

Harsch 42-27

NWNE Sec. 27-T2N-R69W

Remediation Project #: 21354

Fourth Quarter 2023 Groundwater Monitoring

November 2023

Prepared by Tasman, Inc.



On behalf of Crestone Peak Resources Operating, LLC



FIGURES

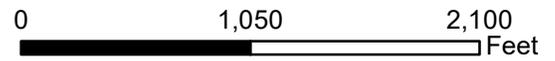
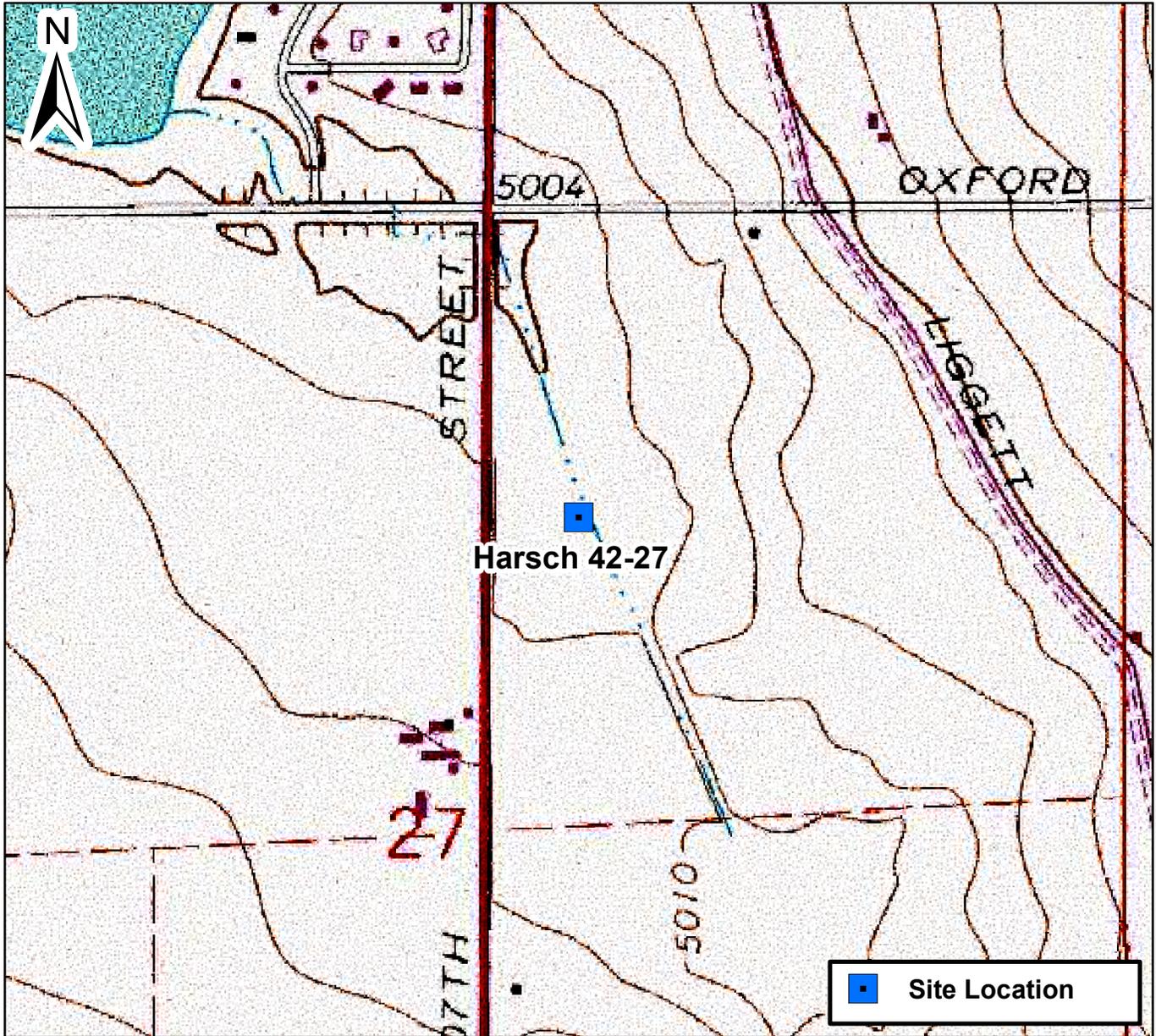


Figure 1

Site Location Map
 Harsch 42-27
 NWNE Sec. 27-T2N-R69W
 Boulder, Colorado





Legend

 Monitoring Well Location
(Collected via Trimble GPS)

Notes

All locations are approximate unless otherwise noted.

GPS – Global Positioning System

0 ft. 30 ft. 60 ft.




Image Source: Google Earth

DATE:	January 30, 2023
DESIGNED BY:	S. Vogt
DRAWN BY:	S. Kirylo

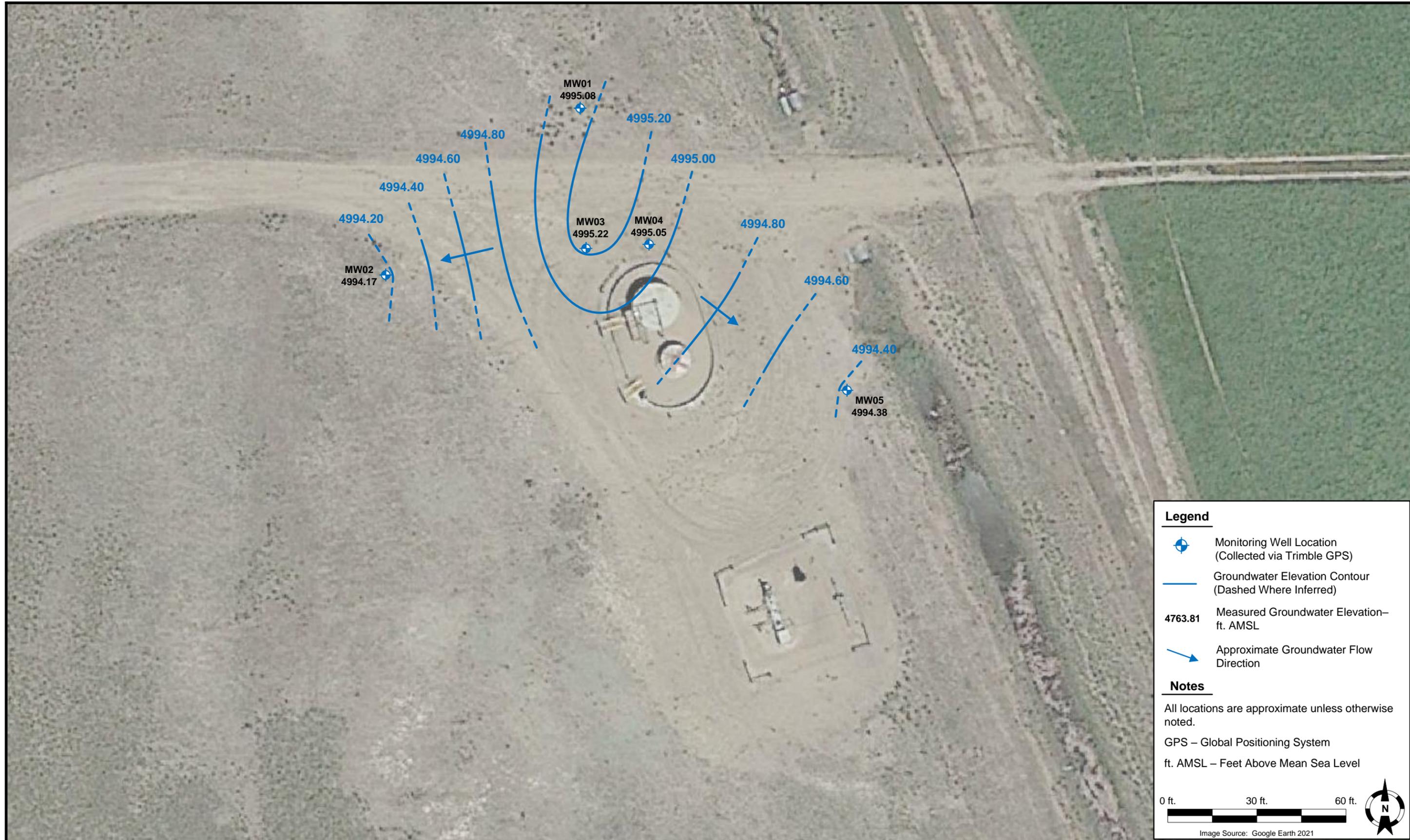


Tasman, Inc.
6855 W. 119th Avenue
Broomfield, Colorado 80020

Crestone Peak Resources Operating, LLC
Harsch 42-27
 NWNE Sec. 27-T2N-R69W
 Boulder County, Colorado

Site Overview Map

FIGURE
2



Legend

- Monitoring Well Location (Collected via Trimble GPS)
- Groundwater Elevation Contour (Dashed Where Inferred)
- 4763.81** Measured Groundwater Elevation—ft. AMSL
- Approximate Groundwater Flow Direction

Notes

All locations are approximate unless otherwise noted.

GPS – Global Positioning System

ft. AMSL – Feet Above Mean Sea Level

0 ft. 30 ft. 60 ft.

Image Source: Google Earth 2021

DATE:	January 2, 2024
DESIGNED BY:	S. Vogt
DRAWN BY:	L. Reed

Tasman, Inc.
6855 W. 119th Avenue
Broomfield, Colorado 80020

Crestone Peak Resources Operating, LLC
Harsch 42-27
NWNE Sec. 27-T2N-R6W
Boulder County, Colorado

Groundwater Potentiometric
Surface Contour Map
(11/15/2023)

FIGURE
3

MW01	
Compound	11/15/2023
Benzene (µg/L)	<1.0
Toluene (µg/L)	<1.0
Ethylbenzene (µg/L)	<1.0
Total Xylenes (µg/L)	<2.0
Naphthalene (µg/L)	<1.0
1,2,4-Trimethylbenzene (µg/L)	<1.0
1,3,5-Trimethylbenzene (µg/L)	<1.0
Chloride (mg/L)	1,090
Sulfate (mg/L)	11,800
Total Dissolved Solids (mg/L)	12,000

MW02	
Compound	11/15/2023
Benzene (µg/L)	<1.0
Toluene (µg/L)	<1.0
Ethylbenzene (µg/L)	<1.0
Total Xylenes (µg/L)	<2.0
Naphthalene (µg/L)	<1.0
1,2,4-Trimethylbenzene (µg/L)	<1.0
1,3,5-Trimethylbenzene (µg/L)	<1.0
Chloride (mg/L)	616
Sulfate (mg/L)	11,000
Total Dissolved Solids (mg/L)	11,700

MW03	
Compound	11/15/2023
Benzene (µg/L)	<1.0
Toluene (µg/L)	<1.0
Ethylbenzene (µg/L)	<1.0
Total Xylenes (µg/L)	<2.0
Naphthalene (µg/L)	<1.0
1,2,4-Trimethylbenzene (µg/L)	<1.0
1,3,5-Trimethylbenzene (µg/L)	<1.0
Chloride (mg/L)	2,080
Sulfate (mg/L)	19,400
Total Dissolved Solids (mg/L)	11,600

MW04	
Compound	11/15/2023
Benzene (µg/L)	<1.0
Toluene (µg/L)	<1.0
Ethylbenzene (µg/L)	<1.0
Total Xylenes (µg/L)	<2.0
Naphthalene (µg/L)	<1.0
1,2,4-Trimethylbenzene (µg/L)	<1.0
1,3,5-Trimethylbenzene (µg/L)	<1.0
Chloride (mg/L)	2,230
Sulfate (mg/L)	22,900
Total Dissolved Solids (mg/L)	20,900

MW05	
Compound	11/15/2023
Benzene (µg/L)	<1.0
Toluene (µg/L)	<1.0
Ethylbenzene (µg/L)	<1.0
Total Xylenes (µg/L)	<2.0
Naphthalene (µg/L)	<1.0
1,2,4-Trimethylbenzene (µg/L)	<1.0
1,3,5-Trimethylbenzene (µg/L)	<1.0
Chloride (mg/L)	1,820
Sulfate (mg/L)	20,700
Total Dissolved Solids (mg/L)	21,400

Legend

 Monitoring Well Location – Below
ECMC Table 915-1 Standards
(Collected via Trimble GPS)

ECMC Table 915-1 Groundwater Standards	
Compound	Date
Benzene (µg/L)	5
Toluene (µg/L)	560
Ethylbenzene (µg/L)	700
Total Xylenes (µg/L)	1,400
Naphthalene (µg/L)	140
1,2,4-Trimethylbenzene (µg/L)	67
1,3,5-Trimethylbenzene (µg/L)	67
Chloride (mg/L)	250 / 1.25 x Local Background
Sulfate (mg/L)	250 / 1.25 x Local Background
Total Dissolved Solids (mg/L)	1.25 x Local Background

Notes

All locations are approximate unless otherwise noted.

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

GPS – Global Positioning System

µg/L – micrograms per liter

mg/L – milligrams per liter

ECMC – Colorado Energy and Carbon Management Commission

0 ft. 30 ft. 60 ft.



Image Source: Google Earth



DATE: December 20, 2023

DESIGNED BY: S. Vogt

DRAWN BY: S. Kirylo



Tasman, Inc.
6855 W. 119th Avenue
Broomfield, Colorado 80020

Crestone Peak Resources Operating, LLC
Harsch 42-27
NWNE Sec. 27-T2N-R69W
Boulder County, Colorado

Groundwater Analytical Map
(11/15/2023)

FIGURE
4

TABLES

**TABLE 1
HARSCH 42-27**



**SOIL SAMPLE LOCATIONS
CRESTONE PEAK RESOURCES OPERATING, LLC**

Soil Sample Location	Depth	Date	PID Reading (ppm)	Latitude	Longitude	GPS PDOP Value	Lab (Y/N)
SB01@5-6	5'-6'	10/08/2021	7.4	40.112769	-105.101412	-	Y
SB02@4-5	4'-5'	10/08/2021	3.2	40.112755	-105.101507	-	Y
SB03@3-4	3'-4'	10/08/2021	2.6	40.112654	-105.101487	-	Y
SB03@4-5	4'-5'	10/08/2021	2.7	40.112654	-105.101487	-	Y
SB04@4-5	4'-5'	10/08/2021	1.6	40.112556	-105.101382	-	Y
BKG01@4-5	4'-5'	10/08/2021	-	40.112693	-105.101568	-	Y
SB01_GW	-	10/08/2021	-	40.112789	-105.101409	-	Y
BKG01_GW	-	10/08/2021	-	40.112693	-105.101568	-	Y
MW01@12'	12'	10/27/2022	0.0	40.112893	-105.101424	-	Y
MW02@12'	12'	10/27/2022	0.0	40.112739	-105.101657	-	Y
MW03@2'	2'	10/27/2022	2.5	40.112764	-105.101417	-	Y
MW03@12'	12'	10/27/2022	0.0	40.112764	-105.101417	-	Y
MW04@2'	2'	10/27/2022	3.5	40.112768	-105.101340	-	Y
MW04@10'-11'	10'-11'	10/27/2022	0.0	40.112768	-105.101340	-	Y
MW05@12'	12'	10/27/2022	0.0	40.112634	-105.101102	-	Y

Notes:

PID = Photoionization Detector

ppm = parts per million

GPS = Global Positioning System

PDOP = Position Dilution of Precision

- = Not Applicable

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

TABLE 2
HARSCH 42-27
SOIL ANALYTICAL DATA - VOCs
CRESTONE PEAK RESOURCES OPERATING, LLC

Soil Sample Location	Depth	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)
ECMC Organic Compounds in Soils ⁽¹⁾			0.0026	0.69	0.78	9.9	0.0038	500			0.0081	0.0087
ECMC Organic Compounds in Soils ⁽²⁾			1.2	490	5.8	58	2	500			30	27
SB01@5-6	5'-6'	10/08/2021	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50			<0.0050	<0.0050
SB02@4-5	4'-5'	10/08/2021	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50			<0.0050	<0.0050
SB03@3-4	3'-4'	10/08/2021	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50			<0.0050	<0.0050
SB03@4-5	4'-5'	10/08/2021	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50			<0.0050	<0.0050
SB04@4-5	4'-5'	10/08/2021	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50			<0.0050	<0.0050
MW01@12'	12'	10/27/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
MW02@12'	12'	10/27/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
MW03@12'	12'	10/27/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
MW03@2'	2'	10/27/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
MW04@10-11'	10'-11'	10/27/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
MW04@2'	2'	10/27/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
MW05@12'	12'	10/27/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050

Notes:

VOCs = Volatile Organic Compounds

(1) Standards for soil are taken from ECMC Table 915-1: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations (Effective January 15, 2021)

(2) Standards for soil are taken from ECMC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations (Effective January 15, 2021)

ECMC = Colorado Energy and Carbon Management Commission

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

mg/kg = milligram 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

BOLD = Analytical result is in exceedance of ECMC Table 915-1: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations

BOLD = Analytical result is in exceedance of ECMC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations

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

**TABLE 3
HARSCH 42-27
SOIL ANALYTICAL DATA - PAHs
CRESTONE PEAK RESOURCES OPERATING, LLC**

Soil Sample Location	Depth	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)
ECMC Organic Compounds in Soils ⁽¹⁾			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
ECMC Organic Compounds in Soils ⁽²⁾			360	1,800	1.1	1.1	11	0.11	110	0.11	240	240	1.1	18	24	180
SB01@5-6	5'-6'	10/08/2021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB02@4-5	4'-5'	10/08/2021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB03@3-4	3'-4'	10/08/2021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB03@4-5	4'-5'	10/08/2021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB04@4-5	4'-5'	10/08/2021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
MW01@12'	12'	10/27/2022	<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
MW02@12'	12'	10/27/2022	<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
MW03@12'	12'	10/27/2022	<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
MW03@2'	2'	10/27/2022	<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
MW04@10-11'	10'-11'	10/27/2022	<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
MW04@2'	2'	10/27/2022	<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
MW05@12'	12'	10/27/2022	<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

Notes:

PAHs = Polycyclic Aromatic Hydrocarbons

(1) Standards for soil are taken from ECMC Table 915-1: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations (Effective January 15, 2021)

(2) Standards for soil are taken from ECMC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations (Effective January 15, 2021)

ECMC = Colorado Energy and Carbon Management 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 = Dibenz(a,h)Anthracene

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

1-M = 1-Methylnaphthalene

2-M = 2-Methylnaphthalene

BOLD = Analytical result is in exceedance of ECMC Table 915-1: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations

BOLD = Analytical result is in exceedance of ECMC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations

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

TABLE 5
HARSCH 42-27



SOIL ANALYTICAL DATA - SOIL RECLAMATION
CRESTONE PEAK RESOURCES OPERATING, LLC

Soil Sample Location	Depth	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
ECMC Soil Suitability for Reclamation ⁽¹⁾			6 - 8.3	< 6	< 4	2
SB01@5-6	5'-6'	10/08/2021	8.34	12.1*	4.21*	0.499
SB02@4-5	4'-5'	10/08/2021	8.16	11.9*	7.96*	0.209
SB03@3-4	3'-4'	10/08/2021	8.27	13.8*	11.5	0.357
SB03@4-5	4'-5'	10/08/2021	8.25	13.8*	10.8	0.335
SB04@4-5	4'-5'	10/08/2021	8.25	13.3*	10.3	0.284
MW01@12'	12'	10/27/2022	8.21	14.8	5.24	0.817
MW02@12'	12'	10/27/2022	8.50	13.8	3.40	1.47
MW03@12'	12'	10/27/2022	8.07	15.7	9.94	1.37
MW03@2'	2'	10/27/2022	7.71	16.4	11.6	0.567
MW04@10-11'	10'-11'	10/27/2022	8.31	19.5	9.11	1.29
MW04@2'	2'	10/27/2022	8.21	16.2	8.89	0.493
MW05@12'	12'	10/27/2022	8.15	18.0	9.43	1.33
BACKGROUND						
BKG01@4-5	4'-5'	10/08/2021	8.29	15.5	8.58	0.325

Notes:

(1) Standards for soil are taken from ECMC Table 915-1: Soil Suitability for Reclamation (Effective January 15, 2021)

ECMC = Colorado Energy and Carbon Management Commission

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

mmhos/cm = millimhos per centimeter

mg/L = milligrams per liter

pH = Potential of Hydrogen

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

BOLD = Analytical result is in exceedance of ECMC Table 915-1: Soil Suitability for Reclamation Concentrations

Average background concentration

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

* Result exceeded the ECMC Table 915-1 standard, but was within site-specific background concentrations

**TABLE 4
HARSCH 42-27
SOIL ANALYTICAL DATA - METALS
CRESTONE PEAK RESOURCES OPERATING, LLC**

Soil Sample Location	Depth	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)
ECMC Metals in Soils ⁽¹⁾			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
ECMC Metals in Soils ⁽²⁾			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
SB01@5-6	5'-6'	10/08/2021	3.53*	117*	0.299	<0.30	18.8	14.5*	18.8	1.32	0.109	78.6
SB02@4-5	4'-5'	10/08/2021	5.07*	116*	0.254	<0.30	18.3	16.7*	16.1	1.40	0.101	74.6
SB03@3-4	3'-4'	10/08/2021	5.73*	65.7	0.284	<0.30	16.7	15.8*	18.0	0.988*	0.106	74.6
SB03@4-5	4'-5'	10/08/2021	6.81*	75.6	0.280	<0.30	17.9	14.6*	18.5	1.05*	0.0986	83.0
SB04@4-5	4'-5'	10/08/2021	6.41*	101*	0.288	<0.30	18.9	15.2*	18.9	1.37	0.102	90.6
MW01@12'	12'	10/27/2022	2.06	112	0.309	<0.30	10.6	12.4	10.7	<0.213	0.0677	40.8
MW02@12'	12'	10/27/2022	1.77	63.3	0.282	<0.30	9.90	11.5	10.7	<0.213	0.0708	38.1
MW03@12'	12'	10/27/2022	1.84	77.0	0.307	<0.30	10.5	11.7	10.3	0.274	0.0668	42.6
MW03@2'	2'	10/27/2022	2.04	92.7	0.333	<0.30	9.35	10.4	8.86	0.272	0.0718	32.9
MW04@10-11'	10'-11'	10/27/2022	2.11	112	0.330	<0.30	11.3	12.3	11.3	0.363	0.0686	43.4
MW04@2'	2'	10/27/2022	2.82	80.9	0.262	<0.30	9.87	10.8	8.79	0.336	0.0692	32.2
MW05@12'	12'	10/27/2022	1.95	70.0	0.334	<0.30	11.0	12.2	10.8	0.510	0.0932	42.8
BACKGROUND												
BKG01@4-5	4'-5'	10/08/2021	5.61	94.9	<0.251	<0.30	16.3	13.4	16.9	1.04	0.0725	71.2
Average Background @ 4'-5' x1.25			7.01	119	-	-	20.4	16.8	21.1	1.30	0.0906	89.0

Notes:

(1) Standards for soil are taken from ECMC Table 915-1: Metals in Soils - Protection of Groundwater Soil Screening Level Concentrations (Effective January 15, 2021)

(2) Standards for soil are taken from ECMC Table 915-1: Metals in Soils - Residential Soil Screening Level Concentrations (Effective January 15, 2021)

ECMC = Colorado Energy and Carbon Management Commission

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

mg/kg = milligrams per kilogram

BOLD = Analytical result is in exceedance of ECMC Table 915-1: Metals in Soils - Protection of Groundwater Soil Screening Level Concentrations

BOLD = Analytical result is in exceedance of ECMC Table 915-1: Metals in Soils - Residential Soil Screening Level Concentrations

Average background concentration x1.25

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

Italics = Laboratory minimum detection limit exceeds the ECMC Table 915-1 Standard

* Result exceeded the ECMC Table 915-1 standard, but was within site-specific 1.25x background multiplier levels

- = Constituent not analyzed

**TABLE 6
HARSCH 42-27**



**GROUNDWATER ANALYTICAL DATA
CRESTONE PEAK RESOURCES OPERATING, LLC**

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)
ECMC Organic Compounds in Groundwater and Groundwater Inorganic Parameters ⁽¹⁾		5	560	700	1,400	140	67	67	250 or <1.25 x Background	250 or <1.25 x Background	<1.25 x Background
SB01_GW	10/08/2021	88	27	2.1	42	<1.0	5.3	4	-	-	-
BKG01_GW	10/08/2021	-	-	-	-	-	-	-	-	-	-
MW01	11/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,350	11,700	13,100
	02/03/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	911	11,300	13,000
	05/10/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,430	9,750	11,500
	08/09/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,330	10,700	12,100
	11/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,090	11,800	12,000
MW02	11/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	-	-	-
	02/03/2023	NS - Unable to locate									
	05/10/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,100	12,200	13,600
	08/09/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	945	11,600	12,700
	11/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	616	11,000	11,700
MW03	11/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2,580	13,500	16,300
	02/03/2023	NS - Unable to locate									
	05/10/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2,610	15,400	18,300
	08/09/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2,330	15,200	17,600
	11/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2,080	19,400	11,600
MW04	11/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,740	16,600	18,700
	02/03/2023	NS - Unable to locate									
	05/10/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3,140	19,200	22,500
	08/09/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2,790	18,000	21,000
	11/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2,230	22,900	20,900
MW05	11/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	-	-	-
	02/03/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,720	19,600	21,700
	05/10/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2,820	19,300	22,200
	08/09/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2,660	19,300	22,200
	11/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,820	20,700	21,400

Notes:

(1) Standards for groundwater are taken from ECMC Table 915-1: Organic Compounds in Groundwater and Groundwater Inorganic Parameters (Effective January 15, 2021)

ECMC = Colorado Energy and Carbon Management 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 ECMC Table 915-1: Organic Compounds in Groundwater and Groundwater Inorganic Parameters

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

- = Constituent not analyzed

NS = Not sampled

**TABLE 7
HARSCH 42-27**



**GROUNDWATER ELEVATION DATA
CRESTONE PEAK RESOURCES OPERATING, LLC**

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)	
MW01	11/23/2022	4,998.50	10.45	7.89		ND	4,990.61	
	02/03/2023		10.48	4.19		ND	4,994.31	
	05/10/2023		10.45	2.70		ND	4,995.80	
	08/09/2023		10.43	2.20		ND	4,996.30	
	11/15/2023		10.44	3.42		ND	4,995.08	
MW02	11/23/2022	4,998.65	11.10	7.57		ND	4,991.08	
	02/03/2023		NS - Unable to locate					
	05/10/2023		11.11	1.35		ND	4997.30	
	08/09/2023		11.12	3.24		ND	4995.41	
	11/15/2023		11.13	4.48		ND	4994.17	
MW03	11/23/2022	4,999.83	10.15	5.73		ND	4,994.10	
	02/03/2023		NS - Unable to locate					
	05/10/2023		10.15	3.74		ND	4996.09	
	08/09/2023		10.16	3.81		ND	4996.02	
	11/15/2023		10.18	4.61		ND	4995.22	
MW04	11/23/2022	4,999.70	11.34	9.25		ND	4,990.45	
	02/03/2023		NS - Unable to locate					
	05/10/2023		11.33	3.83		ND	4995.87	
	08/09/2023		11.32	3.35		ND	4996.35	
	11/15/2023		11.34	4.65		ND	4995.05	
MW05	11/23/2022	5,000.69	11.14	10.62		ND	4,990.07	
	02/03/2023		11.34	8.78		ND	4,991.91	
	05/10/2023		11.31	7.34		ND	4993.35	
	08/09/2023		11.32	6.43		ND	4994.26	
	11/15/2023		11.32	6.31		ND	4994.38	

Notes:

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

TABLE 7
HARSCH 42-27



GROUNDWATER ELEVATION DATA
CRESTONE PEAK RESOURCES OPERATING, LLC

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)
-----------------------	------	------------------------------------	-------------------	----------------------	----------------------	-----------------------	-----------------------------------

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

NS = Not sampled

LABORATORY ANALYTICAL DATA

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 27, 2023

Sam Vogt

Tasman Geosciences

6855 W. 119th Ave.

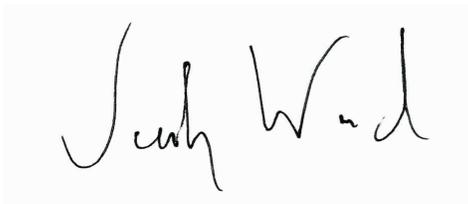
Broomfield, CO 80020

RE: Civitas - Harsch 42-27

Work Order #2311329

Enclosed are the results of analyses for samples received by Summit Scientific on 11/15/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a distinct "W".

Jacob Wood For Paul Shrewsbury

President



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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
11/27/23 15:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	2311329-01	Water	11/15/23 10:28	11/15/23 16:30
MW02	2311329-02	Water	11/15/23 10:45	11/15/23 16:30
MW03	2311329-03	Water	11/15/23 10:58	11/15/23 16:30
MW04	2311329-04	Water	11/15/23 11:11	11/15/23 16:30
MW05	2311329-05	Water	11/15/23 11:22	11/15/23 16:30

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

2311329

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: CIVITAS/Tasman

Address: 6855 W. 199th St.

City/State/Zip: Broomfield, CO 80020

Phone: Sam Vogt: 610-405-9078 Fax:

Sampler Name: Elizabeth Braver

Project Manager: Sam Vogt, Jacob Evans

E-Mail: svogt@tasman-geo.com, jevans@civiresources.com

Project Name: Harsch 42-27

Project Number: AFE#:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix		Analyze For: Table 915-1					Special Instructions		
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEXN	1,2,4+1,3,5THB	Chloride		Sulfate	TDS
MW01	11/15/23	1028	4	3	1			X				X	X	X	X	X	
MW02		1045															
MW03		1058															
MW04		1111															
MW05		1122															

Relinquished by: <u>ELB</u>	Date/Time: <u>11/15/23 12:32</u>	Received by: <u>CO Tasman Lockbox Summit North</u>	Date/Time: <u>11/15/23 12:32</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: <u>9.3</u> Intact: Yes <input type="checkbox"/> No <input type="checkbox"/>	Notes: Methods: *pH, EC, SAR = Saturated paste **Boron = Hot water
Relinquished by: <u>SL</u>	Date/Time: <u>11/15/23 1030</u>	Received by: <u>[Signature]</u>	Date/Time: <u>11/15/23 1030</u>		
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2 311329

Client: Contractor Client Project ID: Harsch 42-27

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

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) 9.3 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? (1) NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			on ICE
If custody seals are present, are they intact? (1)	-			
Are samples due within 48 hours present?		-		
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen		-		
Is a chain-of-custody (COC) form present and filled out Completely? (1)	-			
Is the COC properly relinquished by the client w/ date and time recorded? (1)	-			
Were all samples received intact? (1)	✓			
Was adequate sample volume provided? (1)	✓			
Does the COC agree with the number and type of sample bottles received? (1)	✓			
Do the sample IDs on the bottle labels match the COC? (1)	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		✓		
Are samples preserved that require preservation (excluding cooling)? (1) Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	✓			HCl
If samples are acid preserved for metals, is the pH ≤ 2? (1) Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				
(1) If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS
Custodian Printed Name

11/15/23
Date/Time

0203



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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
11/27/23 15:14

MW01
2311329-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/15/23 10:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGK0698	11/17/23	11/18/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **11/15/23 10:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	16.1	121 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	14.3	107 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	14.6	109 %		21-167		"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **11/15/23 10:28**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	12000	10.0		mg/L	1	BGK0830	11/21/23	11/21/23	SM2540C	

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.



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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
11/27/23 15:14

MW02
2311329-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/15/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGK0698	11/17/23	11/18/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **11/15/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	15.7	117 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.8	104 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	14.7	110 %		21-167		"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **11/15/23 10:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	11700	10.0		mg/L	1	BGK0830	11/21/23	11/21/23	SM2540C	

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.



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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
11/27/23 15:14

MW03
2311329-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/15/23 10:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BGK0698	11/17/23	11/18/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **11/15/23 10:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	15.7	118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.8	103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	14.6	110 %	21-167		"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **11/15/23 10:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	11600	10.0	mg/L	1	BGK0830	11/21/23	11/21/23	SM2540C	

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.



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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
11/27/23 15:14

MW04
2311329-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/15/23 11:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGK0698	11/17/23	11/18/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **11/15/23 11:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	16.9	127 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.0	97.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	14.0	105 %		21-167		"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **11/15/23 11:11**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	20900	10.0		mg/L	1	BGK0830	11/21/23	11/21/23	SM2540C	

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.



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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
11/27/23 15:14

MW05
2311329-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/15/23 11:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BGK0698	11/17/23	11/18/23	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **11/15/23 11:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	17.0	127 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.2	98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	14.3	107 %	21-167		"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **11/15/23 11:22**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	21400	10.0	mg/L	1	BGK0830	11/21/23	11/21/23	SM2540C	

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.



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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
11/27/23 15:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGK0698 - EPA 5030 Water MS

Blank (BGK0698-BLK1)

Prepared: 11/17/23 Analyzed: 11/18/23

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Naphthalene	ND	1.0	"								
1,2,4-Trimethylbenzene	ND	1.0	"								
1,3,5-Trimethylbenzene	ND	1.0	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	14.3		"	13.3		107		23-173			
<i>Surrogate: Toluene-d8</i>	13.8		"	13.3		103		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	14.4		"	13.3		108		21-167			

LCS (BGK0698-BS1)

Prepared: 11/17/23 Analyzed: 11/18/23

Benzene	54.2	1.0	ug/l	50.0		108		51-132			
Toluene	51.4	1.0	"	50.0		103		51-138			
Ethylbenzene	49.6	1.0	"	50.0		99.2		58-146			
m,p-Xylene	100	2.0	"	100		100		57-144			
o-Xylene	47.3	1.0	"	50.0		94.7		53-146			
Naphthalene	57.0	1.0	"	50.0		114		70-130			
1,2,4-Trimethylbenzene	44.6	1.0	"	50.0		89.1		70-130			
1,3,5-Trimethylbenzene	44.6	1.0	"	50.0		89.2		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	14.9		"	13.3		112		23-173			
<i>Surrogate: Toluene-d8</i>	13.4		"	13.3		100		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.0		"	13.3		97.4		21-167			

Matrix Spike (BGK0698-MS1)

Source: 2311087-01

Prepared: 11/17/23 Analyzed: 11/18/23

Benzene	54.4	1.0	ug/l	50.0	ND	109		34-141			
Toluene	51.4	1.0	"	50.0	ND	103		27-151			
Ethylbenzene	49.8	1.0	"	50.0	ND	99.6		29-160			
m,p-Xylene	99.0	2.0	"	100	ND	99.0		20-166			
o-Xylene	46.8	1.0	"	50.0	ND	93.6		33-159			
Naphthalene	59.6	1.0	"	50.0	ND	119		70-130			
1,2,4-Trimethylbenzene	46.1	1.0	"	50.0	ND	92.2		70-130			
1,3,5-Trimethylbenzene	46.0	1.0	"	50.0	ND	91.9		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	15.6		"	13.3		117		23-173			
<i>Surrogate: Toluene-d8</i>	13.3		"	13.3		99.7		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	12.7		"	13.3		95.3		21-167			

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.



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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
11/27/23 15:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGK0698 - EPA 5030 Water MS

Matrix Spike Dup (BGK0698-MSD1)	Source: 2311087-01			Prepared: 11/17/23 Analyzed: 11/18/23					
Benzene	52.4	1.0	ug/l	50.0	ND	105	34-141	3.71	30
Toluene	49.4	1.0	"	50.0	ND	98.8	27-151	4.05	30
Ethylbenzene	47.5	1.0	"	50.0	ND	94.9	29-160	4.75	30
m,p-Xylene	95.5	2.0	"	100	ND	95.5	20-166	3.65	30
o-Xylene	45.2	1.0	"	50.0	ND	90.5	33-159	3.45	30
Naphthalene	60.2	1.0	"	50.0	ND	120	70-130	1.09	30
1,2,4-Trimethylbenzene	44.2	1.0	"	50.0	ND	88.4	70-130	4.21	30
1,3,5-Trimethylbenzene	44.0	1.0	"	50.0	ND	87.9	70-130	4.47	30
Surrogate: 1,2-Dichloroethane-d4	15.1		"	13.3		113	23-173		
Surrogate: Toluene-d8	13.5		"	13.3		101	20-170		
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.5	21-167		

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.



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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
11/27/23 15:14

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BGK0830 - General Preparation

Blank (BGK0830-BLK1)

Prepared & Analyzed: 11/21/23

Total Dissolved Solids ND 10.0 mg/L

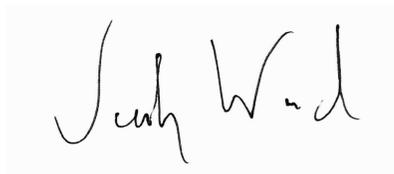
Duplicate (BGK0830-DUP1)

Source: 2311329-01

Prepared & Analyzed: 11/21/23

Total Dissolved Solids 12000 10.0 mg/L 12000 0.0831 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.

Report To: Paul Shrewsbury
Company: Summit Scientific
4653 Table Mountain Drive
Golden CO 80403

Bill To: Accounts Payable
Company: Summit Scientific
4653 Table Mountain Drive
Golden CO 80403

Task No.: 231116025
Client PO:
Client Project: 2311329

Date Received: 11/16/23
Date Reported: 11/27/23
Matrix: Wastewater

Customer Sample ID MW01
Sample Date/Time: 11/15/23 10:28 AM
Lab Number: 231116025-01

Test	Result / Units	Method	RL	MDL	Date Analyzed	QC Batch ID	Analyzed By
Chloride	1090 mg/L	EPA 300.0	100	0.007	11/18/23	QC69503	AMJ
Sulfate	11800 mg/L	EPA 300.0	100	0.012	11/18/23	QC69507	AMJ

Abbreviations/References:

RL = Reporting Limit = Minimum Level
MDL = Method Detection Limit
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 mls = Most Probable Number Index/ 100 mls
Date Analyzed = Date Test Completed

(d) RPD acceptable due to low duplicate and sample concentrations.
(s) The accuracy of the spike recovery value is reduced due to the analyte concentration in the sample being disproportionate to the spike level. The laboratory control sample recovery was acceptable

ND = Not Detected at Reporting Limit.

Analytical Results

TASK NO: 231116025

Report To: Paul Shrewsbury
Company: Summit Scientific
4653 Table Mountain Drive
Golden CO 80403

Bill To: Accounts Payable
Company: Summit Scientific
4653 Table Mountain Drive
Golden CO 80403

Task No.: 231116025	Date Received: 11/16/23
Client PO:	Date Reported: 11/27/23
Client Project: 2311329	Matrix: Wastewater

Customer Sample ID MW02
Sample Date/Time: 11/15/23 10:45 AM
Lab Number: 231116025-02

Test	Result / Units	Method	RL	MDL	Date Analyzed	QC Batch ID	Analyzed By
Chloride	616 mg/L	EPA 300.0	100	0.007	11/18/23	QC69503	AMJ
Sulfate	11000 mg/L	EPA 300.0	100	0.012	11/18/23	QC69507	AMJ

Abbreviations/References:

RL = Reporting Limit = Minimum Level
MDL = Method Detection Limit
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 mls = Most Probable Number Index/ 100 mls
Date Analyzed = Date Test Completed

(d) RPD acceptable due to low duplicate and sample concentrations.
(s) The accuracy of the spike recovery value is reduced due to the analyte concentration in the sample being disproportionate to the spike level. The laboratory control sample recovery was acceptable

ND = Not Detected at Reporting Limit.

Report To: Paul Shrewsbury
Company: Summit Scientific
4653 Table Mountain Drive
Golden CO 80403

Bill To: Accounts Payable
Company: Summit Scientific
4653 Table Mountain Drive
Golden CO 80403

Task No.: 231116025
Client PO:
Client Project: 2311329

Date Received: 11/16/23
Date Reported: 11/27/23
Matrix: Wastewater

Customer Sample ID MW03
Sample Date/Time: 11/15/23 10:58 AM
Lab Number: 231116025-03

Test	Result / Units	Method	RL	MDL	Date Analyzed	QC Batch ID	Analyzed By
Chloride	2080 mg/L	EPA 300.0	100	0.007	11/18/23	QC69503	AMJ
Sulfate	19400 mg/L	EPA 300.0	100	0.012	11/18/23	QC69507	AMJ

Abbreviations/ References:

RL = Reporting Limit = Minimum Level
MDL = Method Detection Limit
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 mls = Most Probable Number Index/ 100 mls
Date Analyzed = Date Test Completed

(d) RPD acceptable due to low duplicate and sample concentrations.
(s) The accuracy of the spike recovery value is reduced due to the analyte concentration in the sample being disproportionate to the spike level. The laboratory control sample recovery was acceptable

ND = Not Detected at Reporting Limit.

Report To: Paul Shrewsbury
Company: Summit Scientific
 4653 Table Mountain Drive
 Golden CO 80403

Bill To: Accounts Payable
Company: Summit Scientific
 4653 Table Mountain Drive
 Golden CO 80403

Task No.: 231116025	Date Received: 11/16/23
Client PO:	Date Reported: 11/27/23
Client Project: 2311329	Matrix: Wastewater

Customer Sample ID MW04
Sample Date/Time: 11/15/23 11:11 AM
Lab Number: 231116025-04

Test	Result / Units	Method	RL	MDL	Date Analyzed	QC Batch ID	Analyzed By
Chloride	2230 mg/L	EPA 300.0	100	0.007	11/18/23	QC69503	AMJ
Sulfate	22900 mg/L	EPA 300.0	100	0.012	11/18/23	QC69507	AMJ

Abbreviations/References:

RL = Reporting Limit = Minimum Level
 MDL = Method Detection Limit
 mg/L = Milligrams Per Liter or PPM
 ug/L = Micrograms Per Liter or PPB
 mpn/100 mls = Most Probable Number Index/ 100 mls
 Date Analyzed = Date Test Completed

(d) RPD acceptable due to low duplicate and sample concentrations.
 (s) The accuracy of the spike recovery value is reduced due to the analyte concentration in the sample being disproportionate to the spike level. The laboratory control sample recovery was acceptable

ND = Not Detected at Reporting Limit.

Report To: Paul Shrewsbury
Company: Summit Scientific
4653 Table Mountain Drive
Golden CO 80403

Bill To: Accounts Payable
Company: Summit Scientific
4653 Table Mountain Drive
Golden CO 80403

Task No.: 231116025
Client PO:
Client Project: 2311329

Date Received: 11/16/23
Date Reported: 11/27/23
Matrix: Wastewater

Customer Sample ID MW05
Sample Date/Time: 11/15/23 11:22 AM
Lab Number: 231116025-05

Test	Result / Units	Method	RL	MDL	Date Analyzed	QC Batch ID	Analyzed By
Chloride	1820 mg/L	EPA 300.0	100	0.007	11/18/23	QC69503	AMJ
Sulfate	20700 mg/L	EPA 300.0	100	0.012	11/18/23	QC69507	AMJ

Abbreviations/References:

RL = Reporting Limit = Minimum Level
MDL = Method Detection Limit
mg/L = Milligrams Per Liter or PPM
ug/L = Micrograms Per Liter or PPB
mpn/100 mls = Most Probable Number Index/ 100 mls
Date Analyzed = Date Test Completed

(d) RPD acceptable due to low duplicate and sample concentrations.
(s) The accuracy of the spike recovery value is reduced due to the analyte concentration in the sample being disproportionate to the spike level. The laboratory control sample recovery was acceptable

ND = Not Detected at Reporting Limit.

**Analytical QC
Summary**

TASK NO: 231116025

Report To: Paul Shrewsbury
Company: Summit Scientific

Receive Date: 11/16/23
Project Name: 2311329

Test	QC Batch ID	QC Type	Result	Method	Prep Date
Chloride	QC69503	Blank	ND	EPA 300.0	11/17/23
Sulfate	QC69507	Blank	ND	EPA 300.0	11/17/23

Test	QC Batch ID	QC Type	Limits	% Rec	RPD	Method
Chloride	QC69503	Duplicate	0 - 20	-	1.8	EPA 300.0
		LCS	90 - 110	99.0	-	
		MS	75 - 125	95.0	-	
Sulfate	QC69507	Duplicate	0 - 20	-	5.8	EPA 300.0
		LCS	90 - 110	95.3	-	
		MS	75 - 125	96.8	-	

All analyses were performed in accordance with approved methods under the latest revision to 40 CFR Part 136 unless otherwise identified. Based on my inquiry of the person or persons directly responsible for analyzing the wastewater samples and generating the report (s), the analyses, report, and information submitted are, to the best of my knowledge and belief, true, accurate, and complete.



DATA APPROVED FOR RELEASE BY

Abbreviations/ References:

RL = Reporting Limit = Minimum Level
 MDL = Method Detection Limit
 mg/L = Milligrams Per Liter or PPM
 ug/L = Micrograms Per Liter or PPB
 mpn/100 mls = Most Probable Number Index/ 100 mls
 Date Analyzed = Date Test Completed

(d) RPD acceptable due to low duplicate and sample concentrations.
 (s) The accuracy of the spike recovery value is reduced due to the analyte concentration in the sample being disproportionate to the spike level. The laboratory control sample recovery was acceptable

ND = Not Detected at Reporting Limit.



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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
11/27/23 15:14

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