

**Chemical Bulk Storage (CBS) and Petroleum
Bulk Storage (PBS) Tank Closure
Construction Completion Report
RITC Tank No. ST06
DEC Registered Tank No. B03**

Riverview Innovation & Technology Campus
Brownfield Cleanup Program Site No. C915353

3875 River Road
Tonawanda, New York 14150

August 19, 2025

1. Facility Information Summary

Facility Information	
Name of Facility:	Riverview Innovation & Technology Campus, Inc. (RITC)
Address:	3875 River Road, Tonawanda, NY 14150
County:	Erie
Waste Generator Status:	Large Quantity Generator
EPA Identification Number:	NYD088413877
Site Operator:	Ontario Specialty Contracting (OSC)
Operator Address:	140 Lee Street, Buffalo, NY 14210
RITC Project Manager:	Dan Flanigan
RITC Project Manager Email:	dflanigan@oscinc.com
Engineering Consultant:	Inventum Engineering
Consultant Address:	441 Carlisle Drive, Suite C, Herndon, VA 20170
Consultant Contact:	John Black, P.E.
Consultant Email:	John.Black@inventumeng.com

2. Above Ground Storage Tank Information

RITC Tank No.:	ST06 "Lid Seal"
DEC Registered Tank No.:	B03
Grid Location:	R10
Location Notes:	ST06 was located north adjacent to the Coal Charging building.
Date of Closure:	9/23/2021
Tank Dimensions:	Horizontal Cylinder 8-foot Diameter, 13.5-foot Length
Storage Capacity:	5,100 gallons
Tank Exterior Coating Description:	Steel with blue painted coating.
Tank Piping Description:	One 8-foot long 3-inch diameter steel pipe was present between the tank containment and the Coal Charging building.
Secondary Containment Description:	ST06 had a dedicated rectangular steel box with a yellow painted coating.
Contents Description:	ST06 contained approximately 3-feet of brown, viscous, lid sealant.

3. AST Closure Procedure

Contractor:	US Ecology
Contractor Address:	2525 George Urban Blvd, Depew, NY 14043
Dates of Cleaning:	9/20/2021 – 9/21/2021
Cleaning Method:	Hot water power washing and mechanical removal of residuals.
Disposition of tank shell and piping:	Tank shell and piping were recycled.
Recycler or Disposal Facility Address:	Niagara Metals 4861 Packard Rd, Niagara Falls, NY 14304
Contents Volume Disposed:	1,650 gallons
Disposition of Contents & Hazardous Waste Code(s):	ST06 contents were disposed as non-hazardous waste at a RCRA-permitted waste facility.
Disposal Facility Address:	Veolia ES Technical Solutions LLC 4301 Infirmary Rd, West Carrollton, OH 45449
Disposal Facility EPA No.:	OHD093945293
Hazardous Waste Code(s):	NA
Hazardous Waste Transporter Name:	(1) Veolia ES Technical Solutions (2) Freehold Cartage Inc
Hazardous Waste Transporter EPA No.:	(1) NJD080631369 (2) NJD054126164

4. Inspection Summary

Tank closure inspection:	ST06 contains no remaining residuals and is free of standing water from decontamination. Tank is cleared for recycling in September 2021.
Evidence of Leaks and/or additional observations:	The ST06 secondary containment contained lid seal residuals. Lid seal material was observed beneath the secondary containment in September 2021. NYSDEC filed Spill Report No. 2106302. Additional lid seal material was observed in the base of the nearby elevator shaft after demolition of the Coal Charging building and was managed in accordance with the Spill Number. Management of the secondary containment, including inspection, photographic documentation, and soil sampling, is documented under separate cover in the Secondary Containment Closure CCR (Inventum).

5. CAMP Data

Air monitoring was performed in accordance with the Community Air Monitoring Plan (CAMP) for all dates that tank work was completed including sampling, contents removal, cleaning, decommissioning and disposal. Decommissioning includes ancillary pipe removal, shearing, torch cutting, and/or contents stabilization. Daily summary graphs of particulate and volatile organic compound (VOC) monitoring are provided in the AST CCR CAMP Appendix.

Tank Work	Dates
Sampling	2/9/2021, 2/10/2022, 3/10/2022, 6/30/2022
Contents Removal	9/13/2021 – 9/20/2021
Cleaning	9/20/2021 - 9/21/2021
Decommissioning	9/21/2021 – 9/23/2021
Disposal	5/19/2022, 12/16/2022, 2/23/2023

Additional Notes:

Sampling:

One characterization sample of the viscous lid seal material was collected from the tank in February 2021. The pile of excavated lid seal and coke breeze documented under Spill No. 2106302 was sampled in February 2022 for disposal characterization with Modern Landfill. The analytical data from these two samples are presented in Attachment A, Table 1.

An additional sample of the stockpiled lid seal and coke breeze was collected in March 2022 for the paint filter test disposal parameter. The analysis is presented in Attachment A, Table 2.

In June 2022 one additional sample each from the containerized lid seal material, aqueous liquid separated on top of the lid seal material, and the solids removed from inside the secondary containment was collected and analyzed for total methanol (Methyl Alcohol, Method 18015D) at the request of the waste broker. The analysis is presented in Attachment A, Table 2.

Disposal:

A total of 1,650 gallons, or six 275-gallon polyethylene totes, of lid seal were disposed from tank ST06 with Veolia Environmental Services (Veolia). The five cubic yard boxes of lid seal residuals and coke breeze removed from the ST06 secondary containment were also disposed with Veolia.

The lid seal observed beneath the secondary containment and within the base of the Coal Charging building elevator shaft was segregated and managed in accordance with Spill No. 2106302. Two shipments of lid seal impacted soils and coke breeze were disposed at Modern Landfill as non-hazardous solid waste.

6. Attachments

1. Attachment A – Analytical Tables of tank contents for disposal profiling.
2. Attachment B – Photographic Log includes original, color photographs of the closure process.
3. Attachment C – Spill Report No. 2106302
4. Attachment D – Additional Lid Seal Memo (Inventum, 2022)
5. Attachment E – Waste Manifests.
6. Attachment F – Laboratory Reports.

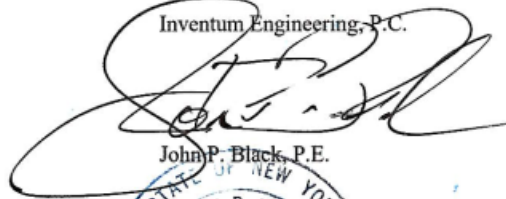


Engineering Certification

I, John P. Black, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Tank Management and Closure Construction Completion Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and DER Green Remediation (DER-31) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Respectfully Submitted,

Inventum Engineering, P.C.



John P. Black, P.E.



Date:

8.18.2025

License No:

062818-1

It is a violation of the laws of New York for any person, unless acting under the direction of a Licensed Professional Engineer, to alter any item or any portion of this document in any way. If an item bearing the seal of a Licensed Professional Engineer is altered, the altering Engineer shall affix to the item his/her seal and notation "altered by" followed by his/her signature and the date of such alternation, and a specific description of the alteration.



INVENTUM ENGINEERING, PC

Attachment A – Analytical Tables



Table 1
CBS PBS Tank Closure Construction Completion Report
ST06 Analytical Results
Riverview Innovation & Technology Campus, Inc.
Town of Tonawanda, New York

Analytes	Sample ID:		TK-SD-ST06-02092021		SD-ST06-02102022	
	Sample Date:		2/9/2021		2/10/2022	
	Lab Report Number(s):		R2101264, R2101265		220605	
	Contents:		Brown Viscous Mud		Lid Seal & Coke Breeze Pile	
	Hazardous Waste Code(s):		None			
	TCLP Standards (ug/L)	Units	ST06/B03 - "Lid Seal Tank"			
VOCs SW8260C						
1,1,1-Trichloroethane (TCA)		ug/kg	<0.47	U	<9.05	U
1,1,2,2-Tetrachloroethane		ug/kg	<1.1	U	<9.05	U
1,1,2-Trichloroethane		ug/kg	<0.47	U	<9.05	U
1,1,2-Trichloro-1,2,2-Trifluoroethane		ug/kg	<0.47	U	<9.05	U
1,1-Dichloroethane		ug/kg	<0.47	U	<9.05	U
1,1-Dichloroethene		ug/kg	<0.67	U	<9.05	U
1,2,3-Trichlorobenzene		ug/kg	<1.2	U	<22.6	U
1,2,4-Trichlorobenzene		ug/kg	<0.97	U	<22.6	U
1,2-Dibromo-3-Chloropropane		ug/kg	<1.8	U	<45.3	U
1,2-Dibromoethane (Ethylene Dibromide)		ug/kg	<0.47	U	<9.05	U
1,2-Dichlorobenzene		ug/kg	<0.47	U	<9.05	U
1,2-Dichloroethane		ug/kg	<0.47	U	<9.05	U
1,2-Dichloropropane		ug/kg	<0.47	U	<9.05	U
1,3-Dichlorobenzene		ug/kg	<0.47	U	<9.05	U
1,4-Dichlorobenzene		ug/kg	<0.51	U	<9.05	U
1,4-Dioxane (P-Dioxane)		ug/kg	<47	U	<45.3	U
Methyl Ethyl Ketone (2-Butanone)		ug/kg	11	J	<45.3	U
2-Hexanone		ug/kg	<0.83	U	<22.6	U
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)		ug/kg	0.6	J	<22.6	U
Acetone		ug/kg	79		<45.3	U
Benzene		ug/kg	<0.47	U	<9.05	U
Bromochloromethane		ug/kg	<0.47	U	<22.6	U
Bromodichloromethane		ug/kg	<0.47	U	<9.05	U
Bromoform		ug/kg	<1.2	U	<22.6	U
Bromomethane		ug/kg	<4.9	U	<9.05	U
Carbon Disulfide		ug/kg	<0.67	U	<9.05	U
Carbon Tetrachloride		ug/kg	<0.60	U	<9.05	U
Chlorobenzene		ug/kg	<0.47	U	<9.05	U
Chloroethane		ug/kg	<0.95	U	<9.05	U
Chloroform		ug/kg	<0.47	U	<9.05	U
Chloromethane		ug/kg	<3.3	U	<9.05	U
Cyclohexane		ug/kg	<0.60	U	<45.3	U
Dibromochloromethane		ug/kg	<0.47	U	<9.05	U
Dichlorodifluoromethane		ug/kg	<0.77	U	<9.05	U
Methylene Chloride		ug/kg	<6.5	U	<22.6	U
Ethylbenzene		ug/kg	<0.47	U	<9.05	U
Isopropylbenzene (Cumene)		ug/kg	<0.47	U	<9.05	U
Methyl Acetate		ug/kg	<2.0	U	<9.05	U
Tert-Butyl Methyl Ether		ug/kg	<0.47	U	<9.05	U
Methylcyclohexane		ug/kg	<0.72	U	<9.05	U
Styrene		ug/kg	<0.47	U	<22.6	U
Tetrachloroethylene (PCE)		ug/kg	<0.53	U	<9.05	U
Toluene		ug/kg	<0.47	U	<9.05	U
Trichloroethylene (TCE)		ug/kg	<0.51	U	<9.05	U
Trichlorofluoromethane		ug/kg	<0.60	U	<9.05	U
Vinyl Chloride		ug/kg	<1.1	U	<9.05	U
Cis-1,2-Dichloroethylene		ug/kg	<0.47	U	<9.05	U
Cis-1,3-Dichloropropene		ug/kg	<0.47	U	<9.05	U
m,p-Xylene		ug/kg	<0.86	U	<9.05	U
O-Xylene (1,2-Dimethylbenzene)		ug/kg	<0.47	U	<9.05	U
Trans-1,2-Dichloroethene		ug/kg	<0.47	U	<9.05	U
Trans-1,3-Dichloropropene		ug/ke	<0.47	U	<9.05	U



Table 1
CBS PBS Tank Closure Construction Completion Report
ST06 Analytical Results
Riverview Innovation & Technology Campus, Inc.
Town of Tonawanda, New York

Analytes	Sample ID:		TK-SD-ST06-02092021		SD-ST06-02102022	
	Sample Date:		2/9/2021		2/10/2022	
	Lab Report Number(s):		R2101264, R2101265		220605	
	Contents:		Brown Viscous Mud		Lid Seal & Coke Breeze Pile	
	Hazardous Waste Code(s):		None			
	TCLP Standards (ug/L)	Units	ST06/B03 - "Lid Seal Tank"			
SVOCs SW8270D						
1,2,4,5-Tetrachlorobenzene		ug/kg	<1000	U	<427	U
2,3,4,6-Tetrachlorophenol		ug/kg	<1600	U	<427	U
2,4,5-Trichlorophenol		ug/kg	<1200	U	<427	U
2,4,6-Trichlorophenol		ug/kg	<1000	U	<427	U
2,4-Dichlorophenol		ug/kg	<870	U	<427	U
2,4-Dimethylphenol		ug/kg	<810	U	<427	U
2,4-Dinitrophenol		ug/kg	<7700	U	<1710	U
2,4-Dinitrotoluene		ug/kg	<1800	U	<427	U
2,6-Dinitrotoluene		ug/kg	<980	U	<427	U
2-Chloronaphthalene		ug/kg	<900	U	<427	U
2-Chlorophenol		ug/kg	<750	U	<427	U
2-Methylnaphthalene		ug/kg	<750	U	652	
2-Methylphenol (O-Cresol)		ug/kg	<930	U	<427	U
2-Nitroaniline		ug/kg	<1100	U	<427	U
2-Nitrophenol		ug/kg	<1100	U	<427	U
3,3'-Dichlorobenzidine		ug/kg	<510	U	<427	U
Cresols, M & P		ug/kg	<860	U	<427	U
3-Nitroaniline		ug/kg	<900	U	<427	U
4,6-Dinitro-2-Methylphenol		ug/kg	<2600	U	<571	U
4-Bromophenyl Phenyl Ether		ug/kg	<1200	U	<427	U
4-Chloro-3-Methylphenol		ug/kg	<910	U	<427	U
4-Chloroaniline		ug/kg	<760	U	<427	U
4-Chlorophenyl Phenyl Ether		ug/kg	<960	U	<427	U
4-Nitroaniline		ug/kg	<460	U	<427	U
4-Nitrophenol		ug/kg	<900	U	<427	U
Acenaphthene		ug/kg	<850	U	447	
Acenaphthylene		ug/kg	<910	U	<427	U
Acetophenone		ug/kg	<1300	U	<427	U
Anthracene		ug/kg	<750	U	781	
Atrazine		ug/kg	<630	U	<427	U
Benzo(A)Anthracene		ug/kg	<670	U	2350	
Benzaldehyde		ug/kg	<1100	U	<427	U
Benzo(A)Pyrene		ug/kg	<1200	U	3030	
Benzo(B)Fluoranthene		ug/kg	<750	U	3200	
Benzo(G,H,I)Perylene		ug/kg	<1100	U	2110	
Benzo(K)Fluoranthene		ug/kg	<730	U	1620	
Biphenyl (Diphenyl)		ug/kg	<1400	U	<427	U
Bis(2-Chloroisopropyl) Ether		ug/kg	<920	U	NS	
Bis(2-Chloroethoxy) Methane		ug/kg	<1100	U	<427	U
Bis(2-Chloroethyl) Ether (2-Chloroethyl Ether)		ug/kg	<890	U	<427	U
Bis(2-Ethylhexyl) Phthalate		ug/kg	<820	U	<427	U
Benzyl Butyl Phthalate		ug/kg	<540	U	<427	U
Caprolactam		ug/kg	<990	U	<427	U
Carbazole		ug/kg	<730	U	492	
Chrysene		ug/kg	<660	U	2880	
Di-N-Butyl Phthalate		ug/kg	<730	U	<427	U
Di-N-Octylphthalate		ug/kg	<1600	U	<427	U
Dibenz(A,H)Anthracene		ug/kg	<980	U	632	
Dibenzofuran		ug/kg	<820	U	523	
Diethyl Phthalate		ug/kg	<800	U	<427	U
Dimethyl Phthalate		ug/kg	<860	U	<427	U



Table 1
CBS PBS Tank Closure Construction Completion Report
ST06 Analytical Results
Riverview Innovation & Technology Campus, Inc.
Town of Tonawanda, New York

Analytes	Sample ID:		TK-SD-ST06-02092021		SD-ST06-02102022	
	Sample Date:		2/9/2021		2/10/2022	
	Lab Report Number(s):		R2101264, R2101265		220605	
	Contents:		Brown Viscous Mud		Lid Seal & Coke Breeze Pile	
	Hazardous Waste Code(s):		None			
	TCLP Standards (ug/L)	Units	ST06/B03 - "Lid Seal Tank"			
Fluoranthene		ug/kg	<1200	U	4790	
Fluorene		ug/kg	<840	U	462	
Hexachlorobenzene		ug/kg	<1100	U	<427	U
Hexachlorobutadiene		ug/kg	<770	U	<427	U
Hexachlorocyclopentadiene		ug/kg	<1500	U	<427	U
Hexachloroethane		ug/kg	<840	U	<427	U
Indeno(1,2,3-C,D)Pyrene		ug/kg	<1500	U	1720	
Isophorone		ug/kg	<940	U	<427	U
N-Nitrosodi-N-Propylamine		ug/kg	<1400	U	<427	U
N-Nitrosodiphenylamine		ug/kg	<2800	U	<427	U
Naphthalene		ug/kg	<840	U	2000	
Nitrobenzene		ug/kg	<800	U	<427	U
Pentachlorophenol		ug/kg	<4500	U	<427	U
Phenanthrene		ug/kg	<640	U	3880	
Phenol		ug/kg	<910	U	<427	U
Pyrene		ug/kg	<750	U	4220	
TAL Metals SW6010						
Aluminum		mg/kg	4230		7090	
Antimony		mg/kg	<1.2	U	<4.58	M
Arsenic		mg/kg	3		2.65	
Barium		mg/kg	55.9		55.8	
Beryllium		mg/kg	0.415	J	<0.381	U
Boron (RSI*)		mg/kg	NS		NS	
Cadmium		mg/kg	<0.553	U	<0.381	U
Calcium		mg/kg	11700		2180	
Chromium, Total		mg/kg	5.1		13.8	D
Cobalt		mg/kg	<1.1	U	<3.81	U
Copper		mg/kg	10.3		23.8	D
Iron		mg/kg	6750		19000	D
Lead		mg/kg	5.2	J	24.2	
Magnesium		mg/kg	7050		961	M
Manganese		mg/kg	14.8		77.4	MD
Molybdenum (RSI*)		mg/kg	NS		NS	
Nickel		mg/kg	<1.5	U	8.04	D
Potassium		mg/kg	3920		3560	M
Selenium		mg/kg	<1.2	U	<1.53	U
Silver		mg/kg	0.276	J	<0.763	U
Sodium		mg/kg	13000		1140	
Sulfur (RSI, 6020A)		mg/kg	NS		NS	
Thallium		mg/kg	1.9	J	<1.91	U
Tin (RSI*)		mg/kg	NS		NS	
Uranium (RSI*)		mg/kg	NS		NS	
Vanadium		mg/kg	6.2	J	9.70	
Zinc		mg/kg	26.4		31.4	
Mercury SW7471						
Mercury		mg/kg	<0.03	U	0.0334	
Ammonia E350.1M						
Nitrogen, Ammonia (As N)		mg/kg	11	J	<32.9	U



Table 1
CBS PBS Tank Closure Construction Completion Report
ST06 Analytical Results
Riverview Innovation & Technology Campus, Inc.
Town of Tonawanda, New York

Analytes	Sample ID:		TK-SD-ST06-02092021		SD-ST06-02102022	
	Sample Date:		2/9/2021		2/10/2022	
	Lab Report Number(s):		R2101264, R2101265		220605	
	Contents:		Brown Viscous Mud		Lid Seal & Coke Breeze Pile	
	Hazardous Waste Code(s):		None			
	TCLP Standards (ug/L)	Units	ST06/B03 - "Lid Seal Tank"			
Cyanide SW9012B						
Cyanide		mg/kg	<0.27	U	<0.777	U
PCBs 8082A						
PCB-1016 (Aroclor 1016)		ug/kg	<140	U	<231	
PCB-1221 (Aroclor 1221)		ug/kg	<140	U	<231	
PCB-1232 (Aroclor 1232)		ug/kg	<140	U	<231	
PCB-1242 (Aroclor 1242)		ug/kg	<140	U	<231	
PCB-1248 (Aroclor 1248)		ug/kg	<140	U	<231	
PCB-1254 (Aroclor 1254)		ug/kg	450	P	<231	
PCB-1260 (Aroclor 1260)		ug/kg	<140	U	<231	
Pesticides 8081B						
P,P'-DDD		ug/kg	<6.5	U	NS	
P,P'-DDE		ug/kg	<6.5	U	NS	
P,P'-DDT		ug/kg	<6.5	U	NS	
Aldrin		ug/kg	<6.5	U	NS	
Dieldrin		ug/kg	<6.5	U	NS	
Alpha Endosulfan		ug/kg	<6.5	U	NS	
Beta Endosulfan		ug/kg	<6.5	U	NS	
Endosulfan Sulfate		ug/kg	<6.5	U	NS	
Endrin		ug/kg	<6.5	U	NS	
Endrin Aldehyde		ug/kg	<6.5	U	NS	
Endrin Ketone		ug/kg	<6.5	U	NS	
Heptachlor		ug/kg	<6.5	U	NS	
Heptachlor Epoxide		ug/kg	<6.5	U	NS	
Methoxychlor		ug/kg	<6.5	U	NS	
Toxaphene		ug/kg	<150	U	NS	
Alpha Bhc (Alpha Hexachlorocyclohexane)		ug/kg	<6.5	U	NS	
cis-Chlordane		ug/kg	<6.5	U	NS	
Beta Bhc (Beta Hexachlorocyclohexane)		ug/kg	<6.5	U	NS	
Delta BHC (Delta Hexachlorocyclohexane)		ug/kg	<6.5	U	NS	
Gamma Bhc (Lindane)		ug/kg	<6.5	U	NS	
Chlordane (Technical)		ug/kg	<6.5	U	NS	
Herbicides SW8151A						
Acetic acid, (2,4,5-trichlorophenoxy)-		ug/kg	<20	U	NS	
Silvex (2,4,5-TP)		ug/kg	<18	U	NS	
2,4-D (Dichlorophenoxyacetic Acid)		ug/kg	<26	U	NS	
Dicamba		ug/kg	<13	U	NS	
TCLP VOCs - SW8260C						
1,2-Dichloroethane	500	ug/l	<20.0	U	<20.0	U
Chlorobenzene	100,000	ug/l	<20.0	U	<20.0	U
Tetrachloroethylene (PCE)	700	ug/l	<20.0	U	<20.0	U
Carbon Tetrachloride	500	ug/l	<20.0	U	<20.0	U
Chloroform	6,000	ug/l	<20.0	U	<20.0	U
Benzene	500	ug/l	<20.0	U	21.0	
Vinyl Chloride	200	ug/l	<20.0	U	<20.0	U
1,1-Dichloroethene	700	ug/l	<20.0	U	<20.0	U
Methyl Ethyl Ketone (2-Butanone)	200,000	ug/l	236		<20.0	U
Trichloroethylene (TCE)	500	ug/l	<20.0	U	<20.0	U



Table 1
CBS PBS Tank Closure Construction Completion Report
ST06 Analytical Results
Riverview Innovation & Technology Campus, Inc.
Town of Tonawanda, New York

Analytes	Sample ID:		TK-SD-ST06-02092021		SD-ST06-02102022	
	Sample Date:		2/9/2021		2/10/2022	
	Lab Report Number(s):		R2101264, R2101265		220605	
	Contents:		Brown Viscous Mud		Lid Seal & Coke Breeze Pile	
	Hazardous Waste Code(s):		None			
	TCLP Standards (ug/L)	Units	ST06/B03 - "Lid Seal Tank"			
TCLP SVOCs - SW8270D						
1,4-Dichlorobenzene	7,500	ug/l	<4.8	U	<40.0	U
2,4,5-Trichlorophenol	400,000	ug/l	<4.4	U	<40.0	U
2,4,6-Trichlorophenol	2,000	ug/l	<5.6	U	<40.0	U
2,4-Dinitrotoluene	130	ug/l	<9.6	U	<40.0	U
2-Methylphenol (O-Cresol)	200,000	ug/l	<4.0	U	NS	
Cresols, M & P	200,000	ug/l	<4.8	U	NS	
Cresols (as m,p,o-Cresol)	-	ug/l	NS		<80.0	U
Hexachlorobenzene	130	ug/l	<6.4	U	<40.0	U
Hexachlorobutadiene	500	ug/l	<4.0	U	<40.0	U
Hexachloroethane	3,000	ug/l	<4.4	U	<40.0	U
Nitrobenzene	2,000	ug/l	<6.0	U	<40.0	U
Pentachlorophenol	100,000	ug/l	<39	U	<80.0	U
Pyridine	5,000	ug/l	<4.0	U	<40.0	U
TCLP Metals - SW6010						
Arsenic	5,000	ug/l	12.3	J	<500	U
Barium	100,000	ug/l	83.6	J	<500	U
Cadmium	1,000	ug/l	<0.35	U	<25.0	U
Chromium, Total	5,000	ug/l	6.6	J	<500	U
Lead	5,000	ug/l	<2.1	U	<500	U
Selenium	1,000	ug/l	13.6	J	<200	U
Silver	5,000	ug/l	<0.57	U	<500	U
TCLP Mercury- SW7470						
Mercury	200	ug/l	<0.077	U	<2.00	U
TCLP Pesticides - 8081B						
Chlordane	30	ug/l	<0.13	U	<2.00	U
Endrin	20	ug/l	<0.020	U	<1.00	U
Gamma Bhc (Lindane)	400	ug/l	<0.020	U	<1.00	U
Heptachlor	8	ug/l	<0.020	U	<1.00	U
Heptachlor Epoxide	8	ug/l	<0.020	U	<1.00	U
Methoxychlor	10,000	ug/l	<0.020	U	<1.00	U
Toxaphene	500	ug/l	<0.50	U	<20.0	U
TCLP Herbicides- SW8151A						
2,4-D (Dichlorophenoxyacetic Acid)	10,000	ug/l	<0.48	U	<50	U
Silvex (2,4,5-TP)	1,000	ug/l	<0.48	U	<50	U
SW9045D						
pH	<2, >=12.5	ph units	11.26		NS	
Ignitability 1010MOD						
Ignitability		deg f	Not Ignitable	U	NS	
SW1010						
Flash Point	<140	deg f	Did not flash		NS	
Reactive Cyanide SW7.3.3.2						
Reactive Cyanide		mg/kg	<10	U	NS	



Table 1
CBS PBS Tank Closure Construction Completion Report
ST06 Analytical Results
Riverview Innovation & Technology Campus, Inc.
Town of Tonawanda, New York

Analytes	Sample ID:		TK-SD-ST06-02092021		SD-ST06-02102022	
	Sample Date:		2/9/2021		2/10/2022	
	Lab Report Number(s):		R2101264, R2101265		220605	
	Contents:		Brown Viscous Mud		Lid Seal & Coke Breeze Pile	
	Hazardous Waste Code(s):		None			
	TCLP Standards (ug/L)	Units	ST06/B03 - "Lid Seal Tank"			
Reactive Sulfide SW7.3.4.2						
Reactive Sulfide		mg/kg	7.2		NS	
Total Solids A2540G						
Moisture, Percent		%	50.1		NS	
Total Solids		%	49.9		NS	
BTU/Higher Heat Value						
BTU		BTU/lb	NS		1200	
Notes:						
NS: Not Sampled						
NA: Sample collected, but not analyzed due to matrix interference						
"<": Analyzed for but detected at or above the quantitation limit						
J: Analyte detected below quantitation limit						
C: Continuing Calibration Verification (CCV) below acceptable limits						
S: Lab Control Sample (LCS) Spike recovery is below acceptable limits						
P: Concentration >40% difference between the two GC columns.						
L: Laboratory Control Sample recovery outside accepted QC limits.						
D: Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range.						
(RSI)*: Additional metals analytes requested by disposal facility RSI						
Bold: Analyte was detected						
Bold with red highlight: Analyte exceeds TCLP standards or is characteristically hazardous for corrosivity, flammability, or reactivity.						



Table 2
CBS PBS Tank Closure Construction Completion Report
ST06 Analytical Results - Additional Disposal Characterization
Riverview Innovation & Technology Campus, Inc.
Town of Tonawanda, New York

Analytes	Sample ID:		ST06SOIL-03102022		ST06-BOXES-06302022		ST06-LQ-06302022		ST06-AQ-06302022		
	Sample Date:		3/10/2022		6/30/2022		6/30/2022		6/30/2022		
	Lab Report Number(s):		220995		223132		223132		223132		
	Contents:		Lid Seal & Coke Breeze Pile		Secondary Containment Solids (CY Boxes)		Viscous Lid Seal Material		Water Separated (on top) of Lid Seal		
	Hazardous Waste Code(s):		None								
		Units	ST06/B03 - "Lid Seal Tank"								
Paint Filter											
Paint Filter Test		NA	Pass		NS		NS		NS		
Percent Moisture											
Percent Moisture		%	77.1		NS		NS		NS		
Methanol											
Methyl Alcohol		mg/kg	NS		2160		NS		NS		
Methanol											
Methyl Alcohol		mg/L	NS		NS		2910		2420		
Notes:											
NS: Not Sampled											
NA: Sample collected, but not analyzed due to matrix interference											
"<": Analyzed for but detected at or above the quantitation limit											
J: Analyte detected below quantitation limit											
C: Continuing Calibration Verification (CCV) below acceptable limits											
S: Lab Control Sample (LCS) Spike recovery is below acceptable limits											
P: Concentration >40% difference between the two GC columns.											
L: Laboratory Control Sample recovery outside accepted QC limits.											
D: Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range.											
(RSI)*: Additional metals analytes requested by disposal facility RSI											
Bold: Analyte was detected											
Bold with red highlight: Analyte exceeds TCLP standards or is characteristically hazardous for corrosivity, flammability, or reactivity.											



INVENTUM ENGINEERING, PC

Attachment B – Photographic Log

Client Name: RITC	Date Photo was Taken: 1/6/2021	Project: RITC
Photo No. 1		
Direction Photo Taken: View is south.		
Description: The north face ST06/B03. The tank was located north adjacent to the Coal Charging building and was used to store "Lid Seal," a mix of bentonite and anti-freeze.		
Client Name: RITC	Date Photo was Taken: 9/16/2021	Project: RITC
Photo No. 2		
Direction Photo Taken: View is southeast.		
Description: ST06 material is pumped into polyethylene totes.		



Client Name: RITC	Date Photo was Taken: 9/20/2021	Project: RITC
Photo No. 3 Direction Photo Taken: View is south.		
Description: ST06 has been sheared and the remaining residuals are removed.		
Client Name: RITC	Date Photo was Taken: 9/21/2021	Project: RITC
Photo No. 4 Direction Photo Taken: View is east.		
Description: ST06 has been removed from the steel secondary containment and sheared. Residual lid seal and coke breeze are present in the containment.		



Client Name: RITC	Date Photo was Taken: 9/23/2021	Project: RITC
Photo No. 5		
Direction Photo Taken: View is southwest.		
Description: Residual lid seal and coke breeze are scraped from the secondary containment and containerized for disposal.		





INVENTUM ENGINEERING, PC

Attachment C – Spill Report No. 2106302

NYSDEC SPILL REPORT FORM

DEC REGION: 9 SPILL NUMBER: 2106302
 SPILL NAME: RITC DEC LEAD: BJMCPHER

CALLER NAME: _____ NOTIFIER'S NAME: ROXANNE BRIX
 CLR'S AGENCY: _____ NOTIFIER'S AGENCY: INVENTUM ENGINEERING, PC
 CALLER'S PHONE: _____ NOTIFIER'S PHONE: (571) 752-6559

SPILL DATE: 09/27/2021 SPILL TIME: 12:00 am DISPATCHER: _____
 CALL RECEIVED DATE: 10/04/2021 RECEIVED TIME: 12:00 am _____

SPILL LOCATION

PLACE: RITC COUNTY: Erie
 STREET: 3875 RIVER ROAD TOWN/CITY: Tonawanda
 COMMUNITY: TONAWANDA
 CONTACT: JOHN BLACK CONTACT PHONE: (571) 217-6761

CONT. FACTOR: Unknown SPILL REPORTED BY: Other
 FACILITY TYPE: Commercial/Industrial WATERBODY: _____

CALLER REMARKS:

2021-10-04: Part of BCP Site #C915353. Inventum report in weekly tank removal memo that 6-7 cubic yards for lid seal and impacted soil were removed from the ground after the steel secondary containment was removed. Excavated Materials are staged on poly on-site. Samples have been collected pursuant to BCP work plans.

MATERIAL	CLASS	SPILLED	RECOVERED	RESOURCES AFFECTED
methanol	Hazardous Material			Soil,

POTENTIAL SPILLERS

COMPANY	ADDRESS	CONTACT

Tank No.	Tank Size	Material	Cause	Source	Test Method	Leak Rate	Gross Failure
B03	5,000	methanol	Unknown	Unknown			

DEC REMARKS:

Contamination found while removing a CBS tank. Will handle under BCP, #C915353.

PIN

T & A

COST CENTER

CLASS: _____ CLOSE DATE: _____ MEETS STANDARDS: False



INVENTUM ENGINEERING, PC

Attachment D – Additional Lid Seal Memo (Inventum, 2022)



February 9, 2022

To: Ben McPherson

From: Roxanne Birx

Re: Spill No. 2106302
Lid Seal Tank ST06/B03
Riverview Innovation & Technology Campus
3875 River Road, Tonawanda
BCP Site # 915353

On Tuesday, February 8th, 2022 additional lid seal material was observed on the northwest section of the Coal Charging pad during clearing and grading activities at the RITC site. Further exploration revealed an elevator shaft approximately 8 ft by 7 ft by 4 ft filled with lid seal and lid seal impacted material. Figure 1 illustrates the locations of the former lid seal tank and elevator shaft. Figure two provides an additional view of the tank and shaft proximity.



Photograph 1: Aerial view of the former Coal Charging Building.

Notes: The yellow box designates the Lid Seal Tank location.

The blue box is the approximate location of the elevation shaft.



Photograph 2: Former Lid Seal Tank ST06/B03.

Note: The elevator shaft is just to the right of the tank.





Photograph 3: Lid Seal Material Below Secondary Containment of ST06.





Photograph 4 – Lid Seal in Former Elevator Shaft

The material discovered at the base of the elevator shaft (Photograph 4) is visually and textually identical to the materials encountered under the secondary containment for ST06 (Photograph 3). Inventum is proposing to manage this material in accordance with the Spill Number.





INVENTUM ENGINEERING, PC

Attachment E – Waste Manifests

OSC

333 Ganson Street • Buffalo, New York 14203
Phone: (716) 856-3333 • FAX: (716) 842-1630

Job No: 19017

G111902

Location: RITC / TCC

Client/Generator: RITC / OSC

Company/Hauler: Niagara Metals

License/Truck: PA46411 / #22

Scale Ticket/
Manifest No: _____

Truck/Load Type: tractor trailer

Destination: Scrapyard

Materials: Shearing STOW / STOT

No. Of Loads: 1

Issuer: MGR.

Authorized: _____

Date: 10/8/21

Time Out: _____

Comments:



White: Driver

Yellow: Customer

Pink: Office



NON-HAZARDOUS WASTE & ASBESTOS WASTE SHIPMENT RECORDS

If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

0014486

Section I GENERATOR (Generator completes Section I, a-q)

a: Generator's US EPA ID Number:			b: Manifest Document Number: 0014486			
c: Generator's Name and Location: Riverview Innovation Technology Campus 3875 River Road Tonawanda, New York 14150 d: Generators Phone: 716-818-3390			e: Generator's Mailing Address: Riverview Innovation Technology Campus 140 Lee Street, Suite 200 Buffalo, New York 14210 f: Phone: 716-856-3333			
If owner of the generating facility differs from the generator, provide: g. Owner's Name:			h. Owner's Phone:			
i. Waste Profile #:	j. Exp. Date	k. Waste Shipping Name and Description	l. Containers No. Type		m. Total Quantity	n. Unit Wt/Vol
M22-3405	4/21/23	Lid seal / Coal / Soil	1	cm	20	Tons
GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions. I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.						
Kirsten Colligan on behalf of RITE		K. S. on behalf of RITE		05/19/22		
o. Generator Authorized Agent Name (Print)		p. Signature		q. Date		

Section II TRANSPORTER (Generator completes Sec. II, a-b; Transporter completes Sec. II, c-e)

a: Transporter's Name and Address: Pariso Logistics 3049 River Road Tonawanda NY 14150 b: Phone:					
JACQUAN BROWN		JACQUAN B		5-19-22	
c. Transporter Authorized Agent Name (Print)		d. Signature		e. Date	

Section III DESTINATION (Generator completes Sec. III, a-c; Destination Site completes Sec. III, d-g)

a: Disposal Facility and Site Address: Modern Landfill, Inc. 1445 Pletcher Rd. Model City, NY 14107 b: Phone: 716-754-8226		c: US EPA Number	d: Discrepancy Indication Space:
I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.			
Michelle Petrea		Michelle Petrea	
e: Authorized Agent Name (Print)		f. Signature	
		g. Date	

Section IV ASBESTOS (Generator completes Sec. IV, a-d; Operator completes Sec. IV, e-g)

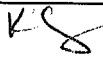
a: Operator's Name and Address:		c: Special Handling Instructions and Additional Information:	
b: Phone:			
d: Friable, Non-Friable or Both:		e: Percentage Friable/NonFriable: 0% Friable and 0% Non-Friable	
OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked, and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.			
e. Operator's Name and Title (Print)		f. Signature	
		g. Date	
*Operator refers to the company which owns, leases, operates, controls or supervises the facility being demolished or renovated, or the demolition or renovation operation or both.			

RETURN TO GENERATOR

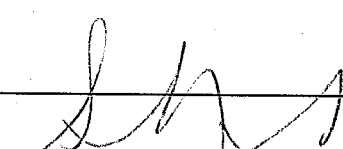
If waste is asbestos waste, complete Sections I, II, III and IV
If waste is **NOT** asbestos waste, complete Sections I, II and III

0014487

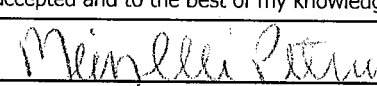
Section I GENERATOR (Generator completes Section I, a-q)

a: Generator's US EPA ID Number:		b: Manifest Document Number: 0014487			
c: Generator's Name and Location: Riverview Innovation Technology Campus 3875 River Road Tonawanda, New York 14150		e: Generator's Mailing Address: Riverview Innovation Technology Campus 140 Lee Street, Suite 200 Buffalo, New York 14210			
d: Generators Phone: 716-818-3390		f: Phone: 716-856-3333			
g: Owner's Name:		h: Owner's Phone:			
i. Waste Profile #:		j. Exp. Date	k. Waste Shipping Name and Description	l. Containers	m. Total Quantity
				No.	Type
M22-3405		4/21/23	Lid seal / Coal / Soil	1	CM
					n. Unit Wt/Vol Tons
GENERATOR'S CERTIFICATION: I hereby certify that the above named material is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations; AND, if this waste is a treatment residue of a previously restricted hazardous waste subject to the Land Disposal Restrictions. I certify and warrant that the waste has been treated in accordance with the requirements of 40 CFR 268 and is no longer a hazardous waste as defined by 40 CFR 261.					
o. Generator Authorized Agent Name (Print) Kirsten Colligan on behalf of RITC		p. Signature 		q. Date 05/19/22	

Section II TRANSPORTER (Generator completes Sec. II, a-b; Transporter completes Sec. II, c-e)

a: Transporter's Name and Address: Pariso Logistics 3649 River Rd Tonawanda NY 14150		
b: Phone:		
c. Transporter Authorized Agent Name (Print) Sherman M Abdel/p	d. Signature 	e. Date 5-19-22

Section III DESTINATION (Generator completes Sec. III, a-c; Destination Site completes Sec. III, d-g)

a: Disposal Facility and Site Address: Modern Landfill, Inc. 1445 Pletcher Rd. Model City, NY 14107	c: US EPA Number	d: Discrepancy Indication Space:
b: Phone: 716-754-8226		
I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.		
e: Authorized Agent Name (Print) Michelle Petrea	f. Signature 	g. Date 5/19/22

Section IV ASBESTOS (Generator completes Sec. IV, a-d; Operator completes Sec. IV, e-g)

a: Operator's Name and Address:	c: Special Handling Instructions and Additional Information:	
b: Phone:		
d: Friable, Non-Friable or Both:		e: Percentage Friable/NonFriable: 0% Friable and 0% Non-Friable
OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked, and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.		
e. Operator's Name and Title (Print)		g. Date
f. Signature		

*Operator refers to the company which owns, leases, operates, controls or supervises the facility being demolished or renovated, or the demolition or renovation operation or both.

RETURN TO GENERATOR



SHIPPING DOCUMENT		1. Generator ID Number NYD088413877	2. Page 1 of 1	3. Emergency Response Phone (877) 818-0087	4. Shipping Document Tracking Number ZZ 01029425		
5. Generator's Name and Mailing Address INTERVIEW INNOVATION & TECH 40 LEE STREET SUITE 200 BUFFALO, NY 14210				Generator's Site Address (if different than mailing address) 3875 RIVER ROAD TONAWANDA, NY 14150			
Generator's Phone: 716 574-6936							
6. Transporter 1 Company Name VEOLIA ES TECHNICAL SOLUTIONS				U.S. EPA ID Number NYD080631369			
7. Transporter 2 Company Name FREEHOLD CARTAGE INC				U.S. EPA ID Number NYD054225164			
8. Designated Facility Name and Site Address VEOLIA ES TECHNICAL SOLUTIONS, LLC 4301 INFIRMARY ROAD WEST CARROLLTON, OH 45449				U.S. EPA ID Number ORD093945293			
Facility's Phone: 937 859-6101							
GENERATOR	9a. FM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Container		11. Total Quantity	12. Unit Wt./Vol.	13. Codes
		1. NON RCRA AND DOT NON REGULATED SOLID, (SOIL) <i>omit 1/6/22</i>	No.	Type			
			5	CF	10,000	P	L
14. Special Handling Instructions and Additional Information: ER Service Contracted by VESTS + Contract retained by generator confers agency authority on initial transporter to add or substitute additional transporters on generator's behalf.							
15. GENERATOR OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governments' regulations.							
INTL	Generator/offeror's Printed/Typed Name Kirsten Colligan on behalf of GUST				Signature <i>[Signature]</i>		Month Day Year 12 16 22
	16. International Shipments ☐ Import to U.S. ☐ Export from U.S.				Port of entry/exit: Date leaving U.S.:		
	Transporter signature (for exports only):						
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Shipment						
	Transporter 1 Printed/Typed Name Chen MOSS				Signature <i>[Signature]</i>		Month Day Year 12 16 22
	Transporter 2 Printed/Typed Name Roger Wakefield				Signature <i>[Signature]</i>		Month Day Year 12 27 22
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection						
	Shipping Document Tracking Number:						
	18b. Alternate Facility (or Generator) U.S. EPA ID Number						
	Facility's Phone:						
18c. Signature of Alternate Facility (or Generator) Month Day Year							
19. Report Management Method Codes (i.e., codes for treatment, disposal, and recycling systems)							
1. H141 2. 3. 4.							
20. Designated Facility Owner or Operator: Certification of receipt of shipment except as noted in Item 18a							
Printed/Typed Name Brittany Blankenship				Signature <i>[Signature]</i>		Month Day Year 12 29 22	

DESIGNATED FACILITY TO GENERATOR

SHIPPING DOCUMENT	1. Generator ID Number NYD088413877	2. Page 1 of 1	3. Emergency Response Phone (877) 818-0087	4. Shipping Document Tracking Number ZZ 00453793		
5. Generator's Name and Mailing Address RIVERVIEW INNOVATION & TECH 140 LEE STREET SUITE 200 BUFFALO, NY 14210		Generator's Site Address (if different than mailing address) 3875 RIVER ROAD TONAWANDA, NY 14150				
Generator's Phone: 716 574-6856						
6. Transporter 1 Company Name VEOLIA ES TECHNICAL SOLUTIONS		U.S. EPA ID Number NI D080631369				
7. Transporter 2 Company Name FIREHOLD CARTAGE INC		U.S. EPA ID Number NI D054126164				
8. Designated Facility Name and Site Address VEOLIA ES TECHNICAL SOLUTIONS, L.L.C. 4301 INFIRMARY ROAD WEST CARROLLTON, OH 45449		U.S. EPA ID Number OH D093945293				
Facility's Phone: 937 839-6101						
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type	11. Total Quantity	12. Unit wt./vol.	13. Codes
		1. NON HCLA AND DOT NON REGULATED LIQUID, (QUANTITY, SOIL, TANK BOTTOM)	6 TR	18,000	P	NEHB L
		2.				
		3.				
		4.				
14. Special Handling Instructions and Additional Information For Service Connected by Veolia + HESD C.O.D.s + Contact resources by generator contact agency authority on initial transporter to add or subtract additional transporters on generator's behalf. + 1) W:1131400 A:REMIPLA-108						
15. GENERATOR S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled, packaged, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. Watt Reardon on behalf of Ritec Watt Reardon on behalf of Ritec 2/23/23						
Generator's Officer's Printed/Typed Name X Tracy Harris Mer		Signature X Tracy Harris Mer		Month Day Year 02 23 23		
TRANSPORTER	16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____		Transporter signature (for exports only): _____			
	17. Transporter Acknowledgment of Receipt of Shipment Transporter 1 Printed/Typed Name OWEN MOORE		Signature [Signature]		Month Day Year 02 23 23	
	Transporter 2 Printed/Typed Name Rockwell High		Signature [Signature]		Month Day Year 02 28 23	
DESIGNATED FACILITY	18. Discrepancy					
	18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection					
	Shipping Document Tracking Number: _____					
	18b. Alternate Facility (or Generator) U.S. EPA ID Number _____					
	Facility's Phone: _____					
18c. Signature of Alternate Facility (or Generator) _____ Month Day Year _____						
19. Report Management Method Codes (i.e., codes for treatment, disposal, and recycling systems)						
1. 4141		2.		3.		4.
20. Designated Facility Owner or Operator: Certification of receipt of shipment except as noted in item 18a Printed/Typed Name Anthony Blankenship Signature [Signature] Month Day Year 03 02 23						

Certificate of Disposition

Veolia ES Technical Solutions, L.L.C., West Carrollton Facility has a RCRA Part B Permit that allows the facility to commingle wastes, recycle, store and transfer waste for distillation, supplemental fuels for energy recovery, thermal treatment, and stabilization

Veolia ES Technical Solutions, L.L.C. certifies the waste which was received on Manifest Number ZZ00453793 Date Received: 03/02/2023 will be/was managed in accordance with all applicable federal state and local laws and regulations.

Generator: Riverview Innovation Tech
Generator EPA ID: NYD088413877

DATE CERTIFICATE ISSUED: 03/02/2023

SIGNATURE: Brittany Blankenship

TITLE: Receiving Coordinator

Veolia ES Technical Solutions, L.L.C., 4301 INFIRMARY ROAD, WEST CARROLLTON, OH 45449; EPA ID# OHD083945293





INVENTUM ENGINEERING, PC

Attachment F – Laboratory Reports



March 25, 2021

Service Request No:R2101264

Mr. John Black
Inventum Engineering
481 Carlisle Drive
Herndon, VA 20170

Laboratory Results for: RTTC Tanks

Dear Mr.Black,

Enclosed are the results of the sample(s) submitted to our laboratory February 11, 2021
For your reference, these analyses have been assigned our service request number **R2101264**.

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7475. You may also contact me via email at Meghan.Pedro@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro
Project Manager

ADDRESS

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

PHONE +1 585 288 5380 | **FAX** +1 585 288 8475

ALS Group USA, Corp.
dba ALS Environmental



Narrative Documents

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com



Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Received: 02/11/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Two soil samples were received for analysis at ALS Environmental on 02/11/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

Method 8270D, 02/18/2021: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Semivolatile GC:

Method 8081B, 02/24/2021: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since the samples have run twice with similar results, matrix is likely to blame for QC failure and no further action is appropriate.

Method 8081B, 02/19/2021: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8081B, R2101264-001: The upper control limit was exceeded for one or more surrogates in one or more samples in this report. The elevated recovery equates to a high bias. Since no target analytes were detected in the sample(s), the quality of the sample data is not significantly affected. No further corrective action was appropriate.

Method 8082A, 02/17/2021: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8082A, 02/17/2021: The control limits were exceeded for one or more surrogates in one or more QC samples associated with samples in this report. The associated recoveries of target compounds were in control, indicating the analysis was in control. The surrogate outlier is flagged accordingly. No further corrective action was appropriate.

Method 8082A, 02/26/2021: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8082A, 02/26/2021: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Method 8082A, 714398: The control limits were exceeded for one or more surrogates in the sample(s). Since the exceedance may indicate a potential bias in the analytical batch, all associated field samples were re-extracted and reanalyzed. The surrogates met control limits for the reanalysis. Since the results for the field samples were comparable for both determinations,

Approved by _____

Date 03/25/2021



the exceedance in the initial analysis was likely restricted to the surrogate recovery. Therefore, the results from the original analysis are reported and flagged.

Method 8151A, 02/23/2021: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8151A, 02/23/2021: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Method 8151A, 02/26/2021: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8151A, 714412: The control limits were exceeded for one or more surrogates in the sample(s). Since the exceedance may indicate a potential bias in the analytical batch, all associated field samples were re-extracted and reanalyzed. The surrogates met control limits for the reanalysis. Since the results for the field samples were comparable for both determinations, the exceedance in the initial analysis was likely restricted to the surrogate recovery. Therefore, the results from the original analysis are reported and flagged.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

Method 8260C, 02/18/2021: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8260C, 02/18/2021: The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) above the MRL in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

Report Revised 3/25/21 as sample 002 had the wrong report list for 8270.

A handwritten signature in black ink, appearing to read "Meghan Pedicini".

Approved by _____

Date 03/25/2021



Sample Receipt Information

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

Client: Inventum Engineering
Project: RTTC Tanks

Service Request:R2101264

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R2101264-001	TK-SD-ST06-02092021	2/9/2021	1100
R2101264-002	TS-SD-RC02-0210	2/10/2021	1030

[illegible]



Cooler Receipt and Preservation Check Form

R2101264

5

Inventum Engineering
RTTC Tanks



Project/Client Inventum Folder Number _____

Cooler received on 2/11/21 by: SW COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y ☒ N ☐	5a	Perchlorate samples have required headspace?	Y ☐ N ☒ NA ☐
2	Custody papers properly completed (ink, signed)?	☒ Y ☐ N	5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y ☐ N ☐ NA ☐
3	Did all bottles arrive in good condition (unbroken)?	☒ Y ☐ N	6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
4	Circle: Wet Ice Dry Ice Gel packs present?	☒ Y ☐ N	7	Soil VOA received as:	<u>BULK</u> Encore 5035set <u>NA</u>

3. Temperature Readings Date: 2/11/21 Time: 1612 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>113</u>	<u>0.7°</u>					
Within 0-6°C?	☒ Y ☐ N	☒ Y ☐ N	Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐
If <0°C, were samples frozen?	Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐	Y ☐ N ☐

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule
& Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by SW on 2/11/21 at 1612
5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y ☐ N ☐

Cooler Breakdown/Preservation Check**: Date: 2/12/21 Time: 1311 by: @

9. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
10. Did all bottle labels and tags agree with custody papers? YES NO
11. Were correct containers used for the tests indicated? YES NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO
13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated N/A

pH	Lot of test paper	Reagent	Preserved?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
≤2		HNO ₃								
≤2		H ₂ SO ₄								
<4		NaHSO ₄								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add Na ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O ₃								
		ZnAcetate	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 081720-1TW, 081020-15R

Explain all Discrepancies/ Other Comments:

HPROD	<u>BULK</u>
HTR	FLDT
SUB	HGFB
ALS	LL3541

Labels secondary reviewed by: @
PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



Miscellaneous Forms

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.	+	Correlation coefficient for MSA is <0.995.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Aroclors).	N	Inorganics- Matrix spike recovery was outside laboratory limits.
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.	N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.	S	Concentration has been determined using Method of Standard Additions (MSA).
E	Organics- Concentration has exceeded the calibration range for that specific analysis.	W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.	P	Concentration >40% difference between the two GC columns.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.	C	Confirmed by GC/MS
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.	Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (100% Difference between two GC columns).
#	Spike was diluted out.	X	See Case Narrative for discussion.
		MRL	Method Reporting Limit. Also known as:
		LOQ	Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
		MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
		LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
		ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.



Rochester Lab ID # for State Certifications¹

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

¹ Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to <https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental>

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
dba ALS Environmental

Client: Inventum Engineering
Project: RTTC Tanks

Service Request: R2101264

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
350.1M	Soil	Ammonia as Nitrogen, undistilled
ALS SOP	Soil	Total Solids

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Inventum Engineering
Project: RTTC Tanks/

Service Request: R2101264

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101264-001
Sample Matrix: Soil

Date Collected: 02/9/21
Date Received: 02/11/21

Analysis Method	Extracted/Digested By	Analyzed By
350.1M	CWOODS	SMEDBURY
6010C	AKONZEL	KMCLAEN
7471B	AKONZEL	AKONZEL
8081B	KSERCU	BALLGEIER
8082A	KSERCU	BALLGEIER
8151A	JMISIUREWICZ	BALLGEIER
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ
9012B	MROGERSON	GNITAJOUPPI
9045D		KWONG
ALS SOP		KAWONG

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101264-001.R01
Sample Matrix: Soil

Date Collected: 02/9/21
Date Received: 02/11/21

Analysis Method	Extracted/Digested By	Analyzed By
8082A	KSERCU	BALLGEIER

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002
Sample Matrix: Soil

Date Collected: 02/10/21
Date Received: 02/11/21

Analysis Method	Extracted/Digested By	Analyzed By
350.1M	CWOODS	SMEDBURY
6010C	AKONZEL	KMCLAEN
7471B	AKONZEL	AKONZEL
8081B	KSERCU	AFELSER
8082A	KSERCU	BALLGEIER
8151A	KSERCU	BALLGEIER
8260C		FNAEGLER
8270D	KSERCU	JMISIUREWICZ

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Inventum Engineering
Project: RTTC Tanks/

Service Request: R2101264

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002
Sample Matrix: Soil

Date Collected: 02/10/21
Date Received: 02/11/21

Analysis Method

9012B

9045D

ALS SOP

Extracted/Digested By

MROGERSON

Analyzed By

GNITAJOUPPI

KWONG

KAWONG

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002.R01
Sample Matrix: Soil

Date Collected: 02/10/21
Date Received: 02/11/21

Analysis Method

8151A

8270D

Extracted/Digested By

JMISIUREWICZ

KSERCU

Analyzed By

BALLGEIER

JMISIUREWICZ

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002.R02
Sample Matrix: Soil

Date Collected: 02/10/21
Date Received: 02/11/21

Analysis Method

8270D

Extracted/Digested By

KSERCU

Analyzed By

JMISIUREWICZ



INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	



Sample Results

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com



Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/09/21 11:00
Date Received: 02/11/21 14:00

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101264-001

Units: ug/Kg
Basis: Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	0.47 U	12	0.47	1	02/18/21 13:40	
1,1,2,2-Tetrachloroethane	1.1 U	12	1.1	1	02/18/21 13:40	
1,1,2-Trichloroethane	0.47 U	12	0.47	1	02/18/21 13:40	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.47 U	12	0.47	1	02/18/21 13:40	
1,1-Dichloroethane (1,1-DCA)	0.47 U	12	0.47	1	02/18/21 13:40	
1,1-Dichloroethene (1,1-DCE)	0.67 U	12	0.67	1	02/18/21 13:40	
1,2,3-Trichlorobenzene	1.2 U	12	1.2	1	02/18/21 13:40	
1,2,4-Trichlorobenzene	0.97 U	12	0.97	1	02/18/21 13:40	
1,2-Dibromo-3-chloropropane (DBCP)	1.8 U	12	1.8	1	02/18/21 13:40	
1,2-Dibromoethane	0.47 U	12	0.47	1	02/18/21 13:40	
1,2-Dichlorobenzene	0.47 U	12	0.47	1	02/18/21 13:40	
1,2-Dichloroethane	0.47 U	12	0.47	1	02/18/21 13:40	
1,2-Dichloropropane	0.47 U	12	0.47	1	02/18/21 13:40	
1,3-Dichlorobenzene	0.47 U	12	0.47	1	02/18/21 13:40	
1,4-Dichlorobenzene	0.51 U	12	0.51	1	02/18/21 13:40	
1,4-Dioxane	47 U	230	47	1	02/18/21 13:40	
2-Butanone (MEK)	11 J	12	4.7	1	02/18/21 13:40	
2-Hexanone	0.83 U	12	0.83	1	02/18/21 13:40	
4-Methyl-2-pentanone	0.60 J	12	0.53	1	02/18/21 13:40	
Acetone	79	12	11	1	02/18/21 13:40	
Benzene	0.47 U	12	0.47	1	02/18/21 13:40	
Bromochloromethane	0.47 U	12	0.47	1	02/18/21 13:40	
Bromodichloromethane	0.47 U	12	0.47	1	02/18/21 13:40	
Bromoform	1.2 U	12	1.2	1	02/18/21 13:40	
Bromomethane	4.9 U	12	4.9	1	02/18/21 13:40	
Carbon Disulfide	0.67 U	12	0.67	1	02/18/21 13:40	
Carbon Tetrachloride	0.60 U	12	0.60	1	02/18/21 13:40	
Chlorobenzene	0.47 U	12	0.47	1	02/18/21 13:40	
Chloroethane	0.95 U	12	0.95	1	02/18/21 13:40	
Chloroform	0.47 U	12	0.47	1	02/18/21 13:40	
Chloromethane	3.3 U	12	3.3	1	02/18/21 13:40	
Cyclohexane	0.60 U	12	0.60	1	02/18/21 13:40	
Dibromochloromethane	0.47 U	12	0.47	1	02/18/21 13:40	
Dichlorodifluoromethane (CFC 12)	0.77 U	12	0.77	1	02/18/21 13:40	
Dichloromethane	6.5 U	12	6.5	1	02/18/21 13:40	
Ethylbenzene	0.47 U	12	0.47	1	02/18/21 13:40	
Isopropylbenzene (Cumene)	0.47 U	12	0.47	1	02/18/21 13:40	
Methyl Acetate	2.0 U	12	2.0	1	02/18/21 13:40	
Methyl tert-Butyl Ether	0.47 U	12	0.47	1	02/18/21 13:40	
Methylcyclohexane	0.72 U	12	0.72	1	02/18/21 13:40	
Styrene	0.47 U	12	0.47	1	02/18/21 13:40	
Tetrachloroethene (PCE)	0.53 U	12	0.53	1	02/18/21 13:40	
Toluene	0.47 U	12	0.47	1	02/18/21 13:40	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/09/21 11:00
Date Received: 02/11/21 14:00

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101264-001

Units: ug/Kg
Basis: Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	0.51 U	12	0.51	1	02/18/21 13:40	
Trichlorofluoromethane (CFC 11)	0.60 U	12	0.60	1	02/18/21 13:40	
Vinyl Chloride	1.1 U	12	1.1	1	02/18/21 13:40	
cis-1,2-Dichloroethene	0.47 U	12	0.47	1	02/18/21 13:40	
cis-1,3-Dichloropropene	0.47 U	12	0.47	1	02/18/21 13:40	
m,p-Xylenes	0.86 U	23	0.86	1	02/18/21 13:40	
o-Xylene	0.47 U	12	0.47	1	02/18/21 13:40	
trans-1,2-Dichloroethene	0.47 U	12	0.47	1	02/18/21 13:40	
trans-1,3-Dichloropropene	0.47 U	12	0.47	1	02/18/21 13:40	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	31 - 154	02/18/21 13:40	
Dibromofluoromethane	84	63 - 138	02/18/21 13:40	
Toluene-d8	101	66 - 138	02/18/21 13:40	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/10/21 10:30
Date Received: 02/11/21 14:00

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002

Units: ug/Kg
Basis: Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.5 U	35	1.5	5	02/15/21 21:56	
1,1,2,2-Tetrachloroethane	3.1 U	35	3.1	5	02/15/21 21:56	
1,1,2-Trichloroethane	1.5 U	35	1.5	5	02/15/21 21:56	
1,1,2-Trichloro-1,2,2-trifluoroethane	1.5 U	35	1.5	5	02/15/21 21:56	
1,1-Dichloroethane (1,1-DCA)	1.5 U	35	1.5	5	02/15/21 21:56	
1,1-Dichloroethene (1,1-DCE)	2.1 U	35	2.1	5	02/15/21 21:56	
1,2,3-Trichlorobenzene	3.7 U	35	3.7	5	02/15/21 21:56	
1,2,4-Trichlorobenzene	3.0 U	35	3.0	5	02/15/21 21:56	
1,2-Dibromo-3-chloropropane (DBCP)	5.3 U	35	5.3	5	02/15/21 21:56	
1,2-Dibromoethane	1.5 U	35	1.5	5	02/15/21 21:56	
1,2-Dichlorobenzene	1.5 U	35	1.5	5	02/15/21 21:56	
1,2-Dichloroethane	1.5 U	35	1.5	5	02/15/21 21:56	
1,2-Dichloropropane	1.5 U	35	1.5	5	02/15/21 21:56	
1,3-Dichlorobenzene	1.5 U	35	1.5	5	02/15/21 21:56	
1,4-Dichlorobenzene	1.6 U	35	1.6	5	02/15/21 21:56	
1,4-Dioxane	150 U	700	150	5	02/15/21 21:56	
2-Butanone (MEK)	15 U	35	15	5	02/15/21 21:56	
2-Hexanone	2.6 U	35	2.6	5	02/15/21 21:56	
4-Methyl-2-pentanone	1.7 U	35	1.7	5	02/15/21 21:56	
Acetone	37	35	33	5	02/15/21 21:56	
Benzene	21 J	35	1.5	5	02/15/21 21:56	
Bromochloromethane	1.5 U	35	1.5	5	02/15/21 21:56	
Bromodichloromethane	1.5 U	35	1.5	5	02/15/21 21:56	
Bromoform	3.6 U	35	3.6	5	02/15/21 21:56	
Bromomethane	15 U	35	15	5	02/15/21 21:56	
Carbon Disulfide	2.1 U	35	2.1	5	02/15/21 21:56	
Carbon Tetrachloride	1.9 U	35	1.9	5	02/15/21 21:56	
Chlorobenzene	1.5 U	35	1.5	5	02/15/21 21:56	
Chloroethane	2.9 U	35	2.9	5	02/15/21 21:56	
Chloroform	1.5 U	35	1.5	5	02/15/21 21:56	
Chloromethane	9.9 U	35	9.9	5	02/15/21 21:56	
Cyclohexane	1.9 U	35	1.9	5	02/15/21 21:56	
Dibromochloromethane	1.5 U	35	1.5	5	02/15/21 21:56	
Dichlorodifluoromethane (CFC 12)	2.4 U	35	2.4	5	02/15/21 21:56	
Dichloromethane	20 U	35	20	5	02/15/21 21:56	
Ethylbenzene	1.5 U	35	1.5	5	02/15/21 21:56	
Isopropylbenzene (Cumene)	1.5 U	35	1.5	5	02/15/21 21:56	
Methyl Acetate	5.9 U	35	5.9	5	02/15/21 21:56	
Methyl tert-Butyl Ether	1.5 U	35	1.5	5	02/15/21 21:56	
Methylcyclohexane	2.2 U	35	2.2	5	02/15/21 21:56	
Styrene	7.0 J	35	1.5	5	02/15/21 21:56	
Tetrachloroethene (PCE)	1.7 U	35	1.7	5	02/15/21 21:56	
Toluene	9.7 J	35	1.5	5	02/15/21 21:56	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/10/21 10:30
Date Received: 02/11/21 14:00

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002

Units: ug/Kg
Basis: Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	1.6 U	35	1.6	5	02/15/21 21:56	
Trichlorofluoromethane (CFC 11)	1.9 U	35	1.9	5	02/15/21 21:56	
Vinyl Chloride	3.3 U	35	3.3	5	02/15/21 21:56	
cis-1,2-Dichloroethene	1.5 U	35	1.5	5	02/15/21 21:56	
cis-1,3-Dichloropropene	1.5 U	35	1.5	5	02/15/21 21:56	
m,p-Xylenes	5.5 J	70	2.6	5	02/15/21 21:56	
o-Xylene	1.9 J	35	1.5	5	02/15/21 21:56	
trans-1,2-Dichloroethene	1.5 U	35	1.5	5	02/15/21 21:56	
trans-1,3-Dichloropropene	1.5 U	35	1.5	5	02/15/21 21:56	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	82	31 - 154	02/15/21 21:56	
Dibromofluoromethane	92	63 - 138	02/15/21 21:56	
Toluene-d8	99	66 - 138	02/15/21 21:56	



Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/09/21 11:00
Date Received: 02/11/21 14:00

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101264-001

Units: ug/Kg
Basis: Dry

Semivolatile Organic Compounds by GC/MS using Microwave Digestion

Analysis Method: 8270D
Prep Method: EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	1000 U	4500	1000	1	02/18/21 14:07	2/17/21	
2,3,4,6-Tetrachlorophenol	1600 U	4500	1600	1	02/18/21 14:07	2/17/21	
2,4,5-Trichlorophenol	1200 U	4500	1200	1	02/18/21 14:07	2/17/21	
2,4,6-Trichlorophenol	1000 U	4500	1000	1	02/18/21 14:07	2/17/21	
2,4-Dichlorophenol	870 U	4500	870	1	02/18/21 14:07	2/17/21	
2,4-Dimethylphenol	810 U	4500	810	1	02/18/21 14:07	2/17/21	
2,4-Dinitrophenol	7700 U	23000	7700	1	02/18/21 14:07	2/17/21	
2,4-Dinitrotoluene	1800 U	4500	1800	1	02/18/21 14:07	2/17/21	
2,6-Dinitrotoluene	980 U	4500	980	1	02/18/21 14:07	2/17/21	
2-Chloronaphthalene	900 U	4500	900	1	02/18/21 14:07	2/17/21	
2-Chlorophenol	750 U	4500	750	1	02/18/21 14:07	2/17/21	
2-Methylnaphthalene	750 U	4500	750	1	02/18/21 14:07	2/17/21	
2-Methylphenol	930 U	4500	930	1	02/18/21 14:07	2/17/21	
2-Nitroaniline	1100 U	23000	1100	1	02/18/21 14:07	2/17/21	
2-Nitrophenol	1100 U	4500	1100	1	02/18/21 14:07	2/17/21	
3,3'-Dichlorobenzidine	510 U	4500	510	1	02/18/21 14:07	2/17/21	
3- and 4-Methylphenol Coelution	860 U	4500	860	1	02/18/21 14:07	2/17/21	
3-Nitroaniline	900 U	23000	900	1	02/18/21 14:07	2/17/21	
4,6-Dinitro-2-methylphenol	2600 U	23000	2600	1	02/18/21 14:07	2/17/21	
4-Bromophenyl Phenyl Ether	1200 U	4500	1200	1	02/18/21 14:07	2/17/21	
4-Chloro-3-methylphenol	910 U	4500	910	1	02/18/21 14:07	2/17/21	
4-Chloroaniline	760 U	4500	760	1	02/18/21 14:07	2/17/21	
4-Chlorophenyl Phenyl Ether	960 U	4500	960	1	02/18/21 14:07	2/17/21	
4-Nitroaniline	460 U	23000	460	1	02/18/21 14:07	2/17/21	
4-Nitrophenol	900 U	23000	900	1	02/18/21 14:07	2/17/21	
Acenaphthene	850 U	4500	850	1	02/18/21 14:07	2/17/21	
Acenaphthylene	910 U	4500	910	1	02/18/21 14:07	2/17/21	
Acetophenone	1300 U	4500	1300	1	02/18/21 14:07	2/17/21	
Anthracene	750 U	4500	750	1	02/18/21 14:07	2/17/21	
Atrazine	630 U	4500	630	1	02/18/21 14:07	2/17/21	
Benz(a)anthracene	670 U	4500	670	1	02/18/21 14:07	2/17/21	
Benzaldehyde	1100 U	23000	1100	1	02/18/21 14:07	2/17/21	
Benzo(a)pyrene	1200 U	4500	1200	1	02/18/21 14:07	2/17/21	
Benzo(b)fluoranthene	750 U	4500	750	1	02/18/21 14:07	2/17/21	
Benzo(g,h,i)perylene	1100 U	4500	1100	1	02/18/21 14:07	2/17/21	
Benzo(k)fluoranthene	730 U	4500	730	1	02/18/21 14:07	2/17/21	
Biphenyl	1400 U	4500	1400	1	02/18/21 14:07	2/17/21	
2,2'-Oxybis(1-chloropropane)	920 U	4500	920	1	02/18/21 14:07	2/17/21	
Bis(2-chloroethoxy)methane	1100 U	4500	1100	1	02/18/21 14:07	2/17/21	
Bis(2-chloroethyl) Ether	890 U	4500	890	1	02/18/21 14:07	2/17/21	
Bis(2-ethylhexyl) Phthalate	820 U	6800	820	1	02/18/21 14:07	2/17/21	
Butyl Benzyl Phthalate	540 U	4500	540	1	02/18/21 14:07	2/17/21	
Caprolactam	990 U	4500	990	1	02/18/21 14:07	2/17/21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/09/21 11:00
Date Received: 02/11/21 14:00

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101264-001

Units: ug/Kg
Basis: Dry

Semivolatile Organic Compounds by GC/MS using Microwave Digestion

Analysis Method: 8270D
Prep Method: EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Carbazole	730 U	4500	730	1	02/18/21 14:07	2/17/21	
Chrysene	660 U	4500	660	1	02/18/21 14:07	2/17/21	
Di-n-butyl Phthalate	730 U	4500	730	1	02/18/21 14:07	2/17/21	
Di-n-octyl Phthalate	1600 U	4500	1600	1	02/18/21 14:07	2/17/21	
Dibenz(a,h)anthracene	980 U	4500	980	1	02/18/21 14:07	2/17/21	
Dibenzofuran	820 U	4500	820	1	02/18/21 14:07	2/17/21	
Diethyl Phthalate	800 U	4500	800	1	02/18/21 14:07	2/17/21	
Dimethyl Phthalate	860 U	4500	860	1	02/18/21 14:07	2/17/21	
Fluoranthene	1200 U	4500	1200	1	02/18/21 14:07	2/17/21	
Fluorene	840 U	4500	840	1	02/18/21 14:07	2/17/21	
Hexachlorobenzene	1100 U	4500	1100	1	02/18/21 14:07	2/17/21	
Hexachlorobutadiene	770 U	4500	770	1	02/18/21 14:07	2/17/21	
Hexachlorocyclopentadiene	1500 U	4500	1500	1	02/18/21 14:07	2/17/21	
Hexachloroethane	840 U	4500	840	1	02/18/21 14:07	2/17/21	
Indeno(1,2,3-cd)pyrene	1500 U	4500	1500	1	02/18/21 14:07	2/17/21	
Isophorone	940 U	4500	940	1	02/18/21 14:07	2/17/21	
N-Nitrosodi-n-propylamine	1400 U	4500	1400	1	02/18/21 14:07	2/17/21	
N-Nitrosodiphenylamine	2800 U	4500	2800	1	02/18/21 14:07	2/17/21	
Naphthalene	840 U	4500	840	1	02/18/21 14:07	2/17/21	
Nitrobenzene	800 U	4500	800	1	02/18/21 14:07	2/17/21	
Pentachlorophenol (PCP)	4500 U	23000	4500	1	02/18/21 14:07	2/17/21	
Phenanthrene	640 U	4500	640	1	02/18/21 14:07	2/17/21	
Phenol	910 U	4500	910	1	02/18/21 14:07	2/17/21	
Pyrene	750 U	4500	750	1	02/18/21 14:07	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	78	10 - 109	02/18/21 14:07	
2-Fluorobiphenyl	76	10 - 102	02/18/21 14:07	
2-Fluorophenol	75	10 - 88	02/18/21 14:07	
Nitrobenzene-d5	75	10 - 95	02/18/21 14:07	
Phenol-d6	75	10 - 145	02/18/21 14:07	
Terphenyl-d14	81	10 - 106	02/18/21 14:07	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/10/21 10:30
Date Received: 02/11/21 14:00

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002

Units: ug/Kg
Basis: Dry

Semivolatile Organic Compounds by GC/MS using Microwave Digestion

Analysis Method: 8270D
Prep Method: EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	600 U	2700	600	1	02/18/21 19:15	2/17/21	
2,3,4,6-Tetrachlorophenol	940 U	2700	940	1	02/18/21 19:15	2/17/21	
2,4,5-Trichlorophenol	670 U	2700	670	1	02/18/21 19:15	2/17/21	
2,4,6-Trichlorophenol	600 U	2700	600	1	02/18/21 19:15	2/17/21	
2,4-Dichlorophenol	520 U	2700	520	1	02/18/21 19:15	2/17/21	
2,4-Dimethylphenol	490 U	2700	490	1	02/18/21 19:15	2/17/21	
2,4-Dinitrophenol	4600 U	14000	4600	1	02/18/21 19:15	2/17/21	
2,4-Dinitrotoluene	1100 U	2700	1100	1	02/18/21 19:15	2/17/21	
2,6-Dinitrotoluene	590 U	2700	590	1	02/18/21 19:15	2/17/21	
2-Chloronaphthalene	540 U	2700	540	1	02/18/21 19:15	2/17/21	
2-Chlorophenol	450 U	2700	450	1	02/18/21 19:15	2/17/21	
2-Methylnaphthalene	3500	2700	450	1	02/18/21 19:15	2/17/21	
2-Methylphenol	560 U	2700	560	1	02/18/21 19:15	2/17/21	
2-Nitroaniline	640 U	14000	640	1	02/18/21 19:15	2/17/21	
2-Nitrophenol	630 U	2700	630	1	02/18/21 19:15	2/17/21	
3,3'-Dichlorobenzidine	310 U	2700	310	1	02/18/21 19:15	2/17/21	
3- and 4-Methylphenol Coelution	520 U	2700	520	1	02/18/21 19:15	2/17/21	
3-Nitroaniline	540 U	14000	540	1	02/18/21 19:15	2/17/21	
4,6-Dinitro-2-methylphenol	1600 U	14000	1600	1	02/18/21 19:15	2/17/21	
4-Bromophenyl Phenyl Ether	710 U	2700	710	1	02/18/21 19:15	2/17/21	
4-Chloro-3-methylphenol	550 U	2700	550	1	02/18/21 19:15	2/17/21	
4-Chloroaniline	460 U	2700	460	1	02/18/21 19:15	2/17/21	
4-Chlorophenyl Phenyl Ether	580 U	2700	580	1	02/18/21 19:15	2/17/21	
4-Nitroaniline	280 U	14000	280	1	02/18/21 19:15	2/17/21	
4-Nitrophenol	540 U	14000	540	1	02/18/21 19:15	2/17/21	
Acenaphthene	510 U	2700	510	1	02/18/21 19:15	2/17/21	
Acenaphthylene	2000 J	2700	550	1	02/18/21 19:15	2/17/21	
Acetophenone	780 U	2700	780	1	02/18/21 19:15	2/17/21	
Anthracene	510000 D	270000	45000	100	02/19/21 19:18	2/17/21	
Atrazine	380 U	2700	380	1	02/18/21 19:15	2/17/21	
Benz(a)anthracene	160000 D	27000	4000	10	02/19/21 18:51	2/17/21	
Benzaldehyde	650 U	14000	650	1	02/18/21 19:15	2/17/21	
Benzo(a)pyrene	14000	2700	720	1	02/18/21 19:15	2/17/21	
Benzo(b)fluoranthene	65000 D	27000	4500	10	02/19/21 18:51	2/17/21	
Benzo(g,h,i)perylene	13000	2700	620	1	02/18/21 19:15	2/17/21	
Benzo(k)fluoranthene	42000	2700	440	1	02/18/21 19:15	2/17/21	
Biphenyl	800 U	2700	800	1	02/18/21 19:15	2/17/21	
2,2'-Oxybis(1-chloropropane)	550 U	2700	550	1	02/18/21 19:15	2/17/21	
Bis(2-chloroethoxy)methane	660 U	2700	660	1	02/18/21 19:15	2/17/21	
Bis(2-chloroethyl) Ether	530 U	2700	530	1	02/18/21 19:15	2/17/21	
Bis(2-ethylhexyl) Phthalate	490 U	4100	490	1	02/18/21 19:15	2/17/21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/10/21 10:30
Date Received: 02/11/21 14:00

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002

Units: ug/Kg
Basis: Dry

Semivolatile Organic Compounds by GC/MS using Microwave Digestion

Analysis Method: 8270D
Prep Method: EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Butyl Benzyl Phthalate	330 U	2700	330	1	02/18/21 19:15	2/17/21	
Caprolactam	600 U	2700	600	1	02/18/21 19:15	2/17/21	
Carbazole	1200000 D	270000	44000	100	02/19/21 19:18	2/17/21	
Chrysene	3200000 D	270000	40000	100	02/19/21 19:18	2/17/21	
Di-n-butyl Phthalate	440 U	2700	440	1	02/18/21 19:15	2/17/21	
Di-n-octyl Phthalate	940 U	2700	940	1	02/18/21 19:15	2/17/21	
Dibenz(a,h)anthracene	5100	2700	590	1	02/18/21 19:15	2/17/21	
Dibenzofuran	8900	2700	490	1	02/18/21 19:15	2/17/21	
Diethyl Phthalate	480 U	2700	480	1	02/18/21 19:15	2/17/21	
Dimethyl Phthalate	520 U	2700	520	1	02/18/21 19:15	2/17/21	
Fluoranthene	340000 D	27000	6800	10	02/19/21 18:51	2/17/21	
Fluorene	33000	2700	510	1	02/18/21 19:15	2/17/21	
Hexachlorobenzene	650 U	2700	650	1	02/18/21 19:15	2/17/21	
Hexachlorobutadiene	460 U	2700	460	1	02/18/21 19:15	2/17/21	
Hexachlorocyclopentadiene	860 U	2700	860	1	02/18/21 19:15	2/17/21	
Hexachloroethane	510 U	2700	510	1	02/18/21 19:15	2/17/21	
Indeno(1,2,3-cd)pyrene	19000	2700	870	1	02/18/21 19:15	2/17/21	
Isophorone	560 U	2700	560	1	02/18/21 19:15	2/17/21	
N-Nitrosodi-n-propylamine	830 U	2700	830	1	02/18/21 19:15	2/17/21	
N-Nitrosodiphenylamine	1700 U	2700	1700	1	02/18/21 19:15	2/17/21	
Naphthalene	8000	2700	510	1	02/18/21 19:15	2/17/21	
Nitrobenzene	480 U	2700	480	1	02/18/21 19:15	2/17/21	
Pentachlorophenol (PCP)	2700 U	14000	2700	1	02/18/21 19:15	2/17/21	
Phenanthrene	280000 D	27000	3800	10	02/19/21 18:51	2/17/21	
Phenol	540 U	2700	540	1	02/18/21 19:15	2/17/21	
Pyrene	210000 D	27000	4500	10	02/19/21 18:51	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	32	10 - 109	02/18/21 19:15	
2-Fluorobiphenyl	28	10 - 102	02/18/21 19:15	
2-Fluorophenol	21	10 - 88	02/18/21 19:15	
Nitrobenzene-d5	25	10 - 95	02/18/21 19:15	
Phenol-d6	19	10 - 145	02/18/21 19:15	
Terphenyl-d14	46	10 - 106	02/18/21 19:15	



Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/09/21 11:00
Date Received: 02/11/21 14:00

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101264-001

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
4,4'-DDE	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
4,4'-DDT	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
Aldrin	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
Dieldrin	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
Endosulfan I	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
Endosulfan II	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
Endosulfan Sulfate	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
Endrin	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
Endrin Aldehyde	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
Endrin Ketone	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
Heptachlor	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
Heptachlor Epoxide	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
Methoxychlor	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
Toxaphene	150 U	250	150	1	02/19/21 06:36	2/16/21	
alpha-BHC	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
alpha-Chlordane	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
beta-BHC	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
delta-BHC	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
gamma-BHC (Lindane)	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	
gamma-Chlordane	6.5 U	13	6.5	1	02/19/21 06:36	2/16/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	154 *	10 - 145	02/19/21 06:36	*
Tetrachloro-m-xylene	100	10 - 123	02/19/21 06:36	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/10/21 10:30
Date Received: 02/11/21 14:00

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	21 U	42	21	10	02/24/21 06:56	2/16/21	
4,4'-DDE	21 U	42	21	10	02/24/21 06:56	2/16/21	
4,4'-DDT	200 P	42	21	10	02/24/21 06:56	2/16/21	
Aldrin	220	42	21	10	02/24/21 06:56	2/16/21	
Dieldrin	21 U	42	21	10	02/24/21 06:56	2/16/21	
Endosulfan I	84	42	21	10	02/24/21 06:56	2/16/21	
Endosulfan II	21 U	42	21	10	02/24/21 06:56	2/16/21	
Endosulfan Sulfate	21 U	42	21	10	02/24/21 06:56	2/16/21	
Endrin	180	42	21	10	02/24/21 06:56	2/16/21	
Endrin Aldehyde	21 U	42	21	10	02/24/21 06:56	2/16/21	
Endrin Ketone	250	42	21	10	02/24/21 06:56	2/16/21	
Heptachlor	21 U	42	21	10	02/24/21 06:56	2/16/21	
Heptachlor Epoxide	21 U	42	21	10	02/24/21 06:56	2/16/21	
Methoxychlor	21 U	42	21	10	02/24/21 06:56	2/16/21	
Toxaphene	480 U	820	480	10	02/24/21 06:56	2/16/21	
alpha-BHC	21 U	42	21	10	02/24/21 06:56	2/16/21	
alpha-Chlordane	21 U	42	21	10	02/24/21 06:56	2/16/21	
beta-BHC	21 U	42	21	10	02/24/21 06:56	2/16/21	
delta-BHC	21 U	42	21	10	02/24/21 06:56	2/16/21	
gamma-BHC (Lindane)	21 U	42	21	10	02/24/21 06:56	2/16/21	
gamma-Chlordane	21 U	42	21	10	02/24/21 06:56	2/16/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	255 *	10 - 145	02/24/21 06:56	*
Tetrachloro-m-xylene	49	10 - 123	02/24/21 06:56	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/09/21 11:00
Date Received: 02/11/21 14:00

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101264-001

Units: ug/Kg
Basis: Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	140 U	250	140	1	02/23/21 15:40	2/16/21	
Aroclor 1221	140 U	510	140	1	02/23/21 15:40	2/16/21	
Aroclor 1232	140 U	250	140	1	02/23/21 15:40	2/16/21	
Aroclor 1242	140 U	250	140	1	02/23/21 15:40	2/16/21	
Aroclor 1248	140 U	250	140	1	02/23/21 15:40	2/16/21	
Aroclor 1254	450 P	250	140	1	02/23/21 15:40	2/16/21	
Aroclor 1260	140 U	250	140	1	02/23/21 15:40	2/16/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	180 *	22 - 128	02/23/21 15:40	*
Tetrachloro-m-xylene	101	14 - 119	02/23/21 15:40	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101264-001

Service Request: R2101264
Date Collected: 02/09/21 11:00
Date Received: 02/11/21 14:00

Units: ug/Kg
Basis: Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	190 U	360	190	1	02/26/21 15:08	2/25/21	*
Aroclor 1221	190 U	730	190	1	02/26/21 15:08	2/25/21	*
Aroclor 1232	190 U	360	190	1	02/26/21 15:08	2/25/21	*
Aroclor 1242	190 U	360	190	1	02/26/21 15:08	2/25/21	*
Aroclor 1248	190 U	360	190	1	02/26/21 15:08	2/25/21	*
Aroclor 1254	190 U	360	190	1	02/26/21 15:08	2/25/21	*
Aroclor 1260	190 U	360	190	1	02/26/21 15:08	2/25/21	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	76	22 - 128	02/26/21 15:08	
Tetrachloro-m-xylene	50	14 - 119	02/26/21 15:08	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/10/21 10:30
Date Received: 02/11/21 14:00

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002

Units: ug/Kg
Basis: Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	43 U	82	43	1	02/17/21 22:04	2/16/21	
Aroclor 1221	43 U	170	43	1	02/17/21 22:04	2/16/21	
Aroclor 1232	43 U	82	43	1	02/17/21 22:04	2/16/21	
Aroclor 1242	43 U	82	43	1	02/17/21 22:04	2/16/21	
Aroclor 1248	43 U	82	43	1	02/17/21 22:04	2/16/21	
Aroclor 1254	43 U	82	43	1	02/17/21 22:04	2/16/21	
Aroclor 1260	43 U	82	43	1	02/17/21 22:04	2/16/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	45	22 - 128	02/17/21 22:04	
Tetrachloro-m-xylene	37	14 - 119	02/17/21 22:04	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101264-001

Service Request: R2101264
Date Collected: 02/09/21 11:00
Date Received: 02/11/21 14:00

Units: ug/Kg
Basis: Dry

Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-T	20 U	39	20	1	02/23/21 19:49	2/19/21	
2,4,5-TP	18 U	39	18	1	02/23/21 19:49	2/19/21	
2,4-D	26 U	39	26	1	02/23/21 19:49	2/19/21	
Dicamba	13 U	39	13	1	02/23/21 19:49	2/19/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4-Dichlorophenylacetic Acid	49	10 - 151	02/23/21 19:49	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/10/21 10:30
Date Received: 02/11/21 14:00

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002

Units: ug/Kg
Basis: Dry

Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-T	9.9 U	20	9.9	1	02/23/21 20:28	2/19/21	
2,4,5-TP	9.0 U	20	9.0	1	02/23/21 20:28	2/19/21	
2,4-D	13 U	20	13	1	02/23/21 20:28	2/19/21	
Dicamba	6.2 U	20	6.2	1	02/23/21 20:28	2/19/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4-Dichlorophenylacetic Acid	4 *	10 - 151	02/23/21 20:28	*

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/10/21 10:30
Date Received: 02/11/21 14:00

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002

Units: ug/Kg
Basis: Dry

Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-T	15 U	28	15	1	02/26/21 15:11	2/25/21	*
2,4,5-TP	13 U	28	13	1	02/26/21 15:11	2/25/21	*
2,4-D	19 U	28	19	1	02/26/21 15:11	2/25/21	*
Dicamba	8.8 U	28	8.8	1	02/26/21 15:11	2/25/21	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4-Dichlorophenylacetic Acid	16	10 - 151	02/26/21 15:11	



Metals

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

Client:	Inventum Engineering	Service Request:	TK-SD-ST06-02092021
Project No.:	R2101264	Date Collected:	2/9/2021
Project Name:		Date Received:	2/11/2021
Matrix:	SOIL	Units:	mg/Kg
		Basis:	

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	46.1	27.6	1.0	4230		
Antimony	6010C	13.8	1.2	1.0	13.8	U	
Arsenic	6010C	2.3	1.6	1.0	3.0		
Barium	6010C	4.6	3.5	1.0	55.9		
Beryllium	6010C	0.691	0.138	1.0	0.415	J	
Cadmium	6010C	1.2	0.553	1.0	1.2	U	
Mercury	7471B	0.077	0.030	1.0	0.077	U	
Calcium	6010C	230	73.7	1.0	11700		
Chromium	6010C	2.3	0.806	1.0	5.1		
Cobalt	6010C	11.5	1.1	1.0	11.5	U	
Copper	6010C	4.6	1.5	1.0	10.3		
Iron	6010C	46.1	30.0	1.0	6750		
Lead	6010C	11.5	0.922	1.0	5.2	J	
Magnesium	6010C	230	30.0	1.0	7050		
Manganese	6010C	4.6	3.5	1.0	14.8		
Nickel	6010C	9.2	1.5	1.0	9.2	U	
Potassium	6010C	461	115	1.0	3920		
Selenium	6010C	2.3	1.2	1.0	2.3	U	
Silver	6010C	2.3	0.207	1.0	0.276	J	
Sodium	6010C	230	120	1.0	13000		
Thallium	6010C	2.3	1.5	1.0	1.9	J	
Vanadium	6010C	11.5	1.6	1.0	6.2	J	
Zinc	6010C	4.6	3.2	1.0	26.4		

Form I - IN

METALS
- 1 -
INORGANIC ANALYSIS DATA PACKAGE

Client: Inventum Engineering **Service Request:** TK-SD-ST06-02092021
Project No.: R2101264 **Date Collected:** 2/10/2021
Project Name: **Date Received:** 2/11/2021
Matrix: SOIL **Units:** mg/Kg
Basis:

Sample Name: TS-SD-RC02-0210 **Lab Code:** R2101264-002

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Aluminum	6010C	28.1	16.8	1.0	28.1	U	
Antimony	6010C	8.4	0.757	1.0	7.0	J	
Arsenic	6010C	1.4	0.982	1.0	2.2		
Barium	6010C	2.8	2.1	1.0	5.0		
Beryllium	6010C	0.421	0.084	1.0	0.421	U	
Cadmium	6010C	0.701	0.337	1.0	0.393	J	
Mercury	7471B	0.044	0.017	1.0	0.317		
Calcium	6010C	140	44.9	1.0	175		
Chromium	6010C	1.4	0.491	1.0	10.0		
Cobalt	6010C	7.0	0.645	1.0	1.1	J	
Copper	6010C	2.8	0.884	1.0	14.2		
Iron	6010C	281	182	10.0	38500		
Lead	6010C	7.0	0.561	1.0	74.1		
Magnesium	6010C	140	18.2	1.0	164		
Manganese	6010C	2.8	2.1	1.0	191		
Nickel	6010C	5.6	0.926	1.0	11.8		
Potassium	6010C	281	70.1	1.0	828		
Selenium	6010C	1.4	0.757	1.0	1.4	U	
Silver	6010C	1.4	0.126	1.0	1.4	U	
Sodium	6010C	14000	7290	100.0	379000		
Thallium	6010C	1.4	0.912	1.0	2.1		
Vanadium	6010C	7.0	0.996	1.0	1.2	J	
Zinc	6010C	2.8	2.0	1.0	4.1		

% Solids: 71.3

Comments:



General Chemistry

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering

Project: RTTC Tanks

Sample Matrix: Soil

Sample Name: TK-SD-ST06-02092021

Lab Code: R2101264-001

Service Request: R2101264

Date Collected: 02/09/21 11:00

Date Received: 02/11/21 14:00

Basis: Dry

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Ammonia as Nitrogen, undistilled	350.1M	11 J	mg/Kg	12	8	1	02/23/21 16:40	02/22/21	
Cyanide, Total	9012B	0.27 U	mg/Kg	0.47	0.27	1	02/19/21 13:00	02/18/21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering

Project: RTTC Tanks

Sample Matrix: Soil

Sample Name: TK-SD-ST06-02092021

Lab Code: R2101264-001

Service Request: R2101264

Date Collected: 02/09/21 11:00

Date Received: 02/11/21 14:00

Basis: As Received

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
pH	9045D	11.26	pH Units	-	-	1	02/18/21 09:05	NA	H
Total Solids	ALS SOP	43.4	Percent	-	-	1	02/19/21 05:40	NA	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002

Service Request: R2101264
Date Collected: 02/10/21 10:30
Date Received: 02/11/21 14:00

Basis: Dry

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Ammonia as Nitrogen, undistilled	350.1M	4.4	U	7.0	4.4	1	02/23/21 16:42	02/22/21	
Cyanide, Total	9012B	0.43	mg/Kg	0.41	0.24	1	02/19/21 13:01	02/18/21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002

Service Request: R2101264
Date Collected: 02/10/21 10:30
Date Received: 02/11/21 14:00

Basis: As Received

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
pH	9045D	9.79	pH Units	-	-	1	02/18/21 09:05	NA	H
Total Solids	ALS SOP	71.3	Percent	-	-	1	02/19/21 05:40	NA	



QC Summary Forms

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com



Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Extraction Method: EPA 5030C

Sample Name	Lab Code	4-Bromofluorobenzene	Dibromofluoromethane	Toluene-d8
		31-154	63-138	66-138
Batch QC	R2101108-001	89	93	99
TK-SD-ST06-02092021	R2101264-001	94	84	101
TS-SD-RC02-0210	R2101264-002	82	92	99
Method Blank	RQ2101482-04	95	93	99
Method Blank	RQ2101653-04	97	93	102
Lab Control Sample	RQ2101482-03	97	95	100
Lab Control Sample	RQ2101653-03	98	96	100
Batch QC MS	RQ2101482-05	96	96	99
Batch QC DMS	RQ2101482-06	100	98	103
TK-SD-ST06-02092021 MS	RQ2101653-05	99	87	104
TK-SD-ST06-02092021 DMS	RQ2101653-06	100	88	103

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/09/21
Date Received: 02/11/21
Date Analyzed: 02/18/21
Date Extracted: NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS, Unp

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101264-001
Analysis Method: 8260C
Prep Method: EPA 5030C

Units: ug/Kg
Basis: Dry

Analyte Name	Matrix Spike RQ2101653-05				Duplicate Matrix Spike RQ2101653-06					
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane (TCA)	0.47 U	79.6	115	69	71.8	115	62	44-124	11	30
1,1,2,2-Tetrachloroethane	1.1 U	21.9	115	19 *	5.18 J	115	4 *	41-155	130*	30
1,1,2-Trichloroethane	0.47 U	75.7	115	66	65.6	115	57	48-124	15	30
1,1,2-Trichloro-1,2,2-trifluoroethane	0.47 U	78.4	115	68	73.3	115	64	40-117	6	30
1,1-Dichloroethane (1,1-DCA)	0.47 U	80.8	115	70	73.3	115	64	41-138	9	30
1,1-Dichloroethene (1,1-DCE)	0.67 U	100	115	87	94.3	115	82	46-124	6	30
1,2,3-Trichlorobenzene	1.2 U	63.3	115	55	56.1	115	49	10-169	12	30
1,2,4-Trichlorobenzene	0.97 U	68.8	115	60	60.5	115	53	10-169	12	30
1,2-Dibromo-3-chloropropane (DBCP)	1.8 U	54.7	115	47	45.9	115	40	30-136	16	30
1,2-Dibromoethane	0.47 U	73.7	115	64	64.0	115	56	38-129	13	30
1,2-Dichlorobenzene	0.47 U	74.5	115	65	64.4	115	56	11-152	15	30
1,2-Dichloroethane	0.47 U	74.2	115	64	65.1	115	56	49-119	13	30
1,2-Dichloropropane	0.47 U	78.7	115	68	69.1	115	60	60-126	13	30
1,3-Dichlorobenzene	0.47 U	76.0	115	66	65.6	115	57	13-151	15	30
1,4-Dichlorobenzene	0.51 U	75.2	115	65	65.9	115	57	10-151	13	30
1,4-Dioxane	47 U	2210	2300	96	1650	2300	72	49-188	29	30
2-Butanone (MEK)	11 J	85.1	115	64	74.5	115	55	13-176	15	30
2-Hexanone	0.83 U	71.4	115	62	63.3	115	55	12-163	12	30
4-Methyl-2-pentanone	0.60 J	71.6	115	62	62.2	115	53	38-148	16	30
Acetone	79	150	115	62	134	115	48	11-183	25	30
Benzene	0.47 U	81.2	115	70	72.5	115	63	51-123	11	30
Bromochloromethane	0.47 U	76.8	115	67	68.1	115	59	46-129	13	30
Bromodichloromethane	0.47 U	69.6	115	60	61.2	115	53	39-122	12	30
Bromoform	1.2 U	56.5	115	49	48.9	115	42	16-135	15	30
Bromomethane	4.9 U	115	115	100	90.1	115	78	10-150	25	30
Carbon Disulfide	0.67 U	100	115	87	92.5	115	80	44-139	8	30
Carbon Tetrachloride	0.60 U	71.9	115	62	65.6	115	57	46-137	8	30
Chlorobenzene	0.47 U	80.3	115	70	70.6	115	61	25-129	14	30
Chloroethane	0.95 U	102	115	88	81.7	115	71	10-166	21	30
Chloroform	0.47 U	80.3	115	70	72.2	115	63	55-118	11	30
Chloromethane	3.3 U	82.1	115	71	77.7	115	67	10-139	6	30
Cyclohexane	0.60 U	91.3	115	79	82.4	115	72	28-126	9	30
Dibromochloromethane	0.47 U	69.2	115	60	59.2	115	51	36-125	16	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/09/21
Date Received: 02/11/21
Date Analyzed: 02/18/21
Date Extracted: NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS, Unp

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101264-001
Analysis Method: 8260C
Prep Method: EPA 5030C

Units: ug/Kg
Basis: Dry

Analyte Name	Sample Result	Matrix Spike RQ2101653-05			Duplicate Matrix Spike RQ2101653-06			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Dichlorodifluoromethane (CFC 12)	0.77 U	94.2	115	82	88.7	115	77	51-144	6	30
Dichloromethane	6.5 U	76.1	115	66	68.6	115	60	49-125	10	30
Ethylbenzene	0.47 U	80.3	115	70	69.1	115	60	23-132	15	30
Isopropylbenzene (Cumene)	0.47 U	78.1	115	68	68.8	115	60	18-133	13	30
Methyl Acetate	2.0 U	48.9	115	42	30.1	115	26	10-200	47*	30
Methyl tert-Butyl Ether	0.47 U	74.5	115	65	66.3	115	58 *	62-130	11	30
Methylcyclohexane	0.72 U	96.9	115	84	85.2	115	74	12-134	13	30
Styrene	0.47 U	76.9	115	67	67.8	115	59	15-160	13	30
Tetrachloroethene (PCE)	0.53 U	77.1	115	67	67.9	115	59	21-137	13	30
Toluene	0.47 U	81.3	115	71	70.7	115	61	11-152	15	30
Trichloroethene (TCE)	0.51 U	134	115	116	128	115	111	23-140	4	30
Trichlorofluoromethane (CFC 11)	0.60 U	82.1	115	71	75.6	115	66	47-129	7	30
Vinyl Chloride	1.1 U	85.0	115	74	80.7	115	70	59-153	6	30
cis-1,2-Dichloroethene	0.47 U	84.8	115	74	76.9	115	67	42-129	10	30
cis-1,3-Dichloropropene	0.47 U	72.8	115	63	63.2	115	55	14-139	14	30
m,p-Xylenes	0.86 U	161	230	70	142	230	62	20-135	12	30
o-Xylene	0.47 U	79.5	115	69	70.2	115	61	26-137	12	30
trans-1,2-Dichloroethene	0.47 U	92.4	115	80	84.5	115	73	34-128	9	30
trans-1,3-Dichloropropene	0.47 U	69.2	115	60	59.4	115	52	17-155	14	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101482-04

Units: ug/Kg
Basis: Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	0.20 U	5.0	0.20	1	02/15/21 15:13	
1,1,2,2-Tetrachloroethane	0.44 U	5.0	0.44	1	02/15/21 15:13	
1,1,2-Trichloroethane	0.20 U	5.0	0.20	1	02/15/21 15:13	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.20 U	5.0	0.20	1	02/15/21 15:13	
1,1-Dichloroethane (1,1-DCA)	0.20 U	5.0	0.20	1	02/15/21 15:13	
1,1-Dichloroethene (1,1-DCE)	0.29 U	5.0	0.29	1	02/15/21 15:13	
1,2,3-Trichlorobenzene	0.52 U	5.0	0.52	1	02/15/21 15:13	
1,2,4-Trichlorobenzene	0.42 U	5.0	0.42	1	02/15/21 15:13	
1,2-Dibromo-3-chloropropane (DBCP)	0.75 U	5.0	0.75	1	02/15/21 15:13	
1,2-Dibromoethane	0.20 U	5.0	0.20	1	02/15/21 15:13	
1,2-Dichlorobenzene	0.20 U	5.0	0.20	1	02/15/21 15:13	
1,2-Dichloroethane	0.20 U	5.0	0.20	1	02/15/21 15:13	
1,2-Dichloropropane	0.20 U	5.0	0.20	1	02/15/21 15:13	
1,3-Dichlorobenzene	0.20 U	5.0	0.20	1	02/15/21 15:13	
1,4-Dichlorobenzene	0.22 U	5.0	0.22	1	02/15/21 15:13	
1,4-Dioxane	20 U	100	20	1	02/15/21 15:13	
2-Butanone (MEK)	2.0 U	5.0	2.0	1	02/15/21 15:13	
2-Hexanone	0.36 U	5.0	0.36	1	02/15/21 15:13	
4-Methyl-2-pentanone	0.23 U	5.0	0.23	1	02/15/21 15:13	
Acetone	4.7 U	5.0	4.7	1	02/15/21 15:13	
Benzene	0.20 U	5.0	0.20	1	02/15/21 15:13	
Bromochloromethane	0.20 U	5.0	0.20	1	02/15/21 15:13	
Bromodichloromethane	0.20 U	5.0	0.20	1	02/15/21 15:13	
Bromoform	0.50 U	5.0	0.50	1	02/15/21 15:13	
Bromomethane	2.1 U	5.0	2.1	1	02/15/21 15:13	
Carbon Disulfide	0.29 U	5.0	0.29	1	02/15/21 15:13	
Carbon Tetrachloride	0.26 U	5.0	0.26	1	02/15/21 15:13	
Chlorobenzene	0.20 U	5.0	0.20	1	02/15/21 15:13	
Chloroethane	0.41 U	5.0	0.41	1	02/15/21 15:13	
Chloroform	0.20 U	5.0	0.20	1	02/15/21 15:13	
Chloromethane	1.4 U	5.0	1.4	1	02/15/21 15:13	
Cyclohexane	0.26 U	5.0	0.26	1	02/15/21 15:13	
Dibromochloromethane	0.20 U	5.0	0.20	1	02/15/21 15:13	
Dichlorodifluoromethane (CFC 12)	0.33 U	5.0	0.33	1	02/15/21 15:13	
Dichloromethane	2.8 U	5.0	2.8	1	02/15/21 15:13	
Ethylbenzene	0.20 U	5.0	0.20	1	02/15/21 15:13	
Isopropylbenzene (Cumene)	0.20 U	5.0	0.20	1	02/15/21 15:13	
Methyl Acetate	0.84 U	5.0	0.84	1	02/15/21 15:13	
Methyl tert-Butyl Ether	0.20 U	5.0	0.20	1	02/15/21 15:13	
Methylcyclohexane	0.31 U	5.0	0.31	1	02/15/21 15:13	
Styrene	0.20 U	5.0	0.20	1	02/15/21 15:13	
Tetrachloroethene (PCE)	0.23 U	5.0	0.23	1	02/15/21 15:13	
Toluene	0.20 U	5.0	0.20	1	02/15/21 15:13	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101482-04

Units: ug/Kg
Basis: Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	0.22 U	5.0	0.22	1	02/15/21 15:13	
Trichlorofluoromethane (CFC 11)	0.26 U	5.0	0.26	1	02/15/21 15:13	
Vinyl Chloride	0.46 U	5.0	0.46	1	02/15/21 15:13	
cis-1,2-Dichloroethene	0.20 U	5.0	0.20	1	02/15/21 15:13	
cis-1,3-Dichloropropene	0.20 U	5.0	0.20	1	02/15/21 15:13	
m,p-Xylenes	0.37 U	10	0.37	1	02/15/21 15:13	
o-Xylene	0.20 U	5.0	0.20	1	02/15/21 15:13	
trans-1,2-Dichloroethene	0.20 U	5.0	0.20	1	02/15/21 15:13	
trans-1,3-Dichloropropene	0.20 U	5.0	0.20	1	02/15/21 15:13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	95	31 - 154	02/15/21 15:13	
Dibromofluoromethane	93	63 - 138	02/15/21 15:13	
Toluene-d8	99	66 - 138	02/15/21 15:13	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101653-04

Units: ug/Kg
Basis: Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	0.20 U	5.0	0.20	1	02/18/21 11:21	
1,1,2,2-Tetrachloroethane	0.44 U	5.0	0.44	1	02/18/21 11:21	
1,1,2-Trichloroethane	0.20 U	5.0	0.20	1	02/18/21 11:21	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.20 U	5.0	0.20	1	02/18/21 11:21	
1,1-Dichloroethane (1,1-DCA)	0.20 U	5.0	0.20	1	02/18/21 11:21	
1,1-Dichloroethene (1,1-DCE)	0.29 U	5.0	0.29	1	02/18/21 11:21	
1,2,3-Trichlorobenzene	0.52 U	5.0	0.52	1	02/18/21 11:21	
1,2,4-Trichlorobenzene	0.42 U	5.0	0.42	1	02/18/21 11:21	
1,2-Dibromo-3-chloropropane (DBCP)	0.75 U	5.0	0.75	1	02/18/21 11:21	
1,2-Dibromoethane	0.20 U	5.0	0.20	1	02/18/21 11:21	
1,2-Dichlorobenzene	0.20 U	5.0	0.20	1	02/18/21 11:21	
1,2-Dichloroethane	0.20 U	5.0	0.20	1	02/18/21 11:21	
1,2-Dichloropropane	0.20 U	5.0	0.20	1	02/18/21 11:21	
1,3-Dichlorobenzene	0.20 U	5.0	0.20	1	02/18/21 11:21	
1,4-Dichlorobenzene	0.22 U	5.0	0.22	1	02/18/21 11:21	
1,4-Dioxane	20 U	100	20	1	02/18/21 11:21	
2-Butanone (MEK)	2.0 U	5.0	2.0	1	02/18/21 11:21	
2-Hexanone	0.36 U	5.0	0.36	1	02/18/21 11:21	
4-Methyl-2-pentanone	0.23 U	5.0	0.23	1	02/18/21 11:21	
Acetone	4.7 U	5.0	4.7	1	02/18/21 11:21	
Benzene	0.20 U	5.0	0.20	1	02/18/21 11:21	
Bromochloromethane	0.20 U	5.0	0.20	1	02/18/21 11:21	
Bromodichloromethane	0.20 U	5.0	0.20	1	02/18/21 11:21	
Bromoform	0.50 U	5.0	0.50	1	02/18/21 11:21	
Bromomethane	2.1 U	5.0	2.1	1	02/18/21 11:21	
Carbon Disulfide	0.29 U	5.0	0.29	1	02/18/21 11:21	
Carbon Tetrachloride	0.26 U	5.0	0.26	1	02/18/21 11:21	
Chlorobenzene	0.20 U	5.0	0.20	1	02/18/21 11:21	
Chloroethane	0.41 U	5.0	0.41	1	02/18/21 11:21	
Chloroform	0.20 U	5.0	0.20	1	02/18/21 11:21	
Chloromethane	1.4 U	5.0	1.4	1	02/18/21 11:21	
Cyclohexane	0.26 U	5.0	0.26	1	02/18/21 11:21	
Dibromochloromethane	0.20 U	5.0	0.20	1	02/18/21 11:21	
Dichlorodifluoromethane (CFC 12)	0.33 U	5.0	0.33	1	02/18/21 11:21	
Dichloromethane	2.8 U	5.0	2.8	1	02/18/21 11:21	
Ethylbenzene	0.20 U	5.0	0.20	1	02/18/21 11:21	
Isopropylbenzene (Cumene)	0.20 U	5.0	0.20	1	02/18/21 11:21	
Methyl Acetate	0.84 U	5.0	0.84	1	02/18/21 11:21	
Methyl tert-Butyl Ether	0.20 U	5.0	0.20	1	02/18/21 11:21	
Methylcyclohexane	0.31 U	5.0	0.31	1	02/18/21 11:21	
Styrene	0.20 U	5.0	0.20	1	02/18/21 11:21	
Tetrachloroethene (PCE)	0.23 U	5.0	0.23	1	02/18/21 11:21	
Toluene	0.20 U	5.0	0.20	1	02/18/21 11:21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101653-04

Units: ug/Kg
Basis: Dry

Volatile Organic Compounds by GC/MS, Unp

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Trichloroethene (TCE)	0.22 U	5.0	0.22	1	02/18/21 11:21	
Trichlorofluoromethane (CFC 11)	0.26 U	5.0	0.26	1	02/18/21 11:21	
Vinyl Chloride	0.46 U	5.0	0.46	1	02/18/21 11:21	
cis-1,2-Dichloroethene	0.20 U	5.0	0.20	1	02/18/21 11:21	
cis-1,3-Dichloropropene	0.20 U	5.0	0.20	1	02/18/21 11:21	
m,p-Xylenes	0.37 U	10	0.37	1	02/18/21 11:21	
o-Xylene	0.20 U	5.0	0.20	1	02/18/21 11:21	
trans-1,2-Dichloroethene	0.20 U	5.0	0.20	1	02/18/21 11:21	
trans-1,3-Dichloropropene	0.20 U	5.0	0.20	1	02/18/21 11:21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	97	31 - 154	02/18/21 11:21	
Dibromofluoromethane	93	63 - 138	02/18/21 11:21	
Toluene-d8	102	66 - 138	02/18/21 11:21	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Analyzed: 02/15/21

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unp

Units:ug/Kg
Basis:Dry

Lab Control Sample
RQ2101482-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	19.2	20.0	96	68-123
1,1,2,2-Tetrachloroethane	8260C	17.0	20.0	85	78-121
1,1,2-Trichloroethane	8260C	19.7	20.0	98	84-117
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	18.5	20.0	93	54-121
1,1-Dichloroethane (1,1-DCA)	8260C	20.2	20.0	101	76-123
1,1-Dichloroethene (1,1-DCE)	8260C	24.1	20.0	121 *	65-115
1,2,3-Trichlorobenzene	8260C	17.2	20.0	86	60-128
1,2,4-Trichlorobenzene	8260C	17.7	20.0	89	62-130
1,2-Dibromo-3-chloropropane (DBCP)	8260C	15.9	20.0	80	54-135
1,2-Dibromoethane	8260C	19.0	20.0	95	77-117
1,2-Dichlorobenzene	8260C	18.2	20.0	91	75-116
1,2-Dichloroethane	8260C	18.9	20.0	95	74-116
1,2-Dichloropropane	8260C	19.3	20.0	97	79-112
1,3-Dichlorobenzene	8260C	18.7	20.0	93	72-118
1,4-Dichlorobenzene	8260C	18.2	20.0	91	72-117
1,4-Dioxane	8260C	365	400	91	59-147
2-Butanone (MEK)	8260C	18.1	20.0	90	67-129
2-Hexanone	8260C	18.2	20.0	91	68-118
4-Methyl-2-pentanone	8260C	18.0	20.0	90	64-123
Acetone	8260C	18.1	20.0	91	32-154
Benzene	8260C	19.9	20.0	99	77-114
Bromochloromethane	8260C	19.5	20.0	98	78-117
Bromodichloromethane	8260C	18.3	20.0	92	72-118
Bromoform	8260C	16.5	20.0	82	55-134
Bromomethane	8260C	21.4	20.0	107	10-150
Carbon Disulfide	8260C	20.8	20.0	104	44-139
Carbon Tetrachloride	8260C	17.3	20.0	86	51-123
Chlorobenzene	8260C	19.2	20.0	96	79-115
Chloroethane	8260C	20.9	20.0	105	10-140
Chloroform	8260C	20.6	20.0	103	76-115
Chloromethane	8260C	19.7	20.0	99	10-131
Cyclohexane	8260C	20.3	20.0	102	67-122
Dibromochloromethane	8260C	18.4	20.0	92	68-121

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Analyzed: 02/15/21

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unp

Units:ug/Kg
Basis:Dry

Lab Control Sample
RQ2101482-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Dichlorodifluoromethane (CFC 12)	8260C	23.9	20.0	119	51-144
Dichloromethane	8260C	19.2	20.0	96	72-118
Ethylbenzene	8260C	18.2	20.0	91	64-118
Isopropylbenzene (Cumene)	8260C	17.7	20.0	89	60-123
Methyl Acetate	8260C	16.7	20.0	83	31-122
Methyl tert-Butyl Ether	8260C	20.6	20.0	103	76-118
Methylcyclohexane	8260C	21.5	20.0	107	70-124
Styrene	8260C	18.1	20.0	91	74-117
Tetrachloroethene (PCE)	8260C	17.5	20.0	87	58-124
Toluene	8260C	19.1	20.0	96	72-116
Trichloroethene (TCE)	8260C	20.2	20.0	101	69-118
Trichlorofluoromethane (CFC 11)	8260C	20.1	20.0	100	52-127
Vinyl Chloride	8260C	20.7	20.0	103	59-153
cis-1,2-Dichloroethene	8260C	21.1	20.0	105	79-113
cis-1,3-Dichloropropene	8260C	18.9	20.0	95	66-117
m,p-Xylenes	8260C	37.1	40.0	93	68-118
o-Xylene	8260C	18.9	20.0	94	71-116
trans-1,2-Dichloroethene	8260C	22.6	20.0	113	73-114
trans-1,3-Dichloropropene	8260C	18.6	20.0	93	57-135

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Analyzed: 02/18/21

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unp

Units:ug/Kg
Basis:Dry

Lab Control Sample
RQ2101653-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	8260C	18.6	20.0	93	68-123
1,1,2,2-Tetrachloroethane	8260C	16.6	20.0	83	78-121
1,1,2-Trichloroethane	8260C	19.1	20.0	96	84-117
1,1,2-Trichloro-1,2,2-trifluoroethane	8260C	18.9	20.0	94	54-121
1,1-Dichloroethane (1,1-DCA)	8260C	18.8	20.0	94	76-123
1,1-Dichloroethene (1,1-DCE)	8260C	23.3	20.0	117 *	65-115
1,2,3-Trichlorobenzene	8260C	17.3	20.0	86	60-128
1,2,4-Trichlorobenzene	8260C	17.6	20.0	88	62-130
1,2-Dibromo-3-chloropropane (DBCP)	8260C	15.0	20.0	75	54-135
1,2-Dibromoethane	8260C	18.2	20.0	91	77-117
1,2-Dichlorobenzene	8260C	18.0	20.0	90	75-116
1,2-Dichloroethane	8260C	18.1	20.0	91	74-116
1,2-Dichloropropane	8260C	18.3	20.0	92	79-112
1,3-Dichlorobenzene	8260C	18.3	20.0	91	72-118
1,4-Dichlorobenzene	8260C	18.1	20.0	90	72-117
1,4-Dioxane	8260C	411	400	103	59-147
2-Butanone (MEK)	8260C	17.9	20.0	90	67-129
2-Hexanone	8260C	17.8	20.0	89	68-118
4-Methyl-2-pentanone	8260C	17.9	20.0	89	64-123
Acetone	8260C	18.8	20.0	94	32-154
Benzene	8260C	18.7	20.0	93	77-114
Bromochloromethane	8260C	18.9	20.0	95	78-117
Bromodichloromethane	8260C	16.6	20.0	83	72-118
Bromoform	8260C	14.5	20.0	72	55-134
Bromomethane	8260C	25.6	20.0	128	10-150
Carbon Disulfide	8260C	19.9	20.0	100	44-139
Carbon Tetrachloride	8260C	16.8	20.0	84	51-123
Chlorobenzene	8260C	18.6	20.0	93	79-115
Chloroethane	8260C	21.5	20.0	108	10-140
Chloroform	8260C	19.1	20.0	96	76-115
Chloromethane	8260C	18.8	20.0	94	10-131
Cyclohexane	8260C	20.3	20.0	101	67-122
Dibromochloromethane	8260C	16.8	20.0	84	68-121

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Analyzed: 02/18/21

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS, Unp

Units:ug/Kg
Basis:Dry

Lab Control Sample
RQ2101653-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Dichlorodifluoromethane (CFC 12)	8260C	23.4	20.0	117	51-144
Dichloromethane	8260C	18.0	20.0	90	72-118
Ethylbenzene	8260C	18.2	20.0	91	64-118
Isopropylbenzene (Cumene)	8260C	17.9	20.0	90	60-123
Methyl Acetate	8260C	16.6	20.0	83	31-122
Methyl tert-Butyl Ether	8260C	19.9	20.0	99	76-118
Methylcyclohexane	8260C	21.5	20.0	107	70-124
Styrene	8260C	17.4	20.0	87	74-117
Tetrachloroethene (PCE)	8260C	18.0	20.0	90	58-124
Toluene	8260C	18.3	20.0	92	72-116
Trichloroethene (TCE)	8260C	19.4	20.0	97	69-118
Trichlorofluoromethane (CFC 11)	8260C	19.6	20.0	98	52-127
Vinyl Chloride	8260C	19.4	20.0	97	59-153
cis-1,2-Dichloroethene	8260C	19.7	20.0	98	79-113
cis-1,3-Dichloropropene	8260C	17.5	20.0	87	66-117
m,p-Xylenes	8260C	36.5	40.0	91	68-118
o-Xylene	8260C	18.1	20.0	90	71-116
trans-1,2-Dichloroethene	8260C	21.4	20.0	107	73-114
trans-1,3-Dichloropropene	8260C	16.7	20.0	84	57-135



Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264

SURROGATE RECOVERY SUMMARY

Semivolatile Organic Compounds by GC/MS using Microwave Digestion

Analysis Method: 8270D
Extraction Method: EPA 3546

Sample Name	Lab Code	2,4,6-Tribromophenol	2-Fluorobiphenyl	2-Fluorophenol
		10-109	10-102	10-88
TK-SD-ST06-02092021	R2101264-001	78	76	75
TS-SD-RC02-0210	R2101264-002	32	28	21
Batch QC	R2101317-001	41	52	56
Method Blank	RQ2101599-01	84	71	75
Lab Control Sample	RQ2101599-02	80	65	66
Duplicate Lab Control Sample	RQ2101599-03	87	73	74
Batch QC MS	RQ2101599-04	44	55	57
Batch QC DMS	RQ2101599-05	38	45	51

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264

SURROGATE RECOVERY SUMMARY

Semivolatile Organic Compounds by GC/MS using Microwave Digestion

Analysis Method: 8270D
Extraction Method: EPA 3546

Sample Name	Lab Code	Nitrobenzene-d5	Phenol-d6	Terphenyl-d14
		10-95	10-145	10-106
TK-SD-ST06-02092021	R2101264-001	75	75	81
TS-SD-RC02-0210	R2101264-002	25	19	46
Batch QC	R2101317-001	6*	52	53
Method Blank	RQ2101599-01	73	73	90
Lab Control Sample	RQ2101599-02	64	65	79
Duplicate Lab Control Sample	RQ2101599-03	72	74	82
Batch QC MS	RQ2101599-04	6*	55	58
Batch QC DMS	RQ2101599-05	7*	47	54

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101599-01

Units: ug/Kg
Basis: Dry

Semivolatile Organic Compounds by GC/MS using Microwave Digestion

Analysis Method: 8270D
Prep Method: EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,2,4,5-Tetrachlorobenzene	74 U	320	74	1	02/18/21 12:38	2/17/21	
2,3,4,6-Tetrachlorophenol	120 U	320	120	1	02/18/21 12:38	2/17/21	
2,4,5-Trichlorophenol	82 U	320	82	1	02/18/21 12:38	2/17/21	
2,4,6-Trichlorophenol	74 U	320	74	1	02/18/21 12:38	2/17/21	
2,4-Dichlorophenol	64 U	320	64	1	02/18/21 12:38	2/17/21	
2,4-Dimethylphenol	59 U	320	59	1	02/18/21 12:38	2/17/21	
2,4-Dinitrophenol	560 U	1700	560	1	02/18/21 12:38	2/17/21	
2,4-Dinitrotoluene	130 U	320	130	1	02/18/21 12:38	2/17/21	
2,6-Dinitrotoluene	72 U	320	72	1	02/18/21 12:38	2/17/21	
2-Chloronaphthalene	66 U	320	66	1	02/18/21 12:38	2/17/21	
2-Chlorophenol	55 U	320	55	1	02/18/21 12:38	2/17/21	
2-Methylnaphthalene	55 U	320	55	1	02/18/21 12:38	2/17/21	
2-Methylphenol	69 U	320	69	1	02/18/21 12:38	2/17/21	
2-Nitroaniline	78 U	1700	78	1	02/18/21 12:38	2/17/21	
2-Nitrophenol	77 U	320	77	1	02/18/21 12:38	2/17/21	
3,3'-Dichlorobenzidine	37 U	320	37	1	02/18/21 12:38	2/17/21	
3- and 4-Methylphenol Coelution	63 U	320	63	1	02/18/21 12:38	2/17/21	
3-Nitroaniline	67 U	1700	67	1	02/18/21 12:38	2/17/21	
4,6-Dinitro-2-methylphenol	190 U	1700	190	1	02/18/21 12:38	2/17/21	
4-Bromophenyl Phenyl Ether	87 U	320	87	1	02/18/21 12:38	2/17/21	
4-Chloro-3-methylphenol	67 U	320	67	1	02/18/21 12:38	2/17/21	
4-Chloroaniline	56 U	320	56	1	02/18/21 12:38	2/17/21	
4-Chlorophenyl Phenyl Ether	71 U	320	71	1	02/18/21 12:38	2/17/21	
4-Nitroaniline	34 U	1700	34	1	02/18/21 12:38	2/17/21	
4-Nitrophenol	67 U	1700	67	1	02/18/21 12:38	2/17/21	
Acenaphthene	63 U	320	63	1	02/18/21 12:38	2/17/21	
Acenaphthylene	67 U	320	67	1	02/18/21 12:38	2/17/21	
Acetophenone	95 U	320	95	1	02/18/21 12:38	2/17/21	
Anthracene	55 U	320	55	1	02/18/21 12:38	2/17/21	
Atrazine	46 U	320	46	1	02/18/21 12:38	2/17/21	
Benz(a)anthracene	49 U	320	49	1	02/18/21 12:38	2/17/21	
Benzaldehyde	80 U	1700	80	1	02/18/21 12:38	2/17/21	
Benzo(a)pyrene	88 U	320	88	1	02/18/21 12:38	2/17/21	
Benzo(b)fluoranthene	55 U	320	55	1	02/18/21 12:38	2/17/21	
Benzo(g,h,i)perylene	76 U	320	76	1	02/18/21 12:38	2/17/21	
Benzo(k)fluoranthene	54 U	320	54	1	02/18/21 12:38	2/17/21	
Biphenyl	98 U	320	98	1	02/18/21 12:38	2/17/21	
2,2'-Oxybis(1-chloropropane)	68 U	320	68	1	02/18/21 12:38	2/17/21	
Bis(2-chloroethoxy)methane	81 U	320	81	1	02/18/21 12:38	2/17/21	
Bis(2-chloroethyl) Ether	65 U	320	65	1	02/18/21 12:38	2/17/21	
Bis(2-ethylhexyl) Phthalate	61 U	490	61	1	02/18/21 12:38	2/17/21	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101599-01

Units: ug/Kg
Basis: Dry

Semivolatile Organic Compounds by GC/MS using Microwave Digestion

Analysis Method: 8270D
Prep Method: EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Butyl Benzyl Phthalate	40 U	320	40	1	02/18/21 12:38	2/17/21	
Caprolactam	73 U	320	73	1	02/18/21 12:38	2/17/21	
Carbazole	54 U	320	54	1	02/18/21 12:38	2/17/21	
Chrysene	49 U	320	49	1	02/18/21 12:38	2/17/21	
Di-n-butyl Phthalate	54 U	320	54	1	02/18/21 12:38	2/17/21	
Di-n-octyl Phthalate	120 U	320	120	1	02/18/21 12:38	2/17/21	
Dibenz(a,h)anthracene	72 U	320	72	1	02/18/21 12:38	2/17/21	
Dibenzofuran	60 U	320	60	1	02/18/21 12:38	2/17/21	
Diethyl Phthalate	59 U	320	59	1	02/18/21 12:38	2/17/21	
Dimethyl Phthalate	63 U	320	63	1	02/18/21 12:38	2/17/21	
Fluoranthene	83 U	320	83	1	02/18/21 12:38	2/17/21	
Fluorene	62 U	320	62	1	02/18/21 12:38	2/17/21	
Hexachlorobenzene	79 U	320	79	1	02/18/21 12:38	2/17/21	
Hexachlorobutadiene	57 U	320	57	1	02/18/21 12:38	2/17/21	
Hexachlorocyclopentadiene	110 U	320	110	1	02/18/21 12:38	2/17/21	
Hexachloroethane	62 U	320	62	1	02/18/21 12:38	2/17/21	
Indeno(1,2,3-cd)pyrene	110 U	320	110	1	02/18/21 12:38	2/17/21	
Isophorone	69 U	320	69	1	02/18/21 12:38	2/17/21	
N-Nitrosodi-n-propylamine	110 U	320	110	1	02/18/21 12:38	2/17/21	
N-Nitrosodiphenylamine	210 U	320	210	1	02/18/21 12:38	2/17/21	
Naphthalene	62 U	320	62	1	02/18/21 12:38	2/17/21	
Nitrobenzene	59 U	320	59	1	02/18/21 12:38	2/17/21	
Pentachlorophenol (PCP)	330 U	1700	330	1	02/18/21 12:38	2/17/21	
Phenanthrene	47 U	320	47	1	02/18/21 12:38	2/17/21	
Phenol	67 U	320	67	1	02/18/21 12:38	2/17/21	
Pyrene	55 U	320	55	1	02/18/21 12:38	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	84	10 - 109	02/18/21 12:38	
2-Fluorobiphenyl	71	10 - 102	02/18/21 12:38	
2-Fluorophenol	75	10 - 88	02/18/21 12:38	
Nitrobenzene-d5	73	10 - 95	02/18/21 12:38	
Phenol-d6	73	10 - 145	02/18/21 12:38	
Terphenyl-d14	90	10 - 106	02/18/21 12:38	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Analyzed: 02/18/21

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS using Microwave Digestion

Units:ug/Kg
Basis:Dry

Analyte Name	Analytical Method	Lab Control Sample RQ2101599-02			Duplicate Lab Control Sample RQ2101599-03			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,2,4,5-Tetrachlorobenzene	8270D	2120	3340	63	2560	3340	77	10-115	19	30
2,3,4,6-Tetrachlorophenol	8270D	2320	3330	70	2670	3330	80	29-100	14	30
2,4,5-Trichlorophenol	8270D	2230	3330	67	2560	3330	77	29-97	14	30
2,4,6-Trichlorophenol	8270D	2180	3330	65	2590	3330	78	26-97	17	30
2,4-Dichlorophenol	8270D	2050	3330	62	2380	3330	71	25-90	15	30
2,4-Dimethylphenol	8270D	2120	3330	64	2460	3330	74	26-89	15	30
2,4-Dinitrophenol	8270D	1350 J	3330	41	1660 J	3330	50	10-128	20	30
2,4-Dinitrotoluene	8270D	2600	3330	78	2930	3330	88	30-111	12	30
2,6-Dinitrotoluene	8270D	2420	3330	73	2790	3330	84	28-105	14	30
2-Chloronaphthalene	8270D	2210	3330	66	2590	3330	78	21-88	16	30
2-Chlorophenol	8270D	2020	3330	61	2350	3330	70	18-87	15	30
2-Methylnaphthalene	8270D	2060	3330	62	2400	3330	72	21-83	15	30
2-Methylphenol	8270D	2230	3330	67	2580	3330	77	22-86	15	30
2-Nitroaniline	8270D	2570	3330	77	2900	3330	87	27-105	12	30
2-Nitrophenol	8270D	2100	3330	63	2400	3330	72	20-88	13	30
3- and 4-Methylphenol Coelution	8270D	2220	3330	67	2590	3330	78	27-92	15	30
3-Nitroaniline	8270D	1930	3330	58	2090	3330	63	27-98	8	30
4,6-Dinitro-2-methylphenol	8270D	1860	3330	56	2080	3330	62	11-96	11	30
4-Bromophenyl Phenyl Ether	8270D	2290	3330	69	2620	3330	78	25-96	13	30
4-Chloro-3-methylphenol	8270D	2130	3330	64	2390	3330	72	29-92	11	30
4-Chloroaniline	8270D	1560	3330	47	1630	3330	49	21-72	5	30
4-Chlorophenyl Phenyl Ether	8270D	2240	3330	67	2590	3330	78	25-92	14	30
4-Nitroaniline	8270D	2520	3330	76	2860	3330	86	27-102	13	30
4-Nitrophenol	8270D	2260	3330	68	2430	3330	73	10-130	7	30
Acenaphthene	8270D	2230	3330	67	2580	3330	77	25-92	15	30
Acenaphthylene	8270D	2330	3330	70	2700	3330	81	27-93	15	30
Acetophenone	8270D	3750	6670	56	4390	6670	66	23-87	16	30
Anthracene	8270D	2450	3330	73	2710	3330	81	32-106	10	30
Benz(a)anthracene	8270D	2540	3330	76	2670	3330	80	33-109	5	30
Benzo(a)pyrene	8270D	3470	3330	104	3630	3330	109	34-115	4	30
Benzo(b)fluoranthene	8270D	2610	3330	78	2710	3330	81	31-107	4	30
Benzo(g,h,i)perylene	8270D	3080	3330	92	3190	3330	96	30-127	4	30
Benzo(k)fluoranthene	8270D	2790	3330	84	2960	3330	89	34-111	6	30

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Analyzed: 02/18/21

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS using Microwave Digestion

Units:ug/Kg
Basis:Dry

Analyte Name	Lab Control Sample RQ2101599-02				Duplicate Lab Control Sample RQ2101599-03				RPD	RPD Limit
	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits		
Biphenyl	8270D	2060	3330	62	2420	3330	73	26-88	16	30
2,2'-Oxybis(1-chloropropane)	8270D	2110	3330	63	2460	3330	74	10-82	15	30
Bis(2-chloroethoxy)methane	8270D	2320	3330	70	2670	3330	80	17-85	14	30
Bis(2-chloroethyl) Ether	8270D	2180	3330	66	2540	3330	76	10-79	15	30
Bis(2-ethylhexyl) Phthalate	8270D	2720	3330	82	2830	3330	85	31-115	4	30
Butyl Benzyl Phthalate	8270D	2820	3330	84	2920	3330	88	31-115	4	30
Caprolactam	8270D	2230	3330	67	2640	3330	79	28-99	17	30
Carbazole	8270D	2650	3330	79	2830	3330	85	23-129	7	30
Chrysene	8270D	2620	3330	79	2780	3330	83	34-108	6	30
Di-n-butyl Phthalate	8270D	2770	3330	83	2910	3330	87	33-114	5	30
Di-n-octyl Phthalate	8270D	2690	3330	81	2790	3330	84	32-116	4	30
Dibenz(a,h)anthracene	8270D	3100	3330	93	3240	3330	97	23-122	4	30
Dibenzofuran	8270D	2230	3330	67	2550	3330	77	27-94	13	30
Diethyl Phthalate	8270D	2220	3330	67	2530	3330	76	26-101	13	30
Dimethyl Phthalate	8270D	2260	3330	68	2560	3330	77	27-98	12	30
Fluoranthene	8270D	2510	3330	75	2650	3330	79	34-111	5	30
Fluorene	8270D	2310	3330	69	2620	3330	79	27-95	13	30
Hexachlorobenzene	8270D	2510	3330	75	2750	3330	83	30-104	9	30
Hexachlorobutadiene	8270D	2060	3330	62	2340	3330	70	10-142	13	30
Hexachlorocyclopentadiene	8270D	2170	3330	65	2510	3330	75	10-133	15	30
Hexachloroethane	8270D	1910	3330	57	2180	3330	66	10-129	13	30
Indeno(1,2,3-cd)pyrene	8270D	3110	3330	93	3270	3330	98	33-121	5	30
Isophorone	8270D	1810	3330	54	2090	3330	63	21-79	14	30
N-Nitrosodi-n-propylamine	8270D	2230	3330	67	2590	3330	78	15-78	15	30
N-Nitrosodiphenylamine	8270D	2520	3330	76	2870	3330	86	29-108	13	30
Naphthalene	8270D	2100	3330	63	2410	3330	72	18-81	14	30
Nitrobenzene	8270D	2080	3330	63	2470	3330	74	14-80	17	30
Pentachlorophenol (PCP)	8270D	2430	3330	73	2740	3330	82	13-117	12	30
Phenanthrene	8270D	2340	3330	70	2590	3330	78	33-103	10	30
Phenol	8270D	2160	3330	65	2550	3330	76	10-144	17	30
Pyrene	8270D	2710	3330	81	2960	3330	89	33-111	9	30



Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl	Tetrachloro-m-xylene
		10-145	10-123
TK-SD-ST06-02092021	R2101264-001	154*	100
TS-SD-RC02-0210	R2101264-002	255*	49
Method Blank	RQ2101498-01	101	81
Lab Control Sample	RQ2101498-02	103	82
Duplicate Lab Control Sample	RQ2101498-03	94	80

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101498-01

Units: ug/Kg
Basis: Dry

Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDD	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
4,4'-DDE	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
4,4'-DDT	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
Aldrin	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
Dieldrin	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
Endosulfan I	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
Endosulfan II	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
Endosulfan Sulfate	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
Endrin	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
Endrin Aldehyde	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
Endrin Ketone	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
Heptachlor	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
Heptachlor Epoxide	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
Methoxychlor	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
Toxaphene	19 U	33	19	1	02/19/21 03:44	2/16/21	
alpha-BHC	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
alpha-Chlordane	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
beta-BHC	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
delta-BHC	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
gamma-BHC (Lindane)	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	
gamma-Chlordane	0.84 U	1.7	0.84	1	02/19/21 03:44	2/16/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	101	10 - 145	02/19/21 03:44	
Tetrachloro-m-xylene	81	10 - 123	02/19/21 03:44	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Analyzed: 02/19/21

Duplicate Lab Control Sample Summary
Organochlorine Pesticides by Gas Chromatography

Units:ug/Kg
Basis:Dry

Lab Control Sample RQ2101498-02					Duplicate Lab Control Sample RQ2101498-03					
Analyte Name	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
4,4'-DDD	8081B	6.33	6.84	93	5.79	6.61	88	33-149	9	30
4,4'-DDE	8081B	6.64	6.84	97	5.97	6.61	90	38-147	11	30
4,4'-DDT	8081B	6.72	6.84	98	6.13	6.61	93	37-146	9	30
Aldrin	8081B	6.06	6.84	89	5.43	6.61	82	25-146	11	30
Dieldrin	8081B	6.43	6.84	94	6.08	6.61	92	40-140	6	30
Endosulfan I	8081B	6.35	6.84	93	5.65	6.61	86	35-116	12	30
Endosulfan II	8081B	6.74	6.84	99	6.10	6.61	92	39-122	10	30
Endosulfan Sulfate	8081B	6.34	6.84	93	6.20	6.61	94	31-132	2	30
Endrin	8081B	6.42	6.84	94	5.86	6.61	89	40-144	9	30
Endrin Aldehyde	8081B	6.15	6.84	90	5.58	6.61	84	10-109	10	30
Endrin Ketone	8081B	6.64	6.84	97	6.05	6.61	92	38-122	9	30
Heptachlor	8081B	6.19	6.84	91	5.50	6.61	83	34-142	12	30
Heptachlor Epoxide	8081B	6.34	6.84	93	5.72	6.61	87	37-113	10	30
Methoxychlor	8081B	7.04	6.84	103	6.55	6.61	99	41-152	7	30
alpha-BHC	8081B	6.02	6.84	88	5.37	6.61	81	28-145	11	30
alpha-Chlordane	8081B	6.25	6.84	91	5.66	6.61	86	37-114	10	30
beta-BHC	8081B	6.38	6.84	93	5.95	6.61	90	38-144	7	30
delta-BHC	8081B	6.47	6.84	95	5.80	6.61	88	30-153	11	30
gamma-BHC (Lindane)	8081B	5.91	6.84	86	5.46	6.61	83	32-145	8	30
gamma-Chlordane	8081B	6.14	6.84	90	5.50	6.61	83	34-123	11	30

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Extraction Method: EPA 3541

Sample Name	Lab Code	Decachlorobiphenyl	Tetrachloro-m-xylene
		22-128	14-119
TK-SD-ST06-02092021	R2101264-001	180*	101
TK-SD-ST06-02092021 RE	R2101264-001	76	50
TS-SD-RC02-0210	R2101264-002	45	37
Method Blank	RQ2101498-01	100	72
Method Blank	RQ2101920-01	75	67
Lab Control Sample	RQ2101498-04	101	71
Duplicate Lab Control Sample	RQ2101498-05	113	112
Lab Control Sample	RQ2101920-02	75	67
Duplicate Lab Control Sample	RQ2101920-03	67	62

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101498-01

Units: ug/Kg
Basis: Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	17 U	32	17	1	02/17/21 20:06	2/16/21	
Aroclor 1221	17 U	65	17	1	02/17/21 20:06	2/16/21	
Aroclor 1232	17 U	32	17	1	02/17/21 20:06	2/16/21	
Aroclor 1242	17 U	32	17	1	02/17/21 20:06	2/16/21	
Aroclor 1248	17 U	32	17	1	02/17/21 20:06	2/16/21	
Aroclor 1254	17 U	32	17	1	02/17/21 20:06	2/16/21	
Aroclor 1260	17 U	32	17	1	02/17/21 20:06	2/16/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	100	22 - 128	02/17/21 20:06	
Tetrachloro-m-xylene	72	14 - 119	02/17/21 20:06	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101920-01

Units: ug/Kg
Basis: Dry

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	18 U	33	18	1	02/26/21 14:09	2/25/21	
Aroclor 1221	18 U	67	18	1	02/26/21 14:09	2/25/21	
Aroclor 1232	18 U	33	18	1	02/26/21 14:09	2/25/21	
Aroclor 1242	18 U	33	18	1	02/26/21 14:09	2/25/21	
Aroclor 1248	18 U	33	18	1	02/26/21 14:09	2/25/21	
Aroclor 1254	18 U	33	18	1	02/26/21 14:09	2/25/21	
Aroclor 1260	18 U	33	18	1	02/26/21 14:09	2/25/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	75	22 - 128	02/26/21 14:09	
Tetrachloro-m-xylene	67	14 - 119	02/26/21 14:09	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Analyzed: 02/17/21

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Units:ug/Kg
Basis:Dry

			Lab Control Sample			Duplicate Lab Control Sample				
			RQ2101498-04			RQ2101498-05				
Analyte Name	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Aroclor 1016	8082A	130	162	80	152	166	92	41-127	16	30
Aroclor 1260	8082A	145	162	89	170	166	102	37-127	16	30

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264**Date Analyzed:** 02/26/21

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Units:ug/Kg**Basis:**Dry

Lab Control Sample RQ2101920-02					Duplicate Lab Control Sample RQ2101920-03					
Analyte Name	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Aroclor 1016	8082A	128	171	75	112	167	67	41-127	13	30
Aroclor 1260	8082A	132	171	77	112	167	67	37-127	17	30

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264

SURROGATE RECOVERY SUMMARY
Chlorinated Herbicides by GC

Analysis Method: 8151A
Extraction Method: Method

Sample Name	Lab Code	2,4-Dichlorophenylacetic
		Acid 10-151
TK-SD-ST06-02092021	R2101264-001	49
TS-SD-RC02-0210	R2101264-002	4*
TS-SD-RC02-0210 RE	R2101264-002	16
Method Blank	RQ2101693-07	43
Method Blank	RQ2101916-01	65
Lab Control Sample	RQ2101693-08	61
Duplicate Lab Control Sample	RQ2101693-09	69
Lab Control Sample	RQ2101916-02	77
Duplicate Lab Control Sample	RQ2101916-03	71

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101693-07

Units: ug/Kg
Basis: Dry

Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-T	5.0 U	10	5.0	1	02/23/21 17:09	2/19/21	
2,4,5-TP	4.5 U	10	4.5	1	02/23/21 17:09	2/19/21	
2,4-D	6.5 U	10	6.5	1	02/23/21 17:09	2/19/21	
Dicamba	3.1 U	10	3.1	1	02/23/21 17:09	2/19/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4-Dichlorophenylacetic Acid	43	10 - 151	02/23/21 17:09	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101916-01

Units: ug/Kg
Basis: Dry

Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4,5-T	5.1 U	10	5.1	1	02/26/21 14:11	2/25/21	
2,4,5-TP	4.6 U	10	4.6	1	02/26/21 14:11	2/25/21	
2,4-D	6.6 U	10	6.6	1	02/26/21 14:11	2/25/21	
Dicamba	3.2 U	10	3.2	1	02/26/21 14:11	2/25/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4-Dichlorophenylacetic Acid	65	10 - 151	02/26/21 14:11	

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Analyzed: 02/23/21

Duplicate Lab Control Sample Summary
Chlorinated Herbicides by GC

Units:ug/Kg**Basis:**Dry**Lab Control Sample**

RQ2101693-08

Duplicate Lab Control Sample

RQ2101693-09

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
2,4,5-T	8151A	24.3	50.0	49	30.6	50.0	61	19-127	23	30
2,4,5-TP	8151A	26.4	50.0	53	32.4	50.0	65	18-122	20	30
2,4-D	8151A	25.8	50.0	52	33.4	50.0	67	24-165	26	30
Dicamba	8151A	24.2	50.0	48	29.5	50.0	59	26-128	20	30

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Analyzed: 02/26/21

Duplicate Lab Control Sample Summary
Chlorinated Herbicides by GC

Units:ug/Kg
Basis:Dry

Lab Control Sample
RQ2101916-02

Duplicate Lab Control Sample
RQ2101916-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
2,4,5-T	8151A	30.6	50.2	61	31.5	50.0	63	19-127	3	30
2,4,5-TP	8151A	36.7	50.2	73	38.0	50.0	76	18-122	3	30
2,4-D	8151A	35.4	50.2	70	35.6	50.0	71	24-165	<1	30
Dicamba	8151A	28.4	50.2	57	28.7	50.0	57	26-128	1	30



Metals

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

METALS

-3-

BLANKS

Contract: R2101264

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: TK-SD-ST06-0

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): MG/KG

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank		M
		1	2	3						
Aluminum	120.00 U	120.00 U	120.00 U	120.00 U				12.000 U		P
Antimony	5.40 U	5.40 U	5.40 U	5.40 U				0.540 U		P
Arsenic	7.00 U	7.00 U	7.00 U	7.00 U				0.700 U		P
Barium	15.00 U	15.00 U	15.00 U	15.00 U				1.500 U		P
Beryllium	0.60 U	0.60 U	0.60 U	0.60 U				0.060 U		P
Cadmium	2.40 U	2.40 U	2.40 U	2.40 U				0.240 U		P
Mercury	0.078 U	0.078 U	0.078 U	0.078 U				0.013 U		CV
Calcium	320.00 U	320.00 U	320.00 U	320.00 U				32.000 U		P
Chromium	3.50 U	3.50 U	3.50 U	3.50 U				0.350 U		P
Cobalt	4.60 U	4.60 U	4.60 U	4.60 U				0.460 U		P
Copper	6.30 U	6.30 U	6.30 U	6.30 U				0.630 U		P
Iron	130.00 U	130.00 U	130.00 U	130.00 U				13.000 U		P
Lead	4.00 U	4.00 U	4.00 U	4.00 U				0.400 U		P
Magnesium	130.00 U	130.00 U	130.00 U	130.00 U				13.000 U		P
Manganese	15.00 U	15.00 U	15.00 U	15.00 U				1.500 U		P
Nickel	6.60 U	6.60 U	6.60 U	6.60 U				0.660 U		P
Potassium	500.00 U	500.00 U	500.00 U	500.00 U				50.000 U		P
Selenium	5.40 U	5.40 U	5.40 U	5.40 U				0.540 U		P
Silver	0.90 U	0.90 U	0.90 U	0.90 U				0.090 U		P
Sodium	520.00 U	520.00 U	520.00 U	520.00 U				52.000 U		P
Thallium	6.50 U	6.50 U	6.50 U	6.50 U				0.650 U		P
Vanadium	7.10 U	7.10 U	7.10 U	7.10 U				0.710 U		P
Zinc	14.00 U	14.00 U	14.00 U	14.00 U				1.400 U		P

Comments:

METALS

-3-

BLANKS

Contract: R2101264

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: TK-SD-ST06-0

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	C	Continuing Calibration Blank ug/L						Preparation Blank	C	M
			1	C	2	C	3	C			
Aluminum			120.00	U	120.00	U	120.00	U			P
Antimony			5.40	U	5.40	U	5.40	U			P
Arsenic			7.00	U	7.00	U	7.00	U			P
Barium			15.00	U	15.00	U	15.00	U			P
Beryllium			0.60	U	0.60	U	0.60	U			P
Cadmium			2.40	U	2.40	U	2.40	U			P
Calcium			320.00	U	320.00	U	320.00	U			P
Chromium			3.50	U	3.50	U	3.50	U			P
Cobalt			4.60	U	4.60	U	4.60	U			P
Copper			6.30	U	6.30	U	6.30	U			P
Iron			130.00	U	130.00	U	130.00	U			P
Lead			4.00	U	4.00	U	4.00	U			P
Magnesium			130.00	U	130.00	U	130.00	U			P
Manganese			15.00	U	15.00	U	15.00	U			P
Nickel			6.60	U	6.60	U	6.60	U			P
Potassium			500.00	U	500.00	U	500.00	U			P
Selenium			5.40	U	5.40	U	5.40	U			P
Silver			0.90	U	0.90	U	0.90	U			P
Sodium			520.00	U	520.00	U	520.00	U			P
Thallium			6.50	U	-6.50	J	-7.50	J			P
Vanadium			7.10	U	7.10	U	7.10	U			P
Zinc			14.00	U	14.00	U	14.00	U			P

Comments:

METALS

-3-

BLANKS

Contract: R2101264

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: TK-SD-ST06-0

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank	C	M
		1	C	2	C	3	C			
Aluminum		120.00	U							P
Antimony		5.60	J							P
Arsenic		7.00	U							P
Barium		15.00	U							P
Beryllium		0.60	U							P
Cadmium		2.40	U							P
Calcium		320.00	U							P
Chromium		3.50	U							P
Cobalt		4.60	U							P
Copper		6.30	U							P
Iron		130.00	U							P
Lead		4.00	U							P
Magnesium		130.00	U							P
Manganese		15.00	U							P
Nickel		6.60	U							P
Potassium		500.00	U							P
Selenium		5.40	U							P
Silver		0.90	U							P
Sodium		520.00	U							P
Thallium		6.50	U							P
Vanadium		7.10	U							P
Zinc		14.00	U							P

Comments:

METALS

-3-

BLANKS

Contract: R2101264

Lab Code: Case No.: SAS No.: SDG NO.: TK-SD-ST06-0

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank		
		1	2	3						
Sodium	520.00	520.00	520.00	520.00						P

Comments:

METALS

-3-

BLANKS

Contract: R2101264

Lab Code: Case No.: SAS No.: SDG NO.: TK-SD-ST06-0

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank		
		1	2	3						
Sodium		520.00	520.00							P

Comments:

METALS

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

TK-SD-ST06-02092021S

Contract: R2101264

Lab Code: Case No.: SAS No.: SDG NO.: TK-SD-ST06-0

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 43.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	0.362	0.030 U	0.36	101		CV

Comments:

METALS

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

TK-SD-ST06-02092021SD

Contract: R2101264

Lab Code: Case No.: SAS No.: SDG NO.: TK-SD-ST06-0

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 43.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Mercury	75 - 125	0.382	0.030 U	0.37	103		CV

Comments:

**METALS
-6-
DUPLICATES**

SAMPLE NO.

TK-SD-ST06-02092021SD

Contract: R2101264

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: TK-SD-ST06-0

Matrix (soil/water): SOIL _____ Level (low/med): LOW _____

% Solids for Sample: 43.4 _____ % Solids for Duplicate: 43.4 _____

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S) C	Duplicate (D) C	RPD	Q	M
Mercury		0.362	0.382	5		CV

Comments: _____

METALS

-7-

LABORATORY CONTROL SAMPLE

Contract: R2101264

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: TK-SD-ST06-0

Solid LCS Source: CPI

Aqueous LCS Source: _____

Analyte	Aqueous (ug/L			Solid (mg/K				
	True	Found	%R	True	Found	C	Limits	%R
Aluminum				200	195.11		160 240	98
Antimony				50	46.57		40 60	93
Arsenic				4	4.39		3.2 4.8	110
Barium				200	203.52		160 240	102
Beryllium				5	4.92		4 6	98
Cadmium				5	5.04		4 6	101
Mercury				0.166	0.18		.133 .199	108
Calcium				200	202.68		160 240	101
Chromium				20	20.38		16 24	102
Cobalt				50	50.49		40 60	101
Copper				25	24.85		20 30	99
Iron				100	100.94		80 120	101
Lead				50	50.21		40 60	100
Magnesium				200	196.10		160 240	98
Manganese				50	49.41		40 60	99
Nickel				50	50.36		40 60	101
Potassium				2000	1916.18		1600 2400	96
Selenium				101	88.46		80.8 121	88
Silver				5	4.75		4 6	95
Sodium				2000	1962.24		1600 2400	98
Thallium				200	181.78		160 240	91
Vanadium				50	49.62		40 60	99
Zinc				50	48.55		40 60	97

Comments: _____



General Chemistry

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Sample Name: Method Blank
Lab Code: R2101264-MB

Service Request: R2101264
Date Collected: NA
Date Received: NA

Basis: Dry

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Ammonia as Nitrogen, undistilled	350.1M	3.1 U	mg/Kg	5.0	3.1	1	02/23/21 16:17	02/22/21	
Cyanide, Total	9012B	0.17 U	mg/Kg	0.30	0.17	1	02/19/21 12:57	02/18/21	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Collected: 02/10/21
Date Received: 02/11/21
Date Analyzed: 02/19/21
Date Extracted: 02/18/21

Duplicate Matrix Spike Summary
Cyanide, Total

Sample Name: TS-SD-RC02-0210
Lab Code: R2101264-002
Analysis Method: 9012B
Prep Method: Method

Units: mg/Kg
Basis: Dry

Analyte Name	Matrix Spike					Duplicate Matrix Spike				
	R2101264-002MS					R2101264-002DMS				
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Cyanide, Total	0.43	1.60	3.87	30	1.22	4.20	19	10-159	27	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Analyzed: 02/19/21 - 02/23/21

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg**Basis:**Dry**Lab Control Sample**

R2101264-LCS1

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Ammonia as Nitrogen, undistilled	350.1M	25.0	25.0	100	69-142
Cyanide, Total	9012B	3.14	3.00	105	85-115

ALS Group USA, Corp.

dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101264
Date Analyzed: 02/19/21

Lab Control Sample Summary
General Chemistry Parameters

Units:mg/Kg**Basis:**Dry**Lab Control Sample**

R2101264-LCS2

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Cyanide, Total	9012B	17.8	18.0	99	85-115



March 09, 2021

Service Request No:R2101265

Mr. John Black
Inventum Engineering
481 Carlisle Drive
Herndon, VA 20170

Laboratory Results for: RTTC Tanks

Dear Mr.Black,

Enclosed are the results of the sample(s) submitted to our laboratory February 11, 2021
For your reference, these analyses have been assigned our service request number **R2101265**.

All testing was performed according to our laboratory's quality assurance program and met the requirements of the TNI standards except as noted in the case narrative report. Any testing not included in the lab's accreditation is identified on a Non-Certified Analytes report. All results are intended to be considered in their entirety. ALS Environmental is not responsible for use of less than the complete report. Results apply only to the individual samples submitted to the lab for analysis, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s), and represented by Laboratory Control Sample control limits. Any events, such as QC failures or Holding Time exceedances, which may add to the uncertainty are explained in the report narrative or are flagged with qualifiers. The flags are explained in the Report Qualifiers and Definitions page of this report.

Please contact me if you have any questions. My extension is 7475. You may also contact me via email at Meghan.Pedro@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Meghan Pedro
Project Manager

ADDRESS

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

PHONE +1 585 288 5380 | **FAX** +1 585 288 8475

ALS Group USA, Corp.
dba ALS Environmental



Narrative Documents

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com



Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Received: 02/11/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier level IV requested by the client.

Sample Receipt:

Two soil samples were received for analysis at ALS Environmental on 02/11/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

The RPD between the MS and the MSD was greater than the RPD limit. The percent recovery limit was met for both the MS and the MSD.

Semivolatile GC:

Method 8081B, 02/18/2021: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8151A, 02/18/2021: The upper control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analyte(s) in question above the Method Reporting Limit (MRL). Since the exceedance equates to a potential high bias, the data quality was not significantly affected and no further corrective action was taken.

Method 8151A, 02/18/2021: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) above the MRL in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Metals:

No significant anomalies were noted with this analysis.

Subcontracted Analytical Parameters:

No significant anomalies were noted with this analysis.

A handwritten signature in black ink, appearing to read "Meghan Pedicini".

Approved by _____

Date 03/09/2021



Sample Receipt Information

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

Client: Inventum Engineering
Project: RTTC Tanks

Service Request:R2101265

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R2101265-001	TK-SD-ST06-02092021	2/9/2021	1100
R2101265-002	TK-SD-RC02-0210	2/10/2021	1030



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

004192

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 1

Project Name RTIC Tanks		Project Number		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																
Project Manager Don Black		Report CC		PRESERVATIVE																
Company/Address INVENTUM ENGINEERING 481 CARLISLE DR. #202 HERNDON, VA 20170				NUMBER OF CONTAINERS	GC/MS VOAs P280 • 821 • CLP GC/MS SVDA's P270 • 825 GC/VOAs • 821 • 801/802 PESTICIDES P281 • 808 PCBs P282 • 808 METALS TOTAL (List in comments below) METALS TOXIC (List in comments below) Full Telp CYANIDE CORROSIVITY FLAMMABILITY HEAVY METALS Ammonia															Preservative Key 0. NONE 1. HCL 2. HNO ₃ 3. H ₂ SO ₄ 4. NaOH 5. Zn. Acetate 6. MeOH 7. NaHSO ₄ 8. Other _____
Phone # 571 217 6761		Email ph.black@inventum.com			REMARKS/ ALTERNATE DESCRIPTION															
Sampler's Signature <i>[Signature]</i>		Sampler's Printed Name Don Black																		
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	DATE	SAMPLING TIME	MATRIX																
TK-LQ-507-02092021		2/9/21	1200	Oil	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TK-SD-506-02092021		2/9/21	1100	SD	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TK-LQ-504-02092021		2/9/21	130	LQ	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TK-SD-R02-0210		2/10/21	10:30	SD	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TK-LQ-R01-0210		2/10/21	9:30	LQ	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TK-LQ-R03-0210		2/10/21	10:50	LQ	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TK-SD-R04-0210		2/10/21	130	SD	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SPECIAL INSTRUCTIONS/COMMENTS Metals					TURNAROUND REQUIREMENTS RUSH (SURCHARGES APPLY) 1 day 2 day 3 day 4 day 5 day Standard (10 business days-No Surcharge) REQUESTED REPORT DATE 2/21/2021					REPORT REQUIREMENTS I. Results Only II. Results + QC Summaries (LCS, DUP, MS/MSD as required) III. Results + QC and Calibration Summaries IV. Data Validation Report with Raw Data NYS DEC EQUIP HONEYWELL Edata Yes No					INVOICE INFORMATION PO # RTIC BILL TO: INVENTUM 481 CARLISLE DR #202 HERNDON, VA 20170					
See QAPP ☐					STATE WHERE SAMPLES WERE COLLECTED NY															
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY						
Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature <i>[Signature]</i>						
Printed Name Don Black		Printed Name Don Black		Printed Name Don Black		Printed Name Don Black		Printed Name Don Black		Printed Name Don Black		Printed Name Don Black		Printed Name Don Black						
Firm INVENTUM		Firm INVENTUM		Firm INVENTUM		Firm INVENTUM		Firm INVENTUM		Firm INVENTUM		Firm INVENTUM		Firm INVENTUM						
Date/Time 2/11/2021		Date/Time 2/11/21 1000		Date/Time 2/11/21 1400		Date/Time 2/11/21 1400		Date/Time 2/11/21 1400		Date/Time 2/11/21 1400		Date/Time 2/11/21 1400		Date/Time 2/11/21 1400						

R2101265
Inventum Engineering
RTIC Tanks

5





Cooler Receipt and Preservation Check Form

R2101265

5

Inventum Engineering
RTTC Tanks



Project/Client Inventum Folder Number _____

Cooler received on 2/11/21

by: SW

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	Y ☒ N
2	Custody papers properly completed (ink, signed)?	☒ Y N
3	Did all bottles arrive in good condition (unbroken)?	☒ Y N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	☒ Y N

5a	Perchlorate samples have required headspace?	Y N ☒ NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y N NA
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as: Bulk Encore 5035set	☒ NA

3. Temperature Readings Date: 2/11/21 Time: 1612 ID: IR#7 IR#10 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>113</u>	<u>0.7°</u>					
Within 0-6°C?	☒ Y N	☒ Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

& Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by SW on 2/11/21 at 1612
5035 samples placed in storage location: _____ by _____ on _____ at _____ within 48 hours of sampling? Y N

Cooler Breakdown/Preservation Check**: Date: 2/12/21 Time: 1310 by: SW

9. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
10. Did all bottle labels and tags agree with custody papers? YES NO
11. Were correct containers used for the tests indicated? YES NO
12. Were 5035 vials acceptable (no extra labels, not leaking)? YES NO
13. Air Samples: Cassettes / Tubes Intact Y / N with MS Y / N Canisters Pressurized Tedlar® Bags Inflated NA

pH	Lot of test paper	Reagent	Preserved?		Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
			Yes	No						
≥12		NaOH								
≤2		HNO ₃								
≤2		H ₂ SO ₄								
<4		NaHSO ₄								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)		For CN, Phenol, 625, 608pest, 522			If +, contact PM to add Na ₂ S ₂ O ₃ (625, 608, CN), ascorbic (phenol).					
		Na ₂ S ₂ O ₃								
		ZnAcetate	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: 081720-17W, 081020-15R

Explain all Discrepancies/ Other Comments:

HPROD	BULK
HTR	FLDT
<u>SUB</u>	HGFB
ALS	LL3541

Labels secondary reviewed by: SW

PC Secondary Review: _____

*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



Miscellaneous Forms

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.	+	Correlation coefficient for MSA is <0.995.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Aroclors).	N	Inorganics- Matrix spike recovery was outside laboratory limits.
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.	N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.	S	Concentration has been determined using Method of Standard Additions (MSA).
E	Organics- Concentration has exceeded the calibration range for that specific analysis.	W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.	P	Concentration >40% difference between the two GC columns.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.	C	Confirmed by GC/MS
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.	Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (100% Difference between two GC columns).
#	Spike was diluted out.	X	See Case Narrative for discussion.
		MRL	Method Reporting Limit. Also known as:
		LOQ	Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
		MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
		LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
		ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.



Rochester Lab ID # for State Certifications¹

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

¹ Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to <https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental>

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Inventum Engineering
Project: RTTC Tanks/

Service Request: R2101265

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101265-001
Sample Matrix: Soil

Date Collected: 02/9/21
Date Received: 02/11/21

Analysis Method	Extracted/Digested By	Analyzed By
6010C	AKONZEL	KMCLAEN
7470A	AKONZEL	AKONZEL
8081B	KSERCU	BALLGEIER
8151A	KSERCU	BALLGEIER
8270D	KSERCU	JMISIUREWICZ

Sample Name: TK-SD-RC02-0210
Lab Code: R2101265-002
Sample Matrix: Soil

Date Collected: 02/10/21
Date Received: 02/11/21

Analysis Method	Extracted/Digested By	Analyzed By
6010C	AKONZEL	KMCLAEN
7470A	AKONZEL	AKONZEL
8081B	KSERCU	BALLGEIER
8151A	KSERCU	BALLGEIER
8270D	KSERCU	JMISIUREWICZ



INORGANIC PREPARATION METHODS

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9034 Sulfide Acid Soluble	9030B
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7199	3060A
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction
For analytical methods not listed, the preparation method is the same as the analytical method reference.	



Sample Results

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com



Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: 02/09/21 11:00
Date Received: 02/11/21 14:00

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101265-001

Units: ug/L
Basis: As Received

TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Pre-Prep Method: EPA 1311
Pre-Prep Date: 2/15/21

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dichlorobenzene	4.8 U	400	4.8	1	02/19/21 15:07	2/17/21	
2,4,5-Trichlorophenol	4.4 U	400	4.4	1	02/19/21 15:07	2/17/21	
2,4,6-Trichlorophenol	5.6 U	400	5.6	1	02/19/21 15:07	2/17/21	
2,4-Dinitrotoluene	9.6 U	400	9.6	1	02/19/21 15:07	2/17/21	
2-Methylphenol	4.0 U	400	4.0	1	02/19/21 15:07	2/17/21	
3- and 4-Methylphenol Coelution	4.8 U	400	4.8	1	02/19/21 15:07	2/17/21	
Hexachlorobenzene	6.4 U	400	6.4	1	02/19/21 15:07	2/17/21	
Hexachlorobutadiene	4.0 U	400	4.0	1	02/19/21 15:07	2/17/21	
Hexachloroethane	4.4 U	400	4.4	1	02/19/21 15:07	2/17/21	
Nitrobenzene	6.0 U	400	6.0	1	02/19/21 15:07	2/17/21	
Pentachlorophenol (PCP)	39 U	2000	39	1	02/19/21 15:07	2/17/21	
Pyridine	4.0 U	2000	4.0	1	02/19/21 15:07	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	91	35 - 141	02/19/21 15:07	
2-Fluorobiphenyl	56	31 - 118	02/19/21 15:07	
2-Fluorophenol	46	10 - 105	02/19/21 15:07	
Nitrobenzene-d5	61	31 - 110	02/19/21 15:07	
Phenol-d6	31	10 - 107	02/19/21 15:07	
p-Terphenyl-d14	112	10 - 165	02/19/21 15:07	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: 02/10/21 10:30
Date Received: 02/11/21 14:00

Sample Name: TK-SD-RC02-0210
Lab Code: R2101265-002

Units: ug/L
Basis: As Received

TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Pre-Prep Method: EPA 1311
Pre-Prep Date: 2/15/21

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dichlorobenzene	4.8 U	400	4.8	1	02/19/21 16:31	2/17/21	
2,4,5-Trichlorophenol	4.4 U	400	4.4	1	02/19/21 16:31	2/17/21	
2,4,6-Trichlorophenol	5.6 U	400	5.6	1	02/19/21 16:31	2/17/21	
2,4-Dinitrotoluene	9.6 U	400	9.6	1	02/19/21 16:31	2/17/21	
2-Methylphenol	4.0 U	400	4.0	1	02/19/21 16:31	2/17/21	
3- and 4-Methylphenol Coelution	4.8 U	400	4.8	1	02/19/21 16:31	2/17/21	
Hexachlorobenzene	6.4 U	400	6.4	1	02/19/21 16:31	2/17/21	
Hexachlorobutadiene	4.0 U	400	4.0	1	02/19/21 16:31	2/17/21	
Hexachloroethane	4.4 U	400	4.4	1	02/19/21 16:31	2/17/21	
Nitrobenzene	6.0 U	400	6.0	1	02/19/21 16:31	2/17/21	
Pentachlorophenol (PCP)	39 U	2000	39	1	02/19/21 16:31	2/17/21	
Pyridine	4.0 U	2000	4.0	1	02/19/21 16:31	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	82	35 - 141	02/19/21 16:31	
2-Fluorobiphenyl	58	31 - 118	02/19/21 16:31	
2-Fluorophenol	40	10 - 105	02/19/21 16:31	
Nitrobenzene-d5	57	31 - 110	02/19/21 16:31	
Phenol-d6	27	10 - 107	02/19/21 16:31	
p-Terphenyl-d14	110	10 - 165	02/19/21 16:31	



Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: 02/09/21 11:00
Date Received: 02/11/21 14:00

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101265-001

Units: ug/L
Basis: As Received

TCLP Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Pre-Prep Method: EPA 1311
Pre-Prep Date: 2/15/21

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chlordane	0.13 U	2.5	0.13	1	02/18/21 21:41	2/17/21	
Endrin	0.020 U	0.50	0.020	1	02/18/21 21:41	2/17/21	
gamma-BHC (Lindane)	0.020 U	0.50	0.020	1	02/18/21 21:41	2/17/21	
Heptachlor	0.020 U	0.50	0.020	1	02/18/21 21:41	2/17/21	
Heptachlor Epoxide	0.020 U	0.50	0.020	1	02/18/21 21:41	2/17/21	
Methoxychlor	0.020 U	0.50	0.020	1	02/18/21 21:41	2/17/21	
Toxaphene	0.50 U	5.0	0.50	1	02/18/21 21:41	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	66	10 - 164	02/18/21 21:41	
Tetrachloro-m-xylene	65	10 - 147	02/18/21 21:41	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: 02/10/21 10:30
Date Received: 02/11/21 14:00

Sample Name: TK-SD-RC02-0210
Lab Code: R2101265-002

Units: ug/L
Basis: As Received

TCLP Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Pre-Prep Method: EPA 1311
Pre-Prep Date: 2/15/21

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chlordane	0.13 U	2.5	0.13	1	02/18/21 22:38	2/17/21	
Endrin	0.020 U	0.50	0.020	1	02/18/21 22:38	2/17/21	
gamma-BHC (Lindane)	0.020 U	0.50	0.020	1	02/18/21 22:38	2/17/21	
Heptachlor	0.020 U	0.50	0.020	1	02/18/21 22:38	2/17/21	
Heptachlor Epoxide	0.020 U	0.50	0.020	1	02/18/21 22:38	2/17/21	
Methoxychlor	0.020 U	0.50	0.020	1	02/18/21 22:38	2/17/21	
Toxaphene	0.50 U	5.0	0.50	1	02/18/21 22:38	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	67	10 - 164	02/18/21 22:38	
Tetrachloro-m-xylene	67	10 - 147	02/18/21 22:38	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101265-001

Service Request: R2101265
Date Collected: 02/09/21 11:00
Date Received: 02/11/21 14:00

Units: ug/L
Basis: As Received

TCLP Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Pre-Prep Method: EPA 1311
Pre-Prep Date: 2/15/21

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4-D	0.48 U	20	0.48	1	02/18/21 17:35	2/17/21	
2,4,5-TP (Silvex)	0.48 U	20	0.48	1	02/18/21 17:35	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
DCAA	55	12 - 131	02/18/21 17:35	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: 02/10/21 10:30
Date Received: 02/11/21 14:00

Sample Name: TK-SD-RC02-0210
Lab Code: R2101265-002

Units: ug/L
Basis: As Received

TCLP Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Pre-Prep Method: EPA 1311
Pre-Prep Date: 2/15/21

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4-D	0.48 U	20	0.48	1	02/18/21 17:55	2/17/21	
2,4,5-TP (Silvex)	0.48 U	20	0.48	1	02/18/21 17:55	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
DCAA	86	12 - 131	02/18/21 17:55	



Metals

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

INORGANIC ANALYSIS DATA PACKAGE

Basis:

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Arsenic	6010C	500	5.5	1.0	12.3	J	
Barium	6010C	1000	3.0	1.0	83.6	J	
Cadmium	6010C	100	0.350	1.0	100	U	
Mercury	7470A	0.300	0.077	1.0	0.300	U	
Chromium	6010C	100	0.590	1.0	6.6	J	
Lead	6010C	100	2.1	1.0	100	U	
Selenium	6010C	500	6.4	1.0	13.6	J	
Silver	6010C	100	0.570	1.0	100	U	

Comments:

INORGANIC ANALYSIS DATA PACKAGE

Basis:

Analyte	Analysis Method	PQL	MDL	Dil. Factor	Result	C	Q
Arsenic	6010C	500	5.5	1.0	500	U	
Barium	6010C	1000	3.0	1.0	1000	U	
Cadmium	6010C	100	0.350	1.0	100	U	
Mercury	7470A	0.300	0.077	1.0	0.236	J	
Chromium	6010C	100	0.590	1.0	78.5	J	
Lead	6010C	100	2.1	1.0	28.8	J	
Selenium	6010C	500	6.4	1.0	10.5	J	
Silver	6010C	100	0.570	1.0	100	U	

Comments:



QC Summary Forms

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com



Semivolatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265

SURROGATE RECOVERY SUMMARY
TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

Sample Name	Lab Code	2,4,6-Tribromophenol	2-Fluorobiphenyl	2-Fluorophenol
		35-141	31-118	10-105
TK-SD-ST06-02092021	R2101265-001	91	56	46
TK-SD-RC02-0210	R2101265-002	82	58	40
Method Blank	RQ2101473-01	101	68	48
Method Blank	RQ2101474-01	94	66	50
Method Blank	RQ2101560-01	82	58	48
Lab Control Sample	RQ2101560-02	102	69	48
Duplicate Lab Control Sample	RQ2101560-03	90	70	46
TK-SD-ST06-02092021 MS	RQ2101560-04	99	71	46
TK-SD-ST06-02092021 DMS	RQ2101560-05	83	66	43

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265

SURROGATE RECOVERY SUMMARY
TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

Sample Name	Lab Code	Nitrobenzene-d5	Phenol-d6	p-Terphenyl-d14
		31-110	10-107	10-165
TK-SD-ST06-02092021	R2101265-001	61	31	112
TK-SD-RC02-0210	R2101265-002	57	27	110
Method Blank	RQ2101473-01	73	31	113
Method Blank	RQ2101474-01	68	36	118
Method Blank	RQ2101560-01	64	30	103
Lab Control Sample	RQ2101560-02	69	34	120
Duplicate Lab Control Sample	RQ2101560-03	66	32	104
TK-SD-ST06-02092021 MS	RQ2101560-04	68	35	117
TK-SD-ST06-02092021 DMS	RQ2101560-05	62	32	96

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: 02/09/21
Date Received: 02/11/21
Date Analyzed: 02/19/21
Date Extracted: 02/17/21

Duplicate Matrix Spike Summary
TCLP Semivolatile Organic Compounds by GC/MS

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101265-001
Analysis Method: 8270D
Prep Method: EPA 3510C

Units: ug/L
Basis: As Received

Analyte Name	Sample Result	Matrix Spike RQ2101560-04			Duplicate Matrix Spike RQ2101560-05			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,4-Dichlorobenzene	4.8 U	299 J	800	37	305 J	800	38	10-124	2	30
2,4,5-Trichlorophenol	4.4 U	614	800	77	534	800	67	48-134	14	30
2,4,6-Trichlorophenol	5.6 U	602	800	75	517	800	65	44-135	15	30
2,4-Dinitrotoluene	9.6 U	680	800	85	588	800	73	37-143	15	30
2-Methylphenol	4.0 U	465	800	58	466	800	58	37-102	<1	30
3- and 4-Methylphenol Coelution	4.8 U	478	800	60	458	800	57	30-95	4	30
Hexachlorobenzene	6.4 U	697	800	87	640	800	80	42-125	9	30
Hexachlorobutadiene	4.0 U	339 J	800	42	329 J	800	41	10-111	3	30
Hexachloroethane	4.4 U	295 J	800	37	280 J	800	35	12-101	5	30
Nitrobenzene	6.0 U	483	800	60	457	800	57	35-112	6	30
Pentachlorophenol (PCP)	39 U	653 J	800	82	569 J	800	71	29-164	14	30
Pyridine	4.0 U	199 J	800	25	274 J	800	34	10-123	32*	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101473-01

Units: ug/L
Basis: As Received

TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Pre-Prep Method: EPA 1311
Pre-Prep Date: 2/15/21

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dichlorobenzene	4.8 U	400	4.8	1	02/19/21 17:54	2/17/21	
2,4,5-Trichlorophenol	4.4 U	400	4.4	1	02/19/21 17:54	2/17/21	
2,4,6-Trichlorophenol	5.6 U	400	5.6	1	02/19/21 17:54	2/17/21	
2,4-Dinitrotoluene	9.6 U	400	9.6	1	02/19/21 17:54	2/17/21	
2-Methylphenol	4.0 U	400	4.0	1	02/19/21 17:54	2/17/21	
3- and 4-Methylphenol Coelution	4.8 U	400	4.8	1	02/19/21 17:54	2/17/21	
Hexachlorobenzene	6.4 U	400	6.4	1	02/19/21 17:54	2/17/21	
Hexachlorobutadiene	4.0 U	400	4.0	1	02/19/21 17:54	2/17/21	
Hexachloroethane	4.4 U	400	4.4	1	02/19/21 17:54	2/17/21	
Nitrobenzene	6.0 U	400	6.0	1	02/19/21 17:54	2/17/21	
Pentachlorophenol (PCP)	39 U	2000	39	1	02/19/21 17:54	2/17/21	
Pyridine	4.0 U	2000	4.0	1	02/19/21 17:54	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	101	35 - 141	02/19/21 17:54	
2-Fluorobiphenyl	68	31 - 118	02/19/21 17:54	
2-Fluorophenol	48	10 - 105	02/19/21 17:54	
Nitrobenzene-d5	73	31 - 110	02/19/21 17:54	
Phenol-d6	31	10 - 107	02/19/21 17:54	
p-Terphenyl-d14	113	10 - 165	02/19/21 17:54	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101474-01

Units: ug/L
Basis: As Received

TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Pre-Prep Method: EPA 1311
Pre-Prep Date: 2/15/21

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dichlorobenzene	4.8 U	400	4.8	1	02/19/21 18:23	2/17/21	
2,4,5-Trichlorophenol	4.4 U	400	4.4	1	02/19/21 18:23	2/17/21	
2,4,6-Trichlorophenol	5.6 U	400	5.6	1	02/19/21 18:23	2/17/21	
2,4-Dinitrotoluene	9.6 U	400	9.6	1	02/19/21 18:23	2/17/21	
2-Methylphenol	4.0 U	400	4.0	1	02/19/21 18:23	2/17/21	
3- and 4-Methylphenol Coelution	4.8 U	400	4.8	1	02/19/21 18:23	2/17/21	
Hexachlorobenzene	6.4 U	400	6.4	1	02/19/21 18:23	2/17/21	
Hexachlorobutadiene	4.0 U	400	4.0	1	02/19/21 18:23	2/17/21	
Hexachloroethane	4.4 U	400	4.4	1	02/19/21 18:23	2/17/21	
Nitrobenzene	6.0 U	400	6.0	1	02/19/21 18:23	2/17/21	
Pentachlorophenol (PCP)	39 U	2000	39	1	02/19/21 18:23	2/17/21	
Pyridine	4.0 U	2000	4.0	1	02/19/21 18:23	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	94	35 - 141	02/19/21 18:23	
2-Fluorobiphenyl	66	31 - 118	02/19/21 18:23	
2-Fluorophenol	50	10 - 105	02/19/21 18:23	
Nitrobenzene-d5	68	31 - 110	02/19/21 18:23	
Phenol-d6	36	10 - 107	02/19/21 18:23	
p-Terphenyl-d14	118	10 - 165	02/19/21 18:23	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101560-01

Units: ug/L
Basis: As Received

TCLP Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
1,4-Dichlorobenzene	1.2 U	40	1.2	1	02/19/21 13:43	2/17/21	
2,4,5-Trichlorophenol	1.1 U	40	1.1	1	02/19/21 13:43	2/17/21	
2,4,6-Trichlorophenol	1.4 U	40	1.4	1	02/19/21 13:43	2/17/21	
2,4-Dinitrotoluene	2.4 U	40	2.4	1	02/19/21 13:43	2/17/21	
2-Methylphenol	1.0 U	40	1.0	1	02/19/21 13:43	2/17/21	
3- and 4-Methylphenol Coelution	1.2 U	40	1.2	1	02/19/21 13:43	2/17/21	
Hexachlorobenzene	1.6 U	40	1.6	1	02/19/21 13:43	2/17/21	
Hexachlorobutadiene	1.0 U	40	1.0	1	02/19/21 13:43	2/17/21	
Hexachloroethane	1.1 U	40	1.1	1	02/19/21 13:43	2/17/21	
Nitrobenzene	1.5 U	40	1.5	1	02/19/21 13:43	2/17/21	
Pentachlorophenol (PCP)	9.7 U	200	9.7	1	02/19/21 13:43	2/17/21	
Pyridine	1.0 U	200	1.0	1	02/19/21 13:43	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	82	35 - 141	02/19/21 13:43	
2-Fluorobiphenyl	58	31 - 118	02/19/21 13:43	
2-Fluorophenol	48	10 - 105	02/19/21 13:43	
Nitrobenzene-d5	64	31 - 110	02/19/21 13:43	
Phenol-d6	30	10 - 107	02/19/21 13:43	
p-Terphenyl-d14	103	10 - 165	02/19/21 13:43	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Analyzed: 02/19/21

Duplicate Lab Control Sample Summary
TCLP Semivolatile Organic Compounds by GC/MS

Units:ug/L

Basis:As Received

Analyte Name	Analytical Method	Lab Control Sample RQ2101560-02			Duplicate Lab Control Sample RQ2101560-03			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,4-Dichlorobenzene	8270D	33.6 J	80.0	42	34.9 J	80.0	44	10-124	4	30
2,4,5-Trichlorophenol	8270D	61.9	80.0	77	56.6	80.0	71	48-134	9	30
2,4,6-Trichlorophenol	8270D	57.9	80.0	72	56.8	80.0	71	44-135	2	30
2,4-Dinitrotoluene	8270D	69.2	80.0	87	62.2	80.0	78	54-130	11	30
2-Methylphenol	8270D	50.6	80.0	63	48.0	80.0	60	47-100	5	30
3- and 4-Methylphenol Coelution	8270D	49.9	80.0	62	46.1	80.0	58	40-92	8	30
Hexachlorobenzene	8270D	73.3	80.0	92	65.1	80.0	81	53-123	12	30
Hexachlorobutadiene	8270D	35.4 J	80.0	44	38.1 J	80.0	48	16-95	7	30
Hexachloroethane	8270D	32.1 J	80.0	40	32.1 J	80.0	40	15-92	<1	30
Nitrobenzene	8270D	49.6	80.0	62	49.7	80.0	62	46-108	<1	30
Pentachlorophenol (PCP)	8270D	58.5 J	80.0	73	50.0 J	80.0	62	29-164	16	30
Pyridine	8270D	34.6 J	80.0	43	35.4 J	80.0	44	10-123	2	30



Semivolatile Organic Compounds by GC

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265

SURROGATE RECOVERY SUMMARY
TCLP Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Extraction Method: EPA 3510C

Sample Name	Lab Code	Decachlorobiphenyl	Tetrachloro-m-xylene
		10-164	10-147
TK-SD-ST06-02092021	R2101265-001	66	65
TK-SD-RC02-0210	R2101265-002	67	67
Method Blank	RQ2101473-01	61	61
Method Blank	RQ2101474-01	50	44
Method Blank	RQ2101558-01	64	62
Lab Control Sample	RQ2101558-02	63	61
Duplicate Lab Control Sample	RQ2101558-03	63	63
TK-SD-ST06-02092021 MS	RQ2101558-04	54	48
TK-SD-ST06-02092021 DMS	RQ2101558-05	86	86

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: 02/09/21
Date Received: 02/11/21
Date Analyzed: 02/18/21
Date Extracted: 02/17/21

Duplicate Matrix Spike Summary
TCLP Organochlorine Pesticides by Gas Chromatography

Sample Name: TK-SD-ST06-02092021
Lab Code: R2101265-001
Analysis Method: 8081B
Prep Method: EPA 3510C

Units: ug/L
Basis: As Received

Analyte Name	Matrix Spike RQ2101558-04				Duplicate Matrix Spike RQ2101558-05					
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Endrin	0.020 U	2.32	4.00	58	4.51	4.00	113	48-165	64*	30
gamma-BHC (Lindane)	0.020 U	2.26	4.00	57	4.30	4.00	108	43-164	62*	30
Heptachlor	0.020 U	1.87	4.00	47	3.40	4.00	85	29-168	58*	30
Heptachlor Epoxide	0.020 U	2.19	4.00	55	4.18	4.00	104	29-180	62*	30
Methoxychlor	0.020 U	2.56	4.00	64	4.69	4.00	117	38-162	59*	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101473-01

Units: ug/L
Basis: As Received

TCLP Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Pre-Prep Method: EPA 1311
Pre-Prep Date: 2/15/21

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chlordane	0.13 U	2.5	0.13	1	02/18/21 23:36	2/17/21	
Endrin	0.020 U	0.50	0.020	1	02/18/21 23:36	2/17/21	
gamma-BHC (Lindane)	0.020 U	0.50	0.020	1	02/18/21 23:36	2/17/21	
Heptachlor	0.020 U	0.50	0.020	1	02/18/21 23:36	2/17/21	
Heptachlor Epoxide	0.020 U	0.50	0.020	1	02/18/21 23:36	2/17/21	
Methoxychlor	0.020 U	0.50	0.020	1	02/18/21 23:36	2/17/21	
Toxaphene	0.50 U	5.0	0.50	1	02/18/21 23:36	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	61	10 - 164	02/18/21 23:36	
Tetrachloro-m-xylene	61	10 - 147	02/18/21 23:36	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101474-01

Units: ug/L
Basis: As Received

TCLP Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Pre-Prep Method: EPA 1311
Pre-Prep Date: 2/15/21

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chlordane	0.13 U	2.5	0.13	1	02/19/21 00:14	2/17/21	
Endrin	0.020 U	0.50	0.020	1	02/19/21 00:14	2/17/21	
gamma-BHC (Lindane)	0.020 U	0.50	0.020	1	02/19/21 00:14	2/17/21	
Heptachlor	0.020 U	0.50	0.020	1	02/19/21 00:14	2/17/21	
Heptachlor Epoxide	0.020 U	0.50	0.020	1	02/19/21 00:14	2/17/21	
Methoxychlor	0.020 U	0.50	0.020	1	02/19/21 00:14	2/17/21	
Toxaphene	0.50 U	5.0	0.50	1	02/19/21 00:14	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	50	10 - 164	02/19/21 00:14	
Tetrachloro-m-xylene	44	10 - 147	02/19/21 00:14	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101558-01

Units: ug/L
Basis: As Received

TCLP Organochlorine Pesticides by Gas Chromatography

Analysis Method: 8081B
Prep Method: EPA 3510C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chlordane	0.13 U	0.25	0.13	1	02/18/21 20:44	2/17/21	
Endrin	0.020 U	0.050	0.020	1	02/18/21 20:44	2/17/21	
gamma-BHC (Lindane)	0.020 U	0.050	0.020	1	02/18/21 20:44	2/17/21	
Heptachlor	0.020 U	0.050	0.020	1	02/18/21 20:44	2/17/21	
Heptachlor Epoxide	0.020 U	0.050	0.020	1	02/18/21 20:44	2/17/21	
Methoxychlor	0.020 U	0.050	0.020	1	02/18/21 20:44	2/17/21	
Toxaphene	0.50 U	0.50	0.50	1	02/18/21 20:44	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	64	10 - 164	02/18/21 20:44	
Tetrachloro-m-xylene	62	10 - 147	02/18/21 20:44	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Analyzed: 02/18/21

Duplicate Lab Control Sample Summary
TCLP Organochlorine Pesticides by Gas Chromatography

Units:ug/L

Basis:As Received

Lab Control Sample					Duplicate Lab Control Sample					
RQ2101558-02					RQ2101558-03					
Analyte Name	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Endrin	8081B	0.308	0.400	77	0.299	0.400	75	56-143	3	30
gamma-BHC (Lindane)	8081B	0.284	0.400	71	0.277	0.400	69	41-149	2	30
Heptachlor	8081B	0.249	0.400	62	0.253	0.400	63	32-141	1	30
Heptachlor Epoxide	8081B	0.288	0.400	72	0.283	0.400	71	51-143	2	30
Methoxychlor	8081B	0.312	0.400	78	0.310	0.400	77	56-149	<1	30

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265

SURROGATE RECOVERY SUMMARY
TCLP Chlorinated Herbicides by GC

Analysis Method: 8151A
Extraction Method: Method

Sample Name	Lab Code	DCAA
		12-131
TK-SD-ST06-02092021	R2101265-001	55
TK-SD-RC02-0210	R2101265-002	86
Method Blank	RQ2101473-01	41
Method Blank	RQ2101474-01	51
Method Blank	RQ2101559-01	59
Lab Control Sample	RQ2101559-02	79
Duplicate Lab Control Sample	RQ2101559-03	72
TK-SD-RC02-0210 MS	RQ2101559-04	84
TK-SD-RC02-0210 DMS	RQ2101559-05	92

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: 02/10/21
Date Received: 02/11/21
Date Analyzed: 02/18/21
Date Extracted: 02/17/21

Duplicate Matrix Spike Summary
TCLP Chlorinated Herbicides by GC

Sample Name: TK-SD-RC02-0210
Lab Code: R2101265-002
Analysis Method: 8151A
Prep Method: Method

Units: ug/L
Basis: As Received

Analyte Name	Sample Result	Matrix Spike RQ2101559-04			Duplicate Matrix Spike RQ2101559-05			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
2,4-D	0.48 U	9.79 J	20.0	49	10.3 J	20.0	52	26-154	5	30
2,4,5-TP (Silvex)	0.48 U	9.13 J	20.0	46	10.0 J	20.0	50	21-120	10	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101473-01

Units: ug/L
Basis: As Received

TCLP Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Pre-Prep Method: EPA 1311
Pre-Prep Date: 2/15/21

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4-D	0.48 U	20	0.48	1	02/18/21 19:34	2/17/21	
2,4,5-TP (Silvex)	0.48 U	20	0.48	1	02/18/21 19:34	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
DCAA	41	12 - 131	02/18/21 19:34	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101474-01

Units: ug/L
Basis: As Received

TCLP Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Pre-Prep Method: EPA 1311
Pre-Prep Date: 2/15/21

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4-D	0.48 U	20	0.48	1	02/18/21 20:13	2/17/21	
2,4,5-TP (Silvex)	0.48 U	20	0.48	1	02/18/21 20:13	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
DCAA	51	12 - 131	02/18/21 20:13	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Collected: NA
Date Received: NA

Sample Name: Method Blank
Lab Code: RQ2101559-01

Units: ug/L
Basis: As Received

TCLP Chlorinated Herbicides by GC

Analysis Method: 8151A
Prep Method: Method

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
2,4-D	0.12 U	2.0	0.12	1	02/18/21 16:36	2/17/21	
2,4,5-TP (Silvex)	0.12 U	2.0	0.12	1	02/18/21 16:36	2/17/21	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
DCAA	59	12 - 131	02/18/21 16:36	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Inventum Engineering
Project: RTTC Tanks
Sample Matrix: Soil

Service Request: R2101265
Date Analyzed: 02/18/21

Duplicate Lab Control Sample Summary
TCLP Chlorinated Herbicides by GC

Units:ug/L
Basis:As Received

Lab Control Sample RQ2101559-02					Duplicate Lab Control Sample RQ2101559-03					
Analyte Name	Analytical Method	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
2,4-D	8151A	1.72 J	2.00	86	1.84 J	2.00	92	26-154	7	30
2,4,5-TP (Silvex)	8151A	1.52 J	2.00	76	1.61 J	2.00	81	21-120	6	30



Metals

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

METALS

-3-

BLANKSContract: R2101265Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: TK-SD-ST06-0Preparation Blank Matrix (soil/water): WATERPreparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank		M
		1	2	3						
Arsenic	5.50 U	5.50 U	5.50 U	5.50 U				5.500 U		P
Barium	3.00 U	3.00 U	3.00 U	3.00 U				3.000 U		P
Cadmium	0.35 U	0.35 U	0.35 U	0.35 U				0.350 U		P
Mercury	0.077 U	0.077 U	0.077 U	0.077 U				0.077 U		CV
Chromium	0.59 U	0.59 U	0.59 U	0.59 U				0.590 U		P
Lead	-2.50 J	2.10 U	2.10 U	2.10 U				2.100 U		P
Selenium	6.40 U	6.40 U	6.40 U	6.40 U				6.400 U		P
Silver	0.57 U	0.57 U	0.57 U	0.57 U				0.570 U		P

Comments:

METALS

-3-

BLANKSContract: R2101265Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: TK-SD-ST06-0Preparation Blank Matrix (soil/water): WATERPreparation Blank Concentration Units (ug/L, ppt, or mg/kg): UG/L

Analyte	Initial Calib. Blank ug/L	Continuing Calibration Blank ug/L						Preparation Blank		
		1	C	2	C	3	C			
Arsenic		5.50	U	5.50	U					P
Barium		3.00	U	3.00	U					P
Cadmium		0.35	U	0.35	U					P
Mercury		0.077	U							CV
Chromium		0.59	U	0.59	U					P
Lead		2.10	U	2.10	U					P
Selenium		6.40	U	6.40	U					P
Silver		0.57	U	0.57	U					P

Comments:

METALS

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

TK-SD-ST06-02092021S

Contract: R2101265

Lab Code: Case No.: SAS No.: SDG NO.: TK-SD-ST06-0

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Arsenic	75 - 125	1020.00	12.30 J	1000.0	101		P
Barium	75 - 125	2050.00	83.60 J	2000.0	98		P
Cadmium	75 - 125	468.00	0.35 U	500.0	94		P
Chromium	75 - 125	489.00	6.60 J	500.0	96		P
Lead	75 - 125	476.00	2.10 U	500.0	95		P
Selenium	75 - 125	1050.00	13.60 J	1000.0	104		P
Silver	75 - 125	274.00	0.57 U	250.0	110		P

Comments:

METALS

-5A-

SPIKE SAMPLE RECOVERY

SAMPLE NO.

TK-SD-ST06-02092021SD

Contract: R2101265

Lab Code: Case No.: SAS No.: SDG NO.: TK-SD-ST06-0

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Arsenic	75 - 125	1130.00	12.30 J	1000.0	112		P
Barium	75 - 125	2300.00	83.60 J	2000.0	111		P
Cadmium	75 - 125	521.00	0.35 U	500.0	104		P
Chromium	75 - 125	544.00	6.60 J	500.0	107		P
Lead	75 - 125	530.00	2.10 U	500.0	106		P
Selenium	75 - 125	1150.00	13.60 J	1000.0	114		P
Silver	75 - 125	306.00	0.57 U	250.0	122		P

Comments:

**METALS
-6-
DUPLICATES**

SAMPLE NO.

TK-SD-ST06-02092021SD

Contract: R2101265

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: TK-SD-ST06-0

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Arsenic		1020.00		1130.00		10		P
Barium		2050.00		2300.00		11		P
Cadmium		468.00		521.00		11		P
Chromium		489.00		544.00		11		P
Lead		476.00		530.00		11		P
Selenium		1050.00		1150.00		9		P
Silver		274.00		306.00		11		P

Comments: _____

METALS

-7-

LABORATORY CONTROL SAMPLE

Contract: R2101265

Lab Code: Case No.: SAS No.: SDG NO.: TK-SD-ST06-0

Solid LCS Source:

Aqueous LCS Source: CPI

Analyte	Aqueous (ug/L			Solid (mg/K					
	True	Found	%R	True	Found	C	Limits	%R	
Arsenic	1000	985	98						
Barium	2000	2020	101						
Cadmium	500	508	102						
Mercury	1.000	1.060	106						
Chromium	500	507	101						
Lead	500	499	100						
Selenium	1000	989	99						
Silver	250	246	98						

Comments:



Subcontracted Analytical Parameters

ALS Environmental—Rochester Laboratory

1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

Phone (585) 288-5380 Fax (585) 288-8475

www.alsglobal.com

February 25, 2021

Reports and Invoices
ALS Environmental
1565 Jefferson Road
Building 300, Suite 360
Rochester, NY 14623

Certificate of Analysis

Project Name:	Custom EDD, MDL, QC	Workorder:	3158025
Purchase Order:	58-R2101265	Workorder ID:	AER557 R2101265

Dear Reports Invoices:

Enclosed are the analytical results for samples received by the laboratory on Monday, February 15, 2021.

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 Ms. Sarah S 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.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Michael Chevalier , Mr. Brady Kalkman , Ms. Janice Jaeger

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



Ms. Sarah S Leung
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

**SAMPLE SUMMARY**

Workorder: 3158025 AER557|R2101265

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3158025001	TK-SD-ST06-02092021	Solid	2/9/2021 11:00	2/15/2021 09:26	Collected by Client
3158025002	TK-SD-RC02-0210	Solid	2/10/2021 10:30	2/15/2021 09:26	Collected by Client

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

SAMPLE SUMMARY

Workorder: 3158025 AER557|R2101265

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).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- 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.

Standard Acronyms/Flags

C	Please reference the Project Summary section of this Certificate of Analysis for case narrative comments.
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)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
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

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey



PROJECT SUMMARY

Workorder: 3158025 AER557|R2101265

Workorder Comments

Temperature of sample taken at time of sample receipt in the laboratory. See chain of custody for actual temperature.

Project was received at a temperature greater than six degrees Celsius.

Project was received without the presence of ice.

Sample Comments

Lab ID: 3158025001

Sample ID: TK-SD-ST06-02092021

Sample Type: SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

Lab ID: 3158025002

Sample ID: TK-SD-RC02-0210

Sample Type: SAMPLE

The analysis for ignitability is performed using a modified method 1010A that provides a flashpoint temperature for a solid sample.

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 3158025 AER557|R2101265

Lab ID: **3158025001**
Sample ID: **TK-SD-ST06-02092021**

Date Collected: 2/9/2021 11:00 Matrix: Solid
Date Received: 2/15/2021 09:26

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND	C	ug/L	20.0	8.0	SW846 8260C		2/23/21 13:03	TMP	A
2-Butanone	236	C	ug/L	200	60.0	SW846 8260C		2/23/21 13:03	TMP	A
Carbon Tetrachloride	ND	C	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:03	TMP	A
Chlorobenzene	ND	C	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:03	TMP	A
Chloroform	ND	C	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:03	TMP	A
1,2-Dichloroethane	ND	C	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:03	TMP	A
1,1-Dichloroethene	ND	C	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:03	TMP	A
Tetrachloroethene	ND	C	ug/L	20.0	8.0	SW846 8260C		2/23/21 13:03	TMP	A
Trichloroethene	ND	C	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:03	TMP	A
Vinyl Chloride	ND	C	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:03	TMP	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	102	C	%	62 - 133		SW846 8260C		2/23/21 13:03	TMP	A
4-Bromofluorobenzene (S)	89.3	C	%	79 - 114		SW846 8260C		2/23/21 13:03	TMP	A
Dibromofluoromethane (S)	98.3	C	%	78 - 116		SW846 8260C		2/23/21 13:03	TMP	A
Toluene-d8 (S)	90.8	C	%	76 - 127		SW846 8260C		2/23/21 13:03	TMP	A
WET CHEMISTRY										
Cyanide, Reactive	ND	C	mg/L	10	0.011	SW-846 7.3CN	2/21/21 15:00 VXF	2/23/21 08:03	MXF	A
Ignitability	See Comment	C, 1, 2	Deg. F			SW-846 1010AM		2/17/21 12:43	II	A
Moisture	50.1	C	%	0.1	0.01	S2540G-11		2/16/21 15:00	II	
Sulfide, Reactive	7.2	C	mg/kg	6.2	1.4	SW846 7.3	2/21/21 15:00 VXF	2/21/21 21:40	VXF	A
Total Solids	49.9	C	%	0.1	0.01	S2540G-11		2/16/21 15:00	II	



Ms. Sarah S Leung
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 3158025 AER557|R2101265

Lab ID: **3158025002**
Sample ID: **TK-SD-RC02-0210**

Date Collected: 2/10/2021 10:30 Matrix: Solid
Date Received: 2/15/2021 09:26

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
TCLP EPA 1311 VOLATILE ORGANIC										
Benzene	ND	C	ug/L	20.0	8.0	SW846 8260C		2/23/21 13:26	TMP	A
2-Butanone	ND	C	ug/L	200	60.0	SW846 8260C		2/23/21 13:26	TMP	A
Carbon Tetrachloride	ND	C	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:26	TMP	A
Chlorobenzene	ND	C	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:26	TMP	A
Chloroform	5.2J	C,J	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:26	TMP	A
1,2-Dichloroethane	ND	C	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:26	TMP	A
1,1-Dichloroethene	ND	C	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:26	TMP	A
Tetrachloroethene	1090	C	ug/L	20.0	8.0	SW846 8260C		2/23/21 13:26	TMP	A
Trichloroethene	18.1J	C,J	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:26	TMP	A
Vinyl Chloride	ND	C	ug/L	20.0	4.0	SW846 8260C		2/23/21 13:26	TMP	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
1,2-Dichloroethane-d4 (S)	110	C	%	62 - 133		SW846 8260C		2/23/21 13:26	TMP	A
4-Bromofluorobenzene (S)	91.3	C	%	79 - 114		SW846 8260C		2/23/21 13:26	TMP	A
Dibromofluoromethane (S)	104	C	%	78 - 116		SW846 8260C		2/23/21 13:26	TMP	A
Toluene-d8 (S)	88.6	C	%	76 - 127		SW846 8260C		2/23/21 13:26	TMP	A
WET CHEMISTRY										
Cyanide, Reactive	ND	C	mg/L	10	0.011	SW-846 7.3CN	2/21/21 15:00	VXF	2/23/21 08:03	MXF A
Ignitability	See Comment	C,1,2	Deg. F			SW-846 1010AM			2/17/21 12:43	II A
Moisture	30.0	C	%	0.1	0.01	S2540G-11			2/16/21 15:00	II
Sulfide, Reactive	8.8	C	mg/kg	6.2	1.4	SW846 7.3	2/21/21 15:00	VXF	2/21/21 21:40	VXF A
Total Solids	70.0	C	%	0.1	0.01	S2540G-11			2/16/21 15:00	II



Ms. Sarah S Leung
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

**ANALYTICAL RESULTS**

Workorder: 3158025 AER557|R2101265

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3158025001	1	TK-SD-ST06-02092021	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3158025001	2	TK-SD-ST06-02092021	SW-846 1010AM	Ignitability
The sample did not flash up to 199°F				
3158025002	1	TK-SD-RC02-0210	SW-846 1010AM	Ignitability
According to Pa/USEPA regulations, this sample is not considered to be ignitable. (Ref 40 CFR 261.21)				
3158025002	2	TK-SD-RC02-0210	SW-846 1010AM	Ignitability
The sample did not flash up to 199°F				

ALS Environmental Laboratory Locations Across North AmericaCanada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

**ANALYSIS - PREP METHOD CROSS REFERENCE TABLE**

Workorder: 3158025 AER557|R2101265

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3158025001	TK-SD-ST06-02092021	S2540G-11		
3158025001	TK-SD-ST06-02092021	SW-846 1010AM		
3158025001	TK-SD-ST06-02092021	SW-846 7.3CN	SW-846 7.3CN	
3158025001	TK-SD-ST06-02092021	SW846 7.3	SW846 7.3	
3158025001	TK-SD-ST06-02092021	SW846 8260C		SW846 1311
3158025002	TK-SD-RC02-0210	S2540G-11		
3158025002	TK-SD-RC02-0210	SW-846 1010AM		
3158025002	TK-SD-RC02-0210	SW-846 7.3CN	SW-846 7.3CN	
3158025002	TK-SD-RC02-0210	SW846 7.3	SW846 7.3	
3158025002	TK-SD-RC02-0210	SW846 8260C		SW846 1311

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

QUALITY CONTROL DATA

Workorder: 3158025 AER557|R2101265

QC Batch: VOMS/58421 **Analysis Method:** SW846 8260C
QC Batch Method: SW846 8260C
Associated Lab Samples: 3158025001, 3158025002

METHOD BLANK: 3282320

Parameter	Blank Result	Units	Reporting Limit
Benzene	ND	ug/L	1.0
2-Butanone	ND	ug/L	10.0
Carbon Tetrachloride	ND	ug/L	1.0
Chlorobenzene	ND	ug/L	1.0
Chloroform	ND	ug/L	1.0
1,2-Dichloroethane	ND	ug/L	1.0
1,1-Dichloroethene	ND	ug/L	1.0
Tetrachloroethene	ND	ug/L	1.0
Trichloroethene	ND	ug/L	1.0
Vinyl Chloride	ND	ug/L	1.0
1,2-Dichloroethane-d4 (S)	101	%	62 - 133
4-Bromofluorobenzene (S)	90.1	%	79 - 114
Dibromofluoromethane (S)	95.3	%	78 - 116
Toluene-d8 (S)	90.1	%	76 - 127

LABORATORY CONTROL SAMPLE: 3282321

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Benzene	108	ug/L	20	21.7	80 - 124
2-Butanone	125	ug/L	100	125	50 - 152
Carbon Tetrachloride	106	ug/L	20	21.2	62 - 132
Chlorobenzene	91.5	ug/L	20	18.3	85 - 117
Chloroform	106	ug/L	20	21.2	78 - 122
1,2-Dichloroethane	111	ug/L	20	22.3	70 - 133
1,1-Dichloroethene	115	ug/L	20	23.0	63 - 128
Tetrachloroethene	90.3	ug/L	20	18.1	72 - 124
Trichloroethene	90.9	ug/L	20	18.2	77 - 124
Vinyl Chloride	93.2	ug/L	20	18.6	27 - 138
1,2-Dichloroethane-d4 (S)	89.3	%			62 - 133
4-Bromofluorobenzene (S)	79.9	%			79 - 114
Dibromofluoromethane (S)	88.7	%			78 - 116
Toluene-d8 (S)	78	%			76 - 127

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

**QUALITY CONTROL DATA**

Workorder: 3158025 AER557|R2101265

QC Batch: WCPR/53939 **Analysis Method:** SW-846 7.3CN
QC Batch Method: SW-846 7.3CN
Associated Lab Samples: 3158025001, 3158025002

METHOD BLANK: 3281267

Parameter	Blank Result	Units	Reporting Limit
Cyanide, Reactive	ND	mg/L	10

LABORATORY CONTROL SAMPLE: 3281268

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Cyanide, Reactive	9	mg/L	10	0.90J	0 - 92

SAMPLE DUPLICATE: 3281269 ORIGINAL: 3158496001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Cyanide, Reactive	0	mg/L	0	NC	20

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

QUALITY CONTROL DATA

Workorder: 3158025 AER557|R2101265

QC Batch: WCPR/53940 Analysis Method: SW846 7.3

QC Batch Method: SW846 7.3

Associated Lab Samples: 3158025001, 3158025002

METHOD BLANK: 3281270

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	4.0J	mg/kg	6.2

LABORATORY CONTROL SAMPLE: 3281271

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	% Rec Limit
Sulfide, Reactive	67.1	mg/kg	570	382	49 - 148

SAMPLE DUPLICATE: 3281272 ORIGINAL: 3158496001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Sulfide, Reactive	5.58047	mg/kg	3.19521	54.4*	20

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

QUALITY CONTROL DATA

Workorder: 3158025 AER557|R2101265

QC Batch: WETC/250849 Analysis Method: S2540G-11

QC Batch Method: S2540G-11

Associated Lab Samples: 3158025001, 3158025002

SAMPLE DUPLICATE: 3278740 ORIGINAL: 3158024001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	71.2625	%	71.1217	.2	10
Total Solids	28.7374	%	28.8782	.49	5

SAMPLE DUPLICATE: 3278720 ORIGINAL: 3158083001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Total Solids	5.1555	%	4.8543	6.02*	5

SAMPLE DUPLICATE: 3278721 ORIGINAL: 3158106010

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	11.9087	%	13.3263	11.2*	10
Total Solids	88.0912	%	86.6736	1.62	5

SAMPLE DUPLICATE: 3278722 ORIGINAL: 3158111001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	18.5737	%	18.5076	.36	10
Total Solids	81.4262	%	81.4923	.08	5

SAMPLE DUPLICATE: 3278723 ORIGINAL: 3158117006

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	13.7931	%	13.4362	2.62	10
Total Solids	86.2068	%	86.5637	.41	5

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey



QUALITY CONTROL DATA

Workorder: 3158025 AER557|R2101265

SAMPLE DUPLICATE: 3278821 ORIGINAL: 3158119001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	13.6759	%	13.4241	1.86	10
Total Solids	86.324	%	86.5758	.29	5

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

**QUALITY CONTROL DATA**

Workorder: 3158025 AER557|R2101265

QC Batch: WETC/251066

Analysis Method: SW846 7.3

QC Batch Method: SW846 7.3

Associated Lab Samples:

METHOD BLANK: 3281288

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

METHOD BLANK: 3281290

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

METHOD BLANK: 3281292

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

METHOD BLANK: 3281294

Parameter	Blank Result	Units	Reporting Limit
Sulfide, Reactive	ND	mg/kg	6.3

ALS Environmental Laboratory Locations Across North AmericaCanada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey



QUALITY CONTROL DATA

Workorder: 3158025 AER557|R2101265

QC Batch: WETC/251095

Analysis Method: SW-846 7.3CN

QC Batch Method: SW-846 7.3CN

Associated Lab Samples:

METHOD BLANK: 3281626

Parameter	Blank Result	Units	Reporting Limit
Cyanide, Reactive	ND	mg/L	0.00010

METHOD BLANK: 3281628

Parameter	Blank Result	Units	Reporting Limit
Cyanide, Reactive	ND	mg/L	0.00010

METHOD BLANK: 3281630

Parameter	Blank Result	Units	Reporting Limit
Cyanide, Reactive	ND	mg/L	0.00010

METHOD BLANK: 3281632

Parameter	Blank Result	Units	Reporting Limit
Cyanide, Reactive	ND	mg/L	0.00010

METHOD BLANK: 3281634

Parameter	Blank Result	Units	Reporting Limit
Cyanide, Reactive	ND	mg/L	0.00010

METHOD BLANK: 3281636

Parameter	Blank Result	Units	Reporting Limit
-----------	--------------	-------	-----------------

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

**QUALITY CONTROL DATA**

Workorder: 3158025 AER557|R2101265

Cyanide, Reactive	ND	mg/L	0.00010
-------------------	----	------	---------

METHOD BLANK: 3281638

Parameter	Blank Result	Units	Reporting Limit
Cyanide, Reactive	ND	mg/L	0.00010

METHOD BLANK: 3282224

Parameter	Blank Result	Units	Reporting Limit
Cyanide, Reactive	ND	mg/L	0.00010

METHOD BLANK: 3282226

Parameter	Blank Result	Units	Reporting Limit
Cyanide, Reactive	ND	mg/L	0.00010

ALS Environmental Laboratory Locations Across North AmericaCanada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 3158025 AER557|R2101265

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
3158025001	TK-SD-ST06-02092021			S2540G-11	WETC/250849
3158025002	TK-SD-RC02-0210			S2540G-11	WETC/250849
3158025001	TK-SD-ST06-02092021	SW-846 7.3CN	WCPR/53939	SW-846 7.3CN	WETC/251095
3158025002	TK-SD-RC02-0210	SW-846 7.3CN	WCPR/53939	SW-846 7.3CN	WETC/251095
3158025001	TK-SD-ST06-02092021	SW846 7.3	WCPR/53940	SW846 7.3	WETC/251066
3158025002	TK-SD-RC02-0210	SW846 7.3	WCPR/53940	SW846 7.3	WETC/251066
3158025001	TK-SD-ST06-02092021			SW846 8260C	VOMS/58421
3158025002	TK-SD-RC02-0210			SW846 8260C	VOMS/58421

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ALS Environmental Chain of Custody

1565 Jefferson Rd, Building 300 • Rochester, NY 14623 • 585-288-5380 • FAX 585-288-8475

ALS Contact: Meghan Pedro

Project Number: R2101265
Project Manager: Meghan Pedro
QAP: LAB QAP

Lab Code	Sample ID	# of Cont.	Matrix	Sample			Lab ID
				Date	Time		
R2101265-001	TK-SD-ST06-02092021	2	Soil	2/9/21	1100	Middletown ALS	CN React 9014
R2101265-002	TK-SD-RC02-0210	2	Soil	2/10/21	1030	Middletown ALS	Flash 1010A Modified
							Sulfide React 9034 Modified
							VOC TCLP 8260C



Special Instructions/Comments H - Test is On Hold P - Test is Authorized for Prep Only	Turnaround Requirements RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 ☒ STANDARD Requested FAX Date: _____ Requested Report Date: 03/01/21	Report Requirements I. Results Only ☒ II. Results + QC Summaries III. Results + QC and Calibration Summaries ☒ IV. Data Validation Report with Raw Data PQL/MDL/J Y EDD Y NYS DEC Equis 4	Invoice Information PO# 58R2101265 Bill to

Relinquished By: Lucy Lopez 2/10/21 1230 Received By: Ken Als 2/25/21 0920 Airbill Number: 12.5M

R2101265

— **Ship To: Middletown ALS**
ALS Environmental - Middletown
301 Fulling Mill Rd.
Middletown, PA 17057

PC _____ Date _____
SMO _____ Date _____

Instructions:

Ice _____
Dry Ice _____
No Ice _____

Shipping:

Overnight _____
2nd Day _____
Ground _____

Bill to Client Account _____

Comments:

ALS Group USA, Corp.
www.alsglobal.com
An ALS Limited Company

ALS



301 Fulling Mill Road
Middletown, PA 17057

P: (717) 944-5541

F: (717) 944-1430

Condition of Sample Receipt Form

Client: ALS NY Work Order #: 3158025 Initials: lw Date: 2/25/21

1. Were airbills / tracking numbers present and recorded?..... NONE ☒ YES ☐ NO
Tracking number: 173624347892
2. Are Custody Seals on shipping containers intact?..... NONE ☒ YES ☐ NO
3. Are Custody Seals on sample containers intact?..... ~~NONE~~ ☒ YES ☐ NO
4. Is there a COC (Chain-of-Custody) present?..... ☒ YES ☐ NO
5. Are the COC and bottle labels complete, legible and in agreement?..... ☒ YES ☐ NO
- 5a. Does the COC contain sample locations?..... ☒ YES ☐ NO
- 5b. Does the COC contain date and time of sample collection for all samples?..... ☒ YES ☐ NO
- 5c. Does the COC contain sample collectors name?..... n/a ☒ YES ☐ NO
- 5d. Does the COC note the type(s) of preservation for all bottles?..... ☒ YES ☐ NO
- 5e. Does the COC note the number of bottles submitted for each sample?..... ☒ YES ☐ NO
- 5f. Does the COC note the type of sample, composite or grab?..... n/a ☒ YES ☐ NO
- 5g. Does the COC note the matrix of the sample(s)?..... ☒ YES ☐ NO
6. Are all aqueous samples requiring preservation preserved correctly?¹..... N/A ☒ YES ☐ NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?..... ☒ YES ☐ NO
8. Are all samples within holding times for the requested analyses?..... ☒ YES ☐ NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)..... ☒ YES ☐ NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?..... N/A ☒ YES ☐ NO
11. Were the samples received on ice?..... ☒ YES ☐ NO
12. Were sample temperatures measured at 0.0-6.0°C..... ☒ YES ☐ NO
13. Are the samples DW matrix? If YES, fill out Reportable Drinking Water questions below..... ☒ YES ☐ NO
- 13a. Are the samples required for SDWA compliance reporting?..... N/A ☒ YES ☐ NO
- 13b. Did the client provide a SDWA PWS ID#?..... N/A ☒ YES ☐ NO
- 13c. Are all aqueous unpreserved SDWA samples pH 5-9?..... N/A ☒ YES ☐ NO
- 13d. Did the client provide the SDWA sample location ID/Description?..... N/A ☒ YES ☐ NO
- 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?..... N/A ☒ YES ☐ NO

Cooler #: _____
Temperature (°C): 12 _____
Thermometer ID: 524 _____
Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

NO ice

¹Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis



PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report For
Inventum Engineering, P.C.

For Lab Project ID

220605

Referencing

Lid Seal Soil

Prepared

Wednesday, February 23, 2022

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below:

Reduced sample size used for Paint Filter Test analysis due to limited sample volume. Kindly refer to Chain of Custody Supplement for the affected sample(s)

A handwritten signature in blue ink, appearing to read "K. Hansen", is written over a horizontal line.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Wednesday, February 23, 2022

Page 1 of 51

Lab Project ID: 220605

 Client: **Inventum Engineering, P.C.**

Project Reference: Lid Seal Soil

Sample Identifier: SD-ST06-02102022

Lab Sample ID: 220605-01

Date Sampled: 2/10/2022 11:45

Matrix: Soil

Date Received 2/11/2022

Ammonia-N

Analyte	Result	Units	Qualifier	Date Analyzed
Ammonia	<32.9	mg/Kg		2/22/2022
Method Reference(s): SM 4500 NH3 G				
Subcontractor ELAP ID: 10709				

Heat Value

Analyte	Result	Units	Qualifier	Date Analyzed
BTU	1200	btu/lb		2/18/2022
Method Reference(s): ASTM D240-09				
Subcontractor ELAP ID: 10709				

ELAP does not offer this test for approval as part of their laboratory certification program.

Mercury

Analyte	Result	Units	Qualifier	Date Analyzed
Mercury	0.0334	mg/Kg		2/16/2022 11:17
Method Reference(s): EPA 7471B				
Preparation Date: 2/16/2022				
Data File: Hg220216A				

TAL Metals (ICP)

Analyte	Result	Units	Qualifier	Date Analyzed
Aluminum	7090	mg/Kg		2/16/2022 18:32
Antimony	< 4.58	mg/Kg	M	2/16/2022 18:32
Arsenic	2.65	mg/Kg		2/16/2022 18:32
Barium	55.8	mg/Kg		2/16/2022 18:32
Beryllium	< 0.381	mg/Kg		2/16/2022 18:32
Cadmium	< 0.381	mg/Kg		2/16/2022 18:32
Calcium	2180	mg/Kg		2/16/2022 18:32
Chromium	13.8	mg/Kg	D	2/16/2022 18:32
Cobalt	< 3.81	mg/Kg		2/16/2022 18:32
Copper	23.8	mg/Kg	D	2/16/2022 18:32

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Lab Project ID: 220605

Client: **Inventum Engineering, P.C.**

Project Reference: Lid Seal Soil

Sample Identifier: SD-ST06-02102022

Lab Sample ID: 220605-01

Date Sampled: 2/10/2022 11:45

Matrix: Soil

Date Received 2/11/2022

Iron	19000	mg/Kg	D	2/16/2022 18:32
Lead	24.2	mg/Kg		2/16/2022 18:32
Magnesium	961	mg/Kg	M	2/16/2022 18:32
Manganese	77.4	mg/Kg	MD	2/16/2022 18:32
Nickel	8.04	mg/Kg	D	2/16/2022 18:32
Potassium	3560	mg/Kg	M	2/16/2022 18:32
Selenium	< 1.53	mg/Kg		2/16/2022 18:32
Silver	< 0.763	mg/Kg		2/16/2022 18:32
Sodium	1140	mg/Kg		2/16/2022 18:32
Thallium	< 1.91	mg/Kg		2/16/2022 18:32
Vanadium	9.70	mg/Kg		2/16/2022 18:32
Zinc	31.4	mg/Kg		2/16/2022 18:32

Method Reference(s): EPA 6010C

EPA 3050B

Preparation Date: 2/16/2022

Data File: 220216B

Paint Filter Test

Analyte	Result	Units	Qualifier	Date Analyzed
Paint Filter Test	Fail	N/A		2/17/2022

Method Reference(s): EPA 9095B

PCBs

Analyte	Result	Units	Qualifier	Date Analyzed
PCB-1016	< 0.231	mg/Kg		2/15/2022 08:04
PCB-1221	< 0.231	mg/Kg		2/15/2022 08:04
PCB-1232	< 0.231	mg/Kg		2/15/2022 08:04
PCB-1242	< 0.231	mg/Kg		2/15/2022 08:04
PCB-1248	< 0.231	mg/Kg		2/15/2022 08:04
PCB-1254	< 0.231	mg/Kg		2/15/2022 08:04
PCB-1260	< 0.231	mg/Kg		2/15/2022 08:04
PCB-1262	< 0.231	mg/Kg		2/15/2022 08:04

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Wednesday, February 23, 2022



Lab Project ID: 220605

Client: **Inventum Engineering, P.C.**

Project Reference: Lid Seal Soil

Sample Identifier: SD-ST06-02102022

Lab Sample ID: 220605-01

Date Sampled: 2/10/2022 11:45

Matrix: Soil

Date Received 2/11/2022

PCB-1268 < 0.231 mg/Kg 2/15/2022 08:04

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Tetrachloro-m-xylene	59.2	12.2 - 91.2		2/15/2022 08:04

Method Reference(s): EPA 8082A

EPA 3546

Preparation Date: 2/14/2022

Semi-Volatile Organics (Acid/Base Neutrals)

Analyte	Result	Units	Qualifier	Date Analyzed
1,1-Biphenyl	< 427	ug/Kg		2/16/2022 05:15
1,2,4,5-Tetrachlorobenzene	< 427	ug/Kg		2/16/2022 05:15
1,2,4-Trichlorobenzene	< 427	ug/Kg		2/16/2022 05:15
1,2-Dichlorobenzene	< 427	ug/Kg		2/16/2022 05:15
1,3-Dichlorobenzene	< 427	ug/Kg		2/16/2022 05:15
1,4-Dichlorobenzene	< 427	ug/Kg		2/16/2022 05:15
2,2-Oxybis (1-chloropropane)	< 427	ug/Kg		2/16/2022 05:15
2,3,4,6-Tetrachlorophenol	< 427	ug/Kg		2/16/2022 05:15
2,4,5-Trichlorophenol	< 427	ug/Kg		2/16/2022 05:15
2,4,6-Trichlorophenol	< 427	ug/Kg		2/16/2022 05:15
2,4-Dichlorophenol	< 427	ug/Kg		2/16/2022 05:15
2,4-Dimethylphenol	< 427	ug/Kg		2/16/2022 05:15
2,4-Dinitrophenol	< 1710	ug/Kg		2/16/2022 05:15
2,4-Dinitrotoluene	< 427	ug/Kg		2/16/2022 05:15
2,6-Dinitrotoluene	< 427	ug/Kg		2/16/2022 05:15
2-Chloronaphthalene	< 427	ug/Kg		2/16/2022 05:15
2-Chlorophenol	< 427	ug/Kg		2/16/2022 05:15
2-Methylnapthalene	652	ug/Kg		2/16/2022 05:15
2-Methylphenol	< 427	ug/Kg		2/16/2022 05:15
2-Nitroaniline	< 427	ug/Kg		2/16/2022 05:15
2-Nitrophenol	< 427	ug/Kg		2/16/2022 05:15
3&4-Methylphenol	< 427	ug/Kg		2/16/2022 05:15

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Lab Project ID: 220605

Client: **Inventum Engineering, P.C.**

Project Reference: Lid Seal Soil

Sample Identifier: SD-ST06-02102022

Lab Sample ID: 220605-01

Date Sampled: 2/10/2022 11:45

Matrix: Soil

Date Received 2/11/2022

3,3'-Dichlorobenzidine	< 427	ug/Kg	2/16/2022 05:15
3-Nitroaniline	< 427	ug/Kg	2/16/2022 05:15
4,6-Dinitro-2-methylphenol	< 571	ug/Kg	2/16/2022 05:15
4-Bromophenyl phenyl ether	< 427	ug/Kg	2/16/2022 05:15
4-Chloro-3-methylphenol	< 427	ug/Kg	2/16/2022 05:15
4-Chloroaniline	< 427	ug/Kg	2/16/2022 05:15
4-Chlorophenyl phenyl ether	< 427	ug/Kg	2/16/2022 05:15
4-Nitroaniline	< 427	ug/Kg	2/16/2022 05:15
4-Nitrophenol	< 427	ug/Kg	2/16/2022 05:15
Acenaphthene	447	ug/Kg	2/16/2022 05:15
Acenaphthylene	< 427	ug/Kg	2/16/2022 05:15
Acetophenone	< 427	ug/Kg	2/16/2022 05:15
Anthracene	781	ug/Kg	2/16/2022 05:15
Atrazine	< 427	ug/Kg	2/16/2022 05:15
Benzaldehyde	< 427	ug/Kg	2/16/2022 05:15
Benzo (a) anthracene	2350	ug/Kg	2/16/2022 05:15
Benzo (a) pyrene	3030	ug/Kg	2/16/2022 05:15
Benzo (b) fluoranthene	3200	ug/Kg	2/16/2022 05:15
Benzo (g,h,i) perylene	2110	ug/Kg	2/16/2022 05:15
Benzo (k) fluoranthene	1620	ug/Kg	2/16/2022 05:15
Bis (2-chloroethoxy) methane	< 427	ug/Kg	2/16/2022 05:15
Bis (2-chloroethyl) ether	< 427	ug/Kg	2/16/2022 05:15
Bis (2-ethylhexyl) phthalate	< 427	ug/Kg	2/16/2022 05:15
Butylbenzylphthalate	< 427	ug/Kg	2/16/2022 05:15
Caprolactam	< 427	ug/Kg	2/16/2022 05:15
Carbazole	492	ug/Kg	2/16/2022 05:15
Chrysene	2880	ug/Kg	2/16/2022 05:15
Dibenz (a,h) anthracene	632	ug/Kg	2/16/2022 05:15
Dibenzofuran	523	ug/Kg	2/16/2022 05:15
Diethyl phthalate	< 427	ug/Kg	2/16/2022 05:15

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Lab Project ID: 220605
Client: **Inventum Engineering, P.C.**
Project Reference: Lid Seal Soil

Sample Identifier: SD-ST06-02102022

Lab Sample ID: 220605-01

Date Sampled: 2/10/2022 11:45

Matrix: Soil

Date Received 2/11/2022

Dimethyl phthalate	< 427	ug/Kg	2/16/2022 05:15
Di-n-butyl phthalate	< 427	ug/Kg	2/16/2022 05:15
Di-n-octylphthalate	< 427	ug/Kg	2/16/2022 05:15
Fluoranthene	4790	ug/Kg	2/16/2022 05:15
Fluorene	462	ug/Kg	2/16/2022 05:15
Hexachlorobenzene	< 427	ug/Kg	2/16/2022 05:15
Hexachlorobutadiene	< 427	ug/Kg	2/16/2022 05:15
Hexachlorocyclopentadiene	< 1710	ug/Kg	2/16/2022 05:15
Hexachloroethane	< 427	ug/Kg	2/16/2022 05:15
Indeno (1,2,3-cd) pyrene	1720	ug/Kg	2/16/2022 05:15
Isophorone	< 427	ug/Kg	2/16/2022 05:15
Naphthalene	2000	ug/Kg	2/16/2022 05:15
Nitrobenzene	< 427	ug/Kg	2/16/2022 05:15
N-Nitroso-di-n-propylamine	< 427	ug/Kg	2/16/2022 05:15
N-Nitrosodiphenylamine	< 427	ug/Kg	2/16/2022 05:15
Pentachlorophenol	< 854	ug/Kg	2/16/2022 05:15
Phenanthrene	3880	ug/Kg	2/16/2022 05:15
Phenol	< 427	ug/Kg	2/16/2022 05:15
Pyrene	4220	ug/Kg	2/16/2022 05:15

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2,4,6-Tribromophenol	49.3	37.7 - 88.9		2/16/2022 05:15
2-Fluorobiphenyl	60.9	42 - 83.2		2/16/2022 05:15
2-Fluorophenol	61.2	38.1 - 82.3		2/16/2022 05:15
Nitrobenzene-d5	59.4	37.1 - 80.1		2/16/2022 05:15
Phenol-d5	66.5	37.4 - 81.8		2/16/2022 05:15
Terphenyl-d14	67.8	45.7 - 104		2/16/2022 05:15

Method Reference(s): EPA 8270D

EPA 3546

Preparation Date: 2/15/2022

Data File: B59990.D

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Client: **Inventum Engineering, P.C.**

Project Reference: Lid Seal Soil

Sample Identifier: SD-ST06-02102022

Lab Sample ID: 220605-01

Date Sampled: 2/10/2022 11:45

Matrix: Soil

Date Received 2/11/2022

Volatile Organics

Analyte	Result	Units	Qualifier	Date Analyzed
1,1,1-Trichloroethane	< 9.05	ug/Kg		2/16/2022 18:04
1,1,2,2-Tetrachloroethane	< 9.05	ug/Kg		2/16/2022 18:04
1,1,2-Trichloroethane	< 9.05	ug/Kg		2/16/2022 18:04
1,1-Dichloroethane	< 9.05	ug/Kg		2/16/2022 18:04
1,1-Dichloroethene	< 9.05	ug/Kg		2/16/2022 18:04
1,2,3-Trichlorobenzene	< 22.6	ug/Kg		2/16/2022 18:04
1,2,4-Trichlorobenzene	< 22.6	ug/Kg		2/16/2022 18:04
1,2-Dibromo-3-Chloropropane	< 45.3	ug/Kg		2/16/2022 18:04
1,2-Dibromoethane	< 9.05	ug/Kg		2/16/2022 18:04
1,2-Dichlorobenzene	< 9.05	ug/Kg		2/16/2022 18:04
1,2-Dichloroethane	< 9.05	ug/Kg		2/16/2022 18:04
1,2-Dichloropropane	< 9.05	ug/Kg		2/16/2022 18:04
1,3-Dichlorobenzene	< 9.05	ug/Kg		2/16/2022 18:04
1,4-Dichlorobenzene	< 9.05	ug/Kg		2/16/2022 18:04
1,4-Dioxane	< 45.3	ug/Kg		2/16/2022 18:04
2-Butanone	< 45.3	ug/Kg		2/16/2022 18:04
2-Hexanone	< 22.6	ug/Kg		2/16/2022 18:04
4-Methyl-2-pentanone	< 22.6	ug/Kg		2/16/2022 18:04
Acetone	< 45.3	ug/Kg		2/16/2022 18:04
Benzene	< 9.05	ug/Kg		2/16/2022 18:04
Bromochloromethane	< 22.6	ug/Kg		2/16/2022 18:04
Bromodichloromethane	< 9.05	ug/Kg		2/16/2022 18:04
Bromoform	< 22.6	ug/Kg		2/16/2022 18:04
Bromomethane	< 9.05	ug/Kg		2/16/2022 18:04
Carbon disulfide	< 9.05	ug/Kg		2/16/2022 18:04
Carbon Tetrachloride	< 9.05	ug/Kg		2/16/2022 18:04
Chlorobenzene	< 9.05	ug/Kg		2/16/2022 18:04
Chloroethane	< 9.05	ug/Kg		2/16/2022 18:04

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Client: **Inventum Engineering, P.C.**

Project Reference: Lid Seal Soil

Sample Identifier: SD-ST06-02102022

Lab Sample ID: 220605-01

Date Sampled: 2/10/2022 11:45

Matrix: Soil

Date Received 2/11/2022

Chloroform	< 9.05	ug/Kg	2/16/2022 18:04
Chloromethane	< 9.05	ug/Kg	2/16/2022 18:04
cis-1,2-Dichloroethene	< 9.05	ug/Kg	2/16/2022 18:04
cis-1,3-Dichloropropene	< 9.05	ug/Kg	2/16/2022 18:04
Cyclohexane	< 45.3	ug/Kg	2/16/2022 18:04
Dibromochloromethane	< 9.05	ug/Kg	2/16/2022 18:04
Dichlorodifluoromethane	< 9.05	ug/Kg	2/16/2022 18:04
Ethylbenzene	< 9.05	ug/Kg	2/16/2022 18:04
Freon 113	< 9.05	ug/Kg	2/16/2022 18:04
Isopropylbenzene	< 9.05	ug/Kg	2/16/2022 18:04
m,p-Xylene	< 9.05	ug/Kg	2/16/2022 18:04
Methyl acetate	< 9.05	ug/Kg	2/16/2022 18:04
Methyl tert-butyl Ether	< 9.05	ug/Kg	2/16/2022 18:04
Methylcyclohexane	< 9.05	ug/Kg	2/16/2022 18:04
Methylene chloride	< 22.6	ug/Kg	2/16/2022 18:04
o-Xylene	< 9.05	ug/Kg	2/16/2022 18:04
Styrene	< 22.6	ug/Kg	2/16/2022 18:04
Tetrachloroethene	< 9.05	ug/Kg	2/16/2022 18:04
Toluene	< 9.05	ug/Kg	2/16/2022 18:04
trans-1,2-Dichloroethene	< 9.05	ug/Kg	2/16/2022 18:04
trans-1,3-Dichloropropene	< 9.05	ug/Kg	2/16/2022 18:04
Trichloroethene	< 9.05	ug/Kg	2/16/2022 18:04
Trichlorofluoromethane	< 9.05	ug/Kg	2/16/2022 18:04
Vinyl chloride	< 9.05	ug/Kg	2/16/2022 18:04



Lab Project ID: 220605

Client: Inventum Engineering, P.C.

Project Reference: Lid Seal Soil

Sample Identifier: SD-ST06-02102022

Lab Sample ID: 220605-01

Date Sampled: 2/10/2022 11:45

Matrix: Soil

Date Received 2/11/2022

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	105	82.8 - 125		2/16/2022 18:04
4-Bromofluorobenzene	68.1	68.3 - 118	*	2/16/2022 18:04
Pentafluorobenzene	103	81 - 114		2/16/2022 18:04
Toluene-D8	103	79.3 - 124		2/16/2022 18:04

Internal standard outliers indicate probable matrix interference

Method Reference(s): EPA 8260C

EPA 5035A - L

Data File: z07301.D

This sample was not collected following SW846 5035A specifications. Accordingly, any Volatiles soil results that are less than 200 ug/Kg, including Non Detects, may be biased low, per ELAP method 5035 guidance document from 11/15/2012.

Total Cyanide

Analyte	Result	Units	Qualifier	Date Analyzed
Cyanide, Total	< 0.777	mg/Kg		2/17/2022

Method Reference(s): EPA 9014

EPA 9010C

Preparation Date: 2/17/2022

Lab Project ID: 220605
Client: **Inventum Engineering, P.C.**
Project Reference: Lid Seal Soil

Sample Identifier: SD-ST06-02102022

Lab Sample ID: 220605-01A

Date Sampled: 2/10/2022 11:45

Matrix: TCLP Extract

Date Received 2/11/2022

TCLP Semi-Volatile Organics

Analyte	Result	Units	Regulatory Limit	Qualifier	Date Analyzed
1,4-Dichlorobenzene	< 40.0	ug/L	7500		2/16/2022 02:22
2,4,5-Trichlorophenol	< 40.0	ug/L	400000		2/16/2022 02:22
2,4,6-Trichlorophenol	< 40.0	ug/L	2000		2/16/2022 02:22
2,4-Dinitrotoluene	< 40.0	ug/L	130		2/16/2022 02:22
Cresols (as m,p,o-Cresol)	< 80.0	ug/L	200000		2/16/2022 02:22
Hexachlorobenzene	< 40.0	ug/L	130		2/16/2022 02:22
Hexachlorobutadiene	< 40.0	ug/L	500		2/16/2022 02:22
Hexachloroethane	< 40.0	ug/L	3000		2/16/2022 02:22
Nitrobenzene	< 40.0	ug/L	2000		2/16/2022 02:22
Pentachlorophenol	< 80.0	ug/L	100000		2/16/2022 02:22
Pyridine	< 40.0	ug/L	5000		2/16/2022 02:22

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
2,4,6-Tribromophenol	98.5	49.6 - 116		2/16/2022 02:22
2-Fluorobiphenyl	55.3	18.6 - 104		2/16/2022 02:22
2-Fluorophenol	68.3	10 - 105		2/16/2022 02:22
Nitrobenzene-d5	70.4	51.2 - 99.6		2/16/2022 02:22
Phenol-d5	68.9	10 - 104		2/16/2022 02:22
Terphenyl-d14	85.7	55.6 - 122		2/16/2022 02:22

Method Reference(s): EPA 8270D
 EPA 1311 / 3510C
Preparation Date: 2/15/2022
Data File: B59984.D

TCLP Herbicides

Analyte	Result	Units	Regulatory Limit	Qualifier	Date Analyzed
2,4,5-TP (Silvex)	<0.050	mg/L	1		2/17/2022
2,4-D	<0.050	mg/L	10		2/17/2022

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Client: Inventum Engineering, P.C.

Project Reference: Lid Seal Soil

Sample Identifier: SD-ST06-02102022

Lab Sample ID: 220605-01A

Date Sampled: 2/10/2022 11:45

Matrix: TCLP Extract

Date Received 2/11/2022

Method Reference(s): EPA 8321B

EPA 1311

Subcontractor ELAP ID: 10709

TCLP Mercury

Analyte	Result	Units	Regulatory Limit	Qualifier	Date Analyzed
Mercury	< 0.00200	mg/L	0.2		2/15/2022 12:06

Method Reference(s): EPA 7470A

EPA 1311

Preparation Date: 2/15/2022

Data File: Hg220215A

TCLP Pesticides

Analyte	Result	Units	Regulatory Limit	Qualifier	Date Analyzed
Chlordane	< 2.00	ug/L	30	L	2/21/2022 12:15
Endrin	< 1.00	ug/L	20	L	2/21/2022 12:15
gamma-BHC (Lindane)	< 1.00	ug/L	400		2/21/2022 12:15
Heptachlor	< 1.00	ug/L	8		2/21/2022 12:15
Heptachlor Epoxide	< 1.00	ug/L	8		2/21/2022 12:15
Methoxychlor	< 1.00	ug/L	10000		2/21/2022 12:15
Toxaphene	< 20.0	ug/L	500		2/21/2022 12:15

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
Decachlorobiphenyl (1)	138	17 - 148		2/21/2022 12:15
Tetrachloro-m-xylene (1)	102	18 - 112		2/21/2022 12:15

Method Reference(s): EPA 8081B

EPA 1311 / 3510C

Preparation Date: 2/18/2022

TCLP RCRA Metals (ICP)

Analyte	Result	Units	Regulatory Limit	Qualifier	Date Analyzed
Arsenic	< 0.500	mg/L	5		2/15/2022 14:28
Barium	< 0.500	mg/L	100		2/15/2022 14:28
Cadmium	< 0.0250	mg/L	1		2/15/2022 14:28



Lab Project ID: 220605

Client: **Inventum Engineering, P.C.**

Project Reference: Lid Seal Soil

Sample Identifier: SD-ST06-02102022

Lab Sample ID: 220605-01A

Date Sampled: 2/10/2022 11:45

Matrix: TCLP Extract

Date Received 2/11/2022

Chromium	< 0.500	mg/L	5	2/15/2022 14:28
Lead	< 0.500	mg/L	5	2/15/2022 14:28
Selenium	< 0.200	mg/L	1	2/15/2022 14:28
Silver	< 0.500	mg/L	5	2/15/2022 14:28

Method Reference(s): EPA 6010C
EPA 1311 / 3005A
Preparation Date: 2/15/2022
Data File: 220215B

TCLP Volatile Organics

Analyte	Result	Units	Regulatory Limit	Qualifier	Date Analyzed
1,1-Dichloroethene	< 20.0	ug/L	700		2/16/2022 13:14
1,2-Dichloroethane	< 20.0	ug/L	500		2/16/2022 13:14
2-Butanone	< 100	ug/L	200000		2/16/2022 13:14
Benzene	21.0	ug/L	500		2/16/2022 13:14
Carbon Tetrachloride	< 20.0	ug/L	500		2/16/2022 13:14
Chlorobenzene	< 20.0	ug/L	100000		2/16/2022 13:14
Chloroform	< 20.0	ug/L	6000		2/16/2022 13:14
Tetrachloroethene	< 20.0	ug/L	700		2/16/2022 13:14
Trichloroethene	< 20.0	ug/L	500		2/16/2022 13:14
Vinyl chloride	< 20.0	ug/L	200		2/16/2022 13:14

Surrogate	Percent Recovery	Limits	Outliers	Date Analyzed
1,2-Dichloroethane-d4	117	77.9 - 132		2/16/2022 13:14
4-Bromofluorobenzene	89.8	62.6 - 133		2/16/2022 13:14
Pentafluorobenzene	108	88.9 - 114		2/16/2022 13:14
Toluene-D8	117	75.6 - 117		2/16/2022 13:14

Method Reference(s): EPA 8260C
EPA 1311 / 5030C
Data File: z07286.D

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: Soil

Mercury

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Mercury	<0.00763	mg/Kg		2/16/2022 10:33

Method Reference(s): EPA 7471B
Preparation Date: 2/16/2022
Data File: Hg220216A
QC Batch ID: QC220216HgSoil
QC Number: Blk 1



QC Report for Laboratory Control Sample and Control Sample Duplicate

Client: Inventum Engineering, P.C.

Project Reference: Lid Seal Soil

Lab Project ID: 220605

Matrix: Soil

Mercury

Analyte	<u>Added</u>	<u>Added</u>	<u>Units</u>	<u>Result</u>	<u>Result</u>	<u>Recovery</u>	<u>Recovery</u>	<u>% Rec</u>	<u>LCS</u>	<u>LCSD</u>	<u>Relative %</u>	<u>RPD</u>	<u>RPD</u>	<u>Date</u>
Mercury	0.0671	0.0753	mg/Kg	0.0659	0.0744	98.2	98.8	80 - 120			0.625	20		2/16/2022

Method Reference(s): EPA 7471B
Preparation Date: 2/16/2022
Data File: Hg220216A
QC Number: 1
QC Batch ID: QC220216HgSoil

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: Soil

TAL Metals (ICP)

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Aluminum	<4.90	mg/Kg		2/16/2022 18:18
Antimony	<2.94	mg/Kg		2/16/2022 18:18
Arsenic	<0.490	mg/Kg		2/16/2022 18:18
Barium	<4.90	mg/Kg		2/16/2022 18:18
Beryllium	<0.245	mg/Kg		2/16/2022 18:18
Cadmium	<0.245	mg/Kg		2/16/2022 18:18
Calcium	<123	mg/Kg		2/16/2022 18:18
Chromium	<0.490	mg/Kg		2/16/2022 18:18
Cobalt	<2.45	mg/Kg		2/16/2022 18:18
Copper	<0.980	mg/Kg		2/16/2022 18:18
Iron	<9.80	mg/Kg		2/16/2022 18:18
Lead	<0.490	mg/Kg		2/16/2022 18:18
Magnesium	<123	mg/Kg		2/16/2022 18:18
Manganese	<0.735	mg/Kg		2/16/2022 18:18
Nickel	<1.96	mg/Kg		2/16/2022 18:18
Potassium	<123	mg/Kg		2/16/2022 18:18
Selenium	<0.980	mg/Kg		2/16/2022 18:18
Silver	<0.490	mg/Kg		2/16/2022 18:18
Sodium	<123	mg/Kg		2/16/2022 18:18
Thallium	<1.23	mg/Kg		2/16/2022 18:18
Vanadium	<1.23	mg/Kg		2/16/2022 18:18
Zinc	<2.94	mg/Kg		2/16/2022 18:18

Method Reference(s): EPA 6010C
EPA 3050B
Preparation Date: 2/16/2022
Data File: 220216B
QC Batch ID: QC220216soil
QC Number: Blk 1

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Laboratory Control Sample and Control Sample Duplicate

Client:

Inventum Engineering, P.C.

Project Reference:

Lid Seal Soil

Lab Project ID:

220605

Matrix:

Soil

TAL Metals (ICP)

Analyte	LCS	LCSD	Spike	LCS	LCSD	LCS %	LCSD %	% Rec	LCS	LCSD	Relative %	RPD	RPD	Date
	Added	Added	Units	Result	Result	Recovery	Recovery	Limits	Outliers	Outliers	Difference	Limit	Outliers	Analyzed
Aluminum	125	125	mg/Kg	117	117	94.0	93.6	80 - 120			0.417	20		2/16/2022
Antimony	125	125	mg/Kg	119	119	95.1	94.8	80 - 120			0.335	20		2/16/2022
Arsenic	125	125	mg/Kg	115	114	91.6	91.0	80 - 120			0.642	20		2/16/2022
Barium	125	125	mg/Kg	131	131	105	105	80 - 120			0.466	20		2/16/2022
Beryllium	25.0	25.0	mg/Kg	25.4	24.4	101	97.7	80 - 120			3.80	20		2/16/2022
Cadmium	50.0	50.0	mg/Kg	51.5	50.7	103	101	80 - 120			1.72	20		2/16/2022
Calcium	200	200	mg/Kg	190	185	95.0	92.6	80 - 120			2.56	20		2/16/2022
Chromium	125	125	mg/Kg	118	117	94.2	93.7	80 - 120			0.510	20		2/16/2022
Cobalt	50.0	50.0	mg/Kg	49.8	49.2	99.6	98.3	80 - 120			1.26	20		2/16/2022
Copper	125	125	mg/Kg	127	124	101	99.5	80 - 120			1.77	20		2/16/2022
Iron	125	125	mg/Kg	120	119	96.3	95.1	80 - 120			1.22	20		2/16/2022
Lead	125	125	mg/Kg	118	115	94.1	91.9	80 - 120			2.34	20		2/16/2022
Magnesium	400	400	mg/Kg	407	398	102	99.5	80 - 120			2.22	20		2/16/2022
Manganese	50.0	50.0	mg/Kg	51.3	50.8	103	102	80 - 120			1.02	20		2/16/2022
Nickel	250	250	mg/Kg	248	244	99.1	97.5	80 - 120			1.55	20		2/16/2022
Potassium	2120	2120	mg/Kg	2030	1990	95.7	93.5	80 - 120			2.34	20		2/16/2022

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Laboratory Control Sample and Control Sample Duplicate

Client: Inventum Engineering, P.C.

Project Reference: Lid Seal Soil

Lab Project ID: 220605

Matrix: Soil

TAL Metals (ICP)

<u>Analyte</u>	<u>LCS</u>	<u>LCSD</u>	<u>Spike</u>	<u>LCS</u>	<u>LCSD</u>	<u>LCS %</u>	<u>LCSD %</u>	<u>% Rec</u>	<u>LCS</u>	<u>LCSD</u>	<u>Relative %</u>	<u>RPD</u>	<u>RPD</u>	<u>Date</u>
	<u>Added</u>	<u>Added</u>	<u>Units</u>	<u>Result</u>	<u>Result</u>	<u>Recovery</u>	<u>Recovery</u>	<u>Limits</u>	<u>Outliers</u>	<u>Outliers</u>	<u>Difference</u>	<u>Limit</u>	<u>Outliers</u>	<u>Analyzed</u>
Selenium	125	125	mg/Kg	111	110	89.1	88.2	80 - 120			0.987	20		2/16/2022
Silver	12.5	12.5	mg/Kg	11.6	11.5	92.6	91.9	80 - 120			0.703	20		2/16/2022
Sodium	600	600	mg/Kg	568	554	94.7	92.3	80 - 120			2.50	20		2/16/2022
Thallium	125	125	mg/Kg	124	124	99.3	98.9	80 - 120			0.390	20		2/16/2022
Vanadium	50.0	50.0	mg/Kg	53.6	52.9	107	106	80 - 120			1.44	20		2/16/2022
Zinc	125	125	mg/Kg	121	119	96.4	95.1	80 - 120			1.36	20		2/16/2022

Method Reference(s):

EPA 6010C

EPA 3050B

Preparation Date: 2/16/2022

Data File: 220216B

QC Number: 1

QC Batch ID: QC220216soil

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Thursday, February 17, 2022



PARADIGM
ENVIRONMENTAL SERVICES, LLC

QC Report for Sample Spike and Sample Duplicate

Client:

Inventum Engineering, P.C.

Lab Project ID: 220605

Project Reference:

Lid Seal Soil

Lab Sample ID:

220605-01

Sample Identifier:

SD-ST06-02102022

Matrix:

Soil

Date Sampled: 2/10/2022

Date Received: 2/11/2022

TAL Metals (ICP)

Analyte	Sample Results	Result Units	Spike Added	Spike Result	Spike % Recovery	% Rec Limits	Spike Outliers	Duplicate Result	Relative % Difference	RPD Limit	RPD Outliers	Date Analyzed
Aluminum	7090	mg/Kg	206	12400	NC	75 - 125		7410	4.36	20		2/16/2022
Antimony	< 4.58	mg/Kg	206	94.4	45.8	75 - 125	*	<4.62	NC	20		2/16/2022
Arsenic	2.65	mg/Kg	206	178	85.2	75 - 125		3.19	18.4	20		2/16/2022
Barium	55.8	mg/Kg	206	248	93.4	75 - 125		53.8	3.56	20		2/16/2022
Beryllium	< 0.381	mg/Kg	41.2	38.9	94.4	75 - 125		<0.385	NC	20		2/16/2022
Cadmium	< 0.381	mg/Kg	82.4	76.2	92.5	75 - 125		<0.385	NC	20		2/16/2022
Calcium	2180	mg/Kg	329	2440	79.0	75 - 125		2310	5.76	20		2/16/2022
Chromium	13.8	mg/Kg	206	191	86.1	75 - 125		46.3	108	20	*	2/16/2022
Cobalt	< 3.81	mg/Kg	82.4	76.0	92.3	75 - 125		<3.85	NC	20		2/16/2022
Copper	23.8	mg/Kg	206	212	91.2	75 - 125		49.4	69.7	20	*	2/16/2022
Iron	19000	mg/Kg	206	13100	NC	75 - 125		28000	38.2	20		2/16/2022
Lead	24.2	mg/Kg	206	204	87.5	75 - 125		22.1	8.97	20		2/16/2022
Magnesium	961	mg/Kg	659	1420	69.7	75 - 125	*	989	2.91	20		2/16/2022

NC = Not Calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Thursday, February 17, 2022



QC Report for Sample Spike and Sample Duplicate

Client:

Inventum Engineering, P.C.

Lab Project ID: 220605

Project Reference:

Lid Seal Soil

Lab Sample ID:

220605-01

Sample Identifier:

SD-ST06-02102022

Date Sampled: 2/10/2022

Matrix:

Soil

Date Received: 2/11/2022

TAL Metals (ICP)

Analyte	Sample Results	Result Units	Spike Added	Spike Result	Spike % Recovery	% Rec Limits	Spike Outliers	Duplicate Result	Relative % Difference	RPD Limit	RPD Outliers	Date Analyzed
Manganese	77.4	mg/Kg	82.4	121	53.1	75 - 125	*	126	47.9	20	*	2/16/2022
Nickel	8.04	mg/Kg	412	365	86.7	75 - 125		38.7	131	20	*	2/16/2022
Potassium	3560	mg/Kg	3500	4810	35.7	75 - 125	*	3890	8.78	20		2/16/2022
Selenium	< 1.53	mg/Kg	206	174	84.7	75 - 125		<1.54	NC	20		2/16/2022
Silver	< 0.763	mg/Kg	20.6	17.8	86.6	75 - 125		<0.770	NC	20		2/16/2022
Sodium	1140	mg/Kg	988	1930	80.0	75 - 125		1130	0.806	20		2/16/2022
Thallium	< 1.91	mg/Kg	206	176	85.5	75 - 125		<1.92	NC	20		2/16/2022
Vanadium	9.70	mg/Kg	82.4	87.8	94.8	75 - 125		9.50	2.11	20		2/16/2022
Zinc	31.4	mg/Kg	206	210	86.6	75 - 125		26.6	16.4	20		2/16/2022

Method Reference(s):

EPA 6010C
EPA 3050B

Preparation Date:

2/16/2022
220216B

QC Batch ID:

QC220216soil

NC = Not Calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Thursday, February 17, 2022



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: Soil

PCBs

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
PCB-1016	<0.0269	mg/Kg		2/14/2022 20:20
PCB-1221	<0.0269	mg/Kg		2/14/2022 20:20
PCB-1232	<0.0269	mg/Kg		2/14/2022 20:20
PCB-1242	<0.0269	mg/Kg		2/14/2022 20:20
PCB-1248	<0.0269	mg/Kg		2/14/2022 20:20
PCB-1254	<0.0269	mg/Kg		2/14/2022 20:20
PCB-1260	<0.0269	mg/Kg		2/14/2022 20:20
PCB-1262	<0.0269	mg/Kg		2/14/2022 20:20
PCB-1268	<0.0269	mg/Kg		2/14/2022 20:20

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Limits</u>	<u>Outliers</u>	<u>Date Analyzed</u>
Tetrachloro-m-xylene	40.6	12.2 - 91.2		2/14/2022 20:20

Method Reference(s): EPA 8082A
EPA 3546
Preparation Date: 2/14/2022
Data File: PC111770.D
QC Batch ID: QC220214PCBS
QC Number: Blk 1



QC Report for Laboratory Control Sample

Client: Inventum Engineering, P.C.

Project Reference: Lid Seal Soil

Lab Project ID: 220605

Matrix: Soil

PCBs

<u>Analyte</u>	<u>Spike Added</u>	<u>Spike Units</u>	<u>LCS Result</u>	<u>LCS % Recovery</u>	<u>% Rec Limits</u>	<u>LCS Outliers</u>	<u>Date Analyzed</u>
----------------	--------------------	--------------------	-------------------	-----------------------	---------------------	---------------------	----------------------

PCB-1016/1260	0.132	mg/Kg	0.0488	37.1	10 - 104		2/14/2022
---------------	-------	-------	--------	------	----------	--	-----------

Method Reference(s): EPA 8082A

EPA 3546

Preparation Date: 2/14/2022

Data File: PC111771.D

QC Number: LCS 1

QC Batch ID: QC220214PCBS

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: Soil

Semi-Volatile Organics (Acid/Base Neutrals)

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
1,1-Biphenyl	<1400	ug/Kg		2/15/2022 18:13
1,2,4,5-Tetrachlorobenzene	<1400	ug/Kg		2/15/2022 18:13
1,2,4-Trichlorobenzene	<1400	ug/Kg		2/15/2022 18:13
1,2-Dichlorobenzene	<1400	ug/Kg		2/15/2022 18:13
1,3-Dichlorobenzene	<1400	ug/Kg		2/15/2022 18:13
1,4-Dichlorobenzene	<1400	ug/Kg		2/15/2022 18:13
2,2-Oxybis (1-chloropropane)	<1400	ug/Kg		2/15/2022 18:13
2,3,4,6-Tetrachlorophenol	<1400	ug/Kg		2/15/2022 18:13
2,4,5-Trichlorophenol	<1400	ug/Kg		2/15/2022 18:13
2,4,6-Trichlorophenol	<1400	ug/Kg		2/15/2022 18:13
2,4-Dichlorophenol	<1400	ug/Kg		2/15/2022 18:13
2,4-Dimethylphenol	<1400	ug/Kg		2/15/2022 18:13
2,4-Dinitrophenol	<5590	ug/Kg		2/15/2022 18:13
2,4-Dinitrotoluene	<1400	ug/Kg		2/15/2022 18:13
2,6-Dinitrotoluene	<1400	ug/Kg		2/15/2022 18:13
2-Chloronaphthalene	<1400	ug/Kg		2/15/2022 18:13
2-Chlorophenol	<1400	ug/Kg		2/15/2022 18:13
2-Methylnaphthalene	<1400	ug/Kg		2/15/2022 18:13
2-Methylphenol	<1400	ug/Kg		2/15/2022 18:13
2-Nitroaniline	<1400	ug/Kg		2/15/2022 18:13
2-Nitrophenol	<1400	ug/Kg		2/15/2022 18:13
3&4-Methylphenol	<1400	ug/Kg		2/15/2022 18:13
3,3'-Dichlorobenzidine	<1400	ug/Kg		2/15/2022 18:13
3-Nitroaniline	<1400	ug/Kg		2/15/2022 18:13
4,6-Dinitro-2-methylphenol	<2790	ug/Kg		2/15/2022 18:13
4-Bromophenyl phenyl ether	<1400	ug/Kg		2/15/2022 18:13
4-Chloro-3-methylphenol	<1400	ug/Kg		2/15/2022 18:13

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: Soil

Semi-Volatile Organics (Acid/Base Neutrals)

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
4-Chloroaniline	<1400	ug/Kg		2/15/2022 18:13
4-Chlorophenyl phenyl ether	<1400	ug/Kg		2/15/2022 18:13
4-Nitroaniline	<1400	ug/Kg		2/15/2022 18:13
4-Nitrophenol	<1400	ug/Kg		2/15/2022 18:13
Acenaphthene	<1400	ug/Kg		2/15/2022 18:13
Acenaphthylene	<1400	ug/Kg		2/15/2022 18:13
Acetophenone	<1400	ug/Kg		2/15/2022 18:13
Anthracene	<1400	ug/Kg		2/15/2022 18:13
Atrazine	<1400	ug/Kg		2/15/2022 18:13
Benzaldehyde	<1400	ug/Kg		2/15/2022 18:13
Benzo (a) anthracene	<1400	ug/Kg		2/15/2022 18:13
Benzo (a) pyrene	<1400	ug/Kg		2/15/2022 18:13
Benzo (b) fluoranthene	<1400	ug/Kg		2/15/2022 18:13
Benzo (g,h,i) perylene	<1400	ug/Kg		2/15/2022 18:13
Benzo (k) fluoranthene	<1400	ug/Kg		2/15/2022 18:13
Bis (2-chloroethoxy) methane	<1400	ug/Kg		2/15/2022 18:13
Bis (2-chloroethyl) ether	<1400	ug/Kg		2/15/2022 18:13
Bis (2-ethylhexyl) phthalate	<1400	ug/Kg		2/15/2022 18:13
Butylbenzylphthalate	<1400	ug/Kg		2/15/2022 18:13
Caprolactam	<1400	ug/Kg		2/15/2022 18:13
Carbazole	<1400	ug/Kg		2/15/2022 18:13
Chrysene	<1400	ug/Kg		2/15/2022 18:13
Dibenz (a,h) anthracene	<1400	ug/Kg		2/15/2022 18:13
Dibenzofuran	<1400	ug/Kg		2/15/2022 18:13
Diethyl phthalate	<1400	ug/Kg		2/15/2022 18:13
Dimethyl phthalate	<1400	ug/Kg		2/15/2022 18:13
Di-n-butyl phthalate	<1400	ug/Kg		2/15/2022 18:13
Di-n-octylphthalate	<1400	ug/Kg		2/15/2022 18:13

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: Soil

Semi-Volatile Organics (Acid/Base Neutrals)

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Fluoranthene	<1400	ug/Kg		2/15/2022 18:13
Fluorene	<1400	ug/Kg		2/15/2022 18:13
Hexachlorobenzene	<1400	ug/Kg		2/15/2022 18:13
Hexachlorobutadiene	<1400	ug/Kg		2/15/2022 18:13
Hexachlorocyclopentadiene	<5590	ug/Kg		2/15/2022 18:13
Hexachloroethane	<1400	ug/Kg		2/15/2022 18:13
Indeno (1,2,3-cd) pyrene	<1400	ug/Kg		2/15/2022 18:13
Isophorone	<1400	ug/Kg		2/15/2022 18:13
Naphthalene	<1400	ug/Kg		2/15/2022 18:13
Nitrobenzene	<1400	ug/Kg		2/15/2022 18:13
N-Nitroso-di-n-propylamine	<1400	ug/Kg		2/15/2022 18:13
N-Nitrosodiphenylamine	<1400	ug/Kg		2/15/2022 18:13
Pentachlorophenol	<2790	ug/Kg		2/15/2022 18:13
Phenanthrene	<1400	ug/Kg		2/15/2022 18:13
Phenol	<1400	ug/Kg		2/15/2022 18:13
Pyrene	<1400	ug/Kg		2/15/2022 18:13

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Limits</u>	<u>Outliers</u>	<u>Date Analyzed</u>
2,4,6-Tribromophenol	71.0	37.7 - 88.9		2/15/2022 18:13
2-Fluorobiphenyl	59.4	42 - 83.2		2/15/2022 18:13
2-Fluorophenol	60.1	38.1 - 82.3		2/15/2022 18:13
Nitrobenzene-d5	58.0	37.1 - 80.1		2/15/2022 18:13
Phenol-d5	64.8	37.4 - 81.8		2/15/2022 18:13
Terphenyl-d14	68.8	45.7 - 104		2/15/2022 18:13

Method Reference(s): EPA 8270D
EPA 3546
Preparation Date: 2/15/2022
Data File: B59967.D
QC Batch ID: QC220215ABNS
QC Number: Blk 1

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Wednesday, February 16, 2022



PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Laboratory Control Sample

Client:

Inventum Engineering, P.C.

Project Reference:

Lid Seal Soil

Lab Project ID:

220605

Matrix:

Soil

Semi-Volatile Organics (Acid/Base Neutrals)

<u>Analyte</u>	<u>Spike Added</u>	<u>Spike Units</u>	<u>LCS Result</u>	<u>LCS % Recovery</u>	<u>% Rec Limits</u>	<u>LCS Outliers</u>	<u>Date Analyzed</u>
1,2,4-Trichlorobenzene	13400	ug/Kg	8300	61.7	43.8 - 79.2		2/15/2022
1,4-Dichlorobenzene	13400	ug/Kg	7390	55.0	41.1 - 73.2		2/15/2022
2,4-Dinitrotoluene	13400	ug/Kg	9280	69.0	48.2 - 91.1		2/15/2022
2-Chlorophenol	20200	ug/Kg	12900	63.9	52 - 83.3		2/15/2022
4-Chloro-3-methylphenol	20200	ug/Kg	14600	72.5	52.4 - 90.3		2/15/2022
4-Nitrophenol	20200	ug/Kg	14400	71.5	25.1 - 102		2/15/2022
Acenaphthene	13400	ug/Kg	8700	64.7	46.4 - 83		2/15/2022
N-Nitroso-di-n-propylamine	13400	ug/Kg	7920	58.9	38.4 - 84.7		2/15/2022
Pentachlorophenol	20200	ug/Kg	15500	76.6	47.6 - 109		2/15/2022
Phenol	20200	ug/Kg	12300	61.1	48.4 - 84.9		2/15/2022
Pyrene	13400	ug/Kg	9860	73.3	51.3 - 103		2/15/2022

Method Reference(s):

EPA 8270D
EPA 3546

Preparation Date:

2/15/2022

Data File:

B59968.D

QC Number:

LCS 1

QC Batch ID:

QC220215ABNS

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Wednesday, February 16, 2022



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: Soil

Volatile Organics

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
1,1,1-Trichloroethane	<2.00	ug/Kg		2/16/2022 12:24
1,1,2,2-Tetrachloroethane	<2.00	ug/Kg		2/16/2022 12:24
1,1,2-Trichloroethane	<2.00	ug/Kg		2/16/2022 12:24
1,1-Dichloroethane	<2.00	ug/Kg		2/16/2022 12:24
1,1-Dichloroethene	<2.00	ug/Kg		2/16/2022 12:24
1,2,3-Trichlorobenzene	<5.00	ug/Kg		2/16/2022 12:24
1,2,4-Trichlorobenzene	<5.00	ug/Kg		2/16/2022 12:24
1,2-Dibromo-3-Chloropropane	<10.0	ug/Kg		2/16/2022 12:24
1,2-Dibromoethane	<2.00	ug/Kg		2/16/2022 12:24
1,2-Dichlorobenzene	<2.00	ug/Kg		2/16/2022 12:24
1,2-Dichloroethane	<2.00	ug/Kg		2/16/2022 12:24
1,2-Dichloropropane	<2.00	ug/Kg		2/16/2022 12:24
1,3-Dichlorobenzene	<2.00	ug/Kg		2/16/2022 12:24
1,4-Dichlorobenzene	<2.00	ug/Kg		2/16/2022 12:24
1,4-Dioxane	<10.0	ug/Kg		2/16/2022 12:24
2-Butanone	<10.0	ug/Kg		2/16/2022 12:24
2-Hexanone	<5.00	ug/Kg		2/16/2022 12:24
4-Methyl-2-pentanone	<5.00	ug/Kg		2/16/2022 12:24
Acetone	<10.0	ug/Kg		2/16/2022 12:24
Benzene	<2.00	ug/Kg		2/16/2022 12:24
Bromochloromethane	<5.00	ug/Kg		2/16/2022 12:24
Bromodichloromethane	<2.00	ug/Kg		2/16/2022 12:24
Bromoform	<5.00	ug/Kg		2/16/2022 12:24
Bromomethane	<2.00	ug/Kg		2/16/2022 12:24
Carbon disulfide	<2.00	ug/Kg		2/16/2022 12:24
Carbon Tetrachloride	<2.00	ug/Kg		2/16/2022 12:24
Chlorobenzene	<2.00	ug/Kg		2/16/2022 12:24

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: Soil

Volatile Organics

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Chloroethane	<2.00	ug/Kg		2/16/2022 12:24
Chloroform	<2.00	ug/Kg		2/16/2022 12:24
Chloromethane	<2.00	ug/Kg		2/16/2022 12:24
cis-1,2-Dichloroethene	<2.00	ug/Kg		2/16/2022 12:24
cis-1,3-Dichloropropene	<2.00	ug/Kg		2/16/2022 12:24
Cyclohexane	<10.0	ug/Kg		2/16/2022 12:24
Dibromochloromethane	<2.00	ug/Kg		2/16/2022 12:24
Dichlorodifluoromethane	<2.00	ug/Kg		2/16/2022 12:24
Ethylbenzene	<2.00	ug/Kg		2/16/2022 12:24
Freon 113	<2.00	ug/Kg		2/16/2022 12:24
Isopropylbenzene	<2.00	ug/Kg		2/16/2022 12:24
m,p-Xylene	<2.00	ug/Kg		2/16/2022 12:24
Methyl acetate	<2.00	ug/Kg		2/16/2022 12:24
Methyl tert-butyl Ether	<2.00	ug/Kg		2/16/2022 12:24
Methylcyclohexane	<2.00	ug/Kg		2/16/2022 12:24
Methylene chloride	<5.00	ug/Kg		2/16/2022 12:24
o-Xylene	<2.00	ug/Kg		2/16/2022 12:24
Styrene	<5.00	ug/Kg		2/16/2022 12:24
Tetrachloroethene	<2.00	ug/Kg		2/16/2022 12:24
Toluene	<2.00	ug/Kg		2/16/2022 12:24
trans-1,2-Dichloroethene	<2.00	ug/Kg		2/16/2022 12:24
trans-1,3-Dichloropropene	<2.00	ug/Kg		2/16/2022 12:24
Trichloroethene	<2.00	ug/Kg		2/16/2022 12:24
Trichlorofluoromethane	<2.00	ug/Kg		2/16/2022 12:24
Vinyl chloride	<2.00	ug/Kg		2/16/2022 12:24

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: Soil

Volatile Organics

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>	
<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Limits</u>	<u>Outliers</u>	<u>Date Analyzed</u>	
1,2-Dichloroethane-d4	112	82.8 - 125		2/16/2022	12:24
4-Bromofluorobenzene	89.9	68.3 - 118		2/16/2022	12:24
Pentafluorobenzene	107	81 - 114		2/16/2022	12:24
Toluene-D8	115	79.3 - 124		2/16/2022	12:24

Method Reference(s): EPA 8260C
EPA 5035A - L
Data File: z07284.D
QC Batch ID: voas220216
QC Number: Blk 1



PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Laboratory Control Sample

Client: Inventum Engineering, P.C.

Project Reference: Lid Seal Soil

Lab Project ID: 220605

Matrix: Soil

Volatile Organics

<u>Analyte</u>	<u>Spike Added</u>	<u>Spike Units</u>	<u>LCS Result</u>	<u>LCS % Recovery</u>	<u>% Rec Limits</u>	<u>LCS Outliers</u>	<u>Date Analyzed</u>
1,1,1-Trichloroethane	20.0	ug/Kg	21.7	108	71.9 - 122		2/16/2022
1,1,2,2-Tetrachloroethane	20.0	ug/Kg	17.9	89.7	29.7 - 153		2/16/2022
1,1,2-Trichloroethane	20.0	ug/Kg	18.6	92.8	65.3 - 116		2/16/2022
1,1-Dichloroethane	20.0	ug/Kg	21.4	107	76.8 - 120		2/16/2022
1,1-Dichloroethene	20.0	ug/Kg	20.7	104	59.3 - 120		2/16/2022
1,2-Dichlorobenzene	20.0	ug/Kg	18.3	91.7	68.5 - 118		2/16/2022
1,2-Dichloroethane	20.0	ug/Kg	20.0	99.9	75.4 - 116		2/16/2022
1,2-Dichloropropane	20.0	ug/Kg	19.7	98.4	77.6 - 110		2/16/2022
1,3-Dichlorobenzene	20.0	ug/Kg	18.9	94.6	72.7 - 114		2/16/2022
1,4-Dichlorobenzene	20.0	ug/Kg	18.7	93.4	72.4 - 115		2/16/2022
Benzene	20.0	ug/Kg	20.6	103	81.6 - 109		2/16/2022
Bromodichloromethane	20.0	ug/Kg	17.9	89.3	74.9 - 106		2/16/2022
Bromoform	20.0	ug/Kg	16.2	81.2	47 - 131		2/16/2022
Bromomethane	20.0	ug/Kg	24.1	120	28 - 176		2/16/2022
Carbon Tetrachloride	20.0	ug/Kg	21.2	106	72.1 - 116		2/16/2022
Chlorobenzene	20.0	ug/Kg	19.3	96.6	79.1 - 109		2/16/2022

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Laboratory Control Sample

Client:

Inventum Engineering, P.C.

Project Reference:

Lid Seal Soil

Lab Project ID:

220605

Matrix:

Soil

Volatile Organics

Analyte	Spike Added	Spike Units	LCS Result	LCS % Recovery	% Rec Limits	LCS Outliers	Date Analyzed
Chloroethane	20.0	ug/Kg	25.0	125	54.3 - 146		2/16/2022
Chloroform	20.0	ug/Kg	21.0	105	77.4 - 118		2/16/2022
Chloromethane	20.0	ug/Kg	27.9	139	10 - 217		2/16/2022
cis-1,3-Dichloropropene	20.0	ug/Kg	19.5	97.7	70.4 - 109		2/16/2022
Dibromochloromethane	20.0	ug/Kg	17.6	87.9	66.5 - 111		2/16/2022
Ethylbenzene	20.0	ug/Kg	19.9	99.3	76.2 - 114		2/16/2022
Methylene chloride	20.0	ug/Kg	19.6	98.0	30.7 - 154		2/16/2022
Tetrachloroethene	20.0	ug/Kg	20.0	100	65.1 - 125		2/16/2022
Toluene	20.0	ug/Kg	20.3	102	76.8 - 115		2/16/2022
trans-1,2-Dichloroethene	20.0	ug/Kg	21.7	108	69 - 122		2/16/2022
trans-1,3-Dichloropropene	20.0	ug/Kg	18.4	92.1	54.2 - 116		2/16/2022
Trichloroethene	20.0	ug/Kg	20.9	104	76.1 - 115		2/16/2022
Trichlorofluoromethane	20.0	ug/Kg	24.4	122	61.2 - 137		2/16/2022
Vinyl chloride	20.0	ug/Kg	28.0	140	49.7 - 154		2/16/2022

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



QC Report for Laboratory Control Sample

Client: Inventum Engineering, P.C.

Project Reference: Lid Seal Soil

Lab Project ID: 220605

Matrix: Soil

Volatile Organics

<u>Analyte</u>	<u>Spike Added</u>	<u>Spike Units</u>	<u>LCS Result</u>	<u>LCS % Recovery</u>	<u>% Rec Limits</u>	<u>LCS Outliers</u>	<u>Date Analyzed</u>
----------------	--------------------	--------------------	-------------------	-----------------------	---------------------	---------------------	----------------------

Method Reference(s): EPA 8260C
EPA 5035A - L

Data File: z07283.D

QC Number: LCS 1

QC Batch ID: voas220216

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: Soil

Total Cyanide

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Cyanide, Total	<0.481	mg/Kg		2/17/2022
Method Reference(s):	EPA 9014			
	EPA 9010C			
Preparation Date:	2/17/2022			
QC Batch ID:	QC220217WTCN			
QC Number:	Blk 1			



PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Laboratory Control Sample

Client:

Inventum Engineering, P.C.

Project Reference:

Lid Seal Soil

Lab Project ID:

220605

Matrix:

Soil

Total Cyanide

<u>Analyte</u>	<u>Spike Added</u>	<u>Spike Units</u>	<u>LCS Result</u>	<u>LCS % Recovery</u>	<u>% Rec Limits</u>	<u>LCS Outliers</u>	<u>Date Analyzed</u>
Cyanide, Total	4.85	mg/Kg	4.82	99.2	85 - 115		2/17/2022
Method Reference(s):							
EPA 9014							
EPA 9010C							
Preparation Date:							
2/17/2022							
QC Number:							
1							
QC Batch ID:							
QC220217WTCN							

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: TCLP Fluid

TCLP Mercury

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Mercury	<0.00200	mg/L		2/15/2022 11:59

Method Reference(s): EPA 7470A
Preparation Date: 2/15/2022
Data File: Hg220215A
QC Batch ID: QC220215HgTCLP
QC Number: Blk 1



QC Report for Laboratory Control Sample and Control Sample Duplicate

Client: Inventum Engineering, P.C.

Project Reference: Lid Seal Soil

Lab Project ID: 220605

Matrix: TCLP Fluid

TCLP Mercury

Analyte	<u>LCS</u>	<u>LCSD</u>	<u>Spike</u>	<u>LCS</u>	<u>LCSD</u>	<u>LCS %</u>	<u>LCSD %</u>	<u>% Rec</u>	<u>LCS</u>	<u>LCSD</u>	<u>Relative %</u>	<u>RPD</u>	<u>RPD</u>	<u>Date</u>
	<u>Added</u>	<u>Added</u>	<u>Units</u>	<u>Result</u>	<u>Result</u>	<u>Recovery</u>	<u>Recovery</u>	<u>Limits</u>	<u>Outliers</u>	<u>Outliers</u>	<u>Difference</u>	<u>Limit</u>	<u>Outliers</u>	<u>Analyzed</u>
Mercury	0.0200	0.0200	mg/L	0.0195	0.0197	97.4	98.5	80 - 120			1.12	20		2/15/2022

Method Reference(s): EPA 7470A
Preparation Date: 2/15/2022
Data File: Hg220215A
QC Number: 1
QC Batch ID: QC220215HgTCLP

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Sample Spike and Sample Duplicate

Client:

Inventum Engineering, P.C.

Lab Project ID: 220605

Project Reference:

Lid Seal Soil

Lab Sample ID: 220605-01A

Sample Identifier: SD-ST06-02102022

Date Sampled: 2/10/2022

Matrix: TCLP Extract

Date Received: 2/11/2022

TCLP Mercury

<u>Analyte</u>	<u>Sample Results</u>	<u>Result Units</u>	<u>Spike Added</u>	<u>Spike Result</u>	<u>Spike Recovery</u>	<u>% Rec Limits</u>	<u>Spike Outliers</u>	<u>Duplicate Result</u>	<u>Relative % Difference</u>	<u>RPD Limit</u>	<u>RPD Outliers</u>	<u>Date Analyzed</u>
Mercury	< 0.00200	mg/L	0.0200	0.0192	96.1	75 - 125		<0.00200	NC	20		2/15/2022
	<u>Method Reference(s):</u> EPA 7470A EPA 1311											
	<u>Preparation Date:</u> 2/15/2022 Hg220215A											
	<u>QC Batch ID:</u> QC220215HgTCLP											

NC = Not Calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Tuesday, February 15, 2022



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: TCLP Fluid

TCLP RCRA Metals (ICP)

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Arsenic	<0.500	mg/L		2/15/2022 14:13
Barium	<0.500	mg/L		2/15/2022 14:13
Cadmium	<0.0250	mg/L		2/15/2022 14:13
Chromium	<0.500	mg/L		2/15/2022 14:13
Lead	<0.500	mg/L		2/15/2022 14:13
Selenium	<0.200	mg/L		2/15/2022 14:13
Silver	<0.500	mg/L		2/15/2022 14:13

Method Reference(s): EPA 6010C
EPA 3005
Preparation Date: 2/15/2022
Data File: 220215B
QC Batch ID: QC220215TCLP
QC Number: Blk 1



PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Laboratory Control Sample and Control Sample Duplicate

Client: Inventum Engineering, P.C.

Project Reference: Lid Seal Soil

Lab Project ID: 220605

Matrix: TCLP Fluid

TCLP RCRA Metals (ICP)

Analyte	LCS	LCSD	Spike	LCS	LCSD	LCS %	LCSD %	%Rec	LCS	LCSD	Relative %	RPD	RPD	Date
	Added	Added	Units	Result	Result	Recovery	Recovery	Limits	Outliers	Outliers	Difference	Limit	Outliers	Analyzed
Arsenic	12.5	12.5	mg/L	12.5	12.2	100	97.4	80 - 120			2.72	20		2/15/2022
Barium	12.5	12.5	mg/L	13.1	13.5	105	108	80 - 120			2.46	20		2/15/2022
Cadmium	5.00	5.00	mg/L	5.33	5.24	107	105	80 - 120			1.82	20		2/15/2022
Chromium	12.5	12.5	mg/L	11.9	12.2	95.4	97.6	80 - 120			2.37	20		2/15/2022
Lead	12.5	12.5	mg/L	12.2	12.5	97.2	100	80 - 120			3.13	20		2/15/2022
Selenium	12.5	12.5	mg/L	12.9	12.6	103	101	80 - 120			2.14	20		2/15/2022
Silver	1.25	1.25	mg/L	1.26	1.24	101	98.8	80 - 120			1.73	20		2/15/2022

Method Reference(s): EPA 6010C

EPA 3005

Preparation Date: 2/15/2022

Data File: 220215B

QC Number: 1

QC Batch ID: QC220215TCLP

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



QC Report for Sample Spike and Sample Duplicate

Client:

Inventum Engineering, P.C.

Lab Project ID: 220605

Project Reference:

Lid Seal Soil

Lab Sample ID:

220605-01A

Date Sampled: 2/10/2022

Sample Identifier:

SD-ST06-02102022

Date Received: 2/11/2022

Matrix:

TCLP Extract

TCLP RCRA Metals (ICP)

Analyte	Sample Results	Result Units	Spike Added	Spike Result	Spike % Recovery	% Rec Limits	Spike Outliers	Duplicate Result	Relative % Difference	RPD Limit	RPD Outliers	Date Analyzed
Arsenic	< 0.500	mg/L	12.5	12.3	98.2	75 - 125		<0.500	NC	20		2/15/2022
Barium	< 0.500	mg/L	12.5	13.6	108	75 - 125		<0.500	NC	20		2/15/2022
Cadmium	< 0.0250	mg/L	5.00	5.15	103	75 - 125		<0.0250	NC	20		2/15/2022
Chromium	< 0.500	mg/L	12.5	12.3	98.5	75 - 125		<0.500	NC	20		2/15/2022
Lead	< 0.500	mg/L	12.5	12.6	101	75 - 125		<0.500	NC	20		2/15/2022
Selenium	< 0.200	mg/L	12.5	13.0	104	75 - 125		<0.200	NC	20		2/15/2022
Silver	< 0.500	mg/L	1.25	1.24	99.3	75 - 125		<0.500	NC	20		2/15/2022

Method Reference(s):

EPA 6010C

EPA 1311 / 3005A

Preparation Date:

2/15/2022

220215B

QC Batch ID:

QC220215TCLP

NC = Not Calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Wednesday, February 16, 2022



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: TCLP Fluid

TCLP Pesticides

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Chlordane	<2.00	ug/L		2/21/2022 11:26
Endrin	<1.00	ug/L		2/21/2022 11:26
gamma-BHC (Lindane)	<1.00	ug/L		2/21/2022 11:26
Heptachlor	<1.00	ug/L		2/21/2022 11:26
Heptachlor Epoxide	<1.00	ug/L		2/21/2022 11:26
Methoxychlor	<1.00	ug/L		2/21/2022 11:26
Toxaphene	<20.0	ug/L		2/21/2022 11:26

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Limits</u>	<u>Outliers</u>	<u>Date Analyzed</u>
Decachlorobiphenyl (1)	150	17 - 148	*	2/21/2022 11:26
Tetrachloro-m-xylene (1)	53.4	18 - 112		2/21/2022 11:26

Method Reference(s): EPA 8081B
EPA 3510C
Preparation Date: 2/18/2022
QC Batch ID: QC220218PESTT
QC Number: Blk 1



PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Laboratory Control Sample

Client: Inventum Engineering, P.C.

Project Reference: Lid Seal Soil

Lab Project ID: 220605

Matrix: TCLP Fluid

TCLP Pesticides

<u>Analyte</u>	<u>Spike Added</u>	<u>Spike Units</u>	<u>LCS Result</u>	<u>LCS % Recovery</u>	<u>% Rec Limits</u>	<u>LCS Outliers</u>	<u>Date Analyzed</u>
Chlordane (1)	10.0	ug/L	11.5	115	59.9 - 90.1	*	2/21/2022
Endrin (1)	5.00	ug/L	5.97	119	33.4 - 115	*	2/21/2022
gamma-BHC (Lindane) (1)	5.00	ug/L	4.96	99.3	47.4 - 112		2/21/2022
Heptachlor (1)	5.00	ug/L	5.45	109	39.8 - 116		2/21/2022
Heptachlor Epoxide (1)	5.00	ug/L	5.76	115	51.5 - 117		2/21/2022
Methoxychlor (1)	5.00	ug/L	7.93	159	30.1 - 182		2/21/2022
Method Reference(s):							
EPA 8081B							
EPA 3510C							
Preparation Date: 2/18/2022							
QC Number: LCS 1							
QC Batch ID: QC220218PESTT							

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: TCLP Fluid

TCLP Semi-Volatile Organics

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
1,4-Dichlorobenzene	<40.0	ug/L		2/16/2022 01:25
2,4,5-Trichlorophenol	<40.0	ug/L		2/16/2022 01:25
2,4,6-Trichlorophenol	<40.0	ug/L		2/16/2022 01:25
2,4-Dinitrotoluene	<40.0	ug/L		2/16/2022 01:25
Cresols (as m,p,o-Cresol)	<80.0	ug/L		2/16/2022 01:25
Hexachlorobenzene	<40.0	ug/L		2/16/2022 01:25
Hexachlorobutadiene	<40.0	ug/L		2/16/2022 01:25
Hexachloroethane	<40.0	ug/L		2/16/2022 01:25
Nitrobenzene	<40.0	ug/L		2/16/2022 01:25
Pentachlorophenol	<80.0	ug/L		2/16/2022 01:25
Pyridine	<40.0	ug/L		2/16/2022 01:25

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Limits</u>	<u>Outliers</u>	<u>Date Analyzed</u>
2,4,6-Tribromophenol	87.4	49.6 - 116		2/16/2022 01:25
2-Fluorobiphenyl	50.7	18.6 - 104		2/16/2022 01:25
2-Fluorophenol	65.5	10 - 105		2/16/2022 01:25
Nitrobenzene-d5	65.9	51.2 - 99.6		2/16/2022 01:25
Phenol-d5	64.8	10 - 104		2/16/2022 01:25
Terphenyl-d14	78.1	55.6 - 122		2/16/2022 01:25

Method Reference(s): EPA 8270D
EPA 3510C
Preparation Date: 2/15/2022
Data File: B59982.D
QC Batch ID: QC220215ABNT
QC Number: Blk 1

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Laboratory Control Sample

Client: Inventum Engineering, P.C.

Project Reference: Lid Seal Soil

Lab Project ID: 220605

Matrix: TCLP Fluid

TCLP Semi-Volatile Organics

Analyte	<u>Spike</u>	<u>Spike</u>	<u>LCS</u>	<u>LCS %</u>	<u>% Rec</u>	<u>LCS</u>	<u>Date</u>
	<u>Added</u>	<u>Units</u>	<u>Result</u>	<u>Recovery</u>	<u>Limits</u>	<u>Outliers</u>	<u>Analyzed</u>
1,4-Dichlorobenzene	200	ug/L	115	57.4	24.7 - 94.8		2/16/2022
2,4,6-Trichlorophenol	300	ug/L	282	93.8	53.8 - 128		2/16/2022
2,4-Dinitrotoluene	200	ug/L	186	92.9	54.8 - 114		2/16/2022
Pentachlorophenol	300	ug/L	322	107	39.7 - 161		2/16/2022

Method Reference(s):

EPA 8270D
EPA 3510C

Preparation Date:

2/15/2022

Data File:

B59983.D

QC Number:

LCS 1

QC Batch ID:

QC220215ABNT

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Method Blank Report

Client: Inventum Engineering, P.C.
Project Reference: Lid Seal Soil
Lab Project ID: 220605
Matrix: TCLP Fluid

TCLP Volatile Organics

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
1,1-Dichloroethene	<2.00	ug/L		2/16/2022 11:45
1,2-Dichloroethane	<2.00	ug/L		2/16/2022 11:45
2-Butanone	<10.0	ug/L		2/16/2022 11:45
Benzene	<2.00	ug/L		2/16/2022 11:45
Carbon Tetrachloride	<2.00	ug/L		2/16/2022 11:45
Chlorobenzene	<2.00	ug/L		2/16/2022 11:45
Chloroform	<2.00	ug/L		2/16/2022 11:45
Tetrachloroethene	<2.00	ug/L		2/16/2022 11:45
Trichloroethene	<2.00	ug/L		2/16/2022 11:45
Vinyl chloride	<2.00	ug/L		2/16/2022 11:45

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Limits</u>	<u>Outliers</u>	<u>Date Analyzed</u>
1,2-Dichloroethane-d4	113	77.9 - 132		2/16/2022 11:45
1,2-Dichloroethane-d4	113	77.9 - 132		2/16/2022 11:45
4-Bromofluorobenzene	94.3	62.6 - 133		2/16/2022 11:45
4-Bromofluorobenzene	94.3	62.6 - 133		2/16/2022 11:45
Pentafluorobenzene	107	88.9 - 114		2/16/2022 11:45
Pentafluorobenzene	107	88.9 - 114		2/16/2022 11:45
Toluene-D8	114	75.6 - 117		2/16/2022 11:45

Method Reference(s): EPA 8260C
EPA 5030
Data File: z07282.D
QC Batch ID: voax220216
QC Number: Blk 1

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Monday, February 21, 2022



PARADIGM
ENVIRONMENTAL SERVICES, INC.

QC Report for Laboratory Control Sample

Client:

Inventum Engineering, P.C.

Project Reference:

Lid Seal Soil

Lab Project ID:

220605

Matrix:

TCLP Fluid

TCLP Volatile Organics

Analyte	Spike Added	Spike Units	LCS Result	LCS % Recovery	% Rec Limits	LCS Outliers	Date Analyzed
1,1-Dichloroethene	20.0	ug/L	19.5	97.4	68.1 - 110		2/16/2022
1,2-Dichloroethane	20.0	ug/L	20.2	101	79.4 - 120		2/16/2022
Benzene	20.0	ug/L	20.0	100	85.6 - 106		2/16/2022
Carbon Tetrachloride	20.0	ug/L	19.5	97.3	79.7 - 122		2/16/2022
Chlorobenzene	20.0	ug/L	18.7	93.6	81.5 - 104		2/16/2022
Chloroform	20.0	ug/L	20.1	101	86.3 - 116		2/16/2022
Tetrachloroethene	20.0	ug/L	20.1	100	69.8 - 110		2/16/2022
Trichloroethene	20.0	ug/L	19.3	96.7	81.6 - 108		2/16/2022
Vinyl chloride	20.0	ug/L	25.4	127	58.2 - 140		2/16/2022
Method Reference(s):							
EPA 8260C							
EPA 5030							
Data File: z07281.D							
QC Number: LCS 1							
QC Batch ID: voax220216							

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

Each page of this document is part of a multipage report. This document may not be reproduced except in its entirety, without the prior consent of Paradigm Environmental Services, Inc.

All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.

"E" = Result has been estimated, calibration limit exceeded.

"H" = Denotes a parameter analyzed outside of holding time.

"Z" = See case narrative.

"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.

"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.

"B" = Method blank contained trace levels of analyte. Refer to included method blank report.

"J" = Result estimated between the quantitation limit and half the quantitation limit.

"L" = Laboratory Control Sample recovery outside accepted QC limits.

"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.

"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.

"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*

"(1)" = Indicates data from primary column used for QC calculation.

"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.

"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

GENERAL TERMS AND CONDITIONS

LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, term or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty.

Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation.

LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB will use LAB default method for all tests unless specified otherwise on the Work Order.

Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices.

Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability.

In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.

LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.

All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.

Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure.

Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling.

Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.

Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on the final report.

Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.

LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility.

LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment.

LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure.

LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law.

This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM

REQUESTED ANALYSIS

LID SEAL (BENTONITE)	
SOIL	O1A
Full TSP includes pest herb per m ²	

Total Cost:

P.I.F.*



2 of 2

Chain of Custody Supplement

Client: Inventum EngineeringCompleted by: Glenn PezzuloLab Project ID: 220605Date: 2/11/22

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

NELAC compliance with the sample condition requirements upon receipt

Condition	Yes	No	N/A
Container Type	☒	☒ 5035	☐
Comments			
Transferred to method-compliant container	☐	☐	☒
Headspace (<1 mL)	☐	☐	☒
Comments			
Preservation	☐	☐	☒
Comments			
Chlorine Absent (<0.10 ppm per test strip)	☐	☐	☒
Comments			
Holding Time	☒	☐	☐
Comments			
Temperature	☒	☐	☒ metals
Comments	3°C iced		
Compliant Sample Quantity/Type	☒	☐	☐
Comments			

1779 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

40

ELAP ID: 1



220214009 Page 50 of 51

REPORT TO:

INVOICE TO:

COMPANY:	Paradigm Environmental	COMPANY:	Same	LAB PROJECT #:	CLIENT PROJECT
ADDRESS:		ADDRESS:			
CITY:	STATE:	ZIP:			
PHONE:	FAX:	PHONE:	FAX:		
				TURNAROUND TIME: (WORKING DAYS)	

ATTN:	Reporting	ATTN:	Accounts Payable	☐	☐	☐	☒	☐
COMMENTS:	Please email results to reporting@paradigmenv.com							
				Date Due: 2/21/22				

REQUESTED ANALYSIS

[illegible]

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter

NELAC Compliance

Container Type: ☒ Y ☐ N

Preservation: Y ☐ N ☐

Comments:

Holding Time: Y ☐ N ☐

Comments:

Temperature: 45c

Comments:

Y ☐ N ☐

Client

Sampled By	Date/Time
2/2	2/14/22 08:30
Reinquinshed By	Date/Time

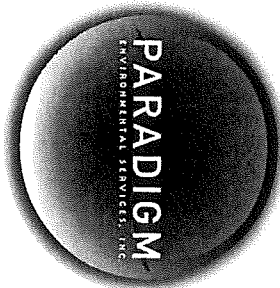
Received By Thomas Gachon 2/14/22 12:33

Received @ Lab By	Date/Time
M. V. V.	21/4/22
	4:10

Total Cost:

--	--

P.I.F



179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

220215005

CHAIN OF CUSTODY

1 of 1

ELAP ID: 1

REPORT TO:

INVOICE TO:

COMPANY: Paradigm Environmental	COMPANY: Same	LAB PROJECT #:	CLIENT PROJECT #:		
ADDRESS:	ADDRESS:				
CITY:	STATE:	ZIP:	CITY:	STATE:	ZIP:
PHONE:	FAX:	PHONE:	FAX:	TURNAROUND TIME: (WORKING DAYS)	
ATTN: Reporting	ATTN: Accounts Payable	STD 1 ☐ 2 ☐ 3 ☐ 5 ☐			
COMMENTS: Please email results to reporting@paradigmenv.com		Date Due: 2/21/22			

REQUESTED ANALYSIS

DATE	TIME	COMPOSITE	GRADES	SAMPLE LOCATION/FIELD ID	MATERIALS	CONTAMINANTS	TESTS	REMARKS	PARADIGM SAMPLE NUMBER
2/10/22	11:45	X		220605-01A	TCLP	Herbicides		Batch AC	
2					Extract	1		Sample spun at Paradigm 2/14/22	
3									
4									
5									
6									
7									
8									
9									
10									

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter

NELAC Compliance

Container Type:

Y ☐ N ☐

Preservation:

Y ☐ N ☐

Holding Time:

Y ☐ N ☐

Temperature:

Y ☐ N ☐

Client

Sampled By

Date/Time

Total Cost:

Relinquished By

Date/Time

Received By

Date/Time

P.I.F.

Received @ Lab By

Date/Time





PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report For
Inventum Engineering, P.C.

For Lab Project ID

220995

Referencing

Lid Seal Soil

Prepared

Monday, March 14, 2022

Any noncompliant QC parameters or other notes impacting data interpretation are flagged or documented on the final report or are noted below.

A handwritten signature in blue ink, appearing to be "AD", is written over a horizontal line.

Certifies that this report has been approved by the Technical Director or Designee

179 Lake Avenue • Rochester, NY 14608 • (585) 647-2530 • Fax (585) 647-3311 • ELAP ID# 10958

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

Report Prepared Monday, March 14, 2022



Lab Project ID: 220995

Client: **Inventum Engineering, P.C.**

Project Reference: Lid Seal Soil

Sample Identifier: ST06Soil-03102022, Lid Seal & Soil

Lab Sample ID: 220995-01

Date Sampled: 3/10/2022 13:45

Matrix: Sludge

Date Received 3/10/2022

Paint Filter Test

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Paint Filter Test	Pass	N/A		3/14/2022

Method Reference(s): EPA 9095B

Percent Moisture

<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Qualifier</u>	<u>Date Analyzed</u>
Percent Moisture	77.1	%		3/11/2022

Method Reference(s): SM 2540 B

ELAP does not offer this test for approval as part of their laboratory certification program.



Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

Each page of this document is part of a multipage report. This document may not be reproduced except in its entirety, without the prior consent of Paradigm Environmental Services, Inc.

All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.

"E" = Result has been estimated, calibration limit exceeded.

"H" = Denotes a parameter analyzed outside of holding time.

"Z" = See case narrative.

"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.

"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.

"B" = Method blank contained trace levels of analyte. Refer to included method blank report.

"J" = Result estimated between the quantitation limit and half the quantitation limit.

"L" = Laboratory Control Sample recovery outside accepted QC limits.

"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.

"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.

"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*

"(1)" = Indicates data from primary column used for QC calculation.

"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.

"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

GENERAL TERMS AND CONDITIONS

LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, term or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty.

Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation.

LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB will use LAB default method for all tests unless specified otherwise on the Work Order.

Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices.

Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability.

In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.

LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.

All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.

Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure.

Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling.

Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.

Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on the final report.

Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.

LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility.

LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment.

LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure.

LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law.

This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

PARADIGM

Soil

4^o cited 3/10/22/1627

2062



Chain of Custody Supplement

Client: Inventum
 Lab Project ID: 220995

Completed by: Mdylail
 Date: 3/10/22

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition	<i>NELAC compliance with the sample condition requirements upon receipt</i>		
	Yes	No	N/A
Container Type	☒	☐	☐
Comments			
Transferred to method-compliant container	☐	☐	☒
Headspace (<1 mL)	☐	☐	☒
Comments			
Preservation	☐	☐	☒
Comments			
Chlorine Absent (<0.10 ppm per test strip)	☐	☐	☒
Comments			
Holding Time	☒	☐	☐
Comments			
Temperature	☒	☐	☐
Comments	4°C cool		
Compliant Sample Quantity/Type	☒	☐	☐
Comments			



PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report For
Inventum Engineering, P.C.

For Lab Project ID

223132

Referencing

ST-06 Lid Seal Disposal

Prepared

Friday, July 15, 2022

The enclosed reports reflect an analysis that has been subcontracted and are presented in their original form.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.



ANALYTICAL REPORT

Lab Number:	L2235421
Client:	Paradigm Environmental Services 179 Lake Avenue Rochester, NY 14608
ATTN:	Jane Daloia
Phone:	(585) 647-2530
Project Name:	ST-06 LID SEAL DISPOSAL
Project Number:	ST-06 LID SEAL DISP
Report Date:	07/15/22

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-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: ST-06 LID SEAL DISPOSAL
Project Number: ST-06 LID SEAL DISP

Lab Number: L2235421
Report Date: 07/15/22

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2235421-01	ST06 - BOXES - 06302022	SOLID	Not Specified	06/30/22 15:15	07/01/22
L2235421-02	ST06 - LQ - 06302022	WATER	Not Specified	06/30/22 15:30	07/01/22
L2235421-03	ST06 - AQ - 06302022	WATER	Not Specified	06/30/22 15:35	07/01/22



Project Name: ST-06 LID SEAL DISPOSAL
Project Number: ST-06 LID SEAL DISP

Lab Number: L2235421
Report Date: 07/15/22

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.

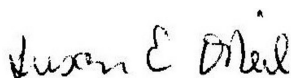
Project Name: ST-06 LID SEAL DISPOSAL**Lab Number:** L2235421**Project Number:** ST-06 LID SEAL DISP**Report Date:** 07/15/22**Case Narrative (continued)**

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:



Susan O' Neil

Title: Technical Director/Representative

Date: 07/15/22

ORGANICS

VOLATILES

Project Name: ST-06 LID SEAL DISPOSAL**Lab Number:** L2235421**Project Number:** ST-06 LID SEAL DISP**Report Date:** 07/15/22**SAMPLE RESULTS**

Lab ID: L2235421-01
Client ID: ST06 - BOXES - 06302022
Sample Location: Not Specified

Date Collected: 06/30/22 15:15
Date Received: 07/01/22
Field Prep: Not Specified

Sample Depth:

Matrix: Solid

Analytical Method: 1,8015D

Analytical Date: 07/14/22 21:06

Analyst: WR

Percent Solids: 71%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
-----------	--------	-----------	-------	----	-----	-----------------

Alcohol Analysis by GC/FID - Mansfield Lab

Methyl Alcohol	2160		mg/kg	28.1	14.0	1
----------------	------	--	-------	------	------	---

Project Name: ST-06 LID SEAL DISPOSAL**Lab Number:** L2235421**Project Number:** ST-06 LID SEAL DISP**Report Date:** 07/15/22**SAMPLE RESULTS**

Lab ID: L2235421-02 D

Date Collected: 06/30/22 15:30

Client ID: ST06 - LQ - 06302022

Date Received: 07/01/22

Sample Location: Not Specified

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Analytical Method: 1,8015D

Analytical Date: 07/13/22 21:11

Analyst: WR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
-----------	--------	-----------	-------	----	-----	-----------------

Alcohol Analysis by GC/FID - Mansfield Lab

Methyl Alcohol	2910		mg/l	20.0	10.0	10
----------------	------	--	------	------	------	----

Project Name: ST-06 LID SEAL DISPOSAL**Lab Number:** L2235421**Project Number:** ST-06 LID SEAL DISP**Report Date:** 07/15/22**SAMPLE RESULTS**

Lab ID: L2235421-03 D

Date Collected: 06/30/22 15:35

Client ID: ST06 - AQ - 06302022

Date Received: 07/01/22

Sample Location: Not Specified

Field Prep: Not Specified

Sample Depth:

Matrix: Water

Analytical Method: 1,8015D

Analytical Date: 07/14/22 19:46

Analyst: WR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
-----------	--------	-----------	-------	----	-----	-----------------

Alcohol Analysis by GC/FID - Mansfield Lab

Methyl Alcohol	2420		mg/l	20.0	10.0	10
----------------	------	--	------	------	------	----

Project Name: ST-06 LID SEAL DISPOSAL**Lab Number:** L2235421**Project Number:** ST-06 LID SEAL DISP**Report Date:** 07/15/22**Method Blank Analysis**
Batch Quality Control

Analytical Method: 1,8015D

Analytical Date: 07/13/22 15:48

Analyst: WR

Parameter	Result	Qualifier	Units	RL	MDL
Alcohol Analysis by GC/FID - Mansfield Lab for sample(s): 02 Batch: WG1662442-1					
Methyl Alcohol	ND		mg/l	2.00	1.00

Project Name: ST-06 LID SEAL DISPOSAL**Lab Number:** L2235421**Project Number:** ST-06 LID SEAL DISP**Report Date:** 07/15/22**Method Blank Analysis**
Batch Quality Control

Analytical Method: 1,8015D

Analytical Date: 07/14/22 13:02

Analyst: WR

Parameter	Result	Qualifier	Units	RL	MDL
Alcohol Analysis by GC/FID - Mansfield Lab for sample(s): 01 Batch: WG1662981-1					
Methyl Alcohol	ND		mg/kg	2.00	1.00

Project Name: ST-06 LID SEAL DISPOSAL**Lab Number:** L2235421**Project Number:** ST-06 LID SEAL DISP**Report Date:** 07/15/22**Method Blank Analysis**
Batch Quality Control

Analytical Method: 1,8015D
Analytical Date: 07/14/22 12:21
Analyst: WR

Parameter	Result	Qualifier	Units	RL	MDL
Alcohol Analysis by GC/FID - Mansfield Lab for sample(s): 03 Batch: WG1662982-1					
Methyl Alcohol	ND		mg/l	2.00	1.00

Lab Control Sample Analysis
Batch Quality Control

Project Name: ST-06 LID SEAL DISPOSAL
Project Number: ST-06 LID SEAL DISP

Lab Number: L2235421
Report Date: 07/15/22

Parameter	LCS		LCSD		%Recovery Limits	RPD	
	%Recovery	Qual	%Recovery	Qual		RPD	Limits
Alcohol Analysis by GC/FID - Mansfield Lab Associated sample(s): 02 Batch: WG1662442-2 WG1662442-3							
Methyl Alcohol	91		90		70-130	1	30



Lab Control Sample Analysis
Batch Quality Control

Project Name: ST-06 LID SEAL DISPOSAL
Project Number: ST-06 LID SEAL DISP

Lab Number: L2235421
Report Date: 07/15/22

Parameter	LCS		LCSD		%Recovery Limits	RPD	
	%Recovery	Qual	%Recovery	Qual		RPD	Qual
Alcohol Analysis by GC/FID - Mansfield Lab Associated sample(s): 01 Batch: WG1662981-2 WG1662981-3							
Methyl Alcohol	85		86		70-130	1	30



Lab Control Sample Analysis
Batch Quality Control

Project Name: ST-06 LID SEAL DISPOSAL
Project Number: ST-06 LID SEAL DISP

Lab Number: L2235421
Report Date: 07/15/22

Parameter	LCS		LCSD		%Recovery Limits	RPD	
	%Recovery	Qual	%Recovery	Qual		RPD	Qual
Alcohol Analysis by GC/FID - Mansfield Lab Associated sample(s): 03 Batch: WG1662982-2 WG1662982-3							
Methyl Alcohol	86		88		70-130	2	30



Project Name: ST-06 LID SEAL DISPOSAL

Project Number: ST-06 LID SEAL DISP

Lab Duplicate Analysis
Batch Quality Control

Lab Number: L2235421

Report Date: 07/15/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
-----------	---------------	------------------	-------	-----	------	------------

Alcohol Analysis by GC/FID - Mansfield Lab Associated sample(s): 01	QC Batch ID: WG1662981-4	QC Sample: L2235421-01	Client ID: ST06 - BOXES - 06302022
---	--------------------------	------------------------	------------------------------------

Methyl Alcohol	2160	2060	mg/kg	5		30
----------------	------	------	-------	---	--	----

Alcohol Analysis by GC/FID - Mansfield Lab Associated sample(s): 03	QC Batch ID: WG1662982-4	QC Sample: L2235421-03	Client ID: ST06 - AQ - 06302022
---	--------------------------	------------------------	---------------------------------

Methyl Alcohol	2420	2430	mg/l	0		20
----------------	------	------	------	---	--	----



INORGANICS & MISCELLANEOUS

Project Name: ST-06 LID SEAL DISPOSAL**Lab Number:** L2235421**Project Number:** ST-06 LID SEAL DISP**Report Date:** 07/15/22**SAMPLE RESULTS****Lab ID:** L2235421-01**Date Collected:** 06/30/22 15:15**Client ID:** ST06 - BOXES - 06302022**Date Received:** 07/01/22**Sample Location:** Not Specified**Field Prep:** Not Specified**Sample Depth:****Matrix:** Solid

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.1		%	0.100	NA	1	-	07/06/22 11:13	121,2540G	RI



Lab Duplicate Analysis
Batch Quality Control

Project Name: ST-06 LID SEAL DISPOSAL
Project Number: ST-06 LID SEAL DISP

Lab Number: L2235421
Report Date: 07/15/22

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1659352-1 QC Sample: L2235628-01 Client ID: DUP Sample						
Solids, Total	71.9	68.7	%	5		20

Project Name: ST-06 LID SEAL DISPOSAL
Project Number: ST-06 LID SEAL DISP

Serial_No:07152216:13
Lab Number: L2235421
Report Date: 07/15/22

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**

L2235421-01A	Glass 60ml unpreserved split	A	NA	4.4	Y	Absent	A2-ALCOHOL(14)
L2235421-01B	Glass 120ml/4oz unpreserved	A	NA	4.4	Y	Absent	TS(7)
L2235421-02A	Vial unpreserved	A	NA	4.4	Y	Absent	A2-ALCOHOL(14)
L2235421-02B	Vial unpreserved	A	NA	4.4	Y	Absent	A2-ALCOHOL(14)
L2235421-02C	Glass 120ml/4oz unpreserved	A	NA	4.4	Y	Absent	ARCHIVE0
L2235421-03A	Vial unpreserved	A	NA	4.4	Y	Absent	A2-ALCOHOL(14)
L2235421-03B	Vial unpreserved	A	NA	4.4	Y	Absent	A2-ALCOHOL(14)

Initial **Final** **Temp** **Frozen**
Cooler **pH** **pH** **deg C** **Pres** **Seal** **Date/Time** **Analysis(*)**



Project Name: ST-06 LID SEAL DISPOSAL**Lab Number:** L2235421**Project Number:** ST-06 LID SEAL DISP**Report Date:** 07/15/22

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: ST-06 LID SEAL DISPOSAL**Lab Number:** L2235421**Project Number:** ST-06 LID SEAL DISP**Report Date:** 07/15/22**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: ST-06 LID SEAL DISPOSAL
Project Number: ST-06 LID SEAL DISP

Lab Number: L2235421
Report Date: 07/15/22

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: ST-06 LID SEAL DISPOSAL
Project Number: ST-06 LID SEAL DISP

Lab Number: L2235421
Report Date: 07/15/22

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.
- 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, NO₂, NO₃.

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, **LACHAT 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.



Analytical Report Appendix

The reported results relate only to the samples as they have been received by the laboratory.

Each page of this document is part of a multipage report. This document may not be reproduced except in its entirety, without the prior consent of Paradigm Environmental Services, Inc.

All soil/sludge samples have been reported on a dry weight basis, unless qualified "reported as received". Other solids are reported as received.

Low level Volatiles blank reports for soil/solid matrix are based on a nominal 5 gram weight. Sample results and reporting limits are based on actual weight, which may be more or less than 5 grams.

The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified. Aliquots separated for certain tests, such as TCLP, are indicated on the Chain of Custody and final reports with an "A" suffix.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of analyte-specific, frequently used data flags and their meaning:

"<" = Analyzed for but not detected at or above the quantitation limit.

"E" = Result has been estimated, calibration limit exceeded.

"Z" = See case narrative.

"H" = Sample analyzed outside of holding time.

"D" = Sample, Laboratory Control Sample, or Matrix Spike Duplicate results above Relative Percent Difference limit.

"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.

"B" = Method blank contained trace levels of analyte. Refer to included method blank report.

"J" = Result estimated between the quantitation limit and half the quantitation limit.

"L" = Laboratory Control Sample recovery outside accepted QC limits.

"P" = Concentration differs by more than 40% between the primary and secondary analytical columns.

"NC" = Not calculable. Applicable to RPD if sample or duplicate result is non-detect or estimated (see primary report for data flags). Applicable to MS if sample is greater or equal to ten times the spike added. Applicable to sample surrogates or MS if sample dilution is 10x or higher.

"" = Indicates any recoveries outside associated acceptance windows. Surrogate outliers in samples are presumed matrix effects. LCS demonstrates method compliance unless otherwise noted.*

"(1)" = Indicates data from primary column used for QC calculation.

"A" = denotes a parameter for which ELAP does not offer approval as part of their laboratory certification program.

"F" = denotes a parameter for which Paradigm does not carry certification, the results for which should therefore only be used where ELAP certification is not required, such as personal exposure assessment.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

GENERAL TERMS AND CONDITIONS

LABORATORY SERVICES

These Terms and Conditions embody the whole agreement of the parties in the absence of a signed and executed contract between the Laboratory (LAB) and Client. They shall supersede all previous communications, representations, or agreements, either verbal or written, between the parties. The LAB specifically rejects all additional, inconsistent, or conflicting terms, whether printed or otherwise set forth in any purchase order or other communication from the Client to the LAB. The invalidity or unenforceability in whole or in part of any provision, term or condition hereof shall not affect in any way the validity or enforceability of the remainder of the Terms and Conditions. No waiver by LAB of any provision, term, or condition hereof or of any breach by or obligation of the Client hereunder shall constitute a waiver of such provision, term, or condition on any other occasion or a waiver of any other breach by or obligation of the Client. This agreement shall be administered and interpreted under the laws of the state which services are procured.

Warranty.

Recognizing that the nature of many samples is unknown and that some may contain potentially hazardous components, LAB warrants only that it will perform testing services, obtain findings, and prepare reports in accordance with generally accepted analytical laboratory principles and practices at the time of performance of services. LAB makes no other warranty, express or implied.

Scope and Compensation.

LAB agrees to perform the services described in the chain of custody to which these terms and conditions are attached. Unless the parties agree in writing to the contrary, the duties of LAB shall not be construed to exceed the services specifically described. LAB will use LAB default method for all tests unless specified otherwise on the Work Order.

Payment terms are net 30 days from the date of invoice. All overdue payments are subject to an interest charge of one and one-half percent (1-1/2%) per month or a portion thereof. Client shall also be responsible for costs of collection, including payment of reasonable attorney fees if such expense is incurred. The prices, unless stated, do not include any sale, use or other taxes. Such taxes will be added to invoice prices when required.

Prices.

Compensation for services performed will be based on the current Lab Analytical Fee Schedule or on quotations agreed to in writing by the parties. Turnaround time based charges are determined from the time of resolution of all work order questions. Testimony, court appearances or data compilation for legal action will be charged separately. Evaluation and reporting of initial screening runs may incur additional fees.

Limitations of Liability.

In the event of any error, omission, or other professional negligence, the sole and exclusive responsibility of LAB shall be to re-perform the deficient work at its own expense and LAB shall have no other liability whatsoever. All claims shall be deemed waived unless made in writing and received by LAB within ninety (90) days following completion of services.

LAB shall have no liability, obligation, or responsibility of any kind for losses, costs, expenses, or other damages (including but not limited to any special, direct, incidental or consequential damages) with respect to LAB's services or results.

All results provided by LAB are strictly for the use of its clients and LAB is in no way responsible for the use of such results by clients or third parties. All reports should be considered in their entirety, and LAB is not responsible for the separation, detachment, or other use of any portion of these reports. Client may not assign the lab report without the written consent of the LAB.

Client covenants and agrees, at its/his/her sole expense, to indemnify, protect, defend, and save harmless the LAB from and against any and all damages, losses, liabilities, obligations, penalties, claims, litigation, demands, defenses, judgments, suits, actions, proceedings, costs, disbursements and/or expenses (including, without limitation attorneys' and experts' fees and disbursements) of any kind whatsoever which may at any time be imposed upon, incurred by or asserted or awarded against client relating to, resulting from or arising out of (a) the breach of this agreement by this client, (b) the negligence of the client in handling, delivering or disclosing any hazardous substance, (c) the violation of the Client of any applicable law, (d) non-compliance by the Client with any environmental permit or (e) a material misrepresentation in disclosing the materials to be tested.

Hazard Disclosure.

Client represents and warrants that any sample delivered to LAB will be preceded or accompanied by complete written disclosure of the presence of any hazardous substances known or suspected by Client. Client further warrants that any sample containing any hazardous substance that is to be delivered to LAB will be packaged, labeled, transported, and delivered properly and in accordance with applicable laws.

Sample Handling.

Prior to LAB's acceptance of any sample (or after any revocation of acceptance), the entire risk of loss or of damage to such sample remains with Client. Samples are accepted when receipt is acknowledged on chain of custody documentation. In no event will LAB have any responsibility for the action or inaction of any carrier shipping or delivering any sample to or from LAB premises.

Client authorizes LAB to proceed with the analysis of samples as received by the laboratory, recognizing that any samples not in compliance with all current DOH-ELAP-NELAP requirements for containers, preservation or holding time will be noted as such on the final report.

Disposal of hazardous waste samples is the responsibility of the Client. If the Client does not wish such samples returned, LAB may add storage and disposal fees to the final invoice. Maximum storage time for samples is 30 days after completion of analysis unless modified by applicable state or federal laws. Client will be required to give the LAB written instructions concerning disposal of these samples.

LAB reserves the absolute right, exercisable at any time, to refuse to receive delivery of, refuse to accept, or revoke acceptance of any sample, which, in the sole judgment of LAB (a) is of unsuitable volume, (b) may be or become unsuitable for or may pose a risk in handling, transport, or processing for any health, safety, environmental or other reason whether or not due to the presence in the sample of any hazardous substance, and whether or not such presence has been disclosed to LAB by Client or (c) if the condition or sample date make the sample unsuitable for analysis.

Legal Responsibility.

LAB is solely responsible for performance of this contract, and no affiliated company, director, officer, employee, or agent shall have any legal responsibility hereunder, whether in contract or tort including negligence.

Assignment.

LAB may assign its performance obligations under this contract to other parties, as it deems necessary. LAB shall disclose to Client any assignee (subcontractor) by ELAP ID # on the submitted final report.

Force Majeure.

LAB shall have no responsibility or liability to the Client for any failure or delay in performance by LAB, which results in whole or in part from any cause or circumstance beyond the reasonable control of LAB. Such causes and circumstances shall include, but not limited to, acts of God, acts or orders of any government authority, strikes or other labor disputes, natural disasters, accidents, wars, civil disturbances, difficulties or delays in transportation, mail or delivery services, inability to obtain sufficient services or supplies from LAB's usual suppliers, or any other cause beyond LAB's reasonable control.

Law.

This contract shall be continued under the laws of the State of New York without regard to its conflicts of laws provision.

This report is part of a multipage document and should only be evaluated in its entirety. The Chain of Custody provides additional sample information, including compliance with the sample condition requirements upon receipt.

REQUESTED ANALYSIS

Sent directly to sub lab

Peter Zaffrin		06/30/2022	CA 115/122
Sampled By	<i>[Signature]</i>	Date/Time	
Relinquished By	<i>[Signature]</i>	Date/Time	
Received By	Brian Zuck	Date/Time	6/30/22 16:20
Received @ Lab By	Quinn Hyde	Date/Time	7/5/22 16:04
		P.I.F.	☐
			☐



Chain of Custody Supplement

Client: Inventum Eng
 Lab Project ID: 223132

Completed by: Emilee Hyde
 Date: 7/5/22

Sample Condition Requirements

Per NELAC/ELAP 210/241/242/243/244

Condition		<i>NELAC compliance with the sample condition requirements upon receipt</i>		
		Yes	No	N/A
Container Type		☐	☐	☒
	Comments _____			
Transferred to method-compliant container		☐	☐	☐
Headspace (<1 mL)		☐	☐	☐
	Comments _____			
Preservation		☐	☐	☐
	Comments _____			
Chlorine Absent (<0.10 ppm per test strip)		☐	☐	☐
	Comments _____			
Holding Time		☐	☐	☐
	Comments _____			
Temperature		☐	☐	☐
	Comments _____			
Compliant Sample Quantity/Type		☐	☐	☒
	Comments <u>Sent directly to sub lab.</u>			



11148

ATTN:		ATTN:		reporting@pparadiagemv.com	
Reporting					
Matrix Codes:					
AQ - Aqueous Liquid	WA - Water	DW - Drinking Water	SO - Soil	SD - Solid	WP - Wipe
NA - Non-Aqueous Liquid	WG - Groundwater	WW - Wastewater	SL - Sludge	PT - Paint	CK - Caulk
					OL - Oil
					AR - Air

Turnaround Time	Report Supplements	
Availability contingent upon lab approval; additional fees may apply.		
Standard Turn	☒	None Required ☐
10 day	☐	Batch QC ☒
Rush 3 day	☐	Category A ☐
Rush 2 day	☐	Category B ☐
Rush 1 day	☐	
Other	☐	Other ☐
please indicate date needed: _____		
26 of 26	Other EDD ☐	
please indicate EDD needed: _____		

Client	Date/Time	Total Cost:
Sampled By	7/1/22 14:15	
Reinquished By	7/1/22 14:15	
Received By	7/1/22 14:15	P.L.F.
Received By	7/1/22 14:15	
Received By	7/1/22 14:15	