

# **Harsch 42-27**

NWNE Sec. 27-T2N-R69W

**Remediation Project #: 21354**

Second Quarter 2023 Groundwater Monitoring

May 2023

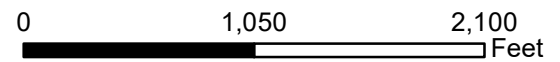
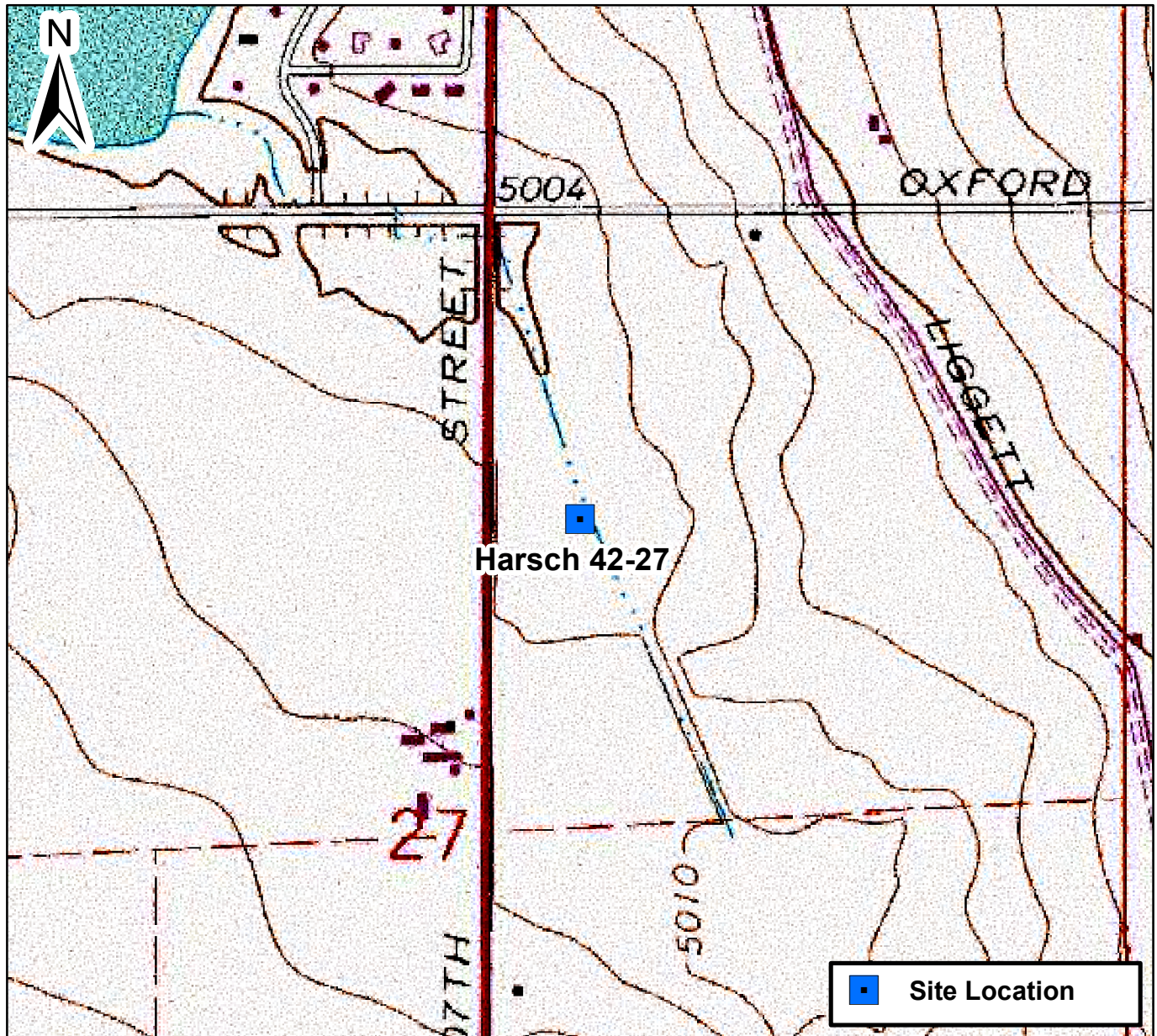
Prepared by Tasman, Inc.



On behalf of Crestone Peak Resources Operating, LLC



## FIGURES



## Figure 1

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







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**





DATE:	July 24, 2023
DESIGNED BY:	S. Vogt
DRAWN BY:	L. Reed



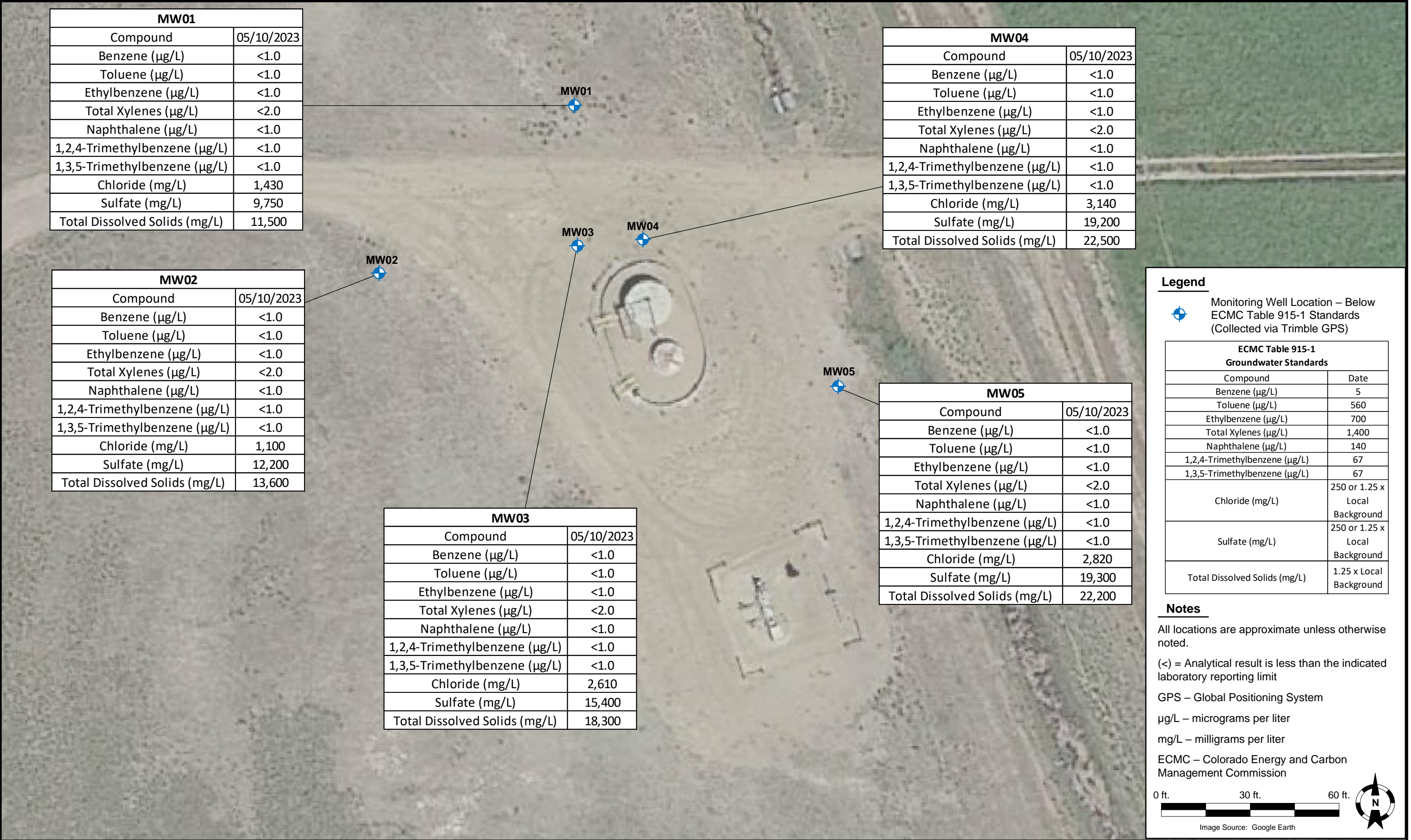
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**Harsch 42-27**  
NWNE Sec. 27-T2N-R6W  
Boulder County, Colorado

Groundwater Potentiometric  
Surface Contour Map  
(05/10/2023)

**FIGURE**  
**3**





# 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 <sup>(1)</sup>			0.0026	0.69	0.78	9.9	0.0038	500			0.0081	0.0087
ECMC Organic Compounds in Soils <sup>(2)</sup>			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 <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
ECMC Organic Compounds in Soils <sup>(2)</sup>			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 = Dibenzo(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 <sup>(1)</sup>			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
ECMC Metals in Soils <sup>(2)</sup>			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 <sup>(1)</sup>			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)
<b>ECMC Organic Compounds in Groundwater and Groundwater Inorganic Parameters <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	<b>140</b>	<b>67</b>	<b>67</b>	<b>250 or &lt;1.25 x Background</b>	<b>250 or &lt;1.25 x Background</b>	<b>&lt;1.25 x Background</b>
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
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
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	Destroyed									
	05/10/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2,610	15,400	18,300
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	Destroyed									
	05/10/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3,140	19,200	22,500
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

**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
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
MW03	11/23/2022	4,999.83	10.15	5.73	ND		4,994.10
	02/03/2023		Destroyed				
	05/10/2023		10.15	3.74	ND		4996.09
MW04	11/23/2022	4,999.70	11.34	9.25	ND		4,990.45
	02/03/2023		Destroyed				
	05/10/2023		11.33	3.83	ND		4995.87
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

**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

May 22, 2023

Sam Vogt

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Civitas - Harsch 42-27

Work Order #2305282

Enclosed are the results of analyses for samples received by Summit Scientific on 05/10/23 17:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely".

Scott Sheely 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:**  
05/22/23 13:58

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	2305282-01	Water	05/10/23 13:08	05/10/23 17:55
MW02	2305282-02	Water	05/10/23 13:26	05/10/23 17:55
MW03	2305282-03	Water	05/10/23 13:49	05/10/23 17:55
MW04	2305282-04	Water	05/10/23 14:05	05/10/23 17:55
MW05	2305282-05	Water	05/10/23 14:31	05/10/23 17:55

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.*

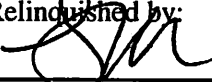
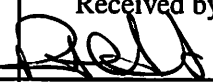

# SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2305282	

Send Data To:		Send Invoice To:
Client: Civitas/Tasman	Project Manager: Sam Vogt/Jacob Evans	Company:
Address: 6855 W. 119th Ave	E-Mail: svgot@tasman-geo.com; jevans@civiresources.com	Project Name/Location:
City/State/Zip: Broomfield, CO 80020		AFE#: 21354
Phone: PM (610) 405-9078	Project Name: Harsch 42-27	PO/Billing Codes:
Sampler Name: Sierra Fin10	Project Number:	Contact:

					Preservative				Matrix				Analysis Requested						Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN	1,2,4 + 1,3,5 TMBs	TPH (GRO, DRO, ORO)	<del>PH</del> TDS	<del>PH</del> SAR C1	<del>PH</del> SO4	Metals	
1	MW01	5-10-23	1308	4	3		1		X				X	X		X	X	X		pH, EC, SAR by Saturated paste preparation method Boron by Hot Water Soluble preparation Method Table 915 Metals - As, Ba, Cd, Cu, Pb, Ni, Se, Ag, Zn, Cr VI
2	MW02	↓	1326	↓	↓		↓		X				↓	↓		↓	↓	↓		
3	MW03	↓	1349	↓	↓		↓		↓				↓	↓		↓	↓	↓		
4	MW04	↓	1405	↓	↓		↓		↓				↓	↓		↓	↓	↓		
5	MW05	↓	1431	↓	↓		↓		↓				↓	↓		↓	↓	↓		
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 5-10-23 1540	Received by: Tasman Lockbox	Date/Time: 5-10-23 1540	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lockbox	Date/Time: 51023 1755	Received by: 	Date/Time: 51023 1755	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 8.8	Corrected Temperature: 	IR gun #:		HNO3 lot #:		

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2305282Client: Contos / Asman Client Project ID: Harsch 42-27Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☒ Other ☐Temp (°C) 8.8Thermometer # 1

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

AS  
Custodian Printed Name

5/10/23  
Date/Time





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

Project: Civitas - Harsch 42-27

Project Number: 21354  
Project Manager: Sam Vogt

**Reported:**  
05/22/23 13:58

**MW01**  
**2305282-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/10/23 13:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BGE0439	05/12/23	05/13/23	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: **05/10/23 13:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	14.0	105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	12.2	91.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.1	98.3 %	21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **05/10/23 13:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chloride	1430	12.0	mg/L	200	BGE0561	05/15/23	05/17/23	EPA 300.0	
Sulfate	9750	120	"	400	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/10/23 13:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	11500	10.0	mg/L	1	BGE0552	05/15/23	05/16/23	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:**  
05/22/23 13:58

**MW02**  
**2305282-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/10/23 13:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGE0439	05/12/23	05/13/23	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: **05/10/23 13:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	14.7	110 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.4	92.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.1	98.3 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **05/10/23 13:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	1100	12.0		mg/L	200	BGE0561	05/15/23	05/17/23	EPA 300.0	
Sulfate	12200	120		"	400	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/10/23 13:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	13600	10.0		mg/L	1	BGE0552	05/15/23	05/16/23	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:**  
05/22/23 13:58

**MW03**  
**2305282-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/10/23 13:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGE0439	05/12/23	05/13/23	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: **05/10/23 13:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	14.9	111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	12.4	93.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.1	98.4 %	21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **05/10/23 13:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	<b>2610</b>	24.0	mg/L	400	BGE0561	05/15/23	05/17/23	EPA 300.0	
Sulfate	<b>15400</b>	120	"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/10/23 13:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	<b>18300</b>	10.0	mg/L	1	BGE0552	05/15/23	05/16/23	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:**  
05/22/23 13:58

**MW04**  
**2305282-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/10/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGE0439	05/12/23	05/14/23	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: **05/10/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	15.9	119 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.5	93.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.1	98.0 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **05/10/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	3140	24.0		mg/L	400	BGE0561	05/15/23	05/17/23	EPA 300.0	
Sulfate	19200	150		"	500	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/10/23 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	22500	10.0		mg/L	1	BGE0552	05/15/23	05/16/23	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:**  
05/22/23 13:58

**MW05**  
**2305282-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/10/23 14:31**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BGE0439	05/12/23	05/14/23	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: **05/10/23 14:31**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	15.4	115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	12.4	93.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.0	97.6 %	21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **05/10/23 14:31**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	<b>2820</b>	24.0	mg/L	400	BGE0561	05/15/23	05/17/23	EPA 300.0	
Sulfate	<b>19300</b>	150	"	500	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **05/10/23 14:31**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	<b>22200</b>	10.0	mg/L	1	BGE0552	05/15/23	05/16/23	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:**  
05/22/23 13:58

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BGE0439 - EPA 5030 Water MS

##### Blank (BGE0439-BLK1)

Prepared: 05/12/23 Analyzed: 05/13/23

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	"							
Surrogate: 1,2-Dichloroethane-d4	16.5		"	13.3		124	23-173			
Surrogate: Toluene-d8	12.8		"	13.3		96.2	20-170			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	21-167			

##### LCS (BGE0439-BS1)

Prepared: 05/12/23 Analyzed: 05/13/23

Benzene	38.7	1.0	ug/l	41.7		93.0	51-132			
Toluene	42.0	1.0	"	41.7		101	51-138			
Ethylbenzene	47.6	1.0	"	41.7		114	58-146			
m,p-Xylene	98.2	2.0	"	83.3		118	57-144			
o-Xylene	47.6	1.0	"	41.7		114	53-146			
Naphthalene	45.7	1.0	"	41.7		110	70-130			
1,2,4-Trimethylbenzene	53.6	1.0	"	41.7		129	70-130			
1,3,5-Trimethylbenzene	46.1	1.0	"	41.7		111	70-130			
Surrogate: 1,2-Dichloroethane-d4	17.0		"	13.3		127	23-173			
Surrogate: Toluene-d8	13.5		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3		92.3	21-167			

##### Matrix Spike (BGE0439-MS1)

Source: 2305281-04

Prepared: 05/12/23 Analyzed: 05/13/23

Benzene	38.0	1.0	ug/l	41.7	ND	91.1	34-141			
Toluene	37.0	1.0	"	41.7	ND	88.8	27-151			
Ethylbenzene	43.4	1.0	"	41.7	ND	104	29-160			
m,p-Xylene	88.1	2.0	"	83.3	ND	106	20-166			
o-Xylene	42.3	1.0	"	41.7	ND	102	33-159			
Naphthalene	49.9	1.0	"	41.7	ND	120	70-130			
1,2,4-Trimethylbenzene	48.4	1.0	"	41.7	ND	116	70-130			
1,3,5-Trimethylbenzene	49.2	1.0	"	41.7	ND	118	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.7		"	13.3		110	23-173			
Surrogate: Toluene-d8	12.4		"	13.3		92.6	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		98.9	21-167			

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:**  
05/22/23 13:58

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

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

**Batch BGE0439 - EPA 5030 Water MS**

Matrix Spike Dup (BGE0439-MSD1)	Source: 2305281-04			Prepared: 05/12/23 Analyzed: 05/13/23						
Benzene	38.6	1.0	ug/l	41.7	ND	92.6	34-141	1.67	30	
Toluene	37.1	1.0	"	41.7	ND	89.0	27-151	0.243	30	
Ethylbenzene	44.2	1.0	"	41.7	ND	106	29-160	2.01	30	
m,p-Xylene	89.6	2.0	"	83.3	ND	108	20-166	1.71	30	
o-Xylene	43.2	1.0	"	41.7	ND	104	33-159	2.10	30	
Naphthalene	50.0	1.0	"	41.7	ND	120	70-130	0.180	30	
1,2,4-Trimethylbenzene	49.6	1.0	"	41.7	ND	119	70-130	2.47	30	
1,3,5-Trimethylbenzene	49.2	1.0	"	41.7	ND	118	70-130	0.00	30	
Surrogate: 1,2-Dichloroethane-d4	14.5		"	13.3		109	23-173			
Surrogate: Toluene-d8	12.3		"	13.3		92.5	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.2	21-167			

Summit Scientific

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

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Project Number: 21354  
Project Manager: Sam Vogt

**Reported:**  
05/22/23 13:58

### Anions by EPA Method 300.0 - Quality Control

#### Summit Scientific

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

#### Batch BGE0561 - General Preparation

##### Blank (BGE0561-BLK1)

Prepared: 05/15/23 Analyzed: 05/17/23

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

##### LCS (BGE0561-BS1)

Prepared: 05/15/23 Analyzed: 05/17/23

Chloride	2.96	0.0600	mg/L	3.00	98.8	90-110
Sulfate	14.8	0.300	"	15.0	98.9	90-110

##### Duplicate (BGE0561-DUP1)

Source: 2305214-01

Prepared: 05/15/23 Analyzed: 05/17/23

Chloride	22.4	12.0	mg/L	26.0	14.9	20
Sulfate	57.4	60.0	"	61.0	6.08	20

##### Matrix Spike (BGE0561-MS1)

Source: 2305214-01

Prepared: 05/15/23 Analyzed: 05/17/23

Chloride	636	12.0	mg/L	600	26.0	102	80-120
Sulfate	3210	60.0	"	3000	61.0	105	80-120

Summit Scientific

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Broomfield CO, 80020

Project: Civitas - Harsch 42-27

Project Number: 21354  
Project Manager: Sam Vogt

**Reported:**  
05/22/23 13:58

**Total Dissolved Solids by SM2540C - Quality Control**  
**Summit Scientific**

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

**Batch BGE0552 - General Preparation**

**Blank (BGE0552-BLK1)**

Prepared: 05/15/23 Analyzed: 05/16/23

Total Dissolved Solids ND 10.0 mg/L

**Duplicate (BGE0552-DUP1)**

**Source: 2305243-01**

Prepared: 05/15/23 Analyzed: 05/16/23

Total Dissolved Solids 2070 10.0 mg/L 1940 6.69 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:**  
05/22/23 13:58

### 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