

# **Culver 5-17 Tank Battery**

SWNE Sec. 17-T1N-R69W

Facility ID: 470301

Remediation Project #: 22770

Third Quarter 2022 Quarterly Report

September 2022

Prepared by Tasman, Inc.



On behalf of Extraction Oil and Gas, Inc.



## **BORING LOGS**



# TASMAN

6855 W. 119th Ave  
Broomfield, CO 80020

<b>CLIENT:</b> Extraction Oil & Gas, Inc.	<b>SITE NAME:</b> Culver 5-17 Tank Battery Remediation Project #: 22770
<b>LOGGED BY:</b> Justin Covey	<b>SOIL BORING ID:</b> BG01
<b>PROJECT MANAGER:</b> Sam Vogt	<b>LOCATION:</b> SWNE Sec. 17-T1N-R69W
<b>DRILLING CONTRACTOR:</b> Tasman, Inc.	<b>LATITUDE (WGS 84):</b> -
<b>DRILLING EQUIPMENT:</b> Hand Auger / AMS Power Probe 9580-VTR	<b>LONGITUDE (WGS 84):</b> -
<b>DRILL BIT SIZE (INCHES):</b> 3" / 2.375"	<b>TOTAL WELL DEPTH (FT. BGS):</b> 10
<b>DATE STARTED - COMPLETED:</b> 9/9/22 - 9/9/22	<b>DEPTH TO WATER (FT. BGS):</b> Not Encountered ▼

Depth (feet)	Drill Tooling	% Rec. 25 50 75	Lithologic Description	USCS	PID (ppm) 100 1000	Lab	Well Construction	Depth (feet)
0			Silt - medium dense, brown, moist, non-plastic, no HC odor, no HC staining					0
1			Same as above, low plasticity, trace clay					
2			Same as above, no clay, trace fine-grained sand	ML				
3			Same as above, very moist					
4			Sand - medium dense, brown, wet, fine-grained, poorly graded, no HC odor, no HC staining				▼	
5				SP				5
6								
7			Silty Sand - medium dense, brown, wet, fine-grained, poorly graded, no HC odor, no HC staining	SM				
8			No recovery					
9								
10								10

**Drilling / Sample Method:**

- Direct Push Technology  
 Grab Sample  
 Hydrovac  
 Hand Auger

**Laboratory Sample Types:**

- Geotechnical Lab  
 Analytical Chemistry Lab  
 Geotechnical & Analytical Chemistry Lab



# TASMAN

6855 W. 119th Ave  
Broomfield, CO 80020

<b>CLIENT:</b> Extraction Oil & Gas, Inc.	<b>SITE NAME:</b> Culver 5-17 Tank Battery Remediation Project #: 22770
<b>LOGGED BY:</b> Justin Covey	<b>SOIL BORING ID:</b> BG02
<b>PROJECT MANAGER:</b> Sam Vogt	<b>LOCATION:</b> SWNE Sec. 17-T1N-R69W
<b>DRILLING CONTRACTOR:</b> Tasman, Inc.	<b>LATITUDE (WGS 84):</b> -
<b>DRILLING EQUIPMENT:</b> Hand Auger / AMS Power Probe 9580-VTR	<b>LONGITUDE (WGS 84):</b> -
<b>DRILL BIT SIZE (INCHES):</b> 3" / 2.375"	<b>TOTAL WELL DEPTH (FT. BGS):</b> 10
<b>DATE STARTED - COMPLETED:</b> 9/9/22 - 9/9/22	<b>DEPTH TO WATER (FT. BGS):</b> Not Encountered ▼

Depth (feet)	Drill Tooling	% Rec. 25 50 75	Lithologic Description	USCS	PID (ppm) 100 1000	Lab	Well Construction	Depth (feet)
0			Sandy Silt - medium dense, brown, moist, fine-grained sand, non-plastic, no HC odor, no HC staining	ML				0
1			Silty Clay - medium dense, brown, moist, low plasticity, no HC odor, no HC staining	CL				
2								
3			Silty Sand - medium dense, brown, wet, fine-grained, poorly graded, no HC odor, no HC staining	SM			▼	
4								
5								5
6			Silty Clay - stiff, brown, wet, low plasticity, no HC odor, no HC staining, trace fine-grained sand	CL				
7			Sand - dense, brown, wet, fine to medium-grained sand, poorly graded, no HC odor, no HC staining	SP				
8			No recovery					
9								
10								10

**Drilling / Sample Method:**

Direct Push Technology  
Grab Sample  
Hydrovac  
Hand Auger

**Laboratory Sample Types:**

Geotechnical Lab  
Analytical Chemistry Lab  
Geotechnical & Analytical Chemistry Lab



# TASMAN

6855 W. 119th Ave  
Broomfield, CO 80020

**CLIENT:**  
Extraction Oil & Gas, Inc.

**LOGGED BY:** Justin Covey

**PROJECT MANAGER:** Sam Vogt

**DRILLING CONTRACTOR:** Tasman, Inc.

**DRILLING EQUIPMENT:**  
Hand Auger / AMS Power Probe 9580-VTR

**DRILL BIT SIZE (INCHES):** 3" / 2.375"

**DATE STARTED - COMPLETED:** 9/9/22 - 9/9/22

**SITE NAME:**  
Culver 5-17 Tank Battery  
Remediation Project #: 22770

**SOIL BORING ID:** BH01

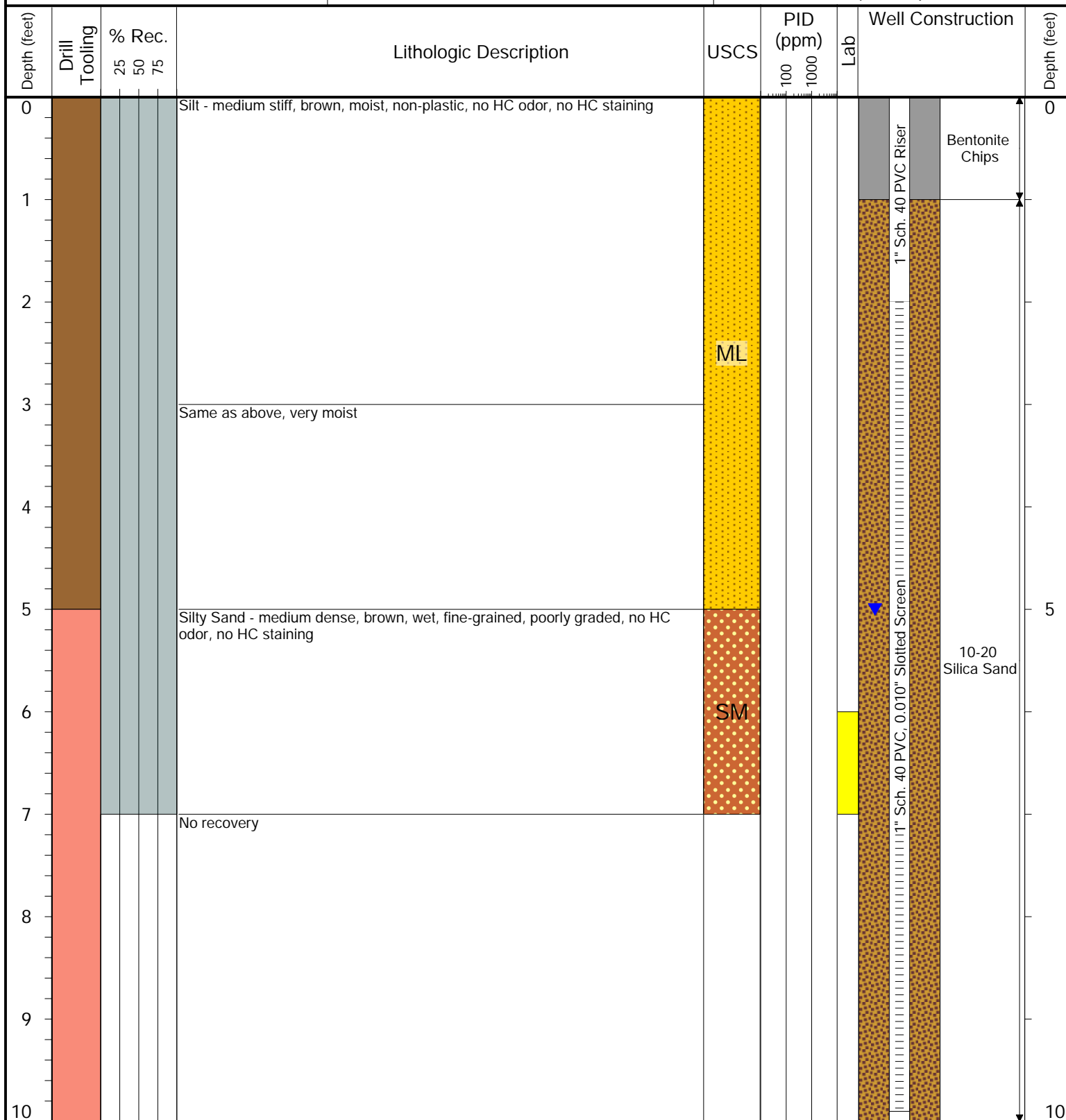
**LOCATION:** SWNE Sec. 17-T1N-R69W

**LATITUDE (WGS 84):** 40.052613

**LONGITUDE (WGS 84):** -105.138091

**TOTAL WELL DEPTH (FT. BGS):** 10

**DEPTH TO WATER (FT. BGS):** Not Encountered ▼



**Drilling / Sample Method:**

Direct Push Technology  
 Grab Sample

Hydrovac  
 Hand Auger

**Laboratory Sample Types:**

Geotechnical Lab  
 Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



# TASMAN

6855 W. 119th Ave  
Broomfield, CO 80020

**CLIENT:**  
Extraction Oil & Gas, Inc.

**LOGGED BY:** Justin Covey

**PROJECT MANAGER:** Sam Vogt

**DRILLING CONTRACTOR:** Tasman, Inc.

**DRILLING EQUIPMENT:**  
Hand Auger / AMS Power Probe 9580-VTR

**DRILL BIT SIZE (INCHES):** 3" / 2.375"

**DATE STARTED - COMPLETED:** 9/9/22 - 9/9/22

**SITE NAME:**  
Culver 5-17 Tank Battery  
Remediation Project #: 22770

**SOIL BORING ID:** BH02

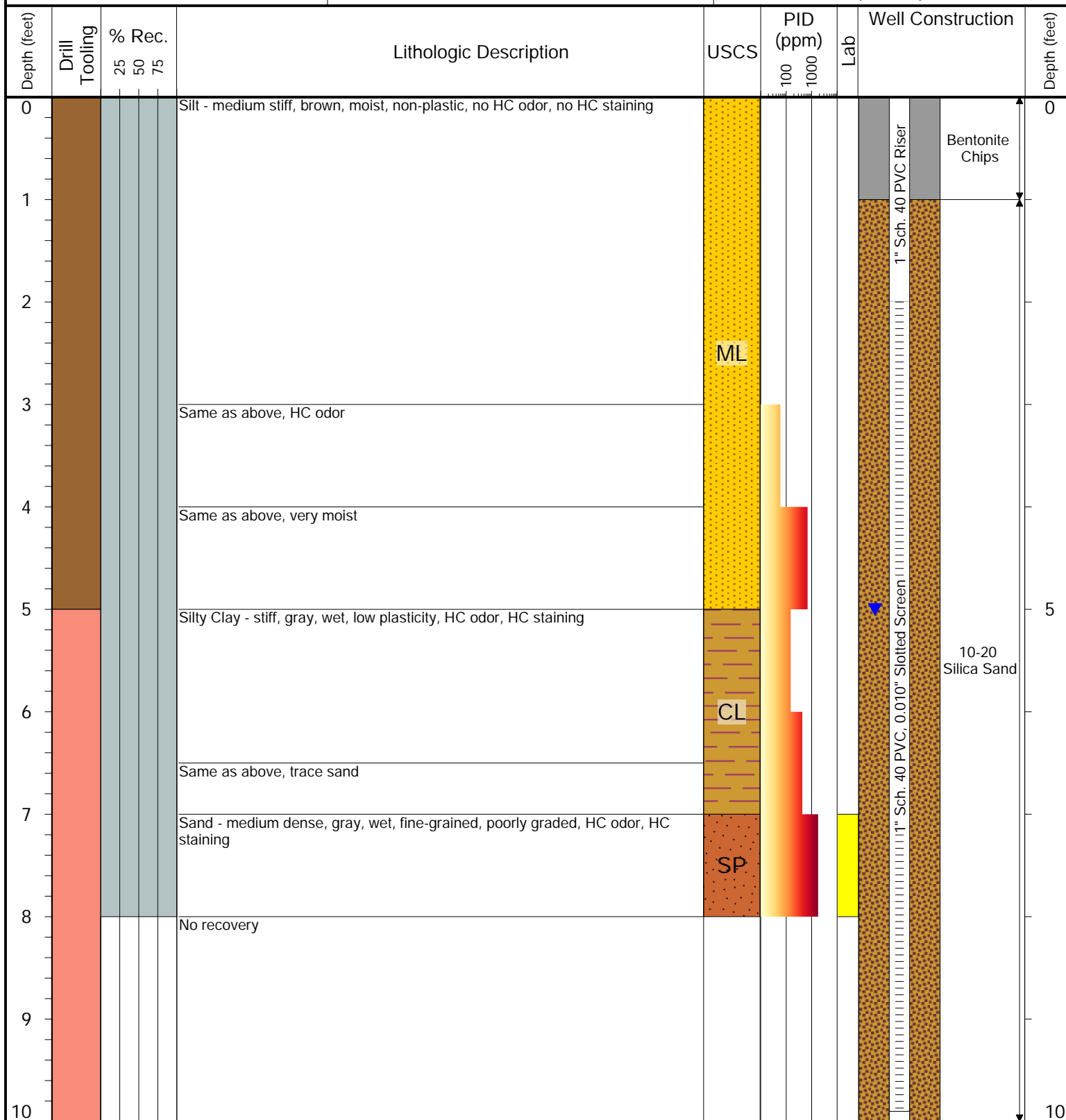
**LOCATION:** SWNE Sec. 17-T1N-R69W

**LATITUDE (WGS 84):** 40.052609

**LONGITUDE (WGS 84):** -105.137895

**TOTAL WELL DEPTH (FT. BGS):** 10

**DEPTH TO WATER (FT. BGS):** Not Encountered ▼



**Drilling / Sample Method:**

Direct Push Technology  
 Grab Sample  
 Hydrovac  
 Hand Auger

**Laboratory Sample Types:**

Geotechnical Lab  
 Analytical Chemistry Lab  
 Geotechnical & Analytical Chemistry Lab



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Broomfield, CO 80020

**CLIENT:**  
Extraction Oil & Gas, Inc.

**LOGGED BY:** Justin Covey

**PROJECT MANAGER:** Sam Vogt

**DRILLING CONTRACTOR:** Tasman, Inc.

**DRILLING EQUIPMENT:**  
Hand Auger / AMS Power Probe 9580-VTR

**DRILL BIT SIZE (INCHES):** 3" / 2.375"

**DATE STARTED - COMPLETED:** 9/9/22 - 9/9/22

**SITE NAME:**  
Culver 5-17 Tank Battery  
Remediation Project #: 22770

**SOIL BORING ID:** BH03

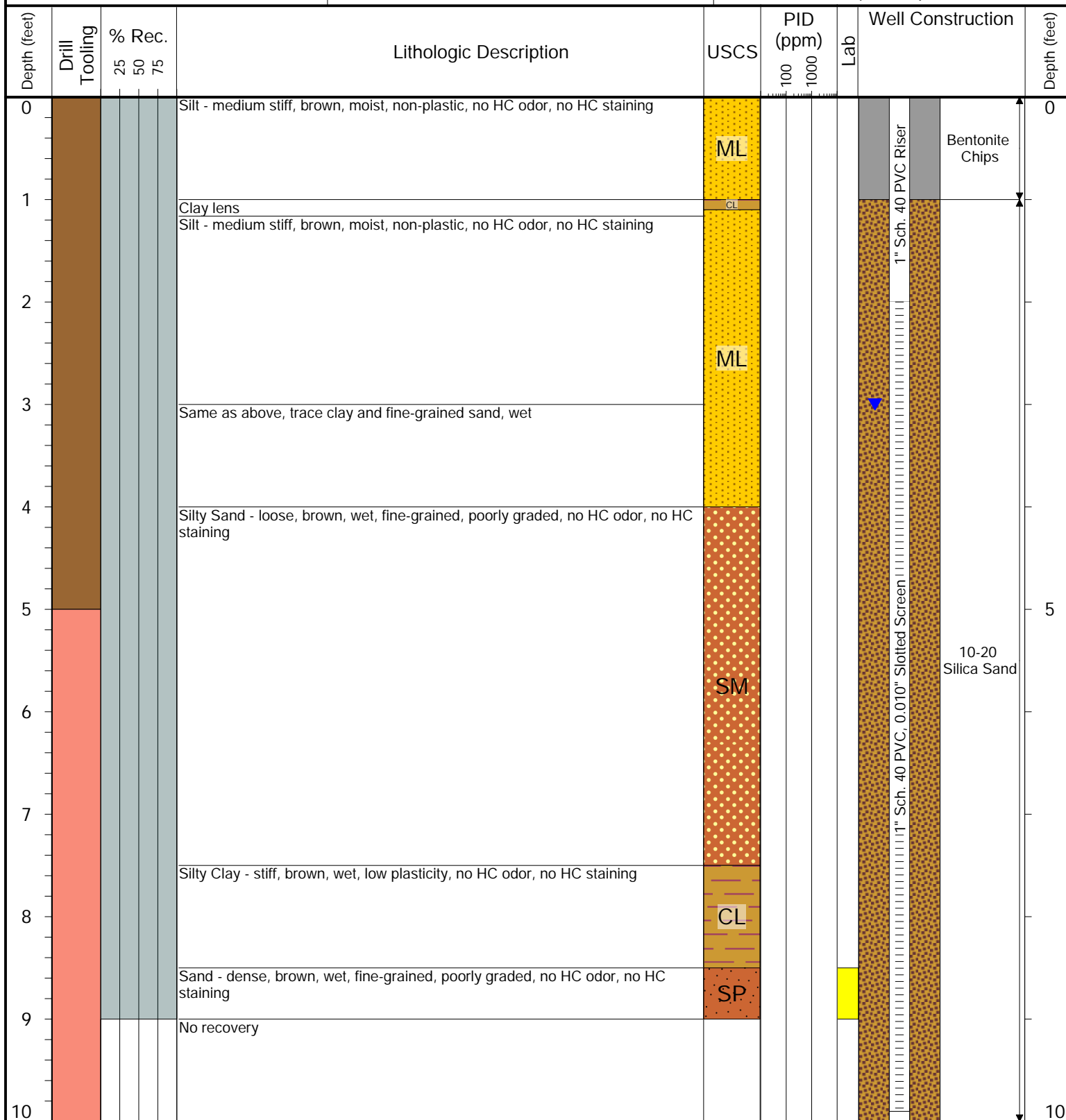
**LOCATION:** SWNE Sec. 17-T1N-R69W

**LATITUDE (WGS 84):** 40.052452

**LONGITUDE (WGS 84):** -105.137941

**TOTAL WELL DEPTH (FT. BGS):** 10

**DEPTH TO WATER (FT. BGS):** Not Encountered ▼



**Drilling / Sample Method:**

Direct Push Technology  
 Grab Sample  
 Hand Auger  
 Hydrovac

**Laboratory Sample Types:**

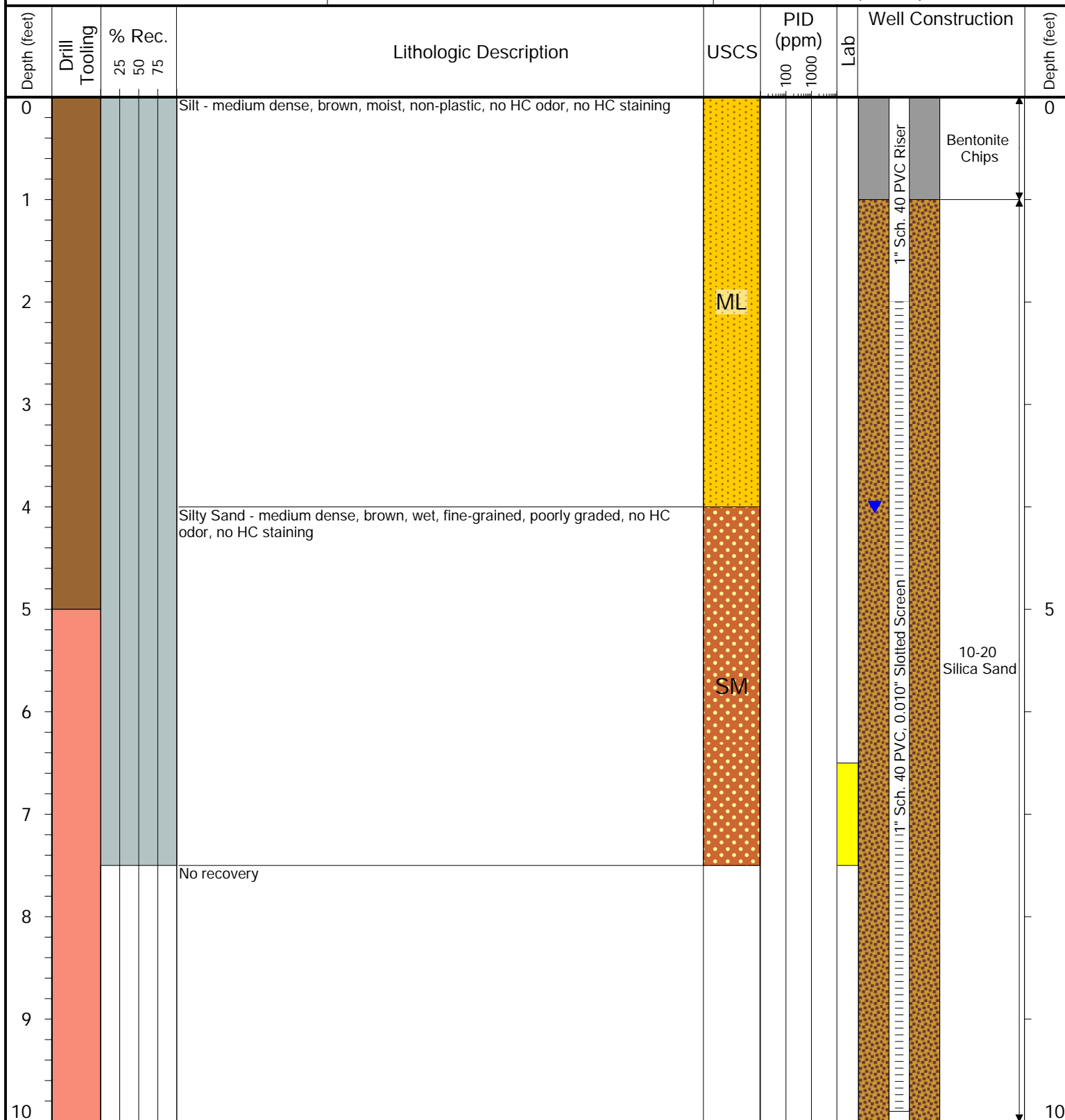
Geotechnical Lab  
 Analytical Chemistry Lab  
 Geotechnical & Analytical Chemistry Lab



# TASMAN

6855 W. 119th Ave  
Broomfield, CO 80020

<b>CLIENT:</b> Extraction Oil & Gas, Inc.	<b>SITE NAME:</b> Culver 5-17 Tank Battery Remediation Project #: 22770
<b>LOGGED BY:</b> Justin Covey	<b>SOIL BORING ID:</b> BH04
<b>PROJECT MANAGER:</b> Sam Vogt	<b>LOCATION:</b> SWNE Sec. 17-T1N-R69W
<b>DRILLING CONTRACTOR:</b> Tasman, Inc.	<b>LATITUDE (WGS 84):</b> 40.052497
<b>DRILLING EQUIPMENT:</b> Hand Auger / AMS Power Probe 9580-VTR	<b>LONGITUDE (WGS 84):</b> -105.138112
<b>DRILL BIT SIZE (INCHES):</b> 3" / 2.375"	<b>TOTAL WELL DEPTH (FT. BGS):</b> 10
<b>DATE STARTED - COMPLETED:</b> 9/9/22 - 9/9/22	<b>DEPTH TO WATER (FT. BGS):</b> Not Encountered ▼



**Drilling / Sample Method:**

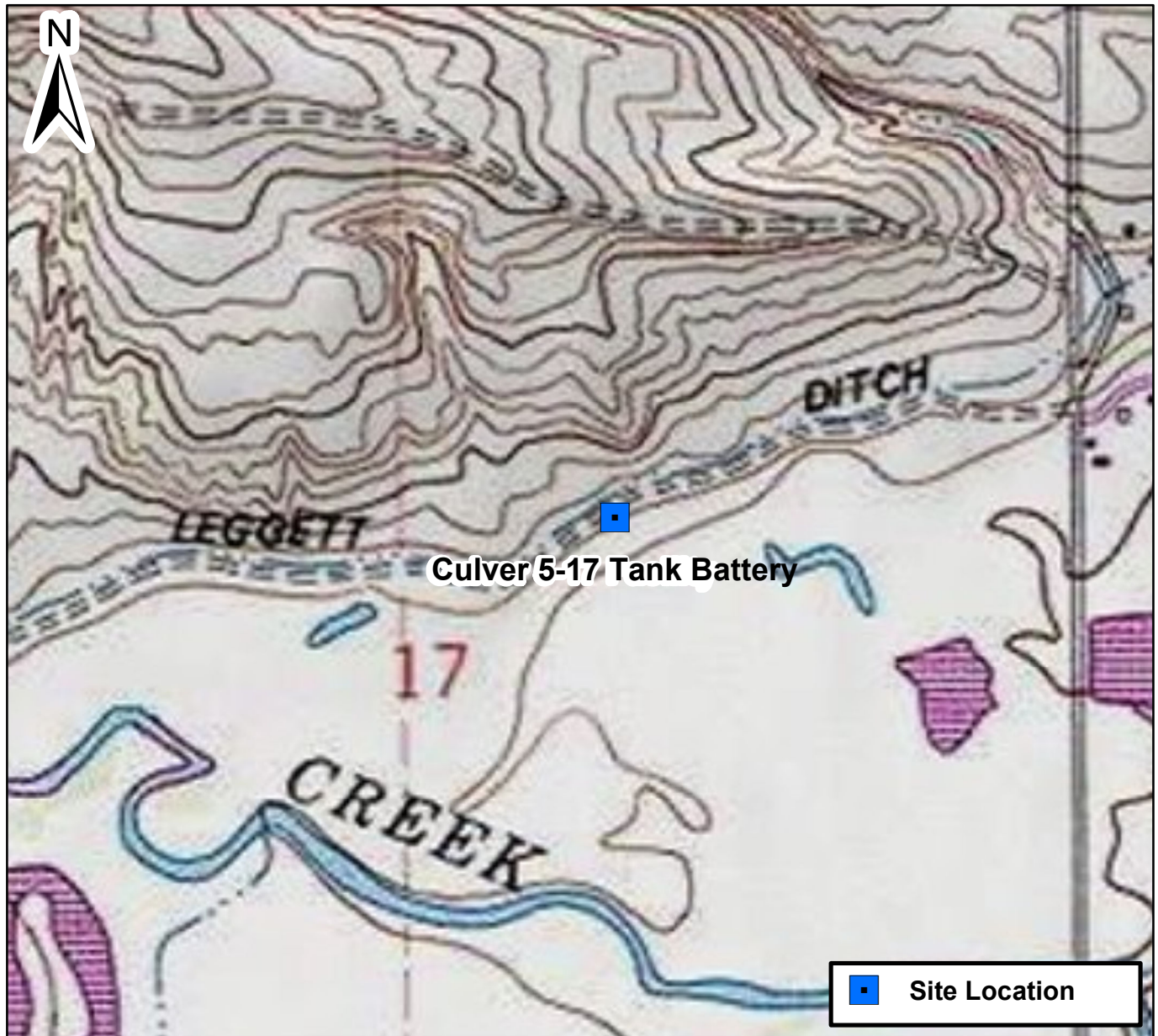
Direct Push Technology  
 Grab Sample  
 Hydrovac  
 Hand Auger

**Laboratory Sample Types:**

Geotechnical Lab  
 Analytical Chemistry Lab  
 Geotechnical & Analytical Chemistry Lab



## FIGURES



0 1,000 2,000 Feet


## Figure 1

Site Location Map  
Culver 5-17 Tank Battery  
SWNE Sec. 17-T1N-R69W  
Boulder County, Colorado

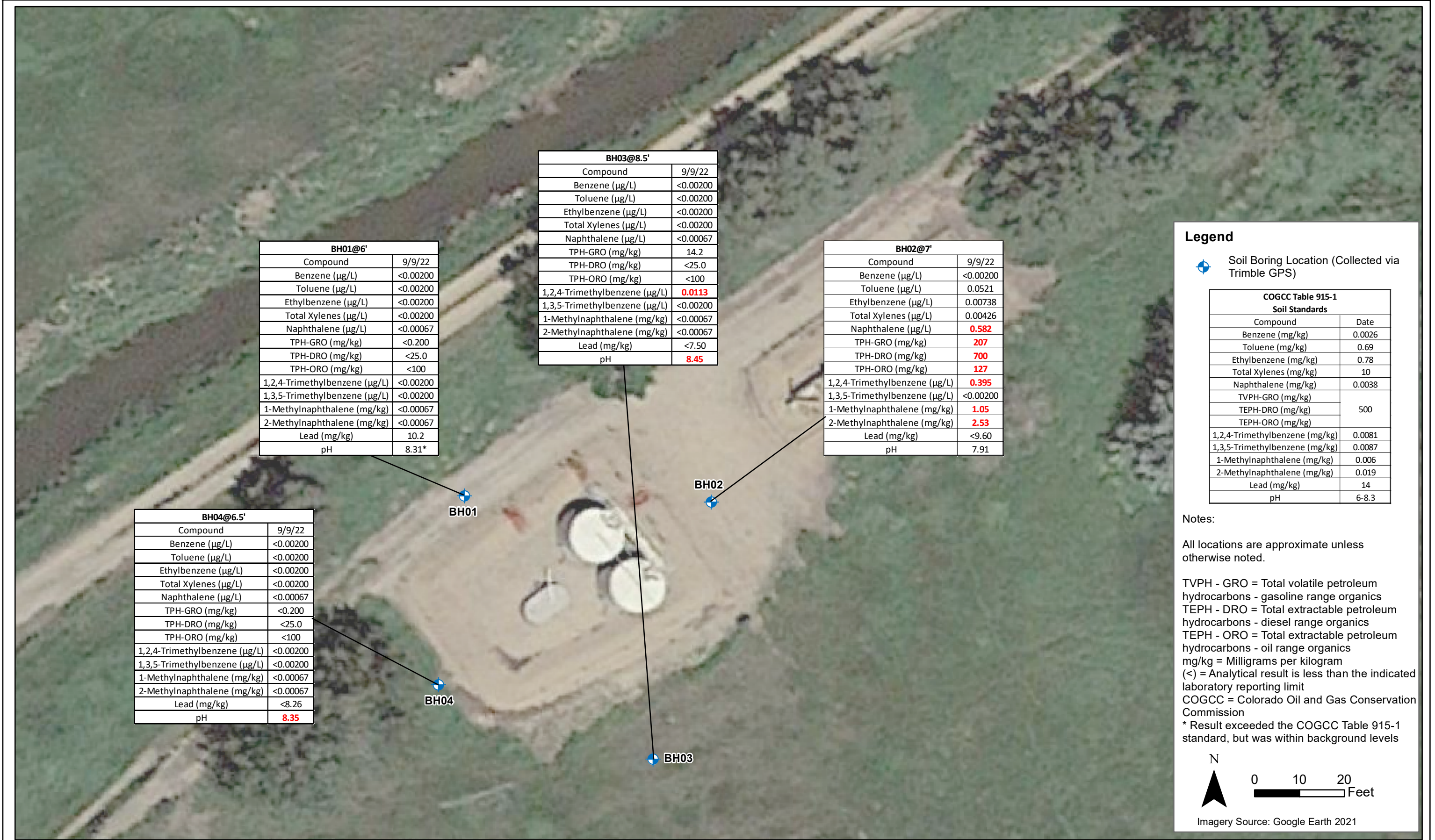






DATE: January 4, 2023	 <div>Tasman, Inc. 6855 W. 119th Avenue Broomfield, Colorado 80020</div>	<b>Extraction Oil &amp; Gas, Inc.</b> <b>Culver 5-17 Tank Battery</b> SWNE Sec. 17-T1N-R69W Boulder County, Colorado	Site Overview Map	FIGURE 2
DESIGNED BY: S. Vogt				
DRAWN BY: S. Vogt				





DATE:	January 5, 2022
DESIGNED BY:	S. Vogt
DRAWN BY:	L. Reed



**Tasman, Inc.**  
6855 W. 119th Ave  
Broomfield, CO 80020

**Extraction Oil & Gas, Inc.**  
**Culver 5-17 Tank Battery**  
SWNE Sec. 17-T1N-R69W  
Boulder County, Colorado

Soil Sample Analytical Map  
(9/9/2022)

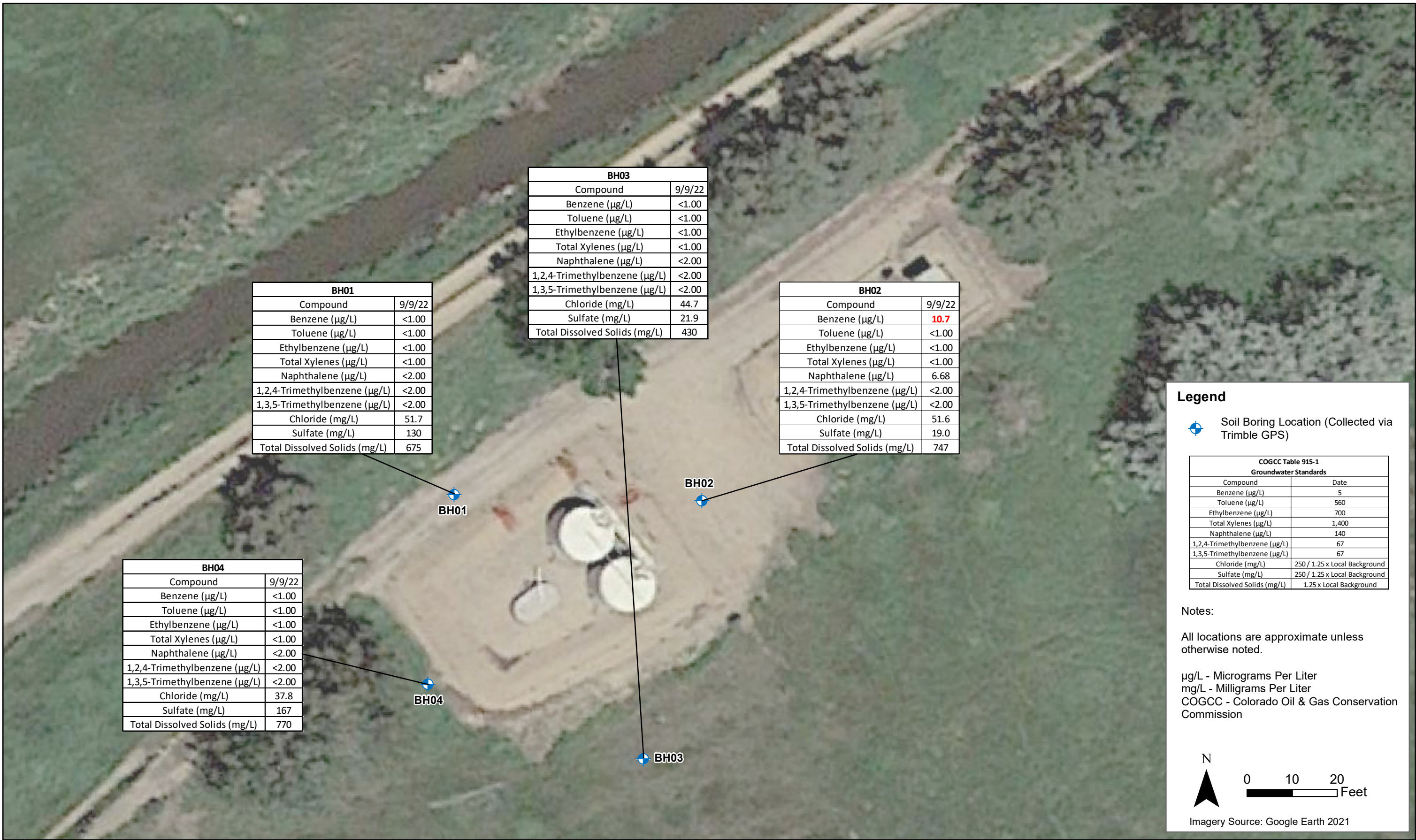
**Figure**  
**3**





DATE:	December 20, 2022	 <b>Tasman, Inc.</b> 6855 W. 119 <sup>th</sup> Ave Broomfield, CO 80020	<b>Extraction Oil &amp; Gas, Inc.</b> <b>Culver 5-17 Tank Battery</b> SWNE Sec. 17-T1N-R69W Boulder County, Colorado	Groundwater Elevation Contour Map (9/16/2022)	FIGURE 4
DESIGNED BY:	S. Vogt				
DRAWN BY:	L. Reed				





DATE:	November 2022
DESIGNED BY:	S. Vogt
DRAWN BY:	L. Reed



Tasman, Inc.  
6855 W. 119th Ave  
Broomfield, CO 80020

Extraction Oil & Gas, Inc.  
Culver 5-17 Tank Battery  
SWNE Sec. 17-T1N-R69W  
Boulder County, Colorado

Soil Sample Groundwater  
Analytical Map  
(9/9/2022)

Figure  
5

# TABLES

**TABLE 1**  
**CULVER 5-17 TANK BATTERY**  
**SOIL SAMPLE LOCATIONS**  
**EXTRACTION OIL AND GAS, INC.**



Soil Sample Location	Date	PID Reading (ppm)	Visual Observation	Olfactory Observation	Latitude	Longitude	GPS PDOP Value
FL/SEP04@4'	04/19/2022	50.1	-	-	40.052652	-105.137811	-
AST01@3"	04/19/2022	35.4	-	-	-	-	-
AST02@2"	04/19/2022	16.8	-	-	-	-	-
PWV01B@4'	04/19/2022	426.8	-	-	40.052562	-105.138046	-
PWV01N@3'	04/19/2022	8.8	-	-	40.052574	-105.138045	-
PWV01E@3.5'	04/19/2022	1780	-	-	40.052576	-105.138031	-
PWV01S@1'	04/19/2022	23.2	-	-	40.052549	-105.138026	-
PWV01W@2'	04/19/2022	940.4	-	-	40.052545	-105.138052	-
BKG01@4"	04/19/2022	-	-	-	40.051679	-105.139727	-
BH01@6'	09/09/2022	0.0	No Staining	No Odor	40.052613	-105.138091	1.4
BH02@7'	09/09/2022	1,793	HC Staining	HC Odor	40.052609	-105.137895	1.4
BH03@8.5'	09/09/2022	-	No Staining	No Odor	40.052452	-105.137941	1.4
BH04@6.5'	09/09/2022	0.0	No Staining	No Odor	40.052497	-105.138112	2.1
BG01@6.5'	09/09/2022	0.0	No Staining	No Odor	-	-	-
BG02@6.5'	09/09/2022	0.0	No Staining	No Odor	-	-	-

**Notes:**

PID = Photoionization detector

ppm = Parts per million

HC = Hydrocarbon

GPS = Global positioning system

PDOP = Position dilution of precision

- = Data Not Available

10/29/20 [date] = Data collected by 3rd-party consultant(s)



**TABLE 2**  
**CULVER 5-17 TANK BATTERY**  
**SOIL ANALYTICAL DATA - VOCs**  
**EXTRACTION OIL AND GAS, INC.**

Soil Sample Location	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TVPH-GRO (mg/kg)	TEPH-DRO (mg/kg)	TEPH-ORO (mg/kg)	1,2,4-TMB (mg/kg)	1,3,5-TMB (mg/kg)
COGCC standards for soil (mg/kg) <sup>(1)</sup>		0.0026	0.69	0.78	9.9	0.0038	500			0.0081	0.0087
COGCC standards for soil (mg/kg) <sup>(2)</sup>		1.2	490	5.8	58	2	500			30	27
FL/SEP04@4'	04/19/2022	<0.00200	<0.00200	<0.00200	<0.00200	<0.00380	<100			<0.00200	<0.00200
AST01@3"	04/19/2022	<0.00200	<0.00200	<0.00200	<0.00200	<0.00380	<100			<0.00200	<0.00200
AST02@2"	04/19/2022	<0.00200	<0.00200	<0.00200	<0.00200	<0.00380	172.2			<0.00200	<0.00200
PWV01B@4'	04/19/2022	<0.00200	<0.00200	<0.00200	<0.00200	0.02430	725.5			<0.00200	<0.00200
PWV01N@3'	04/19/2022	<0.00200	<0.00200	<0.00200	<0.00200	<0.00335	<100			<0.00200	<0.00200
PWV01E@3.5'	04/19/2022	0.00664	<0.00200	<0.00200	0.00336	0.715	2,335.2			0.0801	<0.00200
PWV01S@1'	04/19/2022	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067	<100			<0.00200	<0.00200
PWV01W@2'	04/19/2022	<0.00200	<0.00200	<0.00200	<0.00200	0.00571	<100			<0.00200	<0.00200
BH01@6'	09/09/2022	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067	<0.200	<25.0	<100	<0.00200	<0.00200
BH02@7'	09/09/2022	<0.00200	0.0521	0.00738	0.00426	0.582	207	700	127	0.395	<0.00200
BH03@8.5'	09/09/2022	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067	14.2	<25.0	<100	0.0113	<0.00200
BH04@6.5'	09/09/2022	<0.00200	<0.00200	<0.00200	<0.00200	<0.00067	<0.200	<25.0	<100	<0.00200	<0.00200

**Notes:**

VOCs = Volatile Organic Compounds

(1) Standards for soil are taken from COGCC Table 915-1: Protection of Groundwater Soil Screening Level Concentrations, effective January 15, 2021

(2) Standards for soil are taken from COGCC Table 915-1: Residential Soil Screening Level Concentrations, effective January 15, 2021

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

mg/kg = Milligrams per kilogram

TVPH - GRO = Total volatile petroleum hydrocarbons - gasoline range organics

TEPH - DRO = Total extractable petroleum hydrocarbons - diesel range organics

TEPH - ORO = Total extractable petroleum hydrocarbons - oil range organics

1,2,4 - TMB = 1,2,4 - Trimethylbenzene

1,3,5 - TMB = 1,3,5 - Trimethylbenzene

10/29/20 [date] = Data collected by 3rd-party consultant(s)

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1 soil standards

**TABLE 3**  
**CULVER 5-17 TANK BATTERY**  
**SOIL ANALYTICAL DATA - PAHs**  
**EXTRACTION OIL AND GAS, INC.**

Soil Sample Location	Date	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo(a)A (mg/kg)	Benzo(b)F (mg/kg)	Benzo(k)F (mg/kg)	Benzo(a)P (mg/kg)	Chrysene (mg/kg)	D (a,h) A (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	Pyrene (mg/kg)
COGCC standards for soil (mg/kg) <sup>(1)</sup>		0.55	5.8	0.011	0.3	2.9	0.24	9	0.96	8.9	0.54	0.98	0.006	0.019	1.3
COGCC standards for soil (mg/kg) <sup>(2)</sup>		360	1,800	1.1	1.1	11	0.11	110	0.11	240	240	1.1	18	24	180
PWV01B@4'	04/19/2022	0.0225	<0.0067	0.00858	<0.0067	<0.0067	<0.0067	0.0304	<0.0067	<0.0067	0.0481	<0.0067	<b>0.0907</b>	<b>0.132</b>	0.0108
PWV01N@3'	04/19/2022	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335	<0.00335
PWV01E@3.5'	04/19/2022	0.163	0.00909	<b>0.0116</b>	<0.0067	<0.0067	<0.0067	0.0601	<0.0067	0.00554	0.348	<0.0067	<b>1.52</b>	<b>2.75</b>	0.0275
PWV01S@1'	04/19/2022	<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
PWV01W@2'	04/19/2022	0.0021	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	0.000801	<0.00067	<0.00067	0.0042	<0.00067	<b>0.0155</b>	<b>0.0268</b>	<0.00067
BH01@6'	09/09/2022	<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
BH02@7'	09/09/2022	0.114	0.00344	0.00873	<0.00335	<0.00335	<0.00335	0.0361	<0.00335	<0.00335	0.215	<0.00335	<b>1.05</b>	<b>2.53</b>	0.0187
BH03@8.5'	09/09/2022	<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
BH04@6.5'	09/09/2022	<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

**Notes:**

PAHs = Polycyclic Aromatic Hydrocarbons

(1) Standards for soil are taken from COGCC Table 915-1: Protection of Groundwater Soil Screening Level Concentrations, effective January 15, 2021

(2) Standards for soil are taken from COGCC Table 915-1: Residential Soil Screening Level Concentrations, effective January 15, 2021

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

mg/kg = Milligrams per kilogram

Benzo(a)A = Benzo(a)anthracene

Benzo(b)F = Benzo(b)fluoranthene

Benzo(k)F = Benzo(k)fluoranthene

Benzo(a)P = Benzo(a)pyrene

D (a,h) A = Dibenzo(a,h)anthracene

1,2,3-CD = Indeno(1,2,3-cd)pyrene

1-M = 1-Methylnaphthalene

2-M = 2-Methylnaphthalene

10/29/20 [date] = Data collected by 3rd-party consultant(s)

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1 soil standards

**TABLE 4**  
**CULVER 5-17 TANK BATTERY**  
**SOIL ANALYTICAL DATA - METALS**  
**EXTRACTION OIL AND GAS, INC.**

Soil Sample Location	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
COGCC standards for soil (mg/kg) <sup>(1)</sup>		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
COGCC standards for soil (mg/kg) <sup>(2)</sup>		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
PWV01B@4'	04/19/2022	<b>3.8</b>	<b>162</b>	0.22	<0.515	16.7	<b>15.4</b>	19.5	<b>0.477</b>	0.0651	70.9
PWV01N@3'	04/19/2022	<b>2.09</b>	<b>115</b>	0.137	<0.246	8.16	8.06	10.2	<b>0.354</b>	0.0404	35.1
PWV01E@3.5'	04/19/2022	<b>1.93</b>	<b>128</b>	0.143	<0.514	13.4	10.7	13.6	<b>0.456</b>	0.0526	48.8
PWV01S@1'	04/19/2022	<b>2.52</b>	<b>120</b>	0.146	<0.507	10	9.08	11.6	<b>0.385</b>	0.048	42
PWV01W@2'	04/19/2022	<b>2.27</b>	<b>115</b>	0.152	<0.245	9.73	8.86	11.7	<b>0.345</b>	0.0421	42.3
BH01@6'	09/09/2022	-	-	-	-	-	10.2	-	-	-	-
BH02@7'	09/09/2022	-	-	-	-	-	<9.60	-	-	-	-
BH03@8.5'	09/09/2022	-	-	-	-	-	<7.50	-	-	-	-
BH04@6.5'	09/09/2022	-	-	-	-	-	<8.26	-	-	-	-
<b>BACKGROUND</b>											
BKG01@4"	04/19/2022	3.28	206	0.0928	<2.5	6.53	11.1	8.13	0.284	0.0753	38.7
BG01@6.5'	09/09/2022	-	-	-	-	-	11.6	-	-	-	-
BG02@6.5'	09/09/2022	-	-	-	-	-	<8.78	-	-	-	-

**Notes:**

(1) Standards for soil are taken from COGCC Table 915-1: Protection of Groundwater Soil Screening Level Concentrations, effective January 15, 2021

(2) Standards for soil are taken from COGCC Table 915-1: Residential Soil Screening Level Concentrations, effective January 15, 2021

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory minimum detection limit

mg/kg = Milligrams per kilogram

10/29/20 [date] = Data collected by 3rd-party consultant(s)

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1 soil standards

*Italics* = Laboratory minimum detection limit exceeds the COGCC Table 915-1 standard

\* Result exceeded the COGCC Table 915-1 standard, but was within range of site-specific background concentrations

- = Constituent not analyzed

**TABLE 5**  
**CULVER 5-17 TANK BATTERY**  
**SOIL ANALYTICAL DATA - SOIL RECLAMATION**  
**EXTRACTION OIL AND GAS, INC.**



Soil Sample Location	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
COGCC standards for soil (mg/kg) <sup>(1)</sup>		6 - 8.3	< 6	< 4	2
FL/SEP04@4'	4/19/2022	8.25	0.249	0.379	0.281
AST01@3"	4/19/2022	8.19	0.0400	0.248	<0.0994
AST02@2"	4/19/2022	8.29	0.336	0.255	<0.100
PWV01B@4'	4/19/2022	<b>8.78</b>	1.080	1.080	0.399
PWV01N@3'	4/19/2022	<b>8.53</b>	0.111	0.266	<0.100
PWV01E@3.5'	4/19/2022	<b>8.67</b>	0.987	0.581	0.723
PWV01S@1'	4/19/2022	<b>8.48</b>	0.057	0.272	0.241
PWV01W@2'	4/19/2022	<b>8.47</b>	0.35	0.365	0.709
BH01@6'	09/09/2022	8.31*	-	-	-
BH02@7'	09/09/2022	7.91	-	-	-
BH03@8.5'	09/09/2022	<b>8.45</b>	-	-	-
BH04@6.5'	09/09/2022	<b>8.35</b>	-	-	-
<b>BACKGROUND</b>					
BKG01@4"	4/19/2022	7.76	0.06	0.337	0.340
BG01@6.5'	09/09/2022	8.31	-	-	-
BG02@6.5'	09/09/2022	8.14	-	-	-

**Notes:**

(1) Standards for soil are taken from COGCC Table 915-1, effective January 15, 2021

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

mmhos/cm = Millimhos per centimeter

mg/L = Milligrams per liter

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

10/29/20 [date] = Data collected by 3rd-party consultant(s)

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1 soil standards

\* Result exceeded the COGCC Table 915-1 standard, but was within background levels

- = Constituent not analyzed

**TABLE 6**  
**CULVER 5-17 TANK BATTERY**  
**GROUNDWATER ANALYTICAL DATA**  
**EXTRACTION OIL AND GAS, INC.**

Groundwater Sample ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ehtylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
COGCC standards for groundwater (µg/L) <sup>(1)</sup>		5	560	700	1,400	140	67	67	250 or <1.25 x Background	250 or <1.25 x Background	<1.25 x Background
BH01	09/16/2022	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	51.7	130	675
BH02	09/16/2022	<b>10.7</b>	<1.00	<1.00	<1.00	6.68	<2.00	<2.00	51.6	19.0	747
BH03	09/16/2022	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	44.7	21.9	430
BH04	09/16/2022	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	37.8	167	770

**Notes:**

Background groundwater data not available at this time

(1) Standards for groundwater are taken from COGCC Table 915-1, effective January 15, 2021

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

µg/L = Micrograms per liter

1,2,4-TMB = 1,2,4-Trimethylbenzene

1,3,5-TMB = 1,3,5-Trimethylbenzene

TDS = Total dissolved solids

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1 standards

**TABLE 7**  
**CULVER 5-17 TANK BATTERY**  
**GROUNDWATER ELEVATION DATA**  
**EXTRACTION OIL AND GAS, INC.**



Groundwater Sample ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft.)	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	09/16/2022	5,064.84	12.52	9.24	ND	ND	5,055.60
BH02	09/16/2022	5,063.85	13.14	9.02	9.01	0.01	5,054.84
BH03	09/16/2022	5,060.26	9.14	5.98	5.97	0.01	5,054.29
BH04	09/16/2022	5,062.37	8.37	7.21	ND	ND	5,055.16

**Notes:**

\* Groundwater elevation was corrected for product thickness (when present) using the following calculation:

Groundwater elevation = (TOC Elevation - Measured Depth to Water)+(LNAPL Thickness in Well x LNAPL Relative Density)

LNAPL relative density was estimated to be approximately 0.75

**Definitions:**

ft. = Feet

AMSL = Above mean sea level

LNAPL = Light non-aqueous phase liquid

ND = Not detected

## **LABORATORY ANALYTICAL DATA**



September 26, 2022

Tasman Geosciences

Sam Vogt

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - Civitas - Culver 5-17 Facility**

**Project Number - [none]**

Attached are your analytical results for Civitas - Culver 5-17 Facility received by Origins Laboratory, Inc. September 09, 2022. This project is associated with Origins project number Y209200-01.

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



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@6'	Y209200-01	Soil	September 9, 2022 15:05	09/09/2022 17:45
BH02@7'	Y209200-02	Soil	September 9, 2022 15:50	09/09/2022 17:45
BH03@8.5'	Y209200-03	Soil	September 9, 2022 14:20	09/09/2022 17:45
BH04@6.5'	Y209200-04	Soil	September 9, 2022 14:50	09/09/2022 17:45
BG01@6.5'	Y209200-05	Soil	September 9, 2022 14:40	09/09/2022 17:45
BG02@6.5'	Y209200-06	Soil	September 9, 2022 14:30	09/09/2022 17:45

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.*

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

**ORIGINS**  
LABORATORY, INC

www.originslaboratory.com

4209200

page 1 of 1

Client: CIVITAS / TASMAN

Address:

Project Manager: SAM VOGT

Project Name: CULVER 5-17 FACILITY

Project Number:

Samples Collected By: J. Covey

Telephone Number:

Email Address: SVOGT@TASMAN-GEOSCI.COM

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix	Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other			
BH01@6'	9.9.22	1505	2	X				Soil	PH, LEAD, RAH'S, GPD, 1.24-TMB, 1.35-TMB, DTEX, Other	1
BH02@7'		1550	1					Groundwater		2
BH03@8.5'		1420	1					Other		3
BH04@6.5'		1450	1					Other		4
BH01@6.5'		1440	1					Other		5
BH02@6.5'		1430	1					Other		6
										7
										8
										9
										10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<u>SVOGT</u>	9.9.22	1745	DE	09.09.2022	1745	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>

Date Results Needed

Temp Received- 5.5'

Origins Laboratory, Inc.

*J. Bynon*

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

## Sample Receipt Checklist

Origins Work Order: 4209200

Client: Tasman

Client Project ID: Culver 5-17 Facility

Checklist Completed by: TSH/DE

Shipped Via: tlp

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 9/12/22

Airbill #: nlq

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_ (Describe)

Cooler Number/Temperature: 1155 °C 1 °C 1 °C 1 °C

Thermometer ID: 10041

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) 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 and was it checked <sup>(1)</sup> ? (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 <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>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 JB (Project Manager)

9-13-22  
Date/Time Reviewed

Origins Laboratory, Inc.

*J. Bynon*

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

BH01@6'

9/9/2022 3:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Y209200-01 (Soil)**  
**Origins Laboratory, Inc.**

**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2I1222	ADM	09/12/2022	09/17/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl 90.2 % 50-150 " "

**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2I1513	ADM	09/15/2022	09/22/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ADM	"	"	U
Benzene	ND	0.00200	"	"	"	ADM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ADM	"	"	U
Toluene	ND	0.00200	"	"	"	ADM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ADM	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JMA	"	09/17/2022	U

Surrogate: 1,2-Dichloroethane-d4 87.7 % 70-130 " " 09/22/2022  
Surrogate: Toluene-d8 95.5 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 94.1 % 70-130 " " "

**pH in Soil by 9045D**

pH	8.31	pH Units	1	B2I1306	BWM	09/13/2022	09/14/2022
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**Table 915 metals by EPA 6020B**

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

BH01@6'

9/9/2022 3:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y209200-01 (Soil)  
Origins Laboratory, Inc.

## Table 915 metals by EPA 6020B

Lead	10.2	7.79	mg/kg	5	B2I1302	CIH	09/13/2022	09/15/2022
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## Waypoint Analytical, LLC.

## PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00067	mg/Kg	1	L637334	09/14/2022	09/14/2022
2-Methylnaphthalene	ND	0.00067	"	"	"	"	"
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	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.00067	"	"	"	"	"
Chrysene	ND	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.00067	"	"	"	"	"
Fluoranthene	ND	0.00067	"	"	"	"	"
Fluorene	ND	0.00067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.00067	"	"	"	"	"
Naphthalene	ND	0.00067	"	"	"	"	"
Pyrene	ND	0.00067	"	"	"	"	"

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

BH01@6'

9/9/2022 3:05:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y209200-01 (Soil)

Waypoint Analytical, LLC.

## PAH by 8270D SIM

Surrogate: 2-Fluorobiphenyl	52.7 %	33-115			L6373 34	09/14/2022	09/14/2022
Surrogate: 4-Terphenyl-d14	60.1 %	33-122			"	"	"
Surrogate: Nitrobenzene-d5	54.3 %	29-110			"	"	"

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

BH02@7'

9/9/2022 3:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y209200-02 (Soil)  
Origins Laboratory, Inc.

DRO/ORO by EPA 8015D

Diesel (C10-C28)	700	25.0	mg/kg	1	B2I1222	ADM	09/12/2022	09/17/2022	
Residual Range Organics (C28-C40)	127	100	"	"	"	ADM	"	"	

Surrogate: o-Terphenyl 90.4 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	0.395	0.00200	mg/kg	1	B2I1513	JMA	09/15/2022	09/17/2022	
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JMA	"	"	U
Benzene	ND	0.00200	"	"	"	JMA	"	"	U
Ethylbenzene	0.00738	0.00200	"	"	"	JMA	"	"	
Toluene	0.0521	0.00200	"	"	"	JMA	"	"	
Xylenes, total	0.00426	0.00200	"	"	"	JMA	"	"	
Gasoline Range Hydrocarbons	207	5.00	"	25	"	ADM	"	09/22/2022	

Surrogate: 1,2-Dichloroethane-d4 83.8 % 70-130 " " "

Surrogate: Toluene-d8 142 % 70-130 " " S-GC

Surrogate: 4-Bromofluorobenzene 90.6 % 70-130 " " "

pH in Soil by 9045D

pH	7.91		pH Units	1	B2I1306	BWM	09/13/2022	09/14/2022	
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Table 915 metals by EPA 6020B

Lead	ND	9.60	mg/kg	5	B2I1302	CIH	09/13/2022	09/15/2022	U
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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.



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

BH02@7'

9/9/2022 3:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y209200-02 (Soil)  
Origins Laboratory, Inc.

Waypoint Analytical, LLC.

## PAH by 8270D SIM

1-Methylnaphthalene	1.05	0.00335	mg/Kg	5	L637334	09/14/2022	09/14/2022
2-Methylnaphthalene	2.53	0.00335	"	"	"	"	"
Acenaphthene	0.114	0.00335	"	"	"	"	"
Anthracene	0.00344	0.00335	"	"	"	"	"
Benzo(a)anthracene	0.00873	0.00335	"	"	"	"	"
Benzo(a)pyrene	ND	0.00335	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.00335	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.00335	"	"	"	"	"
Chrysene	0.0361	0.00335	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.00335	"	"	"	"	"
Fluoranthene	ND	0.00335	"	"	"	"	"
Fluorene	0.215	0.00335	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.00335	"	"	"	"	"
Naphthalene	0.582	0.00335	"	"	"	"	"
Pyrene	0.0187	0.00335	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	49.2 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	64 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	75.7 %	29-110	"	"	"

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.



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

BH03@8.5'

9/9/2022 2:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y209200-03 (Soil)  
Origins Laboratory, Inc.

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2I1222	ADM	09/12/2022	09/17/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl 89.1 % 50-150 " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	0.0113	0.00200	mg/kg	1	B2I1513	JMA	09/15/2022	09/17/2022	
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JMA	"	"	U
Benzene	ND	0.00200	"	"	"	JMA	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JMA	"	"	U
Toluene	ND	0.00200	"	"	"	JMA	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JMA	"	"	U
Gasoline Range Hydrocarbons	14.2	5.00	"	25	"	ADM	"	09/22/2022	

Surrogate: 1,2-Dichloroethane-d4 83.0 % 70-130 " "  
Surrogate: Toluene-d8 98.2 % 70-130 " "  
Surrogate: 4-Bromofluorobenzene 92.8 % 70-130 " "

pH in Soil by 9045D

pH	8.45		pH Units	1	B2I1306	BWM	09/13/2022	09/14/2022	
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Table 915 metals by EPA 6020B

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

BH03@8.5'

9/9/2022 2:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y209200-03 (Soil)  
Origins Laboratory, Inc.

## Table 915 metals by EPA 6020B

Lead	ND	7.50	mg/kg	5	B2I1302	CIH	09/13/2022	09/15/2022	U
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## Waypoint Analytical, LLC.

## PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00067	mg/Kg	1	L637334	09/14/2022	09/14/2022
2-Methylnaphthalene	ND	0.00067	"	"	"	"	"
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	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.00067	"	"	"	"	"
Chrysene	ND	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.00067	"	"	"	"	"
Fluoranthene	ND	0.00067	"	"	"	"	"
Fluorene	ND	0.00067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.00067	"	"	"	"	"
Naphthalene	ND	0.00067	"	"	"	"	"

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

BH03@8.5'

9/9/2022 2:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y209200-03 (Soil)

Waypoint Analytical, LLC.

## PAH by 8270D SIM

Pyrene	ND	0.00067	mg/Kg	1	L637334		09/14/2022	09/14/2022	
Surrogate: 2-Fluorobiphenyl	57.2 %		33-115			"	"	"	
Surrogate: 4-Terphenyl-d14	64.9 %		33-122			"	"	"	
Surrogate: Nitrobenzene-d5	58.2 %		29-110			"	"	"	

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

BH04@6.5'

9/9/2022 2:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y209200-04 (Soil)  
Origins Laboratory, Inc.

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2I1222	ADM	09/12/2022	09/17/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl 90.2 % 50-150 " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2I1513	JMA	09/15/2022	09/17/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JMA	"	"	U
Benzene	ND	0.00200	"	"	"	JMA	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JMA	"	"	U
Toluene	ND	0.00200	"	"	"	JMA	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JMA	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JMA	"	"	U

Surrogate: 1,2-Dichloroethane-d4 108 % 70-130 "  
Surrogate: Toluene-d8 98.5 % 70-130 "  
Surrogate: 4-Bromofluorobenzene 94.3 % 70-130 "

pH in Soil by 9045D

pH	8.35	pH Units	1	B2I1306	BWM	09/13/2022	09/14/2022
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Table 915 metals by EPA 6020B

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

BH04@6.5'

9/9/2022 2:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y209200-04 (Soil)  
Origins Laboratory, Inc.

## Table 915 metals by EPA 6020B

Lead	ND	8.26	mg/kg	5	B2I1302	CIH	09/13/2022	09/15/2022	U
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## Waypoint Analytical, LLC.

## PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00067	mg/Kg	1	L637334	09/14/2022	09/14/2022
2-Methylnaphthalene	ND	0.00067	"	"	"	"	"
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	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.00067	"	"	"	"	"
Chrysene	ND	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.00067	"	"	"	"	"
Fluoranthene	ND	0.00067	"	"	"	"	"
Fluorene	ND	0.00067	"	"	"	"	"
Indeno(1,2,3-cd)pyrene	ND	0.00067	"	"	"	"	"
Naphthalene	ND	0.00067	"	"	"	"	"

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

BH04@6.5'

9/9/2022 2:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y209200-04 (Soil)  
Waypoint Analytical, LLC.

## PAH by 8270D SIM

Pyrene	ND	0.00067	mg/Kg	1	L637334		09/14/2022	09/14/2022	
Surrogate: 2-Fluorobiphenyl	53.3 %		33-115			"	"	"	
Surrogate: 4-Terphenyl-d14	64.8 %		33-122			"	"	"	
Surrogate: Nitrobenzene-d5	52.1 %		29-110			"	"	"	

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

BG01@6.5'

9/9/2022 2:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y209200-05 (Soil)  
Origins Laboratory, Inc.

### pH in Soil by 9045D

pH	8.31		pH Units	1	B2I1306	BWM	09/13/2022	09/14/2022	
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### Table 915 metals by EPA 6020B

Lead	11.6	8.89	mg/kg	5	B2I1302	CIH	09/13/2022	09/15/2022	
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Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

BG02@6.5'

9/9/2022 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y209200-06 (Soil)  
Origins Laboratory, Inc.

### pH in Soil by 9045D

pH	8.14		pH Units	1	B2I1306	BWM	09/13/2022	09/14/2022	
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### Table 915 metals by EPA 6020B

Lead	ND	8.78	mg/kg	5	B2I1302	CIH	09/13/2022	09/15/2022	U
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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

**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 B2I1222 - EPA 3580										
Blank (B2I1222-BLK1)					Prepared: 09/12/2022 Analyzed: 09/17/2022					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	23		"	24.9		92.7	50-150			

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.*

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

**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 B2I1222 - EPA 3580

**LCS (B2I1222-BS1)**

Prepared: 09/12/2022 Analyzed: 09/17/2022

Diesel (C10-C28)	1040	50.0	mg/kg	1000		104	70-130			
Residual Range Organics (C28-C40)	861	200	"	1000		86.1	70-130			
Surrogate: o-Terphenyl	56		"	49.8		113	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

## 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 B2I1222 - EPA 3580

Matrix Spike (B2I1222-MS1)		Source: Y209199-01			Prepared: 09/12/2022 Analyzed: 09/17/2022					
Diesel (C10-C28)	1000	50.0	mg/kg	1000	ND	100	70-130			
Residual Range Organics (C28-C40)	810	200	"	1000	ND	81.0	70-130			
Surrogate: o-Terphenyl	41		"	49.8		82.9	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

## 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 B2I1222 - EPA 3580										
Matrix Spike Dup (B2I1222-MSD1)		Source: Y209199-01			Prepared: 09/12/2022 Analyzed: 09/17/2022					
Diesel (C10-C28)	1080	50.0	mg/kg	1000	ND	108	70-130	7.31	35	
Residual Range Organics (C28-C40)	907	200	"	1000	ND	90.7	70-130	11.3	35	
Surrogate: o-Terphenyl	43		"	49.8		85.9	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

## 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
<b>Batch B2I1513 - EPA 5030 (soil)</b>										
<b>Blank (B2I1513-BLK1)</b>					Prepared: 09/15/2022 Analyzed: 09/17/2022					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125	106		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	94.1		70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125	94.1		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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

**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
<b>Batch B2I1513 - EPA 5030 (soil)</b>										
<b>LCS (B2I1513-BS1)</b>					Prepared: 09/15/2022 Analyzed: 09/17/2022					
1,2,4-Trimethylbenzene	0.0967	0.00200	mg/kg	0.100		96.7	70-130			
1,3,5-Trimethylbenzene	0.0978	0.00200	"	0.100		97.8	70-130			
Benzene	0.103	0.00200	"	0.100		103	70-130			
Ethylbenzene	0.103	0.00200	"	0.100		103	70-130			
Naphthalene	0.103	0.00380	"	0.100		103	70-130			
Toluene	0.0998	0.00200	"	0.100		99.8	70-130			
o-Xylene	0.0998	0.00200	"	0.100		99.8	70-130			
m,p-Xylene	0.217	0.00400	"	0.200		109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.6	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.*

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

**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
<b>Batch B2I1513 - EPA 5030 (soil)</b>										
<b>Matrix Spike (B2I1513-MS1)</b>		<b>Source: Y209187-10</b>			Prepared: 09/15/2022 Analyzed: 09/21/2022					
1,2,4-Trimethylbenzene	0.105	0.00200	mg/kg	0.100	ND	105	70-130			
1,3,5-Trimethylbenzene	0.111	0.00200	"	0.100	ND	111	70-130			
Benzene	0.174	0.00200	"	0.100	ND	174	70-130			QM-07
Ethylbenzene	0.118	0.00200	"	0.100	ND	118	70-130			
Naphthalene	0.113	0.00380	"	0.100	ND	113	70-130			
Toluene	0.149	0.00200	"	0.100	ND	149	70-130			QM-07
o-Xylene	0.126	0.00200	"	0.100	ND	126	70-130			
m,p-Xylene	0.246	0.00400	"	0.200	ND	123	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.5	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.*

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

**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
<b>Batch B2I1513 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (B2I1513-MSD1)</b>		<b>Source: Y209187-10</b>			Prepared: 09/15/2022 Analyzed: 09/17/2022					
1,2,4-Trimethylbenzene	0.0777	0.00200	mg/kg	0.100	ND	77.7	70-130	29.8	20	QR-02
1,3,5-Trimethylbenzene	0.0787	0.00200	"	0.100	ND	78.7	70-130	33.7	20	QR-02
Benzene	0.0872	0.00200	"	0.100	ND	87.2	70-130	66.5	20	QM-07
Ethylbenzene	0.0858	0.00200	"	0.100	ND	85.8	70-130	31.3	20	QR-02
Naphthalene	0.0806	0.00380	"	0.100	ND	80.6	70-130	33.5	20	QR-02
Toluene	0.0838	0.00200	"	0.100	ND	83.8	70-130	56.2	20	QM-07
o-Xylene	0.0832	0.00200	"	0.100	ND	83.2	70-130	41.0	20	QR-02
m,p-Xylene	0.181	0.00400	"	0.200	ND	90.5	70-130	30.4	20	QR-02
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		107	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.9	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.



Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

**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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**\*\*\* DEFAULT GENERAL METHOD \*\*\* - 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 B2I1302 - Default Prep Metals**

<b>Blank (B2I1302-BLK1)</b>					Prepared: 09/13/2022 Analyzed: 09/15/2022					
Lead	ND	0.0100	mg/kg							U
<b>LCS (B2I1302-BS1)</b>					Prepared: 09/13/2022 Analyzed: 09/15/2022					
Lead	0.0526	0.0100	mg/kg	0.0500		105	80-120			
<b>Matrix Spike (B2I1302-MS1)</b>					Source: Y209177-09 Prepared: 09/13/2022 Analyzed: 09/15/2022					
Lead	21.3	9.29	mg/kg	9.29	4.71	179	75-125			QM-07
<b>Matrix Spike Dup (B2I1302-MSD1)</b>					Source: Y209177-09 Prepared: 09/13/2022 Analyzed: 09/15/2022					
Lead	29.5	8.49	mg/kg	8.49	4.71	292	75-125	32.3	20	QM-07, QR-DUP

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.*

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

## Saturated Paste - 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 B2I1306 - NO PREP

Duplicate (B2I1306-DUP1)

Source: Y209165-01

Prepared: 09/13/2022 Analyzed: 09/14/2022

pH	8.18		pH Units	8.23				0.609	25	
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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.*

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

**PAH by 8270D SIM - 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 L637334 - 3550B**

MSD (L 98406-MSD-L637334)		Source: Y209200-01			Prepared: 09/14/2022 Analyzed: 09/14/2022					
Benzo(a)anthracene	0.111	0.00067	mg/Kg	0.163	<0.000493	68	30-130	0.8	30	
1-Methylnaphthalene	0.101	0.00067	"	0.163	<0.000364	61.9	30-130	9.4	30	
2-Methylnaphthalene	0.101	0.00067	"	0.163	<0.000645	61.9	30-130	8.5	30	
Naphthalene	0.0994	0.00067	"	0.163	<0.000484	60.9	30-130	7.3	30	
Anthracene	0.111	0.00067	"	0.163	<0.000334	68	30-130	5.2	30	
Indeno(1,2,3-cd)pyrene	0.123	0.00067	"	0.163	<0.000627	75.4	30-130	1.6	30	
Fluorene	0.108	0.00067	"	0.163	<0.000286	66.2	30-130	8	30	
Fluoranthene	0.114	0.00067	"	0.163	<0.000394	69.9	30-130	2.5	30	
Acenaphthene	0.102	0.00067	"	0.163	<0.000304	62.5	30-130	9.3	30	
Chrysene	0.114	0.00067	"	0.163	<0.000624	69.9	30-130	2.5	30	
Benzo(k)fluoranthene	0.117	0.00067	"	0.163	<0.000437	71.7	30-130	8.9	30	
Benzo(b)fluoranthene	0.12	0.00067	"	0.163	<0.000585	73.6	30-130	2.5	30	
Benzo(a)pyrene	0.128	0.00067	"	0.163	<0.000468	78.5	30-130	2.3	30	
Dibenz(a,h)anthracene	0.127	0.00067	"	0.163	<0.000614	77.9	30-130	3.8	30	
Pyrene	0.113	0.00067	"	0.163	<0.000643	69.3	30-130	4.3	30	
Surrogate: 2-Fluorobiphenyl	54.9		"	0.326	173	54.9	33-115			
Surrogate: 4-Terphenyl-d14	63.8		"	0.326	197	63.8	33-122			
Surrogate: Nitrobenzene-d5	56.4		"	0.326	178	56.4	29-110			

MS (L 98406-MS-L637334)		Source: Y209200-01			Prepared: 09/14/2022 Analyzed: 09/14/2022					
Dibenz(a,h)anthracene	0.132	0.00067	mg/Kg	0.164	<0.000614	80.4	30-130			
Fluoranthene	0.117	0.00067	"	0.164	<0.000394	71.3	30-130			
Fluorene	0.117	0.00067	"	0.164	<0.000286	71.3	30-130			
Indeno(1,2,3-cd)pyrene	0.125	0.00067	"	0.164	<0.000627	76.2	30-130			
Naphthalene	0.107	0.00067	"	0.164	<0.000484	65.2	30-130			
Pyrene	0.118	0.00067	"	0.164	<0.000643	71.9	30-130			
Chrysene	0.117	0.00067	"	0.164	<0.000624	71.3	30-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

**PAH by 8270D SIM - 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 L637334 - 3550B**

MS (L 98406-MS-L637334)		Source: Y209200-01			Prepared: 09/14/2022 Analyzed: 09/14/2022					
Benzo(a)anthracene	0.112	0.00067	mg/Kg	0.164	<0.000493	68.2	30-130			
Benzo(b)fluoranthene	0.117	0.00067	"	0.164	<0.000585	71.3	30-130			
1-Methylnaphthalene	0.111	0.00067	"	0.164	<0.000364	67.6	30-130			
Benzo(k)fluoranthene	0.128	0.00067	"	0.164	<0.000437	78	30-130			
2-Methylnaphthalene	0.11	0.00067	"	0.164	<0.000645	67	30-130			
Acenaphthene	0.112	0.00067	"	0.164	<0.000304	68.2	30-130			
Anthracene	0.117	0.00067	"	0.164	<0.000334	71.3	30-130			
Benzo(a)pyrene	0.131	0.00067	"	0.164	<0.000468	79.8	30-130			
Surrogate: Nitrobenzene-d5	61.3		"	0.329	178	61.3	29-110			
Surrogate: 2-Fluorobiphenyl	61		"	0.329	173	61	33-115			
Surrogate: 4-Terphenyl-d14	64.4		"	0.329	197	64.4	33-122			

**LCS (LCS-L637334)**

Prepared: 09/14/2022 Analyzed: 09/14/2022

Chrysene	0.118	0.00067	mg/Kg	0.167		70.6	30-130
Naphthalene	0.0991	0.00067	"	0.167		59.3	30-130
Pyrene	0.116	0.00067	"	0.167		69.4	30-130
Indeno(1,2,3-cd)pyrene	0.137	0.00067	"	0.167		82	30-130
Fluorene	0.109	0.00067	"	0.167		65.2	30-130
Fluoranthene	0.115	0.00067	"	0.167		68.8	30-130
Dibenz(a,h)anthracene	0.142	0.00067	"	0.167		85	30-130
Benzo(b)fluoranthene	0.122	0.00067	"	0.167		73	30-130
Benzo(a)pyrene	0.132	0.00067	"	0.167		79	30-130
Benzo(a)anthracene	0.111	0.00067	"	0.167		66.4	30-130
Anthracene	0.112	0.00067	"	0.167		67	30-130
Acenaphthene	0.102	0.00067	"	0.167		61	30-130
2-Methylnaphthalene	0.102	0.00067	"	0.167		61	30-130
1-Methylnaphthalene	0.101	0.00067	"	0.167		60.4	30-130

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch L637334 - 3550B</b>										
<b>LCS (LCS-L637334)</b>					Prepared: 09/14/2022 Analyzed: 09/14/2022					
Benzo(k)fluoranthene	0.128	0.00067	mg/Kg	0.167		76.6	30-130			
Surrogate: 2-Fluorobiphenyl	50.1		"	0.333		50.1	33-115			
Surrogate: Nitrobenzene-d5	50.4		"	0.333		50.4	29-110			
Surrogate: 4-Terphenyl-d14	57.9		"	0.333		57.9	33-122			
<b>LRB (LRB-L637334)</b>					Prepared: 09/14/2022 Analyzed: 09/14/2022					
Chrysene	ND	0.00067	mg/Kg				-			
Dibenz(a,h)anthracene	ND	0.00067	"				-			
Fluoranthene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Benzo(k)fluoranthene	ND	0.00067	"				-			
Naphthalene	ND	0.00067	"				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Benzo(a)pyrene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Acenaphthene	ND	0.00067	"				-			
2-Methylnaphthalene	ND	0.00067	"				-			
1-Methylnaphthalene	ND	0.00067	"				-			
Pyrene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
Surrogate: Nitrobenzene-d5	60.9		"	0.333		60.9	29-110			
Surrogate: 4-Terphenyl-d14	71.4		"	0.333		71.4	33-122			
Surrogate: 2-Fluorobiphenyl	58.8		"	0.333		58.8	33-115			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver 5-17 Facility

### Notes and Definitions

- U Sample is Non-Detect.
- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
- QR-DUP RPD exceeds QC acceptance criteria, this indicates source sample is not homogenous.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- 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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October 04, 2022

Tasman Geosciences

Sam Vogt

6855 West 119th Avenue

Broomfield CO 80020

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**Project Name - Civitas - Culver MC 5-17 Facility      Project Number - [none]**

Attached are your analytical results for Civitas - Culver MC 5-17 Facility received by Origins Laboratory, Inc. September 16, 2022. This project is associated with Origins project number Y209369-01.

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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver MC 5-17 Facility

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	Y209369-01	Water	September 16, 2022 9:57	09/16/2022 12:41
BH02	Y209369-02	Water	September 16, 2022 10:00	09/16/2022 12:41
BH03	Y209369-03	Water	September 16, 2022 10:20	09/16/2022 12:41
BH04	Y209369-04	Water	September 16, 2022 10:21	09/16/2022 12:41

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.*



Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver MC 5-17 Facility

# ORIGINS

LABORATORY, INC

www.originslaboratory.com

page

of 1

Client: CIVITAS/TASMAN

Address: 6855 W 114<sup>th</sup> AVE

Dreamfield CO

Telephone Number: 610-405-9078

Email Address: [Support@tasman-gca.com](mailto:Support@tasman-gca.com)

[jean@civilresources.com](mailto:jean@civilresources.com)

Fax: 303.265.9645

Phone: 303.433.1322

Denver, CO 80211

1725 Elk Place

Relinquished By:

Relinquished By:

Date:

Date:

Time:

Time:

Received By:

Received By:

Date:

Date:

Turnaround Time:

Same Day ☐

48 Hr ☐

72 Hr ☐

Standard ☒

Temp Received: 5.8°

Date Results Needed

Origins Laboratory, Inc.

Byron

*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.*

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver MC 5-17 Facility

Origins Laboratory

F-012207-01-R1  
Effective Date: 01/09/12

Origins Work Order: Y209369

Client: Tasman

Client Project ID: Culver MC 5-17 Fac

Checklist Completed by: MO/DE

Date/time completed: 09/19/2022

Shipped Via: HD  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid 0 Water 0 Other: 0

Cooler Number/Temperature: 15.8 °C 1 °C 1 °C 1 °C (Describe)

Thermometer ID: 7000A

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	X			
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact <sup>(1)</sup> ?	X			
Was adequate sample volume provided <sup>(1)</sup> ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		X		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	X			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	X			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	X			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		X		
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (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 <sub>3</sub> , HCl, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	X			not checked
Additional Comments (if any):				

<sup>(1)</sup> 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 (Project Manager) JB Date/Time Reviewed 9-20-22

Origins Laboratory, Inc.

*J. Bynon*

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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver MC 5-17 Facility

## BH01

9/16/2022 9:57:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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## Y209369-01 (Water) Origins Laboratory, Inc.

### BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B2I2016	JMA	09/20/2022	09/24/2022	Ua
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	JMA	"	"	Ua
Benzene	ND	1.00	"	"	"	JMA	"	"	Ua
Ethylbenzene	ND	1.00	"	"	"	JMA	"	"	Ua
Naphthalene	ND	2.00	"	"	"	JMA	"	"	Ua
Toluene	ND	1.00	"	"	"	JMA	"	"	Ua
Xylenes, total	ND	1.00	"	"	"	JMA	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"
Surrogate: Toluene-d8	99.9 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	98.7 %	70-130			"	"	"

## GEL Laboratories, LLC

### Anions by EPA 300.0

Chloride	51.7	20.0	mg/L	100	2318878	JLD1	09/16/2022	09/20/2022
Sulfate	130	40.0	"	"	"	JLD1	"	"

### TDS by SM 2540C

Total Dissolved Solids	675	50.0	mg/L	1	2319236	CH6	"	09/21/2022
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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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver MC 5-17 Facility

## BH02

9/16/2022 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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## Y209369-02 (Water) Origins Laboratory, Inc.

### BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B2I2016	JMA	09/20/2022	09/24/2022	Ua
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	JMA	"	"	Ua
Benzene	10.7	1.00	"	"	"	JMA	"	"	
Ethylbenzene	ND	1.00	"	"	"	JMA	"	"	Ua
Naphthalene	6.68	2.00	"	"	"	JMA	"	"	
Toluene	ND	1.00	"	"	"	JMA	"	"	Ua
Xylenes, total	ND	1.00	"	"	"	JMA	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"
Surrogate: Toluene-d8	110 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"

## GEL Laboratories, LLC

### Anions by EPA 300.0

Chloride	51.6	20.0	mg/L	100	2318878	JLD1	09/16/2022	09/20/2022
Sulfate	19.0	0.800	"	2	"	JLD1	"	09/21/2022

### TDS by SM 2540C

Total Dissolved Solids	747	33.3	mg/L	1	2319236	CH6	"	09/21/2022
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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.

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver MC 5-17 Facility

## BH03

9/16/2022 10:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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## Y209369-03 (Water) Origins Laboratory, Inc.

### BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B2I2016	JMA	09/20/2022	09/24/2022	Ua
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	JMA	"	"	Ua
Benzene	ND	1.00	"	"	"	JMA	"	"	Ua
Ethylbenzene	ND	1.00	"	"	"	JMA	"	"	Ua
Naphthalene	ND	2.00	"	"	"	JMA	"	"	Ua
Toluene	ND	1.00	"	"	"	JMA	"	"	Ua
Xylenes, total	ND	1.00	"	"	"	JMA	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"
Surrogate: Toluene-d8	99.6 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"

## GEL Laboratories, LLC

### Anions by EPA 300.0

Chloride	44.7	20.0	mg/L	100	2318878	JLD1	09/16/2022	09/21/2022
Sulfate	21.9	0.800	"	2	"	JLD1	"	"

### TDS by SM 2540C

Total Dissolved Solids	430	50.0	mg/L	1	2319236	CH6	"	09/21/2022
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Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver MC 5-17 Facility

## BH04

9/16/2022 10:21:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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## Y209369-04 (Water) Origins Laboratory, Inc.

### BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B2I2016	JMA	09/20/2022	09/24/2022	Ua
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	JMA	"	"	Ua
Benzene	ND	1.00	"	"	"	JMA	"	"	Ua
Ethylbenzene	ND	1.00	"	"	"	JMA	"	"	Ua
Naphthalene	ND	2.00	"	"	"	JMA	"	"	Ua
Toluene	ND	1.00	"	"	"	JMA	"	"	Ua
Xylenes, total	ND	1.00	"	"	"	JMA	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"
Surrogate: Toluene-d8	98.5 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	99.5 %	70-130			"	"	"

## GEL Laboratories, LLC

### Anions by EPA 300.0

Chloride	37.8	20.0	mg/L	100	2318878	JLD1	09/16/2022	09/21/2022
Sulfate	167	40.0	"	"	"	JLD1	"	"

### TDS by SM 2540C

Total Dissolved Solids	770	33.3	mg/L	1	2319236	CH6	"	09/21/2022
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Origins Laboratory, Inc.



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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver MC 5-17 Facility

**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
<b>Batch B2I2016 - EPA 5030B (Water)</b>										
<b>Blank (B2I2016-BLK1)</b>					Prepared: 09/20/2022 Analyzed: 09/23/2022					
1,2,4-Trimethylbenzene	ND	2.00	ug/L							Ua
1,3,5-Trimethylbenzene	ND	2.00	"							Ua
Benzene	ND	1.00	"							Ua
Ethylbenzene	ND	1.00	"							Ua
Naphthalene	ND	2.00	"							Ua
Toluene	ND	1.00	"							Ua
Xylenes, total	ND	1.00	"							Ua
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		102	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.7	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B2I2016 - EPA 5030B (Water)</b>										
<b>LCS (B2I2016-BS1)</b>					Prepared: 09/20/2022 Analyzed: 09/23/2022					
1,2,4-Trimethylbenzene	51.9	2.00	ug/L	50.0		104	70-130			
1,3,5-Trimethylbenzene	53.1	2.00	"	50.0		106	70-130			
Benzene	48.7	1.00	"	50.0		97.3	70-130			
Ethylbenzene	50.1	1.00	"	50.0		100	70-130			
m,p-Xylene	103	2.00	"	100		103	70-130			
Naphthalene	50.2	2.00	"	50.0		100	70-130			
o-Xylene	50.1	1.00	"	50.0		100	70-130			
Toluene	49.3	1.00	"	50.0		98.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.7	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

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**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 B2I2016 - EPA 5030B (Water)**

Matrix Spike (B2I2016-MS1)		Source: Y209352-01			Prepared: 09/20/2022 Analyzed: 09/23/2022					
1,2,4-Trimethylbenzene	48.7	2.00	ug/L	50.0	ND	97.4	70-130			
1,3,5-Trimethylbenzene	46.3	2.00	"	50.0	ND	92.6	70-130			
Benzene	46.0	1.00	"	50.0	ND	91.9	70-130			
Ethylbenzene	45.8	1.00	"	50.0	ND	91.5	70-130			
m,p-Xylene	93.5	2.00	"	100	ND	93.5	70-130			
Naphthalene	49.7	2.00	"	50.0	ND	99.5	70-130			
o-Xylene	47.4	1.00	"	50.0	ND	94.9	70-130			
Toluene	44.9	1.00	"	50.0	ND	89.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.8	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

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Sam Vogt  
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Project: Civitas - Culver MC 5-17 Facility

**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
<b>Batch B2I2016 - EPA 5030B (Water)</b>										
<b>Matrix Spike Dup (B2I2016-MSD1)</b>	<b>Source: Y209352-01</b>				Prepared: 09/20/2022 Analyzed: 09/23/2022					
1,2,4-Trimethylbenzene	58.6	2.00	ug/L	50.0	ND	117	70-130	18.5	20	
1,3,5-Trimethylbenzene	57.3	2.00	"	50.0	ND	115	70-130	21.2	20	QR-02
Benzene	54.2	1.00	"	50.0	ND	108	70-130	16.4	20	
Ethylbenzene	55.8	1.00	"	50.0	ND	112	70-130	19.8	20	
m,p-Xylene	115	2.00	"	100	ND	115	70-130	20.2	20	QR-02
Naphthalene	59.8	2.00	"	50.0	ND	120	70-130	18.4	20	
o-Xylene	55.4	1.00	"	50.0	ND	111	70-130	15.5	20	
Toluene	54.6	1.00	"	50.0	ND	109	70-130	19.5	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.8	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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Project: Civitas - Culver MC 5-17 Facility

**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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**Anions by EPA 300.0 - Quality Control**  
**GEL Laboratories, LLC**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2318878 -**

**BLANK (1205196159-BLK)**

Prepared: Analyzed: 09/21/2022

Chloride	ND	0.200	mg/L				-			U
Sulfate	ND	0.400	"				-			U

**LCS (1205196160-BKS)**

Prepared: Analyzed: 09/21/2022

Chloride	4.84	0.200	mg/L	5.00		96.8	90-110			
Sulfate	10.0	0.400	"	10.0		100	90-110			

**DUP (1205196161 D)**

**Source: 593731002**

Prepared: Analyzed: 09/20/2022

Chloride	421	20.0	mg/L		425		0-20	0.868	20	
Sulfate	4150	100	"		4130		0-20	0.34	20	

**PS (1205196162 S)**

**Source: 593731002**

Prepared: Analyzed: 09/20/2022

Chloride	964	20.0	mg/L	5.00		108	90-110			
Sulfate	7000	100	"	10.0		115	90-110			

**DUP (1205196163 D)**

**Source: 593739003**

Prepared: Analyzed: 09/20/2022

Chloride	390	20.0	mg/L		391		0-20	0.064	20	
Sulfate	1590	40.0	"		1590		0-20	0.0971	20	

**PS (1205196164 S)**

**Source: 593739003**

Prepared: Analyzed: 09/20/2022

Chloride	929	20.0	mg/L	5.00		108	90-110			
Sulfate	2710	40.0	"	10.0		112	90-110			

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Sam Vogt  
Project Number: [none]  
Project: Civitas - Culver MC 5-17 Facility

**TDS by SM 2540C - Quality Control**  
**GEL Laboratories, LLC**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2319236 -</b>										
<b>BLANK (1205196690-BLK)</b>					Prepared: Analyzed: 09/21/2022					
Total Dissolved Solids	ND	10.0	mg/L				-			U
<b>LCS (1205196691-BKS)</b>					Prepared: Analyzed: 09/21/2022					
Total Dissolved Solids	302	10.0	mg/L	300		101	95-105			
<b>DUP (1205196693 D)</b>					Prepared: Analyzed: 09/21/2022					
Total Dissolved Solids	460	50.0	mg/L		430		0-5	6.74	5	

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### Notes and Definitions

Ua Sample is Non-Detect.

U Result not detected above the detection limit

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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