

Harsch 42-27

NWNE Sec. 27-T2N-R69W

Remediation Project #: 21354

Third Quarter 2023 Groundwater Monitoring

August 2023

Prepared by Tasman, Inc.



On behalf of Crestone Peak Resources Operating, LLC



FIGURES

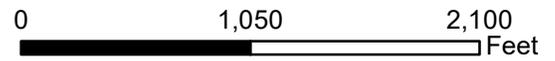
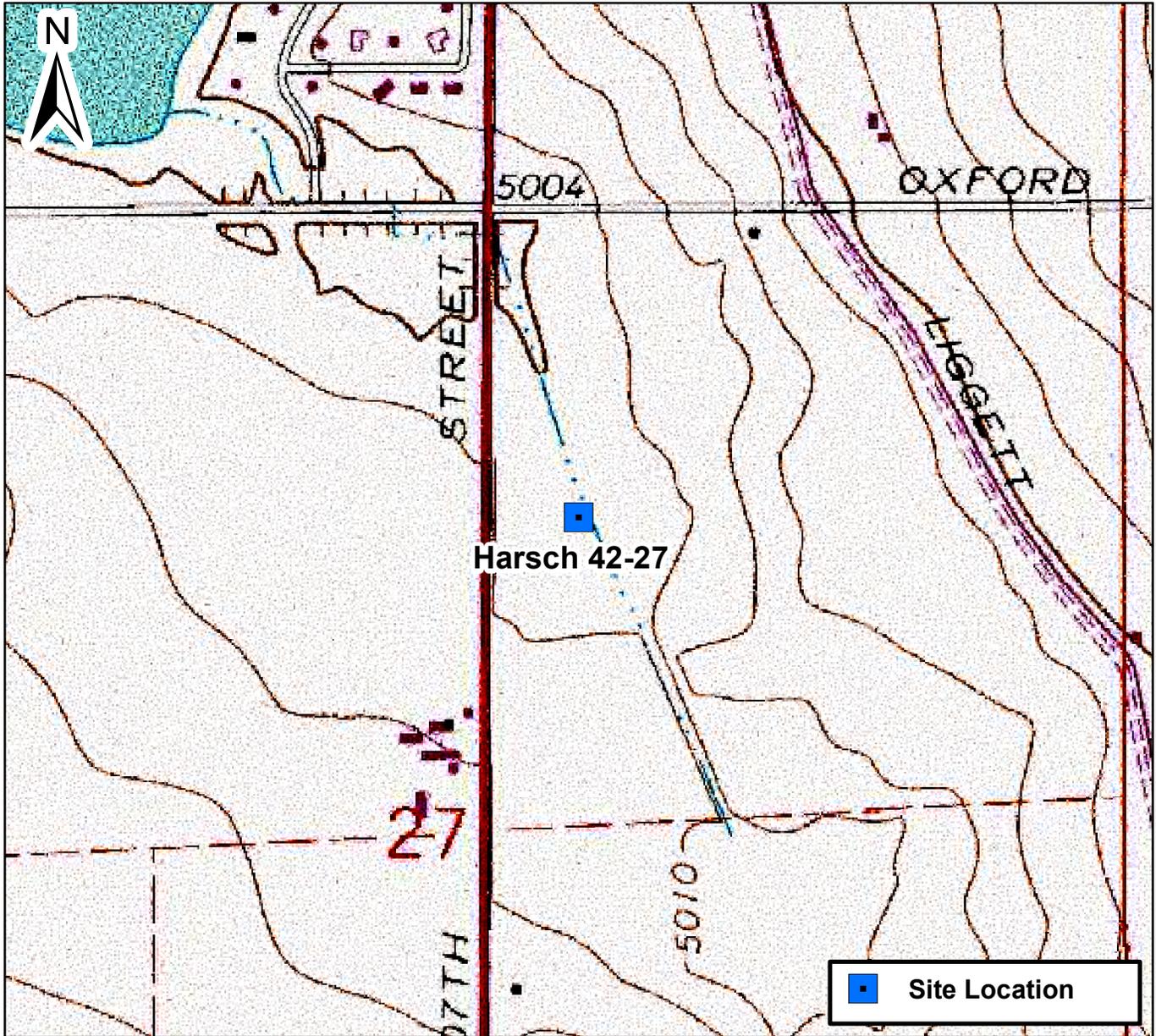


Figure 1

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

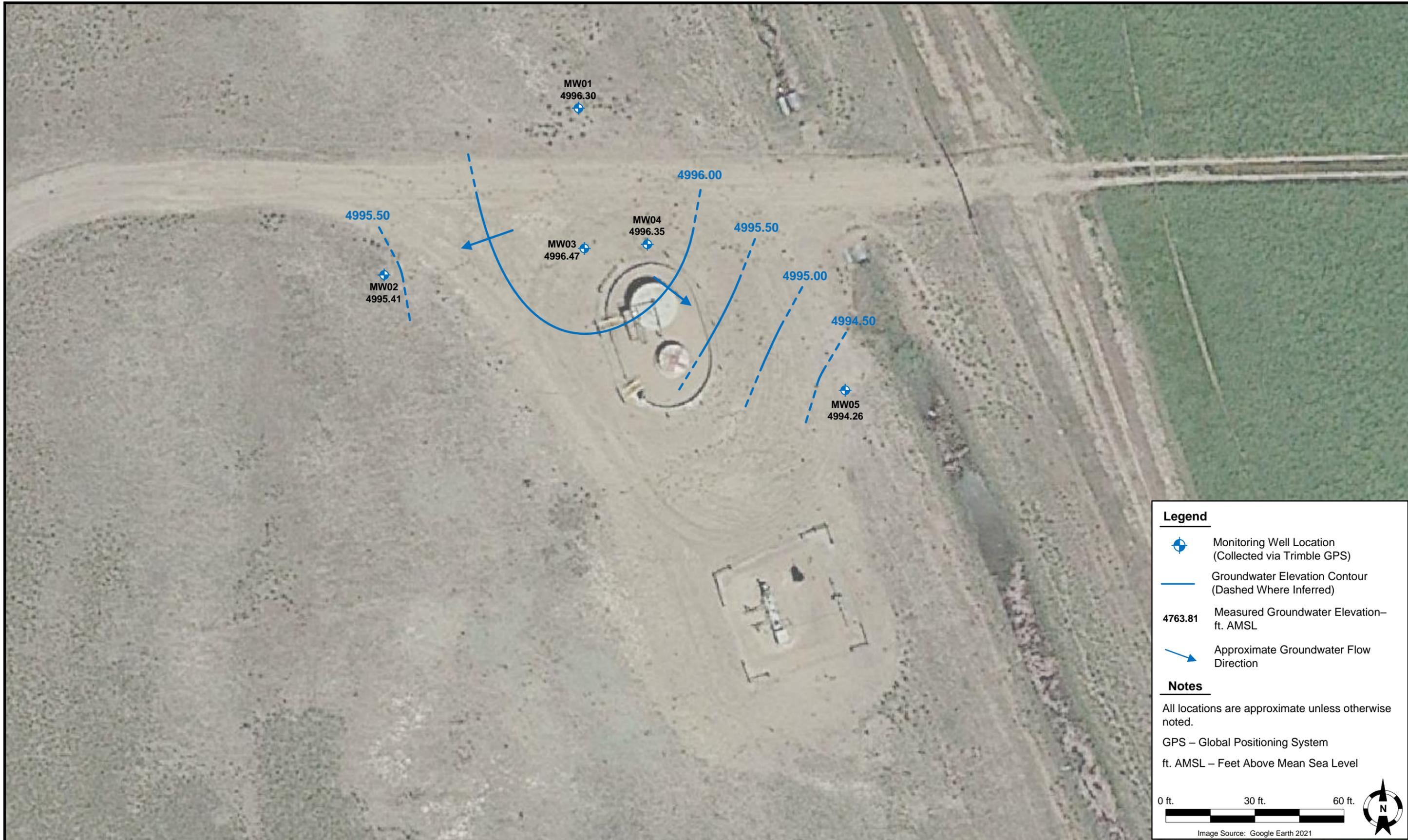


Tasman, Inc.
6855 W. 119th Avenue
Broomfield, Colorado 80020

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:	November 28, 2023
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
 (08/09/2023)

FIGURE
3

MW01	
Compound	08/09/2023
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)	1,330
Sulfate (mg/L)	10,700
Total Dissolved Solids (mg/L)	12,100

MW02	
Compound	08/09/2023
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)	945
Sulfate (mg/L)	11,600
Total Dissolved Solids (mg/L)	12,700

MW03	
Compound	08/09/2023
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)	2,330
Sulfate (mg/L)	15,200
Total Dissolved Solids (mg/L)	17,600

MW04	
Compound	08/09/2023
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)	2,790
Sulfate (mg/L)	18,000
Total Dissolved Solids (mg/L)	21,000

MW05	
Compound	08/09/2023
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)	2,660
Sulfate (mg/L)	19,300
Total Dissolved Solids (mg/L)	22,200

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 or 1.25 x Local Background
Sulfate (mg/L)	250 or 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: October 23, 2023

DESIGNED BY: S. Vogt

DRAWN BY: L. Molson



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
(08/09/2023)

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 = 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

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 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 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 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
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
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
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
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

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
MW02	11/23/2022	4,998.65	11.10	7.57		ND	4,991.08
	02/03/2023		Unable to locate				
	05/10/2023		11.11	1.35		ND	4997.30
	08/09/2023		11.12	3.24		ND	4995.41
MW03	11/23/2022	4,999.83	10.15	5.73		ND	4,994.10
	02/03/2023		Unable to locate				
	05/10/2023		10.15	3.74		ND	4996.09
	08/09/2023		11.16	3.81		ND	4988.67
MW04	11/23/2022	4,999.70	11.34	9.25		ND	4,990.45
	02/03/2023		Unable to locate				
	05/10/2023		11.33	3.83		ND	4995.87
	08/09/2023		11.32	3.35		ND	4996.35
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

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 16, 2023

Sam Vogt

Tasman Geosciences

6855 W. 119th Ave.

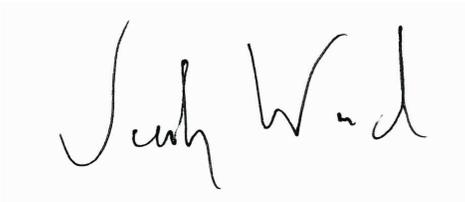
Broomfield, CO 80020

RE: Civitas - Harsch 42-27

Work Order #2308215

Enclosed are the results of analyses for samples received by Summit Scientific on 08/09/23 17:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and "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:
08/16/23 09:22

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	2308215-01	Water	08/09/23 13:21	08/09/23 17:10
MW02	2308215-02	Water	08/09/23 13:23	08/09/23 17:10
MW03	2308215-03	Water	08/09/23 13:40	08/09/23 17:10
MW04	2308215-04	Water	08/09/23 13:44	08/09/23 17:10
MW05	2308215-05	Water	08/09/23 14:07	08/09/23 17:10

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

4653 Table Mountain Drive
Golden, CO 80403
303-277-9310

Lab ID	Page 1 of 1
2308215	

Send Data To:		Send Invoice To:	
Client: Civitas/Tasman	Project Manager: Sam Vogt/Jacob Evans	Company: CIVITAS	
Address: 6855 W. 119th Ave	E-Mail: svgot@tasman-geo.com; jevans@civiresources.com	Project Name/Location: Harsch 42-27	
City/State/Zip: Broomfield, CO 80020		AFE#:	
Phone: PM (610) 405-9078	Project Name: Harsch 42-27	PO/Billing Codes:	
Sampler Name: LB+DH	Project Number:	Contact:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions			
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN	1,2,4 + 1,3,5 TMBs	TPH (GRO, DRO, ORO)	Chloride		Sulfate	TDS	
1	MW01	8/9/23	1321	4	3		1		X					X	X		X	X	X	
2	MW02	↓	1323	↓	↓		↓		↓					↓	↓		↓	↓	↓	
3	MW03	↓	1340	↓	↓		↓		↓					↓	↓		↓	↓	↓	
4	MW04	↓	1344	↓	↓		↓		↓					↓	↓		↓	↓	↓	
5	MW05	↓	1407	↓	↓		↓		↓					↓	↓		↓	↓	↓	
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: <i>[Signature]</i>	Date/Time: 8/9/23 1511	Received by: Tasman Lockbox	Date/Time: 8/9/23 1511	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Lockbox	Date/Time: 8/23 1710	Received by: <i>[Signature]</i>	Date/Time: 8/23 1710	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 10.7	Corrected Temperature: 6	IR gun #:)	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2308215

Client: CrAsstasman Client Project ID: Hanson 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) 10.7 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

8/9/23

Date/Time



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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
08/16/23 09:22

MW01
2308215-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/09/23 13:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGH0475	08/11/23	08/12/23	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: **08/09/23 13:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	18.9	141 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	18.0	135 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	14.0	105 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **08/09/23 13:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	1330	12.0		mg/L	200	BGH0428	08/10/23	08/11/23	EPA 300.0	
Sulfate	10700	120		"	400	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **08/09/23 13:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	12100	10.0		mg/L	1	BGH0430	08/10/23	08/10/23	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:
08/16/23 09:22

MW02
2308215-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/09/23 13:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGH0475	08/11/23	08/12/23	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: **08/09/23 13:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	19.4	145 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	16.0	120 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.8	103 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **08/09/23 13:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	945	12.0		mg/L	200	BGH0428	08/10/23	08/11/23	EPA 300.0	
Sulfate	11600	120		"	400	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **08/09/23 13:23**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	12700	10.0		mg/L	1	BGH0430	08/10/23	08/10/23	SM2540C	

Summit Scientific

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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
08/16/23 09:22

MW03
2308215-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/09/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGH0475	08/11/23	08/12/23	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: **08/09/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	20.2	151 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	17.8	134 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.9	104 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **08/09/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	2330	12.0		mg/L	200	BGH0428	08/10/23	08/11/23	EPA 300.0	
Sulfate	15200	120		"	400	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **08/09/23 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	17600	10.0		mg/L	1	BGH0430	08/10/23	08/10/23	SM2540C	

Summit Scientific

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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
08/16/23 09:22

MW04
2308215-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/09/23 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGH0475	08/11/23	08/12/23	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: **08/09/23 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	21.1	159 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	18.0	135 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.4	100 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **08/09/23 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	2790	12.0		mg/L	200	BGH0428	08/10/23	08/11/23	EPA 300.0	
Sulfate	18000	120		"	400	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **08/09/23 13:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	21000	10.0		mg/L	1	BGH0430	08/10/23	08/10/23	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:
08/16/23 09:22

MW05
2308215-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/09/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGH0475	08/11/23	08/12/23	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: **08/09/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	22.4	168 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	17.4	131 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	14.0	105 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **08/09/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	2660	12.0		mg/L	200	BGH0428	08/10/23	08/11/23	EPA 300.0	
Sulfate	19300	120		"	400	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **08/09/23 14:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	22200	10.0		mg/L	1	BGH0430	08/10/23	08/10/23	SM2540C	

Summit Scientific

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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
08/16/23 09:22

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 BGH0475 - EPA 5030 Water MS

Blank (BGH0475-BLK1)

Prepared: 08/11/23 Analyzed: 08/12/23

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>	17.6		"	13.3		132		23-173			
<i>Surrogate: Toluene-d8</i>	17.8		"	13.3		133		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.1		"	13.3		98.0		21-167			

LCS (BGH0475-BS1)

Prepared: 08/11/23 Analyzed: 08/12/23

Benzene	37.3	1.0	ug/l	50.0		74.7		51-132			
Toluene	35.1	1.0	"	50.0		70.2		51-138			
Ethylbenzene	46.6	1.0	"	50.0		93.2		58-146			
m,p-Xylene	112	2.0	"	100		112		57-144			
o-Xylene	68.0	1.0	"	50.0		136		53-146			
Naphthalene	46.4	1.0	"	50.0		92.8		70-130			
1,2,4-Trimethylbenzene	57.6	1.0	"	50.0		115		70-130			
1,3,5-Trimethylbenzene	57.5	1.0	"	50.0		115		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	12.8		"	13.3		96.4		23-173			
<i>Surrogate: Toluene-d8</i>	8.42		"	13.3		63.2		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	15.4		"	13.3		115		21-167			

Matrix Spike (BGH0475-MS1)

Source: 2308193-01

Prepared: 08/11/23 Analyzed: 08/12/23

Benzene	51.7	1.0	ug/l	50.0	ND	103		34-141			
Toluene	49.2	1.0	"	50.0	ND	98.3		27-151			
Ethylbenzene	40.1	1.0	"	50.0	ND	80.2		29-160			
m,p-Xylene	84.1	2.0	"	100	ND	84.1		20-166			
o-Xylene	56.9	1.0	"	50.0	ND	114		33-159			
Naphthalene	50.8	1.0	"	50.0	9.01	83.6		70-130			
1,2,4-Trimethylbenzene	58.2	1.0	"	50.0	ND	116		70-130			
1,3,5-Trimethylbenzene	59.5	1.0	"	50.0	ND	119		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	18.6		"	13.3		139		23-173			
<i>Surrogate: Toluene-d8</i>	11.8		"	13.3		88.4		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.8		"	13.3		103		21-167			

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Broomfield CO, 80020

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
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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 BGH0475 - EPA 5030 Water MS

Matrix Spike Dup (BGH0475-MSD1)	Source: 2308193-01			Prepared: 08/11/23 Analyzed: 08/12/23						
Benzene	39.6	1.0	ug/l	50.0	ND	79.1	34-141	26.6	30	
Toluene	40.2	1.0	"	50.0	ND	80.5	27-151	20.0	30	
Ethylbenzene	36.7	1.0	"	50.0	ND	73.4	29-160	8.85	30	
m,p-Xylene	81.0	2.0	"	100	ND	81.0	20-166	3.73	30	
o-Xylene	51.7	1.0	"	50.0	ND	103	33-159	9.61	30	
Naphthalene	48.9	1.0	"	50.0	9.01	79.7	70-130	3.91	30	
1,2,4-Trimethylbenzene	42.6	1.0	"	50.0	ND	85.2	70-130	30.9	30	QM-07
1,3,5-Trimethylbenzene	43.8	1.0	"	50.0	ND	87.6	70-130	30.4	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	19.9		"	13.3		149	23-173			
Surrogate: Toluene-d8	12.7		"	13.3		95.0	20-170			
Surrogate: 4-Bromofluorobenzene	16.2		"	13.3		122	21-167			

Summit Scientific

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Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
08/16/23 09:22

Anions by EPA Method 300.0 - Quality Control
Summit Scientific

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

Batch BGH0428 - General Preparation

Blank (BGH0428-BLK1)

Prepared: 08/10/23 Analyzed: 08/11/23

Chloride	ND	0.0600	mg/L						
Sulfate	ND	0.300	"						

LCS (BGH0428-BS1)

Prepared: 08/10/23 Analyzed: 08/11/23

Chloride	2.89	0.0600	mg/L	3.00	96.3	90-110
Sulfate	15.4	0.300	"	15.0	102	90-110

Duplicate (BGH0428-DUP1)

Source: 2308214-01

Prepared: 08/10/23 Analyzed: 08/11/23

Chloride	27.0	12.0	mg/L	27.8	2.92	20
Sulfate	1680	60.0	"	1740	3.94	20

Matrix Spike (BGH0428-MS1)

Source: 2308214-01

Prepared: 08/10/23 Analyzed: 08/11/23

Chloride	614	12.0	mg/L	600	27.8	97.7	80-120
Sulfate	4730	60.0	"	3000	1740	99.5	80-120

Summit Scientific

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Broomfield CO, 80020

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
08/16/23 09:22

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BGH0430 - General Preparation

Blank (BGH0430-BLK1)

Prepared & Analyzed: 08/10/23

Total Dissolved Solids ND 10.0 mg/L

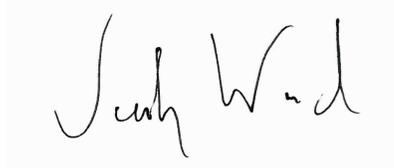
Duplicate (BGH0430-DUP1)

Source: 2308214-01

Prepared & Analyzed: 08/10/23

Total Dissolved Solids 2000 10.0 mg/L 2140 6.72 20

Summit Scientific



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

Project: Civitas - Harsch 42-27

Project Number: 21354
Project Manager: Sam Vogt

Reported:
08/16/23 09:22

Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- 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