



August 13, 2020

Mr. Chris Canfield
Department of Natural Resources
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203-2136

**RE: 2020 Quarter 2 Report
Grant Hurt 14H
SEC.14 T2N R68W 6PM
LAT./LONG.: 40.13928/-104.96659
Weld County, Colorado**

Dear Mr. Canfield:

This report summarizes activities conducted in the second quarter of 2020 to address petroleum hydrocarbon impacts at the Grant Hurt 14H Tank Battery (site). The site is located at latitude: 40.13928 and longitude - 104.96659 in Weld County, Colorado (Figure 1). A site map is included (Figure 2), and groundwater analytical results (Table 2).

BACKGROUND

In March 2018, a 1" hammer union was found leaking on a produced oil line under the insulation resulting in a release of 75 barrels. The hammer union was tightened, and equipment was removed. A hydrovac was used to remove all visual contamination. Further information can be found in document # 402092828.

On March 30, 2018, two 10-foot long, 4-inch diameter horizontal screens were installed into the excavated area that was approximately 15 feet long by 10 feet wide. The horizontal screens were installed and covered with pea gravel. Approximately 2,000 pounds of granular carbon was placed on top of the pea gravel. The excavated area was backfilled to ground surface.

On January 2, 2019, five soil borings (SB-1 through SB-5) were advanced and soil samples were collected at the site. Soil samples were analyzed for TPH and BTEX. All soil samples (SB-1 through SB-5) were below the COGCC limits.

Four temporary monitoring wells were installed in boreholes SB-1, SB-2, SB-3 and SB-4. A water sample was retrieved through the borehole from soil boring 5 (SB-5W) and analyzed for BTEX. The groundwater result collected from SB-5W was below COGCC Table 910-1 allowable limits.

On January 8, 2019, groundwater samples were retrieved from temporary wells 1 through 4 (SB-1W through SB-4W) and analyzed for BTEX. All samples were below Table 910-1 BTEX concentration levels. On March 1, 2019, the temporary wells were removed and abandoned. Please reference document # 402269237 for additional information.



MONITORING RESULTS

On June 17, 2020, five continuous soil sample borings were advanced at the site. Soil samples were collected at one to two-foot intervals and field screened using a photoionization detector (PID). Soil samples containing the highest PID reading and from the bottom of each boring were collected for laboratory analysis. Each soil sample was analyzed for BTEX (EPA Method 8260), TVPH/GRO (EPA Method 8015), and TEPH/DRO (EPA Method 8015).

During the assessment, groundwater was encountered. At each soil boring location, a 1-inch temporary monitoring well was installed. On June 23, 2020, groundwater samples were collected and analyzed for BTEX (8260).

The boring locations, soil data and groundwater data for each sample point are illustrated on the attached figures. Soil analytical results are summarized in Table 1. Depth to groundwater and elevations from top of casing (TOC) are shown in Table 2. Based on the data collected on June 23, 2020, the inferred groundwater flow direction is to the west. Groundwater analytical results are provided in Table 3.

All laboratory analytical results from the soil samples collected the five borings were within the COGCC Table 910-1 limits.

Laboratory results from the groundwater sample collected from TMW-2 indicated a benzene concentration that exceeded COGCC Table 910-1 regulatory limit. All other monitoring wells were within COGCC Table 910-1 limits for BTEX. The laboratory reports and boring logs are attached.

The dissolved benzene concentration for TMW-2 exceeded the COGCC Table 910-1 limit at 287 µg/L. Due to the location of TMW-2, additional assessment will be conducted to the west (down-gradient) and northwest of TMW-2 to further delineate the contaminated plume. Groundwater monitoring will continue until concentrations remain below COGCC Table 910-1 limits for four consecutive quarters.

Please contact me if you have any questions or require additional information.

Sincerely,

David Tewkesbury
Environmental Specialist
Crestone Peak Resources
10188 E. Interstate 25 Frontage Road
Firestone, CO 80504
t 303.774.3985
c 720.236.5525
e david.tewkesbury@crestonepr.com





Attachments:

Table 1 – Soil Analytical Results

Table 2 – Groundwater Elevation Data

Table 3 – Groundwater Analytical Results

Figure 1 – Location Map

Figure 2 – Site Map

Figure 3 – Soil Sampling Map (6/17/2020)

Figure 4 – Groundwater Monitoring Map (6/23/2020)

Soil Laboratory Analytical Report

Groundwater Laboratory Analytical Report

Boring Logs

**TABLE 1 - SOIL ANALYTICAL RESULTS
CRESTONE PEAK RESOURCES**

Grant-Hurt 14H

Sample ID	Date	Rational	Depth Range (ft)	PID (ppm)	Benzene (mg/kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	TPH-GRO (mg/Kg)	TPH-DRO (mg/Kg)	Total TPH (mg/Kg)
COGCC Table 910-1 Limit					0.17	85	100	175	500	500	500
BH1 (1')	6/17/20	Boring	1	363.5	<0.001	<0.005	<0.0025	<0.0065	0.277	390	390.277
BH1 (15')	6/17/20	Boring	15	0	<0.001	<0.005	<0.0025	<0.0065	<0.100	<4.00	<4.00
BH2 (5')	6/17/20	Boring	5	15.7	<0.001	<0.005	<0.0025	<0.0065	<0.100	<4.00	<4.00
BH2 (15')	6/17/20	Boring	15	0	<0.001	<0.005	<0.0025	<0.0065	<0.100	<4.00	<4.00
BH3 (2')	6/17/20	Boring	2	500.3	0.00147	<0.005	0.0130	0.137	74	6.83	80.83
BH3 (15')	6/17/20	Boring	15	0.7	<0.001	<0.005	<0.0025	<0.0065	<0.100	<4.00	<4.00
BH4 (3')	6/17/20	Boring	3	289.9	<0.001	<0.005	<0.0025	0.0285	6.76	30.4	37.16
BH4 (15')	6/17/20	Boring	15	0.3	<0.001	<0.005	<0.0025	<0.0065	<0.100	<4.00	<4.00
BH5 (1')	6/17/20	Boring	1	965.5	0.00168	<0.005	0.00498	0.0891	40.5	169	209.5
BH5 (15')	6/17/20	Boring	15	1.2	<0.001	<0.005	<0.0025	<0.0065	<0.100	<4.00	<4.00

NOTES:

mg/Kg - milligrams per kilogram

BOLD - indicates result exceeds the applicable standard

< - indicates result is less than the stated laboratory reporting limit

NM - Not Measured/Sampled

COGCC Table 910-1 - Colorado Oil and Gas Conservation Commission Table 910-1

Benzene, toluene, ethylbenzene, total xylenes and TPH-GRO analyzed by EPA Method 8260B.

TPH-DRO was analyzed by EPA Method 8015.

**TABLE 2 - GROUNDWATER ELEVATION
CRESTONE PEAK RESOURCES**

Grant-Hurt 14H

Well ID	Date	Top of Casing	Depth to Groundwater (feet)	Groundwater Elevation (feet)	Temperature (°C)	Conductivity (µS/cm)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen (mg/L)	pH (SU)
TMW-1	6/23/20	100.00	10.76	89.24	19.91	1,586	-102.30	10.74	7.37
TMW-2	6/23/20	100.01	11.05	88.96	19.95	1,126	-68.50	5.83	7.46
TMW-3	6/23/20	100.25	10.92	89.33	21.43	1,573	-102.60	2.12	7.41
TMW-4	6/23/20	98.82	9.85	88.97	19.19	753	-68.60	11.34	7.16
TMW-5	6/23/20	100.08	11.05	89.03	16.71	786	-134.80	11.09	7.48

NOTES:

- DES - Destroyed
- NM - Not Measured

**TABLE 3 - GROUNDWATER ANALYTICAL RESULTS
CRESTONE PEAK RESOURCES**

Grant-Hurt 14H

Sample ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Table 910-1 Limit		5	560	700	1,400
TMW-1	6/23/20	<2.0	<2.0	<2.0	<6.0
TMW-2	6/23/20	287	<20.0	<20.0	<60.0
TMW-3	6/23/20	2.59	<1.0	<1.0	<3.0
TMW-4	6/23/20	3.31	<1.0	<1.0	<3.0
TMW-5	6/23/20	<2.0	<2.0	<2.0	<6.0

NOTES:

µg/L - micrograms per liter

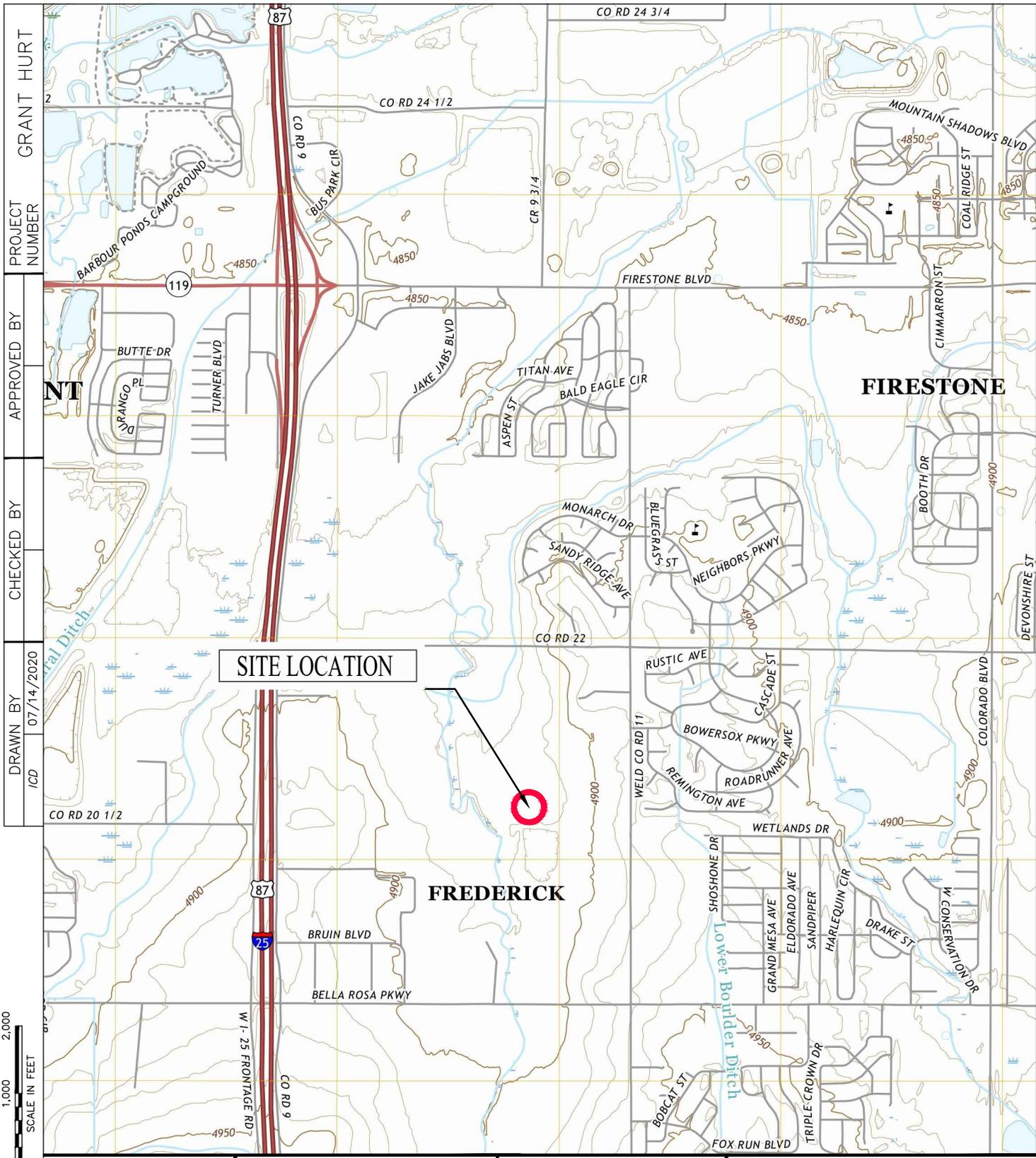
BOLD - indicates result exceeds the applicable standard

< - indicates result is less than the stated laboratory reporting limit

NS - Not Sampled

COGCC Table 910-1 - Colorado Oil and Gas Conservation Commission Table 910-1

Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B

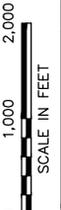


PROJECT NUMBER
GRANT HURT

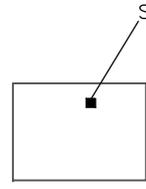
APPROVED BY

CHECKED BY

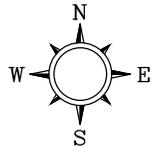
DRAWN BY
ICD
07/14/2020



SITE LOCATION



LATITUDE 40D 08M 23S NORTH
LONGITUDE 104D 57M 58S WEST
U.S. GEOLOGICAL SURVEY – 2019
7.5 MINUTE QUADRANGLE MAP
GOWANDA, COLORADO



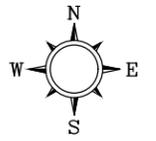
GRANT-HURT 14H

FIGURE 1

SITE LOCATION MAP

40.13928, -104.96659
FIRESTONE, COLORADO

FILENAME	DRAWN BY	CHECKED BY	APPROVED BY	PROJECT NUMBER	GRANT HURT
GRANT_HURT_2002.DWG	ICD	7/14/2020			



LEGEND

TMW-1/ BH-1		MONITORING WELL/BORING LOCATION
		BERM
		FENCE

- NOTES
1. LOCATIONS ARE APPROXIMATE
 2. COORDINATE SYSTEM: WGS 1984
PROJECTION: TRANSVERSE MERCATOR



FIGURE 2
SITE MAP

GRANT-HURT 14H
40.13928, -104.96659
FIRESTONE, COLORADO

PROJECT NUMBER: GRANT HURT
 APPROVED BY:
 CHECKED BY:
 DRAWN BY: 7/14/2020
 FILENAME: GRANT_HURT_2002.DWG

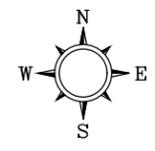
BH-2		
06/17/20		
DP	5'	15'
B	<0.001	<0.001
T	<0.005	<0.005
E	<0.0025	<0.0025
X	<0.0065	<0.0065
TPH-g	<0.100	<0.100
TPH-d	<4.00	<4.00

BH-1		
06/17/20		
DP	1'	15'
B	<0.001	<0.001
T	<0.005	<0.005
E	<0.0025	<0.0025
X	<0.0065	<0.0065
TPH-g	0.277	<0.100
TPH-d	390	<4.00

BH-4		
06/17/20		
DP	3'	15'
B	<0.001	<0.001
T	<0.005	<0.005
E	<0.0025	<0.0025
X	0.0285	<0.0065
TPH-g	6.76	<0.100
TPH-d	30.4	<4.00

BH-5		
06/17/20		
DP	1'	15'
B	0.00168	<0.001
T	<0.005	<0.005
E	0.00498	<0.0025
X	0.0891	<0.0065
TPH-g	40.5	<0.100
TPH-d	169	<4.00

BH-3		
06/17/20		
DP	2'	15'
B	0.00147	<0.001
T	<0.005	<0.005
E	0.0130	<0.0025
X	0.137	<0.0065
TPH-g	74	<0.100
TPH-d	6.83	<4.00



LEGEND

TMW-1/BH-1 MONITORING WELL/BORING LOCATION

BERM

FENCE

B BENZENE (mg/kg)

T TOLUENE (mg/kg)

E ETHYLBENZENE (mg/kg)

X TOTAL XYLENES (mg/kg)

TPH-g TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (mg/kg)

TPH-d TOTAL PETROLEUM HYDROCARBONS AS DIESEL (mg/kg)

mg/kg MILLIGRAMS PER KILOGRAM

< NOT DETECTED ABOVE LIMIT NOTED

DP DEPTH (FEET)

NOTES

1. LOCATIONS ARE APPROXIMATE
2. COORDINATE SYSTEM: WGS 1984
PROJECTION: TRANSVERSE MERCATOR

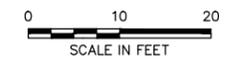


FIGURE 3
SOIL SAMPLE LOCATION MAP

GRANT-HURT 14H
40.13928, -104.96659
FIRESTONE, COLORADO

SOURCE: 2020 AERIAL PHOTOGRAPHY; © GOOGLE

PROJECT NUMBER: GRANT HURT
 APPROVED BY: [Blank]
 CHECKED BY: [Blank]
 DRAWN BY: 7/14/2020
 FILENAME: GRANT_HURT_2002.DWG

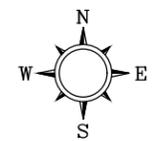
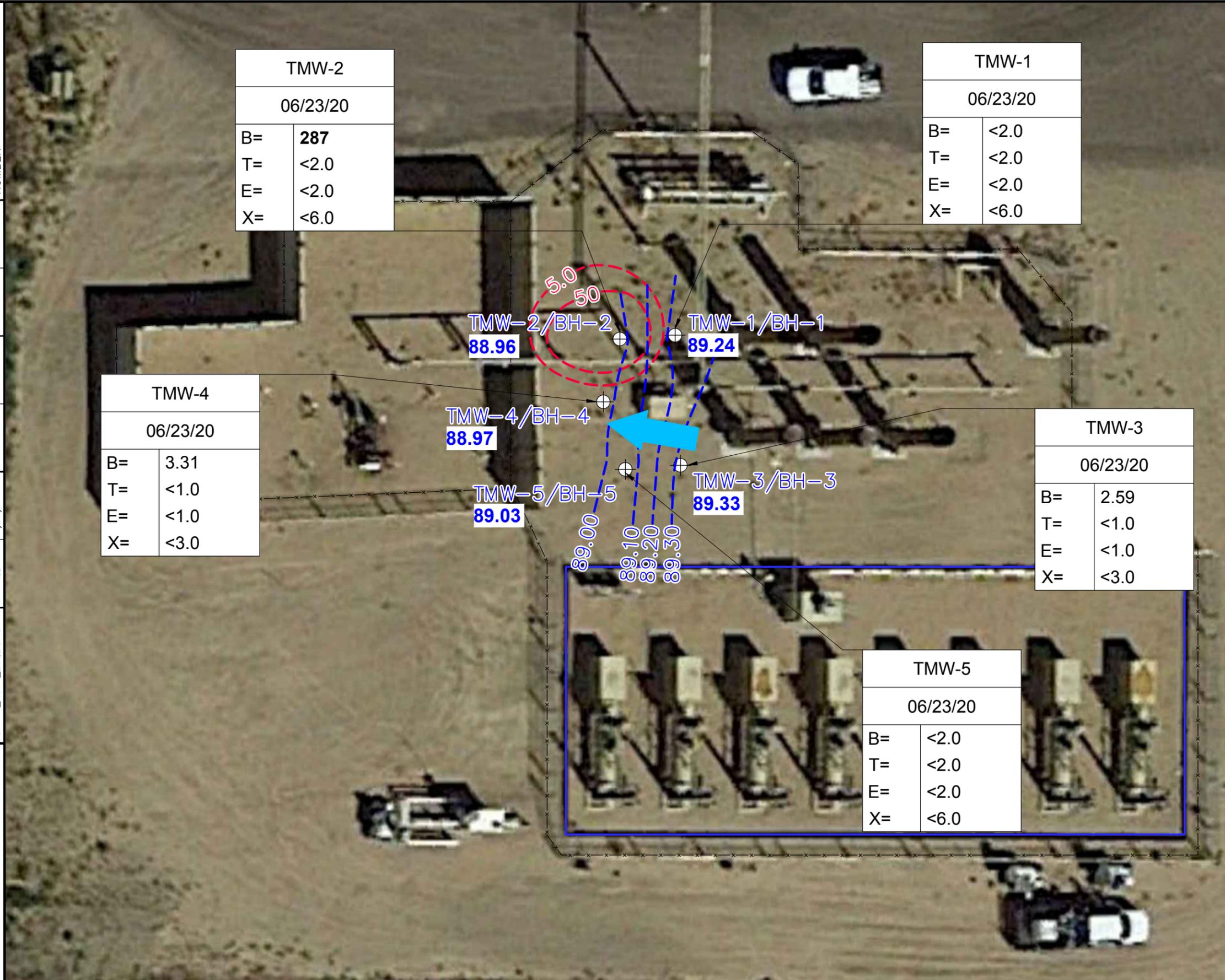
TMW-2	
06/23/20	
B=	287
T=	<2.0
E=	<2.0
X=	<6.0

TMW-1	
06/23/20	
B=	<2.0
T=	<2.0
E=	<2.0
X=	<6.0

TMW-4	
06/23/20	
B=	3.31
T=	<1.0
E=	<1.0
X=	<3.0

TMW-3	
06/23/20	
B=	2.59
T=	<1.0
E=	<1.0
X=	<3.0

TMW-5	
06/23/20	
B=	<2.0
T=	<2.0
E=	<2.0
X=	<6.0



- LEGEND**
- TMW-1/BH-1 MONITORING WELL/BORING LOCATION
 - BERM
 - FENCE
 - 89.24 GROUNDWATER ELEVATION (FEET)
 - 89.00 GROUNDWATER ELEVATION CONTOUR LINE (FEET)
 - CONTOUR INTERVAL=0.10 FEET
 - APPROXIMATE GROUNDWATER FLOW DIRECTION
 - B BENZENE (µg/L)
 - T TOLUENE (µg/L)
 - E ETHYLBENZENE (µg/L)
 - X TOTAL XYLENES (µg/L)
 - µg/L MICROGRAMS PER LITER
 - < NOT DETECTED ABOVE LIMIT NOTED
 - 5.0 BENZENE ISOCONCENTRATION CONTOUR LINE (µg/L)
 - BOLD VALUES INDICATE EXCEEDANCE OF APPLICABLE STANDARDS**

- NOTES**
1. LOCATIONS ARE APPROXIMATE
 2. COORDINATE SYSTEM: WGS 1984
PROJECTION: TRANSVERSE MERCATOR

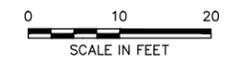


FIGURE 4
 GROUNDWATER MONITORING MAP
 06/23/2020

GRANT-HURT 14H
 40.13928, -104.96659
 FIRESTONE, COLORADO

July 01, 2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Crestone Peak Resources

Sample Delivery Group: L1231667
Samples Received: 06/20/2020
Project Number:
Description: Grant Hurt
Site: GRANT HURT
Report To: Lonnie Dent
10188 E. I-25 Frontage Road
Fireston, CO, CO 80504

Entire Report Reviewed By:

Chris Ward

Chris Ward
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	1 Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	2 Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	3 Ss
BH1 L1231667-01	6	
BH1 15' L1231667-02	7	4 Cn
BH2 L1231667-03	8	5 Sr
BH2 15' L1231667-04	9	
BH3 L1231667-05	10	6 Qc
BH3 15' L1231667-06	11	
BH4 L1231667-07	12	7 Gl
BH4 15' L1231667-08	13	8 Al
BH5 L1231667-09	14	
BH5 15' L1231667-10	15	9 Sc
Qc: Quality Control Summary	16	
Volatile Organic Compounds (GC) by Method 8015D/GRO	16	
Volatile Organic Compounds (GC/MS) by Method 8260B	19	
Semi-Volatile Organic Compounds (GC) by Method 8015	21	
Gl: Glossary of Terms	23	
Al: Accreditations & Locations	24	
Sc: Sample Chain of Custody	25	

SAMPLE SUMMARY



BH1 L1231667-01 Solid

Collected by
Jesse Wilson
Collected date/time
06/17/20 10:15
Received date/time
06/20/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1501230	1	06/22/20 11:42	06/30/20 05:07	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1497767	1	06/22/20 11:42	06/23/20 21:09	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1499370	2	06/26/20 09:02	06/30/20 11:26	JN	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

BH1 15' L1231667-02 Solid

Collected by
Jesse Wilson
Collected date/time
06/17/20 10:15
Received date/time
06/20/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1501230	1	06/22/20 11:42	06/30/20 05:28	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1497767	1	06/22/20 11:42	06/23/20 21:27	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1499810	1	06/26/20 15:55	06/27/20 15:32	FM	Mt. Juliet, TN

BH2 L1231667-03 Solid

Collected by
Jesse Wilson
Collected date/time
06/17/20 10:50
Received date/time
06/20/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1501230	1	06/22/20 11:42	06/30/20 06:41	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1497767	1	06/22/20 11:42	06/23/20 21:46	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1499810	1	06/26/20 15:55	06/27/20 15:44	FM	Mt. Juliet, TN

BH2 15' L1231667-04 Solid

Collected by
Jesse Wilson
Collected date/time
06/17/20 10:50
Received date/time
06/20/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1501230	1	06/22/20 11:42	06/30/20 07:02	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1497767	1	06/22/20 11:42	06/23/20 22:05	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1499810	1	06/26/20 15:55	06/27/20 16:24	FM	Mt. Juliet, TN

BH3 L1231667-05 Solid

Collected by
Jesse Wilson
Collected date/time
06/17/20 12:25
Received date/time
06/20/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1501230	25	06/22/20 11:42	06/30/20 11:30	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1497767	1	06/22/20 11:42	06/23/20 22:24	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1499810	1	06/26/20 15:55	06/27/20 15:57	FM	Mt. Juliet, TN

BH3 15' L1231667-06 Solid

Collected by
Jesse Wilson
Collected date/time
06/17/20 12:25
Received date/time
06/20/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1501633	1	06/30/20 11:56	06/30/20 15:19	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1497767	1	06/22/20 11:42	06/23/20 22:43	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1499810	1	06/26/20 15:55	06/27/20 16:09	FM	Mt. Juliet, TN

SAMPLE SUMMARY

BH4 L1231667-07 Solid

Collected by
Jesse Wilson
Collected date/time
06/17/20 11:55
Received date/time
06/20/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1501525	1	06/22/20 11:42	06/30/20 14:56	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1497767	1	06/22/20 11:42	06/23/20 23:02	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1499810	1	06/26/20 15:55	06/27/20 16:22	FM	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

BH4 15' L1231667-08 Solid

Collected by
Jesse Wilson
Collected date/time
06/17/20 11:55
Received date/time
06/20/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1501525	1	06/22/20 11:42	06/30/20 15:16	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1497767	1	06/22/20 11:42	06/23/20 23:21	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1499810	1	06/26/20 15:55	06/27/20 16:35	FM	Mt. Juliet, TN

BH5 L1231667-09 Solid

Collected by
Jesse Wilson
Collected date/time
06/17/20 12:15
Received date/time
06/20/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1501525	25	06/22/20 11:42	06/30/20 15:37	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1498130	1	06/22/20 11:42	06/24/20 19:12	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1499810	1	06/26/20 15:55	06/27/20 18:04	FM	Mt. Juliet, TN

BH5 15' L1231667-10 Solid

Collected by
Jesse Wilson
Collected date/time
06/17/20 12:15
Received date/time
06/20/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1501525	1	06/22/20 11:42	06/30/20 15:58	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1497767	1	06/22/20 11:42	06/23/20 23:39	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1499810	1	06/26/20 15:55	06/27/20 16:47	FM	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.

Chris Ward
Project Manager

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



Collected date/time: 06/17/20 10:15

L1231667

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	0.277		0.100	1	06/30/2020 05:07	WG1501230
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	88.6		77.0-120		06/30/2020 05:07	WG1501230

1 Cp

2 Tc

3 Ss

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.00100	1	06/23/2020 21:09	WG1497767
Toluene	ND		0.00500	1	06/23/2020 21:09	WG1497767
Ethylbenzene	ND		0.00250	1	06/23/2020 21:09	WG1497767
Total Xylenes	ND		0.00650	1	06/23/2020 21:09	WG1497767
(S) Toluene-d8	108		75.0-131		06/23/2020 21:09	WG1497767
(S) 4-Bromofluorobenzene	93.1		67.0-138		06/23/2020 21:09	WG1497767
(S) 1,2-Dichloroethane-d4	93.0		70.0-130		06/23/2020 21:09	WG1497767

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) High Fraction	390		8.00	2	06/30/2020 11:26	WG1499370
(S) <i>o</i> -Terphenyl	113		18.0-148		06/30/2020 11:26	WG1499370

8 Al

9 Sc



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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	ND		0.100	1	06/30/2020 05:28	WG1501230
(S) a,a,a-Trifluorotoluene(FID)	90.8		77.0-120		06/30/2020 05:28	WG1501230

1 Cp

2 Tc

3 Ss

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.00100	1	06/23/2020 21:27	WG1497767
Toluene	ND		0.00500	1	06/23/2020 21:27	WG1497767
Ethylbenzene	ND		0.00250	1	06/23/2020 21:27	WG1497767
Total Xylenes	ND		0.00650	1	06/23/2020 21:27	WG1497767
(S) Toluene-d8	107		75.0-131		06/23/2020 21:27	WG1497767
(S) 4-Bromofluorobenzene	89.7		67.0-138		06/23/2020 21:27	WG1497767
(S) 1,2-Dichloroethane-d4	94.6		70.0-130		06/23/2020 21:27	WG1497767

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) High Fraction	ND		4.00	1	06/27/2020 15:32	WG1499810
(S) o-Terphenyl	59.4		18.0-148		06/27/2020 15:32	WG1499810

8 Al

9 Sc



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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	ND		0.100	1	06/30/2020 06:41	WG1501230
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	88.4		77.0-120		06/30/2020 06:41	WG1501230

1 Cp

2 Tc

3 Ss

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.00100	1	06/23/2020 21:46	WG1497767
Toluene	ND		0.00500	1	06/23/2020 21:46	WG1497767
Ethylbenzene	ND		0.00250	1	06/23/2020 21:46	WG1497767
Total Xylenes	ND		0.00650	1	06/23/2020 21:46	WG1497767
(S) Toluene-d8	105		75.0-131		06/23/2020 21:46	WG1497767
(S) 4-Bromofluorobenzene	93.2		67.0-138		06/23/2020 21:46	WG1497767
(S) 1,2-Dichloroethane-d4	97.9		70.0-130		06/23/2020 21:46	WG1497767

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) High Fraction	ND		4.00	1	06/27/2020 15:44	WG1499810
(S) <i>o</i> -Terphenyl	67.2		18.0-148		06/27/2020 15:44	WG1499810

8 Al

9 Sc



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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	ND		0.100	1	06/30/2020 07:02	WG1501230
(S) a,a,a-Trifluorotoluene(FID)	90.6		77.0-120		06/30/2020 07:02	WG1501230

1 Cp

2 Tc

3 Ss

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.00100	1	06/23/2020 22:05	WG1497767
Toluene	ND		0.00500	1	06/23/2020 22:05	WG1497767
Ethylbenzene	ND		0.00250	1	06/23/2020 22:05	WG1497767
Total Xylenes	ND		0.00650	1	06/23/2020 22:05	WG1497767
(S) Toluene-d8	108		75.0-131		06/23/2020 22:05	WG1497767
(S) 4-Bromofluorobenzene	90.3		67.0-138		06/23/2020 22:05	WG1497767
(S) 1,2-Dichloroethane-d4	96.3		70.0-130		06/23/2020 22:05	WG1497767

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) High Fraction	ND	J6	4.00	1	06/27/2020 16:24	WG1499810
(S) o-Terphenyl	60.0		18.0-148		06/27/2020 16:24	WG1499810

8 Al

9 Sc



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	74.0		2.50	25	06/30/2020 11:30	WG1501230
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	92.2		77.0-120		06/30/2020 11:30	WG1501230

1 Cp

2 Tc

3 Ss

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00147		0.00100	1	06/23/2020 22:24	WG1497767
Toluene	ND		0.00500	1	06/23/2020 22:24	WG1497767
Ethylbenzene	0.0130		0.00250	1	06/23/2020 22:24	WG1497767
Total Xylenes	0.137		0.00650	1	06/23/2020 22:24	WG1497767
(S) <i>Toluene-d8</i>	108		75.0-131		06/23/2020 22:24	WG1497767
(S) <i>4-Bromofluorobenzene</i>	93.5		67.0-138		06/23/2020 22:24	WG1497767
(S) <i>1,2-Dichloroethane-d4</i>	96.3		70.0-130		06/23/2020 22:24	WG1497767

4 Cn

5 Sr

6 Qc

7 Gl

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	6.83		4.00	1	06/27/2020 15:57	WG1499810
(S) <i>o</i> -Terphenyl	46.4		18.0-148		06/27/2020 15:57	WG1499810

8 Al

9 Sc



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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	ND		0.100	1	06/30/2020 15:19	WG1501633
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	97.2		77.0-120		06/30/2020 15:19	WG1501633

1 Cp

2 Tc

3 Ss

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.00100	1	06/23/2020 22:43	WG1497767
Toluene	ND		0.00500	1	06/23/2020 22:43	WG1497767
Ethylbenzene	ND		0.00250	1	06/23/2020 22:43	WG1497767
Total Xylenes	ND		0.00650	1	06/23/2020 22:43	WG1497767
(S) Toluene-d8	108		75.0-131		06/23/2020 22:43	WG1497767
(S) 4-Bromofluorobenzene	91.0		67.0-138		06/23/2020 22:43	WG1497767
(S) 1,2-Dichloroethane-d4	93.4		70.0-130		06/23/2020 22:43	WG1497767

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) High Fraction	ND		4.00	1	06/27/2020 16:09	WG1499810
(S) <i>o</i> -Terphenyl	61.8		18.0-148		06/27/2020 16:09	WG1499810

8 Al

9 Sc



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	6.76		0.100	1	06/30/2020 14:56	WG1501525
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	84.5		77.0-120		06/30/2020 14:56	WG1501525

1 Cp

2 Tc

3 Ss

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	06/23/2020 23:02	WG1497767
Toluene	ND		0.00500	1	06/23/2020 23:02	WG1497767
Ethylbenzene	ND		0.00250	1	06/23/2020 23:02	WG1497767
Total Xylenes	0.0285		0.00650	1	06/23/2020 23:02	WG1497767
(S) <i>Toluene-d8</i>	109		75.0-131		06/23/2020 23:02	WG1497767
(S) <i>4-Bromofluorobenzene</i>	94.2		67.0-138		06/23/2020 23:02	WG1497767
(S) <i>1,2-Dichloroethane-d4</i>	89.5		70.0-130		06/23/2020 23:02	WG1497767

4 Cn

5 Sr

6 Qc

7 Gl

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	30.4		4.00	1	06/27/2020 16:22	WG1499810
(S) <i>o</i> -Terphenyl	41.7		18.0-148		06/27/2020 16:22	WG1499810

8 Al

9 Sc



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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	ND		0.100	1	06/30/2020 15:16	WG1501525
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	105		77.0-120		06/30/2020 15:16	WG1501525

1 Cp

2 Tc

3 Ss

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.00100	1	06/23/2020 23:21	WG1497767
Toluene	ND		0.00500	1	06/23/2020 23:21	WG1497767
Ethylbenzene	ND		0.00250	1	06/23/2020 23:21	WG1497767
Total Xylenes	ND		0.00650	1	06/23/2020 23:21	WG1497767
(S) Toluene-d8	108		75.0-131		06/23/2020 23:21	WG1497767
(S) 4-Bromofluorobenzene	89.0		67.0-138		06/23/2020 23:21	WG1497767
(S) 1,2-Dichloroethane-d4	89.0		70.0-130		06/23/2020 23:21	WG1497767

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) High Fraction	ND		4.00	1	06/27/2020 16:35	WG1499810
(S) <i>o</i> -Terphenyl	75.9		18.0-148		06/27/2020 16:35	WG1499810

8 Al

9 Sc



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	40.5		2.50	25	06/30/2020 15:37	WG1501525
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	103		77.0-120		06/30/2020 15:37	WG1501525

1 Cp

2 Tc

3 Ss

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00168		0.00100	1	06/24/2020 19:12	WG1498130
Toluene	ND		0.00500	1	06/24/2020 19:12	WG1498130
Ethylbenzene	0.00498		0.00250	1	06/24/2020 19:12	WG1498130
Total Xylenes	0.0891		0.00650	1	06/24/2020 19:12	WG1498130
(S) Toluene-d8	105		75.0-131		06/24/2020 19:12	WG1498130
(S) 4-Bromofluorobenzene	122		67.0-138		06/24/2020 19:12	WG1498130
(S) 1,2-Dichloroethane-d4	77.5		70.0-130		06/24/2020 19:12	WG1498130

4 Cn

5 Sr

6 Qc

7 Gl

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	169		4.00	1	06/27/2020 18:04	WG1499810
(S) <i>o</i> -Terphenyl	59.9		18.0-148		06/27/2020 18:04	WG1499810

8 Al

9 Sc



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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) Low Fraction	ND		0.100	1	06/30/2020 15:58	WG1501525
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	104		77.0-120		06/30/2020 15:58	WG1501525

1 Cp

2 Tc

3 Ss

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.00100	1	06/23/2020 23:39	WG1497767
Toluene	ND		0.00500	1	06/23/2020 23:39	WG1497767
Ethylbenzene	ND		0.00250	1	06/23/2020 23:39	WG1497767
Total Xylenes	ND		0.00650	1	06/23/2020 23:39	WG1497767
(S) Toluene-d8	106		75.0-131		06/23/2020 23:39	WG1497767
(S) 4-Bromofluorobenzene	89.1		67.0-138		06/23/2020 23:39	WG1497767
(S) 1,2-Dichloroethane-d4	91.3		70.0-130		06/23/2020 23:39	WG1497767

4 Cn

5 Sr

6 Qc

7 Gl

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPH (GC/FID) High Fraction	ND		4.00	1	06/27/2020 16:47	WG1499810
(S) <i>o</i> -Terphenyl	68.7		18.0-148		06/27/2020 16:47	WG1499810

8 Al

9 Sc



Method Blank (MB)

(MB) R3544613-2 06/30/20 01:16

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	94.5			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3544613-1 06/30/20 00:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.69	103	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			110	77.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3544855-3 06/30/20 12:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
^(S) a,a,a-Trifluorotoluene(FID)	106			77.0-120

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

(LCS) R3544855-1 06/30/20 11:48 • (LCSD) R3544855-2 06/30/20 12:09

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	6.59	5.66	120	103	72.0-127			15.2	20
^(S) a,a,a-Trifluorotoluene(FID)				103	99.7	77.0-120				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3544785-2 06/30/20 13:49

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0415	↓	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	97.9			77.0-120

1 Cp

2 Tc

3 Ss

4 Cn

Laboratory Control Sample (LCS)

(LCS) R3544785-1 06/30/20 12:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.05	73.6	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			106	77.0-120	

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3542210-3 06/23/20 16:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
<i>(S) Toluene-d8</i>	109			75.0-131
<i>(S) 4-Bromofluorobenzene</i>	90.6			67.0-138
<i>(S) 1,2-Dichloroethane-d4</i>	90.4			70.0-130

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

(LCS) R3542210-1 06/23/20 14:46 • (LCSD) R3542210-2 06/23/20 15:05

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 %
Benzene	0.125	0.105	0.107	84.0	85.6	70.0-123			1.89	20
Ethylbenzene	0.125	0.110	0.109	88.0	87.2	74.0-126			0.913	20
Toluene	0.125	0.119	0.122	95.2	97.6	75.0-121			2.49	20
Xylenes, Total	0.375	0.358	0.356	95.5	94.9	72.0-127			0.560	20
<i>(S) Toluene-d8</i>				104	103	75.0-131				
<i>(S) 4-Bromofluorobenzene</i>				94.8	93.7	67.0-138				
<i>(S) 1,2-Dichloroethane-d4</i>				92.9	94.9	70.0-130				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3543104-3 06/24/20 09:52

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
<i>(S) Toluene-d8</i>	105			75.0-131
<i>(S) 4-Bromofluorobenzene</i>	103			67.0-138
<i>(S) 1,2-Dichloroethane-d4</i>	80.9			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

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

(LCS) R3543104-1 06/24/20 08:36 • (LCSD) R3543104-2 06/24/20 08:55

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Benzene	0.125	0.108	0.110	86.4	88.0	70.0-123			1.83	20
Ethylbenzene	0.125	0.135	0.139	108	111	74.0-126			2.92	20
Toluene	0.125	0.110	0.113	88.0	90.4	75.0-121			2.69	20
Xylenes, Total	0.375	0.412	0.424	110	113	72.0-127			2.87	20
<i>(S) Toluene-d8</i>				103	102	75.0-131				
<i>(S) 4-Bromofluorobenzene</i>				108	106	67.0-138				
<i>(S) 1,2-Dichloroethane-d4</i>				86.4	85.0	70.0-130				

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3543787-1 06/27/20 15:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	1.87	<u>J</u>	0.769	4.00
<i>(S) o-Terphenyl</i>	81.8			18.0-148

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

Laboratory Control Sample (LCS)

(LCS) R3543787-2 06/27/20 16:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	35.6	71.2	50.0-150	
<i>(S) o-Terphenyl</i>			74.3	18.0-148	

⁶ Qc

⁷ Gl

L1231663-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1231663-01 06/27/20 21:42 • (MS) R3543787-3 06/27/20 21:55 • (MSD) R3543787-4 06/27/20 22:08

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 %
TPH (GC/FID) High Fraction	48.3	26.3	58.8	80.1	67.3	111	1	50.0-150		<u>J3</u>	30.7	20
<i>(S) o-Terphenyl</i>					75.5	81.3		18.0-148				

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3543788-1 06/27/20 14:59

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
<i>(S) o-Terphenyl</i>	75.7			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3543788-2 06/27/20 15:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	35.6	71.2	50.0-150	
<i>(S) o-Terphenyl</i>			68.5	18.0-148	

L1231667-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1231667-04 06/27/20 16:24 • (MS) R3543788-3 06/27/20 16:37 • (MSD) R3543788-4 06/27/20 16:50

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	48.5	ND	22.0	26.5	45.4	55.4	1	50.0-150	J6		18.6	20
<i>(S) o-Terphenyl</i>					43.2	51.4		18.0-148				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



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.
(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.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

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

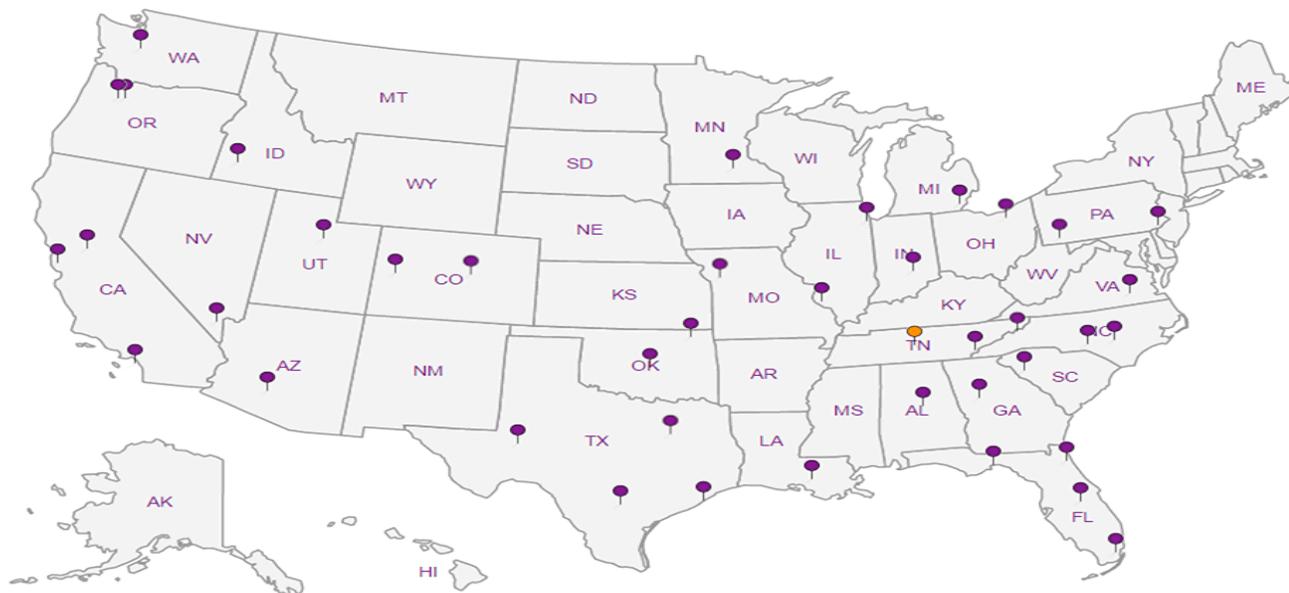
Third Party Federal Accreditations

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.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Crestone Peak Resources
10188 E. I-25 Frontage Road
Firestone, CO 80504

Billing Information:
 Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



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



Report to:
Lonnie Dent

Email To:
ldent@remingtontech.net

Project Description:
Grant Hurt

City/State Collected:
Colorado

Phone: **970-278-1646**
 Fax: **970-278-1645**

Client Project #
 Lab Project #

Collected by (print):
Jesse Wilson

Site/Facility ID #
Grant Hurt

P.O. #

Collected by (signature):
 Immediately Packed on Ice N Y

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
Standard

No. of Cntrs

BTEX
 GRO
 DRO

L# **L1231667**
H213

Acctnum: **CREPEAFCO**
 Template:
 Prelogin:
 TSR:
 PB:

Shipped Via:
 Remarks Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX	GRO	DRO	Remarks	Sample # (lab only)
BH1	grab	soil	1	6/17/20	1015	2					-01
BH2 15'			15		1015	1					02
BH2			5		1050	1					03
BH2 15'			15		1050	1					04
BH3			2		1225	1					05
BH3 15'			15		1225	1					06
BH4			3		1155	1					07
BH4 15'			15		1155	1					08
BH5			1		1215	1					09
BH5 15'			15		1215	1					10

* 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 #

Sample Receipt Checklist
 COC Seal Present/Intact: 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

Relinquished by: (Signature)
 Date: **6/19/20**

Date: **6/19/20**

Time: **1330**

Received by: (Signature)

Trip Blank Received: Yes/No
 HCL / MeOH
 TBR

Relinquished by: (Signature)

Date: **6/19/20**

Time: **1919**

Received by: (Signature)

Temp: **19.19** °C
 Bottles Received: **10**

Bad Screen: **< 0.5 mV/hr**
 If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: **6/20/20**

Time: **0845**

Received for lab by: (Signature)

Date: **6/20-20** Time: **0845**

Hold: Condition: **NCF / OK**

July 08, 2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Crestone Peak Resources

Sample Delivery Group: L1234365
Samples Received: 06/27/2020
Project Number:
Description: Grant Hurt 14H

Report To: Lonnie Dent
10188 E. I-25 Frontage Road
Fireston, CO, CO 80504

Entire Report Reviewed By:

Chris Ward

Chris Ward
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	1 Cp
Tc: Table of Contents	2	2 Tc
Ss: Sample Summary	3	3 Ss
Cn: Case Narrative	4	4 Cn
Sr: Sample Results	5	5 Sr
TMW-1 L1234365-01	5	
TMW-2 L1234365-02	6	
TMW-3 L1234365-03	7	
TMW-4 L1234365-04	8	
TMW-5 L1234365-05	9	6 Qc
Qc: Quality Control Summary	10	7 Gl
Volatile Organic Compounds (GC/MS) by Method 8260B	10	
Gl: Glossary of Terms	11	8 Al
Al: Accreditations & Locations	12	
Sc: Sample Chain of Custody	13	9 Sc

SAMPLE SUMMARY



TMW-1 L1234365-01 GW

Collected by Carlos Rivera
 Collected date/time 06/23/20 11:01
 Received date/time 06/27/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1502051	2	07/01/20 00:27	07/01/20 00:27	JHH	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

TMW-2 L1234365-02 GW

Collected by Carlos Rivera
 Collected date/time 06/23/20 10:50
 Received date/time 06/27/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1502051	20	07/01/20 00:47	07/01/20 00:47	JHH	Mt. Juliet, TN

TMW-3 L1234365-03 GW

Collected by Carlos Rivera
 Collected date/time 06/23/20 10:41
 Received date/time 06/27/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1502051	1	07/01/20 01:08	07/01/20 01:08	JHH	Mt. Juliet, TN

TMW-4 L1234365-04 GW

Collected by Carlos Rivera
 Collected date/time 06/23/20 10:35
 Received date/time 06/27/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1502051	1	07/01/20 01:28	07/01/20 01:28	JHH	Mt. Juliet, TN

TMW-5 L1234365-05 GW

Collected by Carlos Rivera
 Collected date/time 06/23/20 10:28
 Received date/time 06/27/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1502051	2	07/01/20 01:48	07/01/20 01:48	JHH	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.

Chris Ward
Project Manager

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



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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.00200	2	07/01/2020 00:27	WG1502051
Toluene	ND		0.00200	2	07/01/2020 00:27	WG1502051
Ethylbenzene	ND		0.00200	2	07/01/2020 00:27	WG1502051
o-Xylene	ND		0.00200	2	07/01/2020 00:27	WG1502051
m&p-Xylene	ND		0.00400	2	07/01/2020 00:27	WG1502051
Total Xylenes	ND		0.00600	2	07/01/2020 00:27	WG1502051
(S) Toluene-d8	113		80.0-120		07/01/2020 00:27	WG1502051
(S) 4-Bromofluorobenzene	114		77.0-126		07/01/2020 00:27	WG1502051
(S) 1,2-Dichloroethane-d4	108		70.0-130		07/01/2020 00:27	WG1502051

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

Sample Narrative:

L1234365-01 WG1502051: Lowest possible dilution due to sediment in sample vial.



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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	0.287		0.0200	20	07/01/2020 00:47	WG1502051
Toluene	ND		0.0200	20	07/01/2020 00:47	WG1502051
Ethylbenzene	ND		0.0200	20	07/01/2020 00:47	WG1502051
o-Xylene	ND		0.0200	20	07/01/2020 00:47	WG1502051
m&p-Xylene	ND		0.0400	20	07/01/2020 00:47	WG1502051
Total Xylenes	ND		0.0600	20	07/01/2020 00:47	WG1502051
(S) Toluene-d8	114		80.0-120		07/01/2020 00:47	WG1502051
(S) 4-Bromofluorobenzene	108		77.0-126		07/01/2020 00:47	WG1502051
(S) 1,2-Dichloroethane-d4	106		70.0-130		07/01/2020 00:47	WG1502051

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

Sample Narrative:

L1234365-02 WG1502051: Non-target compounds too high to run at a lower dilution.



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.00259		0.00100	1	07/01/2020 01:08	WG1502051
Toluene	ND		0.00100	1	07/01/2020 01:08	WG1502051
Ethylbenzene	ND		0.00100	1	07/01/2020 01:08	WG1502051
o-Xylene	ND		0.00100	1	07/01/2020 01:08	WG1502051
m&p-Xylene	ND		0.00200	1	07/01/2020 01:08	WG1502051
Total Xylenes	ND		0.00300	1	07/01/2020 01:08	WG1502051
(S) Toluene-d8	111		80.0-120		07/01/2020 01:08	WG1502051
(S) 4-Bromofluorobenzene	108		77.0-126		07/01/2020 01:08	WG1502051
(S) 1,2-Dichloroethane-d4	107		70.0-130		07/01/2020 01:08	WG1502051

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



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.00331		0.00100	1	07/01/2020 01:28	WG1502051
Toluene	ND		0.00100	1	07/01/2020 01:28	WG1502051
Ethylbenzene	ND		0.00100	1	07/01/2020 01:28	WG1502051
o-Xylene	ND		0.00100	1	07/01/2020 01:28	WG1502051
m&p-Xylene	ND		0.00200	1	07/01/2020 01:28	WG1502051
Total Xylenes	ND		0.00300	1	07/01/2020 01:28	WG1502051
(S) Toluene-d8	114		80.0-120		07/01/2020 01:28	WG1502051
(S) 4-Bromofluorobenzene	109		77.0-126		07/01/2020 01:28	WG1502051
(S) 1,2-Dichloroethane-d4	106		70.0-130		07/01/2020 01:28	WG1502051

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



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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.00200	2	07/01/2020 01:48	WG1502051
Toluene	ND		0.00200	2	07/01/2020 01:48	WG1502051
Ethylbenzene	ND		0.00200	2	07/01/2020 01:48	WG1502051
o-Xylene	ND		0.00200	2	07/01/2020 01:48	WG1502051
m&p-Xylene	ND		0.00400	2	07/01/2020 01:48	WG1502051
Total Xylenes	ND		0.00600	2	07/01/2020 01:48	WG1502051
(S) Toluene-d8	112		80.0-120		07/01/2020 01:48	WG1502051
(S) 4-Bromofluorobenzene	108		77.0-126		07/01/2020 01:48	WG1502051
(S) 1,2-Dichloroethane-d4	106		70.0-130		07/01/2020 01:48	WG1502051

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

Sample Narrative:

L1234365-05 WG1502051: Lowest possible dilution due to sediment in sample vial.



Method Blank (MB)

(MB) R3546913-2 06/30/20 19:53

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Benzene	U		0.0000941	0.00100
Ethylbenzene	U		0.000137	0.00100
Toluene	U		0.000278	0.00100
Xylenes, Total	U		0.000174	0.00300
o-Xylene	U		0.000174	0.00100
m&p-Xylenes	U		0.000430	0.00200
(S) Toluene-d8	114			80.0-120
(S) 4-Bromofluorobenzene	109			77.0-126
(S) 1,2-Dichloroethane-d4	108			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS)

(LCS) R3546913-1 06/30/20 19:13

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Benzene	0.00500	0.00397	79.4	70.0-123	
Ethylbenzene	0.00500	0.00462	92.4	79.0-123	
Toluene	0.00500	0.00446	89.2	79.0-120	
Xylenes, Total	0.0150	0.0152	101	79.0-123	
o-Xylene	0.00500	0.00525	105	80.0-122	
m&p-Xylenes	0.0100	0.00991	99.1	80.0-122	
(S) Toluene-d8			114	80.0-120	
(S) 4-Bromofluorobenzene			112	77.0-126	
(S) 1,2-Dichloroethane-d4			107	70.0-130	

7 Gl

8 Al

9 Sc



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.
(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.
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.

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

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	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

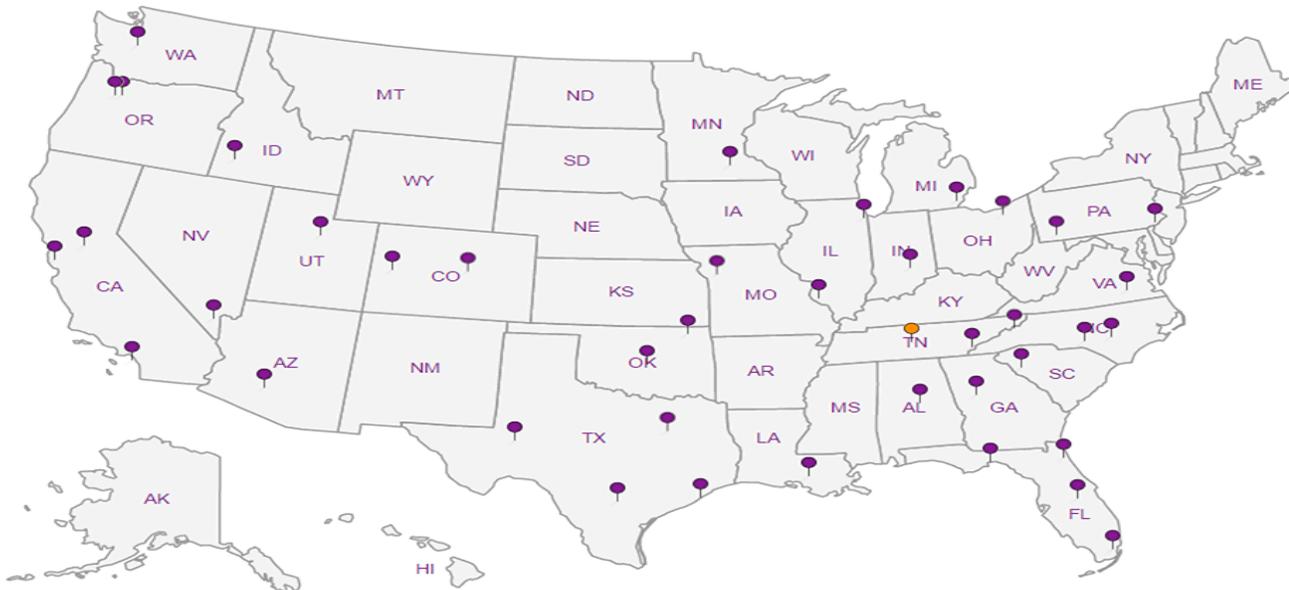
Third Party Federal Accreditations

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.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Crestone Peak Resources 10188 E. I-25 Frontage Road Firestone, CO 80504			Billing Information:			Pres Chk	Analysis / Container / Preservative										Chain of Custody Page ___ of ___			
			Report to: Lonnie Dent, Jeff Carlo				Email To: ldent@remingtontech.net; jcarlo													 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859
Project Description: Grant Hurt 14H			City/State 40.13928, Collected: -104.96659			BTEX 8260											L# L1234365 H163			
Phone: 970-278-1646 Fax: 970-278-1645		Client Project #		Lab Project #													Acctnum: CREPEAFCO Template: Prelogin: TSR: PB:			
Collected by (print): Carlos Rivera		Site/Facility ID #		P.O. #													Shipped Via:			
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 #			Date Results Needed												Remarks Sample # (lab only)	
Immediately Packed on Ice N ___ Y <input checked="" type="checkbox"/>				Standard			No. of Cntrs													
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time															
TMW-1	Grab	GW	NA	6/23/20	11:01	3	<input checked="" type="checkbox"/>											-01		
TMW-2	Grab	GW	NA	6/23/20	10:50	3	<input checked="" type="checkbox"/>											02		
TMW-3	Grab	GW	NA	6/23/20	10:41	3	<input checked="" type="checkbox"/>											03		
TMW-4	Grab	GW	NA	6/23/20	10:35	3	<input checked="" type="checkbox"/>											04		
TMW-5	Grab	GW	NA	6/23/20	10:28	3	<input checked="" type="checkbox"/>											05		
* 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 # 138079948867										Sample Receipt Checklist COC Seal Present/Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N COC Signed/Accurate: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Bottles arrive intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Correct bottles used: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Sufficient volume sent: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If Applicable VOA Zero Headpace: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Preservation Correct/Checked: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N							
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)			Trip Blank Received: Yes/No <input checked="" type="checkbox"/>			HCL / MeOH TBR			RAD SCREEN: <0.5 mR/hr							
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)			Temp 19.3 °C Bottles Received: 224=1.8 15			If preservation required by Login: Date/Time										
Relinquished by: (Signature)		Date:	Time:	Received for lab by: (Signature)			Date: 6/27/20 Time: 0845			Hold:		Condition: NCF / <input checked="" type="checkbox"/> OK								

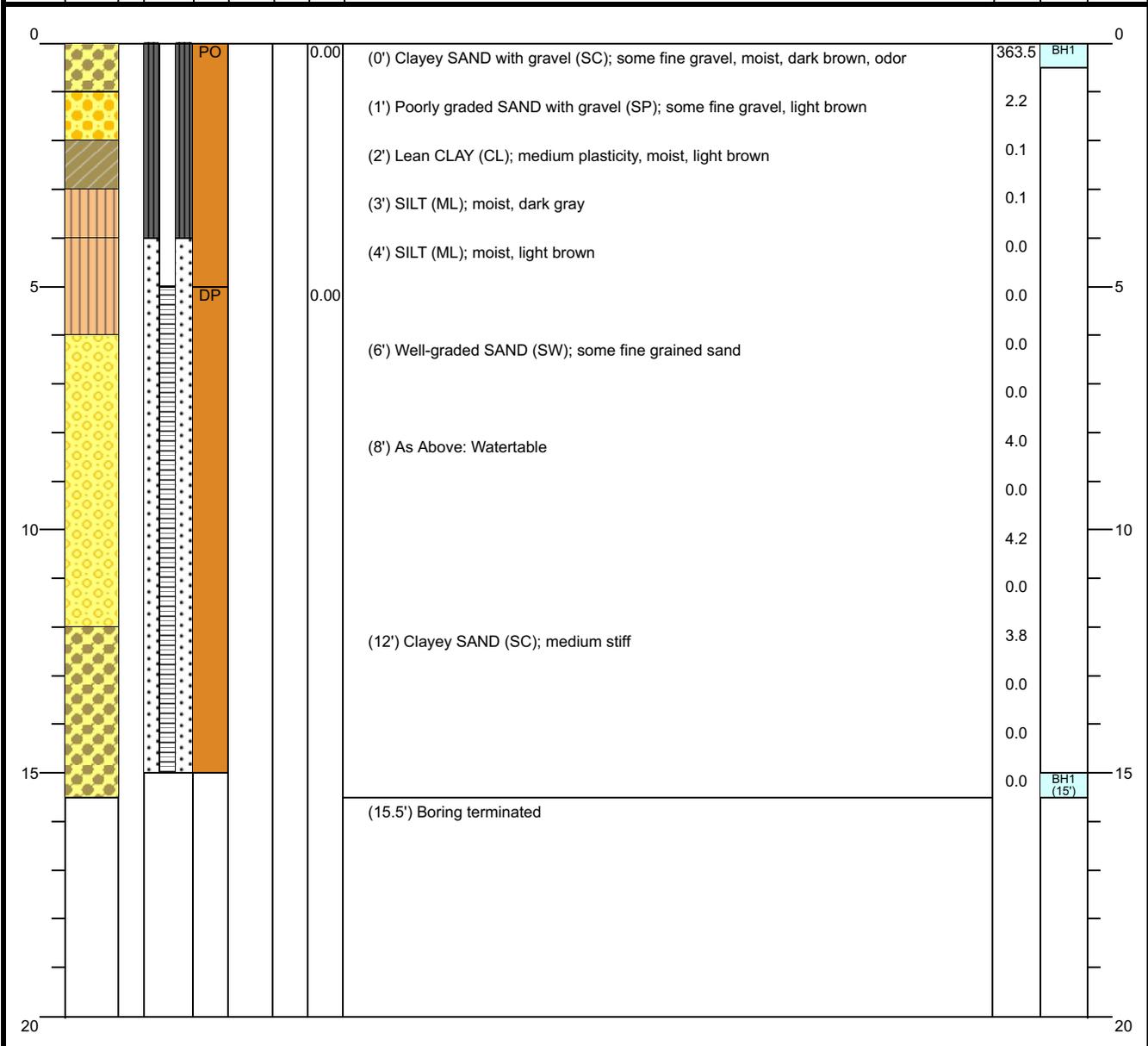


Client: **Crestone Peak Resources**
 Project: **Grant Hurt**
 Address: **40.13928, -104.96659, Firestone, CO**

WELL LOG
 Well No. **TMW-1**
 Page: **1 of 1**

Drilling Start Date: 6/17/20	Boring Depth (ft): 15.5	Well Depth (ft): 15.0
Drilling End Date: 6/17/20	Boring Diameter (in): 2.25	Well Diameter (in): 1.0
Drilling Company: Remington Technologies	Sampling Method(s): DP, PO - Pothole	Screen Slot (in): 0.020
Drilling Method: Direct Push	DTW During Drilling (ft): N/A	Riser Material: Sch 40 PVC
Drilling Equipment: Geoprobe 7822DT	DTW After Drilling (ft): N/A	Screen Material: Sch 40 PVC Slotted
Driller: Carlos Rivera	Top of Casing Elev. (ft): 100	Seal Material(s): Bent. Chips
Logged By: Jesse Wilson	Location (Lat, Long): 40.1401656, -104.9663381	Filter Type: 10/20 Washed Silica Sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		DEPTH (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	



NOTES:

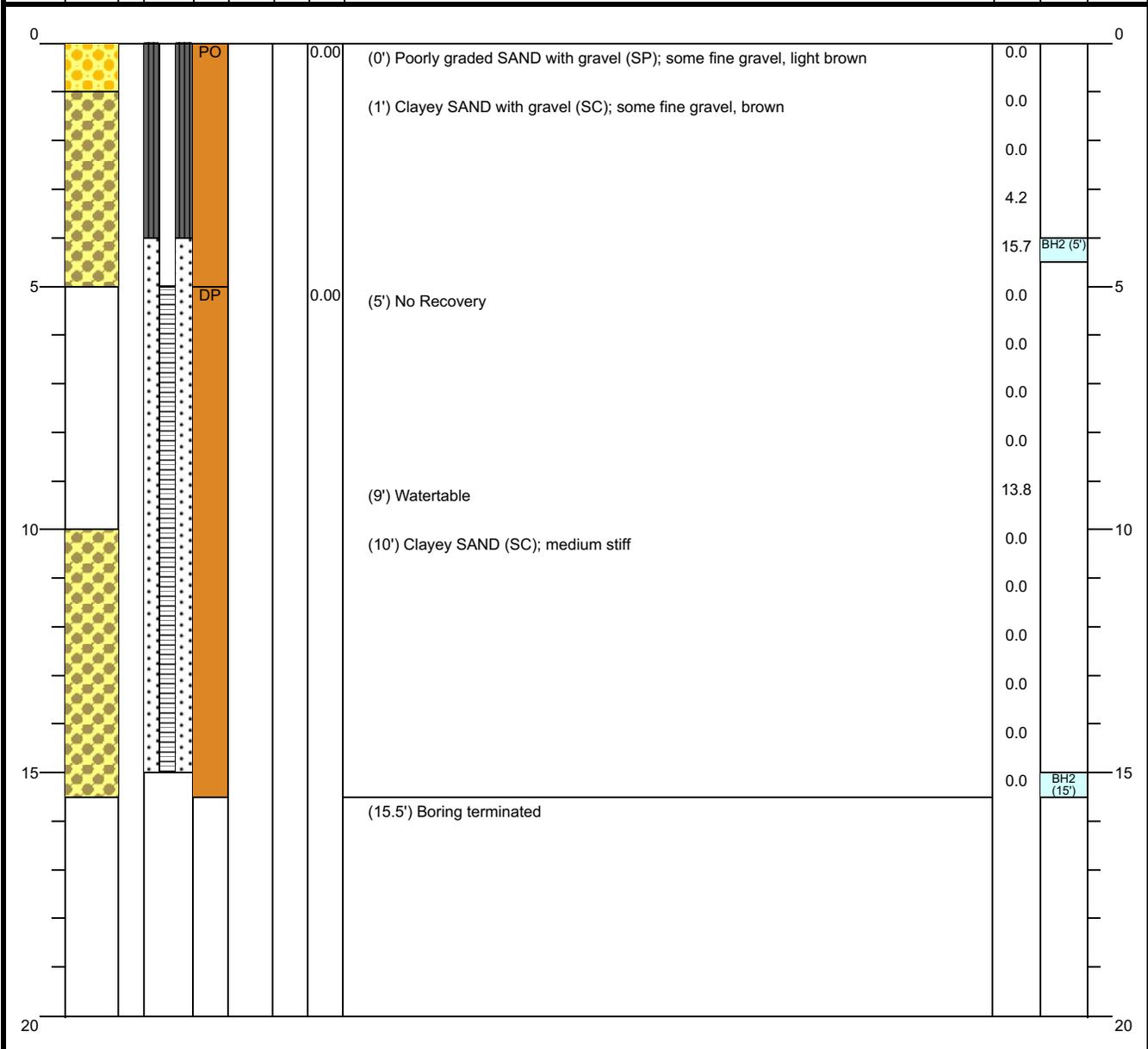


Client: **Crestone Peak Resources**
 Project: **Grant Hurt**
 Address: **40.13928, -104.96659, Firestone, CO**

WELL LOG
 Well No. **TMW-2**
 Page: **1 of 1**

Drilling Start Date: 6/17/20	Boring Depth (ft): 15.5	Well Depth (ft): 15.0
Drilling End Date: 6/17/20	Boring Diameter (in): 2.25	Well Diameter (in): 1.0
Drilling Company: Remington Technologies	Sampling Method(s): DP, PO - Pothole	Screen Slot (in): 0.020
Drilling Method: Direct Push	DTW During Drilling (ft): N/A	Riser Material: Sch 40 PVC
Drilling Equipment: Geoprobe 7822DT	DTW After Drilling (ft): N/A	Screen Material: Sch 40 PVC Slotted
Driller: Carlos Rivera	Top of Casing Elev. (ft): 100.01	Seal Material(s): Bent. Chips
Logged By: Jesse Wilson	Location (Lat, Long): 40.1401637, -104.9663772	Filter Type: 10/20 Washed Silica Sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		DEPTH (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	



NOTES:

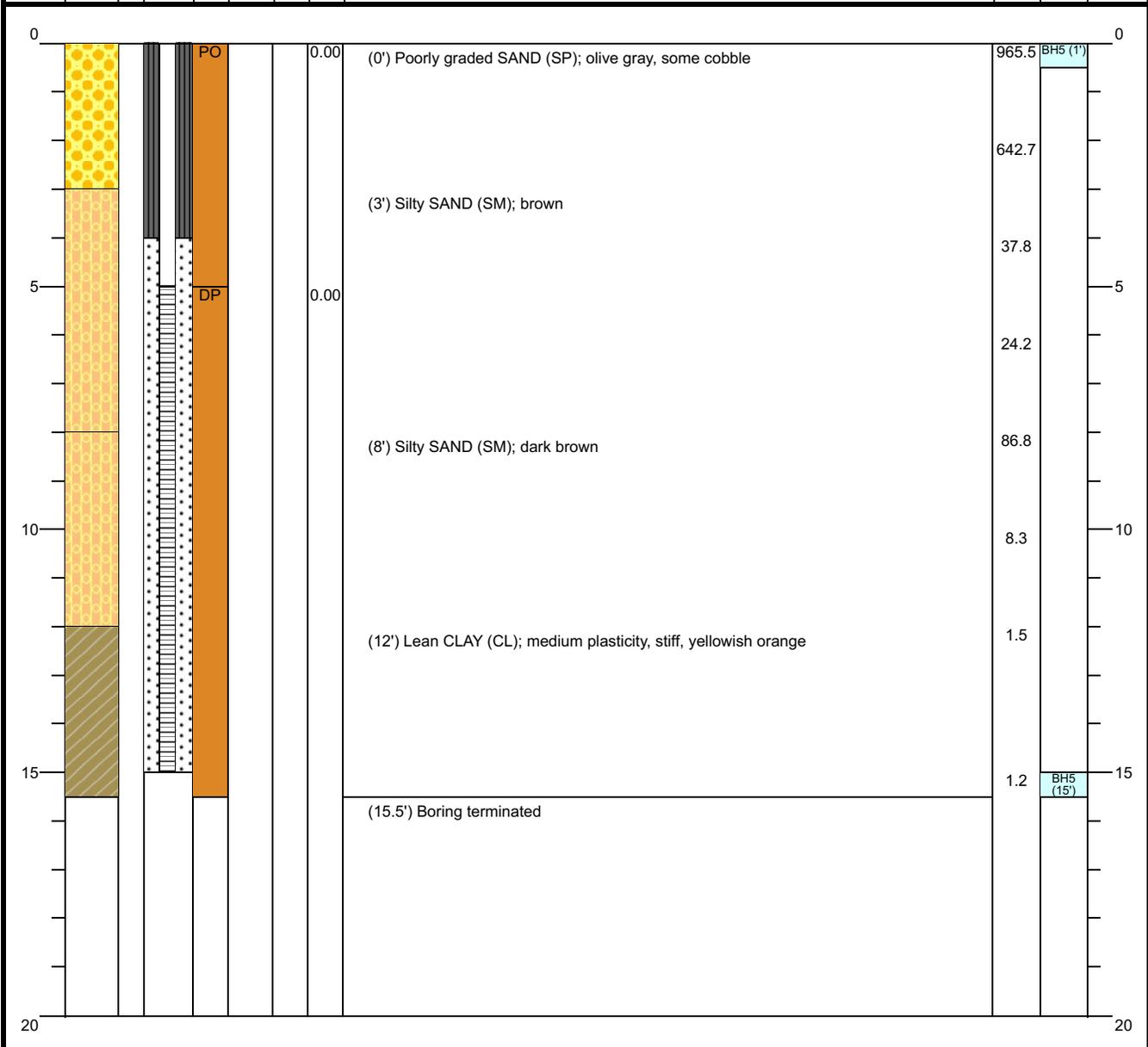


Client: **Crestone Peak Resources**
 Project: **Grant Hurt**
 Address: **40.13928, -104.96659, Firestone, CO**

WELL LOG
 Well No. **TMW-5**
 Page: **1 of 1**

Drilling Start Date: 6/17/20	Boring Depth (ft): 15.5	Well Depth (ft): 15.0
Drilling End Date: 6/17/20	Boring Diameter (in): 2.25	Well Diameter (in): 1.0
Drilling Company: Remington Technologies	Sampling Method(s): DP, PO - Pothole	Screen Slot (in): 0.020
Drilling Method: Direct Push	DTW During Drilling (ft): N/A	Riser Material: Sch 40 PVC
Drilling Equipment: Geoprobe 7822DT	DTW After Drilling (ft): N/A	Screen Material: Sch 40 PVC Slotted
Driller: Carlos Rivera	Top of Casing Elev. (ft): 100.08	Seal Material(s): Bent. Chips
Logged By: Jesse Wilson	Location (Lat, Long): 40.1400928, -104.9663739	Filter Type: 10/20 Washed Silica Sand

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		DEPTH (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	



NOTES:



BORING AND WELL LOG LEGEND

LITHOLOGY	WATER LEVEL	WELL/BORING COMPLETION	Sample Type	DESCRIPTION
-----------	-------------	------------------------	-------------	-------------

ASPHALT
 CONCRETE
 BEDROCK
 IGNEOUS Rock
 METAMORPHIC Rock
 SEDIMENTARY Rock
 Well-graded GRAVEL (GW)
 Poorly graded GRAVEL (GP)
 Silty GRAVEL (GM)
 Clayey GRAVEL (GC)
 Well-graded GRAVEL with silt (GW-GM)
 Poorly graded GRAVEL with silt (GP-GM)
 Well-graded GRAVEL with clay (GW-GC)
 Poorly graded GRAVEL with clay (GP-GC)
 Well-graded SAND (SW)
 Poorly graded SAND (SP)
 Silty SAND (SM)
 Clayey SAND (SC)
 Well-graded SAND with silt (SW-SM)
 Poorly graded SAND with silt (SP-SM)
 Well-graded SAND with clay (SW-SC)
 Poorly graded SAND with clay (SP-SC)
 SILT (ML)
 Lean CLAY (CL)
 Organic SOIL (OL)
 Elastic SILT (MH)
 Fat CLAY (CH)
 Organic SOIL (OH)
 Organic SOIL (OL/OH)
 PEAT (PT)
 Volume Descriptors:
 Trace = <5%
 Few = 5-10%
 Little = 15-25%
 Some = 30-45%
 Mostly = >=50%
 Water Level During Drilling
 Water Level at End of Drilling/in Completed Well
 Cap
 Riser
 Screen
 End Plug
 Annular Seal (Bentonite-Cement Grout, Bentonite Slurry/Chips/Pellets/Powder, Other)
 Sanitary Seal (Bentonite Slurry/Chips/Pellets/Powder, Other)
 Filter Pack (Sand, Gravel, Other)
 Backfill
 GR Grab
 EN Encore
 SS Split Spoon
 SH Shelby Tube
 CO Core Barrel
 DP Direct Push
 ID Lab Sample and ID

NOTES: