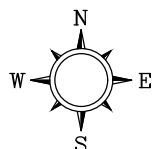


LATITUDE 40D 08M 23S NORTH
 LONGITUDE 104D 57M 58S WEST
 U.S. GEOLOGICAL SURVEY – 2019
 7.5 MINUTE QUADRANGLE MAP
 GOWANDA, COLORADO



GRANT-HURT 14H

FIGURE 1

SITE LOCATION MAP

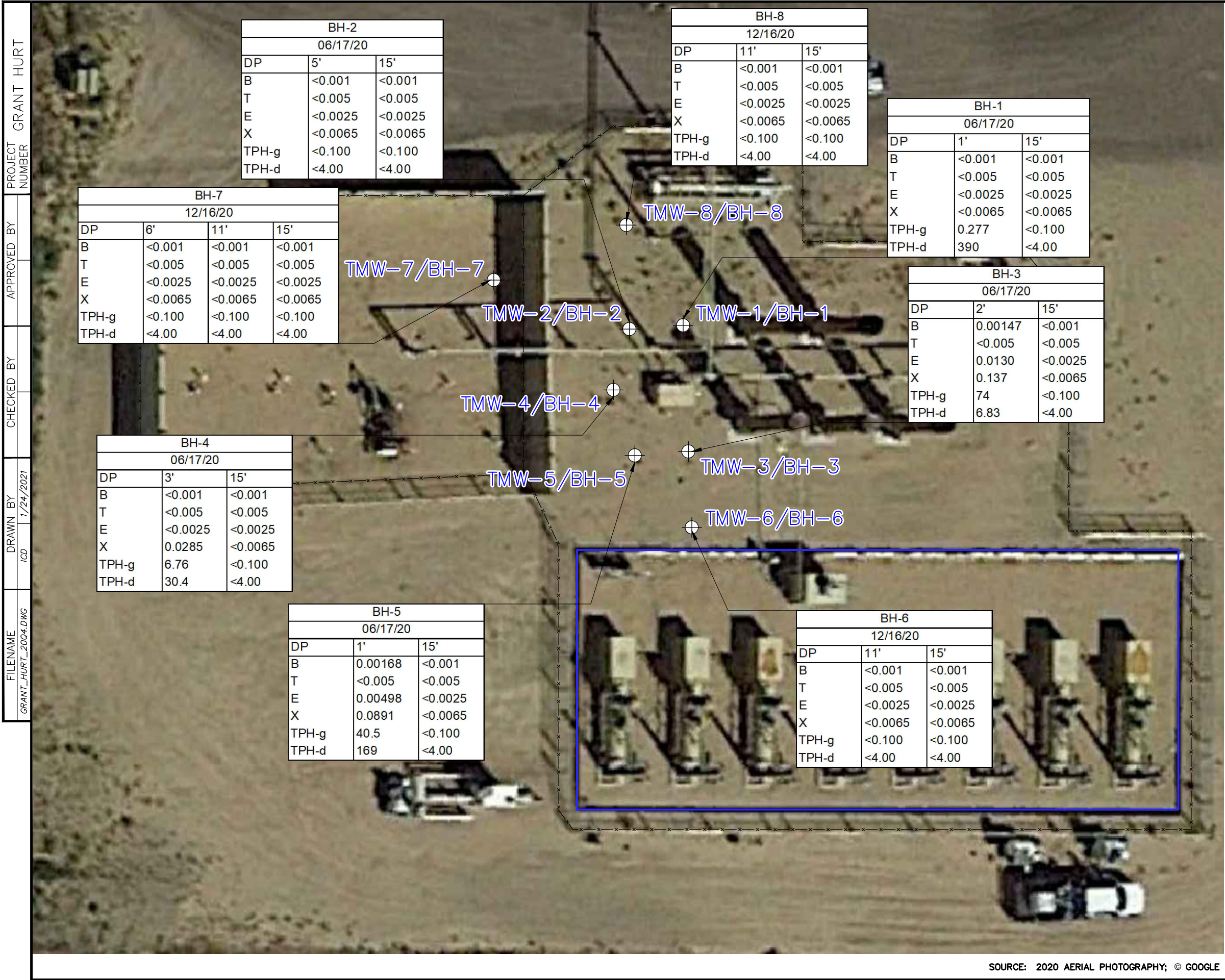
40.13928, -104.96659
 FIRESTONE, COLORADO

PROJECT NUMBER
 GRANT HURT

APPROVED BY

CHECKED BY

DRAWN BY
 ICD 07/14/2020



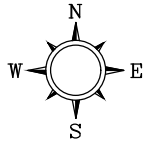
TMW-2	
09/28/20	
B=	<1.0
T=	<1.0
E=	<1.0
X=	<3.0

TMW-1	
09/28/20	
B=	<1.0
T=	<1.0
E=	<1.0
X=	<3.0

TMW-4	
09/28/20	
B=	1.43
T=	<1.0
E=	<1.0
X=	<3.0

TMW-3	
09/28/20	
B=	<1.0
T=	<1.0
E=	<1.0
X=	<3.0

TMW-5	
09/28/20	
B=	2.45
T=	<1.0
E=	<1.0
X=	<3.0



LEGEND

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

BERM

FENCE

86.81 GROUNDWATER ELEVATION (FEET)

86.80 GROUNDWATER ELEVATION CONTOUR LINE (FEET)

CONTOUR INTERVAL=0.05 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

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

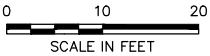
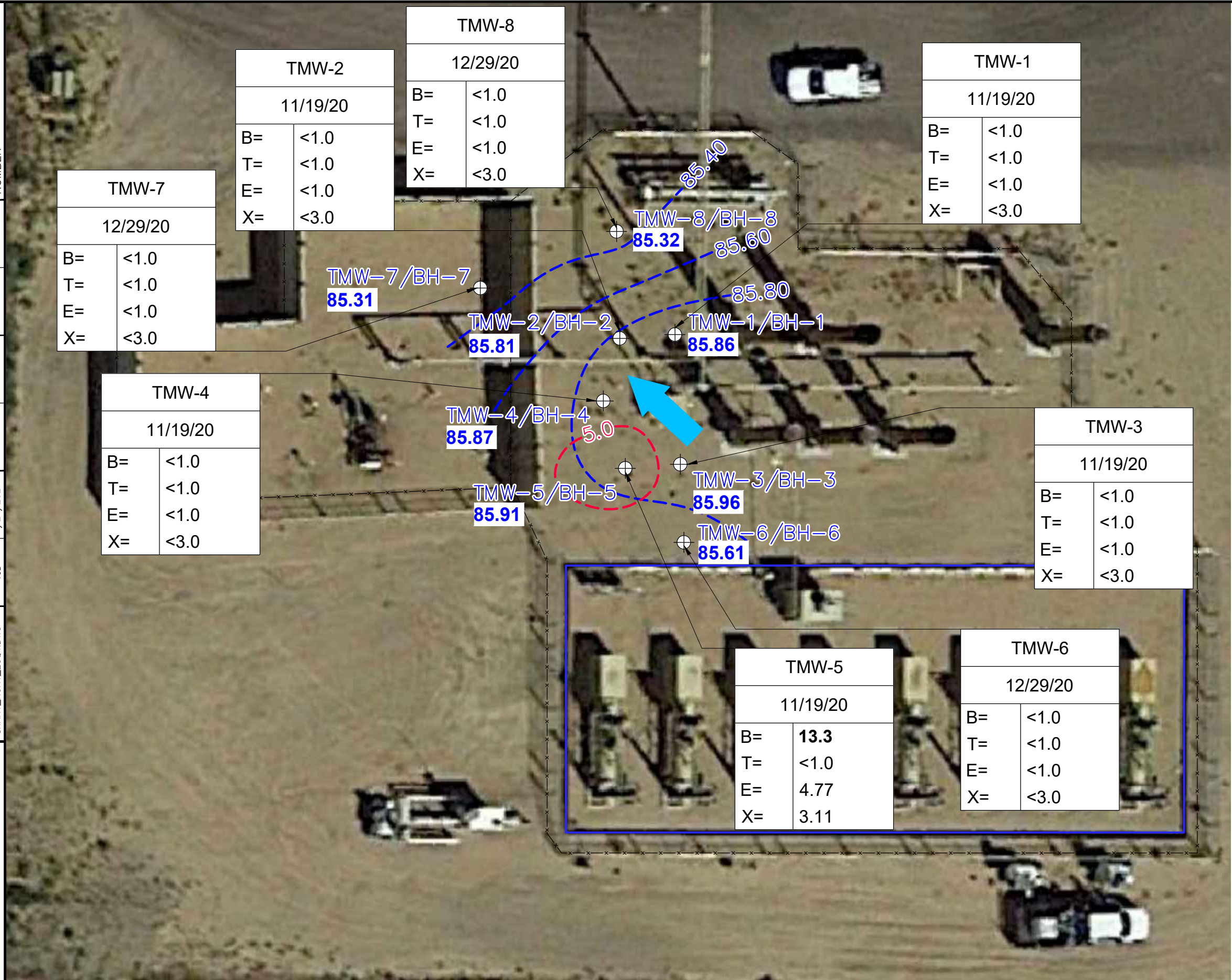


FIGURE 3

GROUNDWATER MONITORING MAP
09/28/2020

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



N
W
E
S

LEGEND

TMW-1/
BH-1

MONITORING WELL/BORING LOCATION

—x—x—x—x—

BERM

—x—x—x—x—

FENCE

86.81

GROUNDWATER ELEVATION (FEET)

86.80

GROUNDWATER ELEVATION
CONTOUR LINE (FEET)

CONTOUR INTERVAL=0.05 FEET

APPROXIMATE GROUNDWATER
FLOW DIRECTION

BENZENE ISOCONCENTRATION
CONTOUR LINE (µg/L)

5.0

BENZENE (µg/L)

B

TOLUENE (µg/L)

T

ETHYLBENZENE (µg/L)

E

TOTAL XYLENES (µg/L)

X

MICROGRAMS PER LITER

µg/L

NOT DETECTED ABOVE LIMIT NOTED

<

BOLD VALUES INDICATE EXCEEDANCE
OF APPLICABLE STANDARDS

NOTES

1. LOCATIONS ARE APPROXIMATE

2. COORDINATE SYSTEM: WGS 1984
PROJECTION: TRANSVERSE MERCATOR

3. TMW-6, TMW-7 AND TMW-8 GAUGED AND
SAMPLED ON 12/29/2020

CRESTONE PEAK
RESOURCES

FIGURE 4

GROUNDWATER MONITORING MAP
11/19/2020 AND 12/29/2020

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

01020

SCALE IN FEET

SOURCE: 2020 AERIAL PHOTOGRAPHY; © GOOGLE

**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
BH-6 (11')	12/16/20	Boring	11	11.2	<0.001	<0.005	<0.0025	<0.0065	<0.100	<4.00	<4.00
BH-6 (15')	12/16/20	Boring	15	0	<0.001	<0.005	<0.0025	<0.0065	<0.100	<4.00	<4.00
BH-7 (6')	12/16/20	Boring	6	80.3	<0.001	<0.005	<0.0025	<0.0065	<0.100	<4.00	<4.00
BH-7 (11')	12/16/20	Boring	11	29.3	<0.001	<0.005	<0.0025	<0.0065	<0.100	<4.00	<4.00
BH-7 (15')	12/16/20	Boring	15	0	<0.001	<0.005	<0.0025	<0.0065	<0.100	<4.00	<4.00
BH-8 (11')	12/16/20	Boring	11	0.8	<0.001	<0.005	<0.0025	<0.0065	<0.100	<4.00	<4.00
BH-8 (15')	12/16/20	Boring	15	0	<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
	9/28/20		13.29	86.71	18.70	1,422	27.00	0.94	14.34
	11/19/20		14.14	85.86	16.74	1,379	-62.70	1.92	7.31
TMW-2	6/23/20	100.01	11.05	88.96	19.95	1,126	-68.50	5.83	7.46
	9/28/20		13.41	86.60	17.96	1,563	5.60	0.81	14.63
	11/19/20		14.20	85.81	16.44	1,511	-115.30	1.25	9.22
TMW-3	6/23/20	100.25	10.92	89.33	21.43	1,573	-102.60	2.12	7.41
	9/28/20		13.44	86.81	19.10	1,612	-53.40	1.35	11.70
	11/19/20		14.29	85.96	16.66	1,499	-133.40	1.10	9.12
TMW-4	6/23/20	98.82	9.85	88.97	19.19	753	-68.60	11.34	7.16
	9/28/20		12.14	86.68	19.14	1,545	-102.20	0.50	15.37
	11/19/20		12.95	85.87	17.53	1,408	171.80	0.50	8.74
TMW-5	6/23/20	100.08	11.05	89.03	16.71	786	-134.80	11.09	7.48
	9/28/20		13.33	86.75	17.91	1,540	-31.90	1.68	13.56
	11/19/20		14.17	85.91	16.60	1,530	-172.60	0.75	8.97
TMW-6	12/29/20	100.06	14.45	85.61	NM	NM	NM	NM	NM
TMW-7	12/29/20	101.06	15.75	85.31	NM	NM	NM	NM	NM
TMW-8	12/29/20	100.07	14.75	85.32	NM	NM	NM	NM	NM

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
	9/28/20	<1.0	<1.0	<1.0	<3.0
	11/19/20	<1.0	<1.0	<1.0	<3.0
TMW-2	6/23/20	287	<20.0	<20.0	<60.0
	9/28/20	<1.0	<1.0	<1.0	<3.0
	11/19/20	<1.0	<1.0	<1.0	<3.0
TMW-3	6/23/20	2.59	<1.0	<1.0	<3.0
	9/28/20	<1.0	<1.0	<1.0	<3.0
	11/19/20	<1.0	<1.0	<1.0	<3.0
TMW-4	6/23/20	3.31	<1.0	<1.0	<3.0
	9/28/20	1.43	<1.0	<1.0	<3.0
	11/19/20	<1.0	<1.0	<1.0	<3.0
TMW-5	6/23/20	<2.0	<2.0	<2.0	<6.0
	9/28/20	2.45	<1.0	<1.0	<3.0
	11/19/20	13.3	<1.0	4.77	3.11
TMW-6	12/29/20	<1.0	<1.0	<1.0	<3.0
TMW-7	12/29/20	<1.0	<1.0	<1.0	<3.0
TMW-8	12/29/20	<1.0	<1.0	<1.0	<3.0

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

				Client: Crestone Peak Resources Project: Grant-Hurt 14H Address: 40.13928, -104.96659, Firestone, CO				WELL LOG Well No. TMW-6 Page: 1 of 1			
Drilling Start Date: 12/16/20 Drilling End Date: 12/16/20 Drilling Company: Remington Technologies Drilling Method: Direct Push Drilling Equipment: Geoprobe 7822DT Driller: Carlos Rivera Logged By: Ryan Millunzi				Boring Depth (ft): 15.0 Boring Diameter (in): 2.25 Sampling Method(s): DP, GR DTW During Drilling (ft): N/A DTW After Drilling (ft): N/A Ground Surface Elev. (ft): Location (Lat, Long):				Well Depth (ft): 15.0 Well Diameter (in): 1.0 Screen Slot (in): 0.020 Riser Material: Sch 40 PVC Screen Material: Sch 40 PVC Slotted Seal Material(s): Bent. Chips 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	
0								(0') Roadbase			0
								(1') Poorly graded SAND (SP); light brown			
								(2') Lean CLAY (CL); medium plasticity, light brown	0.4		
								(4') SILT (ML); moist, light brown	17.5		
5								(6') Silty SAND (SM); moist, dark gray	1.5		
								(8') Silty SAND (SM); moist, dark gray	2.7		
								(9') Silty SAND (SM); moist, light brown	11.2		
10								(11') Silty SAND (SM); moist, light brown	0.6	BH-6 (11')	
								(13') Clayey SAND (SC); light brown	0.0		
15								(15') Boring terminated		BH-6 (15')	15
20											20

NOTES:



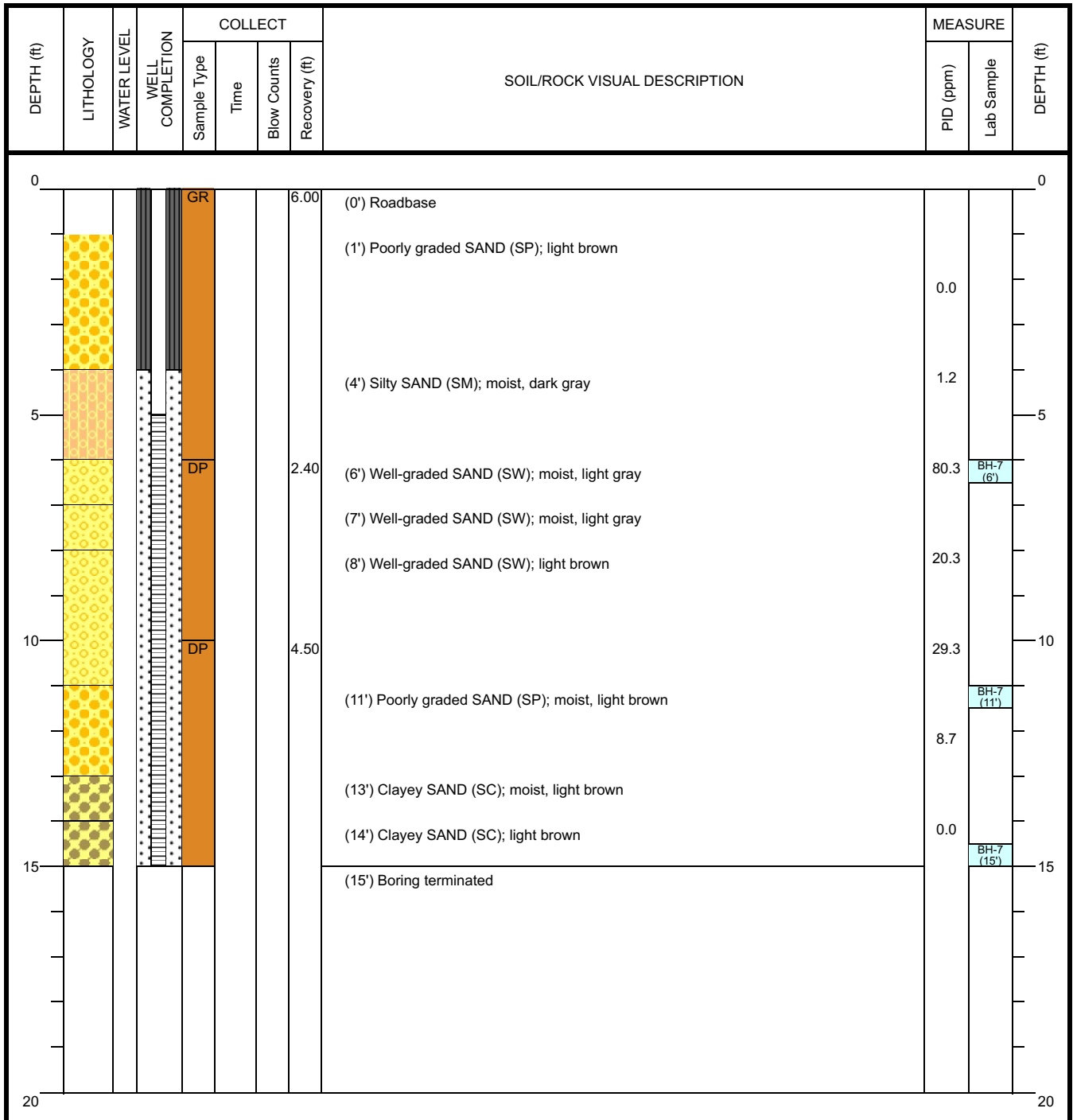
Client: **Crestone Peak Resources**
Project: **Grant-Hurt 14H**
Address: **40.13928, -104.96659, Firestone, CO**

WELL LOG
Well No. **TMW-7**
Page: **1 of 1**

Drilling Start Date: **12/16/20**
Drilling End Date: **12/16/20**
Drilling Company: **Remington Technologies**
Drilling Method: **Direct Push**
Drilling Equipment: **Geoprobe 7822DT**
Driller: **Carlos Rivera**
Logged By: **Ryan Mullanzi**

Boring Depth (ft): **15.0**
Boring Diameter (in): **2.25**
Sampling Method(s): **DP, GR**
DTW During Drilling (ft): **N/A**
DTW After Drilling (ft): **N/A**
Ground Surface Elev. (ft):
Location (Lat, Long):

Well Depth (ft): **15.0**
Well Diameter (in): **1.0**
Screen Slot (in): **0.020**
Riser Material: **Sch 40 PVC**
Screen Material: **Sch 40 PVC Slotted**
Seal Material(s): **Bent. Chips**
Filter Type: **10/20 Washed Silica Sand**



NOTES:



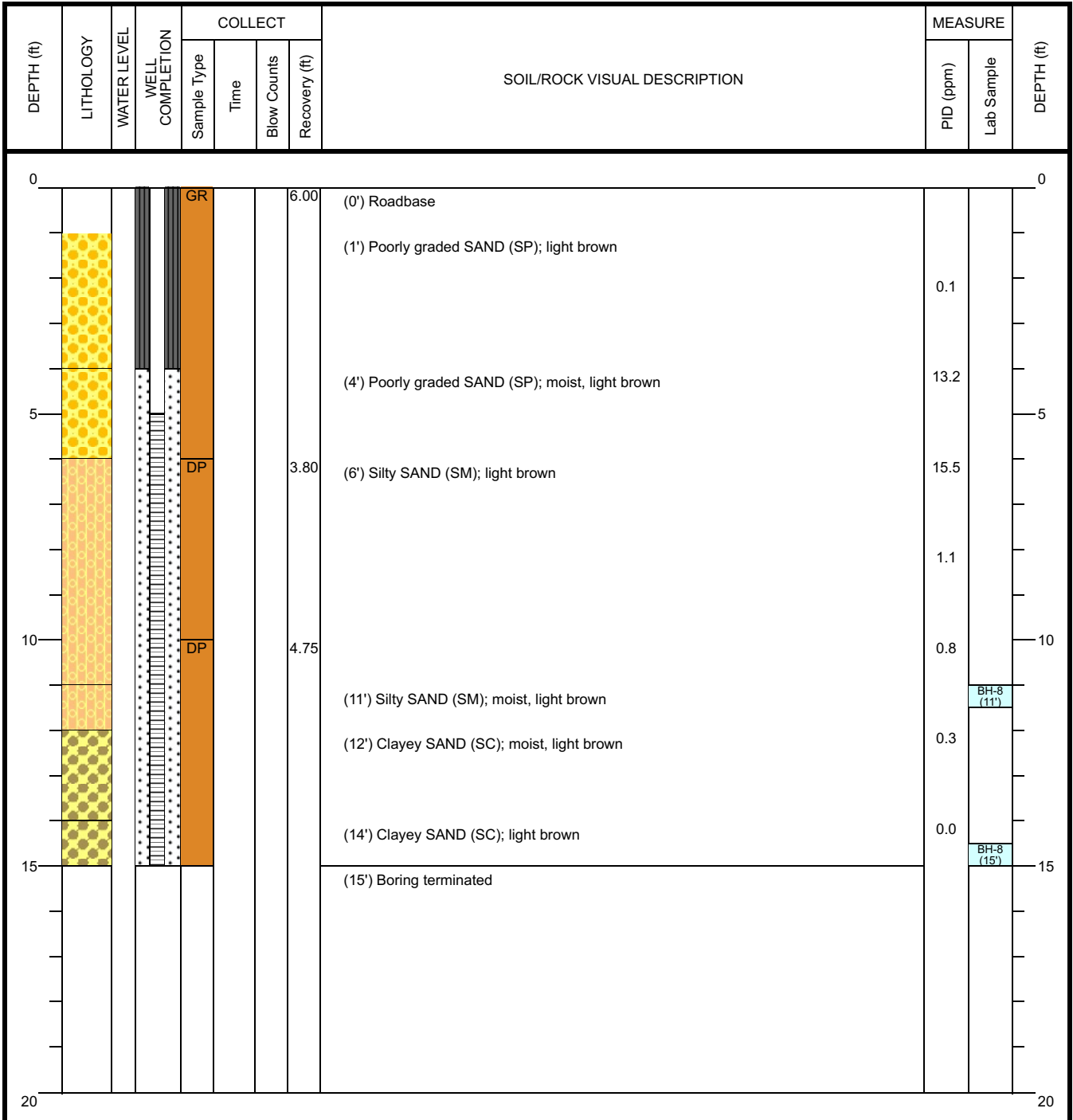
Client: **Crestone Peak Resources**
Project: **Grant-Hurt 14H**
Address: **40.13928, -104.96659, Firestone, CO**

WELL LOG
Well No. **TMW-8**
Page: **1 of 1**

Drilling Start Date: **12/16/20**
Drilling End Date: **12/16/20**
Drilling Company: **Remington Technologies**
Drilling Method: **Direct Push**
Drilling Equipment: **Geoprobe 7822DT**
Driller: **Carlos Rivera**
Logged By: **Ryan Millunzi**

Boring Depth (ft): **15.0**
Boring Diameter (in): **2.25**
Sampling Method(s): **DP, GR**
DTW During Drilling (ft): **N/A**
DTW After Drilling (ft): **N/A**
Ground Surface Elev. (ft):
Location (Lat, Long):

Well Depth (ft): **15.0**
Well Diameter (in): **1.0**
Screen Slot (in): **0.020**
Riser Material: **Sch 40 PVC**
Screen Material: **Sch 40 PVC Slotted**
Seal Material(s): **Bent. Chips**
Filter Type: **10/20 Washed Silica Sand**



NOTES:



NOTES:

Crestone Peak Resources

Sample Delivery Group: L1268767
Samples Received: 10/01/2020
Project Number: CRESTONE PEAK RESOUR
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	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
TMW-1 L1268767-01	5	
TMW-2 L1268767-02	6	⁴ Cn
TMW-3 L1268767-03	7	⁵ Sr
TMW-4 L1268767-04	8	
TMW-5 L1268767-05	9	⁶ Qc
Qc: Quality Control Summary	10	
Volatile Organic Compounds (GC/MS) by Method 8260B	10	⁷ Gl
Gl: Glossary of Terms	11	
Al: Accreditations & Locations	12	⁸ Al
Sc: Sample Chain of Custody	13	⁹ Sc



TMW-1 L1268767-01 GW

				Collected by Jeff Carlo	Collected date/time 09/28/20 15:30	Received date/time 10/01/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1556175	1	10/08/20 19:47	10/08/20 19:47	BMB	Mt. Juliet, TN

¹ Cp² Tc³ Ss

TMW-2 L1268767-02 GW

				Collected by Jeff Carlo	Collected date/time 09/28/20 15:38	Received date/time 10/01/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1556175	1	10/08/20 20:06	10/08/20 20:06	BMB	Mt. Juliet, TN

⁴ Cn⁵ Sr

TMW-3 L1268767-03 GW

				Collected by Jeff Carlo	Collected date/time 09/28/20 15:13	Received date/time 10/01/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1556175	1	10/08/20 20:51	10/08/20 20:51	BMB	Mt. Juliet, TN

⁶ Qc⁷ Gl

TMW-4 L1268767-04 GW

				Collected by Jeff Carlo	Collected date/time 09/28/20 15:45	Received date/time 10/01/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1556175	1	10/08/20 22:27	10/08/20 22:27	BMB	Mt. Juliet, TN

⁸ Al⁹ Sc

TMW-5 L1268767-05 GW

				Collected by Jeff Carlo	Collected date/time 09/28/20 15:20	Received date/time 10/01/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1556175	1	10/08/20 22:46	10/08/20 22:46	BMB	Mt. Juliet, TN



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

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 mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/08/2020 19:47	WG1556175
Toluene	ND		0.00100	1	10/08/2020 19:47	WG1556175
Ethylbenzene	ND		0.00100	1	10/08/2020 19:47	WG1556175
o-Xylene	ND		0.00100	1	10/08/2020 19:47	WG1556175
m&p-Xylene	ND		0.00200	1	10/08/2020 19:47	WG1556175
Total Xylenes	ND		0.00300	1	10/08/2020 19:47	WG1556175
(S) Toluene-d8	102		80.0-120		10/08/2020 19:47	WG1556175
(S) 4-Bromofluorobenzene	103		77.0-126		10/08/2020 19:47	WG1556175
(S) 1,2-Dichloroethane-d4	107		70.0-130		10/08/2020 19:47	WG1556175

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/08/2020 20:06	WG1556175
Toluene	ND		0.00100	1	10/08/2020 20:06	WG1556175
Ethylbenzene	ND		0.00100	1	10/08/2020 20:06	WG1556175
o-Xylene	ND		0.00100	1	10/08/2020 20:06	WG1556175
m&p-Xylene	ND		0.00200	1	10/08/2020 20:06	WG1556175
Total Xylenes	ND		0.00300	1	10/08/2020 20:06	WG1556175
(S) Toluene-d8	106		80.0-120		10/08/2020 20:06	WG1556175
(S) 4-Bromofluorobenzene	105		77.0-126		10/08/2020 20:06	WG1556175
(S) 1,2-Dichloroethane-d4	104		70.0-130		10/08/2020 20:06	WG1556175

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	10/08/2020 20:51	WG1556175
Toluene	ND		0.00100	1	10/08/2020 20:51	WG1556175
Ethylbenzene	ND		0.00100	1	10/08/2020 20:51	WG1556175
o-Xylene	ND		0.00100	1	10/08/2020 20:51	WG1556175
m&p-Xylene	ND		0.00200	1	10/08/2020 20:51	WG1556175
Total Xylenes	ND		0.00300	1	10/08/2020 20:51	WG1556175
(S) Toluene-d8	106		80.0-120		10/08/2020 20:51	WG1556175
(S) 4-Bromofluorobenzene	121		77.0-126		10/08/2020 20:51	WG1556175
(S) 1,2-Dichloroethane-d4	101		70.0-130		10/08/2020 20:51	WG1556175

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.00143		0.00100	1	10/08/2020 22:27	WG1556175
Toluene	ND		0.00100	1	10/08/2020 22:27	WG1556175
Ethylbenzene	ND		0.00100	1	10/08/2020 22:27	WG1556175
o-Xylene	ND		0.00100	1	10/08/2020 22:27	WG1556175
m&p-Xylene	ND		0.00200	1	10/08/2020 22:27	WG1556175
Total Xylenes	ND		0.00300	1	10/08/2020 22:27	WG1556175
(S) Toluene-d8	91.6		80.0-120		10/08/2020 22:27	WG1556175
(S) 4-Bromofluorobenzene	118		77.0-126		10/08/2020 22:27	WG1556175
(S) 1,2-Dichloroethane-d4	111		70.0-130		10/08/2020 22:27	WG1556175

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.00245		0.00100	1	10/08/2020 22:46	WG1556175
Toluene	ND		0.00100	1	10/08/2020 22:46	WG1556175
Ethylbenzene	ND		0.00100	1	10/08/2020 22:46	WG1556175
o-Xylene	0.00179		0.00100	1	10/08/2020 22:46	WG1556175
m&p-Xylene	ND		0.00200	1	10/08/2020 22:46	WG1556175
Total Xylenes	ND		0.00300	1	10/08/2020 22:46	WG1556175
(S) Toluene-d8	97.5		80.0-120		10/08/2020 22:46	WG1556175
(S) 4-Bromofluorobenzene	95.9		77.0-126		10/08/2020 22:46	WG1556175
(S) 1,2-Dichloroethane-d4	83.8		70.0-130		10/08/2020 22:46	WG1556175

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3579698-1 10/08/20 18:30

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL 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	108			80.0-120
(S) 4-Bromofluorobenzene	102			77.0-126
(S) 1,2-Dichloroethane-d4	108			70.0-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

Laboratory Control Sample (LCS)

(LCS) R3579698-2 10/09/20 03:44

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00509	102	70.0-123	
Ethylbenzene	0.00500	0.00509	102	79.0-123	
Toluene	0.00500	0.00519	104	79.0-120	
Xylenes, Total	0.0150	0.0153	102	79.0-123	
o-Xylene	0.00500	0.00508	102	80.0-122	
m&p-Xylenes	0.0100	0.0102	102	80.0-122	
(S) Toluene-d8			104	80.0-120	
(S) 4-Bromofluorobenzene			102	77.0-126	
(S) 1,2-Dichloroethane-d4			107	70.0-130	

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

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.

Qualifier Description

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

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.



[illegible]

December 31, 2020

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Crestone Peak Resources

Sample Delivery Group: L1298764
Samples Received: 12/18/2020
Project Number: CRESTONE PEAK RESOU
Description: Grant-Hurt 14H

Report To: Jeff Carlo
1801 California Street
Denver, CO 80202

Entire Report Reviewed By:



Jason Romer
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.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



BH-6 (11') L1298764-01 Solid

Collected by
Ryan Millunzi

Collected date/time
12/16/20 11:00

Received date/time
12/18/20 11:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1597314	1	12/23/20 08:45	12/24/20 17:36	AV	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1596593	1	12/23/20 08:45	12/23/20 14:00	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1598588	1	12/29/20 23:11	12/30/20 21:26	CAG	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

BH-6 (15') L1298764-02 Solid

Collected by
Ryan Millunzi

Collected date/time
12/16/20 11:15

Received date/time
12/18/20 11:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1597314	1	12/23/20 08:45	12/24/20 17:57	AV	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1596593	1	12/23/20 08:45	12/23/20 14:19	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1598588	1	12/29/20 23:11	12/30/20 08:49	CAG	Mt. Juliet, TN

BH-7 (6') L1298764-03 Solid

Collected by
Ryan Millunzi

Collected date/time
12/16/20 11:50

Received date/time
12/18/20 11:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1597314	1	12/23/20 08:45	12/24/20 18:18	AV	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1596593	1	12/23/20 08:45	12/23/20 14:38	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1598588	1	12/29/20 23:11	12/30/20 22:43	CAG	Mt. Juliet, TN

BH-7 (11') L1298764-04 Solid

Collected by
Ryan Millunzi

Collected date/time
12/16/20 12:00

Received date/time
12/18/20 11:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1597314	1	12/23/20 08:45	12/24/20 18:39	AV	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1596593	1	12/23/20 08:45	12/23/20 14:57	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1598588	1	12/29/20 23:11	12/30/20 20:23	CAG	Mt. Juliet, TN

BH-7 (15') L1298764-05 Solid

Collected by
Ryan Millunzi

Collected date/time
12/16/20 12:10

Received date/time
12/18/20 11:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1597314	1	12/23/20 08:45	12/24/20 19:00	AV	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1596593	1	12/23/20 08:45	12/23/20 15:16	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1598588	1	12/29/20 23:11	12/30/20 20:35	CAG	Mt. Juliet, TN

BH-8 (11') L1298764-06 Solid

Collected by
Ryan Millunzi

Collected date/time
12/16/20 12:35

Received date/time
12/18/20 11:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1597314	1	12/23/20 08:45	12/24/20 19:21	AV	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1596593	1	12/23/20 08:45	12/23/20 15:35	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1598588	1	12/29/20 23:11	12/30/20 20:48	CAG	Mt. Juliet, TN

ACCOUNT:

Crestone Peak Resources

PROJECT:

CREASTONE PEAK RESOU

SDG:

L1298764

DATE/TIME:

12/31/20 10:11

PAGE:

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BH-8 (15') L1298764-07 Solid

Collected by
Ryan MillunziCollected date/time
12/16/20 12:45Received date/time
12/18/20 11:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1597314	1	12/23/20 08:45	12/24/20 19:42	AV	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1596593	1	12/23/20 08:45	12/23/20 15:54	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1598588	1	12/29/20 23:11	12/30/20 21:01	CAG	Mt. Juliet, TN

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc



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.

Jason Romer
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

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	ND		0.100	1	12/24/2020 17:36	WG1597314
(S) a,a,a-Trifluorotoluene(FID)	106		77.0-120		12/24/2020 17:36	WG1597314

¹ Cp² Tc³ 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	12/23/2020 14:00	WG1596593
Toluene	ND		0.00500	1	12/23/2020 14:00	WG1596593
Ethylbenzene	ND		0.00250	1	12/23/2020 14:00	WG1596593
Total Xylenes	ND		0.00650	1	12/23/2020 14:00	WG1596593
(S) Toluene-d8	104		75.0-131		12/23/2020 14:00	WG1596593
(S) 4-Bromofluorobenzene	95.8		67.0-138		12/23/2020 14:00	WG1596593
(S) 1,2-Dichloroethane-d4	94.4		70.0-130		12/23/2020 14:00	WG1596593

⁴ Cn⁵ Sr⁶ Qc⁷ 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	ND		4.00	1	12/30/2020 21:26	WG1598588
(S) o-Terphenyl	58.1		18.0-148		12/30/2020 21:26	WG1598588

⁸ Al⁹ 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	ND		0.100	1	12/24/2020 17:57	WG1597314
(S) a,a,a-Trifluorotoluene(FID)	109		77.0-120		12/24/2020 17:57	WG1597314

1
Cp2
Tc3
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	12/23/2020 14:19	WG1596593
Toluene	ND		0.00500	1	12/23/2020 14:19	WG1596593
Ethylbenzene	ND		0.00250	1	12/23/2020 14:19	WG1596593
Total Xylenes	ND		0.00650	1	12/23/2020 14:19	WG1596593
(S) Toluene-d8	102		75.0-131		12/23/2020 14:19	WG1596593
(S) 4-Bromofluorobenzene	94.8		67.0-138		12/23/2020 14:19	WG1596593
(S) 1,2-Dichloroethane-d4	93.2		70.0-130		12/23/2020 14:19	WG1596593

4
Cn5
Sr6
Qc7
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	ND		4.00	1	12/30/2020 08:49	WG1598588
(S) o-Terphenyl	64.7		18.0-148		12/30/2020 08:49	WG1598588

8
Al9
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	ND		0.100	1	12/24/2020 18:18	WG1597314
(S) a,a,a-Trifluorotoluene(FID)	104		77.0-120		12/24/2020 18:18	WG1597314

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	12/23/2020 14:38	WG1596593
Toluene	ND		0.00500	1	12/23/2020 14:38	WG1596593
Ethylbenzene	ND		0.00250	1	12/23/2020 14:38	WG1596593
Total Xylenes	ND		0.00650	1	12/23/2020 14:38	WG1596593
(S) Toluene-d8	102		75.0-131		12/23/2020 14:38	WG1596593
(S) 4-Bromofluorobenzene	93.6		67.0-138		12/23/2020 14:38	WG1596593
(S) 1,2-Dichloroethane-d4	92.0		70.0-130		12/23/2020 14:38	WG1596593

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	ND		4.00	1	12/30/2020 22:43	WG1598588
(S) o-Terphenyl	60.8		18.0-148		12/30/2020 22:43	WG1598588

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	ND		0.100	1	12/24/2020 18:39	WG1597314
(S) a,a,a-Trifluorotoluene(FID)	106		77.0-120		12/24/2020 18:39	WG1597314

¹ Cp² Tc³ 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	12/23/2020 14:57	WG1596593
Toluene	ND		0.00500	1	12/23/2020 14:57	WG1596593
Ethylbenzene	ND		0.00250	1	12/23/2020 14:57	WG1596593
Total Xylenes	ND		0.00650	1	12/23/2020 14:57	WG1596593
(S) Toluene-d8	105		75.0-131		12/23/2020 14:57	WG1596593
(S) 4-Bromofluorobenzene	95.1		67.0-138		12/23/2020 14:57	WG1596593
(S) 1,2-Dichloroethane-d4	90.9		70.0-130		12/23/2020 14:57	WG1596593

⁴ Cn⁵ Sr⁶ Qc⁷ 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	ND		4.00	1	12/30/2020 20:23	WG1598588
(S) o-Terphenyl	62.2		18.0-148		12/30/2020 20:23	WG1598588

⁸ Al⁹ 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	ND		0.100	1	12/24/2020 19:00	WG1597314
(S) a,a,a-Trifluorotoluene(FID)	106		77.0-120		12/24/2020 19:00	WG1597314

¹ Cp² Tc³ 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	12/23/2020 15:16	WG1596593
Toluene	ND		0.00500	1	12/23/2020 15:16	WG1596593
Ethylbenzene	ND		0.00250	1	12/23/2020 15:16	WG1596593
Total Xylenes	ND		0.00650	1	12/23/2020 15:16	WG1596593
(S) Toluene-d8	102		75.0-131		12/23/2020 15:16	WG1596593
(S) 4-Bromofluorobenzene	94.1		67.0-138		12/23/2020 15:16	WG1596593
(S) 1,2-Dichloroethane-d4	90.9		70.0-130		12/23/2020 15:16	WG1596593

⁴ Cn⁵ Sr⁶ Qc⁷ 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	ND		4.00	1	12/30/2020 20:35	WG1598588
(S) o-Terphenyl	66.6		18.0-148		12/30/2020 20:35	WG1598588

⁸ Al⁹ 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	ND		0.100	1	12/24/2020 19:21	WG1597314
(S) a,a,a-Trifluorotoluene(FID)	106		77.0-120		12/24/2020 19:21	WG1597314

1
Cp2
Tc3
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	12/23/2020 15:35	WG1596593
Toluene	ND		0.00500	1	12/23/2020 15:35	WG1596593
Ethylbenzene	ND		0.00250	1	12/23/2020 15:35	WG1596593
Total Xylenes	ND		0.00650	1	12/23/2020 15:35	WG1596593
(S) Toluene-d8	105		75.0-131		12/23/2020 15:35	WG1596593
(S) 4-Bromofluorobenzene	96.0		67.0-138		12/23/2020 15:35	WG1596593
(S) 1,2-Dichloroethane-d4	92.1		70.0-130		12/23/2020 15:35	WG1596593

4
Cn5
Sr6
Qc7
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	ND		4.00	1	12/30/2020 20:48	WG1598588
(S) o-Terphenyl	62.8		18.0-148		12/30/2020 20:48	WG1598588

8
Al9
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	ND		0.100	1	12/24/2020 19:42	WG1597314
(S) a,a,a-Trifluorotoluene(FID)	108		77.0-120		12/24/2020 19:42	WG1597314

1
Cp2
Tc3
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	12/23/2020 15:54	WG1596593
Toluene	ND		0.00500	1	12/23/2020 15:54	WG1596593
Ethylbenzene	ND		0.00250	1	12/23/2020 15:54	WG1596593
Total Xylenes	ND		0.00650	1	12/23/2020 15:54	WG1596593
(S) Toluene-d8	103		75.0-131		12/23/2020 15:54	WG1596593
(S) 4-Bromofluorobenzene	95.1		67.0-138		12/23/2020 15:54	WG1596593
(S) 1,2-Dichloroethane-d4	93.5		70.0-130		12/23/2020 15:54	WG1596593

4
Cn5
Sr6
Qc7
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	ND		4.00	1	12/30/2020 21:01	WG1598588
(S) o-Terphenyl	59.9		18.0-148		12/30/2020 21:01	WG1598588

8
Al9
Sc



Method Blank (MB)

(MB) R3608387-2 12/24/20 12:31

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0386	⬇	0.0217	0.100
(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

Laboratory Control Sample (LCS)

(LCS) R3608387-1 12/24/20 11:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.08	111	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			109	77.0-120	

L1298408-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1298408-06 12/24/20 15:28 • (MS) R3608387-3 12/24/20 20:03 • (MSD) R3608387-4 12/24/20 20:24

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) Low Fraction	103	ND	116	102	112	97.9	25	10.0-151			12.8	28
(S) a,a,a-Trifluorotoluene(FID)					103	103		77.0-120				



Method Blank (MB)

(MB) R3607502-3 12/23/20 08:55

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
(S) Toluene-d8	103			75.0-131
(S) 4-Bromofluorobenzene	94.2			67.0-138
(S) 1,2-Dichloroethane-d4	92.5			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) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3607502-1 12/23/20 07:40 • (LCSD) R3607502-2 12/23/20 07:59

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 %
Benzene	0.125	0.128	0.136	102	109	70.0-123			6.06	20
Ethylbenzene	0.125	0.135	0.139	108	111	74.0-126			2.92	20
Toluene	0.125	0.133	0.135	106	108	75.0-121			1.49	20
Xylenes, Total	0.375	0.396	0.404	106	108	72.0-127			2.00	20
(S) Toluene-d8				102	102	75.0-131				
(S) 4-Bromofluorobenzene				96.7	92.3	67.0-138				
(S) 1,2-Dichloroethane-d4				99.0	99.1	70.0-130				

L1298732-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1298732-02 12/23/20 11:11 • (MS) R3607502-4 12/23/20 16:51 • (MSD) R3607502-5 12/23/20 17:10

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 %
Benzene	0.125	ND	0.109	0.108	87.9	87.1	1	10.0-149			0.922	37
Ethylbenzene	0.125	ND	0.111	0.109	89.5	87.9	1	10.0-160			1.82	38
Toluene	0.125	ND	0.108	0.107	87.1	86.3	1	10.0-156			0.930	38
Xylenes, Total	0.373	ND	0.329	0.326	88.4	87.6	1	10.0-160			0.916	38
(S) Toluene-d8					99.1	101		75.0-131				
(S) 4-Bromofluorobenzene					92.9	93.1		67.0-138				
(S) 1,2-Dichloroethane-d4					95.4	93.8		70.0-130				



Method Blank (MB)

(MB) R3608298-1 12/30/20 08:24

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	53.0			18.0-148

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3608298-2 12/30/20 08:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	35.1	70.2	50.0-150	
(S) o-Terphenyl			57.5	18.0-148	

L1298764-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1298764-01 12/30/20 21:26 • (MS) R3608298-3 12/30/20 21:39 • (MSD) R3608298-4 12/30/20 21:52

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	ND	33.0	36.7	66.0	73.4	1	50.0-150			10.6	20
(S) o-Terphenyl					72.5	78.4		18.0-148				



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.
---	---

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	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
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}	KY90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-20-18
Maine	TN00003	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	998093910
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.



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: 615-758-5859L # L1298764
H119

Acctnum: CREPEAFCO

Template:

Prelogin:

TSR:

PB:

Shipped Via:

Remarks Sample # (lab only)

Report to:
Lonnie Dent, Jeff CarloEmail To:
ldent@remingtontech.net; jcarloProject
Description: Grant-Hurt 14HCity/State 40.13928,
Collected: -104.96659Phone: 970-278-1646
Fax: 970-278-1645Client Project #
Crestone Peak Resources

Lab Project #

Collected by (print):
Ryan Millunzi

Site/Facility ID #

P.O. #

Collected by (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

Standard

No.
of
CntsImmediately
Packed on Ice N ☐ Y ☒

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time		BTEX	TVPH	TEPH										
BH-6 (11')	Grab	SS		12/16/20	11:00	1	X	X	X										-01
BH-6 (15')	Grab	SS		12/16/20	11:15	1	X	X	X										02
BH-7 (6')	Grab	SS		12/16/20	11:50	1	X	X	X										03
BH-7 (11')	Grab	SS		12/16/20	12:00	1	X	X	X										04
BH-7 (15')	Grab	SS		12/16/20	12:10	1	X	X	X										05
BH-8 (11')	Grab	SS		12/16/20	12:35	1	X	X	X										06
BH-8 (15')	Grab	SS		12/16/20	12:45	1	X	X	X										07
																			08

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

Remarks:

Samples returned via:
☐ UPS ☐ FedEx ☐ Courier

pH Temp

Flow Other

Tracking # 1278 8605 8632

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

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Trip Blank Received: Yes/No
HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: 2.6-12.5 °C
Bottles Received: 7

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: 12/18/20
Time: 11:00

Hold:

Condition:
NCF / OK

Crestone Peak Resources

Sample Delivery Group: L1289103

Samples Received: 11/21/2020

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	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
TMW-1 L1289103-01	5	
TMW-2 L1289103-02	6	⁴ Cn
TMW-3 L1289103-03	7	⁵ Sr
TMW-4 L1289103-04	8	
TMW-5 L1289103-05	9	⁶ Qc
Qc: Quality Control Summary	10	
Volatile Organic Compounds (GC/MS) by Method 8260B	10	⁷ Gl
Gl: Glossary of Terms	12	
Al: Accreditations & Locations	13	⁸ Al
Sc: Sample Chain of Custody	14	⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



TMW-1 L1289103-01 GW

				Collected by Jeff Carlo	Collected date/time 11/19/20 13:21	Received date/time 11/21/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1584311	1	12/01/20 01:08	12/01/20 01:08	JHH	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

TMW-2 L1289103-02 GW

				Collected by Jeff Carlo	Collected date/time 11/19/20 13:27	Received date/time 11/21/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1584311	1	12/01/20 01:28	12/01/20 01:28	JHH	Mt. Juliet, TN

⁴ Cn

⁵ Sr

TMW-3 L1289103-03 GW

				Collected by Jeff Carlo	Collected date/time 11/19/20 13:33	Received date/time 11/21/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1584311	1	12/01/20 01:49	12/01/20 01:49	JHH	Mt. Juliet, TN

⁶ Qc

⁷ Gl

TMW-4 L1289103-04 GW

				Collected by Jeff Carlo	Collected date/time 11/19/20 13:42	Received date/time 11/21/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1584311	1	12/01/20 02:09	12/01/20 02:09	JHH	Mt. Juliet, TN

⁸ Al

⁹ Sc

TMW-5 L1289103-05 GW

				Collected by Jeff Carlo	Collected date/time 11/19/20 13:47	Received date/time 11/21/20 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1583924	1	11/30/20 04:02	11/30/20 04:02	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 mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	12/01/2020 01:08	WG1584311
Toluene	ND		0.00100	1	12/01/2020 01:08	WG1584311
Ethylbenzene	ND		0.00100	1	12/01/2020 01:08	WG1584311
o-Xylene	ND		0.00100	1	12/01/2020 01:08	WG1584311
m&p-Xylene	ND		0.00200	1	12/01/2020 01:08	WG1584311
Total Xylenes	ND		0.00300	1	12/01/2020 01:08	WG1584311
(S) Toluene-d8	109		80.0-120		12/01/2020 01:08	WG1584311
(S) 4-Bromofluorobenzene	95.3		77.0-126		12/01/2020 01:08	WG1584311
(S) 1,2-Dichloroethane-d4	96.6		70.0-130		12/01/2020 01:08	WG1584311

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	12/01/2020 01:28	WG1584311
Toluene	ND		0.00100	1	12/01/2020 01:28	WG1584311
Ethylbenzene	ND		0.00100	1	12/01/2020 01:28	WG1584311
o-Xylene	ND		0.00100	1	12/01/2020 01:28	WG1584311
m&p-Xylene	ND		0.00200	1	12/01/2020 01:28	WG1584311
Total Xylenes	ND		0.00300	1	12/01/2020 01:28	WG1584311
(S) Toluene-d8	105		80.0-120		12/01/2020 01:28	WG1584311
(S) 4-Bromofluorobenzene	94.4		77.0-126		12/01/2020 01:28	WG1584311
(S) 1,2-Dichloroethane-d4	105		70.0-130		12/01/2020 01:28	WG1584311

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	12/01/2020 01:49	WG1584311
Toluene	ND		0.00100	1	12/01/2020 01:49	WG1584311
Ethylbenzene	ND		0.00100	1	12/01/2020 01:49	WG1584311
o-Xylene	ND		0.00100	1	12/01/2020 01:49	WG1584311
m&p-Xylene	ND		0.00200	1	12/01/2020 01:49	WG1584311
Total Xylenes	ND		0.00300	1	12/01/2020 01:49	WG1584311
(S) Toluene-d8	103		80.0-120		12/01/2020 01:49	WG1584311
(S) 4-Bromofluorobenzene	93.2		77.0-126		12/01/2020 01:49	WG1584311
(S) 1,2-Dichloroethane-d4	107		70.0-130		12/01/2020 01:49	WG1584311

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	12/01/2020 02:09	WG1584311
Toluene	ND		0.00100	1	12/01/2020 02:09	WG1584311
Ethylbenzene	ND		0.00100	1	12/01/2020 02:09	WG1584311
o-Xylene	ND		0.00100	1	12/01/2020 02:09	WG1584311
m&p-Xylene	ND		0.00200	1	12/01/2020 02:09	WG1584311
Total Xylenes	ND		0.00300	1	12/01/2020 02:09	WG1584311
(S) Toluene-d8	110		80.0-120		12/01/2020 02:09	WG1584311
(S) 4-Bromofluorobenzene	97.7		77.0-126		12/01/2020 02:09	WG1584311
(S) 1,2-Dichloroethane-d4	101		70.0-130		12/01/2020 02:09	WG1584311

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.0133		0.00100	1	11/30/2020 04:02	WG1583924
Toluene	ND		0.00100	1	11/30/2020 04:02	WG1583924
Ethylbenzene	0.00477		0.00100	1	11/30/2020 04:02	WG1583924
o-Xylene	0.00237		0.00100	1	11/30/2020 04:02	WG1583924
m&p-Xylene	ND		0.00200	1	11/30/2020 04:02	WG1583924
Total Xylenes	0.00311		0.00300	1	11/30/2020 04:02	WG1583924
(S) Toluene-d8	91.6		80.0-120		11/30/2020 04:02	WG1583924
(S) 4-Bromofluorobenzene	97.1		77.0-126		11/30/2020 04:02	WG1583924
(S) 1,2-Dichloroethane-d4	97.8		70.0-130		11/30/2020 04:02	WG1583924

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3599001-3 11/29/20 23:55

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL 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-Xylene	U		0.000430	0.00200
(S) Toluene-d8	97.0			80.0-120
(S) 4-Bromofluorobenzene	99.9			77.0-126
(S) 1,2-Dichloroethane-d4	98.9			70.0-130

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

(LCS) R3599001-1 11/29/20 22:54 • (LCSD) R3599001-2 11/29/20 23:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.00500	0.00588	0.00585	118	117	70.0-123			0.512	20
Ethylbenzene	0.00500	0.00485	0.00482	97.0	96.4	79.0-123			0.620	20
Toluene	0.00500	0.00487	0.00489	97.4	97.8	79.0-120			0.410	20
Xylenes, Total	0.0150	0.0142	0.0142	94.7	94.7	79.0-123			0.000	20
o-Xylene	0.00500	0.00464	0.00465	92.8	93.0	80.0-122			0.215	20
m&p-Xylene	0.0100	0.00959	0.00957	95.9	95.7	80.0-122			0.209	20
(S) Toluene-d8				92.9	94.4	80.0-120				
(S) 4-Bromofluorobenzene				100	102	77.0-126				
(S) 1,2-Dichloroethane-d4				99.6	102	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3598919-2 11/30/20 16:10

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL 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	112			80.0-120
(S) 4-Bromofluorobenzene	97.4			77.0-126
(S) 1,2-Dichloroethane-d4	96.2			70.0-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3598919-1 11/30/20 15:09

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00499	99.8	70.0-123	
Ethylbenzene	0.00500	0.00473	94.6	79.0-123	
Toluene	0.00500	0.00507	101	79.0-120	
Xylenes, Total	0.0150	0.0140	93.3	79.0-123	
o-Xylene	0.00500	0.00463	92.6	80.0-122	
m&p-Xylenes	0.0100	0.00932	93.2	80.0-122	
(S) Toluene-d8			107	80.0-120	
(S) 4-Bromofluorobenzene			97.7	77.0-126	
(S) 1,2-Dichloroethane-d4			99.5	70.0-130	



Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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.

Qualifier Description

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

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.



January 12, 2021

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Crestone Peak Resources

Sample Delivery Group: L1302727
Samples Received: 01/05/2021
Project Number: CRESTONE PEAK RECOUR
Description: Grant Hurt 14H

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

Entire Report Reviewed By:



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.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
TMW-6 L1302727-01	5	
TMW-7 L1302727-02	6	⁴ Cn
TMW-8 L1302727-03	7	⁵ Sr
Qc: Quality Control Summary	8	
Volatile Organic Compounds (GC/MS) by Method 8260B	8	⁶ Qc
Gl: Glossary of Terms	11	⁷ Gl
Al: Accreditations & Locations	12	
Sc: Sample Chain of Custody	13	⁸ Al
		⁹ Sc



TMW-6 L1302727-01 GW

				Collected by Joe Fletcher	Collected date/time 12/29/20 13:10	Received date/time 01/05/21 09:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1601814	1	01/07/21 06:16	01/07/21 06:16	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1603720	1	01/12/21 00:18	01/12/21 00:18	ACG	Mt. Juliet, TN

TMW-7 L1302727-02 GW

				Collected by Joe Fletcher	Collected date/time 12/29/20 13:10	Received date/time 01/05/21 09:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1601814	1	01/07/21 06:36	01/07/21 06:36	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1603720	1	01/12/21 00:39	01/12/21 00:39	ACG	Mt. Juliet, TN

TMW-8 L1302727-03 GW

				Collected by Joe Fletcher	Collected date/time 12/29/20 12:50	Received date/time 01/05/21 09:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1602409	1	01/08/21 05:52	01/08/21 05:52	JHH	Mt. Juliet, TN

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



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 mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	01/12/2021 00:18	WG1603720
Toluene	ND		0.00100	1	01/07/2021 06:16	WG1601814
Ethylbenzene	ND		0.00100	1	01/07/2021 06:16	WG1601814
o-Xylene	ND		0.00100	1	01/07/2021 06:16	WG1601814
m&p-Xylene	ND		0.00200	1	01/07/2021 06:16	WG1601814
Total Xylenes	ND		0.00300	1	01/07/2021 06:16	WG1601814
(S) Toluene-d8	108		80.0-120		01/07/2021 06:16	WG1601814
(S) Toluene-d8	102		80.0-120		01/12/2021 00:18	WG1603720
(S) 4-Bromofluorobenzene	101		77.0-126		01/07/2021 06:16	WG1601814
(S) 4-Bromofluorobenzene	98.3		77.0-126		01/12/2021 00:18	WG1603720
(S) 1,2-Dichloroethane-d4	90.3		70.0-130		01/07/2021 06:16	WG1601814
(S) 1,2-Dichloroethane-d4	114		70.0-130		01/12/2021 00:18	WG1603720

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	01/12/2021 00:39	WG1603720
Toluene	ND		0.00100	1	01/07/2021 06:36	WG1601814
Ethylbenzene	ND		0.00100	1	01/07/2021 06:36	WG1601814
o-Xylene	ND		0.00100	1	01/07/2021 06:36	WG1601814
m&p-Xylene	ND		0.00200	1	01/07/2021 06:36	WG1601814
Total Xylenes	ND		0.00300	1	01/07/2021 06:36	WG1601814
(S) Toluene-d8	110		80.0-120		01/07/2021 06:36	WG1601814
(S) Toluene-d8	102		80.0-120		01/12/2021 00:39	WG1603720
(S) 4-Bromofluorobenzene	104		77.0-126		01/07/2021 06:36	WG1601814
(S) 4-Bromofluorobenzene	96.9		77.0-126		01/12/2021 00:39	WG1603720
(S) 1,2-Dichloroethane-d4	91.0		70.0-130		01/07/2021 06:36	WG1601814
(S) 1,2-Dichloroethane-d4	115		70.0-130		01/12/2021 00:39	WG1603720

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	01/08/2021 05:52	WG1602409
Toluene	ND		0.00100	1	01/08/2021 05:52	WG1602409
Ethylbenzene	ND		0.00100	1	01/08/2021 05:52	WG1602409
o-Xylene	ND		0.00100	1	01/08/2021 05:52	WG1602409
m&p-Xylene	ND		0.00200	1	01/08/2021 05:52	WG1602409
Total Xylenes	ND		0.00300	1	01/08/2021 05:52	WG1602409
(S) Toluene-d8	114		80.0-120		01/08/2021 05:52	WG1602409
(S) 4-Bromofluorobenzene	106		77.0-126		01/08/2021 05:52	WG1602409
(S) 1,2-Dichloroethane-d4	79.3		70.0-130		01/08/2021 05:52	WG1602409

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Method Blank (MB)

(MB) R3610696-2 01/07/21 02:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
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	105			80.0-120
(S) 4-Bromofluorobenzene	96.8			77.0-126
(S) 1,2-Dichloroethane-d4	90.6			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) R3610696-1 01/07/21 01:34

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	0.00500	0.00512	102	79.0-123	
Toluene	0.00500	0.00464	92.8	79.0-120	
Xylenes, Total	0.0150	0.0148	98.7	79.0-123	
o-Xylene	0.00500	0.00486	97.2	80.0-122	
m&p-Xylenes	0.0100	0.00994	99.4	80.0-122	
(S) Toluene-d8			102	80.0-120	
(S) 4-Bromofluorobenzene			99.2	77.0-126	
(S) 1,2-Dichloroethane-d4			91.7	70.0-130	



Method Blank (MB)

(MB) R3610860-2 01/07/21 20:31

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL 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	103			77.0-126
(S) 1,2-Dichloroethane-d4	79.7			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) R3610860-1 01/07/21 19:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00449	89.8	70.0-123	
Ethylbenzene	0.00500	0.00482	96.4	79.0-123	
Toluene	0.00500	0.00500	100	79.0-120	
Xylenes, Total	0.0150	0.0151	101	79.0-123	
o-Xylene	0.00500	0.00509	102	80.0-122	
m&p-Xylenes	0.0100	0.00996	99.6	80.0-122	
(S) Toluene-d8			109	80.0-120	
(S) 4-Bromofluorobenzene			103	77.0-126	
(S) 1,2-Dichloroethane-d4			80.6	70.0-130	



Method Blank (MB)

(MB) R3611683-3 01/11/21 19:08

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
(S) Toluene-d8	104			80.0-120
(S) 4-Bromofluorobenzene	94.0			77.0-126
(S) 1,2-Dichloroethane-d4	119			70.0-130

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

(LCS) R3611683-1 01/11/21 18:05 • (LCSD) R3611683-2 01/11/21 18:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.00500	0.00540	0.00528	108	106	70.0-123			2.25	20
(S) Toluene-d8				107	103	80.0-120				
(S) 4-Bromofluorobenzene				96.1	95.0	77.0-126				
(S) 1,2-Dichloroethane-d4				119	116	70.0-130				

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

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.

Qualifier Description

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

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	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
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}	KY90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-20-18
Maine	TN00003	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	998093910
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.



