

TECHNICAL MEMORANDUM

DATE February 21, 2020

Project No. 19125681

TO April Stegall, Reclamation Agent
Wexpro Company

CC Adam Plonsky, Jeremy Yeglin

FROM Matthew Somogyi

EMAIL Matthew_Somogyi@golder.com

DOMINION ENERGY WEXPRO, EXPLORATION AND PRODUCTION PIT DELINEATION – FIELD INVESTIGATION SUMMARY FOR THE JACKS DRAW 2 PAD, COGCC PIT ID 100620 (PIT 12), POWDER WASH GAS FIELD, MOFFAT COUNTY, COLORADO

On behalf of Wexpro Company (Wexpro), d/b/a Dominion Energy Wexpro, Golder Associates Inc. (Golder) performed an environmental investigation of potential salt and petroleum impacts at eighteen (18) former exploration and production (E&P) pits in the Powder Wash Gas Field in Moffat County, Colorado. The investigation was performed between October 16, 2019 and November 21, 2019. This memorandum summarizes the subsurface investigation performed at the Jacks Draw 2 (JD2) pad, Colorado Oil and Gas Conservation Commission (COGCC) Pit ID 100608 (Pit 12).

Pit 12 is located at Pad JD2 at the approximate latitude/longitude coordinates 40.974687285 / -108.297830434. The subsurface investigation at Pit 12 was performed on October 20-21, 2019 and November 16, 2019. Drilling was performed by Henderson Drilling Inc. of Casper, WY operating a Geoprobe 7822 direct-push drill rig. The Geoprobe advanced 2-inch PVC sample liners to collect continuous core in 5-foot increments. A Golder geologist and technician were present to oversee the drilling activities and perform field screening and soil sample collection. Field screening included photoionization detector (PID) and electrical conductivity (EC) measurements conducted at regular 2-foot intervals. The PID and EC meters were calibrated daily prior to the start of work. Decontamination of downhole tooling was performed between boreholes by rinsing with fresh water and brushing off debris from the core barrel to remove soil and/or contamination from tooling in direct contact with subsurface materials. Investigation derived waste (IDW) included soil not retained for laboratory analysis and decontamination fluids. All IDW was contained as drilling progressed and managed by Wexpro for disposal in accordance with applicable regulations.

Ten boreholes were completed at Pit 12 to attempt to delineate the horizontal and vertical extents of soil impacts from historical operations. One borehole was completed at the assumed center of the pit to the depth of refusal of 14.5 feet (ft) below ground surface (bgs). Four perimeter boreholes were completed approximately 20 ft away, generally north, south, east, and west, from the center borehole to attempt to define the horizontal extents of soil impacts. Five stepout perimeter boreholes were required to be completed to attempt to achieve sample locations free from obvious soil impacts. The location of each borehole was logged in the field with a handheld GPS with approximately +/- 1 meter (m) lateral accuracy and +/- 2 m vertical accuracy. Upon completion, each borehole was backfilled with dry bentonite chips to the existing grade. Borehole depths ranged from 8.0 to 20.0 ft bgs.

Visual and olfactory evidence of potential impacts included black, orange, and red discoloration in addition to a hydrocarbon-like odor. Representative photos of lithologies and/or impacts encountered at Pit 12 are provided as Attachment 1.

Soil samples collected from Pit 12 were assigned unique sample identifiers "P12-BX-Xft," where "P12" represents the pit number, "BX" represents the borehole number, and "Xft" represents the sample depth. Soil samples were collected directly from the retrieved core with freshly gloved hands and/or a clean stainless-steel scoop, placed in laboratory-provided containers, and immediately stored on ice. A total of five samples were collected for laboratory analysis based on field screening results: one sample from each perimeter borehole and one sample representing the center of the pit. The second sample planned to be collected from below the base of impacts at the center borehole was not collected because refusal was met at the center borehole before unimpacted soil was encountered. Soil samples collected from Pit 12 were submitted to Pace National Center for Testing and Innovation (Pace Analytical), a State of Colorado certified environmental laboratory located in Mt. Juliet, TN (certification number TN100003) for laboratory analysis of total petroleum hydrocarbons – diesel range organics, total petroleum hydrocarbons – gasoline range organics, benzene, toluene, ethylbenzene, xylene, electrical conductivity, sodium absorption ratio, chloride, and sulfate. Additionally, the sample with the highest field PID or EC reading from the center borehole was analyzed for all constituents identified on the COGCC Table 910-1 list for soil samples. No groundwater was encountered during this investigation. As such, no groundwater sampling or analysis was performed. Laboratory results compared to applicable COGCC Table 910-1 Concentration Levels are presented in Table 1, and the complete analytical report is provided as Attachment 2.

Sample results from the center borehole included an exceedance of the COGCC Table 910-1 Concentration Level for arsenic. Based on analytical results, horizontal impacted soil delineation of Pit 12 is considered complete. Vertical impacted soil delineation is considered incomplete because of arsenic concentrations at the depth of refusal in the center borehole.



Matthew Somogyi
Senior Hydrogeologist



Jeremy Yeglin, P.E.
Associate, Senior Consultant

MS/JY/dls

Attachments

Table 1 –Pit 12 Analytical Results Summary
Figure 1 –Pit 12 Borehole Locations
Attachment 1 – Representative Pit 12 Photos
Attachment 2 – Analytical Laboratory Report

Table

Table 1 - Analytical Results Summary
Pad Jacks Draw 2
Pit 12
COGCC ID 100620

Pit Number			P12	P12	P12	P12	P12
Sample Name			P12-B1-0-2'	P12-B2-STEPOUT 2 0-2'	P12-B3-STEPOUT3-10-12FT	P12-B4-14-16'	P12-B5-12-14'
Sample Date			20 Oct 2019	21 Oct 2019	16 Nov 2019	21 Oct 2019	20 Oct 2019
Sample Time			15:20	09:00	13:00	11:50	14:45
Analyte	Units	Table 910-1 Concentration Levels					
Acenaphthene	mg/kg	1,000	NA	NA	NA	NA	< 0.00600
Anthracene	mg/kg	1,000	NA	NA	NA	NA	< 0.00600
Arsenic	mg/kg	0.36	NA	NA	NA	NA	11.2
Barium	mg/kg	15,000	NA	NA	NA	NA	122
Benzene	mg/kg	0.17	< 0.00100	< 0.00100	NA	< 0.00100	0.0789
Benzo[a]anthracene	mg/kg	0.22	NA	NA	NA	NA	< 0.00600
Benzo[a]pyrene	mg/kg	0.022	NA	NA	NA	NA	< 0.00600
Benzo[b]fluoranthene	mg/kg	0.22	NA	NA	NA	NA	< 0.00600
Benzo[k]fluoranthene	mg/kg	2.2	NA	NA	NA	NA	< 0.00600
Cadmium	mg/kg	70	NA	NA	NA	NA	< 0.500
Chloride	mg/kg	-	134	33.7	49.3	24.7	74.1
Chromium (III)	mg/kg	120,000	NA	NA	NA	NA	14.5
Chrysene	mg/kg	22	NA	NA	NA	NA	< 0.00600
Copper	mg/kg	3,100	NA	NA	NA	NA	13.8
Dibenz[a,h]anthracene	mg/kg	0.022	NA	NA	NA	NA	< 0.00600
Diesel Fuels, Total (DRO)	mg/kg	500	< 4.00	< 4.00	< 4.00	< 4.00	5.01
Ethylbenzene	mg/kg	100	< 0.00250	< 0.00250	NA	< 0.00250	0.656
Fluoranthene	mg/kg	1,000	NA	NA	NA	NA	< 0.00600
Fluorene	mg/kg	1,000	NA	NA	NA	NA	< 0.00600
Hexavalent Chromium	mg/kg	23	NA	NA	NA	NA	< 2.00
Indeno[1,2,3-cd]pyrene	mg/kg	0.22	NA	NA	NA	NA	< 0.00600
Lead	mg/kg	400	NA	NA	NA	NA	9.16
Mercury	mg/kg	23	NA	NA	NA	NA	< 0.0300
Naphthalene	mg/kg	23	NA	NA	NA	NA	0.0839
Nickel	mg/kg	1,600	NA	NA	NA	NA	11.9
pH	SU	6-9	NA	NA	NA	NA	8.15
Pyrene	mg/kg	1,000	NA	NA	NA	NA	< 0.00600
Selenium	mg/kg	390	NA	NA	NA	NA	< 2.00
Silver	mg/kg	390	NA	NA	NA	NA	< 1.00
Sodium Adsorption Ratio	-	<12	3.21	3.06	1.42	1.39	2.81
Specific Conductance	umhos/cm	<4,000 or 2x background	709	253	187	1380	349
Sulfate	mg/kg	-	172	132	< 50.0	1800	< 50.0
Toluene	mg/kg	85	< 0.00500	< 0.00500	NA	< 0.00500	< 0.500
TPH as Gasoline (GRO)	mg/kg	500	< 0.100	1.14	< 0.100	0.106	194
Xylenes, Total	mg/kg	175	< 0.00650	0.0859	NA	0.00701	4.34
Zinc	mg/kg	23,000	NA	NA	NA	NA	41.2

Notes:

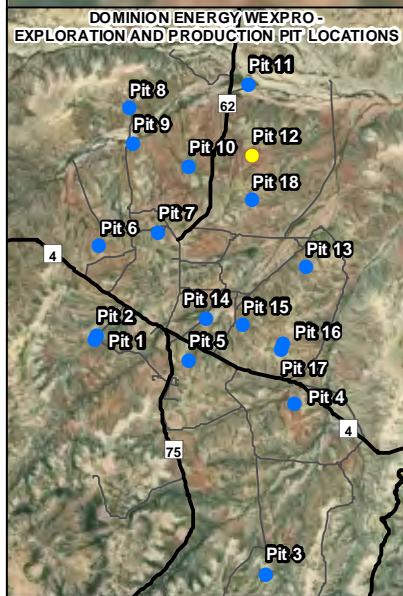
Gray shading means a non-detect result is reported at a laboratory reporting limit that exceeds the COGCC Table 910-1 level

Orange shading means the laboratory result exceeds the COGCC Table 910-1 level

"NA" means not analyzed

Sample Time in Mountain Time

Figure

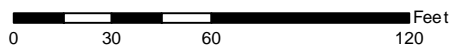


LEGEND

▲ NO ANALYTICAL SAMPLE

ANALYTICAL SAMPLE

- EXCEEDANCE OF COGCC
TABLE 910-1 CONCENTRATION LEVEL
- NO EXCEEDANCE OF COGCC
TABLE 910-1 CONCENTRATION LEVEL



REFERENCE(S)

1. GPS POINT DATA COLLECTED BY GAI IN OCTOBER AND NOVEMBER OF 2019.
2. AERIAL IMAGERY: ESRI BASEMAP SERVICE, DIGITAL GLOBE, VIVID IMAGERY CAPTURED ON 5/26/2013.

CLIENT

DOMINION ENERGY WEXPRO

PROJECT

EXPLORATION AND PRODUCTION
PIT DELINEATION PROJECT
CRAIG, CO

TITLE

BOREHOLE LOCATIONS FOR:
PAD NAME: JACKS DRAW 2
PIT NUMBER: 12
COGCC ID: 100620

CONSULTANT



YYYY-MM-DD 2020-02-18

DESIGNED RHG

PREPARED RHG

REVIEWED TLH

APPROVED MKS

PROJECT NO.

19125681

FIGURE

1

ATTACHMENT 1

Representative Pit 12 Photos



Photograph 1: Typical lithology observed at perimeter boreholes at the Jacks Draw 2 pad, Pit 12, COGCC ID 100620.



Photograph 2: Impacted soil observed at the Jacks Draw 2 pad, Pit 12, COGCC ID 100620. Note the black staining present at approximately 13-15 ft bgs (top core, to the right).

ATTACHMENT 2

Analytical Laboratory Report

January 17, 2020

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Golder & Associates - CO

Sample Delivery Group: L1154933
Samples Received: 10/29/2019
Project Number: 19125681
Description: Wexpro - Craig Pits Delin. Short 910-1 List

Report To: Matt Somogyi
7245 W Alaska Drive, Ste 200
Lakewood, CO 80226

Entire Report Reviewed By:



Christl M Wagner
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

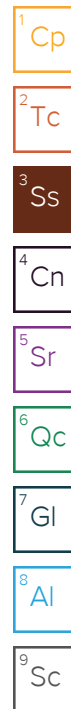


P12-B5-12-14' L1154933-01 Solid

Collected by
Collected date/time
Received date/time

10/20/19 14:45 10/29/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1373639	1	11/04/19 15:55	11/04/19 15:55	TRB	Mt. Juliet, TN
Calculated Results	WG1371955	1	10/30/19 09:45	10/31/19 16:13	JDG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1371341	1	10/29/19 09:00	10/30/19 18:22	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1372160	1	10/30/19 15:07	10/30/19 17:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1372938	1	10/31/19 16:43	10/31/19 22:53	AKA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1372255	1	10/30/19 20:10	10/31/19 00:13	ELN	Mt. Juliet, TN
Mercury by Method 7471A	WG1371974	1	10/30/19 09:11	10/30/19 12:51	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1371955	1	10/30/19 09:45	10/31/19 16:13	JDG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1373171	100	10/30/19 09:17	11/01/19 10:51	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8021	WG1374243	100	10/30/19 09:17	11/03/19 17:30	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1371907	1	10/30/19 07:00	10/30/19 23:10	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1371915	1	10/30/19 07:07	10/30/19 20:44	LEA	Mt. Juliet, TN



P12-B1-0-2' L1154933-02 Solid

Collected by
Collected date/time
Received date/time

10/20/19 15:20 10/29/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1373639	1	11/04/19 15:57	11/04/19 15:57	TRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1372938	1	10/31/19 16:43	10/31/19 22:53	AKA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1372255	1	10/30/19 20:10	10/31/19 00:29	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1371955	1	10/30/19 09:45	10/31/19 16:21	JDG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1373171	1	10/30/19 09:17	11/01/19 11:12	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1373460	1	10/30/19 09:17	11/01/19 17:47	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1371907	1	10/30/19 07:00	10/30/19 23:48	KME	Mt. Juliet, TN

P12-B2-STEPOUT 2 0-2' L1154933-03 Solid

Collected by
Collected date/time
Received date/time

10/21/19 09:00 10/29/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1373639	1	11/04/19 16:00	11/04/19 16:00	TRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1372938	1	10/31/19 16:43	10/31/19 22:53	AKA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1372255	1	10/30/19 20:10	10/31/19 00:45	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1371955	1	10/30/19 09:45	10/31/19 16:24	JDG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1373171	1	10/30/19 09:17	11/01/19 11:32	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1373483	1	10/30/19 09:17	11/01/19 19:24	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1371907	1	10/30/19 07:00	10/30/19 22:57	KME	Mt. Juliet, TN

P12-B4-14-16' L1154933-04 Solid

Collected by
Collected date/time
Received date/time

10/21/19 11:50 10/29/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1373639	1	11/04/19 16:03	11/04/19 16:03	TRB	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1372938	1	10/31/19 16:43	10/31/19 22:53	AKA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1372255	1	10/30/19 20:10	10/31/19 01:32	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1372255	5	10/30/19 20:10	10/31/19 01:48	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1371955	1	10/30/19 09:45	10/31/19 16:26	JDG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1373171	1	10/30/19 09:17	11/01/19 11:53	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1373483	1	10/30/19 09:17	11/01/19 19:44	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1371907	1	10/30/19 07:00	10/30/19 22:45	KME	Mt. Juliet, TN

ACCOUNT:

Golder & Associates - CO

PROJECT:

19125681

SDG:

L1154933

DATE/TIME:

01/17/20 12:03

PAGE:

3 of 30



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.

Christl M Wagner
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Report Revision History

Version 1: 11/06/19 10:08
Version 2: 11/08/19 09:46
Version 3: 12/09/19 10:51
Version 4: 12/19/19 15:50
Version 5: 01/14/20 15:38
Version 6: 01/16/20 11:51
Version 7: 01/16/20 12:46
Version 8: 01/17/20 08:53

Project Narrative

Arsenic run by 6010 instead of 6020 due to laboratory error. Arsenic captured to its MDL for the lower detection limit - CMW 1/15/20



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.81		1	11/04/2019 15:55	WG1373639

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	14.5		1.00	1	10/31/2019 16:13	WG1371955

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	10/30/2019 18:22	WG1371341

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.15	T8	1	10/30/2019 17:00	WG1372160

Sample Narrative:

L1154933-01 WG1372160: 8.15 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	349		10.0	1	10/31/2019 22:53	WG1372938

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	74.1		10.0	1	10/31/2019 00:13	WG1372255
Sulfate	ND		50.0	1	10/31/2019 00:13	WG1372255

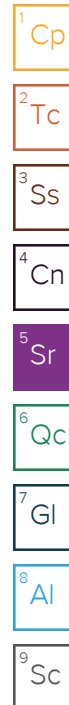
Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND	J3 J6 O1	0.0300	1	10/30/2019 12:51	WG1371974

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	11.2		0.460	1	10/31/2019 16:13	WG1371955
Barium	122		0.500	1	10/31/2019 16:13	WG1371955
Boron	ND		10.0	1	10/31/2019 16:13	WG1371955
Cadmium	ND		0.500	1	10/31/2019 16:13	WG1371955
Chromium	14.5		1.00	1	10/31/2019 16:13	WG1371955
Copper	13.8		2.00	1	10/31/2019 16:13	WG1371955
Lead	9.16		0.500	1	10/31/2019 16:13	WG1371955
Nickel	11.9		2.00	1	10/31/2019 16:13	WG1371955
Selenium	ND		2.00	1	10/31/2019 16:13	WG1371955
Silver	ND		1.00	1	10/31/2019 16:13	WG1371955
Zinc	41.2		5.00	1	10/31/2019 16:13	WG1371955

Sample Narrative:





Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
L1154933-01 WG1371955: Arsenic captured to MDL for the lower detection limit - CMW 1/15/20						

Volatile Organic Compounds (GC) by Method 8015/8015D/8021/GRO

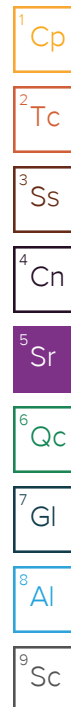
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.0789		0.0500	100	11/03/2019 17:30	WG1374243
Toluene	ND		0.500	100	11/01/2019 10:51	WG1373171
Ethylbenzene	0.656		0.0500	100	11/01/2019 10:51	WG1373171
Total Xylene	4.34		0.150	100	11/01/2019 10:51	WG1373171
TPH (GC/FID) Low Fraction	194		10.0	100	11/01/2019 10:51	WG1373171
(S) a,a,a-Trifluorotoluene(FID)	101		77.0-120		11/01/2019 10:51	WG1373171
(S) a,a,a-Trifluorotoluene(FID)	95.8		77.0-120		11/03/2019 17:30	WG1374243
(S) a,a,a-Trifluorotoluene(PID)	97.1		72.0-128		11/01/2019 10:51	WG1373171
(S) a,a,a-Trifluorotoluene(PID)	102		72.0-128		11/03/2019 17:30	WG1374243

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	5.01		4.00	1	10/30/2019 23:10	WG1371907
(S) o-Terphenyl	76.6		18.0-148		10/30/2019 23:10	WG1371907

Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Acenaphthene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Acenaphthylene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Benzo(a)anthracene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Benzo(a)pyrene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Benzo(b)fluoranthene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Benzo(g,h,i)perylene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Benzo(k)fluoranthene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Chrysene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Dibenz(a,h)anthracene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Fluoranthene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Fluorene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Naphthalene	0.0839		0.0200	1	10/30/2019 20:44	WG1371915
Phenanthrene	ND		0.00600	1	10/30/2019 20:44	WG1371915
Pyrene	ND		0.00600	1	10/30/2019 20:44	WG1371915
1-Methylnaphthalene	0.0565		0.0200	1	10/30/2019 20:44	WG1371915
2-Methylnaphthalene	0.0857		0.0200	1	10/30/2019 20:44	WG1371915
2-Chloronaphthalene	ND		0.0200	1	10/30/2019 20:44	WG1371915
(S) p-Terphenyl-d14	98.3		23.0-120		10/30/2019 20:44	WG1371915
(S) Nitrobenzene-d5	161	<u>J1</u>	14.0-149		10/30/2019 20:44	WG1371915
(S) 2-Fluorobiphenyl	94.6		34.0-125		10/30/2019 20:44	WG1371915





Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.21		1	11/04/2019 15:57	WG1373639

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	709		10.0	1	10/31/2019 22:53	WG1372938

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	134		10.0	1	10/31/2019 00:29	WG1372255
Sulfate	172		50.0	1	10/31/2019 00:29	WG1372255

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Calcium	6210		100	1	10/31/2019 16:21	WG1371955
Magnesium	5060		100	1	10/31/2019 16:21	WG1371955
Sodium	388		100	1	10/31/2019 16:21	WG1371955

Volatile Organic Compounds (GC) by Method 8015/8015D/8021/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		0.100	1	11/01/2019 11:12	WG1373171
(S) a,a,a-Trifluorotoluene(FID)	103		77.0-120		11/01/2019 11:12	WG1373171

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/01/2019 17:47	WG1373460
Toluene	ND		0.00500	1	11/01/2019 17:47	WG1373460
Ethylbenzene	ND		0.00250	1	11/01/2019 17:47	WG1373460
Total Xylenes	ND		0.00650	1	11/01/2019 17:47	WG1373460
(S) Toluene-d8	103		75.0-131		11/01/2019 17:47	WG1373460
(S) 4-Bromofluorobenzene	98.7		67.0-138		11/01/2019 17:47	WG1373460
(S) 1,2-Dichloroethane-d4	108		70.0-130		11/01/2019 17:47	WG1373460

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	10/30/2019 23:48	WG1371907
(S) o-Terphenyl	73.2		18.0-148		10/30/2019 23:48	WG1371907

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	3.06		1	11/04/2019 16:00	WG1373639

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	253		10.0	1	10/31/2019 22:53	WG1372938

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	33.7	B	10.0	1	10/31/2019 00:45	WG1372255
Sulfate	132		50.0	1	10/31/2019 00:45	WG1372255

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Calcium	6570		100	1	10/31/2019 16:24	WG1371955
Magnesium	5190		100	1	10/31/2019 16:24	WG1371955
Sodium	344		100	1	10/31/2019 16:24	WG1371955

Volatile Organic Compounds (GC) by Method 8015/8015D/8021/GRO

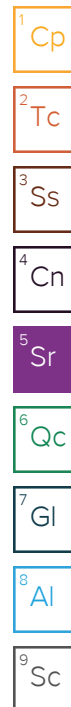
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	1.14		0.100	1	11/01/2019 11:32	WG1373171
(S) a,a,a-Trifluorotoluene(FID)	103		77.0-120		11/01/2019 11:32	WG1373171

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/01/2019 19:24	WG1373483
Toluene	ND		0.00500	1	11/01/2019 19:24	WG1373483
Ethylbenzene	ND		0.00250	1	11/01/2019 19:24	WG1373483
Total Xylenes	0.0859		0.00650	1	11/01/2019 19:24	WG1373483
(S) Toluene-d8	110		75.0-131		11/01/2019 19:24	WG1373483
(S) 4-Bromofluorobenzene	106		67.0-138		11/01/2019 19:24	WG1373483
(S) 1,2-Dichloroethane-d4	107		70.0-130		11/01/2019 19:24	WG1373483

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	10/30/2019 22:57	WG1371907
(S) o-Terphenyl	76.9		18.0-148		10/30/2019 22:57	WG1371907





Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.39		1	11/04/2019 16:03	WG1373639

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1380		10.0	1	10/31/2019 22:53	WG1372938

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	24.7	<u>B</u>	10.0	1	10/31/2019 01:32	WG1372255
Sulfate	1800		250	5	10/31/2019 01:48	WG1372255

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Calcium	3350		100	1	10/31/2019 16:26	WG1371955
Magnesium	3550		100	1	10/31/2019 16:26	WG1371955
Sodium	148	<u>B</u>	100	1	10/31/2019 16:26	WG1371955

Volatile Organic Compounds (GC) by Method 8015/8015D/8021/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.106	<u>B</u>	0.100	1	11/01/2019 11:53	WG1373171
(S) a,a,a-Trifluorotoluene(FID)	103		77.0-120		11/01/2019 11:53	WG1373171

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/01/2019 19:44	WG1373483
Toluene	ND		0.00500	1	11/01/2019 19:44	WG1373483
Ethylbenzene	ND		0.00250	1	11/01/2019 19:44	WG1373483
Total Xylenes	0.00701		0.00650	1	11/01/2019 19:44	WG1373483
(S) Toluene-d8	111		75.0-131		11/01/2019 19:44	WG1373483
(S) 4-Bromofluorobenzene	106		67.0-138		11/01/2019 19:44	WG1373483
(S) 1,2-Dichloroethane-d4	107		70.0-130		11/01/2019 19:44	WG1373483

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	10/30/2019 22:45	WG1371907
(S) o-Terphenyl	69.3		18.0-148		10/30/2019 22:45	WG1371907

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3466854-1 10/30/19 17:52				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1154396-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1154396-02 10/30/19 18:13 • (DUP) R3466854-7 10/30/19 18:13						
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	ND	1.20	1	0.000		20

L1154900-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1154900-03 10/30/19 18:19 • (DUP) R3466854-8 10/30/19 18:21						
	Original Result (dry)	DUP Result (dry)	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	4.02	4.02	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3466854-2 10/30/19 17:52					
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	23.1	96.2	80.0-120	

L1154396-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1154396-01 10/30/19 18:09 • (MS) R3466854-3 10/30/19 18:09 • (MSD) R3466854-4 10/30/19 18:10												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chromium,Hexavalent	20.0	ND	14.4	14.3	72.2	71.7	1	75.0-125	J6	J6	0.813	20

L1154396-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1154396-01 10/30/19 18:09 • (MS) R3466854-5 10/30/19 18:11							
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	666	ND	588	88.3	50	75.0-125	



L1154761-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1154761-01 10/30/19 17:00 • (DUP) R3467061-2 10/30/19 17:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	9.94	10.2	1	2.48	J3	1

Sample Narrative:

OS: 9.94 at 21.1C

DUP: 10.19 at 21C

L1154948-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1154948-02 10/30/19 17:00 • (DUP) R3467061-3 10/30/19 17:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.41	8.33	1	0.956		1

Sample Narrative:

OS: 8.41 at 21C

DUP: 8.33 at 20.7C

Laboratory Control Sample (LCS)

(LCS) R3467061-1 10/30/19 17:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.99	99.9	99.0-101	

Sample Narrative:

LCS: 9.99 at 19.7C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3467290-1 10/31/19 22:53

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1154933-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1154933-01 10/31/19 22:53 • (DUP) R3467290-3 10/31/19 22:53

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	349	346	1	0.863		20

L1154933-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1154933-05 10/31/19 22:53 • (DUP) R3467290-4 10/31/19 22:53

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2670	2660	1	0.188		20

Laboratory Control Sample (LCS)

(LCS) R3467290-2 10/31/19 22:53

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	393	391	99.5	85.0-115	

Method Blank (MB)

(MB) R3467029-1 10/30/19 21:48

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloride	4.70	J	0.795	10.0
Sulfate	U		0.570	50.0

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1154296-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1154296-01 10/30/19 23:09 • (DUP) R3467029-3 10/30/19 23:25

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	20.4	22.3	1	8.89		15
Sulfate	ND	35.7	1	0.000		15

L1154948-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1154948-03 10/31/19 08:10 • (DUP) R3467029-6 10/31/19 08:26

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	278	265	1	4.64		15

L1154948-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1154948-03 10/31/19 08:42 • (DUP) R3467029-7 10/31/19 08:58

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Sulfate	1740	1360	5	24.7	J3	15

Laboratory Control Sample (LCS)

(LCS) R3467029-2 10/30/19 22:04

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chloride	200	209	105	80.0-120	
Sulfate	200	199	99.7	80.0-120	



L1154933-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1154933-06 10/31/19 02:36 • (MS) R3467029-4 10/31/19 02:52 • (MSD) R3467029-5 10/31/19 03:08

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 %
Chloride	500	866	1340	1310	94.6	88.1	1	80.0-120	E	E	2.45	15
Sulfate	500	ND	514	507	101	99.1	1	80.0-120			1.46	15

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3466694-1 10/30/19 12:46

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.00280	0.0300

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3466694-2 10/30/19 12:48 • (LCSD) R3466694-3 10/30/19 12:50

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Mercury	0.500	0.483	0.488	96.6	97.6	80.0-120			0.947	20

L1154933-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1154933-01 10/30/19 12:51 • (MS) R3466694-4 10/30/19 12:59 • (MSD) R3466694-5 10/30/19 13:01

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.500	ND	0.291	0.431	55.5	83.4	1	75.0-125	J6	J3	38.7	20

Method Blank (MB)

(MB) R3467300-1 10/31/19 15:51

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	0.463	⌋	0.460	0.460
Barium	U		0.170	0.500
Boron	U		1.26	10.0
Cadmium	U		0.0700	0.500
Calcium	U		4.63	100
Chromium	U		0.140	1.00
Copper	U		0.530	2.00
Lead	U		0.190	0.500
Magnesium	U		1.11	100
Nickel	U		0.490	2.00
Selenium	U		0.620	2.00
Silver	U		0.120	1.00
Sodium	27.2	⌋	9.85	100
Zinc	U		0.590	5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

(LCS) R3467300-2 10/31/19 15:53 • (LCSD) R3467300-3 10/31/19 15:56

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 %
Arsenic	100	101	102	101	102	80.0-120			1.18	20
Barium	100	105	106	105	106	80.0-120			0.315	20
Boron	100	102	104	102	104	80.0-120			2.25	20
Cadmium	100	93.9	94.1	93.9	94.1	80.0-120			0.228	20
Calcium	1000	1030	1040	103	104	80.0-120			0.729	20
Chromium	100	98.4	98.5	98.4	98.5	80.0-120			0.109	20
Copper	100	103	104	103	104	80.0-120			0.346	20
Lead	100	102	102	102	102	80.0-120			0.117	20
Magnesium	1000	1020	1020	102	102	80.0-120			0.194	20
Nickel	100	105	105	105	105	80.0-120			0.0878	20
Selenium	100	97.0	96.8	97.0	96.8	80.0-120			0.217	20
Silver	20.0	17.8	17.9	89.2	89.3	80.0-120			0.142	20
Sodium	1000	1040	1040	104	104	80.0-120			0.0948	20
Zinc	100	99.8	99.9	99.8	99.9	80.0-120			0.162	20



L1154933-01,02,03,04

L1154967-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1154967-01 10/31/19 15:58 • (MS) R3467300-6 10/31/19 16:06 • (MSD) R3467300-7 10/31/19 16:08

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Arsenic	118	ND	114	110	96.9	93.1	1	75.0-125			3.98	20
Barium	118	31.1	155	152	105	102	1	75.0-125			2.08	20
Boron	118	ND	120	114	102	96.1	1	75.0-125			5.44	20
Cadmium	118	ND	108	105	91.8	88.8	1	75.0-125			3.34	20
Calcium	1180	118	1300	1260	99.7	97.0	1	75.0-125			2.50	20
Chromium	118	8.35	126	122	99.2	95.9	1	75.0-125			3.15	20
Copper	118	ND	125	120	104	100	1	75.0-125			3.75	20
Lead	118	5.66	126	122	101	98.2	1	75.0-125			3.16	20
Magnesium	1180	383	1650	1620	107	105	1	75.0-125			1.83	20
Nickel	118	5.29	131	127	107	103	1	75.0-125			3.50	20
Selenium	118	ND	111	107	94.0	90.9	1	75.0-125			3.35	20
Silver	23.6	ND	20.8	20.2	88.1	85.5	1	75.0-125			3.06	20
Sodium	1180	ND	1210	1180	98.1	95.2	1	75.0-125			2.80	20
Zinc	118	6.45	123	119	98.6	95.5	1	75.0-125			3.06	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3467384-3 11/01/19 03:14

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Toluene	0.000345	⬇	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0260	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	103			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	99.7			72.0-128

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

Laboratory Control Sample (LCS)

(LCS) R3467384-1 11/01/19 02:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Toluene	0.0500	0.0570	114	80.0-120	
Ethylbenzene	0.0500	0.0592	118	80.0-124	
Total Xylene	0.150	0.165	110	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			101	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			108	72.0-128	

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3467384-2 11/01/19 02:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.11	92.9	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			113	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			124	72.0-128	



Method Blank (MB)

(MB) R3468102-3 11/03/19 15:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
(S) a,a,a-Trifluorotoluene(FID)	101			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	103			72.0-128

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R3468102-1 11/03/19 14:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0519	104	76.0-121	
(S) a,a,a-Trifluorotoluene(FID)			98.4	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			101	72.0-128	



Method Blank (MB)

(MB) R3467543-2 11/01/19 10:14

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	102			75.0-131
(S) 4-Bromofluorobenzene	96.3			67.0-138
(S) 1,2-Dichloroethane-d4	107			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3467543-1 11/01/19 09:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.124	99.2	70.0-123	
Ethylbenzene	0.125	0.118	94.4	74.0-126	
Toluene	0.125	0.112	89.6	75.0-121	
Xylenes, Total	0.375	0.313	83.5	72.0-127	
(S) Toluene-d8			102	75.0-131	
(S) 4-Bromofluorobenzene			101	67.0-138	
(S) 1,2-Dichloroethane-d4			113	70.0-130	

Method Blank (MB)

(MB) R3467787-2 11/01/19 11:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	111			75.0-131
(S) 4-Bromofluorobenzene	104			67.0-138
(S) 1,2-Dichloroethane-d4	101			70.0-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3467787-1 11/01/19 10:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.106	84.8	70.0-123	
Ethylbenzene	0.125	0.135	108	74.0-126	
Toluene	0.125	0.120	96.0	75.0-121	
Xylenes, Total	0.375	0.406	108	72.0-127	
(S) Toluene-d8			111	75.0-131	
(S) 4-Bromofluorobenzene			109	67.0-138	
(S) 1,2-Dichloroethane-d4			103	70.0-130	

L1153974-35 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1153974-35 11/01/19 20:24 • (MS) R3467787-3 11/01/19 21:45 • (MSD) R3467787-4 11/01/19 22:06

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 %
Benzene	11.7	0.115	10.1	9.76	84.9	82.2	80	10.0-149			3.19	37
Ethylbenzene	11.7	22.3	47.1	46.6	211	207	80	10.0-160	J5	J5	1.00	38
Toluene	11.7	5.30	19.6	19.0	122	117	80	10.0-156			3.04	38
Xylenes, Total	35.2	64.9	138	136	209	202	80	10.0-160	J5	J5	1.71	38
(S) Toluene-d8					110	110		75.0-131				
(S) 4-Bromofluorobenzene					112	112		67.0-138				
(S) 1,2-Dichloroethane-d4					110	109		70.0-130				



Method Blank (MB)

(MB) R3466783-1 10/30/19 15:13

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	73.9			18.0-148

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3466783-2 10/30/19 15:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	40.9	81.8	50.0-150	
(S) o-Terphenyl			97.9	18.0-148	

L1154522-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1154522-02 10/31/19 00:40 • (MS) R3466783-3 10/31/19 00:53 • (MSD) R3466783-4 10/31/19 01:06

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 %
TPH (GC/FID) High Fraction	61.4	62.3	94.6	328	52.6	432	5	50.0-150		J3 J5	110	20
(S) o-Terphenyl					93.2	87.8		18.0-148				

Method Blank (MB)

(MB) R3466727-2 10/30/19 14:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.000600	0.00600
Acenaphthene	U		0.000600	0.00600
Acenaphthylene	U		0.000600	0.00600
Benzo(a)anthracene	U		0.000600	0.00600
Benzo(a)pyrene	U		0.000600	0.00600
Benzo(b)fluoranthene	U		0.000600	0.00600
Benzo(g,h,i)perylene	U		0.000600	0.00600
Benzo(k)fluoranthene	U		0.000600	0.00600
Chrysene	U		0.000600	0.00600
Dibenz(a,h)anthracene	U		0.000600	0.00600
Fluoranthene	U		0.000600	0.00600
Fluorene	U		0.000600	0.00600
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600
Naphthalene	U		0.00200	0.0200
Phenanthrene	U		0.000600	0.00600
Pyrene	U		0.000600	0.00600
1-Methylnaphthalene	U		0.00200	0.0200
2-Methylnaphthalene	U		0.00200	0.0200
2-Chloronaphthalene	U		0.00200	0.0200
(S) Nitrobenzene-d5	138			14.0-149
(S) 2-Fluorobiphenyl	118			34.0-125
(S) p-Terphenyl-d14	124	J1		23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3466727-1 10/30/19 13:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0927	116	50.0-126	
Acenaphthene	0.0800	0.0860	108	50.0-120	
Acenaphthylene	0.0800	0.0948	119	50.0-120	
Benzo(a)anthracene	0.0800	0.0843	105	45.0-120	
Benzo(a)pyrene	0.0800	0.0796	99.5	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0775	96.9	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0795	99.4	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0836	105	49.0-125	
Chrysene	0.0800	0.0842	105	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0822	103	47.0-125	
Fluoranthene	0.0800	0.0804	101	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3466727-1 10/30/19 13:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0841	105	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0838	105	46.0-125	
Naphthalene	0.0800	0.0830	104	50.0-120	
Phenanthrene	0.0800	0.0826	103	47.0-120	
Pyrene	0.0800	0.0806	101	43.0-123	
1-Methylnaphthalene	0.0800	0.0799	99.9	51.0-121	
2-Methylnaphthalene	0.0800	0.0766	95.8	50.0-120	
2-Chloronaphthalene	0.0800	0.0822	103	50.0-120	
(S) Nitrobenzene-d5			127	14.0-149	
(S) 2-Fluorobiphenyl			109	34.0-125	
(S) p-Terphenyl-d14			118	23.0-120	

L1153953-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1153953-01 10/30/19 21:49 • (MS) R3466727-3 10/30/19 22:11 • (MSD) R3466727-4 10/30/19 22:33

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 %
Anthracene	0.0800	0.0116	0.106	0.102	118	113	10	10.0-145			3.85	30
Acenaphthene	0.0800	U	0.0873	0.0854	109	107	10	14.0-127			2.20	27
Acenaphthylene	0.0800	U	0.0926	0.0905	116	113	10	21.0-124			2.29	25
Benzo(a)anthracene	0.0800	0.0322	0.120	0.118	110	107	10	10.0-139			1.68	30
Benzo(a)pyrene	0.0800	0.0172	0.0975	0.0935	100	95.4	10	10.0-141			4.19	31
Benzo(b)fluoranthene	0.0800	0.0386	0.116	0.108	96.7	86.8	10	10.0-140			7.14	36
Benzo(g,h,i)perylene	0.0800	0.0166	0.0909	0.0884	92.9	89.8	10	10.0-140			2.79	33
Benzo(k)fluoranthene	0.0800	0.0129	0.0966	0.0979	105	106	10	10.0-137			1.34	31
Chrysene	0.0800	0.0379	0.139	0.136	126	123	10	10.0-145			2.18	30
Dibenz(a,h)anthracene	0.0800	U	0.0810	0.0812	101	102	10	10.0-132			0.247	31
Fluoranthene	0.0800	0.125	0.222	0.207	121	103	10	10.0-153			6.99	33
Fluorene	0.0800	U	0.0804	0.0780	101	97.5	10	11.0-130			3.03	29
Indeno(1,2,3-cd)pyrene	0.0800	0.0137	0.0902	0.0887	95.6	93.8	10	10.0-137			1.68	32
Naphthalene	0.0800	U	0.104	0.101	130	126	10	10.0-135			2.93	27
Phenanthrene	0.0800	0.122	0.212	0.199	113	96.3	10	10.0-144			6.33	31
Pyrene	0.0800	0.0934	0.185	0.174	115	101	10	10.0-148			6.13	35
1-Methylnaphthalene	0.0800	U	0.0867	0.0843	108	105	10	10.0-142			2.81	28
2-Methylnaphthalene	0.0800	U	0.0885	0.0867	111	108	10	10.0-137			2.05	28
2-Chloronaphthalene	0.0800	U	0.0826	0.0806	103	101	10	29.0-120			2.45	24
(S) Nitrobenzene-d5					125	121		14.0-149				
(S) 2-Fluorobiphenyl					110	107		34.0-125				
(S) p-Terphenyl-d14					122	117		23.0-120	J1			

1

Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc



Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM [L1154933-01](#)

L1153953-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1153953-01 10/30/19 21:49 • (MS) R3466727-3 10/30/19 22:11 • (MSD) R3466727-4 10/30/19 22:33

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%

Sample Narrative:
OS: Cannot run at lower dilution due to viscosity of extract

- 1Cp
- 2Tc
- 3Ss
- 4Cn
- 5Sr
- 6Qc
- 7Gl
- 8Al
- 9Sc



Guide to Reading and Understanding Your Laboratory Report

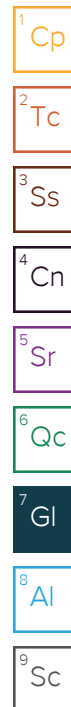
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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.
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
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
T8	Sample(s) received past/too close to holding time expiration.





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	LA000356
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.



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7245 W Alaska Drive, Ste 200 Lakewood, CO 80226						Accounts Payable 7245 W Alaska Drive, Ste 200 Lakewood, CO 80226							
Report to: Matt Somogyi						Email To: matthew_somogyi@golder.com							
Project Description: Wexpro - Craig Pits Delin. Short				City/State Collected: Craig, CO		Please Circle: PT MT CT ET							
Phone: 800-235-7784 Fax: 303-985-2080		Client Project # 19125681		Lab Project # GOLDCO-00062103									
Collected by (print): Incia Hall		Site/Facility ID #		P.O. #									
Collected by (signature): [Signature]		Rush? (Lab MUST Be Notified) Same Day Five Day Next Day 5 Day (Rad Only) Two Day 10 Day (Rad Only) Three Day		Quote #		Date Results Needed							
Immediately Packed on Ice N Y X						No. of Cntrs							
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time							
PB-B5-FT-12-14 FT		G	SS	12-14	10/22/19	1445	2	X	X	V	V	V	
PB-B1-FT-0-2 FT		G	SS	0-2	10/20/19	1520	1	X	X	X	V		
PB-B2-FT-3-4 FT + 2-0-2 FT		G	SS	0-2	10/21/19	0900	1	V	V	V	X		
PB-B4-FT-14-16 FT		HGT	SS	14-16	10/21/19	1150	1	X	V	V	V		
PB-B5-FT-6-8 FT		G	SS	6-8	10/21/19	1315	2	X	X	X	X	V	
PB-B1-FT-16-18 FT		G	SS	14-18	10/21/19	1350	1	V	V	X	V		
PB-B2-FT-8-10 FT		G	SS	8-10	10/21/19	1430	1	X	V	X	V		
PB-B3-FT-6-8 FT		G	SS	6-8	10/21/19	1500	1	X	X	X	X		
PB-B4-FT-6-7.5 FT		G	SS	6-7.5	10/21/19	1515	1	X	X	X	X		
PB-B5-FT-18-20 FT		G	SS	18-20	10/21/19	1625	1	X	Y	X	Y		
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other						Remarks: Samples returned via: UPS X FedEx Courier Tracking # 1203 5789 2645							
Relinquished by : (Signature) [Signature]						Date: 10/22/19 Time: 1515		Received by: (Signature)				Trip Blank Received: Yes No HCL / MeoH TBR	
Relinquished by : (Signature)						Date: Time:		Received by: (Signature)				Temp: 4.8+2=9.0 Bottles Received: 20	
Relinquished by : (Signature)						Date: Time:		Received for lab by: (Signature)				Date: 10-29-19 Time: 8:45	
												Condition: NCF / OK	

Chain of Custody Page 1 of 2

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



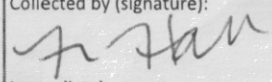
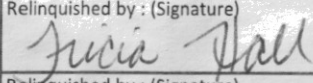
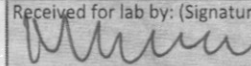
SDG # 1154933 M064

Acctnum: GOLDCO Template: T157215 Prelogin: P735037 PM: 288 - Daphne Richards PB: BF 10/19/19 Shipped Via: FedEx Saver

Remarks Sample # (lab only)

-01
02
03
04
05
06
07
08
09
Oil Hold

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

Golder & Associates - CO 7245 W Alaska Drive, Ste 200 Lakewood, CO 80226				Billing Information: Accounts Payable 7245 W Alaska Drive, Ste 200 Lakewood, CO 80226				Chain of Custody Page 2 of 2			
				Report to: Matt Somogyi				Email To: matthew_somogyi@golder.com			
Project Description: Wexpro - Craig Pits Delin. Short				City/State Collected: Craig, CO		Please Circle: PT MT CT ET		<div style="text-align: center;">  12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859 </div> <div style="text-align: center;">  </div>			
Phone: 800-235-7784 Fax: 303-985-2080		Client Project # 19125681		Lab Project # GOLDCO-00062103							
Collected by (print): Tricia Hall		Site/Facility ID #		P.O. #							
Collected by (signature): 		Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day		Quote #							
Immediately Packed on Ice <input checked="" type="checkbox"/>		Date Results Needed		No. of Cntrs							
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time						
P14-B5-FT-4-6 FT	G	SS	4-6	10/21/19	1630	1	V	V	X	V	10
P14-B1-FT-4-6 FT	G	SS	4-6	10/22/19	0900	1	X	V	X	X	11
P14-B2-FT-2-4 FT	G	SS	2-4	10/22/19	0930	1	V	V	X	V	12
P14-B3-FT-6-8 FT	G	SS	6-8	10/22/19	1000	1	X	X	X	X	13
P14-B4-FT-14 FT	G	SS	14	10/22/19	1020	1				X	14
P14-B4-FT-3 report 2-6-8 FT	G	SS	6-8	10/22/19	1130	1	V	X	V	V	15
P14-B6-FT-14-16 FT	G	SS	14-16	10/22/19	1330	1	X	X	X	X	16
P14-B7-FT-3 report 1-16-18 FT	G	SS	16-18	10/22/19	1500	1	X	X	X	V	17
P - B - FT		SS									
P - B - FT		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: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier				Tracking # 1203 5789 2645				Trip Blank Received: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> HCL / MeOH TBR			
Relinquished by: (Signature) 				Date: 10/22/19		Time: 1515		Received by: (Signature)		Temp 4.8 °C Bottles Received: 20	
Relinquished by: (Signature)				Date:		Time:		Received by: (Signature)		If preservation required by Login: Date/Time	
Relinquished by: (Signature)				Date:		Time:		Received for lab by: (Signature) 		Date: 10-29-19 Time: 8:45	
								Hold:		Condition: NCF / OK	

Andy Vann

From: Chris Ward
Sent: Wednesday, October 30, 2019 10:10 AM
To: Project Service
Cc: Sample Storage
Subject: L1154933 *GOLDCO* Samples going on HOLD

Importance: High

Please stop analysis on the following and place on HOLD

L1154933-11 (P14-B1-4to6ft)
L1154933-12 (P14-B2-2to4ft)
L1154933-13 (P14-B3-6to8ft)

Thanks,
Chris Ward
Project Manager
Pace Analytical National Center for Testing & Innovation
12065 Lebanon Road | Mt. Juliet, TN 37122
cward@pacenational.com | www.pacenational.com

615.773.9712

This E-mail and any attached files are confidential, and may be copyright protected. If you are not the addressee, any dissemination of this communication is strictly prohibited. If you have received this message in error, please contact the sender immediately and delete/destroy all information received.

ANALYTICAL REPORT

January 20, 2020

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Golder & Associates - CO

Sample Delivery Group: L1163543
Samples Received: 11/21/2019
Project Number: 19125681
Description: Wexpro - Craig Pits Delin.

Report To: Matt Somogyi
7245 W Alaska Drive, Ste 200
Lakewood, CO 80226

Entire Report Reviewed By:



Christl M Wagner
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
P12-B3-STEPOUT3-10-12FT L1163543-04	5
Qc: Quality Control Summary	6
Wet Chemistry by Method 9050AMod	6
Wet Chemistry by Method 9056A	7
Volatile Organic Compounds (GC) by Method 8015D/GRO	8
Semi-Volatile Organic Compounds (GC) by Method 8015	9
Gl: Glossary of Terms	10
Al: Accreditations & Locations	11
Sc: Sample Chain of Custody	12



SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



P12-B3-STEP-OUT3-10-12FT L1163543-04 Solid

Collected by
Tricia Hall

Collected date/time
11/16/19 13:00

Received date/time
11/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1385786	1	11/26/19 11:57	11/26/19 11:57	CCE	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1387974	1	11/27/19 11:02	11/27/19 12:10	EEM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1386839	1	11/25/19 23:50	11/26/19 09:45	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1387216	1	11/22/19 11:17	11/26/19 19:26	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1385572	1	11/22/19 21:29	11/23/19 18:59	KME	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Golder & Associates - CO

PROJECT:

19125681

SDG:

L1163543

DATE/TIME:

01/20/20 15:25

PAGE:

3 of 13



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.

Christl M Wagner
Project Manager

Report Revision History

Version 1: 12/03/19 10:21
Version 2: 12/09/19 14:14
Version 3: 12/19/19 17:22
Version 4: 01/16/20 11:23
Version 5: 01/16/20 11:42
Version 6: 01/16/20 13:20
Version 7: 01/17/20 09:52
Version 8: 01/17/20 14:39

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.42		1	11/26/2019 11:57	WG1385786

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	187		10.0	1	11/27/2019 12:10	WG1387974

Wet Chemistry by Method 9056A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chloride	49.3		10.0	1	11/26/2019 09:45	WG1386839
Sulfate	ND		50.0	1	11/26/2019 09:45	WG1386839

Volatile Organic Compounds (GC) by Method 8015/8015D/8021/GRO

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND	J3	0.100	1	11/26/2019 19:26	WG1387216
(S) a,a,a-Trifluorotoluene(FID)	92.7		77.0-120		11/26/2019 19:26	WG1387216

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	ND		4.00	1	11/23/2019 18:59	WG1385572
(S) o-Terphenyl	65.8		18.0-148		11/23/2019 18:59	WG1385572

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3476913-1 11/27/19 12:10

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1163182-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1163182-01 11/27/19 12:10 • (DUP) R3476913-3 11/27/19 12:10

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	76.7	74.4	1	3.04		20

L1163543-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1163543-09 11/27/19 12:10 • (DUP) R3476913-4 11/27/19 12:10

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	282	320	1	12.5		20

Laboratory Control Sample (LCS)

(LCS) R3476913-2 11/27/19 12:10

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	475	476	100	85.0-115	



Method Blank (MB)

(MB) R3476572-1 11/26/19 02:54

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloride	2.56	J	0.795	10.0
Sulfate	U		0.570	50.0

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1162667-24 Original Sample (OS) • Duplicate (DUP)

(OS) L1162667-24 11/26/19 04:16 • (DUP) R3476572-3 11/26/19 04:33

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	1.45	1.84	1	23.6	J P1	15
Sulfate	U	1.77	1	200	J P1	15

L1163853-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1163853-01 11/26/19 11:39 • (DUP) R3476572-6 11/26/19 11:56

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chloride	ND	2.77	1	0.000		15
Sulfate	ND	36.7	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3476572-2 11/26/19 03:10

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chloride	200	215	108	80.0-120	
Sulfate	200	212	106	80.0-120	

L1163081-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1163081-02 11/26/19 07:00 • (MS) R3476572-4 11/26/19 07:17 • (MSD) R3476572-5 11/26/19 07:33

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chloride	518	2.85	548	545	105	105	1	80.0-120			0.619	15
Sulfate	518	282	815	815	103	103	1	80.0-120			0.0323	15



Method Blank (MB)

(MB) R3476992-2 11/26/19 10:49

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0254	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	97.1			77.0-120

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3476992-1 11/26/19 10:08 • (LCSD) R3476992-3 11/26/19 15:59

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 %
TPH (GC/FID) Low Fraction	5.50	4.53	6.09	82.4	111	72.0-127		⬇3	29.4	20
(S) a,a,a-Trifluorotoluene(FID)				106	111	77.0-120				

L1162892-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1162892-01 11/26/19 13:34 • (MS) R3476992-4 11/26/19 21:09 • (MSD) R3476992-5 11/26/19 21:30

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 %
TPH (GC/FID) Low Fraction	148	0.930	126	127	84.3	85.0	25.3	10.0-151			0.844	28
(S) a,a,a-Trifluorotoluene(FID)					109	109		77.0-120				



Method Blank (MB)

(MB) R3475517-1 11/23/19 17:54

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	75.1			18.0-148

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

Laboratory Control Sample (LCS)

(LCS) R3475517-2 11/23/19 18:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	43.3	86.6	50.0-150	
(S) o-Terphenyl			77.3	18.0-148	

7Gl

8Al

L1163543-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1163543-13 11/23/19 20:31 • (MS) R3475517-3 11/23/19 20:45 • (MSD) R3475517-4 11/23/19 20:58

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 %
TPH (GC/FID) High Fraction	50.0	31.7	85.3	60.5	107	57.6	1	50.0-150		J3	34.0	20
(S) o-Terphenyl					70.0	72.5		18.0-148				

9Sc



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.
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

J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



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	LA000356
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

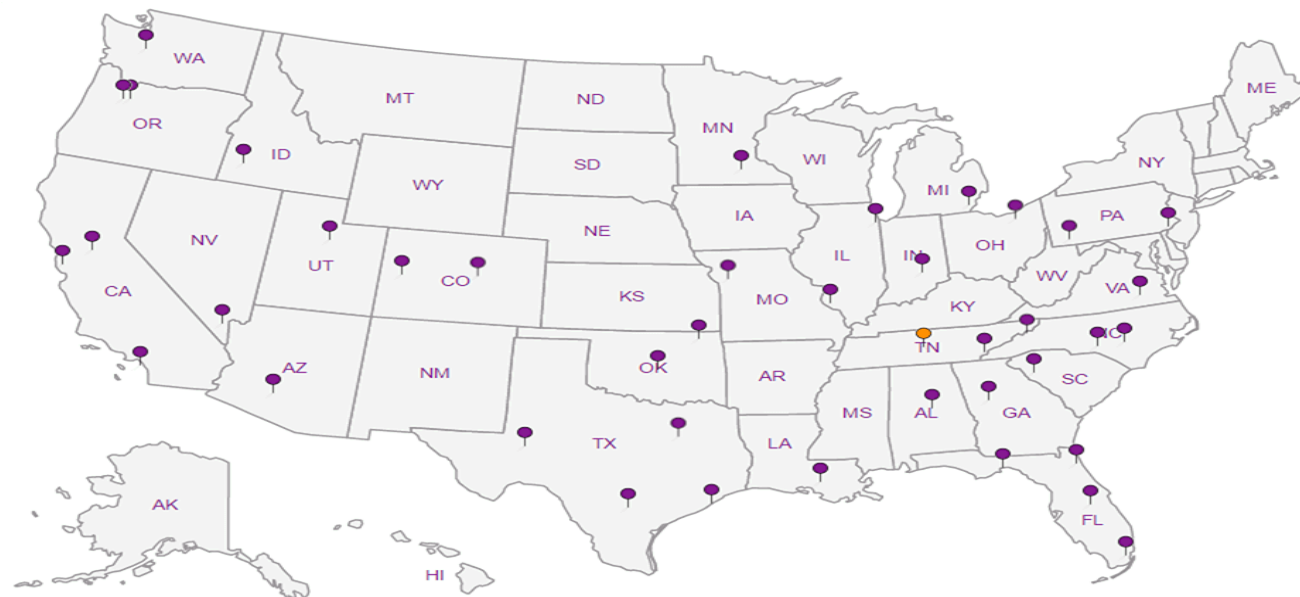
Third Party Federal Accreditations

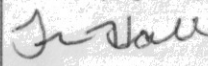
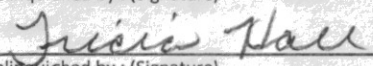
A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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.



Golder & Associates 7245 W. Alaska Dr. Suite 200 Lakewood, CO 80226				Billing Information:				Pres Chk		Analysis / Container / Preservative								Chain of Custody Page <u>1</u> of <u>2</u>	
				Report to: Matt Somogyi				Email To: Matthew_Somogyi@golder.com											
Project Description: Wexpro - Craig Pits Delin.				City/State Collected: Craig, CO															
Phone: 303-980-0540		Client Project # 19125681		Lab Project #															
Fax: 303-9985-2080																			
Collected by (print): Tricia Hall		Site/Facility ID #		P.O. #															
Collected by (signature): 		Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day		Quote #															
Immediately Packed on Ice: N <input type="checkbox"/> Y <input checked="" type="checkbox"/>				Date Results Needed				No. of Cntrs											
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time													
P8-B2 - ft Stepa H-6-8ft G		G	SS	6-8	11/15/2019	1630	1	V	V	X	X						-01		
P8-B3 - ft Stepa H-6-5-5-5ft G		G	SS	5-5.5	11/16/2019	1010	1	V	V	X	X						-02		
P8-B4 - ft Stepa H-4-5ft G		G	SS	4-5	11/16/2019	1130	1	X	V	V	V						-03		
P12-B3 - ft Stepa H-3-10-2ft G		G	SS	10-12	11/16/2019	1300	1	X	X	X	V						-04		
P10-B1 - ft Stepa H-2-22-23ft G		G	SS	22-23	11/16/2019	1520	1	X	X	V	V						-05		
P10-B2 - ft Stepa H-2-0-2ft G		G	SS	0-2	11/17/2019	0900	1	X	X	X	V						-06		
P10-B3 - ft Stepa H-1-4-6ft G		G	SS	4-6	11/17/2019	0950	1	X	X	V	X						-07		
P10-B4 - ft Stepa H-1-6-6.5ft G		G	SS	6-6.5	11/17/2019	1050	1	V	V	X	X						-08		
P8-B1 - ft Stepa H-2-0-2ft G		G	SS	0-2	11/17/2019	1130	1	V	V	V	V						-09		
P7-B1 - ft Stepa H-2-4ft G		G	SS	2-4	11/17/2019	1340	1	V	V	V	V						-10		
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - Waste Water DW - Drinking Water OT - Other		Remarks:				pH _____ Temp _____ Flow _____ Other _____				Sample Receipt Checklist COC Seal Present/Intact: <input checked="" type="checkbox"/> NP <input type="checkbox"/> N COC Signed/Accurate: <input checked="" type="checkbox"/> <input type="checkbox"/> N Bottles arrive intact: <input checked="" type="checkbox"/> <input type="checkbox"/> N Correct bottles used: <input checked="" type="checkbox"/> <input type="checkbox"/> N Sufficient volume sent: <input checked="" type="checkbox"/> <input type="checkbox"/> N If Applicable VOA Zero Headspace: <input type="checkbox"/> Y <input type="checkbox"/> N Preservation Correct/Checked: <input type="checkbox"/> Y <input type="checkbox"/> N RAD SCREEN: <0.5 mR/hr									
Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier		Tracking # 1275 8600 3968																	
Relinquished by: (Signature) 		Date: 11/18/19	Time: 0800	Received by: (Signature)				Trip Blank Received: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> HCL / MeOH TBR				Temp: 12m °C Bottles Received: 15				If preservation required by Login: Date/Time			
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)				Date: 11/21/19 Time: 830				Hold:				Condition: NCF <input checked="" type="checkbox"/> OK			

