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16 September 2020

Mr. Ken Thiessen
Oregon Department of Environmental Quality
Northwest Region
700 NE Multnomah Street, Suite 600
Portland, OR 97232-4100

Subject: TSA Well Drilling Soil IDW– Investigation Derived Waste Non-Hazardous Determination Request
East Multnomah County Troutdale Sandstone Aquifer Remedy (ECSI No. 1479)
Fairview, Oregon

Dear Ken:

Geosyntec Consultants, Inc. (Geosyntec) has prepared this letter on behalf of Cascade Corporation (Cascade) to request Oregon Department of Environmental Quality (DEQ) concurrence for a non-hazardous waste determination for investigation derived waste (IDW), which was generated as part of groundwater well drilling activities for the East Multnomah County, Troutdale Sandstone Aquifer (TSA) remedy Site. The Cascade facility is located at 2201 NE 201st Ave in Fairview, Oregon (referred to "onsite"), and well drilling activities were conducted at the Cascade property located at 2525 NE 201st Ave in Fairview, Oregon (referred to as "offsite").

SITE HISTORY AND BACKGROUND

Following remedial investigations conducted from 1988 to 1994, contaminants of concern (COCs) identified at the Site included volatile organic compounds (VOCs) in soil and groundwater (onsite and offsite), total petroleum hydrocarbons (TPH) in soil (onsite), chromium in soil and groundwater (onsite), and manganese in groundwater (onsite). Active and passive soil and groundwater remediation began in 1989 and were successful in treating the onsite and offsite areas of contamination. Remediation of VOCs in offsite groundwater continues with groundwater pump and treat and soil vapor extraction systems. Currently, contamination in TSA groundwater is primarily comprised of VOCs including trichloroethene (TCE), tetrachloroethene (PCE), and cis-1,2-dichloroethene (cis-1,2-DCE).

INVESTIGATION DERIVED WASTE

IDW generated during the drilling process consisted of soil cores from boreholes where six new groundwater monitoring wells installed. Drilling activities were conducted in June and July 2020.

The IDW was placed into a 20 cubic yard soil roll of box and 55-gallon drums stored at the Cascade offsite property.

Two composite soil samples were collected on 5 August 2020, including one composite sample from a soil roll off box and one composite sample from soil stored in drums. The samples were tested for volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260 and RCRA 8 by EPA Method 6010B/7470. Of these, one sample was additionally analyzed by Method 1311 toxicity characteristic leaching protocol (TCLP) extraction. Analytical laboratory reports are provided as Attachment 1 to this letter.

IDW TESTING RESULTS

Site related VOCs were not detected in the two soil samples collected from the soil cuttings. The two soil samples contained relatively low amounts of barium, chromium, and lead, and the sample from the roll off box (ROB-080520) contained 105 mg/kg of chromium. Due to the higher concentration of chromium, this sample was also analyzed by TCLP extraction. Chromium was not detected in the leachate.

DISCUSSION

Potentially applicable waste codes that could apply to this waste would be F001 or F002, for waste related to historical parts degreasing using TCE at the Cascade facility.

Based on the analytical results, site related VOCs including TCE were not detected in the IDW. This is expected since core material from the wells is predominantly from the TSA, where soil was not historically directly contaminated by VOCs. Rather, groundwater contaminated with VOCs migrated to the TSA.

The IDW has been determined to be non-hazardous and the waste profiles accepted by Waste Management for disposal at the Hillsboro Landfill (roll off box) and by Republic Services for disposal at the Roosevelt Landfill (soil drums). Approved waste profiles from Waste Management and Republic Services are attached in Attachment 2.

Upon receipt of DEQ's concurrence, the soil roll off box and drums will be transported off-site for disposal.

CLOSURE

Please contact us at (503) 222-9518 with any questions regarding this request letter, or if you need additional information to support this request.

Sincerely,

Geosyntec Consultants, Inc.

Cindy Bartlett, R.G.
Geologist/Project Manager

Brent Miller, P.E.
Senior Principal

ATTACHEMENTS:

Attachment 1	Analytical Laboratory Reports
Attachment 2	Approved Waste Profiles

ATTACHMENT 1

Analytical Laboratory Reports

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

August 14, 2020

Cascade Corporation- Fairview, OR

Sample Delivery Group:	L1247644
Samples Received:	08/06/2020
Project Number:	
Description:	Cascade

Report To: Cindy Bartlett
2201 NE 201st Avenue
Fairview, OR 97024-9718

Entire Report Reviewed By:

Brian Ford
Project Manager

TABLE OF CONTENTS

NVWD-080520 L1247644-01 Solid

Collected by: PY/MT
Collected date/time: 08/05/20 13:40
Received date/time: 08/06/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1524343	1	08/12/20 18:49	08/12/20 19:01	KBC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1524427	1	08/05/20 13:40	08/12/20 03:24	ADM	Mt. Juliet, TN

ROB-080520 L1247644-02 Solid

Collected by: PY/MT
Collected date/time: 08/05/20 14:00
Received date/time: 08/06/20 08:45

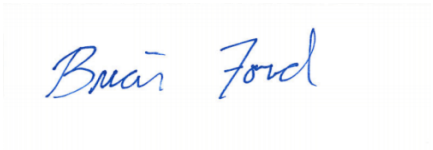
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1524343	1	08/12/20 18:49	08/12/20 19:01	KBC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1524427	2.28	08/05/20 14:00	08/12/20 03:43	ADM	Mt. Juliet, TN

TRIP BLANK LOT#448 L1247644-03 GW

Collected by: PY/MT
Collected date/time: 08/05/20 00:00
Received date/time: 08/06/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1523155	1	08/10/20 00:58	08/10/20 00:58	BMB	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	56.5		1	08/12/2020 19:01	WG1524343

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.141	1	08/12/2020 03:24	WG1524427
Acrylonitrile	ND		0.0352	1	08/12/2020 03:24	WG1524427
Benzene	ND		0.00281	1	08/12/2020 03:24	WG1524427
Bromobenzene	ND		0.0352	1	08/12/2020 03:24	WG1524427
Bromodichloromethane	ND		0.00703	1	08/12/2020 03:24	WG1524427
Bromoform	ND		0.0703	1	08/12/2020 03:24	WG1524427
Bromomethane	ND		0.0352	1	08/12/2020 03:24	WG1524427
n-Butylbenzene	ND		0.0352	1	08/12/2020 03:24	WG1524427
sec-Butylbenzene	ND		0.0352	1	08/12/2020 03:24	WG1524427
tert-Butylbenzene	ND		0.0141	1	08/12/2020 03:24	WG1524427
Carbon tetrachloride	ND		0.0141	1	08/12/2020 03:24	WG1524427
Chlorobenzene	ND		0.00703	1	08/12/2020 03:24	WG1524427
Chlorodibromomethane	ND		0.00703	1	08/12/2020 03:24	WG1524427
Chloroethane	ND		0.0141	1	08/12/2020 03:24	WG1524427
Chloroform	ND		0.00703	1	08/12/2020 03:24	WG1524427
Chloromethane	ND		0.0352	1	08/12/2020 03:24	WG1524427
2-Chlorotoluene	ND		0.00703	1	08/12/2020 03:24	WG1524427
4-Chlorotoluene	ND		0.0141	1	08/12/2020 03:24	WG1524427
1,2-Dibromo-3-Chloropropane	ND		0.0703	1	08/12/2020 03:24	WG1524427
1,2-Dibromoethane	ND		0.00703	1	08/12/2020 03:24	WG1524427
Dibromomethane	ND		0.0141	1	08/12/2020 03:24	WG1524427
1,2-Dichlorobenzene	ND		0.0141	1	08/12/2020 03:24	WG1524427
1,3-Dichlorobenzene	ND		0.0141	1	08/12/2020 03:24	WG1524427
1,4-Dichlorobenzene	ND		0.0141	1	08/12/2020 03:24	WG1524427
Dichlorodifluoromethane	ND		0.00703	1	08/12/2020 03:24	WG1524427
1,1-Dichloroethane	ND		0.00703	1	08/12/2020 03:24	WG1524427
1,2-Dichloroethane	ND		0.00703	1	08/12/2020 03:24	WG1524427
1,1-Dichloroethene	ND		0.00703	1	08/12/2020 03:24	WG1524427
cis-1,2-Dichloroethene	ND		0.00703	1	08/12/2020 03:24	WG1524427
trans-1,2-Dichloroethene	ND		0.0141	1	08/12/2020 03:24	WG1524427
1,2-Dichloropropane	ND		0.0141	1	08/12/2020 03:24	WG1524427
1,1-Dichloropropene	ND		0.00703	1	08/12/2020 03:24	WG1524427
1,3-Dichloropropane	ND		0.0141	1	08/12/2020 03:24	WG1524427
cis-1,3-Dichloropropene	ND		0.00703	1	08/12/2020 03:24	WG1524427
trans-1,3-Dichloropropene	ND		0.0141	1	08/12/2020 03:24	WG1524427
2,2-Dichloropropane	ND		0.00703	1	08/12/2020 03:24	WG1524427
Di-isopropyl ether	ND		0.00281	1	08/12/2020 03:24	WG1524427
Ethylbenzene	0.0232		0.00703	1	08/12/2020 03:24	WG1524427
Hexachloro-1,3-butadiene	ND		0.0703	1	08/12/2020 03:24	WG1524427
Isopropylbenzene	ND		0.00703	1	08/12/2020 03:24	WG1524427
p-Isopropyltoluene	ND		0.0141	1	08/12/2020 03:24	WG1524427
2-Butanone (MEK)	ND	J0	0.281	1	08/12/2020 03:24	WG1524427
Methylene Chloride	ND		0.0703	1	08/12/2020 03:24	WG1524427
4-Methyl-2-pentanone (MIBK)	ND		0.0703	1	08/12/2020 03:24	WG1524427
Methyl tert-butyl ether	ND		0.00281	1	08/12/2020 03:24	WG1524427
Naphthalene	ND	J0	0.0352	1	08/12/2020 03:24	WG1524427
n-Propylbenzene	ND		0.0141	1	08/12/2020 03:24	WG1524427
Styrene	0.258		0.0352	1	08/12/2020 03:24	WG1524427
1,1,1,2-Tetrachloroethane	ND		0.00703	1	08/12/2020 03:24	WG1524427
1,1,2,2-Tetrachloroethane	ND		0.00703	1	08/12/2020 03:24	WG1524427

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	ND		0.00703	1	08/12/2020 03:24	WG1524427
Tetrachloroethene	ND		0.00703	1	08/12/2020 03:24	WG1524427
Toluene	0.113		0.0141	1	08/12/2020 03:24	WG1524427
1,2,3-Trichlorobenzene	ND	J0	0.0352	1	08/12/2020 03:24	WG1524427
1,2,4-Trichlorobenzene	ND		0.0352	1	08/12/2020 03:24	WG1524427
1,1,1-Trichloroethane	ND		0.00703	1	08/12/2020 03:24	WG1524427
1,1,2-Trichloroethane	ND		0.00703	1	08/12/2020 03:24	WG1524427
Trichloroethene	ND		0.00281	1	08/12/2020 03:24	WG1524427
Trichlorofluoromethane	ND		0.00703	1	08/12/2020 03:24	WG1524427
1,2,3-Trichloropropane	ND		0.0352	1	08/12/2020 03:24	WG1524427
1,2,4-Trimethylbenzene	ND		0.0141	1	08/12/2020 03:24	WG1524427
1,2,3-Trimethylbenzene	ND		0.0141	1	08/12/2020 03:24	WG1524427
1,3,5-Trimethylbenzene	ND		0.0141	1	08/12/2020 03:24	WG1524427
Vinyl chloride	ND		0.00703	1	08/12/2020 03:24	WG1524427
Xylenes, Total	0.0824		0.0183	1	08/12/2020 03:24	WG1524427
(S) Toluene-d8	*95.2*		*75.0-131*		*08/12/2020 03:24*	WG1524427
(S) 4-Bromofluorobenzene	*99.9*		*67.0-138*		*08/12/2020 03:24*	WG1524427
(S) 1,2-Dichloroethane-d4	*92.3*		*70.0-130*		*08/12/2020 03:24*	WG1524427

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.4		1	08/12/2020 19:01	WG1524343

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.122	2.28	08/12/2020 03:43	WG1524427
Acrylonitrile	ND		0.0305	2.28	08/12/2020 03:43	WG1524427
Benzene	0.00525		0.00244	2.28	08/12/2020 03:43	WG1524427
Bromobenzene	ND		0.0305	2.28	08/12/2020 03:43	WG1524427
Bromodichloromethane	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
Bromoform	ND		0.0610	2.28	08/12/2020 03:43	WG1524427
Bromomethane	ND		0.0305	2.28	08/12/2020 03:43	WG1524427
n-Butylbenzene	ND		0.0305	2.28	08/12/2020 03:43	WG1524427
sec-Butylbenzene	ND		0.0305	2.28	08/12/2020 03:43	WG1524427
tert-Butylbenzene	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
Carbon tetrachloride	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
Chlorobenzene	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
Chlorodibromomethane	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
Chloroethane	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
Chloroform	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
Chloromethane	ND		0.0305	2.28	08/12/2020 03:43	WG1524427
2-Chlorotoluene	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
4-Chlorotoluene	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
1,2-Dibromo-3-Chloropropane	ND		0.0610	2.28	08/12/2020 03:43	WG1524427
1,2-Dibromoethane	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
Dibromomethane	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
1,2-Dichlorobenzene	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
1,3-Dichlorobenzene	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
1,4-Dichlorobenzene	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
Dichlorodifluoromethane	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
1,1-Dichloroethane	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
1,2-Dichloroethane	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
1,1-Dichloroethene	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
cis-1,2-Dichloroethene	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
trans-1,2-Dichloroethene	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
1,2-Dichloropropane	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
1,1-Dichloropropene	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
1,3-Dichloropropane	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
cis-1,3-Dichloropropene	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
trans-1,3-Dichloropropene	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
2,2-Dichloropropane	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
Di-isopropyl ether	ND		0.00244	2.28	08/12/2020 03:43	WG1524427
Ethylbenzene	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
Hexachloro-1,3-butadiene	ND		0.0610	2.28	08/12/2020 03:43	WG1524427
Isopropylbenzene	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
p-Isopropyltoluene	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
2-Butanone (MEK)	ND	J0	0.244	2.28	08/12/2020 03:43	WG1524427
Methylene Chloride	0.0730		0.0610	2.28	08/12/2020 03:43	WG1524427
4-Methyl-2-pentanone (MIBK)	ND		0.0610	2.28	08/12/2020 03:43	WG1524427
Methyl tert-butyl ether	ND		0.00244	2.28	08/12/2020 03:43	WG1524427
Naphthalene	ND	J0	0.0305	2.28	08/12/2020 03:43	WG1524427
n-Propylbenzene	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
Styrene	ND		0.0305	2.28	08/12/2020 03:43	WG1524427
1,1,1,2-Tetrachloroethane	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
1,1,2,2-Tetrachloroethane	ND		0.00610	2.28	08/12/2020 03:43	WG1524427

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
Tetrachloroethene	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
Toluene	0.0568		0.0122	2.28	08/12/2020 03:43	WG1524427
1,2,3-Trichlorobenzene	ND	J0	0.0305	2.28	08/12/2020 03:43	WG1524427
1,2,4-Trichlorobenzene	ND		0.0305	2.28	08/12/2020 03:43	WG1524427
1,1,1-Trichloroethane	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
1,1,2-Trichloroethane	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
Trichloroethene	ND		0.00244	2.28	08/12/2020 03:43	WG1524427
Trichlorofluoromethane	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
1,2,3-Trichloropropane	ND		0.0305	2.28	08/12/2020 03:43	WG1524427
1,2,4-Trimethylbenzene	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
1,2,3-Trimethylbenzene	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
1,3,5-Trimethylbenzene	ND		0.0122	2.28	08/12/2020 03:43	WG1524427
Vinyl chloride	ND		0.00610	2.28	08/12/2020 03:43	WG1524427
Xylenes, Total	0.0205		0.0159	2.28	08/12/2020 03:43	WG1524427
(S) Toluene-d8	*94.6*		*75.0-131*		*08/12/2020 03:43*	WG1524427
(S) 4-Bromofluorobenzene	*97.9*		*67.0-138*		*08/12/2020 03:43*	WG1524427
(S) 1,2-Dichloroethane-d4	*91.4*		*70.0-130*		*08/12/2020 03:43*	WG1524427

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		25.0	1	08/10/2020 00:58	WG1523155
Acrolein	ND		50.0	1	08/10/2020 00:58	WG1523155
Acrylonitrile	ND		5.00	1	08/10/2020 00:58	WG1523155
Benzene	ND		0.500	1	08/10/2020 00:58	WG1523155
Bromobenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
Bromodichloromethane	ND		0.500	1	08/10/2020 00:58	WG1523155
Bromoform	ND		0.500	1	08/10/2020 00:58	WG1523155
Bromomethane	ND		2.50	1	08/10/2020 00:58	WG1523155
n-Butylbenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
sec-Butylbenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
tert-Butylbenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
Carbon disulfide	ND		0.500	1	08/10/2020 00:58	WG1523155
Carbon tetrachloride	ND		0.500	1	08/10/2020 00:58	WG1523155
Chlorobenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
Chlorodibromomethane	ND		0.500	1	08/10/2020 00:58	WG1523155
Chloroethane	ND		2.50	1	08/10/2020 00:58	WG1523155
Chloroform	ND		0.500	1	08/10/2020 00:58	WG1523155
Chloromethane	ND		1.25	1	08/10/2020 00:58	WG1523155
2-Chlorotoluene	ND		0.500	1	08/10/2020 00:58	WG1523155
4-Chlorotoluene	ND		0.500	1	08/10/2020 00:58	WG1523155
1,2-Dibromo-3-Chloropropane	ND		2.50	1	08/10/2020 00:58	WG1523155
1,2-Dibromoethane	ND		0.500	1	08/10/2020 00:58	WG1523155
Dibromomethane	ND		0.500	1	08/10/2020 00:58	WG1523155
1,2-Dichlorobenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
1,3-Dichlorobenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
1,4-Dichlorobenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
Dichlorodifluoromethane	ND		2.50	1	08/10/2020 00:58	WG1523155
1,1-Dichloroethane	ND		0.500	1	08/10/2020 00:58	WG1523155
1,2-Dichloroethane	ND		0.500	1	08/10/2020 00:58	WG1523155
1,1-Dichloroethene	ND		0.500	1	08/10/2020 00:58	WG1523155
cis-1,2-Dichloroethene	ND		0.500	1	08/10/2020 00:58	WG1523155
trans-1,2-Dichloroethene	ND		0.500	1	08/10/2020 00:58	WG1523155
1,2-Dichloropropane	ND		0.500	1	08/10/2020 00:58	WG1523155
1,1-Dichloropropene	ND		0.500	1	08/10/2020 00:58	WG1523155
1,3-Dichloropropane	ND		1.00	1	08/10/2020 00:58	WG1523155
cis-1,3-Dichloropropene	ND		0.500	1	08/10/2020 00:58	WG1523155
trans-1,3-Dichloropropene	ND		0.500	1	08/10/2020 00:58	WG1523155
2,2-Dichloropropane	ND		0.500	1	08/10/2020 00:58	WG1523155
Di-isopropyl ether	ND		0.500	1	08/10/2020 00:58	WG1523155
Ethylbenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
Hexachloro-1,3-butadiene	ND		1.00	1	08/10/2020 00:58	WG1523155
Isopropylbenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
p-Isopropyltoluene	ND		0.500	1	08/10/2020 00:58	WG1523155
2-Butanone (MEK)	ND		5.00	1	08/10/2020 00:58	WG1523155
Methylene Chloride	ND		2.50	1	08/10/2020 00:58	WG1523155
4-Methyl-2-pentanone (MIBK)	ND		5.00	1	08/10/2020 00:58	WG1523155
Methyl tert-butyl ether	ND		0.500	1	08/10/2020 00:58	WG1523155
Naphthalene	ND		2.50	1	08/10/2020 00:58	WG1523155
n-Propylbenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
Styrene	ND		0.500	1	08/10/2020 00:58	WG1523155
1,1,1,2-Tetrachloroethane	ND		0.500	1	08/10/2020 00:58	WG1523155
1,1,2,2-Tetrachloroethane	ND		0.500	1	08/10/2020 00:58	WG1523155
1,1,2-Trichlorotrifluoroethane	ND		0.500	1	08/10/2020 00:58	WG1523155
Tetrachloroethene	ND		0.500	1	08/10/2020 00:58	WG1523155
Toluene	ND		0.500	1	08/10/2020 00:58	WG1523155
1,2,3-Trichlorobenzene	ND		0.500	1	08/10/2020 00:58	WG1523155

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,2,4-Trichlorobenzene	ND		1.00	1	08/10/2020 00:58	WG1523155
1,1,1-Trichloroethane	ND		0.500	1	08/10/2020 00:58	WG1523155
1,1,2-Trichloroethane	ND		0.500	1	08/10/2020 00:58	WG1523155
Trichloroethene	ND		0.500	1	08/10/2020 00:58	WG1523155
Trichlorofluoromethane	ND		2.50	1	08/10/2020 00:58	WG1523155
1,2,3-Trichloropropane	ND		2.50	1	08/10/2020 00:58	WG1523155
1,2,4-Trimethylbenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
1,2,3-Trimethylbenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
1,3,5-Trimethylbenzene	ND		0.500	1	08/10/2020 00:58	WG1523155
Vinyl chloride	ND		0.500	1	08/10/2020 00:58	WG1523155
Xylenes, Total	ND		1.50	1	08/10/2020 00:58	WG1523155
(S) Toluene-d8	*102*		*80.0-120*		*08/10/2020 00:58*	WG1523155
(S) 4-Bromofluorobenzene	*91.4*		*77.0-126*		*08/10/2020 00:58*	WG1523155
(S) 1,2-Dichloroethane-d4	*103*		*70.0-130*		*08/10/2020 00:58*	WG1523155

Method Blank (MB)

(MB) R3559304-1 08/12/20 19:01

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1247644-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1247644-01 08/12/20 19:01 • (DUP) R3559304-3 08/12/20 19:01

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	56.5	52.2	1	7.84		10

Laboratory Control Sample (LCS)

(LCS) R3559304-2 08/12/20 19:01

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3558761-3 08/09/20 22:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	25.0
Acrolein	U		2.54	50.0
Acrylonitrile	U		0.671	5.00
Benzene	U		0.0941	0.500
Bromobenzene	U		0.118	0.500
Bromodichloromethane	U		0.136	0.500
Bromoform	U		0.129	0.500
Bromomethane	U		0.605	2.50
n-Butylbenzene	U		0.157	0.500
sec-Butylbenzene	U		0.125	0.500
tert-Butylbenzene	U		0.127	0.500
Carbon disulfide	U		0.0962	0.500
Carbon tetrachloride	U		0.128	0.500
Chlorobenzene	U		0.117	0.500
Chlorodibromomethane	U		0.140	0.500
Chloroethane	U		0.192	2.50
Chloroform	U		0.111	0.500
Chloromethane	U		0.960	1.25
2-Chlorotoluene	U		0.106	0.500
4-Chlorotoluene	U		0.114	0.500
1,2-Dibromo-3-Chloropropane	U		0.276	2.50
1,2-Dibromoethane	U		0.126	0.500
Dibromomethane	U		0.122	0.500
1,2-Dichlorobenzene	U		0.107	0.500
1,3-Dichlorobenzene	U		0.299	0.500
1,4-Dichlorobenzene	U		0.120	0.500
Dichlorodifluoromethane	U		0.374	2.50
1,1-Dichloroethane	U		0.100	0.500
1,2-Dichloroethane	U		0.0819	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.126	0.500
trans-1,2-Dichloroethene	U		0.149	0.500
1,2-Dichloropropane	U		0.149	0.500
1,1-Dichloropropene	U		0.142	0.500
1,3-Dichloropropane	U		0.109	1.00
cis-1,3-Dichloropropene	U		0.111	0.500
trans-1,3-Dichloropropene	U		0.118	0.500
2,2-Dichloropropane	U		0.161	0.500
Di-isopropyl ether	U		0.105	0.500
Ethylbenzene	U		0.137	0.500

Method Blank (MB)

(MB) R3558761-3 08/09/20 22:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.337	1.00
Isopropylbenzene	U		0.105	0.500
p-Isopropyltoluene	U		0.120	0.500
2-Butanone (MEK)	U		1.19	5.00
Methylene Chloride	U		0.430	2.50
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00
Methyl tert-butyl ether	U		0.101	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.0993	0.500
Styrene	U		0.118	0.500
1,1,1,2-Tetrachloroethane	U		0.147	0.500
1,1,2,2-Tetrachloroethane	U		0.133	0.500
Tetrachloroethene	U		0.300	0.500
Toluene	U		0.278	0.500
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	0.500
1,1,2-Trichloroethane	U		0.158	0.500
Trichloroethene	U		0.190	0.500
Trichlorofluoromethane	U		0.160	2.50
1,2,3-Trichloropropane	U		0.237	2.50
1,2,3-Trimethylbenzene	U		0.104	0.500
1,2,4-Trimethylbenzene	U		0.322	0.500
1,3,5-Trimethylbenzene	U		0.104	0.500
Vinyl chloride	U		0.234	0.500
Xylenes, Total	U		0.174	1.50
(S) Toluene-d8	*106*			*80.0-120*
(S) 4-Bromofluorobenzene	*93.8*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*99.4*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3558761-1 08/09/20 21:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	29.6	118	19.0-160	
Acrolein	25.0	28.3	113	10.0-160	
Acrylonitrile	25.0	25.8	103	55.0-149	

Laboratory Control Sample (LCS)

(LCS) R3558761-1 08/09/20 21:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.89	97.8	70.0-123	
Bromobenzene	5.00	4.30	86.0	73.0-121	
Bromodichloromethane	5.00	4.58	91.6	75.0-120	
Bromoform	5.00	4.82	96.4	68.0-132	
Bromomethane	5.00	5.24	105	10.0-160	
n-Butylbenzene	5.00	4.82	96.4	73.0-125	
sec-Butylbenzene	5.00	4.82	96.4	75.0-125	
tert-Butylbenzene	5.00	4.88	97.6	76.0-124	
Carbon disulfide	5.00	4.92	98.4	61.0-128	
Carbon tetrachloride	5.00	5.16	103	68.0-126	
Chlorobenzene	5.00	4.78	95.6	80.0-121	
Chlorodibromomethane	5.00	4.91	98.2	77.0-125	
Chloroethane	5.00	5.49	110	47.0-150	
Chloroform	5.00	4.90	98.0	73.0-120	
Chloromethane	5.00	5.62	112	41.0-142	
2-Chlorotoluene	5.00	4.50	90.0	76.0-123	
4-Chlorotoluene	5.00	4.22	84.4	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	5.21	104	58.0-134	
1,2-Dibromoethane	5.00	4.99	99.8	80.0-122	
Dibromomethane	5.00	5.22	104	80.0-120	
1,2-Dichlorobenzene	5.00	5.11	102	79.0-121	
1,3-Dichlorobenzene	5.00	5.27	105	79.0-120	
1,4-Dichlorobenzene	5.00	5.15	103	79.0-120	
Dichlorodifluoromethane	5.00	6.00	120	51.0-149	
1,1-Dichloroethane	5.00	5.32	106	70.0-126	
1,2-Dichloroethane	5.00	5.34	107	70.0-128	
1,1-Dichloroethene	5.00	4.60	92.0	71.0-124	
cis-1,2-Dichloroethene	5.00	4.92	98.4	73.0-120	
trans-1,2-Dichloroethene	5.00	5.24	105	73.0-120	
1,2-Dichloropropane	5.00	5.30	106	77.0-125	
1,1-Dichloropropene	5.00	5.12	102	74.0-126	
1,3-Dichloropropane	5.00	5.40	108	80.0-120	
cis-1,3-Dichloropropene	5.00	4.97	99.4	80.0-123	
trans-1,3-Dichloropropene	5.00	5.24	105	78.0-124	
2,2-Dichloropropane	5.00	4.59	91.8	58.0-130	
Di-isopropyl ether	5.00	5.14	103	58.0-138	
Ethylbenzene	5.00	4.81	96.2	79.0-123	
Hexachloro-1,3-butadiene	5.00	6.09	122	54.0-138	
Isopropylbenzene	5.00	4.64	92.8	76.0-127	
p-Isopropyltoluene	5.00	4.78	95.6	76.0-125	

Laboratory Control Sample (LCS)

(LCS) R3558761-1 08/09/20 21:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
2-Butanone (MEK)	25.0	29.5	118	44.0-160	
Methylene Chloride	5.00	4.64	92.8	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	28.4	114	68.0-142	
Methyl tert-butyl ether	5.00	4.38	87.6	68.0-125	
Naphthalene	5.00	5.58	112	54.0-135	
n-Propylbenzene	5.00	4.40	88.0	77.0-124	
Styrene	5.00	4.51	90.2	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	5.16	103	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.55	91.0	65.0-130	
Tetrachloroethene	5.00	4.69	93.8	72.0-132	
Toluene	5.00	4.84	96.8	79.0-120	
1,1,2-Trichlorotrifluoroethane	5.00	4.80	96.0	69.0-132	
1,2,3-Trichlorobenzene	5.00	6.58	132	50.0-138	
1,2,4-Trichlorobenzene	5.00	5.92	118	57.0-137	
1,1,1-Trichloroethane	5.00	4.96	99.2	73.0-124	
1,1,2-Trichloroethane	5.00	5.34	107	80.0-120	
Trichloroethene	5.00	5.01	100	78.0-124	
Trichlorofluoromethane	5.00	5.84	117	59.0-147	
1,2,3-Trichloropropane	5.00	5.40	108	73.0-130	
1,2,3-Trimethylbenzene	5.00	4.81	96.2	77.0-120	
1,2,4-Trimethylbenzene	5.00	4.58	91.6	76.0-121	
1,3,5-Trimethylbenzene	5.00	4.79	95.8	76.0-122	
Vinyl chloride	5.00	6.03	121	67.0-131	
Xylenes, Total	15.0	14.6	97.3	79.0-123	
(S) Toluene-d8			*99.8*	*80.0-120*	
(S) 4-Bromofluorobenzene			*94.7*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*101*	*70.0-130*	

L1247571-24 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1247571-24 08/10/20 01:58 • (MS) R3558761-4 08/10/20 06:40 • (MSD) R3558761-5 08/10/20 07:00

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Carbon disulfide	5.00	ND	3.46	3.72	69.2	74.4	1	10.0-156			7.24	28
Acetone	25.0	ND	ND	25.8	98.8	103	1	10.0-160			4.36	35
Acrolein	25.0	ND	ND	ND	143	155	1	10.0-160			8.06	39
Acrylonitrile	25.0	ND	23.6	25.3	94.4	101	1	21.0-160			6.95	32
Benzene	5.00	ND	4.48	4.82	89.6	96.4	1	17.0-158			7.31	27
Bromobenzene	5.00	ND	4.22	4.60	84.4	92.0	1	30.0-149			8.62	28

L1247571-24 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1247571-24 08/10/20 01:58 • (MS) R3558761-4 08/10/20 06:40 • (MSD) R3558761-5 08/10/20 07:00

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromodichloromethane	5.00	ND	4.32	4.91	86.4	98.2	1	31.0-150			12.8	27
Bromoform	5.00	ND	4.43	4.78	88.6	95.6	1	29.0-150			7.60	29
Bromomethane	5.00	ND	4.15	4.48	83.0	89.6	1	10.0-160			7.65	38
n-Butylbenzene	5.00	ND	4.72	5.29	94.4	106	1	31.0-150			11.4	30
sec-Butylbenzene	5.00	ND	4.67	5.13	93.4	103	1	33.0-155			9.39	29
tert-Butylbenzene	5.00	ND	4.66	5.26	93.2	105	1	34.0-153			12.1	28
Carbon tetrachloride	5.00	ND	5.14	5.46	103	109	1	23.0-159			6.04	28
Chlorobenzene	5.00	ND	4.46	4.86	89.2	97.2	1	33.0-152			8.58	27
Chlorodibromomethane	5.00	ND	4.70	5.02	94.0	100	1	37.0-149			6.58	27
Chloroethane	5.00	ND	4.74	5.10	94.8	102	1	10.0-160			7.32	30
Chloroform	5.00	ND	4.65	4.94	93.0	98.8	1	29.0-154			6.05	28
Chloromethane	5.00	ND	4.71	4.78	94.2	95.6	1	10.0-160			1.48	29
2-Chlorotoluene	5.00	ND	4.39	4.76	87.8	95.2	1	32.0-153			8.09	28
4-Chlorotoluene	5.00	ND	4.26	4.62	85.2	92.4	1	32.0-150			8.11	28
1,2-Dibromo-3-Chloropropane	5.00	ND	5.27	5.88	105	118	1	22.0-151			10.9	34
1,2-Dibromoethane	5.00	ND	4.62	4.87	92.4	97.4	1	34.0-147			5.27	27
Dibromomethane	5.00	ND	4.16	5.14	83.2	103	1	30.0-151			21.1	27
1,2-Dichlorobenzene	5.00	ND	5.06	5.61	101	112	1	34.0-149			10.3	28
1,3-Dichlorobenzene	5.00	ND	5.14	5.14	103	103	1	36.0-146			0.000	27
1,4-Dichlorobenzene	5.00	ND	5.02	5.99	100	120	1	35.0-142			17.6	27
Dichlorodifluoromethane	5.00	ND	5.61	6.04	112	121	1	10.0-160			7.38	29
1,1-Dichloroethane	5.00	ND	5.06	5.49	101	110	1	25.0-158			8.15	27
1,2-Dichloroethane	5.00	ND	5.16	5.32	103	106	1	29.0-151			3.05	27
1,1-Dichloroethene	5.00	ND	4.57	4.84	91.4	96.8	1	11.0-160			5.74	29
cis-1,2-Dichloroethene	5.00	ND	4.45	4.98	89.0	99.6	1	10.0-160			11.2	27
trans-1,2-Dichloroethene	5.00	ND	4.34	4.84	86.8	96.8	1	17.0-153			10.9	27
1,2-Dichloropropane	5.00	0.673	4.97	5.63	85.9	99.1	1	30.0-156			12.5	27
1,1-Dichloropropene	5.00	ND	5.01	5.12	100	102	1	25.0-158			2.17	27
1,3-Dichloropropane	5.00	ND	5.13	5.56	103	111	1	38.0-147			8.04	27
cis-1,3-Dichloropropene	5.00	ND	4.48	4.88	89.6	97.6	1	34.0-149			8.55	28
trans-1,3-Dichloropropene	5.00	ND	4.77	5.18	95.4	104	1	32.0-149			8.24	28
2,2-Dichloropropane	5.00	ND	4.64	5.02	92.8	100	1	24.0-152			7.87	29
Di-isopropyl ether	5.00	ND	4.80	5.31	96.0	106	1	21.0-160			10.1	28
Ethylbenzene	5.00	ND	4.86	5.14	97.2	103	1	30.0-155			5.60	27
Hexachloro-1,3-butadiene	5.00	ND	6.03	6.82	121	136	1	20.0-154			12.3	34
Isopropylbenzene	5.00	ND	4.47	4.91	89.4	98.2	1	28.0-157			9.38	27
p-Isopropyltoluene	5.00	ND	4.86	5.20	97.2	104	1	30.0-154			6.76	29
2-Butanone (MEK)	25.0	ND	26.9	29.5	108	118	1	10.0-160			9.22	32
Methylene Chloride	5.00	ND	4.30	4.50	86.0	90.0	1	23.0-144			4.55	28
4-Methyl-2-pentanone (MIBK)	25.0	ND	28.6	30.7	114	123	1	29.0-160			7.08	29

L1247571-24 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1247571-24 08/10/20 01:58 • (MS) R3558761-4 08/10/20 06:40 • (MSD) R3558761-5 08/10/20 07:00

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Methyl tert-butyl ether	5.00	ND	4.21	4.64	84.2	92.8	1	28.0-150			9.72	29
Naphthalene	5.00	ND	5.56	5.72	111	114	1	12.0-156			2.84	35
n-Propylbenzene	5.00	ND	4.31	4.70	86.2	94.0	1	31.0-154			8.66	28
Styrene	5.00	ND	4.32	4.50	86.4	90.0	1	33.0-155			4.08	28
1,1,1,2-Tetrachloroethane	5.00	ND	4.99	5.25	99.8	105	1	36.0-151			5.08	29
1,1,2,2-Tetrachloroethane	5.00	ND	4.68	5.07	93.6	101	1	33.0-150			8.00	28
Tetrachloroethene	5.00	ND	4.57	4.92	91.4	98.4	1	10.0-160			7.38	27
Toluene	5.00	ND	4.66	4.86	93.2	97.2	1	26.0-154			4.20	28
1,1,2-Trichlorotrifluoroethane	5.00	ND	4.98	5.40	99.6	108	1	23.0-160			8.09	30
1,2,3-Trichlorobenzene	5.00	ND	6.31	6.75	126	135	1	17.0-150			6.74	36
1,2,4-Trichlorobenzene	5.00	ND	5.46	6.16	109	123	1	24.0-150			12.0	33
1,1,1-Trichloroethane	5.00	ND	4.71	5.28	94.2	106	1	23.0-160			11.4	28
1,1,2-Trichloroethane	5.00	ND	5.02	5.28	100	106	1	35.0-147			5.05	27
Trichloroethene	5.00	ND	4.74	4.79	94.8	95.8	1	10.0-160			1.05	25
Trichlorofluoromethane	5.00	ND	5.58	6.15	112	123	1	17.0-160			9.72	31
1,2,3-Trichloropropane	5.00	ND	5.02	5.48	100	110	1	34.0-151			8.76	29
1,2,3-Trimethylbenzene	5.00	ND	4.51	5.01	90.2	100	1	32.0-149			10.5	28
1,2,4-Trimethylbenzene	5.00	ND	4.37	4.72	87.4	94.4	1	26.0-154			7.70	27
1,3,5-Trimethylbenzene	5.00	ND	4.22	4.99	84.4	99.8	1	28.0-153			16.7	27
Vinyl chloride	5.00	ND	5.29	5.64	106	113	1	10.0-160			6.40	27
Xylenes, Total	15.0	ND	13.7	14.8	91.3	98.7	1	29.0-154			7.72	28
(S) Toluene-d8					*102*	*98.2*		*80.0-120*				
(S) 4-Bromofluorobenzene					*93.3*	*93.5*		*77.0-126*				
(S) 1,2-Dichloroethane-d4					*105*	*102*		*70.0-130*				

Method Blank (MB)

(MB) R3558840-3 08/12/20 00:53

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R3558840-3 08/12/20 00:53

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*96.9*			*75.0-131*
(S) 4-Bromofluorobenzene	*96.6*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*97.1*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3558840-1 08/11/20 23:18 • (LCSD) R3558840-2 08/11/20 23:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.625	0.402	0.542	64.3	86.7	10.0-160			29.7	31
Acrylonitrile	0.625	0.533	0.534	85.3	85.4	45.0-153			0.187	22
Benzene	0.125	0.114	0.110	91.2	88.0	70.0-123			3.57	20
Bromobenzene	0.125	0.126	0.122	101	97.6	73.0-121			3.23	20
Bromodichloromethane	0.125	0.119	0.116	95.2	92.8	73.0-121			2.55	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3558840-1 08/11/20 23:18 • (LCSD) R3558840-2 08/11/20 23:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromoform	0.125	0.119	0.119	95.2	95.2	64.0-132			0.000	20
Bromomethane	0.125	0.143	0.127	114	102	56.0-147			11.9	20
n-Butylbenzene	0.125	0.112	0.111	89.6	88.8	68.0-135			0.897	20
sec-Butylbenzene	0.125	0.120	0.119	96.0	95.2	74.0-130			0.837	20
tert-Butylbenzene	0.125	0.126	0.125	101	100	75.0-127			0.797	20
Carbon tetrachloride	0.125	0.135	0.134	108	107	66.0-128			0.743	20
Chlorobenzene	0.125	0.121	0.121	96.8	96.8	76.0-128			0.000	20
Chlorodibromomethane	0.125	0.118	0.116	94.4	92.8	74.0-127			1.71	20
Chloroethane	0.125	0.132	0.125	106	100	61.0-134			5.45	20
Chloroform	0.125	0.124	0.122	99.2	97.6	72.0-123			1.63	20
Chloromethane	0.125	0.124	0.120	99.2	96.0	51.0-138			3.28	20
2-Chlorotoluene	0.125	0.121	0.119	96.8	95.2	75.0-124			1.67	20
4-Chlorotoluene	0.125	0.126	0.124	101	99.2	75.0-124			1.60	20
1,2-Dibromo-3-Chloropropane	0.125	0.105	0.108	84.0	86.4	59.0-130			2.82	20
1,2-Dibromoethane	0.125	0.118	0.112	94.4	89.6	74.0-128			5.22	20
Dibromomethane	0.125	0.121	0.118	96.8	94.4	75.0-122			2.51	20
1,2-Dichlorobenzene	0.125	0.114	0.112	91.2	89.6	76.0-124			1.77	20
1,3-Dichlorobenzene	0.125	0.122	0.120	97.6	96.0	76.0-125			1.65	20
1,4-Dichlorobenzene	0.125	0.114	0.115	91.2	92.0	77.0-121			0.873	20
Dichlorodifluoromethane	0.125	0.137	0.125	110	100	43.0-156			9.16	20
1,1-Dichloroethane	0.125	0.119	0.115	95.2	92.0	70.0-127			3.42	20
1,2-Dichloroethane	0.125	0.134	0.136	107	109	65.0-131			1.48	20
1,1-Dichloroethene	0.125	0.118	0.115	94.4	92.0	65.0-131			2.58	20
cis-1,2-Dichloroethene	0.125	0.118	0.123	94.4	98.4	73.0-125			4.15	20
trans-1,2-Dichloroethene	0.125	0.110	0.109	88.0	87.2	71.0-125			0.913	20
1,2-Dichloropropane	0.125	0.112	0.106	89.6	84.8	74.0-125			5.50	20
1,1-Dichloropropene	0.125	0.119	0.114	95.2	91.2	73.0-125			4.29	20
1,3-Dichloropropane	0.125	0.109	0.106	87.2	84.8	80.0-125			2.79	20
cis-1,3-Dichloropropene	0.125	0.128	0.125	102	100	76.0-127			2.37	20
trans-1,3-Dichloropropene	0.125	0.115	0.114	92.0	91.2	73.0-127			0.873	20
2,2-Dichloropropane	0.125	0.130	0.136	104	109	59.0-135			4.51	20
Di-isopropyl ether	0.125	0.123	0.121	98.4	96.8	60.0-136			1.64	20
Ethylbenzene	0.125	0.118	0.110	94.4	88.0	74.0-126			7.02	20
Hexachloro-1,3-butadiene	0.125	0.125	0.126	100	101	57.0-150			0.797	20
Isopropylbenzene	0.125	0.118	0.113	94.4	90.4	72.0-127			4.33	20
p-Isopropyltoluene	0.125	0.125	0.120	100	96.0	72.0-133			4.08	20
2-Butanone (MEK)	0.625	0.391	0.429	62.6	68.6	30.0-160			9.27	24
Methylene Chloride	0.125	0.124	0.127	99.2	102	68.0-123			2.39	20
4-Methyl-2-pentanone (MIBK)	0.625	0.553	0.577	88.5	92.3	56.0-143			4.25	20
Methyl tert-butyl ether	0.125	0.124	0.127	99.2	102	66.0-132			2.39	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3558840-1 08/11/20 23:18 • (LCSD) R3558840-2 08/11/20 23:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Naphthalene	0.125	0.0950	0.0941	76.0	75.3	59.0-130			0.952	20
n-Propylbenzene	0.125	0.123	0.122	98.4	97.6	74.0-126			0.816	20
Styrene	0.125	0.115	0.112	92.0	89.6	72.0-127			2.64	20
1,1,1,2-Tetrachloroethane	0.125	0.120	0.113	96.0	90.4	74.0-129			6.01	20
1,1,2,2-Tetrachloroethane	0.125	0.109	0.116	87.2	92.8	68.0-128			6.22	20
Tetrachloroethene	0.125	0.126	0.120	101	96.0	70.0-136			4.88	20
Toluene	0.125	0.110	0.107	88.0	85.6	75.0-121			2.76	20
1,1,2-Trichlorotrifluoroethane	0.125	0.123	0.119	98.4	95.2	61.0-139			3.31	20
1,2,3-Trichlorobenzene	0.125	0.0976	0.0922	78.1	73.8	59.0-139			5.69	20
1,2,4-Trichlorobenzene	0.125	0.106	0.111	84.8	88.8	62.0-137			4.61	20
1,1,1-Trichloroethane	0.125	0.134	0.126	107	101	69.0-126			6.15	20
1,1,2-Trichloroethane	0.125	0.109	0.112	87.2	89.6	78.0-123			2.71	20
Trichloroethene	0.125	0.129	0.118	103	94.4	76.0-126			8.91	20
Trichlorofluoromethane	0.125	0.148	0.141	118	113	61.0-142			4.84	20
1,2,3-Trichloropropane	0.125	0.119	0.120	95.2	96.0	67.0-129			0.837	20
1,2,3-Trimethylbenzene	0.125	0.113	0.110	90.4	88.0	74.0-124			2.69	20
1,2,4-Trimethylbenzene	0.125	0.117	0.116	93.6	92.8	70.0-126			0.858	20
1,3,5-Trimethylbenzene	0.125	0.119	0.120	95.2	96.0	73.0-127			0.837	20
Vinyl chloride	0.125	0.121	0.107	96.8	85.6	63.0-134			12.3	20
Xylenes, Total	0.375	0.345	0.306	92.0	81.6	72.0-127			12.0	20
(S) Toluene-d8				*92.3*	*92.6*	*75.0-131*				
(S) 4-Bromofluorobenzene				*100*	*99.5*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*101*	*101*	*70.0-130*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J0	J0: The identification of the analyte is acceptable, but the reported concentration is an estimate. The calibration met method criteria.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

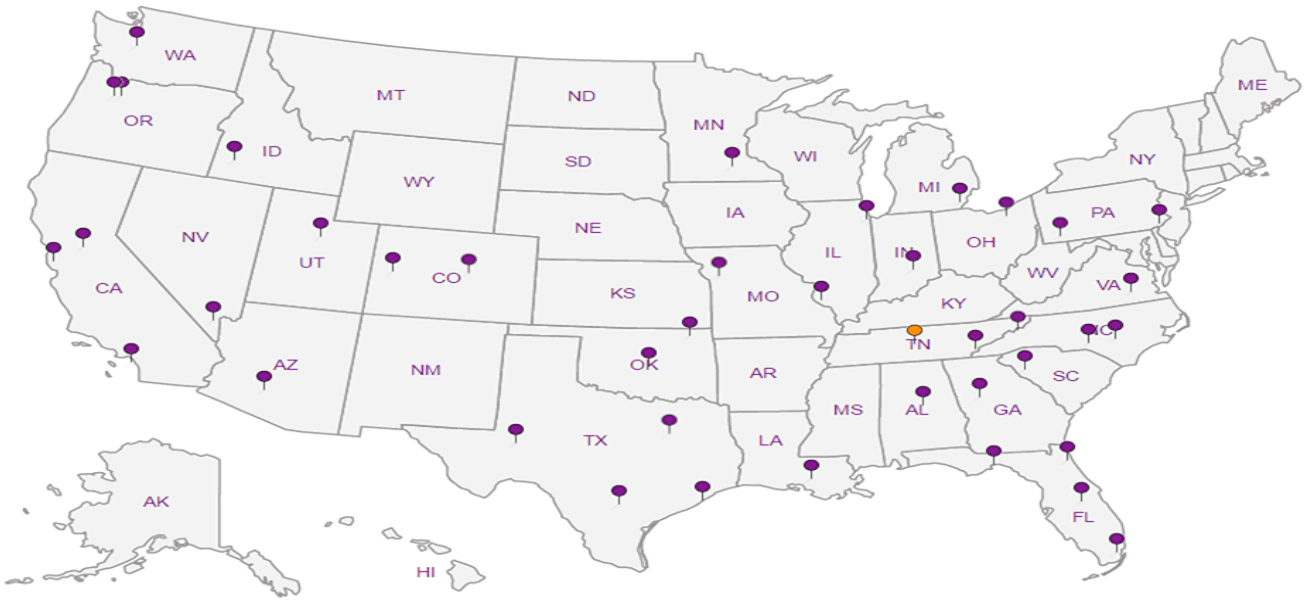
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Cascade Corporation- Fairview, OR

2201 NE 201st Avenue
Fairview, OR 97024-9718

Billing Information:
Accounts Payable
P.O. Box 20187
Portland, OR 97294-0187

Pres Chk

Report to: Cindy Bartlett

Email To: CBartlett@Geosyntec.com;bwebb@Geosyntec.c

Project Description: Cascade

City/State Collected: Fairview OR.

Please Circle: (PT) MT CT ET

Phone: 503-669-6286

Client Project #

Lab Project # CASCORFOR-PNG0564

Collected by (print): PAT YADON Mike TAYLOR

Collected by (signature):

Site/Facility ID #

P.O. #

Quote #

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOCs 8260D 2ozClr-NoPres and 6oz	VOCs 8260D 40mlAmb/MeOH5ml/Syr								Remarks	Sample # (lab only)
NVWD-080520		(SS)		8/5/20	13:40	6	2x	4x									-01
ROB-080520		(SS)		8/5/20	14:00	9	3x	6x									-02
TRIP Blank Lot#448		H2O		N/A	N/A	1	X										-03
		SS															

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 175000042523

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Patrick Yadon	8/5/20	15:00	FED EX		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: UPA 7°C Bottles Received: 1.8+1.2=20 15	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/6/20 Time: 0845	Hold: Condition: NCF OK

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1247644

G121

Acctnum: CASCORFOR
Template: T170334
Prelogin: P783977
PM: 110 - Brian Ford
PB:

Shipped Via:

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

August 24, 2020

Cascade Corporation- Fairview, OR

Sample Delivery Group:	L1251377
Samples Received:	08/06/2020
Project Number:	
Description:	Cascade

Report To: Cindy Bartlett
2201 NE 201st Avenue
Fairview, OR 97024-9718

Entire Report Reviewed By:

Brian Ford
Project Manager

TABLE OF CONTENTS

NVWD-080520 L1251377-01 Solid

Collected by: PY/MT
Collected date/time: 08/05/20 13:40
Received date/time: 08/06/20 08:45

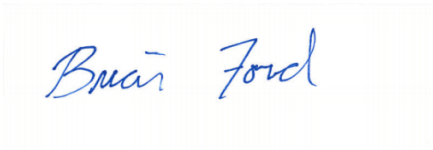
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1524343	1	08/12/20 18:49	08/12/20 19:01	JAV	Mt. Juliet, TN
Mercury by Method 7471B	WG1529947	1	08/21/20 08:28	08/23/20 15:23	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1529875	1	08/21/20 08:00	08/21/20 23:36	TRB	Mt. Juliet, TN

ROB-080520 L1251377-02 Solid

Collected by: PY/MT
Collected date/time: 08/05/20 14:00
Received date/time: 08/06/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1524343	1	08/12/20 18:49	08/12/20 19:01	JAV	Mt. Juliet, TN
Mercury by Method 7471B	WG1529947	1	08/21/20 08:28	08/23/20 15:53	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1529875	1	08/21/20 08:00	08/21/20 23:39	TRB	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	56.5		1	08/12/2020 19:01	WG1524343

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0708	1	08/23/2020 15:23	WG1529947

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	ND		3.54	1	08/21/2020 23:36	WG1529875
Barium	95.0		0.885	1	08/21/2020 23:36	WG1529875
Cadmium	ND		0.885	1	08/21/2020 23:36	WG1529875
Chromium	86.4		1.77	1	08/21/2020 23:36	WG1529875
Lead	3.03		0.885	1	08/21/2020 23:36	WG1529875
Selenium	ND		3.54	1	08/21/2020 23:36	WG1529875
Silver	ND		1.77	1	08/21/2020 23:36	WG1529875

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.4		1	08/12/2020 19:01	WG1524343

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Mercury	ND		0.0428	1	08/23/2020 15:53	WG1529947

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Arsenic	ND		2.14	1	08/21/2020 23:39	WG1529875
Barium	91.3		0.535	1	08/21/2020 23:39	WG1529875
Cadmium	ND		0.535	1	08/21/2020 23:39	WG1529875
Chromium	105		1.07	1	08/21/2020 23:39	WG1529875
Lead	3.10		0.535	1	08/21/2020 23:39	WG1529875
Selenium	ND		2.14	1	08/21/2020 23:39	WG1529875
Silver	ND		1.07	1	08/21/2020 23:39	WG1529875

Method Blank (MB)

(MB) R3559304-1 08/12/20 19:01

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1247644-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1247644-01 08/12/20 19:01 • (DUP) R3559304-3 08/12/20 19:01

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	56.5	52.2	1	7.84		10

Laboratory Control Sample (LCS)

(LCS) R3559304-2 08/12/20 19:01

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3562865-1 08/23/20 15:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3562865-4 08/23/20 18:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.456	91.2	80.0-120	

L1251377-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1251377-01 08/23/20 15:23 • (MS) R3562865-2 08/23/20 15:25 • (MSD) R3562865-3 08/23/20 15:28

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.885	ND	0.713	0.771	80.6	87.1	1	75.0-125			7.73	20

Method Blank (MB)

(MB) R3562583-1 08/21/20 23:18

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.460	2.00
Barium	U		0.240	0.500
Cadmium	U		0.0810	0.500
Chromium	U		0.250	1.00
Lead	U		0.208	0.500
Selenium	U		0.617	2.00
Silver	U		0.228	1.00

Laboratory Control Sample (LCS)

(LCS) R3562583-2 08/21/20 23:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	93.8	93.8	80.0-120	
Barium	100	101	101	80.0-120	
Cadmium	100	95.1	95.1	80.0-120	
Chromium	100	97.5	97.5	80.0-120	
Lead	100	95.2	95.2	80.0-120	
Selenium	100	95.6	95.6	80.0-120	
Silver	20.0	17.8	89.0	80.0-120	

L1252612-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1252612-02 08/21/20 23:23 • (MS) R3562583-5 08/21/20 23:31 • (MSD) R3562583-6 08/21/20 23:34

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	ND	98.8	103	97.8	102	1	75.0-125			4.64	20
Barium	100	2.03	109	115	107	113	1	75.0-125			5.15	20
Cadmium	100	ND	101	106	101	106	1	75.0-125			4.68	20
Chromium	100	1.78	107	110	105	108	1	75.0-125			2.86	20
Lead	100	1.03	103	108	102	107	1	75.0-125			4.20	20
Selenium	100	ND	99.8	105	99.8	105	1	75.0-125			5.42	20
Silver	20.0	ND	18.9	19.8	94.6	98.9	1	75.0-125			4.38	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

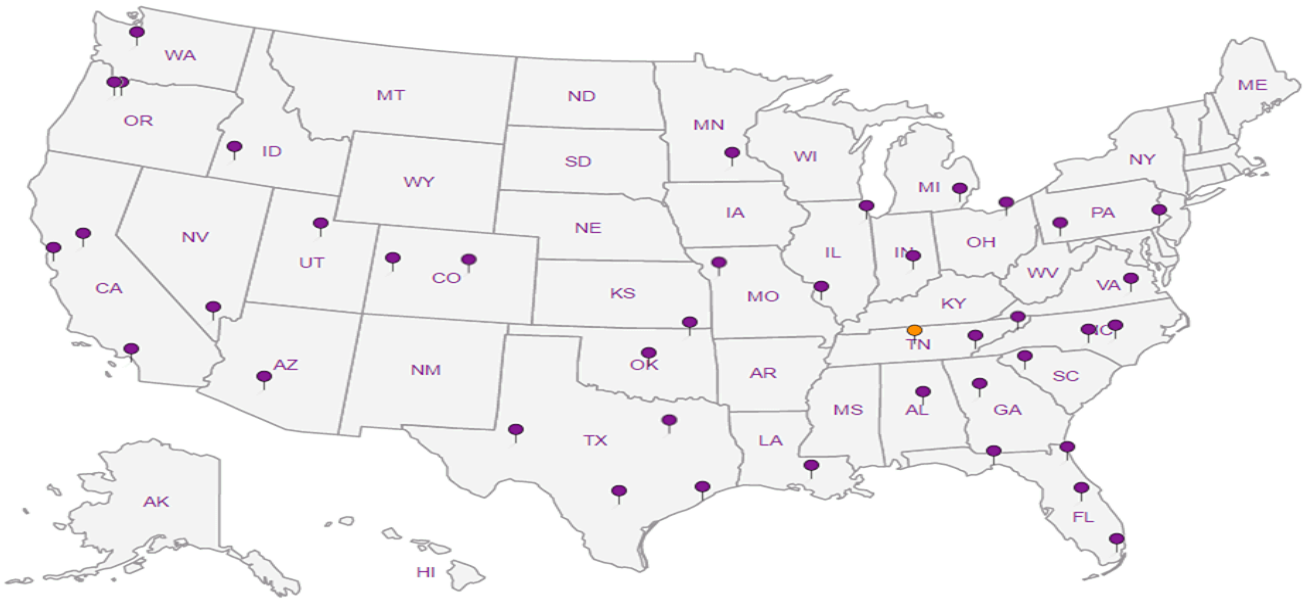
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Cascade Corporation- Fairview, OR

2201 NE 201st Avenue
Fairview, OR 97024-9718

Billing Information:
Accounts Payable
P.O. Box 20187
Portland, OR 97294-0187

Pres Chk

Report to: Cindy Bartlett

Email To: CBartlett@Geosyntec.com;bwebb@Geosyntec.c

Project Description: Cascade

City/State Collected: Fairview OR.

Please Circle: (PT) MT CT ET

Phone: 503-669-6286

Client Project #

Lab Project # CASCORFOR-PNG0564

Collected by (print): PAT YODER Mike TAYLOR

Collected by (signature):

Site/Facility ID #

P.O. #

Quote #

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOCs 8260D 2ozClr-NoPres cnt 6oz	VOCs 8260D 40mlAmb/MeOH5ml/Syr
NVWD-080520		(SS)		8/5/20	13:40	6	2x	4x
ROB-080520		(SS)		8/5/20	14:00	9	3x	6x
TRIP Blank Lot#448		H2O		NA	NA	1	X	
		SS						

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1247644 NJ 8/17/20

G121
L1251377

Acctnum: CASCORFOR

Template: T170334

Prelogin: P783977

PM: 110 - Brian Ford

PB:

Shipped Via:

Remarks	Sample # (lab only)
	-01
	-02
	-03

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 175006042523

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	If preservation required by Login: Date/Time
Patrick Yoder	8/5/20	15:00	FED EX	1	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: UPA 7°C Bottles Received: 1,8,1,2=20 15	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/6/20 Time: 0845	Hold: Condition: NCF OK

Andy Vann

From: Brian Ford
Sent: Monday, August 17, 2020 3:37 PM
To: Project Service; Sample Storage; Brian Ford
Subject: L1247644 *CASCORFOR* re-log

Please re-log -01 and -02 for MRCRA8,TS as R5 due 08/24. Transfer TS.

Thanks,

Brian Ford
Project Manager
Pace Analytical National Center for Testing & Innovation
12065 Lebanon Road | Mt. Juliet, TN 37122
direct 615.773.9772
bford@pacenational.com | pacenational.com

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

August 31, 2020

Cascade Corporation- Fairview, OR

Sample Delivery Group:	L1253870
Samples Received:	08/06/2020
Project Number:	
Description:	Cascade

Report To: Cindy Bartlett
2201 NE 201st Avenue
Fairview, OR 97024-9718

Entire Report Reviewed By:

Brian Ford
Project Manager

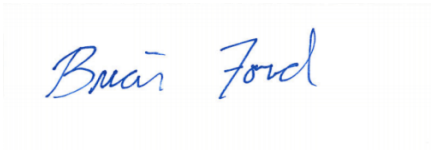
TABLE OF CONTENTS

ROB-080520 L1253870-01 Waste

Collected by: PY/MT
Collected date/time: 08/05/20 14:00
Received date/time: 08/06/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Preparation by Method 1311	WG1533346	1	08/27/20 13:51	08/27/20 13:51	TM	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1534281	1	08/28/20 15:52	08/29/20 11:10	TRB	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Sample Delivery Group (SDG) Narrative

Sample quantity was not sufficient to complete analysis per recommended method guidelines for the following samples.

Lab Sample ID	Project Sample ID	Method
L1253870-01	ROB-080520	1311

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		8/27/2020 1:51:52 PM	WG1533346
Fluid	1		8/27/2020 1:51:52 PM	WG1533346
Initial pH	7.54		8/27/2020 1:51:52 PM	WG1533346
Final pH	5.08		8/27/2020 1:51:52 PM	WG1533346

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
	mg/l		mg/l	mg/l			
Chromium	ND		0.100	5	1	08/29/2020 11:10	WG1534281

Method Blank (MB)

(MB) R3565164-1 08/29/20 10:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chromium	U		0.0333	0.100

Laboratory Control Sample (LCS)

(LCS) R3565164-2 08/29/20 10:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium	10.0	10.1	101	80.0-120	

L1253772-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1253772-01 08/29/20 10:54 • (MS) R3565164-4 08/29/20 10:59 • (MSD) R3565164-5 08/29/20 11:02

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium	10.0	ND	10.1	10.1	101	101	1	75.0-125			0.430	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

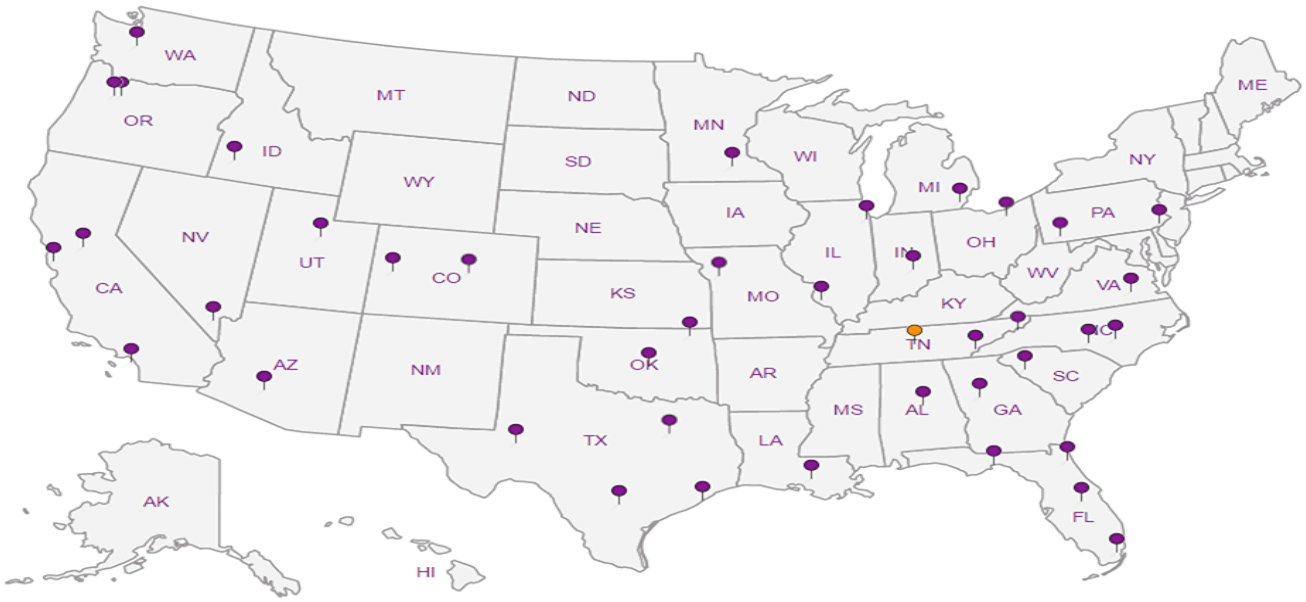
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Cascade Corporation- Fairview, OR

2201 NE 201st Avenue
Fairview, OR 97024-9718

Billing Information:
Accounts Payable
P.O. Box 20187
Portland, OR 97294-0187

Pres Chk

Report to: Cindy Bartlett

Email To: CBartlett@Geosyntec.com;bwebb@Geosyntec.c

Project Description: Cascade

City/State Collected: Fairview OR.

Please Circle: PT MT CT ET

Phone: 503-669-6286

Client Project #

Lab Project # CASCORFOR-PNG0564

Collected by (print): PATYADON Mike TAYLOR

Site/Facility ID #

P.O. #

Collected by (signature):

Quote #

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOCs 8260D 2ozClr-NoPres and 60Z	VOCs 8260D 40mlAmb/MeOH5ml/Syr
NVWD-080520		SS		8/5/20	13:40	6	2x	4x
ROB-080520		SS		8/5/20	14:00	9	3x	6x
TRIP Blank Lot#448		H2O		NA	NA	1	X	
		SS						

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical
National Center for Testing & Innovation

L1253870

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

AV 8/24/20

SDG # L1247644 AL 8/17/20

G121
L1251377

Acctnum: CASCORFOR

Template: T170334

Prelogin: P783977

PM: 110 - Brian Ford

PB:

Shipped Via:

Remarks	Sample # (lab only)
	-01
	-02 -01
	-03

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
___ UPS ___ FedEx ___ Courier _____

Tracking # 175006042523

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Patrick Yodon	8/5/20	15:00	Fed EX
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: 1.7°C Bottles Received: 15

1.8+2=20

Date: 8/6/20 Time: 0845

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Andy Vann

From: Brian Ford
Sent: Monday, August 24, 2020 3:14 PM
To: Project Service; Sample Storage; Brian Ford
Subject: L1251377 *CASCORFOR* re-log

Please re-log L1251377-02 (ROB-080520) for TCLP CRICP as R5 due 08/31.

Thanks,

[redacted]
Brian Ford
Project Manager 2 / Pace National
12065 Lebanon Road | Mt. Juliet, TN 37122
Office: 615.773.9772
bford@pacenational.com

ATTACHMENT 2

Approved Waste Profiles

Republic Services

18500 N. Allied Way, Phoenix, AZ 85054

SPECIAL WASTE DEPARTMENT DECISION

	Waste Profile #	Expiration Date	
	41782011873	9/8/2021	

I. Decision Request: ☑ Initial ☐ Recertification ☐ Change

Disposal Facility: 4178 - Roosevelt Regional MSW L/F

Generator Name: Cascade Corporation

Generator Site Address: 2525 NE 201st Ave

City: Fairview **County:** **State:** OR **Zip:**

Name of Waste: Non Hazardous Waste Soil - Soil Cuttings

Estimated Annual Volume: 71 Drums

II. Special Waste Department Decision: ☑ Approved ☐ Rejected

Management Method(s): ☑ Landfill ☐ Solidification ☐ Bioremediation ☐ Deep Well ☐ Transfer Facility

Problematic Special Waste according to Republic? ☐ Yes ☑ No

If yes, which one?

Approved by Special Waste Review Committee? ☐ Yes ☐ No ☑ Not Applicable

Precautions, Conditions or Limitations on Approval

Special Waste Analyst Signature: _____ **Name (Printed):** KEITH DIAMANTI

Date: 9/16/2020

III. Facility Decision: ☐ Approved ☐ Rejected

Precautions, Conditions or Limitations on Approval

By signing below, the General Manager or Designee agrees that a fully executed Special Waste Service Agreement is on file for this profile and that the special waste file is complete.

General Manager or Designee: _____ **Name (Printed):** _____

Date: 9/16/2020

Republic Services

18500 N. Allied Way, Phoenix, AZ 85054

FAX

INCOMPLETE FILE TRANSMITTAL

TO: Dana Hopper	**LOG NO.:** 41782011873
FAX: (206) 332-7792	**File Received:** 9/15/2020
From: Special Waste Dept.	**Response Date:** 9/16/2020
Re: Cascade Corporation / Non Hazardous Waste Soil - Soil Cuttings	

SECTION I	SECTION II	SECTION III	SECTION IV	SECTION V	SECTION VI
☐ DisposalFacility	☐ TransporterName	☐ NameOfWaste	☐ USEPA	☐ CharacteristicComponents	☐ GenAuthSignature
☐ GeneratorName	☐ TransporterSiteAddress	☐ ProcessGeneratingWaste	☐ SampleDate	☐ FreeLiquids	☐ GenCoName
☐ GeneratorSiteAddress	☐ TransporterCityStateZip	☐ TypeOfWaste	☐ CompositeGrab	☐ YesNo	☐ NoStateLetter
☐ GeneratorCityStateZip	☐ TransporterMailingAddress	☐ PhysicalState	☐ SampleID	☐ pH_Flash	☐ Name_Title
☐ GeneratorMailingAddress	☐ TransporterContactName	☐ MethodOfShipment			☐ SignatureDate
☐ GeneratorContactName	☐ TransporterTelFax	☐ EstimatedAnnualVolume			
☐ GeneratorTelFax		☐ Frequency			
☐ GeneratorStateID		☐ DisposalConsideration			
☐ WasteCodeTexas					

ANALYTICALS	TCLP TOTAL METALS	TCLP VOLATILES	TCLP SEMI-VOLATILES	PESTICIDES / HERBICIDE	
☐ TotalCyanide	☐ Arsenic	☐ Benzene	☐ Cresols	☐ Chlordane	☐ LabLetterhead
☐ ReactiveCyanide	☐ Barium	☐ CarbonTetrachloride	☐ DichlorobenzeneOne	☐ Endrin	☐ ChainOfCustody
☐ TotalSulfide	☐ Cadmium	☐ Chlorobenzene	☐ DinitrotolueneTwo	☐ Heptachlor	☐ NoLabSignature
☐ ReactiveSulfide	☑ Chromium	☐ Chloroform	☐ Hexachlorobenzene	☐ HeptachlorEpoxide	☐ ReportOneYearOldPlus
☐ TotalPCB	☐ Copper	☐ DichloroethaneOne	☐ Nitrobenzene	☐ Lindane	☐ NoThirdPartyLab
☐ TOX_EOX	☐ Lead	☐ DichloroehyleneTwo	☐ Pentachlorophenol	☐ Methoxychlor	☐ MissingReportPages
☐ Phenols	☐ Mercury	☐ MethylEthylKetone	☐ Pyridine	☐ Toxaphene	☐ MissingMSDSPages
☐ FlashPoint	☐ Selenium	☐ Tetrachloroethylene	☐ TrichlorophenolFive	☐ TwoFourD	☐ TotalSulfates
☐ pH	☐ Silver	☐ Trichlorethylene	☐ TrichlorphenolSix	☐ TwoFourFiveTP	☐ TotalSulfur
☐ PaintFilter	☐ Zinc	☐ VinylChloride			☐ WrongProfile
☐ TPH					
☐ BTEX					☑ GeneratorIncomplete

Notes:

Sample 77-02 needs TCLP Chromium. Total result is 105 mg/kg and limit is 100 mg/kg. Keith

REPUBLIC SERVICES

Disposal Facility: 4178 Roosevelt Regional MSW Landfill WA

Waste Profile #: 4178 20 11873

Sales Rep #: 253 - Matt Calantas

I. Generator Information

Generator Name: Cascade Corportation

Generator Site Address: 2525 NE 201st Ave

City: Fairview | County: Multnomah | State: Oregon | Zip: 97024

State ID/Reg No: | State Approval/Waste Code: | NAICS #:

Generator Mailing Address ☑ (if different) 2201 NE 201st Ave

City: Fairview | County: Multnomah | State: Oregon | Zip: 97024

Generator Contact Name: Jason Hegdahl | Email:

Phone Number: 503-669-6728 | Ext: | Fax Number:

II. Billing Information

Bill To: ACTEnviro | Contact Name: Kyle Satterthwaite

Billing Address: 13600 SE Ambler Rd | Email: ksatterthwaite@actenviro.com

City: Clackamas | State: Oregon | Zip: | Phone: 253.334.9256

III. Waste Stream Information

Name of Waste: Non-hazardous Waste Soil, Soil Cuttings

Process Generating Waste: Investigation Derived Waste, soil cuttings, from drilling activities at a forklift attachment manufacturing shop.

Type of Waste: Industrial Process Waste | Physical State: Solid | Method of Shipment: Drum

Estimated Volume: 71 | Volume Type: Drums

Frequency: One-time Event (single project) | Disposal Consideration: Landfill

IV. Representative Sample Certification

☐ **No Sample Taken**

☑ **Sample Taken** **Type of Sample** Composite Sample

Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent? ☑ Yes ☐ No 09/14/2020

Sample Date: August 5, 2020

Sample ID Numbers or SDS: NVWD-080520, Lab reports L1251377 and L1247644

Remember to attach Laboratory Analytical Report (and/or Material Safety Data Sheet) including Chain of Custody and required parameters provided for this profile.

V. Physical Characteristics of Waste

Characteristic Components (must equal 100%:)	% By Weight (out of 100% - ranges acceptable):
1. Soil	100%-100%
2. Barium	95 mg/kg
3. Chromium	86.4 mg/kg
4. Lead	3.03 mg/kg
5.	

Color:	Odor (describe):	Does Waste Contain Free Liquids?	% Solids:	pH:	Flash Point:
Brown	None	☐ Yes ☑ No	100	4-11	>200 °F

Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) including Chain of Custody and required parameters provided for this profile.

RCRA Regulatory Questions

1. Does this waste or generating process contain regulated concentrations of the following Pesticides and/ or Herbicides: Chlordane, Endrin, Heptachlor (and its epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33?	☐ Yes ☑ No
2. Does this waste contain reactive sulfides (greater than 500 ppm) or reactive cyanide (greater than 250 ppm) [reference 40 CFR 261.23(a)(5)]?	☐ Yes ☑ No
3. Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761?	☐ Yes ☑ No
4. Does this waste contain concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents?	☐ Yes ☑ No
5. Has this waste been delisted under 40 CFR 260.20 and 260.22? If yes, attach the final decision to delist the waste as published in the Federal Register.	☐ Yes ☑ No
6. Does this waste exhibit a Hazardous Characteristic as defined by Federal and/or State regulations? If Yes, identify the applicable waste code and specify if the waste is hazardous as defined by Federal, State or both?	☐ Yes ☑ No
7. Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCCD), or any other dioxin as defined in 40 CFR 261.31?	☐ Yes ☑ No
8. Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations?	☐ Yes ☑ No
9. Is this a regulated Radioactive Waste as defined by Federal and/or State regulations?	☐ Yes ☑ No
10. Is this a solid waste that is not a hazardous waste in accordance with 40 CFR 261.4(b)? If yes, please provide the corresponding regulatory citation.	☐ Yes ☑ No

Republic Services Waste Handling Questions

1. Does this waste generate heat or react when contacted with water/moisture?	☐ Yes ☑ No
2. Does the waste contain sulfur or sulfur by-products?	☐ Yes ☑ No
3. Is this waste generated at a State or Federal Superfund cleanup site subject to regulation under CERCLA?	☐ Yes ☑ No
4a. Is this waste from a TSD facility, TSD-like facility or consolidator (i.e. multiple wastes/multiple generators)?	☐ Yes ☑ No

4b. If yes to the above question, please provide clarification.

VI. Certification

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste.

I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue.

I understand that attaching an electronic signature, I am signing this document, consent to complete this transaction and receive all related communication electronically, and agree this document will be binding as though I had physically signed it. A printout of this document may be accepted with the same authority as the original.

If electronic signature is preferred, please submit completed (unsigned) form to your Special Waste Coordinator or Special Waste Sales Executive to initiate signature process.

I further certify that the company has not altered the form or content of this profile sheet as provided by Republic Services.

Jason Hegdahl	Corporate Controller	Cascade Corporation
Authorized Representative Name (Printed)	Title (Printed)	Company Name
Representative Signature		9/8/20 Date