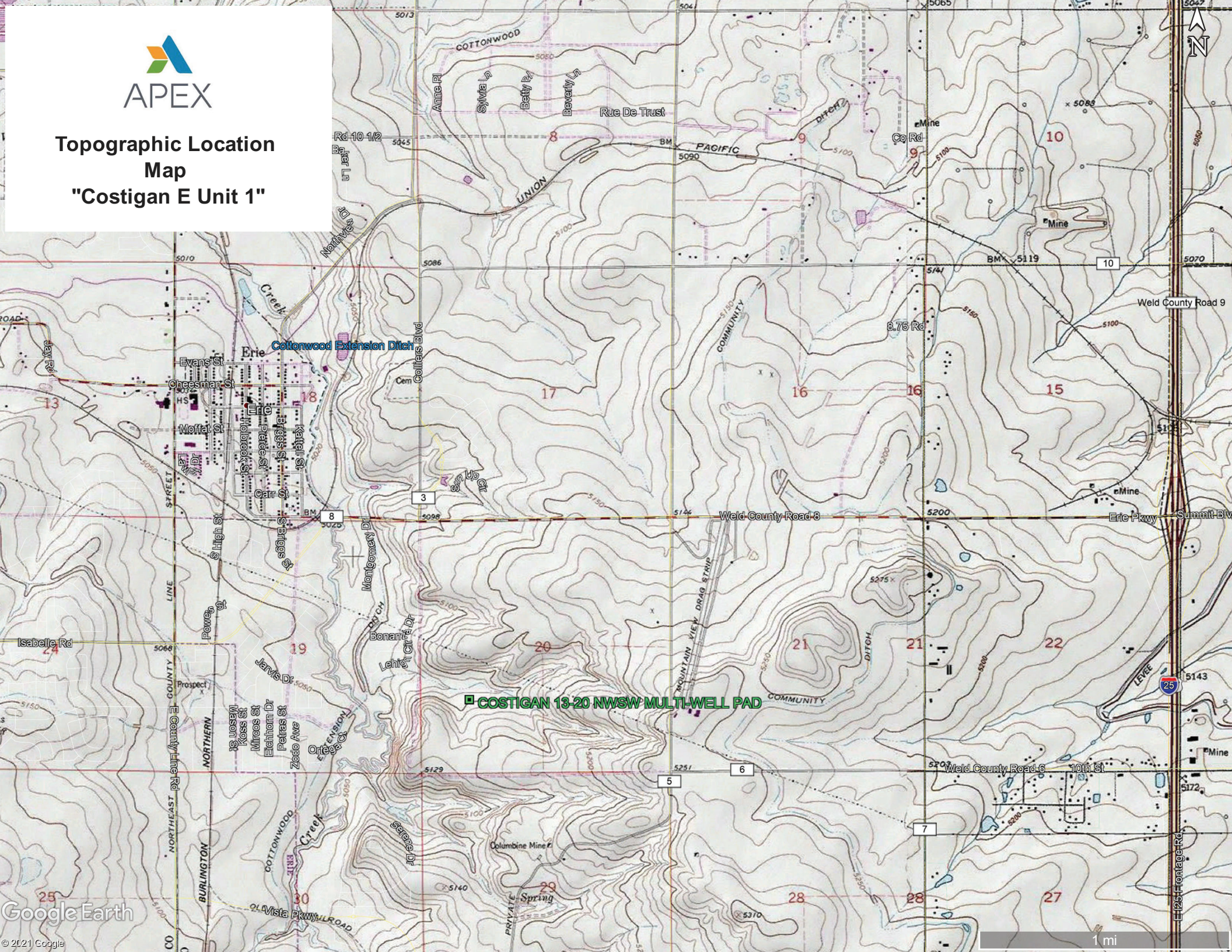




Topographic Location
Map
"Costigan E Unit 1"



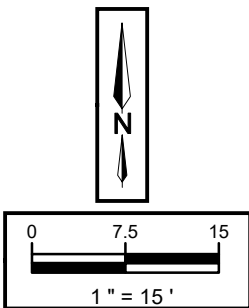


Crestone Peak Resources
Costigan 13-20
COGCC Location ID: 335767
Site Diagram

Legal Description: NWSW, Sec 20, T1N R68W
County: Weld
Land Use: Non-cropland
Topography: 1-20% Slopes
Run-Off Risk: Low
Soil Type: Colombo clay loam, Midway-Shingle complex
Receiving Waters: Unnamed trib

- Soil Sample (6/15/2021)
- Soil Sample (6/15/2021)
- Soil Sample (6/15/2021)
- Soil Sample (6/24/2021)
- Soil Sample (6/24/2021)
- Soil Sample (7/8/2021)
- Soil Sample (7/8/2021)
- Soil Sample (7/8/2021)
- Soil Sample (7/28/2021)
- Soil Sample (7/28/2021)
- Excavation Extent (6/15/2021)
- Excavation Extent (6/24/2021)
- Excavation Extent (7/8/2021)
- Excavation Extent (7/28/2021)

* Samples shown in yellow exceed Table 915-1 allowable limits for Soil Suitability.
* Samples shown in orange exceed Table 915-1 allowable limits for Arsenic.



Sample ID	Latitude NAD83	Longitude NAD83	Sample ID	Latitude NAD83	Longitude NAD83
W01@10'	40.033403	-105.033267	E04@12'	40.033519	-105.033076
B01@15'	40.033423	-105.033228	E03@13'	40.033561	-105.033116
BKG02@10'	40.033511	-105.033074	BKG02@18'	40.033579	-105.032952
N03@13'	40.033469	-105.033258	N04@15'	40.033584	-105.033174
W02@13'	40.033429	-105.033281	N05@15'	40.033553	-105.033209
B03@16'	40.033436	-105.033256	N06@11'	40.033520	-105.033220
S03@14'	40.033388	-105.033169	B04@15'	40.033477	-105.033166
B02@17'	40.033395	-105.033202	B05@16'	40.033486	-105.033103
W03@11'	40.033377	-105.033259	B06@20'	40.033550	-105.033177
S05@14'	40.033414	-105.033120	B07@25'	40.033482	-105.033160
S04@13'	40.033442	-105.033064	B08@25'	40.033435	-105.033236
E05@12'	40.033479	-105.033052	W04@13'	40.033364	-105.033281

Spatial data collected for this project was acquired using a GPS with submeter accuracy. Illustration discrepancies may be present in this diagram due to the inherent limitations of data accuracy for both project data and the underlying aerial imagery. To accurately reflect field conditions, illustrated data may have been manually corrected in order to fit with the aerial imagery reference points and other collected data points.



Description:

Initial Excavation Facing North



Description:

Initial Excavation Facing West

DIRECTION
104 deg(T)

40.03348°N
105.03333°W

ACCURACY 5 m
DATUM WGS84



Taken With
Context Camera

2021-06-24
14:25:08-06:00

Description:

Expanded Excavation Facing East



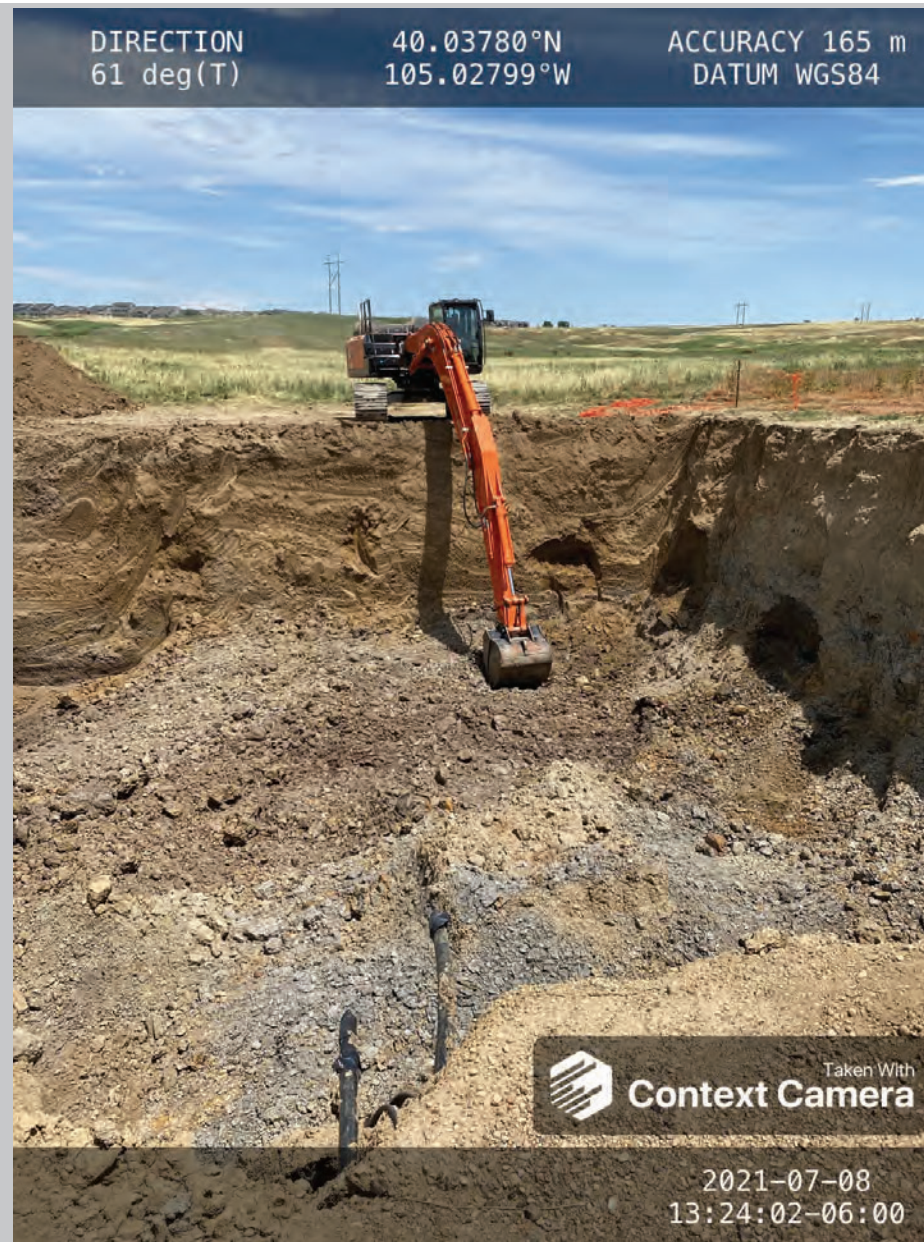
Description:

Expanded Excavation Facing West



Description:

Denver Formation Bedrock Encountered



Description:

Additional Excavation Expansion Facing East



Description:

Additional Excavation Expansion Facing North

DIRECTION
133 deg(T)

40.03355°N
105.03325°W

ACCURACY 5 m
DATUM WGS84



Taken With
Context Camera

2021-07-08
15:14:07-06:00

Description:

Additional Excavation Expansion Facing South



Description:

Additional Excavation Expansion Facing Southwest

DIRECTION
352 deg(T)

40.03350°N
105.03298°W

ACCURACY 9 m
DATUM WGS84



Taken With
Context Camera

2021-07-08
13:42:39-06:00

Description:

Collecting BKG02@10'



Description:

Final Excavation Extents Facing North

DIRECTION
199 deg(T)

40.03418°N
105.03205°W

ACCURACY 39 m
DATUM WGS84



Taken With
Context Camera

2021-07-28
09:35:12-06:00

Description:

Final Excavation Extents Facing Southwest

DIRECTION
287 deg(T)

40.03345°N
105.03302°W

ACCURACY 5 m
DATUM WGS84



Taken With
Context Camera

2021-07-28
09:35:53-06:00

Description:

Final Excavation Extents Facing Northwest



Description:

Compacted Bedrock Encountered at B08@25



Laboratory Results Summary Table

Costigan 13-20

Soil Samples

			Organic Compounds in Soils (mg/kg)										
COGCC Allowable Concentration (Soil) -->			500				1.2/0.0026(M)	490/0.69(M)	5.8/0.78(M)	58/9.9(M)	30/0.0081(R)	27/0.0087(R)	2/0.0038(R)
Site Specific Background -->													
Location	Sample Date	Sample ID	TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	TPH-GRO (C6-C10) Low Fraction	TPH-DRO (C10-C28) High Fraction	TPH-ORO (C28-C36) High Fraction	Benzene	Toluene	Ethylbenzene	Xylenes (sum of o-, m- and p- isomers = total Xylenes)	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Naphthalene
Costigan 13-20	6/15/2021	B01@15'	<50	<0.50	<50	<50	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038
Costigan 13-20	6/15/2021	W01@10'	<50	<0.50	<50	<50	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038
Costigan 13-20	6/24/2021	S03@14'	7.9	7.9	<50	<50	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038
Costigan 13-20	6/24/2021	B02@17'	4.0	4.0	<50	<50	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038
Costigan 13-20	6/24/2021	B03@16'	<50	<0.50	<50	<50	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038
Costigan 13-20	6/24/2021	W02@13'	<50	<0.50	<50	<50	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038
Costigan 13-20	6/24/2021	N03@13'	3.5	3.5	<50	<50	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038
Costigan 13-20	7/8/2021	W03@11	<100	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	NA
Costigan 13-20	7/8/2021	N04@15'	<100	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	NA
Costigan 13-20	7/8/2021	N05@15'	<100	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067
Costigan 13-20	7/8/2021	N06@11'	<100	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	NA
Costigan 13-20	7/8/2021	E03@13'	<100	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	NA
Costigan 13-20	7/8/2021	E04@12'	<100	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067
Costigan 13-20	7/8/2021	E05@12'	<100	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	NA
Costigan 13-20	7/8/2021	S04@13'	<100	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	NA
Costigan 13-20	7/8/2021	S05@14'	1.03	1.03	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.000558
Costigan 13-20	7/8/2021	B04@15'	<100	<0.200	<25.0	<100	0.00660	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	NA
Costigan 13-20	7/8/2021	B05@16'	<100	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	NA
Costigan 13-20	7/8/2021	B06@20'	<100	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	NA
Costigan 13-20	7/28/2021	W04@13'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/28/2021	B07@25'	NA	NA	NA	NA	<0.00200	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/28/2021	B08@25'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Legend:

COGCC - Colorado Oil and Gas Conservation Commission

Orange Highlight - COGCC Table 915-1 TPH, BTEX, organic, metal exceedance

Yellow Highlight - COGCC Table 915-1 inorganic exceedance

Grey Highlight - below laboratory detection limit

Light Blue Highlight - exceedance of protection of groundwater soil screening level concentrations risk based (R) or MCL based (M)

MCL - maximum contaminant level

NA - not analyzed

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter



Laboratory Results Summary Table
Costigan 13-20
Soil Samples

Organic Compounds in Soils (mg/kg)																
COGCC Allowable Concentration (Soil) -->			360/0.55(R)	1800/5.8(R)	1.1/0.011(R)	1.1/0.3(R)	11/2.9(R)	0.11/0.24(M)	110/9(R)	0.11/0.096(R)	240/8.9(R)	240/0.54(R)	1.1/0.98(R)	18/0.006(R)	24/0.019(R)	180/1.3(R)
Site Specific Background -->																
Location	Sample Date	Sample ID	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Chrysene	Dibenzo(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Pyrene
Costigan 13-20	6/15/2021	B01@15'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Costigan 13-20	6/15/2021	W01@10'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Costigan 13-20	6/24/2021	S03@14'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	6/24/2021	B02@17'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Costigan 13-20	6/24/2021	B03@16'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Costigan 13-20	6/24/2021	W02@13'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Costigan 13-20	6/24/2021	N03@13'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/8/2021	W03@11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/8/2021	N04@15'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/8/2021	N05@15'	<0.00067	<0.00067	<0.00067	0.000816	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	0.00055	<0.00067	<0.00067	<0.00067
Costigan 13-20	7/8/2021	N06@11'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/8/2021	E03@13'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/8/2021	E04@12'	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
Costigan 13-20	7/8/2021	E05@12'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/8/2021	S04@13'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/8/2021	S05@14'	<0.00067	0.00141	0.000898	0.000863	<0.00067	<0.00067	0.00641	<0.00067	<0.00067	<0.00067	<0.00067	0.00436	0.000735	0.00439
Costigan 13-20	7/8/2021	B04@15'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/8/2021	B05@16'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/8/2021	B06@20'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/28/2021	W04@13'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/28/2021	B07@25'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/28/2021	B08@25'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Legend:

COGCC - Colorado Oil and Gas Conservation Commission

Orange Highlight - COGCC Table 915-1 TPH, BTEX, organic, metal exceedance

Yellow Highlight - COGCC Table 915-1 inorganic exceedance

Grey Highlight - below laboratory detection limit

Light Blue Highlight - exceedance of protection of groundwater soil screening level concentrations risk based (R) or MCL based (M)

MCL - maximum contaminant level

NA - not analyzed

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter



Laboratory Results Summary Table

Costigan 13-20

Soil Samples

			Soil Suitability for Reclamation				Metals in Soils (mg/kg)									
COGCC Allowable Concentration (Soil) -->			<4	<6	(6-8.3)	2	0.68/0.29(M)	15000/82(M)	71/0.38(M)	0.3/0.00067(R)	3100/46(M)	400/14(M)	1500/26(R)	390/0.26(M)	390/0.8(R)	23000/370(R)
Site Specific Background -->			6.50	8.17			7.6375	132.5	1.14375		26.625	21.375		0.63125		
Location	Sample Date	Sample ID	Electrical Conductivity (EC) (by saturated paste method) (mmhos/cm)	Sodium Adsorption Ratio (SAR) (by saturated paste method) (Calculation)	pH (by saturated paste method) (pH Units)	Boron (hot water soluble soil extract) (mg/L)	Arsenic	Barium	Cadmium	Chromium (VI)	Copper	Lead	Nickel	Selenium	Silver	Zinc
Costigan 13-20	6/15/2021	B01@15'	3.68	10.9	8.06	0.0977	9.21	44.3	0.328	<0.30	22.7	19.4	23.0	1.04	0.0796	112
Costigan 13-20	6/15/2021	W01@10'	0.18	3.74	8.58	0.306	2.55	143	0.437	<0.30	39.2	24.2	31.2	1.52	0.118	83.4
Costigan 13-20	6/24/2021	S03@14'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	6/24/2021	B02@17'	4.74	0.510	7.96	<0.0100	3.91	51.1	0.429	<0.30	20.6	16.7	17.1	1.39	0.0734	75.1
Costigan 13-20	6/24/2021	B03@16'	3.99	9.89	8.07	0.169	1.42	33.3	<0.253	<0.30	18.7	13.0	15.1	0.877	0.0962	48.8
Costigan 13-20	6/24/2021	W02@13'	0.899	5.14	8.49	0.168	3.90	161	0.371	<0.30	30.2	24.5	22.5	1.30	0.103	112
Costigan 13-20	6/24/2021	N03@13'	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/8/2021	W03@11'	1.72	24.6	8.53	1.46	40.7	37.7	0.382	<0.488	19.1	18.6	312	0.419	0.0506	87.4
Costigan 13-20	7/8/2021	N04@15'	10.2	19.4	8.13	0.685	4.69	76.7	0.71	<0.502	18.7	16.6	29.1	0.817	0.0819	308
Costigan 13-20	7/8/2021	N05@15'	10.7	19.8	7.86	0.855	1.88	58.6	0.478	<5	15.7	18.9	14.8	0.378	0.0839	101
Costigan 13-20	7/8/2021	N06@11'	5.31	24.40	8.06	0.626	1.12	97.4	0.323	<5.13	19.4	17.7	10.6	0.249	0.0835	49.1
Costigan 13-20	7/8/2021	E03@13'	1.05	17.2	8.70	2.29	2.44	124	0.177	<0.5	10.5	9.04	13	0.233	0.0379	45.4
Costigan 13-20	7/8/2021	E04@12'	1.10	16.3	8.65	2.26	3.01	68.8	0.145	<0.519	8.29	7.53	9.43	0.305	0.0178	34.3
Costigan 13-20	7/8/2021	E05@12'	8.27	21.7	8.11	1.13	5.14	82.5	0.319	<0.513	15.8	14	17.6	0.557	0.0384	60
Costigan 13-20	7/8/2021	S04@13'	9.06	16.6	7.92	0.734	3.42	79.5	0.182	<0.513	18.7	14.9	18.3	0.513	0.0597	73.5
Costigan 13-20	7/8/2021	S05@14'	5.32	20.0	8.05	0.558	3.54	95.2	0.315	<1	21.8	16.1	38.4	1.06	0.057	88.8
Costigan 13-20	7/8/2021	B04@15'	5.35	18.2	7.68	0.883	2.1	54.6	0.333	<5.13	17.2	19.5	12.5	4.96	0.106	66.6
Costigan 13-20	7/8/2021	B05@16'	4.48	16.9	8.24	0.342	2.05	151	0.273	<5	21	20.8	15.3	0.489	0.089	77.4
Costigan 13-20	7/8/2021	B06@20'	9.39	15.6	7.41	0.638	1.26	64.9	0.641	<1.03	14	15.4	17.1	0.526	0.0635	105
Costigan 13-20	7/28/2021	W04@13'	NA	NA	NA	NA	1.41	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/28/2021	B07@25'	NA	NA	NA	NA	8.98	362	0.262	<1	22.4	22.8	24.5	0.767	0.0777	103
Costigan 13-20	7/28/2021	B08@25'	NA	NA	NA	NA	4.08	193	0.199	<0.5	19.4	18.7	15.9	0.557	0.0624	69.5
Costigan 13-20	6/15/2021	BKG02@10'	0.16	1.60	8.33	0.618	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Costigan 13-20	7/8/2021	BKG02@18'	3.30	11.4	8.01	0.758	6.11	106	0.915	<5.11	21.3	17.1	16.5	0.505	0.0656	159

Legend:

COGCC - Colorado Oil and Gas Conservation Commission

Orange Highlight - COGCC Table 915-1 TPH, BTEX, organic, metal exceedance

Yellow Highlight - COGCC Table 915-1 inorganic exceedance

Grey Highlight - below laboratory detection limit

Light Blue Highlight - exceedance of protection of groundwater soil screening level
concentrations risk based (R) or MCL based (M)

MCL - maximum contaminant level

NA - not analyzed

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 01, 2021

Maggie Graham

Apex Companies

176 Cole Blvd. Suite 250

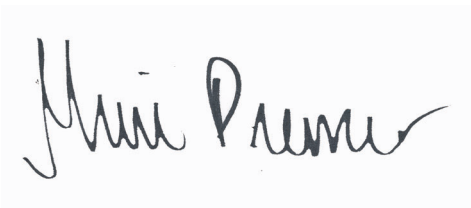
Lakewood, CO 80101

RE: CPR - Costigan 13-20

Work Order #2106283

Enclosed are the results of analyses for samples received by Summit Scientific on 06/15/21 15:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Muri Premer", is shown within a light gray rectangular box.

Muri Premer For Paul Shrewsbury
President



Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@15'	2106283-01	Soil	06/15/21 11:45	06/15/21 15:50
W01@10'	2106283-02	Soil	06/15/21 12:00	06/15/21 15:50
BKG02@10'	2106283-03	Soil	06/15/21 13:30	06/15/21 15:50

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

Page 1 of 1

Project Number:

				Preservative		Matrix			Analyze For:											
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)									Special Instructions
BQ1 @ 15'	6/15/21	11:45	2			X			X			X	915 Suite							Call Maggie Graham with questions
WQ1 @ 10'	J	12:00	2			X			X				EC SAR, pH							
BKG #2 @ 10'	6/15/21	13:30	2			X			X				Boron	X						
Relinquished by: <i>CNR Letter</i>				Date/Time: <i>11:45 6/15/21</i>		Received by: <i>[Signature]</i>				Date/Time: <i>1550 6/15/21</i>		Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 Hours <input type="checkbox"/>								Notes Circle applicable regulatory agency: <i>COGCC / CDPHE</i>
Relinquished by:				Date/Time:		Received by:				Date/Time:		Sample Integrity: Temperature Upon Receipt: <i>7</i> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>								Client Name: <i>CPR</i>
Relinquished by:				Date/Time:		Received in Lab by:				Date/Time:										

Sample Receipt Checklist

S2 Work Order 2106283

Client: Apex Client Project ID: Costigan 13-20

Shipped Via: ☒ H.D. ☐ P.U. ☐ FedEx ☐ UPS ☐ USPS ☐ Other _____ Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	<u>7</u>
-----------	----------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>On ice.</u>
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day.</u>
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

JB
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

6/15/21
Date/Time



Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

B01@15'
2106283-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEF0339	06/15/21	06/15/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		122 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.0 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0340	06/15/21	06/15/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

B01@15'
2106283-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEF0572	06/29/21	06/30/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		65.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		68.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0977	0.0100	mg/L	1	BEF0431	06/21/21	06/22/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

B01@15'
2106283-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	9.21	0.243	mg/kg dry	1	BEF0399	06/18/21	06/19/21	EPA 6020B
Barium	44.3	0.487	"	"	"	"	"	"
Cadmium	0.328	0.243	"	"	"	"	"	"
Copper	22.7	0.487	"	"	"	"	"	"
Lead	19.4	0.243	"	"	"	"	"	"
Nickel	23.0	0.487	"	"	"	"	"	"
Selenium	1.04	0.316	"	"	"	"	"	"
Silver	0.0796	0.0243	"	"	"	"	"	"
Zinc	112	0.487	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0484	06/23/21	06/23/21	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	149	0.0608	mg/L dry	1	BEF0436	06/21/21	06/23/21	EPA 6020B	
Magnesium	77.7	0.0608	"	"	"	"	"	"	
Sodium	659	0.0608	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10.9	0.00100	units	1	BEF0491	06/23/21	06/23/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

B01@15'
2106283-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.2	%	1	BEF0343	06/16/21	06/16/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.68	0.0100	mmhos/cm	1	BEF0456	06/22/21	06/22/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **06/15/21 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.06		pH Units	1	BEF0455	06/22/21	06/22/21	EPA 9045D	

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

W01@10'
2106283-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0339	06/15/21	06/15/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		118 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.6 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0340	06/15/21	06/15/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		91.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

W01@10'
2106283-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEF0572	06/29/21	06/30/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		68.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		69.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.306	0.0100	mg/L	1	BEF0431	06/21/21	06/22/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

W01@10'
2106283-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.55	0.245	mg/kg dry	1	BEF0399	06/18/21	06/19/21	EPA 6020B
Barium	143	0.490	"	"	"	"	"	"
Cadmium	0.437	0.245	"	"	"	"	"	"
Copper	39.2	0.490	"	"	"	"	"	"
Lead	24.2	0.245	"	"	"	"	"	"
Nickel	31.2	0.490	"	"	"	"	"	"
Selenium	1.52	0.318	"	"	"	"	"	"
Silver	0.118	0.0245	"	"	"	"	"	"
Zinc	83.4	0.490	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0484	06/23/21	06/23/21	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	3.84	0.0612	mg/L dry	1	BEF0436	06/21/21	06/23/21	EPA 6020B	
Magnesium	1.99	0.0612	"	"	"	"	"	"	
Sodium	36.2	0.0612	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.74	0.00100	units	1	BEF0491	06/23/21	06/23/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

W01@10'
2106283-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.7	%	1	BEF0343	06/16/21	06/16/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.175	0.0100	mmhos/cm	1	BEF0456	06/22/21	06/22/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **06/15/21 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.58		pH Units	1	BEF0455	06/22/21	06/22/21	EPA 9045D	

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20
Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

BKG02@10'
2106283-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/15/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.618	0.0100	mg/L	1	BEF0431	06/21/21	06/22/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/15/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5.14	0.0592	mg/L dry	1	BEF0436	06/21/21	06/23/21	EPA 6020B	
Magnesium	2.75	0.0592	"	"	"	"	"	"	
Sodium	18.1	0.0592	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/15/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.60	0.00100	units	1	BEF0491	06/23/21	06/23/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/15/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.4		%	1	BEF0343	06/16/21	06/16/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/15/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.155	0.0100	mmhos/cm	1	BEF0456	06/22/21	06/22/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20
Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

BKG02@10'
2106283-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **06/15/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.33			pH Units	1	BEF0455	06/22/21	06/22/21	EPA 9045D	

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0339 - EPA 5030 Soil MS

Blank (BEF0339-BLK1)

Prepared: 06/15/21 Analyzed: 06/16/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0308		"	0.0400		77.0	23-173			
Surrogate: Toluene-d8	0.0493		"	0.0400		123	20-170			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.2	21-167			

LCS (BEF0339-BS1)

Prepared: 06/15/21 Analyzed: 06/16/21

Benzene	0.145	0.0020	mg/kg	0.150		97.0	70-130			
Toluene	0.134	0.0050	"	0.150		89.5	70-130			
Ethylbenzene	0.141	0.0050	"	0.150		94.2	70-130			
m,p-Xylene	0.286	0.010	"	0.300		95.2	70-130			
o-Xylene	0.147	0.0050	"	0.150		97.8	70-130			
1,2,4-Trimethylbenzene	0.131	0.0050	"	0.150		87.3	70-130			
1,3,5-Trimethylbenzene	0.127	0.0050	"	0.150		84.9	70-130			
Naphthalene	0.136	0.0038	"	0.150		90.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0463		"	0.0400		116	23-173			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0400		106	21-167			

Matrix Spike (BEF0339-MS1)

Source: 2106280-01

Prepared: 06/15/21 Analyzed: 06/16/21

Benzene	0.147	0.0020	mg/kg	0.150	ND	98.2	70-130			
Toluene	0.138	0.0050	"	0.150	ND	92.0	70-130			
Ethylbenzene	0.142	0.0050	"	0.150	ND	94.6	70-130			
m,p-Xylene	0.278	0.010	"	0.300	ND	92.8	70-130			
o-Xylene	0.140	0.0050	"	0.150	ND	93.4	70-130			
1,2,4-Trimethylbenzene	0.135	0.0050	"	0.150	ND	90.2	70-130			
1,3,5-Trimethylbenzene	0.140	0.0050	"	0.150	ND	93.0	70-130			
Naphthalene	0.143	0.0038	"	0.150	ND	95.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0376		"	0.0400		94.1	23-173			
Surrogate: Toluene-d8	0.0373		"	0.0400		93.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		101	21-167			

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176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20
Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0339 - EPA 5030 Soil MS

Matrix Spike Dup (BEF0339-MSD1)	Source: 2106280-01			Prepared: 06/15/21 Analyzed: 06/16/21						
Benzene	0.144	0.0020	mg/kg	0.150	ND	96.0	70-130	2.20	30	
Toluene	0.130	0.0050	"	0.150	ND	86.9	70-130	5.75	30	
Ethylbenzene	0.139	0.0050	"	0.150	ND	92.8	70-130	1.94	30	
m,p-Xylene	0.275	0.010	"	0.300	ND	91.8	70-130	1.16	30	
o-Xylene	0.137	0.0050	"	0.150	ND	91.7	70-130	1.84	30	
1,2,4-Trimethylbenzene	0.131	0.0050	"	0.150	ND	87.0	70-130	3.54	30	
1,3,5-Trimethylbenzene	0.136	0.0050	"	0.150	ND	90.5	70-130	2.72	30	
Naphthalene	0.145	0.0038	"	0.150	ND	96.7	70-130	1.46	30	
Surrogate: 1,2-Dichloroethane-d4	0.0358		"	0.0400		89.5	23-173			
Surrogate: Toluene-d8	0.0357		"	0.0400		89.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167			

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176 Cole Blvd. Suite 250
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Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0340 - EPA 3550A

Blank (BEF0340-BLK1)

Prepared: 06/15/21 Analyzed: 06/16/21

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BEF0340-BS1)

Prepared: 06/15/21 Analyzed: 06/16/21

C10-C28 (DRO)	524	50	mg/kg	500	105	70-130
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Matrix Spike (BEF0340-MS1)

Source: 2106280-01

Prepared: 06/15/21 Analyzed: 06/16/21

C10-C28 (DRO)	502	50	mg/kg	500	ND	100	70-130
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Matrix Spike Dup (BEF0340-MSD1)

Source: 2106280-01

Prepared: 06/15/21 Analyzed: 06/16/21

C10-C28 (DRO)	506	50	mg/kg	500	ND	101	70-130	0.894	20
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Project: CPR - Costigan 13-20
Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Reporting				Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0572 - EPA 5030 Soil MS

Blank (BEF0572-BLK1)

Prepared: 06/29/21 Analyzed: 06/30/21

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0255		"	0.0333		76.5	40-150			
Surrogate: Fluoranthene-d10	0.0302		"	0.0333		90.6	40-150			

LCS (BEF0572-BS1)

Prepared & Analyzed: 06/29/21

Acenaphthene	0.0322	0.00500	mg/kg	0.0333		96.6	31-137			
Anthracene	0.0270	0.00500	"	0.0333		81.1	30-120			
Benzo (a) anthracene	0.0293	0.00500	"	0.0333		87.8	30-120			
Benzo (a) pyrene	0.0302	0.00500	"	0.0333		90.5	30-120			
Benzo (b) fluoranthene	0.0269	0.00500	"	0.0333		80.6	30-120			
Benzo (k) fluoranthene	0.0309	0.00500	"	0.0333		92.7	30-120			
Chrysene	0.0320	0.00500	"	0.0333		96.1	30-120			
Dibenz (a,h) anthracene	0.0178	0.00500	"	0.0333		53.4	30-120			
Fluoranthene	0.0263	0.00500	"	0.0333		79.0	30-120			
Fluorene	0.0333	0.00500	"	0.0333		99.8	30-120			
Indeno (1,2,3-cd) pyrene	0.0165	0.00500	"	0.0333		49.6	30-120			
Pyrene	0.0396	0.00500	"	0.0333		119	35-142			
1-Methylnaphthalene	0.0283	0.00500	"	0.0333		84.9	35-142			
2-Methylnaphthalene	0.0288	0.00500	"	0.0333		86.3	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0250		"	0.0333		75.1	40-150			
Surrogate: Fluoranthene-d10	0.0291		"	0.0333		87.4	40-150			

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Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0572 - EPA 5030 Soil MS

Matrix Spike (BEF0572-MS1)	Source: 2106294-12			Prepared: 06/29/21 Analyzed: 06/30/21						
Acenaphthene	0.0340	0.00500	mg/kg	0.0333	ND	102	31-137			
Anthracene	0.0292	0.00500	"	0.0333	ND	87.6	30-120			
Benzo (a) anthracene	0.0315	0.00500	"	0.0333	ND	94.5	30-120			
Benzo (a) pyrene	0.0322	0.00500	"	0.0333	ND	96.6	30-120			
Benzo (b) fluoranthene	0.0264	0.00500	"	0.0333	ND	79.2	30-120			
Benzo (k) fluoranthene	0.0288	0.00500	"	0.0333	ND	86.5	30-120			
Chrysene	0.0348	0.00500	"	0.0333	ND	105	30-120			
Dibenz (a,h) anthracene	0.0192	0.00500	"	0.0333	ND	57.5	30-120			
Fluoranthene	0.0287	0.00500	"	0.0333	ND	86.2	30-120			
Fluorene	0.0352	0.00500	"	0.0333	ND	106	30-120			
Indeno (1,2,3-cd) pyrene	0.0181	0.00500	"	0.0333	ND	54.2	30-120			
Pyrene	0.0463	0.00500	"	0.0333	ND	139	35-142			
1-Methylnaphthalene	0.0338	0.00500	"	0.0333	ND	101	15-130			
2-Methylnaphthalene	0.0340	0.00500	"	0.0333	ND	102	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0276		"	0.0333		82.9	40-150			
Surrogate: Fluoranthene-d10	0.0311		"	0.0333		93.2	40-150			

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0431 - EPA 3050B

Blank (BEF0431-BLK1)

Prepared: 06/21/21 Analyzed: 06/22/21

Boron ND 0.0100 mg/L

LCS (BEF0431-BS1)

Prepared: 06/21/21 Analyzed: 06/22/21

Boron 5.09 0.0100 mg/L 5.00 102 80-120

Duplicate (BEF0431-DUP1)

Source: 2106254-03

Prepared: 06/21/21 Analyzed: 06/22/21

Boron ND 0.0100 mg/L 0.0388 20 QR-04

Matrix Spike (BEF0431-MS1)

Source: 2106254-03

Prepared: 06/21/21 Analyzed: 06/22/21

Boron 5.10 0.0100 mg/L 5.00 0.0388 101 75-125

Matrix Spike Dup (BEF0431-MSD1)

Source: 2106254-03

Prepared: 06/21/21 Analyzed: 06/22/21

Boron 5.17 0.0100 mg/L 5.00 0.0388 103 75-125 1.23 25

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Apex Companies
176 Cole Blvd. Suite 250
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Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0399 - EPA 3050B

Blank (BEF0399-BLK1)

Prepared: 06/18/21 Analyzed: 06/19/21

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BEF0399-BS1)

Prepared: 06/18/21 Analyzed: 06/19/21

Arsenic	39.6	0.200	mg/kg wet	40.0	99.0	80-120
Barium	36.9	0.400	"	40.0	92.2	80-120
Cadmium	2.00	0.200	"	2.00	100	80-120
Copper	37.0	0.400	"	40.0	92.4	80-120
Lead	18.8	0.200	"	20.0	94.2	80-120
Nickel	37.0	0.400	"	40.0	92.5	80-120
Selenium	3.83	0.260	"	4.00	95.7	80-120
Silver	1.96	0.0200	"	2.00	98.0	80-120
Zinc	39.1	0.400	"	40.0	97.6	80-120

Duplicate (BEF0399-DUP1)

Source: 2106263-01

Prepared: 06/18/21 Analyzed: 06/19/21

Arsenic	5.25	0.243	mg/kg dry	4.52	14.9	20
Barium	105	0.486	"	109	3.53	20
Cadmium	0.426	0.243	"	0.405	5.22	20
Copper	16.7	0.486	"	16.3	2.50	20
Lead	11.9	0.243	"	13.7	13.5	20
Nickel	20.5	0.486	"	19.3	6.39	20
Selenium	1.29	0.316	"	1.07	18.4	20
Silver	0.0376	0.0243	"	0.0388	3.08	20
Zinc	55.2	0.486	"	54.0	2.16	20

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0399 - EPA 3050B

Matrix Spike (BEF0399-MS1)

Source: 2106263-01

Prepared: 06/18/21 Analyzed: 06/19/21

Arsenic	45.9	0.243	mg/kg dry	48.6	4.52	85.1	75-125
Barium	159	0.486	"	48.6	109	104	75-125
Cadmium	2.60	0.243	"	2.43	0.405	90.2	75-125
Copper	56.7	0.486	"	48.6	16.3	83.0	75-125
Lead	32.7	0.243	"	24.3	13.7	78.3	75-125
Nickel	62.1	0.486	"	48.6	19.3	88.0	75-125
Selenium	5.15	0.316	"	4.86	1.07	83.9	75-125
Silver	2.19	0.0243	"	2.43	0.0388	88.3	75-125
Zinc	98.0	0.486	"	48.6	54.0	90.5	75-125

Matrix Spike Dup (BEF0399-MSD1)

Source: 2106263-01

Prepared: 06/18/21 Analyzed: 06/19/21

Arsenic	49.6	0.243	mg/kg dry	48.6	4.52	92.7	75-125	7.78	25
Barium	169	0.486	"	48.6	109	123	75-125	5.81	25
Cadmium	2.80	0.243	"	2.43	0.405	98.4	75-125	7.36	25
Copper	61.6	0.486	"	48.6	16.3	93.1	75-125	8.34	25
Lead	34.2	0.243	"	24.3	13.7	84.5	75-125	4.56	25
Nickel	67.3	0.486	"	48.6	19.3	98.6	75-125	8.01	25
Selenium	5.36	0.316	"	4.86	1.07	88.1	75-125	3.92	25
Silver	2.40	0.0243	"	2.43	0.0388	97.1	75-125	9.35	25
Zinc	106	0.486	"	48.6	54.0	107	75-125	7.93	25

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176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0484 - 3060A Mod

Blank (BEF0484-BLK1)

Prepared & Analyzed: 06/23/21

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BEF0484-BS1)

Prepared & Analyzed: 06/23/21

Chromium, Hexavalent 23.2 0.30 mg/kg wet 25.0 93.0 80-120

Duplicate (BEF0484-DUP1)

Source: 2106283-01

Prepared & Analyzed: 06/23/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BEF0484-MS1)

Source: 2106283-01

Prepared & Analyzed: 06/23/21

Chromium, Hexavalent 27.1 0.30 mg/kg dry 30.4 ND 89.0 75-125

Matrix Spike Dup (BEF0484-MSD1)

Source: 2106283-01

Prepared & Analyzed: 06/23/21

Chromium, Hexavalent 27.1 0.30 mg/kg dry 30.4 ND 89.0 75-125 0.00 20

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0436 - General Preparation

Blank (BEF0436-BLK1)

Prepared: 06/21/21 Analyzed: 06/23/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEF0436-BS1)

Prepared: 06/21/21 Analyzed: 06/23/21

Calcium	5.08	0.0500	mg/L wet	5.00	102	70-130
Magnesium	5.35	0.0500	"	5.00	107	70-130
Sodium	4.80	0.0500	"	5.00	96.0	70-130

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0343 - General Preparation

Duplicate (BEF0343-DUP1)

Source: 2106230-01

Prepared & Analyzed: 06/16/21

% Solids	89.0	%	89.2	0.226	20
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Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0456 - General Preparation

Blank (BEF0456-BLK1)

Prepared & Analyzed: 06/22/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEF0456-BS1)

Prepared & Analyzed: 06/22/21

Specific Conductance (EC) 0.142 0.0100 mmhos/cm 0.150 94.5 90-110

Duplicate (BEF0456-DUP1)

Source: 2106283-01

Prepared & Analyzed: 06/22/21

Specific Conductance (EC) 3.68 0.0100 mmhos/cm 3.68 0.0271 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BEF0455 - General Preparation

LCS (BEF0455-BS1)

Prepared & Analyzed: 06/22/21

pH	9.24	pH Units	9.21	100	95-105
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Duplicate (BEF0455-DUP1)

Source: 2106283-01

Prepared & Analyzed: 06/22/21

pH	8.05	pH Units	8.06	0.124	20
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Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/01/21 11:26

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 13, 2021

Maggie Graham

Apex Companies

176 Cole Blvd. Suite 250

Lakewood, CO 80101

RE: CPR - Costigan 13-20

Work Order #2106436

Enclosed are the results of analyses for samples received by Summit Scientific on 06/24/21 15:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', is written on a light gray rectangular background.

Paul Shrewsbury

President



Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S03@14'	2106436-01	Soil	06/24/21 13:45	06/24/21 15:45
B02@17'	2106436-02	Soil	06/24/21 13:50	06/24/21 15:45
B03@16'	2106436-03	Soil	06/24/21 14:00	06/24/21 15:45
W02@13'	2106436-04	Soil	06/24/21 13:55	06/24/21 15:45
N03@13'	2106436-05	Soil	06/24/21 14:05	06/24/21 15:45

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2106436

Page 1 of 1

[illegible]

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes:
Chad Carter	6/24/21 15:45	[Signature]	6/24/21 1545	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	
				48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	Client: LPR
				Temperature Upon Receipt: 10	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

Sample Receipt Checklist

S2 Work Order 2106436

Client: Apex Client Project ID: Costigan

Shipped Via: ☒ H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	<u>10</u>
-----------	-----------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>On ice.</u>
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day.</u>
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

JB
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

6/24/21
Date/Time



Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

S03@14'
2106436-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/24/21 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEF0521	06/24/21	06/24/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	7.9	0.50	"	"	"	"	"	"	

Date Sampled: **06/24/21 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/24/21 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0522	06/24/21	06/24/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/24/21 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		113 %	30-150		"	"	"	"	

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

B02@17'
2106436-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/24/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEF0521	06/24/21	06/24/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	4.0	0.50	"	"	"	"	"	"	

Date Sampled: **06/24/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/24/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0522	06/24/21	06/24/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/24/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		115 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

B02@17'
2106436-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/24/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEG0109	07/07/21	07/11/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/24/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/24/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	0.0100	mg/L	1	BEF0586	06/29/21	06/30/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/24/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

B02@17'
2106436-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.91	0.243	mg/kg dry	1	BEF0531	06/25/21	06/26/21	EPA 6020B	
Barium	51.1	0.486	"	"	"	"	"	"	
Cadmium	0.429	0.243	"	"	"	"	"	"	
Copper	20.6	0.486	"	"	"	"	"	"	
Lead	16.7	0.243	"	"	"	"	"	"	
Nickel	17.1	0.486	"	"	"	"	"	"	
Selenium	1.39	0.316	"	"	"	"	"	"	
Silver	0.0734	0.0243	"	"	"	"	"	"	
Zinc	75.1	0.486	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/24/21 13:50**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0552	06/28/21	06/29/21	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/24/21 13:50**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	144	0.0607	mg/L dry	1	BEF0562	06/28/21	06/29/21	EPA 6020B	
Magnesium	1.42	0.0607	"	"	"	"	06/30/21	"	
Sodium	22.4	0.0607	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/24/21 13:50**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.510	0.00100	units	1	BEG0046	07/02/21	07/02/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/24/21 13:50**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

B02@17'
2106436-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.3	%	1	BEF0526	06/25/21	06/25/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/24/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.74	0.0100	mmhos/cm	1	BEF0578	06/29/21	06/29/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **06/24/21 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.96		pH Units	1	BEF0577	06/29/21	06/29/21	EPA 9045D	

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

B03@16'
2106436-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0521	06/24/21	06/24/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.1 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0522	06/24/21	06/24/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		114 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

B03@16'
2106436-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEG0109	07/07/21	07/11/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.169	0.0100	mg/L	1	BEF0586	06/29/21	06/30/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

B03@16'
2106436-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.42	0.253	mg/kg dry	1	BEF0531	06/25/21	06/26/21	EPA 6020B
Barium	33.3	0.506	"	"	"	"	"	"
Cadmium	ND	0.253	"	"	"	"	"	"
Copper	18.7	0.506	"	"	"	"	"	"
Lead	13.0	0.253	"	"	"	"	"	"
Nickel	15.1	0.506	"	"	"	"	"	"
Selenium	0.877	0.329	"	"	"	"	"	"
Silver	0.0962	0.0253	"	"	"	"	"	"
Zinc	48.8	0.506	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0552	06/28/21	06/29/21	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	41.4	0.0632	mg/L dry	1	BEF0562	06/28/21	06/30/21	EPA 6020B	
Magnesium	11.2	0.0632	"	"	"	"	"	"	
Sodium	278	0.0632	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.89	0.00100	units	1	BEG0046	07/02/21	07/02/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

B03@16'
2106436-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	79.1	%	1	BEF0526	06/25/21	06/25/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.99	0.0100	mmhos/cm	1	BEF0578	06/29/21	06/29/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **06/24/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.07		pH Units	1	BEF0577	06/29/21	06/29/21	EPA 9045D	

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

W02@13'
2106436-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0521	06/24/21	06/24/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0522	06/24/21	06/24/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

W02@13'
2106436-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEG0109	07/07/21	07/11/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		73.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.168	0.0100	mg/L	1	BEF0586	06/29/21	06/30/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

W02@13'
2106436-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.90	0.250	mg/kg dry	1	BEF0531	06/25/21	06/26/21	EPA 6020B
Barium	161	0.500	"	"	"	"	"	"
Cadmium	0.371	0.250	"	"	"	"	"	"
Copper	30.2	0.500	"	"	"	"	"	"
Lead	24.5	0.250	"	"	"	"	"	"
Nickel	22.5	0.500	"	"	"	"	"	"
Selenium	1.30	0.325	"	"	"	"	"	"
Silver	0.103	0.0250	"	"	"	"	"	"
Zinc	112	0.500	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEF0552	06/28/21	06/29/21	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	13.0	0.0625	mg/L dry	1	BEF0562	06/28/21	06/30/21	EPA 6020B	
Magnesium	9.84	0.0625	"	"	"	"	"	"	
Sodium	101	0.0625	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.14	0.00100	units	1	BEG0046	07/02/21	07/02/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

W02@13'
2106436-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	80.1	%	1	BEF0526	06/25/21	06/25/21	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.899	0.0100	mmhos/cm	1	BEF0578	06/29/21	06/29/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **06/24/21 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.49		pH Units	1	BEF0577	06/29/21	06/29/21	EPA 9045D	

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

N03@13'
2106436-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/24/21 14:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEF0521	06/24/21	06/24/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	3.5	0.50	"	"	"	"	"	"	

Date Sampled: **06/24/21 14:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/24/21 14:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEF0522	06/24/21	06/24/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/24/21 14:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		113 %	30-150		"	"	"	"	

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0521 - EPA 5030 Soil MS

Blank (BEF0521-BLK1)

Prepared: 06/24/21 Analyzed: 06/25/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0414		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	21-167			

LCS (BEF0521-BS1)

Prepared: 06/24/21 Analyzed: 06/25/21

Benzene	0.150	0.0020	mg/kg	0.150		100	70-130			
Toluene	0.149	0.0050	"	0.150		99.0	70-130			
Ethylbenzene	0.141	0.0050	"	0.150		94.2	70-130			
m,p-Xylene	0.279	0.010	"	0.300		92.9	70-130			
o-Xylene	0.144	0.0050	"	0.150		95.7	70-130			
1,2,4-Trimethylbenzene	0.150	0.0050	"	0.150		100	70-130			
1,3,5-Trimethylbenzene	0.149	0.0050	"	0.150		99.0	70-130			
Naphthalene	0.182	0.0038	"	0.150		121	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0414		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167			

Matrix Spike (BEF0521-MS1)

Source: 2106434-01

Prepared: 06/24/21 Analyzed: 06/25/21

Benzene	0.138	0.0020	mg/kg	0.150	ND	91.9	70-130			
Toluene	0.134	0.0050	"	0.150	ND	89.7	70-130			
Ethylbenzene	0.125	0.0050	"	0.150	ND	83.4	70-130			
m,p-Xylene	0.239	0.010	"	0.300	0.00333	78.7	70-130			
o-Xylene	0.125	0.0050	"	0.150	ND	83.3	70-130			
1,2,4-Trimethylbenzene	0.124	0.0050	"	0.150	ND	82.6	70-130			
1,3,5-Trimethylbenzene	0.125	0.0050	"	0.150	ND	83.3	70-130			
Naphthalene	0.157	0.0038	"	0.150	ND	104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0426		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.5	21-167			

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0521 - EPA 5030 Soil MS

Matrix Spike Dup (BEF0521-MSD1)		Source: 2106434-01			Prepared: 06/24/21 Analyzed: 06/25/21					
Benzene	0.131	0.0020	mg/kg	0.150	ND	87.5	70-130	4.99	30	
Toluene	0.126	0.0050	"	0.150	ND	83.8	70-130	6.76	30	
Ethylbenzene	0.114	0.0050	"	0.150	ND	76.2	70-130	9.02	30	
m,p-Xylene	0.219	0.010	"	0.300	0.00333	72.0	70-130	8.69	30	
o-Xylene	0.114	0.0050	"	0.150	ND	75.8	70-130	9.48	30	
1,2,4-Trimethylbenzene	0.106	0.0050	"	0.150	ND	70.8	70-130	15.4	30	
1,3,5-Trimethylbenzene	0.107	0.0050	"	0.150	ND	71.4	70-130	15.4	30	
Naphthalene	0.120	0.0038	"	0.150	ND	80.1	70-130	26.4	30	
Surrogate: 1,2-Dichloroethane-d4		0.0416	"	0.0400		104	23-173			
Surrogate: Toluene-d8		0.0405	"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene		0.0398	"	0.0400		99.5	21-167			

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20
Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting			Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BEF0522 - EPA 3550A

Blank (BEF0522-BLK1)

Prepared: 06/24/21 Analyzed: 06/25/21

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								

LCS (BEF0522-BS1)

Prepared: 06/24/21 Analyzed: 06/25/21

C10-C28 (DRO)	474	50	mg/kg	500	94.8	70-130					
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Matrix Spike (BEF0522-MS1)

Source: 2106434-01

Prepared: 06/24/21 Analyzed: 06/25/21

C10-C28 (DRO)	604	50	mg/kg	500	37.5	113	70-130				
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Matrix Spike Dup (BEF0522-MSD1)

Source: 2106434-01

Prepared: 06/24/21 Analyzed: 06/25/21

C10-C28 (DRO)	609	50	mg/kg	500	37.5	114	70-130	0.855	20		
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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20
Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Reporting				Spike	Source	%REC			RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEG0109 - EPA 5030 Soil MS

Blank (BEG0109-BLK1)

Prepared: 07/07/21 Analyzed: 07/11/21

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0185		"	0.0333		55.5	40-150			
Surrogate: Fluoranthene-d10	0.0229		"	0.0333		68.7	40-150			

LCS (BEG0109-BS1)

Prepared: 07/07/21 Analyzed: 07/11/21

Acenaphthene	0.0270	0.00500	mg/kg	0.0333		81.1	31-137			
Anthracene	0.0261	0.00500	"	0.0333		78.3	30-120			
Benzo (a) anthracene	0.0261	0.00500	"	0.0333		78.4	30-120			
Benzo (a) pyrene	0.0258	0.00500	"	0.0333		77.3	30-120			
Benzo (b) fluoranthene	0.0271	0.00500	"	0.0333		81.4	30-120			
Benzo (k) fluoranthene	0.0266	0.00500	"	0.0333		79.9	30-120			
Chrysene	0.0255	0.00500	"	0.0333		76.5	30-120			
Dibenz (a,h) anthracene	0.0251	0.00500	"	0.0333		75.2	30-120			
Fluoranthene	0.0250	0.00500	"	0.0333		75.1	30-120			
Fluorene	0.0280	0.00500	"	0.0333		84.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0248	0.00500	"	0.0333		74.3	30-120			
Pyrene	0.0323	0.00500	"	0.0333		96.8	35-142			
1-Methylnaphthalene	0.0260	0.00500	"	0.0333		78.0	35-142			
2-Methylnaphthalene	0.0225	0.00500	"	0.0333		67.4	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0257		"	0.0333		77.0	40-150			
Surrogate: Fluoranthene-d10	0.0268		"	0.0333		80.4	40-150			

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEG0109 - EPA 5030 Soil MS

Matrix Spike (BEG0109-MS1)

Source: 2106417-01

Prepared: 07/07/21 Analyzed: 07/11/21

Acenaphthene	0.0254	0.00500	mg/kg	0.0333	ND	76.3	31-137		
Anthracene	0.0261	0.00500	"	0.0333	ND	78.3	30-120		
Benzo (a) anthracene	0.0258	0.00500	"	0.0333	ND	77.4	30-120		
Benzo (a) pyrene	0.0254	0.00500	"	0.0333	ND	76.3	30-120		
Benzo (b) fluoranthene	0.0397	0.00500	"	0.0333	ND	119	30-120		
Benzo (k) fluoranthene	0.0393	0.00500	"	0.0333	ND	118	30-120		
Chrysene	0.0251	0.00500	"	0.0333	ND	75.4	30-120		
Dibenz (a,h) anthracene	0.0248	0.00500	"	0.0333	ND	74.4	30-120		
Fluoranthene	0.0245	0.00500	"	0.0333	ND	73.4	30-120		
Fluorene	0.0268	0.00500	"	0.0333	ND	80.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0245	0.00500	"	0.0333	ND	73.5	30-120		
Pyrene	0.0304	0.00500	"	0.0333	ND	91.1	35-142		
1-Methylnaphthalene	0.0248	0.00500	"	0.0333	ND	74.5	15-130		
2-Methylnaphthalene	0.0221	0.00500	"	0.0333	ND	66.4	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0248		"	0.0333		74.4	40-150		
Surrogate: Fluoranthene-d10	0.0263		"	0.0333		78.8	40-150		

Matrix Spike Dup (BEG0109-MSD1)

Source: 2106417-01

Prepared: 07/07/21 Analyzed: 07/11/21

Acenaphthene	0.0242	0.00500	mg/kg	0.0333	ND	72.5	31-137	5.11	30
Anthracene	0.0247	0.00500	"	0.0333	ND	74.0	30-120	5.66	30
Benzo (a) anthracene	0.0240	0.00500	"	0.0333	ND	72.0	30-120	7.17	30
Benzo (a) pyrene	0.0236	0.00500	"	0.0333	ND	70.7	30-120	7.63	30
Benzo (b) fluoranthene	0.0370	0.00500	"	0.0333	ND	111	30-120	7.02	30
Benzo (k) fluoranthene	0.0368	0.00500	"	0.0333	ND	111	30-120	6.50	30
Chrysene	0.0232	0.00500	"	0.0333	ND	69.7	30-120	7.87	30
Dibenz (a,h) anthracene	0.0207	0.00500	"	0.0333	ND	62.2	30-120	17.9	30
Fluoranthene	0.0233	0.00500	"	0.0333	ND	70.0	30-120	4.82	30
Fluorene	0.0252	0.00500	"	0.0333	ND	75.5	30-120	6.09	30
Indeno (1,2,3-cd) pyrene	0.0206	0.00500	"	0.0333	ND	61.9	30-120	17.2	30
Pyrene	0.0282	0.00500	"	0.0333	ND	84.7	35-142	7.24	30
1-Methylnaphthalene	0.0227	0.00500	"	0.0333	ND	68.1	15-130	8.97	50
2-Methylnaphthalene	0.0203	0.00500	"	0.0333	ND	61.0	15-130	8.42	50
Surrogate: 2-Methylnaphthalene-d10	0.0239		"	0.0333		71.7	40-150		
Surrogate: Fluoranthene-d10	0.0248		"	0.0333		74.3	40-150		

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0586 - EPA 3050B

Blank (BEF0586-BLK1)

Prepared: 06/29/21 Analyzed: 06/30/21

Boron ND 0.0100 mg/L

LCS (BEF0586-BS1)

Prepared: 06/29/21 Analyzed: 06/30/21

Boron 5.13 0.0100 mg/L 5.00 103 80-120

Duplicate (BEF0586-DUP1)

Source: 2106413-01

Prepared: 06/29/21 Analyzed: 06/30/21

Boron 0.0627 0.0100 mg/L 0.0646 3.00 20

Matrix Spike (BEF0586-MS1)

Source: 2106413-01

Prepared: 06/29/21 Analyzed: 06/30/21

Boron 4.76 0.0100 mg/L 5.00 0.0646 93.8 75-125

Matrix Spike Dup (BEF0586-MSD1)

Source: 2106413-01

Prepared: 06/29/21 Analyzed: 06/30/21

Boron 4.87 0.0100 mg/L 5.00 0.0646 96.1 75-125 2.37 25

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20
Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0531 - EPA 3050B

Blank (BEF0531-BLK1)

Prepared & Analyzed: 06/25/21

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BEF0531-BS1)

Prepared & Analyzed: 06/25/21

Arsenic	35.3	0.200	mg/kg wet	40.0	88.3	80-120
Barium	34.9	0.400	"	40.0	87.3	80-120
Cadmium	1.76	0.200	"	2.00	88.2	80-120
Copper	33.0	0.400	"	40.0	82.4	80-120
Lead	17.1	0.200	"	20.0	85.5	80-120
Nickel	32.8	0.400	"	40.0	81.9	80-120
Selenium	3.28	0.260	"	4.00	82.0	80-120
Silver	1.71	0.0200	"	2.00	85.3	80-120
Zinc	34.9	0.400	"	40.0	87.3	80-120

Duplicate (BEF0531-DUP1)

Source: 2106413-01

Prepared & Analyzed: 06/25/21

Arsenic	2.51	0.207	mg/kg dry	2.96	16.3	20
Barium	82.3	0.414	"	87.5	6.17	20
Cadmium	0.110	0.207	"	0.111	0.788	20
Copper	8.92	0.414	"	9.07	1.64	20
Lead	6.84	0.207	"	6.68	2.34	20
Nickel	9.16	0.414	"	9.38	2.44	20
Selenium	0.422	0.269	"	0.377	11.2	20
Silver	0.0344	0.0207	"	0.0356	3.48	20
Zinc	31.3	0.414	"	31.8	1.85	20

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20
Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0531 - EPA 3050B

Matrix Spike (BEF0531-MS1)			Source: 2106413-01		Prepared & Analyzed: 06/25/21					
Arsenic	39.5	0.207	mg/kg dry	41.4	2.96	88.2	75-125			
Barium	130	0.414	"	41.4	87.5	103	75-125			
Cadmium	1.96	0.207	"	2.07	0.111	89.6	75-125			
Copper	44.3	0.414	"	41.4	9.07	85.1	75-125			
Lead	24.0	0.207	"	20.7	6.68	83.6	75-125			
Nickel	44.2	0.414	"	41.4	9.38	84.3	75-125			
Selenium	4.04	0.269	"	4.14	0.377	88.6	75-125			
Silver	1.80	0.0207	"	2.07	0.0356	85.4	75-125			
Zinc	68.3	0.414	"	41.4	31.8	88.2	75-125			

Matrix Spike Dup (BEF0531-MSD1)			Source: 2106413-01		Prepared & Analyzed: 06/25/21					
Arsenic	39.6	0.207	mg/kg dry	41.4	2.96	88.7	75-125	0.440	25	
Barium	130	0.414	"	41.4	87.5	104	75-125	0.228	25	
Cadmium	1.95	0.207	"	2.07	0.111	89.1	75-125	0.515	25	
Copper	43.9	0.414	"	41.4	9.07	84.1	75-125	0.924	25	
Lead	25.0	0.207	"	20.7	6.68	88.7	75-125	4.34	25	
Nickel	44.2	0.414	"	41.4	9.38	84.3	75-125	0.0125	25	
Selenium	4.39	0.269	"	4.14	0.377	97.1	75-125	8.28	25	
Silver	1.79	0.0207	"	2.07	0.0356	85.0	75-125	0.399	25	
Zinc	71.6	0.414	"	41.4	31.8	96.2	75-125	4.75	25	

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0552 - 3060A Mod

Blank (BEF0552-BLK1)

Prepared: 06/28/21 Analyzed: 06/29/21

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BEF0552-BS1)

Prepared: 06/28/21 Analyzed: 06/29/21

Chromium, Hexavalent 22.0 0.30 mg/kg wet 25.0 88.0 80-120

Duplicate (BEF0552-DUP1)

Source: 2106414-01

Prepared: 06/28/21 Analyzed: 06/29/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BEF0552-MS1)

Source: 2106414-01

Prepared: 06/28/21 Analyzed: 06/29/21

Chromium, Hexavalent 22.1 0.30 mg/kg dry 25.4 ND 87.0 75-125

Matrix Spike Dup (BEF0552-MSD1)

Source: 2106414-01

Prepared: 06/28/21 Analyzed: 06/29/21

Chromium, Hexavalent 22.0 0.30 mg/kg dry 25.4 ND 86.4 75-125 0.692 20

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0562 - General Preparation

Blank (BEF0562-BLK1)

Prepared: 06/28/21 Analyzed: 06/29/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEF0562-BS1)

Prepared: 06/28/21 Analyzed: 06/29/21

Calcium	5.02	0.0500	mg/L wet	5.00	100	70-130
Magnesium	5.67	0.0500	"	5.00	113	70-130
Sodium	5.08	0.0500	"	5.00	102	70-130

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0526 - General Preparation

Duplicate (BEF0526-DUP1)

Source: 2106366-01

Prepared & Analyzed: 06/25/21

% Solids	84.1	%	84.3	0.239	20
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Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BEF0578 - General Preparation

Blank (BEF0578-BLK1)

Prepared & Analyzed: 06/29/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEF0578-BS1)

Prepared & Analyzed: 06/29/21

Specific Conductance (EC) 0.142 0.0100 mmhos/cm 0.150 94.8 90-110

Duplicate (BEF0578-DUP1)

Source: 2106414-01

Prepared & Analyzed: 06/29/21

Specific Conductance (EC) 2.83 0.0100 mmhos/cm 2.82 0.248 20

Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BEF0577 - General Preparation

LCS (BEF0577-BS1)

Prepared & Analyzed: 06/29/21

pH	9.28	pH Units	9.21	101	95-105
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Duplicate (BEF0577-DUP1)

Source: 2106414-01

Prepared & Analyzed: 06/29/21

pH	6.71	pH Units	6.71	0.00	20
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Summit Scientific

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Apex Companies
176 Cole Blvd. Suite 250
Lakewood CO, 80101

Project: CPR - Costigan 13-20

Project Number: [none]
Project Manager: Maggie Graham

Reported:
07/13/21 08:05

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

W03@11'

7/8/2021 1:20:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-01 (Soil)

GBTEX+TMBs

Surrogate: Toluene-d8	92.9 %		70-130			B1G12 01	07/12/2021	07/12/2021	
Surrogate: 4-Bromofluorobenzene	99.7 %		70-130			"	"	"	

Metals by Saturated Paste

Calcium	0.366		0.0499	meq/L	1	[CALC]	07/14/2021	07/14/2021	
Magnesium	0.444		0.0823	"	"	"	"	"	
Sodium	15.7		0.0435	"	"	"	"	"	

pH in Soil by EPA 9045D

pH	8.53			pH Units	1	B1G1401	07/14/2021	07/14/2021	
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SAR by 20B Saturated Paste

SAR	24.6			SAR	1	B1G1322	07/14/2021	07/14/2021	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	1.72		0.00500	mmhos/cm	1	B1G1404	07/14/2021	07/14/2021	
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Total Metals by 6020B

Arsenic	40.7	0.342	1	mg/Kg	20	L563468	07/13/2021	07/14/2021	
Barium	37.7	0.042	0.25	"	5	"	"	"	
Cadmium	0.382	0.0259	0.25	"	"	"	"	"	

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

W03@11'

7/8/2021 1:20:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.

Y107217-01 (Soil)

Total Metals by 6020B

Copper	19.1	0.0806	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Lead	18.6	0.031	0.25	"	"	"	"	"	
Nickel	31.2	0.0633	0.25	"	"	"	"	"	
Selenium	0.419	0.103	0.25	"	"	"	"	"	
Silver	0.0506	0.0067	0.25	"	"	"	"	"	J
Zinc	87.4	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.488	1	mg/Kg	2	L563574	07/08/2021	07/14/2021	
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

N04@15'
7/8/2021 12:25:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-02 (Soil)

Boron (DTPA Sorbitol)

Boron	0.685	0.00627	0.201	mg/L	1	B1G1306	07/13/2021	07/13/2021	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B1G0922	07/09/2021	07/12/2021	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	100 %		50-150			"	"	"	
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GBTEX+TMBs

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B1G1201	07/12/2021	07/12/2021	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.9 %		70-130			"	"	"	
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

N04@15'

7/8/2021 12:25:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-02 (Soil)

GBTEX+TMBs

Surrogate: Toluene-d8	92.5 %		70-130			B1G12 01	07/12/2021	07/12/2021	
Surrogate: 4-Bromofluorobenzene	101 %		70-130			"	"	"	

Metals by Saturated Paste

Calcium	17.7		0.0499	meq/L	1	[CALC]	07/14/2021	07/14/2021	
Magnesium	24.9		0.0823	"	"	"	"	"	
Sodium	89.8		0.0435	"	"	"	"	"	

pH in Soil by EPA 9045D

pH	8.13			pH Units	1	B1G1401	07/14/2021	07/14/2021	
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SAR by 20B Saturated Paste

SAR	19.4			SAR	1	B1G1322	07/14/2021	07/14/2021	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	10.2		0.00500	mmhos/cm	1	B1G1404	07/14/2021	07/14/2021	
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Total Metals by 6020B

Arsenic	4.69	0.0855	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Barium	76.7	0.042	0.25	"	"	"	"	"	
Cadmium	0.71	0.0259	0.25	"	"	"	"	"	

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

N04@15'

7/8/2021 12:25:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y107217-02 (Soil)

Total Metals by 6020B

Copper	18.7	0.0806	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Lead	16.6	0.031	0.25	"	"	"	"	"	
Nickel	29.1	0.0633	0.25	"	"	"	"	"	
Selenium	0.817	0.103	0.25	"	"	"	"	"	
Silver	0.0819	0.0067	0.25	"	"	"	"	"	J
Zinc	308	1.07	5	"	10	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.502	1.03	mg/Kg	2	L563574	07/08/2021	07/14/2021	
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

N05@15'
7/8/2021 12:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-03 (Soil)

Boron (DTPA Sorbitol)

Boron	0.855	0.00619	0.199	mg/L	1	B1G1306	07/13/2021	07/13/2021	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B1G0922	07/09/2021	07/12/2021	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	68.7 %		50-150			"	"	"	
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GBTEX+TMBs

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B1G1201	07/12/2021	07/12/2021	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.7 %		70-130			"	"	"	
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

N05@15'

7/8/2021 12:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-03 (Soil)

GBTEX+TMBs

Surrogate: Toluene-d8	92.2 %		70-130			B1G12 01	07/12/2021	07/12/2021	
Surrogate: 4-Bromofluorobenzene	99.9 %		70-130			"	"	"	

Metals by Saturated Paste

Calcium	20.5		0.0499	meq/L	1	[CALC]	07/14/2021	07/14/2021	
Magnesium	25.8		0.0823	"	"	"	"	"	
Sodium	95.1		0.0435	"	"	"	"	"	

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00048	0.00067	mg/Kg	1	L563639	07/14/2021	07/14/2021	
2-Methylnaphthalene	ND	0.000542	0.00067	"	"	"	"	"	
Acenaphthene	ND	0.000431	0.00067	"	"	"	"	"	
Anthracene	ND	0.000426	0.00067	"	"	"	"	"	
Benzo(a)anthracene	ND	0.000441	0.00067	"	"	"	"	"	
Benzo(a)pyrene	ND	0.000133	0.00067	"	"	"	"	"	
Benzo(b)fluoranthene	0.000816	0.000138	0.00067	"	"	"	"	"	
Benzo(k)fluoranthene	ND	0.000486	0.00067	"	"	"	"	"	
Chrysene	ND	0.000256	0.00067	"	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.000279	0.00067	"	"	"	"	"	
Fluoranthene	ND	0.000529	0.00067	"	"	"	"	"	

Origins Laboratory, Inc.



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Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

N05@15'
7/8/2021 12:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y107217-03 (Soil)

PAH by 8270D SIM

Fluorene	ND	0.000501	0.00067	mg/Kg	1	L563639	07/14/2021	07/14/2021	
Indeno(1,2,3-cd)pyrene	0.00055	0.000344	0.00067	"	"	"	"	"	J
Naphthalene	ND	0.000467	0.00067	"	"	"	"	"	
Pyrene	ND	0.000387	0.00067	"	"	"	"	"	

Surrogate: 2-Fluorobiphenyl	70.1 %		33-115			"	"	"	
Surrogate: 4-Terphenyl-d14	62.8 %		33-122			"	"	"	
Surrogate: Nitrobenzene-d5	71.3 %		29-110			"	"	"	

pH in Soil by EPA 9045D

pH	7.86			pH Units	1	B1G1401	07/14/2021	07/14/2021	
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SAR by 20B Saturated Paste

SAR	19.8			SAR	1	B1G1322	07/14/2021	07/14/2021	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	10.7		0.00500	mmhos/cm	1	B1G1404	07/14/2021	07/14/2021	
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Total Metals by 6020B

Arsenic	1.88	0.0855	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

N05@15'

7/8/2021 12:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y107217-03 (Soil)

Total Metals by 6020B

Barium	59.5	0.042	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Cadmium	0.478	0.0259	0.25	"	"	"	"	"	
Copper	15.7	0.0806	0.25	"	"	"	"	"	
Lead	18.9	0.031	0.25	"	"	"	"	"	
Nickel	14.8	0.0633	0.25	"	"	"	"	"	
Selenium	0.378	0.103	0.25	"	"	"	"	"	
Silver	0.0839	0.0067	0.25	"	"	"	"	"	J
Zinc	101	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	2.44	5	mg/Kg	10	L563574	07/08/2021	07/14/2021	
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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

N06@11'

7/8/2021 12:35:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-04 (Soil)

Boron (DTPA Sorbitol)

Boron	0.626	0.00629	0.202	mg/L	1	B1G1306	07/13/2021	07/13/2021	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B1G0922	07/09/2021	07/12/2021	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	74.9 %		50-150			"	"	"	
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GBTEX+TMBs

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B1G1201	07/12/2021	07/12/2021	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	111 %		70-130			"	"	"	
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4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

N06@11'

7/8/2021 12:35:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-04 (Soil)

GBTEX+TMBs

Surrogate: Toluene-d8	92.0 %		70-130			B1G12 01	07/12/2021	07/12/2021	
Surrogate: 4-Bromofluorobenzene	100 %		70-130			"	"	"	

Metals by Saturated Paste

Calcium	3.04		0.0499	meq/L	1	[CALC]	07/14/2021	07/14/2021	
Magnesium	5.12		0.0823	"	"	"	"	"	
Sodium	49.2		0.0435	"	"	"	"	"	

pH in Soil by EPA 9045D

pH	8.06			pH Units	1	B1G1401	07/14/2021	07/14/2021	
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SAR by 20B Saturated Paste

SAR	24.4			SAR	1	B1G1322	07/14/2021	07/14/2021	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	5.31		0.00500	mmhos/cm	1	B1G1404	07/14/2021	07/14/2021	
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Total Metals by 6020B

Arsenic	1.12	0.0855	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Barium	97.4	0.042	0.25	"	"	"	"	"	
Cadmium	0.323	0.0259	0.25	"	"	"	"	"	

Origins Laboratory, Inc.



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Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

N06@11'

7/8/2021 12:35:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y107217-04 (Soil)

Total Metals by 6020B

Copper	19.4	0.0806	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Lead	17.7	0.031	0.25	"	"	"	"	"	
Nickel	10.6	0.0633	0.25	"	"	"	"	"	
Selenium	0.249	0.103	0.25	"	"	"	"	"	J
Silver	0.0835	0.0067	0.25	"	"	"	"	"	J
Zinc	49.1	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	2.5	5.13	mg/Kg	10	L563574	07/08/2021	07/14/2021	
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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

E03@13'

7/8/2021 12:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-05 (Soil)

Boron (DTPA Sorbitol)

Boron	2.29	0.00621	0.199	mg/L	1	B1G1306	07/13/2021	07/13/2021	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B1G0922	07/09/2021	07/12/2021	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	65.8 %		50-150			"	"	"	
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GBTEX+TMBs

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B1G1201	07/12/2021	07/12/2021	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %		70-130			"	"	"	
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Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

E03@13'

7/8/2021 12:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-05 (Soil)

GBTEX+TMBs

Surrogate: Toluene-d8	92.8 %		70-130			B1G12 01	07/12/2021	07/12/2021	
Surrogate: 4-Bromofluorobenzene	101 %		70-130			"	"	"	

Metals by Saturated Paste

Calcium	0.299		0.0499	meq/L	1	[CALC]	07/14/2021	07/14/2021	
Magnesium	0.374		0.0823	"	"	"	"	"	
Sodium	9.96		0.0435	"	"	"	"	"	

pH in Soil by EPA 9045D

pH	8.70			pH Units	1	B1G1401	07/14/2021	07/14/2021	
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SAR by 20B Saturated Paste

SAR	17.2			SAR	1	B1G1322	07/14/2021	07/14/2021	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	1.05		0.00500	mmhos/cm	1	B1G1404	07/14/2021	07/14/2021	
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Total Metals by 6020B

Arsenic	2.44	0.0855	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Barium	124	0.042	0.25	"	"	"	"	"	
Cadmium	0.177	0.0259	0.25	"	"	"	"	"	J

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

E03@13'

7/8/2021 12:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y107217-05 (Soil)

Total Metals by 6020B

Copper	10.5	0.0806	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Lead	9.04	0.031	0.25	"	"	"	"	"	
Nickel	13	0.0633	0.25	"	"	"	"	"	
Selenium	0.233	0.103	0.25	"	"	"	"	"	J
Silver	0.0379	0.0067	0.25	"	"	"	"	"	J
Zinc	45.4	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L563574	07/08/2021	07/14/2021	
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4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

E04@12'

7/8/2021 12:45:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-06 (Soil)

Boron (DTPA Sorbitol)

Boron	2.26	0.00629	0.202	mg/L	1	B1G1306	07/13/2021	07/13/2021	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B1G0922	07/09/2021	07/12/2021	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	78.9 %		50-150			"	"	"	
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GBTEX+TMBs

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B1G1201	07/12/2021	07/12/2021	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %		70-130			"	"	"	
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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

E04@12'

7/8/2021 12:45:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-06 (Soil)

GBTEX+TMBs

Surrogate: Toluene-d8	92.3 %		70-130			B1G12 01	07/12/2021	07/12/2021	
Surrogate: 4-Bromofluorobenzene	100 %		70-130			"	"	"	

Metals by Saturated Paste

Calcium	0.301		0.0499	meq/L	1	[CALC]	07/14/2021	07/14/2021	
Magnesium	0.469		0.0823	"	"	"	"	"	
Sodium	10.1		0.0435	"	"	"	"	"	

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00048	0.00067	mg/Kg	1	L563639	07/14/2021	07/14/2021	
2-Methylnaphthalene	ND	0.000542	0.00067	"	"	"	"	"	
Acenaphthene	ND	0.000431	0.00067	"	"	"	"	"	
Anthracene	ND	0.000426	0.00067	"	"	"	"	"	
Benzo(a)anthracene	ND	0.000441	0.00067	"	"	"	"	"	
Benzo(a)pyrene	ND	0.000133	0.00067	"	"	"	"	"	
Benzo(b)fluoranthene	ND	0.000138	0.00067	"	"	"	"	"	
Benzo(k)fluoranthene	ND	0.000486	0.00067	"	"	"	"	"	
Chrysene	ND	0.000256	0.00067	"	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.000279	0.00067	"	"	"	"	"	
Fluoranthene	ND	0.000529	0.00067	"	"	"	"	"	

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Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

E04@12'

7/8/2021 12:45:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y107217-06 (Soil)

PAH by 8270D SIM

Fluorene	ND	0.000501	0.00067	mg/Kg	1	L563639	07/14/2021	07/14/2021
Indeno(1,2,3-cd)pyrene	ND	0.000344	0.00067	"	"	"	"	"
Naphthalene	ND	0.000467	0.00067	"	"	"	"	"
Pyrene	ND	0.000387	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	59 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	59.6 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	62 %	29-110	"	"	"

pH in Soil by EPA 9045D

pH	8.65	pH Units	1	B1G1401	07/14/2021	07/14/2021
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SAR by 20B Saturated Paste

SAR	16.3	SAR	1	B1G1322	07/14/2021	07/14/2021
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	1.10	0.00500	mmhos/cm	1	B1G1404	07/14/2021	07/14/2021
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Total Metals by 6020B

Arsenic	3.01	0.0855	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

E04@12'

7/8/2021 12:45:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.

Y107217-06 (Soil)

Total Metals by 6020B

Barium	68.8	0.042	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Cadmium	0.145	0.0259	0.25	"	"	"	"	"	J
Copper	8.29	0.0806	0.25	"	"	"	"	"	
Lead	7.53	0.031	0.25	"	"	"	"	"	
Nickel	9.43	0.0633	0.25	"	"	"	"	"	
Selenium	0.305	0.103	0.25	"	"	"	"	"	
Silver	0.0178	0.0067	0.25	"	"	"	"	"	J
Zinc	34.3	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.253	0.519	mg/Kg	1	L563574	07/08/2021	07/14/2021	
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

E05@12'
7/8/2021 12:50:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-07 (Soil)

Boron (DTPA Sorbitol)

Boron	1.13	0.00618	0.198	mg/L	1	B1G1306	07/13/2021	07/13/2021	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B1G1202	07/12/2021	07/12/2021	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	71.1 %		50-150			"	"	"	
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GBTEX+TMBs

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B1G1201	07/12/2021	07/12/2021	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %		70-130			"	"	"	
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

E05@12'

7/8/2021 12:50:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-07 (Soil)

GBTEX+TMBs

Surrogate: Toluene-d8	91.7 %		70-130			B1G12 01	07/12/2021	07/12/2021	
Surrogate: 4-Bromofluorobenzene	100 %		70-130			"	"	"	

Metals by Saturated Paste

Calcium	8.62		0.0499	meq/L	1	[CALC]	07/14/2021	07/14/2021	
Magnesium	14.5		0.0823	"	"	"	"	"	
Sodium	74.0		0.0435	"	"	"	"	"	

pH in Soil by EPA 9045D

pH	8.11			pH Units	1	B1G1401	07/14/2021	07/14/2021	
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SAR by 20B Saturated Paste

SAR	21.7			SAR	1	B1G1322	07/14/2021	07/14/2021	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	8.27		0.00500	mmhos/cm	1	B1G1404	07/14/2021	07/14/2021	
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Total Metals by 6020B

Arsenic	5.14	0.0855	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Barium	82.5	0.042	0.25	"	"	"	"	"	
Cadmium	0.319	0.0259	0.25	"	"	"	"	"	

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

E05@12'

7/8/2021 12:50:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y107217-07 (Soil)

Total Metals by 6020B

Copper	15.8	0.0806	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Lead	14	0.031	0.25	"	"	"	"	"	
Nickel	17.6	0.0633	0.25	"	"	"	"	"	
Selenium	0.557	0.103	0.25	"	"	"	"	"	
Silver	0.0384	0.0067	0.25	"	"	"	"	"	J
Zinc	60	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.25	0.513	mg/Kg	1	L563574	07/08/2021	07/14/2021	
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Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

S04@13'

7/8/2021 12:55:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-08 (Soil)

Boron (DTPA Sorbitol)

Boron	0.734	0.00618	0.198	mg/L	1	B1G1306	07/13/2021	07/13/2021	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B1G1202	07/12/2021	07/12/2021	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	71.6 %		50-150			"	"	"	
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GBTEX+TMBs

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B1G1201	07/12/2021	07/12/2021	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %		70-130			"	"	"	
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

S04@13'

7/8/2021 12:55:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-08 (Soil)

GBTEX+TMBs

Surrogate: Toluene-d8	90.7 %		70-130			B1G12 01	07/12/2021	07/12/2021	
Surrogate: 4-Bromofluorobenzene	100 %		70-130			"	"	"	

Metals by Saturated Paste

Calcium	20.2		0.0499	meq/L	1	[CALC]	07/14/2021	07/14/2021	
Magnesium	20.6		0.0823	"	"	"	"	"	
Sodium	74.8		0.0435	"	"	"	"	"	

pH in Soil by EPA 9045D

pH	7.92			pH Units	1	B1G1402	07/14/2021	07/14/2021	
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SAR by 20B Saturated Paste

SAR	16.6			SAR	1	B1G1322	07/14/2021	07/14/2021	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	9.06		0.00500	mmhos/cm	1	B1G1404	07/14/2021	07/14/2021	
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Total Metals by 6020B

Arsenic	3.42	0.0855	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Barium	79.5	0.042	0.25	"	"	"	"	"	
Cadmium	0.182	0.0259	0.25	"	"	"	"	"	J

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

S04@13'

7/8/2021 12:55:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y107217-08 (Soil)

Total Metals by 6020B

Copper	18.7	0.0806	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Lead	14.9	0.031	0.25	"	"	"	"	"	
Nickel	18.3	0.0633	0.25	"	"	"	"	"	
Selenium	0.513	0.103	0.25	"	"	"	"	"	
Silver	0.0597	0.0067	0.25	"	"	"	"	"	J
Zinc	73.5	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.25	0.513	mg/Kg	1	L563574	07/08/2021	07/14/2021	
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

S05@14'

7/8/2021 1:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-09 (Soil)

Boron (DTPA Sorbitol)

Boron	0.558	0.00621	0.199	mg/L	1	B1G1306	07/13/2021	07/13/2021	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B1G1202	07/12/2021	07/12/2021	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	77.7 %		50-150			"	"	"	
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GBTEX+TMBs

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B1G1201	07/12/2021	07/12/2021	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	1.03		0.200	"	"	"	"	"	
Xylenes, total	ND		0.00200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %		70-130			"	"	"	
Surrogate: Toluene-d8	92.8 %		70-130			"	"	"	

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

S05@14'

7/8/2021 1:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-09 (Soil)

GBTEX+TMBs

Surrogate: 4-Bromofluorobenzene 100 % 70-130 B1G12 01 07/12/2021 07/12/2021

Metals by Saturated Paste

Calcium	4.71	0.0499	meq/L	1	[CALC]	07/14/2021	07/14/2021
Magnesium	5.89	0.0823	"	"	"	"	"
Sodium	46.1	0.0435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	0.00436	0.00048	0.00067	mg/Kg	1	L563639	07/14/2021	07/14/2021
2-Methylnaphthalene	0.000735	0.000542	0.00067	"	"	"	"	"
Acenaphthene	ND	0.000431	0.00067	"	"	"	"	"
Anthracene	0.00141	0.000426	0.00067	"	"	"	"	"
Benzo(a)anthracene	0.000898	0.000441	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000133	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	0.000863	0.000138	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000486	0.00067	"	"	"	"	"
Chrysene	0.00641	0.000256	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000279	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000529	0.00067	"	"	"	"	"
Fluorene	0.01	0.000501	0.00067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.000344	0.00067	"	"	"	"	"

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

S05@14'

7/8/2021 1:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y107217-09 (Soil)

PAH by 8270D SIM

Naphthalene	0.000558	0.000467	0.00067	mg/Kg	1	L563639	07/14/2021	07/14/2021	J
Pyrene	0.00439	0.000387	0.00067	"	"	"	"	"	

Surrogate: 2-Fluorobiphenyl	48 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	91.5 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	75.1 %	29-110	"	"	"

pH in Soil by EPA 9045D

pH	8.05	pH Units	1	B1G1402	07/14/2021	07/14/2021
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SAR by 20B Saturated Paste

SAR	20.0	SAR	1	B1G1322	07/14/2021	07/14/2021
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	5.32	0.00500	mmhos/cm	1	B1G1405	07/14/2021	07/14/2021
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Total Metals by 6020B

Arsenic	3.54	0.0855	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021
Barium	95.2	0.042	0.25	"	"	"	"	"
Cadmium	0.315	0.0259	0.25	"	"	"	"	"

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

S05@14'

7/8/2021 1:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y107217-09 (Soil)

Total Metals by 6020B

Copper	21.8	0.0806	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Lead	16.1	0.031	0.25	"	"	"	"	"	
Nickel	38.4	0.0633	0.25	"	"	"	"	"	
Selenium	1.06	0.103	0.25	"	"	"	"	"	
Silver	0.057	0.0067	0.25	"	"	"	"	"	J
Zinc	88.8	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.488	1	mg/Kg	2	L563574	07/08/2021	07/14/2021	
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

B04@15'

7/8/2021 1:05:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-10 (Soil)

Boron (DTPA Sorbitol)

Boron	0.883	0.00625	0.201	mg/L	1	B1G1306	07/13/2021	07/13/2021	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B1G1202	07/12/2021	07/12/2021	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	84.6 %		50-150			"	"	"	
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GBTEX+TMBs

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B1G1201	07/12/2021	07/12/2021	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	0.00660		0.00200	"	"	"	"	"	
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.8 %		70-130			"	"	"	
Surrogate: Toluene-d8	92.6 %		70-130			"	"	"	

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

B04@15'

7/8/2021 1:05:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-10 (Soil)

GBTEX+TMBs

Surrogate: 4-Bromofluorobenzene	99.5 %	70-130				B1G12 01	07/12/2021	07/12/2021
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Metals by Saturated Paste

Calcium	6.61	0.0499	meq/L	1	[CALC]	07/14/2021	07/14/2021
Magnesium	6.58	0.0823	"	"	"	"	"
Sodium	46.8	0.0435	"	"	"	"	"

pH in Soil by EPA 9045D

pH	7.68		pH Units	1	B1G1402	07/14/2021	07/14/2021
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SAR by 20B Saturated Paste

SAR	18.2		SAR	1	B1G1322	07/14/2021	07/14/2021
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	5.35	0.00500	mmhos/cm	1	B1G1405	07/14/2021	07/14/2021
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Total Metals by 6020B

Arsenic	2.1	0.0855	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021
Barium	54.6	0.042	0.25	"	"	"	"	"
Cadmium	0.333	0.0259	0.25	"	"	"	"	"
Copper	17.2	0.0806	0.25	"	"	"	"	"

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

B04@15'

7/8/2021 1:05:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y107217-10 (Soil)

Total Metals by 6020B

Lead	19.5	0.031	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Nickel	12.5	0.0633	0.25	"	"	"	"	"	
Selenium	4.96	0.103	0.25	"	"	"	"	"	
Silver	0.106	0.0067	0.25	"	"	"	"	"	J
Zinc	66.6	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	2.5	5.13	mg/Kg	10	L563577	07/08/2021	07/14/2021	
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

B05@16'

7/8/2021 1:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-11 (Soil)

Boron (DTPA Sorbitol)

Boron	0.342	0.00626	0.201	mg/L	1	B1G1306	07/13/2021	07/13/2021	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B1G1202	07/12/2021	07/12/2021	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	70.7 %		50-150			"	"	"	
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GBTEX+TMBs

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B1G1201	07/12/2021	07/12/2021	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.9 %		70-130			"	"	"	
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Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

B05@16'

7/8/2021 1:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-11 (Soil)

GBTEX+TMBs

Surrogate: Toluene-d8	92.8 %		70-130			B1G12 01	07/12/2021	07/12/2021	
Surrogate: 4-Bromofluorobenzene	99.7 %		70-130			"	"	"	

Metals by Saturated Paste

Calcium	4.29		0.0499	meq/L	1	[CALC]	07/14/2021	07/14/2021	
Magnesium	6.36		0.0823	"	"	"	"	"	
Sodium	39.0		0.0435	"	"	"	"	"	

pH in Soil by EPA 9045D

pH	8.24			pH Units	1	B1G1402	07/14/2021	07/14/2021	
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SAR by 20B Saturated Paste

SAR	16.9			SAR	1	B1G1322	07/14/2021	07/14/2021	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	4.48		0.00500	mmhos/cm	1	B1G1405	07/14/2021	07/14/2021	
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Total Metals by 6020B

Arsenic	2.05	0.0855	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Barium	151	0.042	0.25	"	"	"	"	"	
Cadmium	0.273	0.0259	0.25	"	"	"	"	"	

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

B05@16'

7/8/2021 1:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.

Y107217-11 (Soil)

Total Metals by 6020B

Copper	21	0.0806	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Lead	20.8	0.031	0.25	"	"	"	"	"	
Nickel	15.3	0.0633	0.25	"	"	"	"	"	
Selenium	0.489	0.103	0.25	"	"	"	"	"	
Silver	0.089	0.0067	0.25	"	"	"	"	"	J
Zinc	77.4	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	2.44	5	mg/Kg	10	L563577	07/08/2021	07/14/2021	
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Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

B06@20'

7/8/2021 1:15:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-12 (Soil)

Boron (DTPA Sorbitol)

Boron	0.638	0.00621	0.199	mg/L	1	B1G1306	07/13/2021	07/13/2021	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B1G1202	07/12/2021	07/12/2021	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: o-Terphenyl	72.9 %		50-150			"	"	"	
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GBTEX+TMBs

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B1G1201	07/12/2021	07/12/2021	U
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	U
Benzene	ND		0.00200	"	"	"	"	"	U
Ethylbenzene	ND		0.00200	"	"	"	"	"	U
Toluene	ND		0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	U
Xylenes, total	ND		0.00200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %		70-130			"	"	"	
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

B06@20'

7/8/2021 1:15:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-12 (Soil)

GBTEX+TMBs

Surrogate: Toluene-d8	91.9 %		70-130			B1G12 01	07/12/2021	07/12/2021	
Surrogate: 4-Bromofluorobenzene	101 %		70-130			"	"	"	

Metals by Saturated Paste

Calcium	21.8		0.0499	meq/L	1	[CALC]	07/14/2021	07/14/2021	
Magnesium	24.8		0.0823	"	"	"	"	"	
Sodium	75.3		0.0435	"	"	"	"	"	

pH in Soil by EPA 9045D

pH	7.41			pH Units	1	B1G1402	07/14/2021	07/14/2021	
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SAR by 20B Saturated Paste

SAR	15.6			SAR	1	B1G1412	07/14/2021	07/14/2021	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	9.39		0.00500	mmhos/cm	1	B1G1405	07/14/2021	07/14/2021	
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Total Metals by 6020B

Arsenic	1.26	0.0855	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Barium	64.9	0.042	0.25	"	"	"	"	"	
Cadmium	0.641	0.0259	0.25	"	"	"	"	"	

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

B06@20'

7/8/2021 1:15:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y107217-12 (Soil)

Total Metals by 6020B

Copper	14	0.0806	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Lead	15.4	0.031	0.25	"	"	"	"	"	
Nickel	17.1	0.0633	0.25	"	"	"	"	"	
Selenium	0.526	0.103	0.25	"	"	"	"	"	
Silver	0.0635	0.0067	0.25	"	"	"	"	"	J
Zinc	105	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.502	1.03	mg/Kg	2	L563577	07/08/2021	07/14/2021	
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

BKG02@18'

7/8/2021 2:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107217-13 (Soil)

Boron (DTPA Sorbitol)

Boron	0.758	0.00622	0.200	mg/L	1	B1G1306	07/13/2021	07/13/2021
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Metals by Saturated Paste

Calcium	5.04		0.0499	meq/L	"	[CALC]	07/14/2021	07/14/2021
Magnesium	5.39		0.0823	"	"	"	"	"
Sodium	25.9		0.0435	"	"	"	"	"

pH in Soil by EPA 9045D

pH	8.01			pH Units	1	B1G1402	07/14/2021	07/14/2021
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SAR by 20B Saturated Paste

SAR	11.4			SAR	1	B1G1412	07/14/2021	07/14/2021
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	3.30		0.00500	mmhos/cm	1	B1G1405	07/14/2021	07/14/2021
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Total Metals by 6020B

Arsenic	6.11	0.0855	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021
Barium	106	0.042	0.25	"	"	"	"	"
Cadmium	0.915	0.0259	0.25	"	"	"	"	"
Copper	21.3	0.0806	0.25	"	"	"	"	"

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

BKG02@18'

7/8/2021 2:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, Inc.
Y107217-13 (Soil)

Total Metals by 6020B

Lead	17.1	0.031	0.25	mg/Kg	5	L563468	07/13/2021	07/14/2021	
Nickel	16.5	0.0633	0.25	"	"	"	"	"	
Selenium	0.505	0.103	0.25	"	"	"	"	"	
Silver	0.0656	0.0067	0.25	"	"	"	"	"	J
Zinc	159	0.534	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	2.49	5.11	mg/Kg	10	L563577	07/08/2021	07/14/2021	
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Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B1G0922 - EPA 3550B										
Blank (B1G0922-BLK1)					Prepared: 07/09/2021 Analyzed: 07/09/2021					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	37		"	50.0		73.4	50-150			

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B1G0922 - EPA 3550B

LCS (B1G0922-BS1)

Prepared: 07/09/2021 Analyzed: 07/09/2021

Diesel (C10-C28)	915	50.0	mg/kg	1000		91.5	70-130			
Residual Range Organics (C28-C40)	1080	200	"	1000		108	70-130			
Surrogate: o-Terphenyl	53		"	50.0		107	50-150			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Extractable Petroleum Hydrocarbons by 8015D - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B1G0922 - EPA 3550B

Matrix Spike (B1G0922-MS1)		Source: Y107178-11			Prepared: 07/09/2021 Analyzed: 07/09/2021					
Diesel (C10-C28)	919	50.0	mg/kg	1000	ND	91.9	70-130			
Residual Range Organics (C28-C40)	1030	200	"	1000	ND	103	70-130			
Surrogate: o-Terphenyl	51		"	50.0		103	50-150			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Extractable Petroleum Hydrocarbons by 8015D - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B1G0922 - EPA 3550B

Matrix Spike Dup (B1G0922-MSD1)		Source: Y107178-11			Prepared: 07/09/2021 Analyzed: 07/09/2021					
Diesel (C10-C28)	905	50.0	mg/kg	1000	ND	90.5	70-130	1.52	35	
Residual Range Organics (C28-C40)	964	200	"	1000	ND	96.4	70-130	6.25	35	
Surrogate: o-Terphenyl	51		"	50.0		102	50-150			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B1G1201 - EPA 5030 (soil)										
Blank (B1G1201-BLK1)					Prepared: 07/12/2021 Analyzed: 07/12/2021					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
Naphthalene	ND	0.0100	"							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Toluene	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Xylenes, total	ND	0.00200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		92.6	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.9	70-130			

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B1G1201 - EPA 5030 (soil)										
LCS (B1G1201-BS1)					Prepared: 07/12/2021 Analyzed: 07/12/2021					
1,2,4-Trimethylbenzene	0.0518	0.00200	mg/kg	0.0500		104	70-130			
Naphthalene	0.0484	0.0100	"	0.0500		96.8	70-130			
1,3,5-Trimethylbenzene	0.0513	0.00200	"	0.0500		103	70-130			
Benzene	0.0540	0.00200	"	0.0500		108	70-130			
Ethylbenzene	0.0517	0.00200	"	0.0500		103	70-130			
m,p-Xylene	0.105	0.00400	"	0.100		105	70-130			
o-Xylene	0.0513	0.00200	"	0.0500		103	70-130			
Toluene	0.0510	0.00200	"	0.0500		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.0	70-130			

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B1G1201 - EPA 5030 (soil)

Matrix Spike (B1G1201-MS1)		Source: Y107217-01			Prepared: 07/12/2021 Analyzed: 07/12/2021					
1,2,4-Trimethylbenzene	0.0556	0.00200	mg/kg	0.0500	0.000600	110	70-130			
Naphthalene	0.0536	0.0100	"	0.0500	0.00282	102	70-130			
1,3,5-Trimethylbenzene	0.0549	0.00200	"	0.0500	0.000440	109	70-130			
Benzene	0.0587	0.00200	"	0.0500	ND	117	70-130			
Ethylbenzene	0.0541	0.00200	"	0.0500	ND	108	70-130			
m,p-Xylene	0.110	0.00400	"	0.100	ND	110	70-130			
o-Xylene	0.0546	0.00200	"	0.0500	ND	109	70-130			
Toluene	0.0552	0.00200	"	0.0500	ND	110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.0	70-130			

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B1G1201 - EPA 5030 (soil)										
Matrix Spike Dup (B1G1201-MSD1)		Source: Y107217-01			Prepared: 07/12/2021 Analyzed: 07/12/2021					
1,2,4-Trimethylbenzene	0.0609	0.00200	mg/kg	0.0500	0.000600	121	70-130	9.10	20	
Naphthalene	0.0611	0.0100	"	0.0500	0.00282	117	70-130	13.0	20	
1,3,5-Trimethylbenzene	0.0605	0.00200	"	0.0500	0.000440	120	70-130	9.68	20	
Benzene	0.0653	0.00200	"	0.0500	ND	131	70-130	10.7	20	QM-07
Ethylbenzene	0.0611	0.00200	"	0.0500	ND	122	70-130	12.1	20	
m,p-Xylene	0.123	0.00400	"	0.100	ND	123	70-130	10.9	20	
o-Xylene	0.0610	0.00200	"	0.0500	ND	122	70-130	11.2	20	
Toluene	0.0606	0.00200	"	0.0500	ND	121	70-130	9.37	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.7	70-130			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B1G1202 - EPA 3550B										
Blank (B1G1202-BLK1)					Prepared: 07/12/2021 Analyzed: 07/12/2021					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	21		"	25.0		82.3	50-150			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B1G1202 - EPA 3550B

LCS (B1G1202-BS1)

Prepared: 07/12/2021 Analyzed: 07/12/2021

Diesel (C10-C28)	711	50.0	mg/kg	1000		71.1	70-130			
Residual Range Organics (C28-C40)	797	200	"	1000		79.7	70-130			
Surrogate: o-Terphenyl	44		"	50.0		88.6	50-150			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Extractable Petroleum Hydrocarbons by 8015D - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B1G1202 - EPA 3550B

Matrix Spike (B1G1202-MS1)		Source: Y107217-07			Prepared: 07/12/2021 Analyzed: 07/12/2021					
Diesel (C10-C28)	741	50.0	mg/kg	1000	ND	74.1	70-130			
Residual Range Organics (C28-C40)	853	200	"	1000	ND	85.3	70-130			
Surrogate: o-Terphenyl	40		"	50.0		79.5	50-150			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Extractable Petroleum Hydrocarbons by 8015D - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B1G1202 - EPA 3550B

Matrix Spike Dup (B1G1202-MSD1)		Source: Y107217-07			Prepared: 07/12/2021 Analyzed: 07/12/2021					
Diesel (C10-C28)	862	50.0	mg/kg	1000	ND	86.2	70-130	15.2	35	
Residual Range Organics (C28-C40)	959	200	"	1000	ND	95.9	70-130	11.7	35	
Surrogate: o-Terphenyl	47		"	50.0		94.7	50-150			

Origins Laboratory, Inc.



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4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Classical Chemistry Parameters - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B1G1306 - Default Prep Metals

Blank (B1G1306-BLK1)

Prepared: 07/13/2021 Analyzed: 07/13/2021

Boron	ND	0.200	mg/L
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Origins Laboratory, Inc.



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Apex Companies, LLC
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Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B1G1401 - NO PREP										
Duplicate (B1G1401-DUP1)		Source: Y107201-02			Prepared: 07/14/2021 Analyzed: 07/14/2021					
pH	7.37		pH Units		7.36			0.136	25	
Batch B1G1402 - NO PREP										
Duplicate (B1G1402-DUP1)		Source: Y107247-02			Prepared: 07/14/2021 Analyzed: 07/14/2021					
pH	7.76		pH Units		7.84			1.03	25	
Batch B1G1404 - NO PREP										
Blank (B1G1404-BLK1)		Prepared: 07/14/2021 Analyzed: 07/14/2021								
Specific Conductance (EC)	0.00170	0.00500	mmhos/cm							
Duplicate (B1G1404-DUP1)		Source: Y107201-02			Prepared: 07/14/2021 Analyzed: 07/14/2021					
Specific Conductance (EC)	0.616	0.00500	mmhos/cm		0.587			4.86	25	
Batch B1G1405 - NO PREP										
Blank (B1G1405-BLK1)		Prepared: 07/14/2021 Analyzed: 07/14/2021								
Specific Conductance (EC)	0.00260	0.00500	mmhos/cm							
Duplicate (B1G1405-DUP1)		Source: Y107247-02			Prepared: 07/14/2021 Analyzed: 07/14/2021					
Specific Conductance (EC)	0.893	0.00500	mmhos/cm		0.895			0.213	25	

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L563639 - 3550B

MSD (L 92750-MSD-L563639)		Source: 92750			Prepared: 07/14/2021 Analyzed: 07/14/2021					
1-Methylnaphthalene	0.0992	0.00048	mg/Kg	0.166	92750	59.7	30-130	13.8	30	
Benzo(a)anthracene	0.114	0.000441	"	0.166	92750	68.6	30-130	5.9	30	
Anthracene	0.113	0.000426	"	0.166	92750	68	30-130	10	30	
Acenaphthene	0.101	0.000431	"	0.166	92750	60.8	30-130	12.9	30	
Benzo(a)pyrene	0.118	0.000133	"	0.166	92750	71	30-130	6.5	30	
Indeno(1,2,3-cd)pyrene	0.0894	0.000344	"	0.166	92750	53.8	30-130	32.4	30	
2-Methylnaphthalene	0.0983	0.000542	"	0.166	92750	59.2	30-130	14.7	30	
Pyrene	0.101	0.000387	"	0.166	92750	60.8	30-130	10.3	30	
Benzo(b)fluoranthene	0.0907	0.000138	"	0.166	92750	54.6	30-130	26.1	30	
Naphthalene	0.0987	0.000467	"	0.166	92750	59.4	30-130	11.7	30	
Fluoranthene	0.104	0.000529	"	0.166	92750	62.6	30-130	10.9	30	
Fluorene	0.1	0.000501	"	0.166	92750	60.2	30-130	13.9	30	
Dibenz(a,h)anthracene	0.101	0.000279	"	0.166	92750	60.8	30-130	23.5	30	
Chrysene	0.121	0.000256	"	0.166	92750	72.8	30-130	9.4	30	
Benzo(k)fluoranthene	0.0984	0.000486	"	0.166	92750	59.2	30-130	14.6	30	
Surrogate: 4-Terphenyl-d14	52.2		"	0.331	188	52.2	33-122			
Surrogate: 2-Fluorobiphenyl	58		"	0.331	201	58	33-115			
Surrogate: Nitrobenzene-d5	61.3		"	0.331	206	61.3	29-110			

MS (L 92750-MS-L563639)		Source: 92750			Prepared: 07/14/2021 Analyzed: 07/14/2021					
Benzo(k)fluoranthene	0.114	0.000486	mg/Kg	0.166	92750	68.6	30-130			
Naphthalene	0.111	0.000467	"	0.166	92750	66.8	30-130			
Indeno(1,2,3-cd)pyrene	0.124	0.000344	"	0.166	92750	74.6	30-130			
Fluorene	0.115	0.000501	"	0.166	92750	69.2	30-130			
Fluoranthene	0.116	0.000529	"	0.166	92750	69.8	30-130			
Dibenz(a,h)anthracene	0.128	0.000279	"	0.166	92750	77.1	30-130			
Chrysene	0.133	0.000256	"	0.166	92750	80.1	30-130			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L563639 - 3550B

MS (L 92750-MS-L563639)		Source: 92750			Prepared: 07/14/2021 Analyzed: 07/14/2021					
Pyrene	0.112	0.000387	mg/Kg	0.166	92750	67.4	30-130			
Benzo(a)pyrene	0.126	0.000133	"	0.166	92750	75.9	30-130			
Benzo(b)fluoranthene	0.118	0.000138	"	0.166	92750	71	30-130			
1-Methylnaphthalene	0.114	0.00048	"	0.166	92750	68.6	30-130			
2-Methylnaphthalene	0.114	0.000542	"	0.166	92750	68.6	30-130			
Acenaphthene	0.115	0.000431	"	0.166	92750	69.2	30-130			
Benzo(a)anthracene	0.121	0.000441	"	0.166	92750	72.8	30-130			
Anthracene	0.125	0.000426	"	0.166	92750	75.3	30-130			
Surrogate: Nitrobenzene-d5	67.3		"	0.331	206	67.3	29-110			
Surrogate: 2-Fluorobiphenyl	64.9		"	0.331	201	64.9	33-115			
Surrogate: 4-Terphenyl-d14	59.8		"	0.331	188	59.8	33-122			

LCS (LCS-L563639)		Prepared: 07/14/2021 Analyzed: 07/14/2021								
Chrysene	0.139	0.000256	mg/Kg	0.167		83.2	30-130			
1-Methylnaphthalene	0.118	0.00048	"	0.167		70.6	30-130			
Benzo(a)pyrene	0.131	0.000133	"	0.167		78.4	30-130			
Dibenz(a,h)anthracene	0.113	0.000279	"	0.167		67.6	30-130			
Acenaphthene	0.119	0.000431	"	0.167		71.2	30-130			
Fluoranthene	0.124	0.000529	"	0.167		74.2	30-130			
Fluorene	0.126	0.000501	"	0.167		75.4	30-130			
Indeno(1,2,3-cd)pyrene	0.101	0.000344	"	0.167		60.4	30-130			
Naphthalene	0.113	0.000467	"	0.167		67.6	30-130			
Benzo(b)fluoranthene	0.112	0.000138	"	0.167		67	30-130			
Pyrene	0.119	0.000387	"	0.167		71.2	30-130			
Benzo(a)anthracene	0.125	0.000441	"	0.167		74.8	30-130			
Anthracene	0.127	0.000426	"	0.167		76	30-130			
2-Methylnaphthalene	0.118	0.000542	"	0.167		70.6	30-130			

Origins Laboratory, Inc.



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Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

PAH by 8270D SIM - Quality Control
Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L563639 - 3550B

LCS (LCS-L563639)

Prepared: 07/14/2021 Analyzed: 07/14/2021

Benzo(k)fluoranthene	0.112	0.000486	mg/Kg	0.167		67	30-130			
Surrogate: Nitrobenzene-d5	74.7		"	0.333		74.7	29-110			
Surrogate: 2-Fluorobiphenyl	69.6		"	0.333		69.6	33-115			
Surrogate: 4-Terphenyl-d14	64.2		"	0.333		64.2	33-122			

LRB (LRB-L563639)

Prepared: 07/14/2021 Analyzed: 07/14/2021

Dibenz(a,h)anthracene	ND	0.00067	mg/Kg				-			
Acenaphthene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Benzo(a)pyrene	ND	0.00067	"				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Chrysene	ND	0.00067	"				-			
Fluoranthene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
Naphthalene	ND	0.00067	"				-			
Benzo(k)fluoranthene	ND	0.00067	"				-			
2-Methylnaphthalene	ND	0.00067	"				-			
1-Methylnaphthalene	ND	0.00067	"				-			
Pyrene	ND	0.00067	"				-			
Surrogate: 2-Fluorobiphenyl	65.4		"	0.333		65.4	33-115			
Surrogate: Nitrobenzene-d5	68.7		"	0.333		68.7	29-110			
Surrogate: 4-Terphenyl-d14	59.1		"	0.333		59.1	33-122			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Total Metals by 6020B - Quality Control Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L563468 - 3050B

MSD (L 92704-MSD-L563468)			Source: 92704			Prepared: 07/13/2021 Analyzed: 07/14/2021				
Zinc	49.9	0.534	mg/Kg	24.9	28.2	87	75-125	2.4	80	
Silver	0.477	0.0067	"	0.498	0.0162	96	75-125	2.9	80	
Selenium	3.77	0.103	"	4.98	0.3	70	75-125	3.7	80	*
Nickel	9.26	0.0633	"	2.49	7.49	71	75-125	0.8	80	*
Lead	8.58	0.031	"	2.49	7	63	75-125	5.4	80	*
Copper	8.49	0.0806	"	2.49	6.62	75	75-125	0.8	80	
Cadmium	0.57	0.0259	"	0.498	0.159	114	75-125	3.6	80	
Barium	51.5	0.042	"	4.98	43.6	159	75-125	90.7	80	I*
Arsenic	4.3	0.0855	"	2.49	2.44	75	75-125	1.1	80	

MS (L 92704-MS-L563468)			Source: 92704			Prepared: 07/13/2021 Analyzed: 07/14/2021				
Silver	0.463	0.0067	mg/Kg	0.486	0.0162	95	75-125			
Arsenic	4.25	0.0855	"	2.43	2.44	74	75-125			*
Barium	137	0.042	"	4.86	43.6	NR	75-125			I*
Cadmium	0.591	0.0259	"	0.486	0.159	122	75-125			
Copper	8.42	0.0806	"	2.43	6.62	74	75-125			*
Lead	9.06	0.031	"	2.43	7	85	75-125			
Selenium	3.63	0.103	"	4.86	0.3	68	75-125			*
Zinc	48.7	0.534	"	24.3	28.2	84	75-125			
Nickel	9.34	0.0633	"	2.43	7.49	76	75-125			

LCS (LCS-L563468)			Prepared: 07/13/2021 Analyzed: 07/15/2021							
Copper	2.35	0.0806	mg/Kg	2.5		94	80-120			
Zinc	23.7	0.534	"	25		95	80-120			
Silver	0.462	0.0067	"	0.5		92	80-120			
Selenium	5.16	0.103	"	5		103	80-120			
Lead	2.35	0.031	"	2.5		94	80-120			

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Total Metals by 6020B - Quality Control Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L563468 - 3050B

LCS (LCS-L563468)

Prepared: 07/13/2021 Analyzed: 07/14/2021

Cadmium	0.457	0.0259	mg/Kg	0.5		91	80-120			
Arsenic	2.69	0.0855	"	2.5		108	80-120			
Barium	4.9	0.042	"	5		98	80-120			
Nickel	2.28	0.0633	"	2.5		91	80-120			

LRB (LRB-L563468)

Prepared: 07/13/2021 Analyzed: 07/14/2021

Arsenic	ND	0.25	mg/Kg				-			
Zinc	ND	2.5	"				-			
Silver	ND	0.25	"				-			
Selenium	ND	0.25	"				-			
Nickel	ND	0.25	"				-			
Lead	ND	0.25	"				-			
Copper	0.137	0.25	"				-			J
Barium	ND	0.25	"				-			
Cadmium	ND	0.25	"				-			

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Total Metals by 7196A - Quality Control Waypoint Analytical, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L563574 -

DUP (L 91527-DUP)		Source: 91527			Prepared: Analyzed: 07/14/2021					
Chromium, Hexavalent	ND	2.47	mg/Kg		91527	-		0	20	
MS (L 91527-MS)		Source: 91527			Prepared: Analyzed: 07/14/2021					
Chromium, Hexavalent	ND	2.5	mg/Kg	8.21	91527	0	75-125			*
LCS (LCS)					Prepared: Analyzed: 07/14/2021					
Chromium, Hexavalent	7.13	0.244	mg/Kg	8		89	75-125			

Batch L563577 -

DUP (L 92675-DUP)		Source: Y107217-10			Prepared: Analyzed: 07/14/2021					
Chromium, Hexavalent	ND	2.44	mg/Kg		92675	-		0	20	
MS (L 92675-MS)		Source: Y107217-10			Prepared: Analyzed: 07/14/2021					
Chromium, Hexavalent	ND	2.44	mg/Kg	7.89	92675	0	75-125			*
LRB (LRB)					Prepared: Analyzed: 07/14/2021					
Chromium, Hexavalent	ND	0.5	mg/Kg				-			

Origins Laboratory, Inc.



Jen Pellegrini For Noelle Doyle Mathis, President

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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Notes and Definitions

U Sample is Non-Detect.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

J Estimated Value. Analyte below reported quantitation limit.

I* [Undefined]

* QC Failure

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President



August 03, 2021

Apex Companies, LLC
Maggie Graham
4150 Darley Avenue, Suite 1

Boulder CO 80305

Project Name - CPR - Costigan 13-20

Project Number - 125.2101.01-335767

Attached are your analytical results for CPR - Costigan 13-20 received by Origins Laboratory, Inc. July 28, 2021. This project is associated with Origins project number Y107575-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Apex Companies, LLC

4150 Darley Avenue, Suite 1

Boulder CO 80305

Maggie Graham

Project Number: 125.2101.01-335767

Project: CPR - Costigan 13-20

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W04@13'	Y107575-01	Soil	July 28, 2021 9:45	07/28/2021 14:59
B07@25'	Y107575-02	Soil	July 28, 2021 9:35	07/28/2021 14:59
B08@2.5'	Y107575-03	Soil	July 28, 2021 9:40	07/28/2021 14:59

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Companies, LLC

4150 Darley Avenue, Suite 1

Boulder CO 80305

Maggie Graham

Project Number: 125.2101.01-335767

Project: CPR - Costigan 13-20

ORIGINS
LABORATORY, INC

www.originslaboratory.com

page 1 of 1

Client: Apex Companies
Address: 1746 Cole Blvd. Ste. 250
Telephone Number: 907-538-7699
Email Address: maggie.graham@apexcos.com

Project Manager: Maggie Graham (Apex)
Project Name: CPR- Costigan 13-20
Project Number: 125.2101.01-335767
Samples Collected By: maggie.graham@apexcos.com LL
Chris Costigan

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summation		
W04 @ 13' 1/2" 1/21/21 9:45	7/28/21	9:45	2	X				X			Full 915 / Modified 915 (Circle one)	"Modified 915" =
B07 @ 25' 1/2" 1/21/21 9:35	7/28/21	9:35	2	X				X			Full 915 / Modified 915 (Circle one)	Borehole 915 metals/BTEX, DRO/ORO
B08 @ 25' 1/2" 1/21/21 9:40	7/28/21	9:40	2	X				X			Full 915 / Modified 915 (Circle one)	Naphthalene
											Full 915 / Modified 915 (Circle one)	1,2,4 + 1,3,5 Trimethylnaphthalene
											Full 915 / Modified 915 (Circle one)	EC, SAR, pH, Boron
											Full 915 / Modified 915 (Circle one)	
											Full 915 / Modified 915 (Circle one)	Full 915 =
											Full 915 / Modified 915 (Circle one)	All above + 915 Metals + 915 PAHs
											Full 915 / Modified 915 (Circle one)	
											Full 915 / Modified 915 (Circle one)	
Relinquished By: Chris Costigan	Date: 7/28/21	Time: 1:09									Date: 07/28/21	Time: 1:09
Relinquished By: Jeff Gross	Date: 7/28/21	Time: 1:09									Date: 7/28/21	Time: 1:09

1725 Elk Place

Denver, CO 80211

Phone: 303.433.1322

Fax: 303.265.9645

Origins Laboratory, Inc.

Jordan A. Merrill

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Companies, LLC

4150 Darley Avenue, Suite 1

Boulder CO 80305

Maggie Graham

Project Number: 125.2101.01-335767

Project: CPR - Costigan 13-20

Origins Laboratory

F-012207-01-R1

Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: Y107575

Client: Apex

Client Project ID: Costigan

Checklist Completed by: jm

Shipped Via: HTD

Date/time completed: 7-28-21

Airbill #: HTD

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: _____ (Describe)

Cooler Number/Temperature: 15.8 °C / _____ °C / _____ °C / _____ °C

Thermometer ID: T603

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)(pH < 2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by: jm (Project Manager)

Date/Time Reviewed: 7-28-21

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

W04@13'

7/28/2021 9:45:00AM

Analyte	Result	Reporting	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
		Limit							

Waypoint Analytical, LLC.
Y107575-01 (Soil)

Total Metals by 6020B

Arsenic	1.41	0.25	mg/Kg	5	L566434	07/29/2021	08/02/2021
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

B07@25'

7/28/2021 9:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y107575-02 (Soil)

GBTEX+TMBs

Benzene	ND	0.00200	mg/kg	1	B1G2821	KDK	07/28/2021	07/28/2021	U
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Surrogate: 1,2-Dichloroethane-d4

101 %	70-130	"	"	"
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Surrogate: Toluene-d8

95.3 %	70-130	"	"	"
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Surrogate: 4-Bromofluorobenzene

81.1 %	70-130	"	"	"
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Total Metals by 6020B

Arsenic	8.98	0.25	mg/Kg	5	L566434	07/29/2021	08/02/2021	
Barium	362	0.25	"	"	"	"	"	
Cadmium	0.262	0.25	"	"	"	"	"	
Copper	22.4	0.25	"	"	"	"	"	
Lead	22.8	0.25	"	"	"	"	"	
Nickel	24.5	0.25	"	"	"	"	"	
Selenium	0.767	0.25	"	"	"	"	"	
Silver	0.0777	0.25	"	"	"	"	"	J
Zinc	103	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	1	mg/Kg	2	L566564	07/28/2021	07/30/2021	
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Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

B08@2.5'

7/28/2021 9:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y107575-03 (Soil)

Total Metals by 6020B

Arsenic	4.08	0.25	mg/Kg	5	L566434	07/29/2021	08/02/2021	
Barium	193	0.25	"	"	"	"	"	
Cadmium	0.199	0.25	"	"	"	"	"	J
Copper	19.4	0.25	"	"	"	"	"	
Lead	18.7	0.25	"	"	"	"	"	
Nickel	15.9	0.25	"	"	"	"	"	
Selenium	0.557	0.25	"	"	"	"	"	
Silver	0.0624	0.25	"	"	"	"	"	J
Zinc	69.5	2.5	"	"	"	"	"	

Total Metals by 7196A

Chromium, Hexavalent	ND	0.5	mg/Kg	1	L566564	07/28/2021	07/30/2021	
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Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B1G2821 - EPA 5030 (soil)										
Blank (B1G2821-BLK1)					Prepared: 07/28/2021 Analyzed: 07/28/2021					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
Naphthalene	ND	0.00380	"							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		90.1	70-130			
Surrogate: Toluene-d8	0.15		"	0.125		116	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		112	70-130			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B1G2821 - EPA 5030 (soil)										
LCS (B1G2821-BS1)					Prepared: 07/28/2021 Analyzed: 07/28/2021					
1,2,4-Trimethylbenzene	0.0524	0.00200	mg/kg	0.0500		105	70-130			
Naphthalene	0.0496	0.0100	"	0.0500		99.1	70-130			
1,3,5-Trimethylbenzene	0.0512	0.00200	"	0.0500		102	70-130			
Benzene	0.0493	0.00200	"	0.0500		98.6	70-130			
Ethylbenzene	0.0475	0.00200	"	0.0500		95.0	70-130			
m,p-Xylene	0.101	0.00400	"	0.100		101	70-130			
o-Xylene	0.0481	0.00200	"	0.0500		96.1	70-130			
Toluene	0.0487	0.00200	"	0.0500		97.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.2	70-130			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B1G2821 - EPA 5030 (soil)										
Matrix Spike (B1G2821-MS1)		Source: Y107570-01			Prepared: 07/28/2021 Analyzed: 07/28/2021					
1,2,4-Trimethylbenzene	0.0530	0.00200	mg/kg	0.0500	0.0215	63.1	70-130			QM-07
Naphthalene	0.0545	0.0100	"	0.0500	0.00172	106	70-130			
1,3,5-Trimethylbenzene	0.0504	0.00200	"	0.0500	0.00280	95.3	70-130			
Benzene	0.0494	0.00200	"	0.0500	0.00296	92.8	70-130			
Ethylbenzene	0.0401	0.00200	"	0.0500	0.0167	46.7	70-130			QM-07
m,p-Xylene	0.0840	0.00400	"	0.100	0.00894	75.0	70-130			
o-Xylene	0.0432	0.00200	"	0.0500	ND	86.4	70-130			
Toluene	0.0593	0.00200	"	0.0500	ND	119	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.5	70-130			
Surrogate: Toluene-d8	0.15		"	0.125		118	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B1G2821 - EPA 5030 (soil)										
Matrix Spike Dup (B1G2821-MSD1)	Source: Y107570-01				Prepared: 07/28/2021 Analyzed: 07/28/2021					
1,2,4-Trimethylbenzene	0.0533	0.00200	mg/kg	0.0500	0.0215	63.6	70-130	0.527	20	QM-07
Naphthalene	0.0562	0.0100	"	0.0500	0.00172	109	70-130	3.07	20	
1,3,5-Trimethylbenzene	0.0534	0.00200	"	0.0500	0.00280	101	70-130	5.70	20	
Benzene	0.0513	0.00200	"	0.0500	0.00296	96.6	70-130	3.82	20	
Ethylbenzene	0.0414	0.00200	"	0.0500	0.0167	49.4	70-130	3.29	20	QM-07
m,p-Xylene	0.0876	0.00400	"	0.100	0.00894	78.7	70-130	4.27	20	
o-Xylene	0.0540	0.00200	"	0.0500	ND	108	70-130	22.2	20	QR-03
Toluene	0.0644	0.00200	"	0.0500	ND	129	70-130	8.15	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		94.9	70-130			
Surrogate: Toluene-d8	0.15		"	0.125		119	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Total Metals by 6020B - Quality Control
Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L566434 - 3050B

MSD (L 96507-MSD-L566434)		Source: 96507			Prepared: 07/29/2021 Analyzed: 08/02/2021					
Copper	12.2	0.0806	mg/Kg	2.35	9.77	104	75-125	15.1	80	
Zinc	63.6	0.534	"	23.5	39.3	104	75-125	14.8	80	
Silver	0.499	0.0067	"	0.469	0.0453	106	75-125	0.8	80	
Selenium	3.73	0.103	"	4.69	0.41	71	75-125	3.6	80	*
Lead	16.3	0.031	"	2.35	14	98	75-125	8.2	80	
Cadmium	0.461	0.0259	"	0.469	0.0589	98	75-125	0.2	80	
Barium	71.5	0.042	"	4.69	99.6	NR	75-125	44.1	80	*
Arsenic	23	0.0855	"	2.35	19.2	162	75-125	20.6	80	*
Nickel	13.9	0.0633	"	2.35	10.8	132	75-125	10.2	80	*
MS (L 96507-MS-L566434)		Source: 96507			Prepared: 07/29/2021 Analyzed: 08/03/2021					
Silver	0.495	0.0067	mg/Kg	0.464	0.0453	107	75-125			
Lead	17.7	0.031	"	2.32	14	159	75-125			*
Zinc	73.8	0.534	"	23.2	39.3	149	75-125			*
Selenium	3.87	0.103	"	4.64	0.41	75	75-125			
Nickel	15.4	0.0633	"	2.32	10.8	198	75-125			*
Cadmium	0.46	0.0259	"	0.464	0.0589	99	75-125			
Barium	112	0.042	"	4.64	99.6	267	75-125			*
Arsenic	30.9	0.428	"	2.32	19.2	504	75-125			*
Copper	14.2	0.0806	"	2.32	9.77	191	75-125			*
LCS (LCS-L566434)		Prepared: 07/29/2021 Analyzed: 08/03/2021								

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Total Metals by 6020B - Quality Control Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L566434 - 3050B

LCS (LCS-L566434)

Prepared: 07/29/2021 Analyzed: 08/03/2021

Nickel	2.42	0.0633	mg/Kg	2.5		97	80-120			
Zinc	23	0.534	"	25		92	80-120			
Selenium	4.77	0.103	"	5		95	80-120			
Lead	2.37	0.031	"	2.5		95	80-120			
Copper	2.27	0.0806	"	2.5		91	80-120			
Barium	4.84	0.042	"	5		97	80-120			
Arsenic	2.4	0.0855	"	2.5		96	80-120			
Cadmium	0.451	0.0259	"	0.5		90	80-120			
Silver	0.423	0.0067	"	0.5		85	80-120			

LRB (LRB-L566434)

Prepared: 07/29/2021 Analyzed: 08/02/2021

Arsenic	ND	0.25	mg/Kg				-			
Silver	ND	0.25	"				-			
Selenium	ND	0.25	"				-			
Nickel	ND	0.25	"				-			
Lead	ND	0.25	"				-			
Copper	ND	0.25	"				-			
Cadmium	ND	0.25	"				-			
Barium	ND	0.25	"				-			
Zinc	ND	2.5	"				-			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Total Metals by 7196A - Quality Control Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L566564 -										
DUP (L 96468-DUP)		Source: Y107575-02			Prepared: Analyzed: 07/30/2021					
Chromium, Hexavalent	ND	0.488	mg/Kg		96468	-		0	20	
MS (L 96468-MS)		Source: Y107575-02			Prepared: Analyzed: 07/30/2021					
Chromium, Hexavalent	6.13	0.497	mg/Kg	8.16	96468	75	75-125			
LCS (LCS)					Prepared: Analyzed: 07/30/2021					
Chromium, Hexavalent	7.17	0.244	mg/Kg	8		90	75-125			
LRB (LRB)					Prepared: Analyzed: 07/30/2021					
Chromium, Hexavalent	ND	0.5	mg/Kg				-			

Origins Laboratory, Inc.



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Apex Companies, LLC
4150 Darley Avenue, Suite 1
Boulder CO 80305

Maggie Graham
Project Number: 125.2101.01-335767
Project: CPR - Costigan 13-20

Notes and Definitions

U Sample is Non-Detect.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

J Estimated Value. Analyte below reported quantitation limit.

* QC Failure

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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Arsenic Concentrations in Soil

Risk management guidance for evaluating

reviewed/revised July 2014

Regulatory Limitation

This guidance does not modify, replace, or pre-empt any existing statutory or regulatory requirements, enforcement actions, agreements, policies or other legal mechanisms that may govern actions within the Hazardous Materials and Waste Management Division's (the "division's") various remedial programs. In the event of a conflict between this guidance and existing risk assessment guidance and other programmatic requirements, this guidance defers to the various legal and operating mechanisms of those remedial programs.

This guidance was developed with the division's remedial programs in mind. Other state and federal agencies are not obligated to use the process outlined herein, although the same analysis could apply to other sites undergoing investigation and cleanup where testing for arsenic is required and it may be present in sampled environmental media. Parties wanting to use this guidance at their site must seek approval to do so from the regulatory agency responsible for overseeing their remedial activities.

Purpose

The division has prepared this guidance for the purpose of making preliminary determinations when screening data collected from sites that don't necessarily have a reason to believe arsenic contamination may be present, such as a routine Phase II investigation conducted prior to a property transaction. This guidance is simply meant to inform the regulated community of their responsibilities in managing arsenic risks: it is not regulation, nor does it constitute an enforceable standard that must be complied with.

Background

Arsenic is naturally occurring in some geologic environments in Colorado due to weathering and erosion of bedrock and soil, including highly mineralized areas that are mined for metal ores. It is present in more than 200 different minerals, the most common of which is called arsenopyrite. It may also be present in the environment due to a number of anthropogenic activities including: military operations and firing ranges; mining, especially sulfide ores; smelting copper, gold and lead ores; preservation of wood (CCA); chicken feed operations and associated manures (CAFO) due to arsenic-containing growth promoters; tanning and taxidermy operations; coal-burning emissions and ash-derived residues from power plants; and may be present in landfills and landfill-derived leachate. Arsenic may also be found due to the manufacture, use and disposal of: ammunition; fireworks; pigments (paint, paper, ceramics, etc.); older herbicides, insecticides, and pesticides (examples: monosodium methanearsonate (MSMA), disodium methanearsonate (DSMA) and lead-arsonate); electronics containing Gallium-Arsenide-Selenium (GAS) semi-conductors; lead acid battery plates; glass; and some pharmaceuticals. Other anthropogenic arsenic sources may likely exist. Arsenic contamination in soil is of public health concern due to its toxic effects as a carcinogen and a non-carcinogen. Making risk management decisions about arsenic can be difficult because natural occurring concentrations in soil often exceed carcinogenic risk based exposure values.

This guidance was prepared by the division using a data set of background arsenic concentrations developed by the U.S. EPA Region 8. The data set includes over 2,700 samples from 44 counties in Colorado. The areas sampled included: native grasslands; agricultural areas; urban mixed land use; and mining. A summary of the data set is presented in the table below. The complete data set may be found on the U.S. EPA Region 8's website at <http://www2.epa.gov/region8/hh-exposure-assessment>.

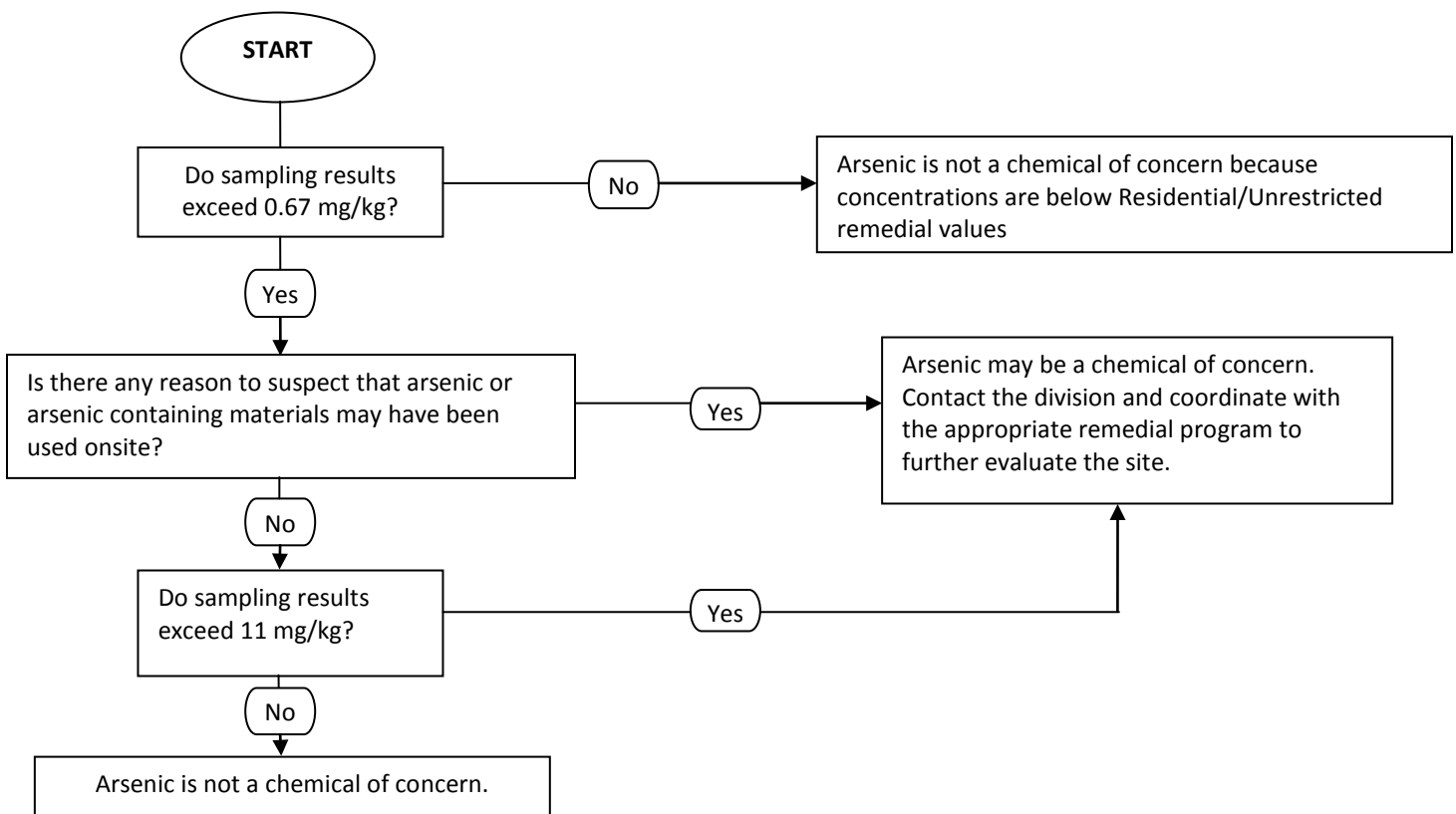
Region 8 U.S. EPA 95% UCLM Background Soil Arsenic Concentrations in Colorado

Land Use	Concentration (mg/kg)
Native Grassland, Rangeland, or Agriculture	3-14
Urban Mixed Use	6-19
Mining	10
Average of all land uses	11

Division Guidance Regarding Background Arsenic Concentration

The division's approach to evaluating arsenic in soil is depicted in the following flowchart. This guidance assumes that, based upon the size, history and environmental concerns associated with a particular site, an adequate amount of arsenic data has been obtained to make a determination regarding arsenic concentrations in soil. It isn't meant to be a guide on how to conduct a background study for risk assessment and/or site closure purposes. Guidance on the subject of data collection and analysis needs for conducting a background study should be sought from other published sources. Soil samples should be collected and analyzed for arsenic if the site history suggests it may be present as a result of anthropogenic activities. However, since arsenic is one of the chemicals included as part of a standard "metals" analysis package from a laboratory, you may already have obtained arsenic data for your site.

The current residential/unrestricted land use remedial objective for inorganic arsenic is 0.67 mg/kg (U.S. EPA regional screening level). If arsenic concentrations at your site are lower than 0.67 mg/kg, the division will require no further action to address arsenic in soil. If arsenic concentrations are lower than 11 mg/kg (the average of the 95% UCLM of background concentrations found by the U.S. EPA in Colorado), and releases of arsenic could not have occurred at the site, based on historical data or process knowledge, the division will require no further action to address arsenic in soil. If arsenic concentrations are greater than 0.67 mg/kg, and the available information suggests that a release of arsenic could have occurred at the site, the division will require additional evaluation of the data and possibly additional sampling to determine whether corrective measures for arsenic are required. This evaluation may include a site specific background study with sampling from offsite locations, and/or additional sampling in areas of the site where activities that could have contributed to environmental contamination never occurred. Please consult with the division prior to performing any background study. If it can be demonstrated that arsenic concentrations in soil are unrelated to site activities, the division will require no further action regarding arsenic. It should be noted that material such as arsenic-bearing mine tailings or oil and gas drill cuttings, although derived from a naturally occurring source material, are not considered to be naturally occurring background once they have been generated through human activity. Therefore, mine tailings and drill cuttings may be subject to remediation if ecological or health-based concentrations are exceeded.



For more information please contact:

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