 17:00		
Toluene-d8	2037-26-5			95.3%		59 – 131		09/26/2022 17:00		

### WET CHEMISTRY

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	40.5	S4	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D
Total Solids	59.5	S4	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D



**Project** CHPE Hudson/24711

**Workorder** 3264940

### Results

Client Sample ID	<b>High 4B</b>	Collected	<b>09/21/2022 09:58</b>
Lab Sample ID	<b>3264940004</b>	Lab Receipt	<b>09/22/2022 08:52</b>

### WET CHEMISTRY (cont.)

<u>Compound</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Dilution</u>	<u>Analysis Date/Time</u>	<u>By</u>	<u>Cntr</u>
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## Results

Client Sample ID	High 5A	Collected	09/21/2022 09:05
Lab Sample ID	3264940005	Lab Receipt	09/22/2022 08:52

### METALS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Arsenic, Total	5.3	S5	mg/kg	3.5	1.2	SW846 6010D	1	10/18/2022 14:57	A1S	E1
Cadmium, Total	ND	ND,S5	mg/kg	0.87	0.29	SW846 6010D	1	10/18/2022 14:57	A1S	E1
Copper, Total	12.6	S5	mg/kg	3.5	1.2	SW846 6010D	1	10/18/2022 14:57	A1S	E1
Lead, Total	10.1	S5	mg/kg	3.5	1.2	SW846 6010D	1	10/18/2022 14:57	A1S	E1
Mercury, Total	ND	ND,S5	mg/kg	0.083	0.027	SW846 7471B	1	09/28/2022 14:13	WDA	E

### PESTICIDES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
4,4'-DDD	ND	ND,2,S5	ug/kg	15.2	9.8	SW846 8081B	5	09/28/2022 20:23	KJH	E
4,4'-DDE	ND	ND,3,S5	ug/kg	15.2	4.9	SW846 8081B	5	09/28/2022 20:23	KJH	E
4,4'-DDT	ND	ND,4,S5	ug/kg	15.2	4.4	SW846 8081B	5	09/28/2022 20:23	KJH	E
Chlordane	ND	ND,S5	ug/kg	313	52.8	SW846 8081B	5	09/28/2022 20:23	KJH	E
Dieldrin	ND	ND,S5	ug/kg	15.2	5.9	SW846 8081B	5	09/28/2022 20:23	KJH	E
Mirex	ND	ND,S5	ug/kg	15.2	4.7	SW846 8081B	5	09/28/2022 20:23	KJH	E

### SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
Decachlorobiphenyl	2051-24-3	52.8%	30 – 135	09/28/2022 20:23	
Tetrachloro-m-xylene	877-09-8	51.6%	30 – 111	09/28/2022 20:23	

### SEMIVOLATILES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acenaphthene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Acenaphthylene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Anthracene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Benzo(a)anthracene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Benzo(a)pyrene	327	S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Benzo(b)fluoranthene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Benzo(g,h,i)perylene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Benzo(k)fluoranthene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Chrysene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Dibenzo(a,h)anthracene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Fluoranthene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Fluorene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Indeno(1,2,3-cd)pyrene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Naphthalene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Phenanthrene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E
Pyrene	ND	ND,S5	ug/kg	83.9	28.5	SW846 8270D	1	09/26/2022 14:43	S7M	E



## Results

Client Sample ID	High 5A	Collected	09/21/2022 09:05
Lab Sample ID	3264940005	Lab Receipt	09/22/2022 08:52

### SEMIVOLATILES (cont.)

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>										
Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
2,4,6-Tribromophenol	118-79-6			77.8%		19 – 132		09/26/2022 14:43		
2-Fluorobiphenyl	321-60-8			72.9%		40 – 110		09/26/2022 14:43		
2-Fluorophenol	367-12-4			73.8%		26 – 116		09/26/2022 14:43		
Nitrobenzene-d5	4165-60-0			76.3%		38 – 112		09/26/2022 14:43		
Phenol-d5	4165-62-2			75.5%		35 – 111		09/26/2022 14:43		
Terphenyl-d14	98904-43-9			77.8%		45 – 126		09/26/2022 14:43		

### SUBCONTRACTED ANALYSIS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Subcontracted Analysis	See attached	5,S5				Subcontract	1	10/07/2022 15:15	SUB	G

### Sub'd-CASH Labs

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dioxin	See attached	1,S5	ug/L			EPA 1613B	1	10/28/2022 13:58	SUB	F

### VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Benzene	ND	ND,S5	ug/kg	3.9	0.97	SW846 8260C	1	09/26/2022 17:25	TMP	B
Ethylbenzene	ND	ND,S5	ug/kg	3.9	1.3	SW846 8260C	1	09/26/2022 17:25	TMP	B
Toluene	ND	ND,S5	ug/kg	3.9	1.3	SW846 8260C	1	09/26/2022 17:25	TMP	B
Total Xylenes	ND	ND,S5	ug/kg	11.6	2.7	SW846 8260C	1	09/26/2022 17:25	TMP	B

### *SURROGATES*

Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			94.1%		56 – 124		09/26/2022 17:25		
4-Bromofluorobenzene	460-00-4			97%		51 – 128		09/26/2022 17:25		
Dibromofluoromethane	1868-53-7			102%		62 – 123		09/26/2022 17:25		
Toluene-d8	2037-26-5			97.5%		59 – 131		09/26/2022 17:25		

### WET CHEMISTRY

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	44.8	S5	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D
Total Solids	55.2	S5	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D



**Project** CHPE Hudson/24711

**Workorder** 3264940

### Results

Client Sample ID	High 5A	Collected	09/21/2022 09:05
Lab Sample ID	3264940005	Lab Receipt	09/22/2022 08:52

### WET CHEMISTRY (cont.)

<u>Compound</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Dilution</u>	<u>Analysis Date/Time</u>	<u>By</u>	<u>Cntr</u>
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## Results

Client Sample ID	<b>High 5B</b>	Collected	<b>09/21/2022 09:12</b>
Lab Sample ID	<b>3264940006</b>	Lab Receipt	<b>09/22/2022 08:52</b>

### METALS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Arsenic, Total	7.0	S6	mg/kg	3.1	1.0	SW846 6010D	1	10/18/2022 14:58	A1S	E1
Cadmium, Total	ND	ND,S6	mg/kg	0.79	0.26	SW846 6010D	1	10/18/2022 14:58	A1S	E1
Copper, Total	13.2	S6	mg/kg	3.1	1.0	SW846 6010D	1	10/18/2022 14:58	A1S	E1
Lead, Total	10.1	S6	mg/kg	3.1	1.0	SW846 6010D	1	10/18/2022 14:58	A1S	E1
Mercury, Total	ND	ND,S6	mg/kg	0.068	0.022	SW846 7471B	1	09/28/2022 14:14	WDA	E

### PESTICIDES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
4,4'-DDD	ND	ND,8,S6	ug/kg	13.4	8.7	SW846 8081B	5	10/03/2022 13:51	KJH	E
4,4'-DDE	ND	ND,S6	ug/kg	13.4	4.3	SW846 8081B	5	10/03/2022 13:51	KJH	E
4,4'-DDT	ND	ND,9,S6	ug/kg	13.4	3.9	SW846 8081B	5	10/03/2022 13:51	KJH	E
Chlordane	ND	ND,S6	ug/kg	277	46.6	SW846 8081B	5	10/03/2022 13:51	KJH	E
Dieldrin	ND	ND,S6	ug/kg	13.4	5.2	SW846 8081B	5	10/03/2022 13:51	KJH	E
Mirex	ND	ND,S6	ug/kg	13.4	4.2	SW846 8081B	5	10/03/2022 13:51	KJH	E

### SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
Decachlorobiphenyl	2051-24-3	10.9* %	30 – 135	10/03/2022 13:51	7
Tetrachloro-m-xylene	877-09-8	8.2* %	30 – 111	10/03/2022 13:51	6

### SEMIVOLATILES

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Acenaphthene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Acenaphthylene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Anthracene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Benzo(a)anthracene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Benzo(a)pyrene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Benzo(b)fluoranthene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Benzo(g,h,i)perylene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Benzo(k)fluoranthene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Chrysene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Dibenzo(a,h)anthracene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Fluoranthene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Fluorene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Indeno(1,2,3-cd)pyrene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Naphthalene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Phenanthrene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E
Pyrene	ND	ND,S6	ug/kg	68.8	23.4	SW846 8270D	1	09/26/2022 15:08	S7M	E



## Results

Client Sample ID	High 5B	Collected	09/21/2022 09:12
Lab Sample ID	3264940006	Lab Receipt	09/22/2022 08:52

### SEMIVOLATILES (cont.)

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>										
Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
2,4,6-Tribromophenol	118-79-6			76.3%		19 – 132		09/26/2022 15:08		
2-Fluorobiphenyl	321-60-8			73.6%		40 – 110		09/26/2022 15:08		
2-Fluorophenol	367-12-4			71.7%		26 – 116		09/26/2022 15:08		
Nitrobenzene-d5	4165-60-0			74.8%		38 – 112		09/26/2022 15:08		
Phenol-d5	4165-62-2			72%		35 – 111		09/26/2022 15:08		
Terphenyl-d14	98904-43-9			77.6%		45 – 126		09/26/2022 15:08		

### SUBCONTRACTED ANALYSIS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Subcontracted Analysis	See attached	5,S6				Subcontract	1	10/07/2022 15:16	SUB	G

### Sub'd-CASH Labs

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dioxin	See attached	1,S6	ug/L			EPA 1613B	1	10/28/2022 13:59	SUB	F

### VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Benzene	ND	ND,S6	ug/kg	3.4	0.86	SW846 8260C	1	09/26/2022 17:49	TMP	B
Ethylbenzene	ND	ND,S6	ug/kg	3.4	1.2	SW846 8260C	1	09/26/2022 17:49	TMP	B
Toluene	ND	ND,S6	ug/kg	3.4	1.2	SW846 8260C	1	09/26/2022 17:49	TMP	B
Total Xylenes	ND	ND,S6	ug/kg	10.3	2.4	SW846 8260C	1	09/26/2022 17:49	TMP	B

### *SURROGATES*

Compound	CAS No			Recovery		Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			92%		56 – 124		09/26/2022 17:49		
4-Bromofluorobenzene	460-00-4			94.7%		51 – 128		09/26/2022 17:49		
Dibromofluoromethane	1868-53-7			103%		62 – 123		09/26/2022 17:49		
Toluene-d8	2037-26-5			94.8%		59 – 131		09/26/2022 17:49		

### WET CHEMISTRY

Compound	Result	Flag	Units	RDL	MDL	Method	Dilution	Analysis Date/Time	By	Cntr
Moisture	38.4	S6	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D
Total Solids	61.6	S6	%	0.1	0.01	S2540G-11	1	09/26/2022 14:44	NXL	D



**Project** CHPE Hudson/24711  
**Workorder** 3264940

### Results

Client Sample ID	<b>High 5B</b>	Collected	<b>09/21/2022 09:12</b>
Lab Sample ID	<b>3264940006</b>	Lab Receipt	<b>09/22/2022 08:52</b>

### WET CHEMISTRY (cont.)

<u>Compound</u>	<u>Result</u>	<u>Flag</u>	<u>Units</u>	<u>RDL</u>	<u>MDL</u>	<u>Method</u>	<u>Dilution</u>	<u>Analysis Date/Time</u>	<u>By</u>	<u>Cntr</u>
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### Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3264940001	High 3A	EPA 1613B	N/A	
		SW846 6010D	SW846 3051A	
		SW846 7471B	SW846 7471B	
		Subcontract	N/A	
		SW846 8081B	SW846 3546	
		SW846 8270D	SW846 3546	
		SW846 8260C	SW846 5035A	
		S2540G-11	N/A	
3264940002	High 3B	EPA 1613B	N/A	
		SW846 6010D	SW846 3051A	
		SW846 7471B	SW846 7471B	
		Subcontract	N/A	
		SW846 8081B	SW846 3546	
		SW846 8270D	SW846 3546	
		SW846 8260C	SW846 5035A	
		S2540G-11	N/A	
3264940003	High 4A	EPA 1613B	N/A	
		SW846 6010D	SW846 3051A	
		SW846 7471B	SW846 7471B	
		Subcontract	N/A	
		SW846 8081B	SW846 3546	
		SW846 8270D	SW846 3546	
		SW846 8260C	SW846 5035A	
		S2540G-11	N/A	
3264940004	High 4B	EPA 1613B	N/A	
		SW846 6010D	SW846 3051A	
		SW846 7471B	SW846 7471B	
		Subcontract	N/A	
		SW846 8081B	SW846 3546	
		SW846 8270D	SW846 3546	
		SW846 8260C	SW846 5035A	
		S2540G-11	N/A	
3264940005	High 5A	EPA 1613B	N/A	
		SW846 6010D	SW846 3051A	
		SW846 7471B	SW846 7471B	
		Subcontract	N/A	
		SW846 8081B	SW846 3546	
		SW846 8270D	SW846 3546	
		SW846 8260C	SW846 5035A	
		S2540G-11	N/A	
3264940006	High 5B	EPA 1613B	N/A	
		SW846 6010D	SW846 3051A	
		SW846 7471B	SW846 7471B	
		Subcontract	N/A	
		SW846 8081B	SW846 3546	
		SW846 8270D	SW846 3546	
		SW846 8260C	SW846 5035A	
		S2540G-11	N/A	



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3264940001	High 3A	N/A	N/A	N/A		EPA 1613B	
		SW846 3051A	882890	09/26/2022 15:00	JSE	SW846 6010D	891275
		SW846 7471B	884167	09/27/2022 11:00	WDA	SW846 7471B	884713
		N/A	N/A	N/A		Subcontract	
		SW846 3546	882840	09/22/2022 17:15	RXS	SW846 8081B	884677
		SW846 3546	882841	09/22/2022 17:00	J1H	SW846 8270D	884132
		SW846 5035A	884099	09/21/2022 11:20	TMP	SW846 8260C	884100
		N/A	N/A	N/A		S2540G-11	883090
3264940002	High 3B	N/A	N/A	N/A		EPA 1613B	
		SW846 3051A	882890	09/26/2022 15:00	JSE	SW846 6010D	891275
		SW846 7471B	884167	09/27/2022 11:00	WDA	SW846 7471B	884713
		N/A	N/A	N/A		Subcontract	
		SW846 3546	882840	09/22/2022 17:15	RXS	SW846 8081B	884677
		SW846 3546	882841	09/22/2022 17:00	J1H	SW846 8270D	884132
		SW846 5035A	884099	09/21/2022 11:25	TMP	SW846 8260C	884100
		N/A	N/A	N/A		S2540G-11	883090
3264940003	High 4A	N/A	N/A	N/A		EPA 1613B	
		SW846 3051A	882890	09/26/2022 15:00	JSE	SW846 6010D	891275
		SW846 7471B	884167	09/27/2022 11:00	WDA	SW846 7471B	884713
		N/A	N/A	N/A		Subcontract	
		SW846 3546	882840	09/22/2022 17:15	RXS	SW846 8081B	884677
		SW846 3546	882841	09/22/2022 17:00	J1H	SW846 8270D	884132
		SW846 5035A	884099	09/21/2022 09:55	TMP	SW846 8260C	884100
		N/A	N/A	N/A		S2540G-11	883090
3264940004	High 4B	N/A	N/A	N/A		EPA 1613B	
		SW846 3051A	882890	09/26/2022 15:00	JSE	SW846 6010D	891275
		SW846 7471B	884167	09/27/2022 11:00	WDA	SW846 7471B	884713
		N/A	N/A	N/A		Subcontract	
		SW846 3546	882840	09/22/2022 17:15	RXS	SW846 8081B	884677
		SW846 3546	882841	09/22/2022 17:00	J1H	SW846 8270D	884132
		SW846 5035A	884099	09/21/2022 09:58	TMP	SW846 8260C	884100
		N/A	N/A	N/A		S2540G-11	883090
3264940005	High 5A	N/A	N/A	N/A		EPA 1613B	
		SW846 3051A	882890	09/26/2022 15:00	JSE	SW846 6010D	891275
		SW846 7471B	884167	09/27/2022 11:00	WDA	SW846 7471B	884713
		N/A	N/A	N/A		Subcontract	
		SW846 3546	882840	09/22/2022 17:15	RXS	SW846 8081B	884677
		SW846 3546	882841	09/22/2022 17:00	J1H	SW846 8270D	884132
		SW846 5035A	884099	09/21/2022 09:05	TMP	SW846 8260C	884100
		N/A	N/A	N/A		S2540G-11	883090
3264940006	High 5B	N/A	N/A	N/A		EPA 1613B	
		SW846 3051A	882890	09/26/2022 15:00	JSE	SW846 6010D	891275
		SW846 7471B	884167	09/27/2022 11:00	WDA	SW846 7471B	884713
		N/A	N/A	N/A		Subcontract	
		SW846 3546	882840	09/22/2022 17:15	RXS	SW846 8081B	884677
		SW846 3546	882841	09/22/2022 17:00	J1H	SW846 8270D	884132
		SW846 5035A	884099	09/21/2022 09:12	TMP	SW846 8260C	884100
		N/A	N/A	N/A		S2540G-11	883090



10/28/2022 2:54 PM



301 Fulling Mill Rd, Suite A  
Middletown, PA 17057  
P. 717-944-5541

CHAIN OF CUSTODY/  
REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /  
SAMPLER. INSTRUCTIONS ON THE BACK.

COC #:



3264940

Logged By: KSB  
PM: SSL



of

ALS Quote

Client Name: <u>Normandeau Associates</u>			Container Type: <u>VOA Glass</u>			Temp Taken By: <u>KSB</u> Therm ID: <u>570</u> WO Temp (°C) <u>1</u>		
Address: <u>400 Old Reading Pike Building A, Suite 101 Stowe, PA 19464</u>			Container Size: <u>40ml 807 807</u>			Receipt Info completed by: <u>KSB</u> WV Containers 0-6°C Y N <u>NA</u>		
Contact: <u>Don Nazario</u>			Preservative: <u>Meat - -</u>			Cooler Custody Seals Intact <u>Y</u> N NA		
Phone#: <u>(717) 617-7076</u>			ANALYSES/METHOD REQUESTED <u>VOAS / 2omaist</u> <u>Dioxins</u> <u>PATs Pest PCB</u> <u>Metals Cong</u>			Sample Custody Seal Intact <u>Y</u> N <u>NA</u>		
Project Name#: <u>CHPE Hudson/24711</u>						Received on Ice <u>Y</u> N NA		
Bill To:						Coolers & Samples Intact <u>Y</u> N		
Purchase Order #: <u>24711.001</u>						Correct Containers Provided <u>Y</u> N		
TAT <input checked="" type="checkbox"/> Normal-Standard TAT is 10-12 business days. <input type="checkbox"/> Rush-Subject to ALS approval and surcharges.						Sample Label/COC Agree <u>Y</u> N		
Date Required: <u>Approved?</u>			Adequate Sample Volumes <u>Y</u> N			Deviations? NO YES		
Email? <input checked="" type="checkbox"/> <u>DNazario@Normandeau.com</u>			VOA only: Headspace Present <u>Y</u> N <u>NA</u>			If YES, list below:		
Date/Time			VOA only: Trip Blank <u>Y</u> N <u>NA</u>			Client contact:		
Sample Description/Location (as it will appear on the lab report)			Date Collected (mm/dd/yy)			NJ ≤ 4 days? <u>Y</u> N		
Time (hh:mm)			SDWA Sample Type (see key)			Courier/Tracking #: <u>81219740 3300</u>		
*G or C			**Matrix (See bottom of COC)			Rad Screen (uCi) _____		
Enter Number of Containers Per Sample or Field Results Below.			Date/Time			New Source? Y N		
1	High 3A	9/21/22	1120	G S	4	1	1	New Source Contact:
2	High 3B	↓	1125	G S	4	1	1	PWSID # _____
3	High 4A	↓	0905	G S	4	1	1	PWS Contact: _____ PWS Phone #: _____
4	High 4B	↓	0958	G S	4	1	1	SDWA Sample Type Key: D=Distribution E=Entry Point R=Raw P=Plant C=Check S=Special A=Annual Startup
5	High 5A	↓	0905	G S	4	1	1	Sample/COC Remarks
6	High 5B	↓	0912	G S	4	1	1	Contains Short Hold Testing YES NO
7								Internal Use: If less than 48 hours - notify lab upon receipt
8								
9								
10								
SAMPLED BY (Please Print, if MD include Sampler #): <u>DON NAZARIO</u>			Comments:			Data Deliverables		
Date:	Time	Relinquished By / Company Name	Received By / Company Name			State Samples Collected In		
9/21/22	1500	<u>DNazario/Normandeau</u>	<u>Fedex</u>			<input type="checkbox"/> NY		
9.22.22	852	<u>Fedex</u>	<u>Ph...</u>			<input type="checkbox"/> NJ		
						<input type="checkbox"/> PA		
						<input type="checkbox"/> WV		
						<input type="checkbox"/> FL		
						other		

\* G=Grab, C=Composite \*\*Matrix - A=Air, D=Drinking Water, GW=Groundwater, O=Oil; LW=Liquid Waste; S=Solid/Soil/Sludge; SW=Surface Water; WP=Wipe; WW=Wastewater

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## ANALYTICAL REPORT

Lab Number:	L2253128
Client:	ALS 301 Fulling Mill Road Middletown, PA 17057
ATTN:	Sarah Leung
Phone:	(717) 702-2248
Project Name:	3264940
Project Number:	Not Specified
Report Date:	10/06/22

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

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320 Forbes Boulevard, Mansfield, MA 02048-1806  
508-822-9300 (Fax) 508-822-3288 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L2253128-01	3264940001 (HIGH 3A)	SEDIMENT	NY	09/21/22 11:20	09/27/22
L2253128-02	3264940002 (HIGH 3B)	SEDIMENT	NY	09/21/22 11:25	09/27/22
L2253128-03	3264940003 (HIGH 4A)	SEDIMENT	NY	09/21/22 09:55	09/27/22
L2253128-04	3264940004 (HIGH 4B)	SEDIMENT	NY	09/21/22 09:58	09/27/22
L2253128-05	3264940005 (HIGH 5A)	SEDIMENT	NY	09/21/22 09:05	09/27/22
L2253128-06	3264940006 (HIGH 5B)	SEDIMENT	NY	09/21/22 09:12	09/27/22

**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

**HOLD POLICY** - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

---

**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22


**Case Narrative (continued)**

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Elizabeth Porta

Title: Technical Director/Representative

Date: 10/06/22

# ORGANICS

# PCBS

**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

Lab ID: L2253128-01  
 Client ID: 3264940001 (HIGH 3A)  
 Sample Location: NY

Date Collected: 09/21/22 11:20  
 Date Received: 09/27/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 105,8270E-SIM/680(M)  
 Analytical Date: 10/04/22 13:00  
 Analyst: PS  
 Percent Solids: 59%

Extraction Method: EPA 3570  
 Extraction Date: 09/28/22 21:00  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/29/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	ND		ug/kg	0.644	0.322	1
CI3-BZ#18	ND		ug/kg	0.644	0.322	1
CI3-BZ#28	ND		ug/kg	0.644	0.322	1
CI4-BZ#44	ND		ug/kg	0.644	0.322	1
CI4-BZ#49	ND		ug/kg	0.644	0.322	1
CI4-BZ#52	ND		ug/kg	0.644	0.322	1
CI4-BZ#66	ND		ug/kg	0.644	0.322	1
CI5-BZ#87	ND		ug/kg	0.644	0.322	1
CI5-BZ#101	ND		ug/kg	0.644	0.322	1
CI5-BZ#105	ND		ug/kg	0.644	0.322	1
CI5-BZ#118	ND		ug/kg	0.644	0.322	1
CI6-BZ#128	ND		ug/kg	0.644	0.322	1
CI6-BZ#138	ND		ug/kg	0.644	0.322	1
CI6-BZ#153	ND		ug/kg	0.644	0.322	1
CI7-BZ#170	ND		ug/kg	0.644	0.322	1
CI7-BZ#180	ND		ug/kg	0.644	0.322	1
CI7-BZ#183	ND		ug/kg	0.644	0.322	1
CI7-BZ#184	ND		ug/kg	0.644	0.322	1
CI7-BZ#187	ND		ug/kg	0.644	0.322	1
CI8-BZ#195	ND		ug/kg	0.644	0.322	1
CI9-BZ#206	ND		ug/kg	0.644	0.322	1
CI10-BZ#209	ND		ug/kg	0.644	0.322	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	93		50-125
BZ 198	120		50-125





**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

Lab ID: L2253128-02  
 Client ID: 3264940002 (HIGH 3B)  
 Sample Location: NY

Date Collected: 09/21/22 11:25  
 Date Received: 09/27/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 105,8270E-SIM/680(M)  
 Analytical Date: 10/04/22 13:28  
 Analyst: PS  
 Percent Solids: 60%

Extraction Method: EPA 3570  
 Extraction Date: 09/28/22 21:00  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/29/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	ND		ug/kg	0.662	0.331	1
CI3-BZ#18	ND		ug/kg	0.662	0.331	1
CI3-BZ#28	ND		ug/kg	0.662	0.331	1
CI4-BZ#44	ND		ug/kg	0.662	0.331	1
CI4-BZ#49	ND		ug/kg	0.662	0.331	1
CI4-BZ#52	ND		ug/kg	0.662	0.331	1
CI4-BZ#66	ND		ug/kg	0.662	0.331	1
CI5-BZ#87	ND		ug/kg	0.662	0.331	1
CI5-BZ#101	ND		ug/kg	0.662	0.331	1
CI5-BZ#105	ND		ug/kg	0.662	0.331	1
CI5-BZ#118	ND		ug/kg	0.662	0.331	1
CI6-BZ#128	ND		ug/kg	0.662	0.331	1
CI6-BZ#138	ND		ug/kg	0.662	0.331	1
CI6-BZ#153	ND		ug/kg	0.662	0.331	1
CI7-BZ#170	ND		ug/kg	0.662	0.331	1
CI7-BZ#180	ND		ug/kg	0.662	0.331	1
CI7-BZ#183	ND		ug/kg	0.662	0.331	1
CI7-BZ#184	ND		ug/kg	0.662	0.331	1
CI7-BZ#187	ND		ug/kg	0.662	0.331	1
CI8-BZ#195	ND		ug/kg	0.662	0.331	1
CI9-BZ#206	ND		ug/kg	0.662	0.331	1
CI10-BZ#209	ND		ug/kg	0.662	0.331	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	89		50-125
BZ 198	107		50-125



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

Lab ID: L2253128-03  
 Client ID: 3264940003 (HIGH 4A)  
 Sample Location: NY

Date Collected: 09/21/22 09:55  
 Date Received: 09/27/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 105,8270E-SIM/680(M)  
 Analytical Date: 10/04/22 13:56  
 Analyst: PS  
 Percent Solids: 61%

Extraction Method: EPA 3570  
 Extraction Date: 09/28/22 21:00  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/29/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	ND		ug/kg	0.642	0.321	1
CI3-BZ#18	ND		ug/kg	0.642	0.321	1
CI3-BZ#28	ND		ug/kg	0.642	0.321	1
CI4-BZ#44	ND		ug/kg	0.642	0.321	1
CI4-BZ#49	ND		ug/kg	0.642	0.321	1
CI4-BZ#52	ND		ug/kg	0.642	0.321	1
CI4-BZ#66	ND		ug/kg	0.642	0.321	1
CI5-BZ#87	ND		ug/kg	0.642	0.321	1
CI5-BZ#101	ND		ug/kg	0.642	0.321	1
CI5-BZ#105	ND		ug/kg	0.642	0.321	1
CI5-BZ#118	ND		ug/kg	0.642	0.321	1
CI6-BZ#128	ND		ug/kg	0.642	0.321	1
CI6-BZ#138	ND		ug/kg	0.642	0.321	1
CI6-BZ#153	ND		ug/kg	0.642	0.321	1
CI7-BZ#170	ND		ug/kg	0.642	0.321	1
CI7-BZ#180	ND		ug/kg	0.642	0.321	1
CI7-BZ#183	ND		ug/kg	0.642	0.321	1
CI7-BZ#184	ND		ug/kg	0.642	0.321	1
CI7-BZ#187	ND		ug/kg	0.642	0.321	1
CI8-BZ#195	ND		ug/kg	0.642	0.321	1
CI9-BZ#206	ND		ug/kg	0.642	0.321	1
CI10-BZ#209	ND		ug/kg	0.642	0.321	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	101		50-125
BZ 198	118		50-125



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

Lab ID: L2253128-04  
 Client ID: 3264940004 (HIGH 4B)  
 Sample Location: NY

Date Collected: 09/21/22 09:58  
 Date Received: 09/27/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 105,8270E-SIM/680(M)  
 Analytical Date: 10/04/22 14:24  
 Analyst: PS  
 Percent Solids: 60%

Extraction Method: EPA 3570  
 Extraction Date: 09/28/22 21:00  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/29/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	ND		ug/kg	0.622	0.311	1
CI3-BZ#18	ND		ug/kg	0.622	0.311	1
CI3-BZ#28	ND		ug/kg	0.622	0.311	1
CI4-BZ#44	ND		ug/kg	0.622	0.311	1
CI4-BZ#49	ND		ug/kg	0.622	0.311	1
CI4-BZ#52	ND		ug/kg	0.622	0.311	1
CI4-BZ#66	ND		ug/kg	0.622	0.311	1
CI5-BZ#87	ND		ug/kg	0.622	0.311	1
CI5-BZ#101	ND		ug/kg	0.622	0.311	1
CI5-BZ#105	ND		ug/kg	0.622	0.311	1
CI5-BZ#118	ND		ug/kg	0.622	0.311	1
CI6-BZ#128	ND		ug/kg	0.622	0.311	1
CI6-BZ#138	ND		ug/kg	0.622	0.311	1
CI6-BZ#153	ND		ug/kg	0.622	0.311	1
CI7-BZ#170	ND		ug/kg	0.622	0.311	1
CI7-BZ#180	ND		ug/kg	0.622	0.311	1
CI7-BZ#183	ND		ug/kg	0.622	0.311	1
CI7-BZ#184	ND		ug/kg	0.622	0.311	1
CI7-BZ#187	ND		ug/kg	0.622	0.311	1
CI8-BZ#195	ND		ug/kg	0.622	0.311	1
CI9-BZ#206	ND		ug/kg	0.622	0.311	1
CI10-BZ#209	ND		ug/kg	0.622	0.311	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	90		50-125
BZ 198	106		50-125



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

Lab ID: L2253128-05  
 Client ID: 3264940005 (HIGH 5A)  
 Sample Location: NY

Date Collected: 09/21/22 09:05  
 Date Received: 09/27/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 105,8270E-SIM/680(M)  
 Analytical Date: 10/04/22 14:52  
 Analyst: PS  
 Percent Solids: 58%

Extraction Method: EPA 3570  
 Extraction Date: 09/28/22 21:00  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/29/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	ND		ug/kg	0.651	0.326	1
CI3-BZ#18	ND		ug/kg	0.651	0.326	1
CI3-BZ#28	ND		ug/kg	0.651	0.326	1
CI4-BZ#44	ND		ug/kg	0.651	0.326	1
CI4-BZ#49	ND		ug/kg	0.651	0.326	1
CI4-BZ#52	ND		ug/kg	0.651	0.326	1
CI4-BZ#66	ND		ug/kg	0.651	0.326	1
CI5-BZ#87	ND		ug/kg	0.651	0.326	1
CI5-BZ#101	ND		ug/kg	0.651	0.326	1
CI5-BZ#105	ND		ug/kg	0.651	0.326	1
CI5-BZ#118	ND		ug/kg	0.651	0.326	1
CI6-BZ#128	ND		ug/kg	0.651	0.326	1
CI6-BZ#138	ND		ug/kg	0.651	0.326	1
CI6-BZ#153	ND		ug/kg	0.651	0.326	1
CI7-BZ#170	ND		ug/kg	0.651	0.326	1
CI7-BZ#180	ND		ug/kg	0.651	0.326	1
CI7-BZ#183	ND		ug/kg	0.651	0.326	1
CI7-BZ#184	ND		ug/kg	0.651	0.326	1
CI7-BZ#187	ND		ug/kg	0.651	0.326	1
CI8-BZ#195	ND		ug/kg	0.651	0.326	1
CI9-BZ#206	ND		ug/kg	0.651	0.326	1
CI10-BZ#209	ND		ug/kg	0.651	0.326	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	89		50-125
BZ 198	111		50-125



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

Lab ID: L2253128-06  
 Client ID: 3264940006 (HIGH 5B)  
 Sample Location: NY

Date Collected: 09/21/22 09:12  
 Date Received: 09/27/22  
 Field Prep: Not Specified

Sample Depth:

Matrix: Sediment  
 Analytical Method: 105,8270E-SIM/680(M)  
 Analytical Date: 10/04/22 15:20  
 Analyst: PS  
 Percent Solids: 61%

Extraction Method: EPA 3570  
 Extraction Date: 09/28/22 21:00  
 Cleanup Method: EPA 3630  
 Cleanup Date: 09/29/22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
<b>PCB Congeners (NOAA List) - Mansfield Lab</b>						
CI2-BZ#8	ND		ug/kg	0.639	0.320	1
CI3-BZ#18	ND		ug/kg	0.639	0.320	1
CI3-BZ#28	ND		ug/kg	0.639	0.320	1
CI4-BZ#44	ND		ug/kg	0.639	0.320	1
CI4-BZ#49	ND		ug/kg	0.639	0.320	1
CI4-BZ#52	ND		ug/kg	0.639	0.320	1
CI4-BZ#66	ND		ug/kg	0.639	0.320	1
CI5-BZ#87	ND		ug/kg	0.639	0.320	1
CI5-BZ#101	ND		ug/kg	0.639	0.320	1
CI5-BZ#105	ND		ug/kg	0.639	0.320	1
CI5-BZ#118	ND		ug/kg	0.639	0.320	1
CI6-BZ#128	ND		ug/kg	0.639	0.320	1
CI6-BZ#138	ND		ug/kg	0.639	0.320	1
CI6-BZ#153	ND		ug/kg	0.639	0.320	1
CI7-BZ#170	ND		ug/kg	0.639	0.320	1
CI7-BZ#180	ND		ug/kg	0.639	0.320	1
CI7-BZ#183	ND		ug/kg	0.639	0.320	1
CI7-BZ#184	ND		ug/kg	0.639	0.320	1
CI7-BZ#187	ND		ug/kg	0.639	0.320	1
CI8-BZ#195	ND		ug/kg	0.639	0.320	1
CI9-BZ#206	ND		ug/kg	0.639	0.320	1
CI10-BZ#209	ND		ug/kg	0.639	0.320	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
DBOB	86		50-125
BZ 198	107		50-125



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

**Method Blank Analysis**  
**Batch Quality Control**

Analytical Method: 105,8270E-SIM/680(M)  
Analytical Date: 10/04/22 09:17  
Analyst: PS

Extraction Method: EPA 3570  
Extraction Date: 09/28/22 21:00  
Cleanup Method: EPA 3630  
Cleanup Date: 09/29/22

Parameter	Result	Qualifier	Units	RL	MDL
PCB Congeners (NOAA List) - Mansfield Lab for sample(s): 01-06 Batch: WG1693135-1					
CI2-BZ#8	ND		ug/kg	0.400	0.200
CI3-BZ#18	ND		ug/kg	0.400	0.200
CI3-BZ#28	ND		ug/kg	0.400	0.200
CI4-BZ#44	ND		ug/kg	0.400	0.200
CI4-BZ#49	ND		ug/kg	0.400	0.200
CI4-BZ#52	ND		ug/kg	0.400	0.200
CI4-BZ#66	ND		ug/kg	0.400	0.200
CI5-BZ#87	ND		ug/kg	0.400	0.200
CI5-BZ#101	ND		ug/kg	0.400	0.200
CI5-BZ#105	ND		ug/kg	0.400	0.200
CI5-BZ#118	ND		ug/kg	0.400	0.200
CI6-BZ#128	ND		ug/kg	0.400	0.200
CI6-BZ#138	ND		ug/kg	0.400	0.200
CI6-BZ#153	ND		ug/kg	0.400	0.200
CI7-BZ#170	ND		ug/kg	0.400	0.200
CI7-BZ#180	ND		ug/kg	0.400	0.200
CI7-BZ#183	ND		ug/kg	0.400	0.200
CI7-BZ#184	ND		ug/kg	0.400	0.200
CI7-BZ#187	ND		ug/kg	0.400	0.200
CI8-BZ#195	ND		ug/kg	0.400	0.200
CI9-BZ#206	ND		ug/kg	0.400	0.200
CI10-BZ#209	ND		ug/kg	0.400	0.200

Surrogate	%Recovery	Qualifier	Acceptance Criteria
DBOB	93		50-125
BZ 198	112		50-125



## Lab Control Sample Analysis

### Batch Quality Control

**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-06 Batch: WG1693135-2 WG1693135-3								
Cl2-BZ#8	74		74		40-140	0		30
Cl3-BZ#18	75		74		40-140	1		30
Cl3-BZ#28	72		73		40-140	1		30
Cl4-BZ#44	80		81		40-140	1		30
Cl4-BZ#49	77		76		40-140	1		30
Cl4-BZ#52	77		79		40-140	3		30
Cl4-BZ#66	79		79		40-140	0		30
Cl5-BZ#87	80		81		40-140	1		30
Cl5-BZ#101	77		78		40-140	1		30
Cl5-BZ#105	79		79		40-140	0		30
Cl5-BZ#118	77		77		40-140	0		30
Cl6-BZ#128	82		83		40-140	1		30
Cl6-BZ#138	79		80		40-140	1		30
Cl6-BZ#153	79		80		40-140	1		30
Cl7-BZ#170	96		96		40-140	0		30
Cl7-BZ#180	78		79		40-140	1		30
Cl7-BZ#183	76		76		40-140	0		30
Cl7-BZ#184	80		81		40-140	1		30
Cl7-BZ#187	83		85		40-140	2		30
Cl8-BZ#195	88		87		40-140	1		30
Cl9-BZ#206	85		86		40-140	1		30
Cl10-BZ#209	80		84		40-140	5		30

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
PCB Congeners (NOAA List) - Mansfield Lab Associated sample(s): 01-06 Batch: WG1693135-2 WG1693135-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
DBOB	87		87		50-125
BZ 198	101		103		50-125



# INORGANICS & MISCELLANEOUS

**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

**Lab ID:** L2253128-01  
**Client ID:** 3264940001 (HIGH 3A)  
**Sample Location:** NY

**Date Collected:** 09/21/22 11:20  
**Date Received:** 09/27/22  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	58.8		%	0.100	0.100	1	-	09/30/22 13:10	121,2540G	VM



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

**Lab ID:** L2253128-02  
**Client ID:** 3264940002 (HIGH 3B)  
**Sample Location:** NY

**Date Collected:** 09/21/22 11:25  
**Date Received:** 09/27/22  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	60.2		%	0.100	0.100	1	-	09/30/22 13:10	121,2540G	VM



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

**Lab ID:** L2253128-03  
**Client ID:** 3264940003 (HIGH 4A)  
**Sample Location:** NY

**Date Collected:** 09/21/22 09:55  
**Date Received:** 09/27/22  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	61.3		%	0.100	0.100	1	-	09/30/22 13:10	121,2540G	VM



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

**Lab ID:** L2253128-04  
**Client ID:** 3264940004 (HIGH 4B)  
**Sample Location:** NY

**Date Collected:** 09/21/22 09:58  
**Date Received:** 09/27/22  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	59.6		%	0.100	0.100	1	-	09/30/22 13:10	121,2540G	VM



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

**Lab ID:** L2253128-05  
**Client ID:** 3264940005 (HIGH 5A)  
**Sample Location:** NY

**Date Collected:** 09/21/22 09:05  
**Date Received:** 09/27/22  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	57.8		%	0.100	0.100	1	-	09/30/22 13:10	121,2540G	VM



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

**SAMPLE RESULTS**

**Lab ID:** L2253128-06  
**Client ID:** 3264940006 (HIGH 5B)  
**Sample Location:** NY

**Date Collected:** 09/21/22 09:12  
**Date Received:** 09/27/22  
**Field Prep:** Not Specified

**Sample Depth:**  
**Matrix:** Sediment

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Mansfield Lab</b>										
Solids, Total	61.1		%	0.100	0.100	1	-	09/30/22 13:10	121,2540G	VM



## Lab Duplicate Analysis

*Batch Quality Control*

**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1694116-1 QC Sample: L2253205-22 Client ID: DUP Sample						
Solids, Total	87.8	87.6	%	0		10



**Project Name:** 3264940  
**Project Number:** Not Specified

### Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

#### Cooler Information

Cooler	Custody Seal
A	Absent

#### Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2253128-01A	Glass 250ml/8oz unpreserved	A	NA		1.9	Y	Absent		A2-TS(7),A2-PCBCONG-8270-NOAA(14)
L2253128-02A	Glass 250ml/8oz unpreserved	A	NA		1.9	Y	Absent		A2-TS(7),A2-PCBCONG-8270-NOAA(14)
L2253128-03A	Glass 250ml/8oz unpreserved	A	NA		1.9	Y	Absent		A2-TS(7),A2-PCBCONG-8270-NOAA(14)
L2253128-04A	Glass 250ml/8oz unpreserved	A	NA		1.9	Y	Absent		A2-TS(7),A2-PCBCONG-8270-NOAA(14)
L2253128-05A	Glass 250ml/8oz unpreserved	A	NA		1.9	Y	Absent		A2-TS(7),A2-PCBCONG-8270-NOAA(14)
L2253128-06A	Glass 250ml/8oz unpreserved	A	NA		1.9	Y	Absent		A2-TS(7),A2-PCBCONG-8270-NOAA(14)

**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

## GLOSSARY

### Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)  Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

#### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

#### Terms

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

**Chlordane:** The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

**Difference:** With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

**Final pH:** As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

**Frozen Date/Time:** With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

**Gasoline Range Organics (GRO):** Gasoline Range Organics (GRO) results include all chromatographic peaks eluting from Methyl tert butyl ether through Naphthalene, with the exception of GRO analysis in support of State of Ohio programs, which includes all chromatographic peaks eluting from Hexane through Dodecane.

**Initial pH:** As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

**PAH Total:** With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

**PFAS Total:** With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

#### Data Qualifiers

- A** - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F** - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively

Report Format: DU Report with 'J' Qualifiers



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

#### Data Qualifiers

Identified Compounds (TICs).

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- V** - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)
- Z** - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers



**Project Name:** 3264940  
**Project Number:** Not Specified

**Lab Number:** L2253128  
**Report Date:** 10/06/22

## REFERENCES

- 105 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997 in conjunction with NOAA Technical Memorandum NMFS-NWFSC-59: Extraction, Cleanup and GC/MS Analysis of Sediments and Tissues for Organic Contaminants, March 2004 and the Determination of Pesticides and PCBs in Water and Oil/Sediment by GC/MS: Method 680, EPA 01A0005295, November 1985.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 624/624.1:** m/p-xylene, o-xylene, Naphthalene

**EPA 625/625.1:** alpha-Terpineol

**EPA 8260C/8260D:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

**EPA 8270D/8270E:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### Mansfield Facility

**SM 2540D:** TSS

**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

### Westborough Facility:

#### Drinking Water

**EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,**

**EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**

**EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

#### Non-Potable Water

**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:**

Ammonia-N, **LCHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E,**

**SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**

**EPA 624.1:** Volatile Halocarbons & Aromatics,

**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II,

Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

### Mansfield Facility:

#### Drinking Water

**EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**

**EPA 522, EPA 537.1.**

#### Non-Potable Water

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

**EPA 245.1 Hg.**

**SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

9/27/21

L 2253128



301 Fulling Mill Road  
Middletown, PA 17057  
P. 717-944-5541  
F. 717-944-1430

**CHAIN OF CUSTODY/  
REQUEST FOR ANALYSIS**

**ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /  
SAMPLER. INSTRUCTIONS ON THE BACK.**

COC #:	1 of 1
ALS Quote #:	

Client Name: ALS	Container Type: G	Receipt Information (completed by Receiving Lab)									
Address: 301 Fulling Mill Road Middletown PA 17057	Container Size: 4oz	W.O. Temp: _____ Therm ID: _____									
Contact: Sarah Leung	Preservatives: None	Courier/Tracking #: _____									

Phone#: (717) 702-2248	ANALYSES/METHOD REQUESTED										Purchase Order #: 3264940
------------------------	---------------------------	--	--	--	--	--	--	--	--	--	---------------------------

Project Name/ #: 3264940	*G or C **Matrix NOAA 22 PCBs 8270D Alpha Quote 19994										Project Comments:
Bill To:											Subcontract: Alpha Analytical
TAT <input checked="" type="checkbox"/> Normal-Standard TAT is 10-12 business days. <input type="checkbox"/> Rush-Subject to ALS approval and surcharges.											ALS Field Services: <input type="checkbox"/> Pickup <input type="checkbox"/> Labor <input type="checkbox"/> Composite Sampling <input type="checkbox"/> Rental Equipment Other: _____
Date Required: _____ Approved? Email? <input checked="" type="checkbox"/> -Y namdt.subcontract@alsglobal.com Fax? <input type="checkbox"/> -Y No.:											

Sample Description/Location (as it will appear on the lab report)	Date Collected mm/dd/yy	Time hh:mm	*G or C	**Matrix	Enter Number of Containers Per Sample or Field Results Below.										Sample/COC Comments				
1 3264940001 (High 3A)	9/21/22	1120	G	S	1														
2 3264940002 (High 3B)	9/21/22	1125	G	S	1														
3 3264940003 (High 4A)	9/21/22	0955	G	S	1														
4 3264940004 (High 4B)	9/21/22	0958	G	S	1														
5 3264940005 (High 5A)	9/21/22	0905	G	S	1														
6 3264940006 (High 5B)	9/21/22	0912	G	S	1														
7																			
8																			
9																			
10																			

SAMPLED BY (Please Print):			Sampler Comments:				Data Deliverables		Special Processing		State Samples Collected In	
Relinquished By / Company Name			Date	Time	Received By / Company Name		Date	Time	<input type="checkbox"/> Standard <input type="checkbox"/> CLP-like <input type="checkbox"/> USACE/DOD <input checked="" type="checkbox"/> Level 2	USACE <input type="checkbox"/> Navy <input type="checkbox"/>	<input checked="" type="checkbox"/> NY <input type="checkbox"/> NJ <input type="checkbox"/> PA <input type="checkbox"/> NC <input type="checkbox"/> MD other	
1	<i>ALS</i>		9/21/22	11:00	2	FEDEX			Reportable to PADEP? Yes <input type="checkbox"/> No <input type="checkbox"/>	Sample Disposal Lab <input type="checkbox"/> Special <input type="checkbox"/>		
3	FEDEX		9/27/22	10:03	4	ALC	9/27/22	10:03				
5					6				PWSID # _____ EDDS: Format Type- Excel			
7					8							
9					10							

\* G=Grab, C=Composite \*\*Matrix - AI=Air, DW=Drinking Water, GW=Groundwater, OI=Oil, OL=Other Liquid, SL=Sludge, SO=Soil, WP=Wipe, WW=Wastewater



October 25, 2022

Service Request No:E2200923

Sarah Leung  
ALS Environmental - Middletown  
301 Fulling Mill Road  
Middletown, PA 17057

**Laboratory Results for: 3264940**

Dear Sarah,

Enclosed are the results of the sample(s) submitted to our laboratory September 27, 2022  
For your reference, these analyses have been assigned our service request number **E2200923**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and except as noted in the laboratory case narrative provided. All results are intended to be considered in their entirety and ALS Environmental is not responsible for use of less than the complete final report. Results apply only to the items submitted to the laboratory, as received for analysis. In accordance with the current TNI Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My extension is 2188. You may also contact me via email at [James.Guin@alsglobal.com](mailto:James.Guin@alsglobal.com).

Respectfully submitted,

**ALS Group USA, Corp. dba ALS Environmental**



James Guin

ADDRESS 10450 Stancliff Rd., Suite 210, Houston, TX 77099  
PHONE +1 281 530 5656 | FAX +1 281 530 5887  
ALS Group USA, Corp.  
dba ALS Environmental





# Certificate of Analysis

**ALS Environmental - Houston HRMS**  
10450 Stancliff Rd, Suite 210, Houston TX 77099  
Phone (713)266-1599 Fax (713)266-0130  
[www.alsglobal.com](http://www.alsglobal.com)

## ALS Environmental

**Client:** ALS Environmental – Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request No.:** E2200923  
**Date Received:** 09/27/22

### CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

#### Sample Receipt

Six samples were received for analysis at ALS Environmental in Houston on 09/27/22.

The samples were received in good condition and are consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

#### Data Validation Notes and Discussion

##### Precision and Accuracy:

EQ2200432-02/03: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of a MS/MSD for this extraction batch. The LCS/DLCS passed quality control ranges.

##### B flags – Method Blanks

The Method Blank EQ2200432-01 contained low levels of target compounds below the Method Reporting Limit (MRL). The associated compounds in the samples are flagged with ‘B’ flags where the sample result is less than ten times the level detected in the method blank.

##### 2378-TCDF

Samples analyzed on the DB-5MSUI column were analyzed under conditions where sufficient separation between 2,3,7,8-TCDF and its closest eluter was achieved. Confirmation of this result was not required.

##### Y flags – Cleanup Standard

The recoveries for the cleanup standard, 37Cl-2,3,7,8-TCDD are below control limits. The sample results are not affected since this labeled standard is provided as a means of demonstrating that both the sample extraction and subsequent cleanup steps performed as expected and is not used in quantitation of target analytes.

##### Y flags – Labeled Standards

Quantification of the native 2,3,7,8-substituted congeners is based on isotopic dilution, which automatically corrects for variation in extraction efficiency and provides accurate values even with poor recovery. Samples that had recoveries of labeled standards outside the acceptance limits are qualified with ‘Y’ flags on the Labeled Compound summary pages. In all cases, the signal-to-noise ratios are greater than 10:1 and detection limits were below the Method Reporting Limits.

### **E flags**

When OCDF exceeds the upper method calibration limit (MCL), we use an 'E' flag on the Sample Analytical Report results page when the detector is not saturated. Sample E2200923-001 is reported with an 'E' flag to denote that they had concentration greater than the highest calibration point. The process of dilution is counter to the isotopic dilution technique that the laboratory uses to determine recovery and produces variability in the final value. The laboratory only dilutes when detector saturation occurs.

### **K flags**

EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.

### **Detection Limits**

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

### **The TEQ Summary results for each sample have been calculated by ALS/Houston to include:**

- WHO-2005 TEFs, The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds (M. Van den Berg et al., Toxicological Sciences 93(2):223-241, 2006)
- Non-detected compounds are not included in the 'Total'

*The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.*

*Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.*

**Client:** ALS Environmental - Middletown  
**Project:** 3264940

**Service Request:**E2200923

**SAMPLE CROSS-REFERENCE**

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
E2200923-001	3264940001 (High 3A)	9/21/2022	1120
E2200923-002	3264940002 (High 3B)	9/21/2022	1125
E2200923-003	3264940003 (High 4A)	9/21/2022	0955
E2200923-004	3264940004 (High 4B)	9/21/2022	0958
E2200923-005	3264940005 (High 5A)	9/21/2022	0905
E2200923-006	3264940006 (High 5B)	9/21/2022	0912

## Service Request Summary

**Folder #:** E2200923  
**Client Name:** ALS Environmental - Middletown  
**Project Name:** 3264940  
**Project Number:**  
  
**Report To:** Sarah Leung  
 ALS Environmental - Middletown  
 301 Fulling Mill Road  
 Middletown, PA 17057  
 USA  
**Phone Number:** 717-944-5541  
**Cell Number:**  
**Fax Number:**  
**E-mail:** sarah.leung@alsglobal.com

**Project Chemist:** James Guin  
**Originating Lab:** HOUSTON  
**Logged By:** CGRANDITS  
**Date Received:** 09/27/22  
**Internal Due Date:** 11/1/2022  
**QAP:** LAB QAP  
**Qualifier Set:** HRMS Qualifier Set  
**Formset:** Lab Standard  
**Merged?:** Y  
**Report to MDL?:** Y  
**P.O. Number:** 40-3264940  
**EDD:** BASIC\_WQC\_CASNo

6 8 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved  
**Location:** EHRMS-WIC 7E  
**Pressure Gas:**

Lab Samp No.	Client Samp No	Matrix	Collected	HOUSTON	
				PCDD PCDF/8290A	Total Solids/ALS SOP
E2200923-001	3264940001 (High 3A)	Soil	09/21/22 1120		
E2200923-002	3264940002 (High 3B)	Soil	09/21/22 1125		
E2200923-003	3264940003 (High 4A)	Soil	09/21/22 0955		
E2200923-004	3264940004 (High 4B)	Soil	09/21/22 0958		
E2200923-005	3264940005 (High 5A)	Soil	09/21/22 0905		
E2200923-006	3264940006 (High 5B)	Soil	09/21/22 0912		

## Service Request Summary

**Folder #:** E2200923  
**Client Name:** ALS Environmental - Middletown  
**Project Name:** 3264940  
**Project Number:**  
**Report To:** Sarah Leung  
ALS Environmental - Middletown  
301 Fulling Mill Road  
Middletown, PA 17057  
USA  
**Phone Number:** 717-944-5541  
**Cell Number:**  
**Fax Number:**  
**E-mail:** sarah.leung@alsglobal.com

**Project Chemist:** James Guin  
**Originating Lab:** HOUSTON  
**Logged By:** CGRANDITS  
**Date Received:** 09/27/22  
**Internal Due Date:** 11/1/2022  
**QAP:** LAB QAP  
**Qualifier Set:** HRMS Qualifier Set  
**Formset:** Lab Standard  
**Merged?:** Y  
**Report to MDL?:** Y  
**P.O. Number:** 40-3264940  
**EDD:** BASIC\_WQC\_CASNo

6 8 oz-Glass Jar WM CLEAR Teflon Liner Unpreserved  
**Location:** EHRMS-WIC 7E  
**Pressure Gas:**

## Data Qualifiers

### HRMS Qualifier Set

- B Indicates the associated analyte was found in the method blank at >1/10th the reported value.
- E Estimated value. The reported concentration is above the calibration range of the instrument.
- H Sample extracted and/or analyzed out of suggested holding time.
- J Estimated value. The reported concentration is below the MRL.
- K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits. The concentration of this analyte should be considered as an estimate.
- P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.
- Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.
- S Signal saturated detector. Result reported from dilution.
- U Compound was analyzed for, but was not detected (ND).
- X See Case Narrative.
- Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-noise ratios are greater than 10:1, making the recoveries acceptable.
  - i The MDL/MRL have been elevated due to a matrix interference.

# ALS Laboratory Group

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## Acronyms

Cal	Calibration
Conc	CONCEntration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient



### State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2023
Arkansas Department of Environmental Quality	22-041-0	3/27/2023
California Department of Health Services	2919-2023	4/30/2023
Department of Defense	L22-90	3/31/2024
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Florida Department of Health	E87611-36	6/30/2023
Hawaii Department of Health	2022	4/30/2023
Illinois Environmental Protection Agency	2000322022-9	5/9/2023
Kansas Department of Health and Environment	E-10352 2022-2023	7/31/2023
Louisiana Department of Environmental Quality	03087-2022	6/30/2023
Louisiana Department of Health and Hospitals	LA028	12/31/2022
Maine Department of Health and Human Services	2022017	6/5/2024
Maryland Department of the Environment	343	6/30/2023
Michigan Department of Environmental Quality	9971-2022	4/30/2023
Minnesota Department of Health	2228443	12/31/2022
Nebraska Department of Health and Human Services	NE-OS-25-13	4/30/2023
Nevada Department of Conservation and Natural Resources	TX026932023-1	7/31/2023
New Hampshire Environmental Laboratory Accreditation Program	209422	4/24/2023
New Jersey Department of Environmental Protection	TX008-2023	6/30/2023
New York Department of Health	11707	3/31/2023
Oklahoma Department of Environmental Quality	2022-141	8/31/2023
Oregon Environmental Laboratory Accreditation Program	TX200002	5/15/2023
Pennsylvania Department of Environmental Protection	68-03441-016	6/30/2023
Perry Johnson Laboratory Accreditation	L22-91	3/31/2024
Tennessee Department of Environment and Conservation	04016-2022	4/30/2023
Texas Commission on Environmental Quality	T104704231-22-29	4/30/2023
Utah Department of Health Environmental Laboratory Certification	TX026932022-13	7/31/2023
Washington Department of Health	C819-2022	11/14/2022

ALS ENVIRONMENTAL – Houston  
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID 52200923

DB-5MSUI

SPB-Octyl

**First Level - Data Processing - to be filled by person generating the forms**

Date:	Analyst:	Samples:
10/25/22	LKL	001, 002, 004

**Second Level - Data Review – to be filled by person doing peer review**

Date:	Analyst:	Samples:
10/25/22	SL	001, 002, 004

ALS ENVIRONMENTAL – Houston  
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID E2200923

DB-5MSUI

SPB-Octyl

**First Level - Data Processing - to be filled by person generating the forms**

Date:	10/20/22	Analyst:	Jc	Samples:	003, 005, 006

**Second Level - Data Review – to be filled by person doing peer review**

Date:	10/20/22	Analyst:	sl	Samples:	003, 005, 006



# Chain of Custody

**ALS Environmental - Houston HRMS**  
10450 Stancliff Rd, Suite 210, Houston TX 77099  
Phone (713)266-1599 Fax (713)266-0130  
[www.alsglobal.com](http://www.alsglobal.com)



301 Fulling Mill Road  
 Middletown, PA 17057  
 P. 717-944-5541  
 F. 717-944-1430

### CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /  
 SAMPLER. INSTRUCTIONS ON THE BACK.

COC #:	1
ALS Quote #:	of 1

Client Name: ALS			Container Type	G											Receipt Information (completed by Receiving Lab)					
Address: 301 Fulling Mill Road Middletown PA 17057			Container Size	8oz											W.O. Temp: _____ Therm ID: _____					
Contact: Sarah Leung			Perservative	None											Courier/Tracking #:					
Phone#: (717) 702-2248			ANALYSES/METHOD REQUESTED												Purchase Order #: 3264940					
Project Name#: 3264940			*G or C **Matrix DIOXIN METHOD 8290											Project Comments:						
Bill To:														Subcontract: ALS Houston						
TAT	<input checked="" type="checkbox"/>	Normal-Standard TAT is 10-12 business days.												ALS Field Services: <input type="checkbox"/> Pickup <input type="checkbox"/> Labor						
	<input type="checkbox"/>	Rush-Subject to ALS approval and surcharges.												<input type="checkbox"/> Composite Sampling <input type="checkbox"/> Rental Equipment						
Date Required:	Approved?													Other: _____						
Email?	<input checked="" type="checkbox"/>	-Y namdt.subcontract@alsglobal.com												Sample/COC Comments						
Fax?	<input type="checkbox"/>	-Y No.:																		
Sample Description/Location (as it will appear on the lab report)		Date Collected mm/dd/yy		Time hh:mm	Enter Number of Containers Per Sample or Field Results Below.															
1	3264940001 (High 3A)	9/21/22		1120	G	S	1													
2	3264940002 (High 3B)	9/21/22		1125	G	S	1													
3	3264940003 (High 4A)	9/21/22	0955	G	S	1														
4	3264940004 (High 4B)	9/21/22	0958	G	S	1														
5	3264940005 (High 5A)	9/21/22	0905	G	S	1														
6	3264940006 (High 5B)	9/21/22	0912	G	S	1														
7																				
8																				
9	<i>Boil 2-20 #31 216-0-2</i>																			
10																				
SAMPLED BY (Please Print):			Sampler Comments:										Data Deliverables		Special Processing		State Samples Collected In			
Relinquished By (Company Name)			Date	Time	Received By / Company Name			Date	Time	<input type="checkbox"/> Standard		USACE <input type="checkbox"/>		NY <input checked="" type="checkbox"/>						
<i>[Signature]</i>			9/21/22	1600	<i>[Signature]</i> ALS			9/27/22	14:58	<input type="checkbox"/> CLP-like		Navy <input type="checkbox"/>		NJ <input type="checkbox"/>						
										<input type="checkbox"/> USACE/DOD				PA <input type="checkbox"/>						
										<input checked="" type="checkbox"/> Level 2				NC <input type="checkbox"/>						
										Reportable to PADEP?		Sample Disposal		MD <input type="checkbox"/>						
										Yes <input type="checkbox"/> No <input type="checkbox"/>		Lab <input type="checkbox"/>								
										PWSID # _____		Special <input type="checkbox"/>								
										EDDS: Format Type- Excel				other						

\* G=Grab; C=Composite      \*\*Matrix - Al=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS SHIPPING ADDRESS: 301 Fulling Mill Road, Middletown, PA 17057



# Cooler Receipt Form

Project Chemist CL

Client/Project AL5-MT

Thermometer ID 1071

Date/Time Received: 9/27/22

Initials: PG

Date/Time Logged in: 9/27/22

Initials CL

1. Method of delivery:  US Mail  Fed Ex  UPS  DHL  Courier  Client

2. Samples received in:  Cooler  Box  Envelope  Other \_\_\_\_\_

3. Were custody seals on coolers?  Yes  No If yes, how many and where?

Were they intact?  Yes  No  N/A

Were they signed and dated?  Yes  No  N/A

4. Packing Material:  Inserts  Baggies  Bubble Wrap  Gel Packs  Wet Ice  Sleeves  Other \_\_\_\_\_

5. Foreign or Regulated Soil?  Yes  No Location of Sampling: \_\_\_\_\_

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp. °C	Temp Blank?
5857 1123 5904		9/27/22	1448	PG	2.0	<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>
						<input type="checkbox"/>

6. Were custody papers properly filled out (Ink, signed, dated, etc)?  Yes  No

7. Did all bottles arrive in good condition (not broken, no signs of leakage)?  Yes  No

8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)?  Yes  No

9. Were appropriate bottles/containers and volumes received for the requested tests?  Yes  No

10. Did sample labels and tags agree with custody documents?  Yes  No

Notes, Discrepancies, & Resolutions:

Service request Label:



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## SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

### **Cooler Custody Seals (desirable, mandatory if specified in SAP):**

- ✓ Intact on outside of cooler, signed and dated

### **Chain-of-Custody (COC) documentation (mandatory):**

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sample. The COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

### **Sample Integrity (mandatory):**

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

### **Temperature Requirement (varies by sample matrix):**

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6°C.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10°C.
- ✓ Air samples are shipped and stored cold, at 0 to 6°C
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report



# Preparation Information Benchsheets

**ALS Environmental - Houston HRMS**  
10450 Stancliff Rd., Suite 210, Houston, TX 77099  
Phone (713)266-1599 Fax (713)266-0130  
[www.alsglobal.com](http://www.alsglobal.com)



# Preparation Information Benchsheet

Prep Run#: 407191  
 Team: Semivoa GCMS/TWOODS

Prep Workflow: OrgExtDioxS(30)  
 Prep Method: Method

Status: Prepped  
 Prep Date/Time: 9/28/22 11:07

10/28/2022 2:54 PM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E2200883-001	22-09-0069 Ash Box #8909	.01	8290A/PCDD PCDF			Soil	10.000g	
2	E2200883-002	22-09-0070 Slag Box #1506	.01	8290A/PCDD PCDF			Soil	10.278g	
3	E2200883-003	22-09-0071 Filtercake Box #N-35289	.01	8290A/PCDD PCDF			Soil	10.166g	
4	E2200887-001	MW3 (0-2)	.01	8290/PCDD PCDF			Soil	10.001g	
5	E2200900-001	Filter Cake	.02	8290A/PCDD PCDF			Solid	10.361g	
6	E2200904-001	SWT Filtercake 2209152616	.01	8290/PCDD PCDF			Solid	10.380g	black soil
7	E2200923-001	3264940001 (High 3A)	.01	8290A/PCDD PCDF			Soil	10.002g	
8	E2200923-002	3264940002 (High 3B)	.01	8290A/PCDD PCDF			Soil	10.318g	
9	E2200923-003	3264940003 (High 4A)	.01	8290A/PCDD PCDF			Soil	10.011g	
10	E2200923-004	3264940004 (High 4B)	.01	8290A/PCDD PCDF			Soil	10.361g	
11	E2200923-005	3264940005 (High 5A)	.01	8290A/PCDD PCDF			Soil	10.129g	
12	E2200923-006	3264940006 (High 5B)	.01	8290A/PCDD PCDF			Soil	10.183g	
13	E2200924-001	3264939001 (High 1A)	.01	8290A/PCDD PCDF			Soil	10.215g	
14	E2200924-002	3264939002 (High 1B)	.01	8290A/PCDD PCDF			Soil	10.006g	
15	E2200924-003	3264939003 (High 2A)	.01	8290A/PCDD PCDF			Soil	10.109g	
16	E2200924-004	3264939004 (High 2B)	.01	8290A/PCDD PCDF			Soil	10.206g	
17	EQ2200432-01	MB		8290A/PCDD PCDF			Solid	10.087g	
18	EQ2200432-02	LCS		8290A/PCDD PCDF			Solid	10.087g	
19	EQ2200432-03	DLCS		8290A/PCDD PCDF			Solid	10.144g	

## Spiking Solutions

Name:	1613B Matrix Working Standard	Inventory ID	224666	Logbook Ref:	tw 08/25/22 224666	Expires On:	02/21/2023
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EQ2200432-02 100.00µL    EQ2200432-02 100.00µL    EQ2200432-03 100.00µL    EQ2200432-03 100.00µL

Name:	8290/1613B Cleanup Working Standard	Inventory ID	225095	Logbook Ref:	NB 225095 09/22/2022 8.000ngML	Expires On:	02/28/2023
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E2200883-001 100.00µL    E2200883-002 100.00µL    E2200883-003 100.00µL    E2200887-001 100.00µL    E2200900-001 100.00µL    E2200904-001 100.00µL  
 E2200923-001 100.00µL    E2200923-002 100.00µL    E2200923-003 100.00µL    E2200923-004 100.00µL    E2200923-005 100.00µL    E2200923-006 100.00µL  
 E2200924-001 100.00µL    E2200924-002 100.00µL    E2200924-003 100.00µL    E2200924-004 100.00µL    EQ2200432-01 100.00µL    EQ2200432-01 100.00µL  
 EQ2200432-02 100.00µL    EQ2200432-02 100.00µL    EQ2200432-03 100.00µL    EQ2200432-03 100.00µL

Name:	1613B Labeled Working Standard	Inventory ID	225177	Logbook Ref:	tw 09/28/22 225177	Expires On:	03/26/2023
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E2200883-001 1,000.00µL    E2200883-002 1,000.00µL    E2200883-003 1,000.00µL    E2200887-001 1,000.00µL    E2200900-001 1,000.00µL    E2200904-001 1,000.00µL  
 E2200923-001 1,000.00µL    E2200923-002 1,000.00µL    E2200923-003 1,000.00µL    E2200923-004 1,000.00µL    E2200923-005 1,000.00µL    E2200923-006 1,000.00µL  
 E2200924-001 1,000.00µL    E2200924-002 1,000.00µL    E2200924-003 1,000.00µL    E2200924-004 1,000.00µL    EQ2200432-01 1,000.00µL    EQ2200432-01 1,000.00µL

# Preparation Information Benchsheet

10/28/2022 2:54 PM

Prep Run#: 407191  
Team: Semivoa GCMS/TWOODS

Prep Workflow: OrgExtDioxS(30)

Prep Method: Method

Status: Prepped  
Prep Date/Time: 9/28/22 11:07

EQ2200432-02 1,000.00µL      EQ2200432-02 1,000.00µL      EQ2200432-03 1,000.00µL      EQ2200432-03 1,000.00µL

## Preparation Steps

Step: Extraction	Step: Acid Clean	Step: Silica Gel Clean	Step: Final Volume
Started: 9/28/22 11:07	Started: 10/4/22 09:00	Started: 10/4/22 10:00	Started: 10/5/22 12:00
Finished: 9/29/22 09:00	Finished: 10/4/22 10:00	Finished: 10/4/22 13:00	Finished: 10/5/22 15:00
By: TWOODS	By: TWOODS	By: TWOODS	By: TWOODS
Comments	Comments	Comments	Comments

Comments: \_\_\_\_\_

Reviewed By: TW      Date: 09/28/22

## Chain of Custody

Relinquished By: _____	Date: _____	<u>Extracts Examined</u>
Received By: _____	Date: _____	Yes      No



# Analytical Results

**ALS Environmental - Houston HRMS**  
10450 Stancliff Rd., Suite 210, Houston, TX 77099  
Phone (713)266-1599 Fax (713)266-0130  
[www.alsglobal.com](http://www.alsglobal.com)

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 11:20  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940001 (High 3A)  
**Lab Code:** E2200923-001

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.002g  
  
**Data File Name:** P539770  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/21/22 05:19  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539767

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.464	0.852			1
1,2,3,7,8-PeCDD	ND	U	0.481	4.26			1
1,2,3,6,7,8-HxCDD	1.27J		0.301	4.26	1.42	1.000	1
1,2,3,4,7,8-HxCDD	0.487JK		0.330	4.26	2.23	1.001	1
1,2,3,7,8,9-HxCDD	0.930JK		0.316	4.26	1.49	1.007	1
1,2,3,4,6,7,8-HpCDD	21.0		0.328	4.26	1.02	1.001	1
OCDD	198		2.60	8.52	0.90	1.000	1
2,3,7,8-TCDF	1.34K		0.626	0.852	0.60	1.001	1
1,2,3,7,8-PeCDF	6.67		1.56	4.26	1.67	1.000	1
2,3,4,7,8-PeCDF	ND	U	0.840	4.26			1
1,2,3,6,7,8-HxCDF	9.53K		0.813	4.26	1.01	1.000	1
1,2,3,7,8,9-HxCDF	3.98JK		1.15	4.26	0.88	1.001	1
1,2,3,4,7,8-HxCDF	40.8		0.806	4.26	1.28	1.000	1
2,3,4,6,7,8-HxCDF	3.74JK		0.656	4.26	1.50	1.000	1
1,2,3,4,6,7,8-HpCDF	838		1.87	4.26	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	71.0		2.03	4.26	1.03	1.001	1
OCDF	18800E		19.2	19.2	0.87	1.005	1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil  
**Sample Name:** 3264940001 (High 3A)  
**Lab Code:** E2200923-001

**Service Request:** E2200923  
**Date Collected:** 09/21/22 11:20  
**Date Received:** 09/27/22 14:58  
**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.002g  
**Data File Name:** P539770  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/21/22 05:19  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539767

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	ND	U	0.464	0.852			1
Total Penta-Dioxins	ND	U	0.481	4.26			1
Total Hexa-Dioxins	1.27J		0.315	4.26	1.42		1
Total Hepta-Dioxins	37.5		0.328	4.26	0.90		1
Total Tetra-Furans	ND	U	0.626	0.852			1
Total Penta-Furans	15.0		1.11	4.26	1.44		1
Total Hexa-Furans	87.3		0.824	4.26	1.20		1
Total Hepta-Furans	1140		1.95	4.26	0.99		1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 11:20  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940001 (High 3A)  
**Lab Code:** E2200923-001

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.002g

**Date Analyzed:** 10/21/22 05:19  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539767

**Data File Name:** P539770  
**ICAL Date:** 01/18/22

**Labeled Standard Results**

<b>Labeled Compounds</b>	<b>Spike Conc.(pg)</b>	<b>Conc. Found (pg)</b>	<b>% Rec</b>	<b>Q</b>	<b>Control Limits</b>	<b>Ion Ratio</b>	<b>RRT</b>
13C-2,3,7,8-TCDD	2000	458.810	23	Y	40-135	0.76	1.023
13C-1,2,3,7,8-PeCDD	2000	359.456	18	Y	40-135	1.63	1.202
13C-1,2,3,4,7,8-HxCDD	2000	303.870	15	Y	40-135	1.33	0.991
13C-1,2,3,6,7,8-HxCDD	2000	322.286	16	Y	40-135	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	226.394	11	Y	40-135	1.06	1.067
13C-OCDD	4000	289.236	7	Y	40-135	0.93	1.139
13C-2,3,7,8-TCDF	2000	425.830	21	Y	40-135	0.80	0.992
13C-1,2,3,7,8-PeCDF	2000	373.262	19	Y	40-135	1.57	1.157
13C-2,3,4,7,8-PeCDF	2000	669.860	33	Y	40-135	1.58	1.192
13C-1,2,3,4,7,8-HxCDF	2000	296.914	15	Y	40-135	0.48	0.970
13C-1,2,3,6,7,8-HxCDF	2000	295.191	15	Y	40-135	0.48	0.973
13C-1,2,3,7,8,9-HxCDF	2000	262.513	13	Y	40-135	0.49	1.008
13C-2,3,4,6,7,8-HxCDF	2000	381.156	19	Y	40-135	0.50	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	182.605	9	Y	40-135	0.41	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	212.673	11	Y	40-135	0.41	1.080
37Cl-2,3,7,8-TCDD	800	391.592	49		40-135	NA	1.024

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 11:20  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940001 (High 3A)  
**Lab Code:** E2200923-001

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method

**Toxicity Equivalency Quotient**

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.464	0.852	1	1	
1,2,3,7,8-PeCDD	ND	0.481	4.26	1	1	
1,2,3,6,7,8-HxCDD	<b>1.27</b>	0.301	4.26	1	0.1	0.127
1,2,3,4,7,8-HxCDD	<b>0.487</b>	0.330	4.26	1	0.1	0.0487
1,2,3,7,8,9-HxCDD	<b>0.930</b>	0.316	4.26	1	0.1	0.0930
1,2,3,4,6,7,8-HpCDD	<b>21.0</b>	0.328	4.26	1	0.01	0.210
OCDD	<b>198</b>	2.60	8.52	1	0.0003	0.0594
2,3,7,8-TCDF	<b>1.34</b>	0.626	0.852	1	0.1	0.134
1,2,3,7,8-PeCDF	<b>6.67</b>	1.56	4.26	1	0.03	0.200
2,3,4,7,8-PeCDF	ND	0.840	4.26	1	0.3	
1,2,3,6,7,8-HxCDF	<b>9.53</b>	0.813	4.26	1	0.1	0.953
1,2,3,7,8,9-HxCDF	<b>3.98</b>	1.15	4.26	1	0.1	0.398
1,2,3,4,7,8-HxCDF	<b>40.8</b>	0.806	4.26	1	0.1	4.08
2,3,4,6,7,8-HxCDF	<b>3.74</b>	0.656	4.26	1	0.1	0.374
1,2,3,4,6,7,8-HpCDF	<b>838</b>	1.87	4.26	1	0.01	8.38
1,2,3,4,7,8,9-HpCDF	<b>71.0</b>	2.03	4.26	1	0.01	0.710
OCDF	<b>18800</b>	19.2	19.2	1	0.0003	5.64
Total TEQ						21.4

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Middletown  
Project: 3264940  
Sample Matrix: Soil  
Sample Name: 3264940001 (High 3A)  
Lab Code: E2200923-001

Service Request: E2200923  
Date Collected: 09/21/22 11:20  
Date Received: 09/27/22 14:58  
Units: Percent  
Basis: As Received

Total Solids

Analysis Method: ALS SOP  
7.0213g

Date Analyzed: 10/21/22 11:10  
NA  
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	58.7		-	-			1



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil  
**Sample Name:** 3264940002 (High 3B)  
**Lab Code:** E2200923-002

**Service Request:** E2200923  
**Date Collected:** 09/21/22 11:25  
**Date Received:** 09/27/22 14:58  
**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.318g  
**Data File Name:** P539771  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/21/22 06:07  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539767

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.601	0.846			1
1,2,3,7,8-PeCDD	ND	U	0.290	4.23			1
1,2,3,6,7,8-HxCDD	0.341JK		0.232	4.23	0.68	1.001	1
1,2,3,4,7,8-HxCDD	0.364JK		0.258	4.23	1.48	1.001	1
1,2,3,7,8,9-HxCDD	0.611JK		0.245	4.23	0.98	1.007	1
1,2,3,4,6,7,8-HpCDD	9.38		0.149	4.23	1.11	1.000	1
OCDD	123		1.03	8.46	0.89	1.000	1
2,3,7,8-TCDF	ND	U	0.566	0.846			1
1,2,3,7,8-PeCDF	ND	U	0.431	4.23			1
2,3,4,7,8-PeCDF	ND	U	0.236	4.23			1
1,2,3,6,7,8-HxCDF	0.505BJ		0.176	4.23	1.15	1.000	1
1,2,3,7,8,9-HxCDF	0.421BJK		0.267	4.23	2.03	1.001	1
1,2,3,4,7,8-HxCDF	1.07J		0.189	4.23	1.07	1.000	1
2,3,4,6,7,8-HxCDF	0.444J		0.153	4.23	1.20	1.000	1
1,2,3,4,6,7,8-HpCDF	12.0		0.454	4.23	1.10	1.000	1
1,2,3,4,7,8,9-HpCDF	1.22J		0.560	4.23	1.17	1.000	1
OCDF	165		0.920	8.46	0.83	1.005	1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil  
**Sample Name:** 3264940002 (High 3B)  
**Lab Code:** E2200923-002

**Service Request:** E2200923  
**Date Collected:** 09/21/22 11:25  
**Date Received:** 09/27/22 14:58  
**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.318g  
**Data File Name:** P539771  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/21/22 06:07  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539767

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	ND	U	0.601	0.846			1
Total Penta-Dioxins	ND	U	0.290	4.23			1
Total Hexa-Dioxins	2.54J		0.245	4.23	1.17		1
Total Hepta-Dioxins	9.38		0.149	4.23	1.11		1
Total Tetra-Furans	ND	U	0.566	0.846			1
Total Penta-Furans	ND	U	0.308	4.23			1
Total Hexa-Furans	2.02J		0.189	4.23	1.07		1
Total Hepta-Furans	25.7		0.505	4.23	1.10		1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 11:25  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940002 (High 3B)  
**Lab Code:** E2200923-002

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.318g

**Date Analyzed:** 10/21/22 06:07  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539767

**Data File Name:** P539771  
**ICAL Date:** 01/18/22

**Labeled Standard Results**

<b>Labeled Compounds</b>	<b>Spike Conc.(pg)</b>	<b>Conc. Found (pg)</b>	<b>% Rec</b>	<b>Q</b>	<b>Control Limits</b>	<b>Ion Ratio</b>	<b>RRT</b>
13C-2,3,7,8-TCDD	2000	429.992	21	Y	40-135	0.80	1.023
13C-1,2,3,7,8-PeCDD	2000	401.218	20	Y	40-135	1.63	1.202
13C-1,2,3,4,7,8-HxCDD	2000	377.000	19	Y	40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	420.244	21	Y	40-135	1.30	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	369.188	18	Y	40-135	1.11	1.067
13C-OCDD	4000	512.994	13	Y	40-135	0.89	1.139
13C-2,3,7,8-TCDF	2000	387.000	19	Y	40-135	0.78	0.992
13C-1,2,3,7,8-PeCDF	2000	403.165	20	Y	40-135	1.59	1.157
13C-2,3,4,7,8-PeCDF	2000	723.590	36	Y	40-135	1.63	1.192
13C-1,2,3,4,7,8-HxCDF	2000	400.526	20	Y	40-135	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	398.627	20	Y	40-135	0.51	0.973
13C-1,2,3,7,8,9-HxCDF	2000	356.329	18	Y	40-135	0.48	1.008
13C-2,3,4,6,7,8-HxCDF	2000	503.017	25	Y	40-135	0.50	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	308.739	15	Y	40-135	0.42	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	327.935	16	Y	40-135	0.43	1.080
37Cl-2,3,7,8-TCDD	800	335.780	42		40-135	NA	1.024

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 11:25  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940002 (High 3B)  
**Lab Code:** E2200923-002

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method

**Toxicity Equivalency Quotient**

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.601	0.846	1	1	
1,2,3,7,8-PeCDD	ND	0.290	4.23	1	1	
1,2,3,6,7,8-HxCDD	<b>0.341</b>	0.232	4.23	1	0.1	0.0341
1,2,3,4,7,8-HxCDD	<b>0.364</b>	0.258	4.23	1	0.1	0.0364
1,2,3,7,8,9-HxCDD	<b>0.611</b>	0.245	4.23	1	0.1	0.0611
1,2,3,4,6,7,8-HpCDD	<b>9.38</b>	0.149	4.23	1	0.01	0.0938
OCDD	<b>123</b>	1.03	8.46	1	0.0003	0.0369
2,3,7,8-TCDF	ND	0.566	0.846	1	0.1	
1,2,3,7,8-PeCDF	ND	0.431	4.23	1	0.03	
2,3,4,7,8-PeCDF	ND	0.236	4.23	1	0.3	
1,2,3,6,7,8-HxCDF	<b>0.505</b>	0.176	4.23	1	0.1	0.0505
1,2,3,7,8,9-HxCDF	<b>0.421</b>	0.267	4.23	1	0.1	0.0421
1,2,3,4,7,8-HxCDF	<b>1.07</b>	0.189	4.23	1	0.1	0.107
2,3,4,6,7,8-HxCDF	<b>0.444</b>	0.153	4.23	1	0.1	0.0444
1,2,3,4,6,7,8-HpCDF	<b>12.0</b>	0.454	4.23	1	0.01	0.120
1,2,3,4,7,8,9-HpCDF	<b>1.22</b>	0.560	4.23	1	0.01	0.0122
OCDF	<b>165</b>	0.920	8.46	1	0.0003	0.0495
Total TEQ						0.688

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Middletown  
Project: 3264940  
Sample Matrix: Soil  
Sample Name: 3264940002 (High 3B)  
Lab Code: E2200923-002

Service Request: E2200923  
Date Collected: 09/21/22 11:25  
Date Received: 09/27/22 14:58  
Units: Percent  
Basis: As Received

Total Solids

Analysis Method: ALS SOP  
5.4763g

Date Analyzed: 10/21/22 11:10  
NA  
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	57.3		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:55  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940003 (High 4A)  
**Lab Code:** E2200923-003

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.011g  
**Data File Name:** P539731  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 17:36  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.683	0.857			1
1,2,3,7,8-PeCDD	ND	U	0.283	4.28			1
1,2,3,6,7,8-HxCDD	ND	U	0.280	4.28			1
1,2,3,4,7,8-HxCDD	ND	U	0.316	4.28			1
1,2,3,7,8,9-HxCDD	ND	U	0.297	4.28			1
1,2,3,4,6,7,8-HpCDD	4.99		0.422	4.28	1.20	1.000	1
OCDD	47.9		1.18	8.57	0.87	1.000	1
2,3,7,8-TCDF	ND	U	0.808	0.857			1
1,2,3,7,8-PeCDF	ND	U	0.445	4.28			1
2,3,4,7,8-PeCDF	ND	U	0.236	4.28			1
1,2,3,6,7,8-HxCDF	ND	U	0.227	4.28			1
1,2,3,7,8,9-HxCDF	ND	U	0.336	4.28			1
1,2,3,4,7,8-HxCDF	0.349	<b>BJK</b>	0.237	4.28	0.97	1.000	1
2,3,4,6,7,8-HxCDF	ND	U	0.213	4.28			1
1,2,3,4,6,7,8-HpCDF	4.84		0.368	4.28	1.00	1.000	1
1,2,3,4,7,8,9-HpCDF	0.724	<b>BJ</b>	0.455	4.28	1.15	1.000	1
OCDF	59.6		0.737	8.57	0.84	1.005	1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:55  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940003 (High 4A)  
**Lab Code:** E2200923-003

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.011g  
  
**Data File Name:** P539731  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 17:36  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	ND	U	0.683	0.857			1
Total Penta-Dioxins	ND	U	0.283	4.28			1
Total Hexa-Dioxins	ND	U	0.297	4.28			1
Total Hepta-Dioxins	ND	U	0.422	4.28			1
Total Tetra-Furans	ND	U	0.808	0.857			1
Total Penta-Furans	ND	U	0.312	4.28			1
Total Hexa-Furans	ND	U	0.246	4.28			1
Total Hepta-Furans	13.0		0.409	4.28	1.00		1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:55  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940003 (High 4A)  
**Lab Code:** E2200923-003

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.011g

**Date Analyzed:** 10/19/22 17:36  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Data File Name:** P539731  
**ICAL Date:** 01/18/22

**Labeled Standard Results**

<b>Labeled Compounds</b>	<b>Spike Conc.(pg)</b>	<b>Conc. Found (pg)</b>	<b>% Rec</b>	<b>Q</b>	<b>Control Limits</b>	<b>Ion Ratio</b>	<b>RRT</b>
13C-2,3,7,8-TCDD	2000	641.463	32	Y	40-135	0.80	1.023
13C-1,2,3,7,8-PeCDD	2000	679.067	34	Y	40-135	1.58	1.201
13C-1,2,3,4,7,8-HxCDD	2000	682.311	34	Y	40-135	1.25	0.991
13C-1,2,3,6,7,8-HxCDD	2000	757.157	38	Y	40-135	1.22	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	671.964	34	Y	40-135	1.04	1.067
13C-OCDD	4000	1014.770	25	Y	40-135	0.90	1.139
13C-2,3,7,8-TCDF	2000	553.593	28	Y	40-135	0.77	0.992
13C-1,2,3,7,8-PeCDF	2000	678.019	34	Y	40-135	1.58	1.156
13C-2,3,4,7,8-PeCDF	2000	1221.499	61		40-135	1.57	1.191
13C-1,2,3,4,7,8-HxCDF	2000	707.798	35	Y	40-135	0.51	0.970
13C-1,2,3,6,7,8-HxCDF	2000	714.440	36	Y	40-135	0.51	0.973
13C-1,2,3,7,8,9-HxCDF	2000	640.191	32	Y	40-135	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	857.771	43		40-135	0.51	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	575.611	29	Y	40-135	0.42	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	603.150	30	Y	40-135	0.42	1.080
37Cl-2,3,7,8-TCDD	800	330.073	41		40-135	NA	1.024



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:55  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940003 (High 4A)  
**Lab Code:** E2200923-003

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method

**Toxicity Equivalency Quotient**

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.683	0.857	1	1	
1,2,3,7,8-PeCDD	ND	0.283	4.28	1	1	
1,2,3,6,7,8-HxCDD	ND	0.280	4.28	1	0.1	
1,2,3,4,7,8-HxCDD	ND	0.316	4.28	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.297	4.28	1	0.1	
1,2,3,4,6,7,8-HpCDD	<b>4.99</b>	0.422	4.28	1	0.01	0.0499
OCDD	<b>47.9</b>	1.18	8.57	1	0.0003	0.0144
2,3,7,8-TCDF	ND	0.808	0.857	1	0.1	
1,2,3,7,8-PeCDF	ND	0.445	4.28	1	0.03	
2,3,4,7,8-PeCDF	ND	0.236	4.28	1	0.3	
1,2,3,6,7,8-HxCDF	ND	0.227	4.28	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.336	4.28	1	0.1	
1,2,3,4,7,8-HxCDF	<b>0.349</b>	0.237	4.28	1	0.1	0.0349
2,3,4,6,7,8-HxCDF	ND	0.213	4.28	1	0.1	
1,2,3,4,6,7,8-HpCDF	<b>4.84</b>	0.368	4.28	1	0.01	0.0484
1,2,3,4,7,8,9-HpCDF	<b>0.724</b>	0.455	4.28	1	0.01	0.00724
OCDF	<b>59.6</b>	0.737	8.57	1	0.0003	0.0179
Total TEQ						0.173

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Middletown  
Project: 3264940  
Sample Matrix: Soil  
Sample Name: 3264940003 (High 4A)  
Lab Code: E2200923-003

Service Request: E2200923  
Date Collected: 09/21/22 09:55  
Date Received: 09/27/22 14:58  
Units: Percent  
Basis: As Received

Total Solids

Analysis Method: ALS SOP  
5.164g

Date Analyzed: 10/21/22 11:10  
NA  
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	58.3		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil  
**Sample Name:** 3264940004 (High 4B)  
**Lab Code:** E2200923-004

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:58  
**Date Received:** 09/27/22 14:58  
**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.361g  
**Data File Name:** P539772  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/21/22 06:55  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539767

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.375	0.859			1
1,2,3,7,8-PeCDD	ND	U	0.253	4.29			1
1,2,3,6,7,8-HxCDD	0.483JK		0.0497	4.29	0.73	1.001	1
1,2,3,4,7,8-HxCDD	0.298JK		0.0559	4.29	0.92	1.000	1
1,2,3,7,8,9-HxCDD	0.385JK		0.0526	4.29	0.96	1.007	1
1,2,3,4,6,7,8-HpCDD	12.4		0.118	4.29	1.08	1.000	1
OCDD	216		0.913	8.59	0.86	1.000	1
2,3,7,8-TCDF	ND	U	0.498	0.859			1
1,2,3,7,8-PeCDF	ND	U	0.420	4.29			1
2,3,4,7,8-PeCDF	ND	U	0.227	4.29			1
1,2,3,6,7,8-HxCDF	0.519JK		0.0876	4.29	1.44	1.000	1
1,2,3,7,8,9-HxCDF	0.436BJK		0.123	4.29	1.53	1.000	1
1,2,3,4,7,8-HxCDF	1.14JK		0.0912	4.29	0.91	1.000	1
2,3,4,6,7,8-HxCDF	0.323BJ		0.0773	4.29	1.41	1.000	1
1,2,3,4,6,7,8-HpCDF	17.1		0.149	4.29	0.91	1.000	1
1,2,3,4,7,8,9-HpCDF	1.84JK		0.173	4.29	0.75	1.000	1
OCDF	352		1.10	8.59	0.81	1.005	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:58  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940004 (High 4B)  
**Lab Code:** E2200923-004

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.361g  
**Data File Name:** P539772  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/21/22 06:55  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539767

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Tetra-Dioxins	ND	U	0.375	0.859			1
Total Penta-Dioxins	0.377J		0.253	4.29	1.39		1
Total Hexa-Dioxins	3.60J		0.0524	4.29	1.39		1
Total Hepta-Dioxins	28.9		0.118	4.29	0.97		1
Total Tetra-Furans	ND	U	0.498	0.859			1
Total Penta-Furans	ND	U	0.297	4.29			1
Total Hexa-Furans	1.10J		0.0923	4.29	1.07		1
Total Hepta-Furans	18.2		0.160	4.29	0.91		1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:58  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940004 (High 4B)  
**Lab Code:** E2200923-004

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.361g

**Date Analyzed:** 10/21/22 06:55  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539767

**Data File Name:** P539772  
**ICAL Date:** 01/18/22

**Labeled Standard Results**

<b>Labeled Compounds</b>	<b>Spike Conc.(pg)</b>	<b>Conc. Found (pg)</b>	<b>% Rec</b>	<b>Q</b>	<b>Control Limits</b>	<b>Ion Ratio</b>	<b>RRT</b>
13C-2,3,7,8-TCDD	2000	526.998	26	Y	40-135	0.80	1.023
13C-1,2,3,7,8-PeCDD	2000	600.725	30	Y	40-135	1.60	1.202
13C-1,2,3,4,7,8-HxCDD	2000	631.043	32	Y	40-135	1.27	0.991
13C-1,2,3,6,7,8-HxCDD	2000	716.565	36	Y	40-135	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	621.169	31	Y	40-135	1.06	1.067
13C-OCDD	4000	941.603	24	Y	40-135	0.89	1.139
13C-2,3,7,8-TCDF	2000	449.175	22	Y	40-135	0.77	0.992
13C-1,2,3,7,8-PeCDF	2000	580.764	29	Y	40-135	1.59	1.157
13C-2,3,4,7,8-PeCDF	2000	1053.171	53		40-135	1.57	1.192
13C-1,2,3,4,7,8-HxCDF	2000	648.694	32	Y	40-135	0.50	0.970
13C-1,2,3,6,7,8-HxCDF	2000	651.535	33	Y	40-135	0.50	0.973
13C-1,2,3,7,8,9-HxCDF	2000	594.185	30	Y	40-135	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	789.480	39	Y	40-135	0.52	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	512.807	26	Y	40-135	0.43	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	578.749	29	Y	40-135	0.42	1.080
37Cl-2,3,7,8-TCDD	800	278.938	35	Y	40-135	NA	1.024

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:58  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940004 (High 4B)  
**Lab Code:** E2200923-004

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method

**Toxicity Equivalency Quotient**

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.375	0.859	1	1	
1,2,3,7,8-PeCDD	ND	0.253	4.29	1	1	
1,2,3,6,7,8-HxCDD	<b>0.483</b>	0.0497	4.29	1	0.1	0.0483
1,2,3,4,7,8-HxCDD	<b>0.298</b>	0.0559	4.29	1	0.1	0.0298
1,2,3,7,8,9-HxCDD	<b>0.385</b>	0.0526	4.29	1	0.1	0.0385
1,2,3,4,6,7,8-HpCDD	<b>12.4</b>	0.118	4.29	1	0.01	0.124
OCDD	<b>216</b>	0.913	8.59	1	0.0003	0.0648
2,3,7,8-TCDF	ND	0.498	0.859	1	0.1	
1,2,3,7,8-PeCDF	ND	0.420	4.29	1	0.03	
2,3,4,7,8-PeCDF	ND	0.227	4.29	1	0.3	
1,2,3,6,7,8-HxCDF	<b>0.519</b>	0.0876	4.29	1	0.1	0.0519
1,2,3,7,8,9-HxCDF	<b>0.436</b>	0.123	4.29	1	0.1	0.0436
1,2,3,4,7,8-HxCDF	<b>1.14</b>	0.0912	4.29	1	0.1	0.114
2,3,4,6,7,8-HxCDF	<b>0.323</b>	0.0773	4.29	1	0.1	0.0323
1,2,3,4,6,7,8-HpCDF	<b>17.1</b>	0.149	4.29	1	0.01	0.171
1,2,3,4,7,8,9-HpCDF	<b>1.84</b>	0.173	4.29	1	0.01	0.0184
OCDF	<b>352</b>	1.10	8.59	1	0.0003	0.106
Total TEQ						0.843

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Middletown  
Project: 3264940  
Sample Matrix: Soil  
Sample Name: 3264940004 (High 4B)  
Lab Code: E2200923-004

Service Request: E2200923  
Date Collected: 09/21/22 09:58  
Date Received: 09/27/22 14:58  
Units: Percent  
Basis: As Received

Total Solids

Analysis Method: ALS SOP  
5.0859g

Date Analyzed: 10/21/22 11:10  
NA  
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	56.2		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:05  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940005 (High 5A)  
**Lab Code:** E2200923-005

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.129g  
  
**Data File Name:** P539733  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 19:13  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.329	0.894			1
1,2,3,7,8-PeCDD	ND	U	0.365	4.47			1
1,2,3,6,7,8-HxCDD	0.356JK		0.236	4.47	1.00	1.000	1
1,2,3,4,7,8-HxCDD	ND	U	0.263	4.47			1
1,2,3,7,8,9-HxCDD	ND	U	0.249	4.47			1
1,2,3,4,6,7,8-HpCDD	6.56		0.270	4.47	1.03	1.000	1
OCDD	105		1.11	8.94	0.89	1.000	1
2,3,7,8-TCDF	ND	U	0.447	0.894			1
1,2,3,7,8-PeCDF	ND	U	0.316	4.47			1
2,3,4,7,8-PeCDF	ND	U	0.177	4.47			1
1,2,3,6,7,8-HxCDF	ND	U	0.308	4.47			1
1,2,3,7,8,9-HxCDF	ND	U	0.458	4.47			1
1,2,3,4,7,8-HxCDF	0.623JK		0.322	4.47	1.76	1.000	1
2,3,4,6,7,8-HxCDF	ND	U	0.288	4.47			1
1,2,3,4,6,7,8-HpCDF	6.88K		0.294	4.47	0.87	1.000	1
1,2,3,4,7,8,9-HpCDF	0.990BJ		0.344	4.47	0.95	1.000	1
OCDF	119		0.844	8.94	0.82	1.005	1



**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil  
**Sample Name:** 3264940005 (High 5A)  
**Lab Code:** E2200923-005

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:05  
**Date Received:** 09/27/22 14:58  
**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.129g  
**Data File Name:** P539733  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 19:13  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	ND	U	0.329	0.894			1
Total Penta-Dioxins	ND	U	0.365	4.47			1
Total Hexa-Dioxins	ND	U	0.249	4.47			1
Total Hepta-Dioxins	15.8		0.270	4.47	1.00		1
Total Tetra-Furans	ND	U	0.447	0.894			1
Total Penta-Furans	ND	U	0.229	4.47			1
Total Hexa-Furans	0.801J		0.335	4.47	1.36		1
Total Hepta-Furans	9.06		0.318	4.47	0.91		1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:05  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940005 (High 5A)  
**Lab Code:** E2200923-005

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.129g  
  
**Data File Name:** P539733  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 19:13  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Labeled Standard Results**

<b>Labeled Compounds</b>	<b>Spike Conc.(pg)</b>	<b>Conc. Found (pg)</b>	<b>% Rec</b>	<b>Q</b>	<b>Control Limits</b>	<b>Ion Ratio</b>	<b>RRT</b>
13C-2,3,7,8-TCDD	2000	927.822	46		40-135	0.80	1.023
13C-1,2,3,7,8-PeCDD	2000	875.139	44		40-135	1.55	1.201
13C-1,2,3,4,7,8-HxCDD	2000	778.737	39	Y	40-135	1.25	0.991
13C-1,2,3,6,7,8-HxCDD	2000	903.123	45		40-135	1.27	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	746.271	37	Y	40-135	1.09	1.067
13C-OCDD	4000	1069.532	27	Y	40-135	0.90	1.139
13C-2,3,7,8-TCDF	2000	836.276	42		40-135	0.80	0.991
13C-1,2,3,7,8-PeCDF	2000	898.531	45		40-135	1.57	1.156
13C-2,3,4,7,8-PeCDF	2000	1549.384	77		40-135	1.56	1.191
13C-1,2,3,4,7,8-HxCDF	2000	851.519	43		40-135	0.50	0.970
13C-1,2,3,6,7,8-HxCDF	2000	840.661	42		40-135	0.49	0.973
13C-1,2,3,7,8,9-HxCDF	2000	760.849	38	Y	40-135	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	974.896	49		40-135	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	636.945	32	Y	40-135	0.44	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	713.580	36	Y	40-135	0.44	1.080
37Cl-2,3,7,8-TCDD	800	446.399	56		40-135	NA	1.024

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:05  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940005 (High 5A)  
**Lab Code:** E2200923-005

**Units:** ng/Kg  
**Basis:** Dry

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

**Analysis Method:** 8290A  
**Prep Method:** Method

Toxicity Equivalency Quotient

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.329	0.894	1	1	
1,2,3,7,8-PeCDD	ND	0.365	4.47	1	1	
1,2,3,6,7,8-HxCDD	<b>0.356</b>	0.236	4.47	1	0.1	0.0356
1,2,3,4,7,8-HxCDD	ND	0.263	4.47	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.249	4.47	1	0.1	
1,2,3,4,6,7,8-HpCDD	<b>6.56</b>	0.270	4.47	1	0.01	0.0656
OCDD	<b>105</b>	1.11	8.94	1	0.0003	0.0315
2,3,7,8-TCDF	ND	0.447	0.894	1	0.1	
1,2,3,7,8-PeCDF	ND	0.316	4.47	1	0.03	
2,3,4,7,8-PeCDF	ND	0.177	4.47	1	0.3	
1,2,3,6,7,8-HxCDF	ND	0.308	4.47	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.458	4.47	1	0.1	
1,2,3,4,7,8-HxCDF	<b>0.623</b>	0.322	4.47	1	0.1	0.0623
2,3,4,6,7,8-HxCDF	ND	0.288	4.47	1	0.1	
1,2,3,4,6,7,8-HpCDF	<b>6.88</b>	0.294	4.47	1	0.01	0.0688
1,2,3,4,7,8,9-HpCDF	<b>0.990</b>	0.344	4.47	1	0.01	0.00990
OCDF	<b>119</b>	0.844	8.94	1	0.0003	0.0357
Total TEQ						0.309

2005 WHO TEFs, ND = 0

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Middletown
Project: 3264940
Sample Matrix: Soil
Sample Name: 3264940005 (High 5A)
Lab Code: E2200923-005

Service Request: E2200923
Date Collected: 09/21/22 09:05
Date Received: 09/27/22 14:58
Units: Percent
Basis: As Received

Total Solids

Analysis Method: ALS SOP
5.4216g

Date Analyzed: 10/21/22 11:10
NA
E-Balance-01

Native Analyte Results

Table with 8 columns: Analyte Name, Result, Q, EDL, MRL, Ion Ratio, RRT, Dilution Factor. Row 1: Total Solids, 55.2, -, -, -, -, -

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:12  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940006 (High 5B)  
**Lab Code:** E2200923-006

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.183g  
**Data File Name:** P539734  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 20:01  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.332	0.894			1
1,2,3,7,8-PeCDD	ND	U	0.193	4.47			1
1,2,3,6,7,8-HxCDD	ND	U	0.180	4.47			1
1,2,3,4,7,8-HxCDD	ND	U	0.197	4.47			1
1,2,3,7,8,9-HxCDD	ND	U	0.188	4.47			1
1,2,3,4,6,7,8-HpCDD	3.73	JK	0.291	4.47	0.81	1.000	1
OCDD	61.1		0.729	8.94	0.86	1.000	1
2,3,7,8-TCDF	ND	U	0.459	0.894			1
1,2,3,7,8-PeCDF	ND	U	0.266	4.47			1
2,3,4,7,8-PeCDF	ND	U	0.160	4.47			1
1,2,3,6,7,8-HxCDF	ND	U	0.161	4.47			1
1,2,3,7,8,9-HxCDF	ND	U	0.220	4.47			1
1,2,3,4,7,8-HxCDF	0.232	BJK	0.163	4.47	0.49	1.000	1
2,3,4,6,7,8-HxCDF	ND	U	0.155	4.47			1
1,2,3,4,6,7,8-HpCDF	3.01	J	0.227	4.47	0.95	1.000	1
1,2,3,4,7,8,9-HpCDF	0.354	BJK	0.265	4.47	0.71	1.000	1
OCDF	31.4		0.510	8.94	0.81	1.005	1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil  
**Sample Name:** 3264940006 (High 5B)  
**Lab Code:** E2200923-006

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:12  
**Date Received:** 09/27/22 14:58  
**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.183g  
**Data File Name:** P539734  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 20:01  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	ND	U	0.332	0.894			1
Total Penta-Dioxins	ND	U	0.193	4.47			1
Total Hexa-Dioxins	1.54J		0.188	4.47	1.29		1
Total Hepta-Dioxins	6.13		0.291	4.47	0.97		1
Total Tetra-Furans	ND	U	0.459	0.894			1
Total Penta-Furans	ND	U	0.201	4.47			1
Total Hexa-Furans	0.892J		0.172	4.47	1.14		1
Total Hepta-Furans	8.40		0.245	4.47	0.95		1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:12  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940006 (High 5B)  
**Lab Code:** E2200923-006

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.183g

**Date Analyzed:** 10/19/22 20:01  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Data File Name:** P539734  
**ICAL Date:** 01/18/22

**Labeled Standard Results**

<b>Labeled Compounds</b>	<b>Spike Conc.(pg)</b>	<b>Conc. Found (pg)</b>	<b>% Rec</b>	<b>Q</b>	<b>Control Limits</b>	<b>Ion Ratio</b>	<b>RRT</b>
13C-2,3,7,8-TCDD	2000	1037.374	52		40-135	0.78	1.023
13C-1,2,3,7,8-PeCDD	2000	981.572	49		40-135	1.62	1.202
13C-1,2,3,4,7,8-HxCDD	2000	936.706	47		40-135	1.30	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1024.743	51		40-135	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	919.165	46		40-135	1.06	1.067
13C-OCDD	4000	1419.569	35	Y	40-135	0.89	1.139
13C-2,3,7,8-TCDF	2000	854.669	43		40-135	0.80	0.992
13C-1,2,3,7,8-PeCDF	2000	1037.595	52		40-135	1.61	1.156
13C-2,3,4,7,8-PeCDF	2000	1686.200	84		40-135	1.60	1.191
13C-1,2,3,4,7,8-HxCDF	2000	978.929	49		40-135	0.50	0.970
13C-1,2,3,6,7,8-HxCDF	2000	984.013	49		40-135	0.51	0.973
13C-1,2,3,7,8,9-HxCDF	2000	928.786	46		40-135	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1107.009	55		40-135	0.51	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	776.857	39	Y	40-135	0.43	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	873.787	44		40-135	0.43	1.080
37Cl-2,3,7,8-TCDD	800	389.547	49		40-135	NA	1.024

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** 09/21/22 09:12  
**Date Received:** 09/27/22 14:58

**Sample Name:** 3264940006 (High 5B)  
**Lab Code:** E2200923-006

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method

**Toxicity Equivalency Quotient**

Analyte Name	Result	DL	MRL	Dilution Factor	TEF	TEF - Adjusted Concentration
2,3,7,8-TCDD	ND	0.332	0.894	1	1	
1,2,3,7,8-PeCDD	ND	0.193	4.47	1	1	
1,2,3,6,7,8-HxCDD	ND	0.180	4.47	1	0.1	
1,2,3,4,7,8-HxCDD	ND	0.197	4.47	1	0.1	
1,2,3,7,8,9-HxCDD	ND	0.188	4.47	1	0.1	
1,2,3,4,6,7,8-HpCDD	<b>3.73</b>	0.291	4.47	1	0.01	0.0373
OCDD	<b>61.1</b>	0.729	8.94	1	0.0003	0.0183
2,3,7,8-TCDF	ND	0.459	0.894	1	0.1	
1,2,3,7,8-PeCDF	ND	0.266	4.47	1	0.03	
2,3,4,7,8-PeCDF	ND	0.160	4.47	1	0.3	
1,2,3,6,7,8-HxCDF	ND	0.161	4.47	1	0.1	
1,2,3,7,8,9-HxCDF	ND	0.220	4.47	1	0.1	
1,2,3,4,7,8-HxCDF	<b>0.232</b>	0.163	4.47	1	0.1	0.0232
2,3,4,6,7,8-HxCDF	ND	0.155	4.47	1	0.1	
1,2,3,4,6,7,8-HpCDF	<b>3.01</b>	0.227	4.47	1	0.01	0.0301
1,2,3,4,7,8,9-HpCDF	<b>0.354</b>	0.265	4.47	1	0.01	0.00354
OCDF	<b>31.4</b>	0.510	8.94	1	0.0003	0.00942
Total TEQ						0.122

2005 WHO TEFs, ND = 0



ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: ALS Environmental - Middletown  
Project: 3264940  
Sample Matrix: Soil  
Sample Name: 3264940006 (High 5B)  
Lab Code: E2200923-006

Service Request: E2200923  
Date Collected: 09/21/22 09:12  
Date Received: 09/27/22 14:58  
Units: Percent  
Basis: As Received

Total Solids

Analysis Method: ALS SOP  
5.3911g

Date Analyzed: 10/21/22 11:10  
NA  
E-Balance-01

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
Total Solids	54.9		-	-			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Method Blank  
**Lab Code:** EQ2200432-01

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.087g  
  
**Data File Name:** P539703  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/18/22 18:06  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539700

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.115	0.496			1
1,2,3,7,8-PeCDD	ND	U	0.0579	2.48			1
1,2,3,6,7,8-HxCDD	ND	U	0.0480	2.48			1
1,2,3,4,7,8-HxCDD	ND	U	0.0546	2.48			1
1,2,3,7,8,9-HxCDD	ND	U	0.0511	2.48			1
1,2,3,4,6,7,8-HpCDD	0.189 <b>JK</b>		0.0424	2.48	0.74	1.000	1
OCDD	0.436 <b>JK</b>		0.106	4.96	0.67	1.000	1
2,3,7,8-TCDF	ND	U	0.199	0.496			1
1,2,3,7,8-PeCDF	ND	U	0.0659	2.48			1
2,3,4,7,8-PeCDF	ND	U	0.0397	2.48			1
1,2,3,6,7,8-HxCDF	0.0515 <b>J</b>		0.0219	2.48	1.15	1.001	1
1,2,3,7,8,9-HxCDF	0.0985 <b>JK</b>		0.0318	2.48	0.89	1.001	1
1,2,3,4,7,8-HxCDF	0.0532 <b>J</b>		0.0234	2.48	1.19	1.001	1
2,3,4,6,7,8-HxCDF	0.0428 <b>J</b>		0.0214	2.48	1.35	1.000	1
1,2,3,4,6,7,8-HpCDF	0.0924 <b>J</b>		0.0200	2.48	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	0.107 <b>J</b>		0.0257	2.48	1.04	1.000	1
OCDF	0.273 <b>J</b>		0.0850	4.96	0.94	1.005	1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Method Blank  
**Lab Code:** EQ2200432-01

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.087g

**Date Analyzed:** 10/18/22 18:06  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539700

**Data File Name:** P539703  
**ICAL Date:** 01/18/22

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	ND	U	0.115	0.496			1
Total Penta-Dioxins	ND	U	0.0579	2.48			1
Total Hexa-Dioxins	ND	U	0.0510	2.48			1
Total Hepta-Dioxins	0.165J		0.0424	2.48	0.89		1
Total Tetra-Furans	ND	U	0.199	0.496			1
Total Penta-Furans	ND	U	0.0501	2.48			1
Total Hexa-Furans	0.186J		0.0240	2.48	1.32		1
Total Hepta-Furans	0.199J		0.0227	2.48	0.99		1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Method Blank  
**Lab Code:** EQ2200432-01

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.087g  
  
**Data File Name:** P539703  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/18/22 18:06  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539700

**Labeled Standard Results**

<b>Labeled Compounds</b>	<b>Spike Conc.(pg)</b>	<b>Conc. Found (pg)</b>	<b>% Rec</b>	<b>Q</b>	<b>Control Limits</b>	<b>Ion Ratio</b>	<b>RRT</b>
13C-2,3,7,8-TCDD	2000	1416.529	71		40-135	0.79	1.023
13C-1,2,3,7,8-PeCDD	2000	1362.405	68		40-135	1.59	1.201
13C-1,2,3,4,7,8-HxCDD	2000	1222.307	61		40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1479.849	74		40-135	1.26	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1303.371	65		40-135	1.06	1.067
13C-OCDD	4000	2307.930	58		40-135	0.89	1.139
13C-2,3,7,8-TCDF	2000	1096.466	55		40-135	0.80	0.992
13C-1,2,3,7,8-PeCDF	2000	1385.811	69		40-135	1.56	1.156
13C-2,3,4,7,8-PeCDF	2000	2195.157	110		40-135	1.57	1.190
13C-1,2,3,4,7,8-HxCDF	2000	1318.052	66		40-135	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1381.234	69		40-135	0.50	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1257.628	63		40-135	0.48	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1505.711	75		40-135	0.51	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1180.359	59		40-135	0.44	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1166.262	58		40-135	0.43	1.080
37Cl-2,3,7,8-TCDD	800	419.499	52		40-135	NA	1.024



# Accuracy & Precision

**ALS Environmental - Houston HRMS**  
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ALS Group USA, Corp.  
dba ALS Environmental

QA/QC Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Analyzed:** 10/19/22  
**Date Extracted:** 09/28/22

**Duplicate Lab Control Sample Summary**  
**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method

**Units:** ng/Kg  
**Basis:** Dry  
**Analysis Lot:** 782082

**Lab Control Sample**  
**EQ2200432-02**

**Duplicate Lab Control Sample**  
**EQ2200432-03**

Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1,2,3,4,6,7,8-HpCDD	106	99.1	107	104	98.6	105	70-130	2	25
1,2,3,4,7,8-HxCDD	95.4	99.1	96	95.3	98.6	97	70-130	<1	25
1,2,3,6,7,8-HxCDD	86.0	99.1	87	85.2	98.6	86	70-130	<1	25
1,2,3,7,8,9-HxCDD	89.3	99.1	90	87.3	98.6	89	70-130	2	25
1,2,3,7,8-PeCDD	89.6	99.1	90	90.2	98.6	91	70-130	<1	25
2,3,7,8-TCDD	15.2	19.8	76	14.4	19.7	73	70-130	5	25
OCDD	221	198	111	219	197	111	70-130	<1	25
1,2,3,4,6,7,8-HpCDF	93.2	99.1	94	102	98.6	103	70-130	9	25
1,2,3,4,7,8,9-HpCDF	85.8	99.1	87	87.3	98.6	89	70-130	2	25
1,2,3,4,7,8-HxCDF	81.0	99.1	82	81.4	98.6	83	70-130	<1	25
1,2,3,6,7,8-HxCDF	87.2	99.1	88	88.8	98.6	90	70-130	2	25
1,2,3,7,8,9-HxCDF	81.5	99.1	82	83.2	98.6	84	70-130	2	25
1,2,3,7,8-PeCDF	82.5	99.1	83	84.5	98.6	86	70-130	2	25
2,3,4,6,7,8-HxCDF	73.2	99.1	74	74.6	98.6	76	70-130	2	25
2,3,4,7,8-PeCDF	80.3	99.1	81	80.3	98.6	81	70-130	<1	25
2,3,7,8-TCDF	18.4	19.8	93	17.6	19.7	89	70-130	4	25
OCDF	206	198	104	251	197	127	70-130	20	25

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Lab Control Sample  
**Lab Code:** EQ2200432-02

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.087g  
**Data File Name:** P539737  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 22:26  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	15.2		0.250	0.496	0.74	1.001	1
1,2,3,7,8-PeCDD	89.6		0.0935	2.48	1.60	1.001	1
1,2,3,6,7,8-HxCDD	86.0		0.0824	2.48	1.30	1.000	1
1,2,3,4,7,8-HxCDD	95.4		0.0949	2.48	1.27	1.000	1
1,2,3,7,8,9-HxCDD	89.3		0.0883	2.48	1.29	1.007	1
1,2,3,4,6,7,8-HpCDD	106		0.133	2.48	1.08	1.000	1
OCDD	221		0.604	4.96	0.88	1.000	1
2,3,7,8-TCDF	18.4		0.297	0.496	0.72	1.001	1
1,2,3,7,8-PeCDF	82.5		0.350	2.48	1.48	1.001	1
2,3,4,7,8-PeCDF	80.3		0.308	2.48	1.50	1.001	1
1,2,3,6,7,8-HxCDF	87.2		0.0970	2.48	1.19	1.000	1
1,2,3,7,8,9-HxCDF	81.5		0.125	2.48	1.21	1.000	1
1,2,3,4,7,8-HxCDF	81.0		0.0922	2.48	1.16	1.000	1
2,3,4,6,7,8-HxCDF	73.2		0.0816	2.48	1.12	1.000	1
1,2,3,4,6,7,8-HpCDF	93.2		0.261	2.48	0.98	1.000	1
1,2,3,4,7,8,9-HpCDF	85.8		0.315	2.48	0.98	1.000	1
OCDF	206		0.338	4.96	0.86	1.005	1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Lab Control Sample  
**Lab Code:** EQ2200432-02

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.087g  
  
**Data File Name:** P539737  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 22:26  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	15.3		0.250	0.496	0.74		1
Total Penta-Dioxins	89.6		0.0935	2.48	1.60		1
Total Hexa-Dioxins	271		0.0881	2.48	1.27		1
Total Hepta-Dioxins	112		0.133	2.48	1.16		1
Total Tetra-Furans	18.4		0.297	0.496	0.72		1
Total Penta-Furans	163		0.328	2.48	1.48		1
Total Hexa-Furans	323		0.0969	2.48	1.16		1
Total Hepta-Furans	189		0.287	2.48	0.98		1



**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Lab Control Sample  
**Lab Code:** EQ2200432-02

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.087g  
  
**Data File Name:** P539737  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 22:26  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539726

**Labeled Standard Results**

<b>Labeled Compounds</b>	<b>Spike Conc.(pg)</b>	<b>Conc. Found (pg)</b>	<b>% Rec</b>	<b>Q</b>	<b>Control Limits</b>	<b>Ion Ratio</b>	<b>RRT</b>
13C-2,3,7,8-TCDD	2000	960.480	48		40-135	0.80	1.023
13C-1,2,3,7,8-PeCDD	2000	1246.614	62		40-135	1.62	1.201
13C-1,2,3,4,7,8-HxCDD	2000	1425.066	71		40-135	1.26	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1674.563	84		40-135	1.26	0.993
13C-1,2,3,4,6,7,8-HpCDD	2000	1448.269	72		40-135	1.05	1.067
13C-OCDD	4000	2352.184	59		40-135	0.89	1.139
13C-2,3,7,8-TCDF	2000	783.299	39	Y	40-135	0.78	0.991
13C-1,2,3,7,8-PeCDF	2000	1204.089	60		40-135	1.60	1.156
13C-2,3,4,7,8-PeCDF	2000	1349.061	67		40-135	1.62	1.191
13C-1,2,3,4,7,8-HxCDF	2000	1521.205	76		40-135	0.50	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1381.483	69		40-135	0.52	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1436.295	72		40-135	0.51	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1763.113	88		40-135	0.51	0.987
13C-1,2,3,4,6,7,8-HpCDF	2000	1285.936	64		40-135	0.42	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1382.826	69		40-135	0.43	1.080
37Cl-2,3,7,8-TCDD	800	328.607	41		40-135	NA	1.024

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Duplicate Lab Control Sample  
**Lab Code:** EQ2200432-03

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.144g  
  
**Data File Name:** P539711  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 00:33  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539700

**Native Analyte Results**

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	14.4		0.214	0.493	0.73	1.001	1
1,2,3,7,8-PeCDD	90.2		0.107	2.46	1.60	1.001	1
1,2,3,6,7,8-HxCDD	85.2		0.0556	2.46	1.26	1.000	1
1,2,3,4,7,8-HxCDD	95.3		0.0617	2.46	1.27	1.000	1
1,2,3,7,8,9-HxCDD	87.3		0.0585	2.46	1.27	1.007	1
1,2,3,4,6,7,8-HpCDD	104		0.263	2.46	1.06	1.000	1
OCDD	219		0.474	4.93	0.89	1.000	1
2,3,7,8-TCDF	17.6		0.376	0.493	0.67	1.001	1
1,2,3,7,8-PeCDF	84.5		0.301	2.46	1.47	1.001	1
2,3,4,7,8-PeCDF	80.3		0.254	2.46	1.48	1.000	1
1,2,3,6,7,8-HxCDF	88.8		0.206	2.46	1.15	1.000	1
1,2,3,7,8,9-HxCDF	83.2		0.249	2.46	1.20	1.000	1
1,2,3,4,7,8-HxCDF	81.4		0.194	2.46	1.20	1.000	1
2,3,4,6,7,8-HxCDF	74.6		0.172	2.46	1.20	1.000	1
1,2,3,4,6,7,8-HpCDF	102		1.04	2.46	0.99	1.000	1
1,2,3,4,7,8,9-HpCDF	87.3		1.20	2.46	1.03	1.000	1
OCDF	251		0.839	4.93	0.86	1.005	1

**ALS Group USA, Corp. dba ALS Environmental**

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Duplicate Lab Control Sample  
**Lab Code:** EQ2200432-03

**Units:** ng/Kg  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.144g  
  
**Data File Name:** P539711  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 00:33  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539700

**Native Analyte Results**

<b>Analyte Name</b>	<b>Result</b>	<b>Q</b>	<b>EDL</b>	<b>MRL</b>	<b>Ion Ratio</b>	<b>RRT</b>	<b>Dilution Factor</b>
Total Tetra-Dioxins	14.4		0.214	0.493	0.73		1
Total Penta-Dioxins	90.3		0.107	2.46	1.60		1
Total Hexa-Dioxins	268		0.0584	2.46	1.27		1
Total Hepta-Dioxins	111		0.263	2.46	1.04		1
Total Tetra-Furans	17.6		0.376	0.493	0.67		1
Total Penta-Furans	165		0.276	2.46	1.47		1
Total Hexa-Furans	329		0.202	2.46	1.20		1
Total Hepta-Furans	200		1.11	2.46	0.99		1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

**Client:** ALS Environmental - Middletown  
**Project:** 3264940  
**Sample Matrix:** Soil

**Service Request:** E2200923  
**Date Collected:** NA  
**Date Received:** NA

**Sample Name:** Duplicate Lab Control Sample  
**Lab Code:** EQ2200432-03

**Units:** Percent  
**Basis:** Dry

**Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS**

**Analysis Method:** 8290A  
**Prep Method:** Method  
**Sample Amount:** 10.144g  
  
**Data File Name:** P539711  
**ICAL Date:** 01/18/22

**Date Analyzed:** 10/19/22 00:33  
**Date Extracted:** 9/28/22  
**Instrument Name:** E-HRMS-07  
**GC Column:** DB-5MSUI  
**Blank File Name:** P539703  
**Cal Ver. File Name:** P539700

**Labeled Standard Results**

<b>Labeled Compounds</b>	<b>Spike Conc.(pg)</b>	<b>Conc. Found (pg)</b>	<b>% Rec</b>	<b>Q</b>	<b>Control Limits</b>	<b>Ion Ratio</b>	<b>RRT</b>
13C-2,3,7,8-TCDD	2000	956.753	48		40-135	0.79	1.023
13C-1,2,3,7,8-PeCDD	2000	1378.746	69		40-135	1.61	1.201
13C-1,2,3,4,7,8-HxCDD	2000	1504.502	75		40-135	1.29	0.991
13C-1,2,3,6,7,8-HxCDD	2000	1691.513	85		40-135	1.28	0.994
13C-1,2,3,4,6,7,8-HpCDD	2000	1548.613	77		40-135	1.05	1.067
13C-OCDD	4000	2648.285	66		40-135	0.89	1.139
13C-2,3,7,8-TCDF	2000	801.003	40		40-135	0.79	0.992
13C-1,2,3,7,8-PeCDF	2000	1270.218	64		40-135	1.59	1.156
13C-2,3,4,7,8-PeCDF	2000	1485.878	74		40-135	1.59	1.191
13C-1,2,3,4,7,8-HxCDF	2000	1484.182	74		40-135	0.52	0.970
13C-1,2,3,6,7,8-HxCDF	2000	1354.693	68		40-135	0.49	0.973
13C-1,2,3,7,8,9-HxCDF	2000	1452.866	73		40-135	0.50	1.008
13C-2,3,4,6,7,8-HxCDF	2000	1746.948	87		40-135	0.51	0.988
13C-1,2,3,4,6,7,8-HpCDF	2000	1304.527	65		40-135	0.42	1.043
13C-1,2,3,4,7,8,9-HpCDF	2000	1429.412	71		40-135	0.42	1.080
37Cl-2,3,7,8-TCDD	800	312.119	39	Y	40-135	NA	1.024

## **Field Data Sheets**

**FIELD DATA SHEET**

<b>Project Name:</b> CHPE Hudson River	<b>Proj. #:</b> 24711.001
<b>Site Name:</b> Hudson River	<b>Task #:</b> 10
<b>City:</b> Poughkeepsie <b>State:</b> NY	<b>Date:</b> 9/20/22

Field Team Leader(s): MM Field Team Safety Coordinator: MM  
 Field Crew: DJN CCB Arrival & Departure Times: 0908 - 0930  
 Station ID #: H1064LPM 5 Weather: Clear Cloudy Rain Temp -  
 Photos: Y (N) File Name: - Wind Conditions (Speed/Direction): CAM

**FIELD DATA**

Water Depth: 55 ft. Tide: Ebb Flood Low Slack High Slack Other N/A  
 PID: N/A Redox Potential: N/A pH: N/A H<sub>2</sub>O Temp.: N/A Air Temp.: NA

**SAMPLE/PUSH #1**

Core ID#: H1064LPM 5 Coring Time: 0922 Penetration Depth: 10' ft. Core Recovery: 9' 7" ft  
 Sample Method: Ponar / Vibracore / Piston Core / Manual Coring Material: CAB / Aluminum / SS Core Diameter (OD): 2" (3") 4"  
 Vibracore Type: Rossfelder / PVL / Portable Clamp-on / Mini Sampling Equipment Decconned or Replaced: (Y) N

**SAMPLE/PUSH #2**

Core ID#: \_\_\_\_\_ Coring Time: \_\_\_\_\_ Penetration Depth: \_\_\_\_\_ ft. Core Recovery: \_\_\_\_\_ ft  
 Sample Method: Ponar / Vibracore / Piston Core / Manual Coring Material: CAB / Aluminum / SS Core Diameter (OD): 2" 3" 4"  
 Vibracore Type: Rossfelder / PVL / Portable Clamp-on / Mini Sampling Equipment Decconned or Replaced: Y N

**SAMPLE/PUSH #3**

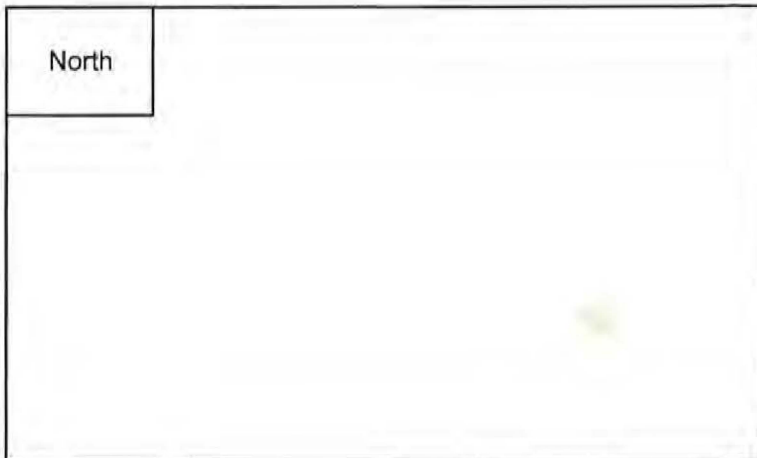
Core ID#: \_\_\_\_\_ Coring Time: \_\_\_\_\_ Penetration Depth: \_\_\_\_\_ ft. Core Recovery: \_\_\_\_\_ ft  
 Sample Method: Ponar / Vibracore / Piston Core / Manual Coring Material: CAB / Aluminum / SS Core Diameter (OD): 2" 3" 4"  
 Vibracore Type: Rossfelder / PVL / Portable Clamp-on / Mini Sampling Equipment Decconned or Replaced: Y N

**DGPS DATA**

Operator: MM Coordinate Units: Lat/Lon Feet  
 File Name: H1064LPM 5 Datum: (Y) N Other WGS 84  
 Lat / N: 41.70761492 N Proj.:  
 Lon / E: 73.94560521 W GPS GeoXH 6000 Series S/N# 5108400788 Serial #:  
 PDOP or SVs: 12

**COMMENTS / NOTES**

HAD TO MOVE SOUTH BECAUSE OF  
CABLE CROSSING



Feet of Tubing 10  
 Preparer's Initial: MM

**FIELD DATA SHEET**

<b>Project Name:</b> CHPE Hudson River	<b>Proj. #:</b> <u>Task 10</u>
<b>Site Name:</b> Hudson River	<b>Task #:</b> <u>24711.001</u>
<b>City:</b> Poughkeepsie <b>State:</b> NY	<b>Date:</b> <u>9/20/27</u>

Field Team Leader(s): MM Field Team Safety Coordinator: MM  
 Field Crew: Don CB Arrival & Departure Times: 1000 - 1035  
 Station ID #: H16-H1444 Weather: (Clear) Cloudy Rain Temp —  
 Photos: Y (N) File Name: — Wind Conditions (Speed/Direction): CALM

**FIELD DATA**

Water Depth: 5.6 ft. Tide: Ebb Flood Low Slack High Slack Other N/A  
 PID: N/A Redox Potential: N/A pH: N/A H<sup>2</sup>O Temp.: N/A Air Temp.: NA

**SAMPLE/PUSH #1**

Core ID#: H16-H1444 Coring Time: 1020 Penetration Depth: 10 ft. Core Recovery: 9'6" ft  
 Sample Method: Ponar / Vibracore / Piston Core / Manual Coring Material: (CAB) Aluminum / SS Core Diameter (OD): 2" 3" 4"  
 Vibracore Type: Rossfelder / PVL / Portable Clamp-on / Mini Sampling Equipment Deconned or Replaced: (Y) N

**SAMPLE/PUSH #2**

Core ID#: \_\_\_\_\_ Coring Time: \_\_\_\_\_ Penetration Depth: \_\_\_\_\_ ft. Core Recovery: \_\_\_\_\_ ft  
 Sample Method: Ponar / Vibracore / Piston Core / Manual Coring Material: CAB / Aluminum / SS Core Diameter (OD): 2" 3" 4"  
 Vibracore Type: Rossfelder / PVL / Portable Clamp-on / Mini Sampling Equipment Deconned or Replaced: Y N

**SAMPLE/PUSH #3**

Core ID#: \_\_\_\_\_ Coring Time: \_\_\_\_\_ Penetration Depth: \_\_\_\_\_ ft. Core Recovery: \_\_\_\_\_ ft  
 Sample Method: Ponar / Vibracore / Piston Core / Manual Coring Material: CAB / Aluminum / SS Core Diameter (OD): 2" 3" 4"  
 Vibracore Type: Rossfelder / PVL / Portable Clamp-on / Mini Sampling Equipment Deconned or Replaced: Y N

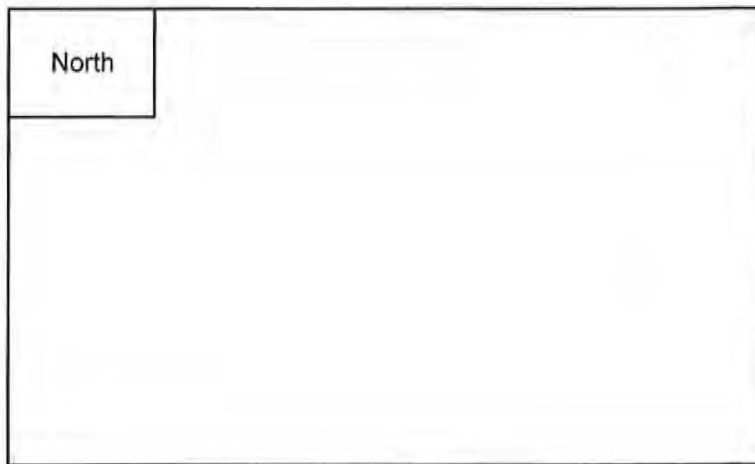
**DGPS DATA**

Operator: MM  
 File Name: H16-H1444  
 Lat N: 41.71037843  
 Lon W: 73.94487147  
 PDOP or SVs: 8

Coordinate Units: (Lat/Lon) Feet  
 Datum: (Y) N Other WGS 84  
 Proj.:  
 GPS GeoXH 6000 Series S/N# 5108400788 Serial #:

**COMMENTS / NOTES**

\_\_\_\_\_  
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 \_\_\_\_\_  
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**Feet of Tubing** 10  
 Preparer's Initial: MM

**FIELD DATA SHEET**

Project Name: <b>CHPE Hudson River</b>		Proj. #: <u>24711.001</u>
Site Name: <b>Hudson River</b>		Task #: <u>10</u>
City: <b>Poughkeepsie</b>	State: <b>NY</b>	Date: <u>9/20/21</u>

Field Team Leader(s): MW Field Team Safety Coordinator: MW  
 Field Crew: DJV CCB Arrival & Departure Times: 1055-1119  
 Station ID #: H16H47ND1 Weather: Clear Cloudy Rain Temp -  
 Photos: Y (N) File Name: - Wind Conditions (Speed/Direction): Chm

**FIELD DATA**

Water Depth: 58 ft. Tide: (Ebb) Flood Low Slack High Slack Other N/A  
 PID: N/A Redox Potential: N/A pH: N/A H<sub>2</sub>O Temp.: N/A Air Temp.: NA

**SAMPLE/PUSH #1**

Core ID#: H16H47ND1 Coring Time: 1106 Penetration Depth: 10 ft. Core Recovery: 9' 7" ft  
 Sample Method: Ponar / Vibracore / Piston Core / Manual Coring Material: CAB / Aluminum / SS Core Diameter (OD): 2" 3" 4"  
 Vibracore Type: Rossfelder / PVL / Portable Clamp-on / Mini Sampling Equipment Deconned or Replaced: Y N

**SAMPLE/PUSH #2**

Core ID#: \_\_\_\_\_ Coring Time: \_\_\_\_\_ Penetration Depth: \_\_\_\_\_ ft. Core Recovery: \_\_\_\_\_ ft  
 Sample Method: Ponar / Vibracore / Piston Core / Manual Coring Material: CAB / Aluminum / SS Core Diameter (OD): 2" 3" 4"  
 Vibracore Type: Rossfelder / PVL / Portable Clamp-on / Mini Sampling Equipment Deconned or Replaced: Y N

**SAMPLE/PUSH #3**

Core ID#: \_\_\_\_\_ Coring Time: \_\_\_\_\_ Penetration Depth: \_\_\_\_\_ ft. Core Recovery: \_\_\_\_\_ ft  
 Sample Method: Ponar / Vibracore / Piston Core / Manual Coring Material: CAB / Aluminum / SS Core Diameter (OD): 2" 3" 4"  
 Vibracore Type: Rossfelder / PVL / Portable Clamp-on / Mini Sampling Equipment Deconned or Replaced: Y N

**DGPS DATA**

Operator: MW  
 File Name: H16H47ND1  
 Lat / N: 41.71284629 N  
 Lon / E: 73.94411418 W  
 PDOP or SVs: 2

Coordinate Units: Lat/Lon Feet  
 Datum: (Y) N Other NCS 84  
 Proj.: \_\_\_\_\_  
 GPS GeoXH 6000 Series S/N# 5108400788 Serial #:

**COMMENTS / NOTES**

north  
HAD TO MOVE DUE TO  
WAS PIPELINE CROSSING



**Feet of Tubing**

Preparer's Initial: MW



**FIELD DATA SHEET**

<b>Project Name:</b> CHPE Hudson River	<b>Proj. #:</b> 24711.001
<b>Site Name:</b> Hudson River	<b>Task #:</b> 10
<b>City:</b> Poughkeepsie <b>State:</b> NY	<b>Date:</b> 9/20/22

Field Team Leader(s): MM Field Team Safety Coordinator: MM  
 Field Crew: Don CUB Arrival & Departure Times: 1135 - 1209  
 Station ID #: HIGHLAND 3 Weather: Clear Cloudy Rain Temp -  
 Photos: Y N File Name: - Wind Conditions (Speed/Direction): 5-10 E

**FIELD DATA**

Water Depth: 5.5 ft. Tide: Ebb Flood Low Slack High Slack Other N/A  
 PID: N/A Redox Potential: N/A pH: N/A H<sup>2</sup>O Temp.: N/A Air Temp.: N/A

**SAMPLE/PUSH #1**  
 Core ID#: HWH 3 Coring Time: 1144 Penetration Depth: 2 ft. Core Recovery: 2 ft  
 Sample Method: Ponar / Vibracore / Piston Core / Manual Coring Material: CAB / Aluminum / SS Core Diameter (OD): 2" 3" 4"  
 Vibracore Type: Rossfelder / PVL / Portable Clamp-on / Mini Sampling Equipment Deconned or Replaced: Y N

**SAMPLE/PUSH #2**  
 Core ID#: HWH 3 Coring Time: 1203 Penetration Depth: 10 ft. Core Recovery: 9 4" ft  
 Sample Method: Ponar / Vibracore / Piston Core / Manual Coring Material: CAB / Aluminum / SS Core Diameter (OD): 2" 3" 4"  
 Vibracore Type: Rossfelder / PVL / Portable Clamp-on / Mini Sampling Equipment Deconned or Replaced: Y N

**SAMPLE/PUSH #3**  
 Core ID#: \_\_\_\_\_ Coring Time: \_\_\_\_\_ Penetration Depth: \_\_\_\_\_ ft. Core Recovery: \_\_\_\_\_ ft  
 Sample Method: Ponar / Vibracore / Piston Core / Manual Coring Material: CAB / Aluminum / SS Core Diameter (OD): 2" 3" 4"  
 Vibracore Type: Rossfelder / PVL / Portable Clamp-on / Mini Sampling Equipment Deconned or Replaced: Y N

**DGPS DATA**

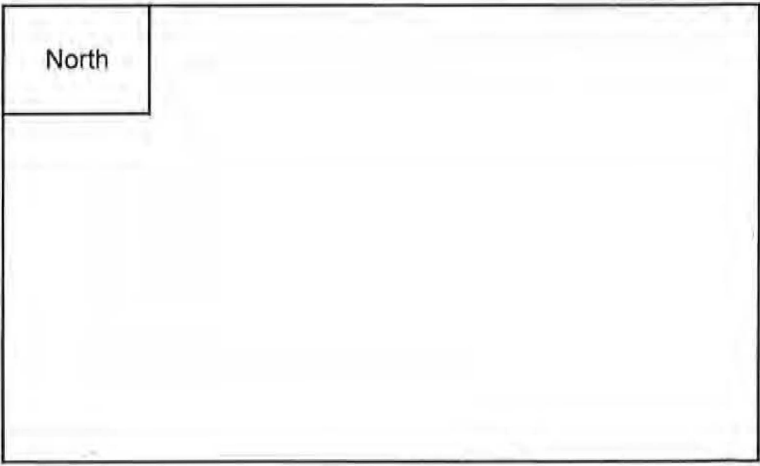
Operator: MM Coordinate Units: Lat/Lon Feet  
 File Name: HWH 3 Datum: N Other WGS 84  
 Lat / N: \_\_\_\_\_ Proj.: \_\_\_\_\_  
 Lon / E: \_\_\_\_\_ GPS GeoXH 6000 Series S/N# 5108400788 Serial #:  
 PDOP or SVs: \_\_\_\_\_

**COMMENTS / NOTES**

PVBT #1 WOODY DEBRIS IN BOTTOM

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Feet of Tubing** 10  
 Preparer's Initial: MM



**FIELD DATA SHEET**

Project Name: <b>CHPE Hudson River</b>		Proj. #: <b>24711.001</b>
Site Name: <b>Hudson River</b>		Task #: <b>10</b>
City: <b>Poughkeepsie</b>	State: <b>NY</b>	Date: <b>9/12/22</b>

Field Team Leader(s): MM Field Team Safety Coordinator: MM  
 Field Crew: DSN CCB Arrival & Departure Times: 1224-1250  
 Station ID #: H1642 Weather: Clear  Cloudy  Rain  Temp: -  
 Photos: Y  (N) File Name: - Wind Conditions (Speed/Direction): 10-15 E

**FIELD DATA**

Water Depth: 54 ft. Tide:  Ebb  Flood  Low Slack  High Slack  Other: N/A  
 PID: N/A Redox Potential: N/A pH: N/A H<sub>2</sub>O Temp.: N/A Air Temp.: NA

**SAMPLE/PUSH #1**

Core ID#: H1642 Coring Time: 1237 Penetration Depth: 10' ft. Core Recovery: 9'9" ft  
 Sample Method:  Ponar /  Vibracore /  Piston Core /  Manual Coring Material:  CAB /  Aluminum /  SS Core Diameter (OD): 2" 3" 4"  
 Vibracore Type:  Rossfelder /  PVL /  Portable Clamp-on /  Mini Sampling Equipment Decconned or Replaced:  Y  N

**SAMPLE/PUSH #2**

Core ID#: \_\_\_\_\_ Coring Time: \_\_\_\_\_ Penetration Depth: \_\_\_\_\_ ft. Core Recovery: \_\_\_\_\_ ft  
 Sample Method:  Ponar /  Vibracore /  Piston Core /  Manual Coring Material:  CAB /  Aluminum /  SS Core Diameter (OD):  2"  3"  4"  
 Vibracore Type:  Rossfelder /  PVL /  Portable Clamp-on /  Mini Sampling Equipment Decconned or Replaced:  Y  N

**SAMPLE/PUSH #3**

Core ID#: \_\_\_\_\_ Coring Time: \_\_\_\_\_ Penetration Depth: \_\_\_\_\_ ft. Core Recovery: \_\_\_\_\_ ft  
 Sample Method:  Ponar /  Vibracore /  Piston Core /  Manual Coring Material:  CAB /  Aluminum /  SS Core Diameter (OD):  2"  3"  4"  
 Vibracore Type:  Rossfelder /  PVL /  Portable Clamp-on /  Mini Sampling Equipment Decconned or Replaced:  Y  N

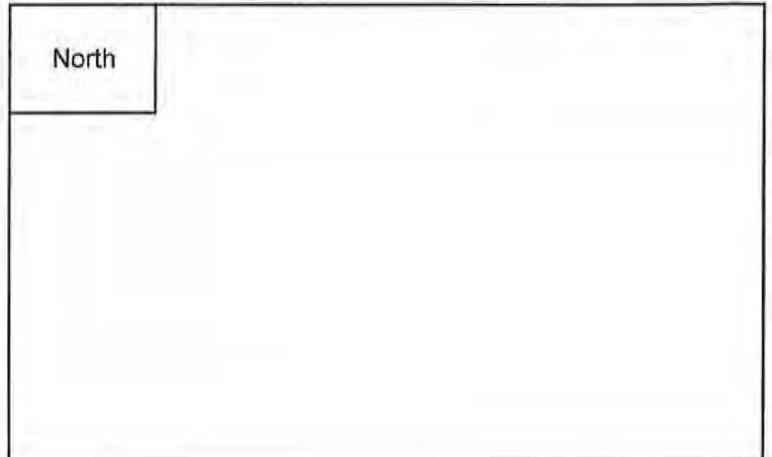
**DGPS DATA**

Operator: MM  
 File Name: H1642  
 Lat / N: 41.71560621  
 Lon / E: 73.94321757  
 PDOP or SVs: 12

Coordinate Units:  Lat/Lon  Feet  
 Datum:  N  Other: NAD83  
 Proj.: \_\_\_\_\_  
 GPS GeoXH 6000 Series S/N# 5108400788 Serial #: \_\_\_\_\_

**COMMENTS / NOTES**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



Feet of Tubing: 10  
 Preparer's Initial: MM


## **Soil Boring Logs**

Collected: Date 9/21/22 Time 0900

PROJECT NUMBER <u>24711.001, Task 10</u>	BORING NUMBER <u>HIGH 5</u>
SHEET <u>1</u> OF <u>5</u>	

## Soil Boring Log


PROJECT : <u>CHPE Hudson River</u>	LOCATION : <u>Poughkeepsie, NY</u>
ELEVATION :	DRILLING CONTRACTOR : <u>Normandeau Associates, Inc.</u>
DRILLING METHOD AND EQUIPMENT USED : <u>Mini-Vibracore sediment sampling, 3 inch CAB tubing</u>	
WATER LEVELS : <u>55</u>	START : <u>0900</u> END : <u>0933</u> LOGGER : <u>MM</u>

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)		STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION	COMMENTS
	RECOVERY (FT)	#/TYPE			
0				<p>Homogeneous throughout very soft to soft very wet to wet GLY 1/3/104 medium plasticity cohesive Silty clay no odor no sheen</p>	<p>High 5 A voa taken at 2 feet at 0905</p> <p>2 x 8 oz jars 1 VOA KIT</p>
4					<p>High 5 B voa taken at 6.5 feet at 0912</p> <p>2 x 8 oz JAR 1 VOA KIT</p>
9					

Collected: Date 9/21/22 Time 0945

PROJECT NUMBER <u>24711.001, Task 10</u>	BORING NUMBER <u>High 4</u>
SHEET <u>2</u> OF <u>5</u>	
<h1>Soil Boring Log</h1>	

PROJECT: CHPE Hudson River      LOCATION: Poughkeepsie, NY  
 ELEVATION:      DRILLING CONTRACTOR: Normandeau Associates, Inc.  
 DRILLING METHOD AND EQUIPMENT USED: Mini-Vibracore sediment sampling, 3 inch CAB tubing  
 WATER LEVELS: 56      START: 0945      END: 1020      LOGGER: BTW

DEPTH BELOW SURFACE (FT)		STANDARD PENETRATION TEST RESULTS		CORE DESCRIPTION	COMMENTS
INTERVAL (FT)	RECOVERY (FT)	6"-6"-6"-6" (N)			
#	#	#	TYPE		
0				Homogeneous Throughout very soft to soft very wet to wet GLE Y 1/3/10 Y medium plasticity Cohesive Silty clay no odor no sheen	High 4 A VOA taken at 2 feet at 0955 2 x 8oz jars 1 VOA Kit
4					High 4 B VOA taken at 6.5 feet at 0958 2 x 8 oz. jars 1 VOA Kit
9					

Collected: Date 9/21/22 Time

PROJECT NUMBER <u>24711.001, Task 10</u>	BORING NUMBER <u>High 1</u>
SHEET <u>3</u> OF <u>5</u>	
<h1>Soil Boring Log</h1>	

PROJECT : CHPE Hudson River      LOCATION : Poughkeepsie, NY  
 ELEVATION :      DRILLING CONTRACTOR : Normandeau Associates, Inc.  
 DRILLING METHOD AND EQUIPMENT USED :  Mini-Vibracore sediment sampling, 3 inch CAB tubing  
 WATER LEVELS : 48.58      START : 1030      END : 1100      LOGGER : SN

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)		STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION	COMMENTS
	RECOVERY (FT)	#/TYPE			
0				Homogeneous throughout Very soft to soft Very wet to wet GLE Y 1/3/10 Y medium plasticity cohesive Silty clay no odor no sheen	High 1 A Voa taken at 2 feet at 1030 2 x 8 oz. jars 1 voa kit
4			↓		
9					

Collected: Date 9/21/22 Time

PROJECT NUMBER <u>24711.001, Task 10</u>	BORING NUMBER <u>High 3</u>
SHEET <u>4</u> OF <u>5</u>	
<h2 style="margin: 0;">Soil Boring Log</h2>	

PROJECT : CHPE Hudson River	LOCATION : Poughkeepsie, NY
ELEVATION :	DRILLING CONTRACTOR : Normandeau Associates, Inc.
DRILLING METHOD AND EQUIPMENT USED : <u>Mint-Vibracore sediment sampling, 3 inch CAB tubing</u>	
WATER LEVELS : <u>55</u>	START : <u>1110</u> END : <u>1140</u> LOGGER : <u>DJN</u>


DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS	CORE DESCRIPTION	COMMENTS
		#/TYPE	6"-6"-6"-6" (N)	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
0				Homogeneous Throughout very soft to soft very wet to wet GLEY 1/3/10y medium plasticity Cohesive Silty clay no odor no sheen	High 3 A VOA taken at 2 feet at 1120 2x 8 oz. jars 1 VOA kit
4				↓	High 3B VOA taken at 6.5 feet at 1125 2x 8 oz jars 1 VOA kit
9					

Collected: Date 9/21/22 Time

PROJECT NUMBER <u>24711.001 , Task 10</u>	BORING NUMBER <u>HIGH 2</u>
SHEET <u>5</u> OF <u>5</u>	

## Soil Boring Log

PROJECT : <u>CHPE Hudson River</u>	LOCATION : <u>Poughkeepsie, NY</u>
ELEVATION :	DRILLING CONTRACTOR : <u>Normandeau Associates, Inc.</u>
DRILLING METHOD AND EQUIPMENT USED :	<u>Mini-Vibracore sediment sampling, 3 inch CAB tubing</u>
WATER LEVELS : <u>6.2</u>	START : <u>1155</u> END : <u>1240</u> LOGGER : <u>BJW</u>

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)		STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	CORE DESCRIPTION	COMMENTS
	RECOVERY (FT)	#/TYPE			
0				Homogeneous Throughout very soft to soft very wet to wet GLE 4 1/3 / 10 Y medium plasticity cohesive Silty clay no odor no sheen	High <del>A</del> 2A VOA taken at 2 feet at 1200 2 x 8 oz jars 1 VOA kit
4					High 2B VOA taken at 6.5 feet at 1205 2 x 8 oz. jars 1 VOA kit
9					



## **Sediment Core Photos**

CHPE Hudson River  
Location - Highland  
Soil Boring Pictures  
Project No. 24711.001, Task 10

HIGH 5  
Top ←  
Bottom →



HIGH 5  
Top ←      → Bottom



HIGH 5  
Top ←  
Bottom →





HIGH 4

← Top

Bottom →