

# Warren H Wiggett 13-2

NWNW Sec. 13-T1N-R69W

API #: 013-06108

Remediation Project #: 35884

Form 19 Data Package

August 2024

Prepared by Tasman, Inc.



On behalf of Crestone Peak Resources Operating, LLC



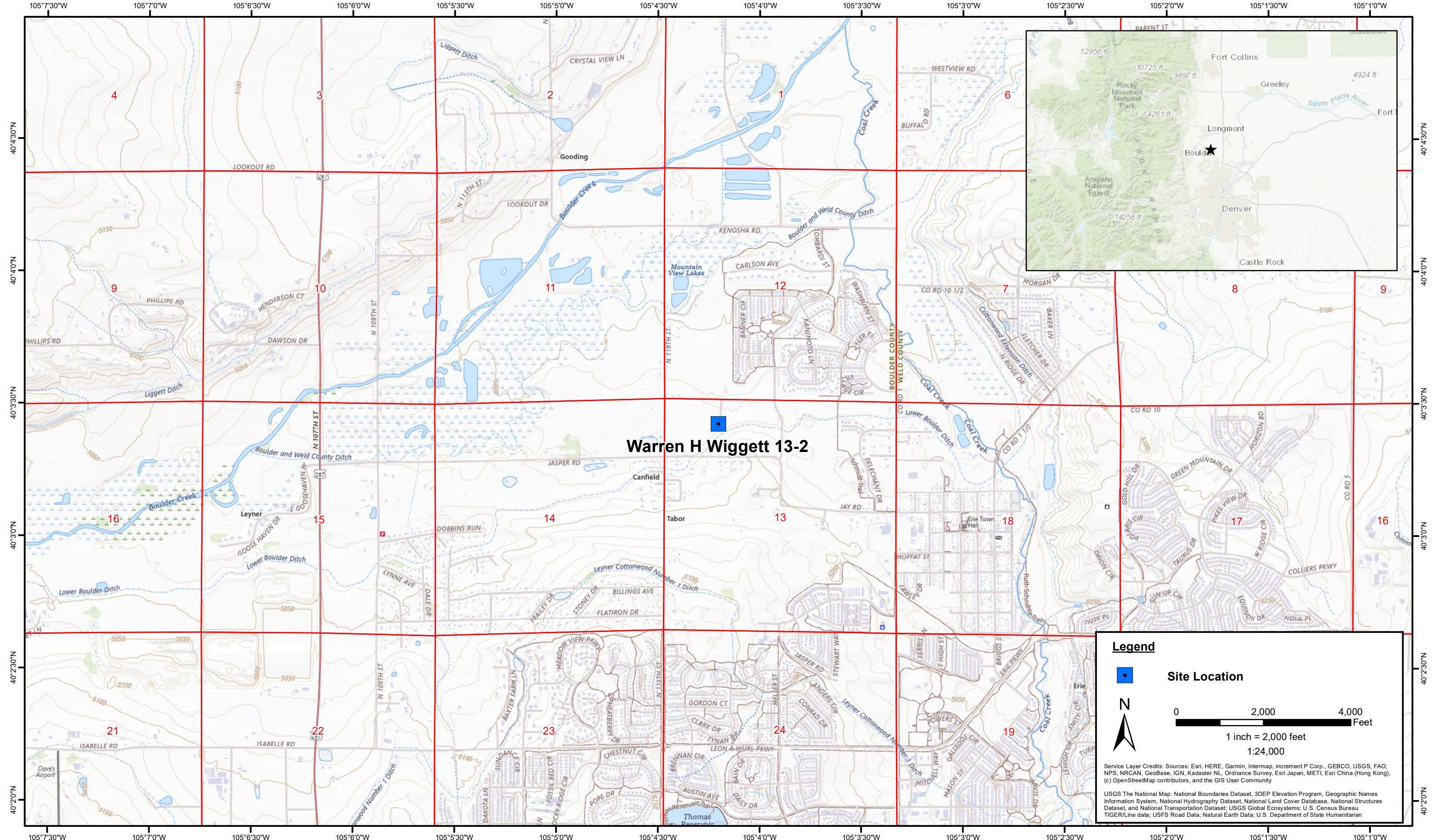
# PHOTO LOG

							
 <p style="text-align: right;">19 Aug 2024, 14:55:14</p>			 <p style="text-align: right;">19 Aug 2024, 14:55:03</p>				
<b>Equipment ID:</b>		<b>Equipment Type:</b>		<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>		<b>Volume:</b>		<b>Material:</b>		<b>Volume:</b>	
<b>Contents:</b>				<b>Contents:</b>			
<b>Notes/Conditions:</b> Surrounding land use.				<b>Notes/Conditions:</b> Surrounding land use.			

					
<p>☀ 180°S (T) ● 40°3'24"N, 105°4'11"W ±16ft ▲ 5020ft</p>			<p>☀ 272°W (T) ● 40°3'25"N, 105°4'12"W ±16ft ▲ 5019ft</p>		
 <p style="text-align: right;">19 Aug 2024, 14:54:24</p>			 <p style="text-align: right;">19 Aug 2024, 14:52:06</p>		
<b>Equipment ID:</b>		<b>Equipment Type:</b>	<b>Equipment ID:</b>		<b>Equipment Type:</b>
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>
<b>Notes/Conditions:</b> Surrounding land use.			<b>Notes/Conditions:</b> Surrounding land use.		

					
133°SE (T) ● 40°3'25"N, 105°4'12"W ±16ft ▲ 5018ft			127°SE (T) ● 40°3'24"N, 105°4'11"W ±16ft ▲ 5020ft		
					
<b>Equipment ID:</b>			<b>Equipment Type:</b>		
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>
<b>Notes/Conditions:</b> Soil sampling locations.			<b>Notes/Conditions:</b> Soil sampling location.		

# FIGURES



DATE: August 2024  
 DESIGNED BY: S. Vogt  
 DRAWN BY: J. Clonts



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

**Crestone Peak Resources Operating, LLC**  
**Warren H Wiggett 13-2**  
 NWNW Sec. 13-T1N-R69W  
 Boulder County, Colorado

Site Location Map

Figure  
1



DATE: August 19, 2024

DESIGNED BY: S. Vogt

DRAWN BY: L. Molson



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Soil Sample Location Map  
 (08/19/2024)

Figure  
 2

# TABLES

**TABLE 1**  
**WARREN H WIGGET 13-2**  
**SOIL SAMPLE LOCATIONS**  
**CRESTONE PEAK RESOURCES OPERATING, LLC**



Soil Sample Location	Depth	Date	PID Reading (ppm)	Latitude	Longitude	GPS PDOP Value	Lab (Y/N)
WH-B01@6'	6'	08/19/2024	1.3	40.057018	-105.070029	0.8	Y
WH-N01@5'	5'	08/19/2024	4.2	40.057038	-105.070024	0.9	Y
WH-S01@5'	5'	08/19/2024	302.5	40.057014	-105.070027	0.8	Y
WH-E01@5'	5'	08/19/2024	19.3	40.057023	-105.070012	0.9	Y
WH-W01@5'	5'	08/19/2024	49.7	40.057021	-105.070039	0.8	Y
FL-B01@4'	4'	08/19/2024	0.1	40.057011	-105.070014	0.9	Y
FL-B02@4'	4'	08/19/2024	0.1	40.056772	-105.069827	0.8	Y
SP-CS01	-	08/19/2024	3.4	40.057030	-105.070075	-	Y

**Notes:**

PID = Photoionization Detector

ppm = parts per million

GPS = Global Positioning System

PDOP = Position Dilution of Precision

- = Not Applicable

**TABLE 2**  
**WARREN H WIGGET 13-2**  
**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)
<b>ECMC Organic Compounds in Soils - GSSL <sup>(1)</sup></b>			<b>0.0026</b>	<b>0.69</b>	<b>0.78</b>	<b>9.9</b>	<b>0.0038</b>	<b>500</b>			<b>0.0081</b>	<b>0.0087</b>
<b>ECMC Organic Compounds in Soils - RSL <sup>(2)</sup></b>			<b>1.2</b>	<b>490</b>	<b>5.8</b>	<b>58</b>	<b>2</b>	<b>500</b>			<b>30</b>	<b>27</b>
WH-B01@6'	6'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-N01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-S01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-E01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-W01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
FL-B01@4'	4'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
FL-B02@4'	4'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
SP-CS01	-	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending

**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 & Carbon Management Commission

GSSL = Protection of Groundwater Screening Level

RSL = Residential Soil Screening Level

(<) = 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

Pending = Analytical results pending final laboratory reporting

**TABLE 3**  
**WARREN H WIGGET 13-2**  
**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)
<b>ECMC Organic Compounds in Soils - GSSL <sup>(1)</sup></b>			<b>0.55</b>	<b>5.8</b>	<b>0.011</b>	<b>0.3</b>	<b>2.9</b>	<b>0.24</b>	<b>9</b>	<b>0.96</b>	<b>8.9</b>	<b>0.54</b>	<b>0.98</b>	<b>0.006</b>	<b>0.019</b>	<b>1.3</b>
<b>ECMC Organic Compounds in Soils - RSL <sup>(2)</sup></b>			<b>360</b>	<b>1,800</b>	<b>1.1</b>	<b>1.1</b>	<b>11</b>	<b>0.11</b>	<b>110</b>	<b>0.11</b>	<b>240</b>	<b>240</b>	<b>1.1</b>	<b>18</b>	<b>24</b>	<b>180</b>
WH-B01@6'	6'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-N01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-S01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-E01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-W01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
FL-B01@4'	4'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
FL-B02@4'	4'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
SP-CS01	-	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending

**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 & Carbon Management Commission

GSSL = Protection of Groundwater Screening Level

RSL = Residential Soil Screening Level

(<) = 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

Pending = Analytical results pending final laboratory reporting

**TABLE 4**  
**WARREN H WIGGET 13-2**  
**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)
<b>ECMC Metals in Soils - GSSL <sup>(1)</sup></b>			<b>0.29</b>	<b>82</b>	<b>0.38</b>	<b>0.00067</b>	<b>46</b>	<b>14</b>	<b>26</b>	<b>0.26</b>	<b>0.8</b>	<b>370</b>
<b>ECMC Metals in Soils - RSL <sup>(2)</sup></b>			<b>0.68</b>	<b>15,000</b>	<b>71</b>	<b>0.3</b>	<b>3,100</b>	<b>400</b>	<b>1,500</b>	<b>390</b>	<b>390</b>	<b>23,000</b>
WH-B01@6'	6'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-N01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-S01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-E01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-W01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
FL-B01@4'	4'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
FL-B02@4'	4'	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
SP-CS01	-	08/19/2024	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending

**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 & Carbon Management Commission

GSSL = Protection of Groundwater Screening Level

RSL = Residential Soil Screening Level

(<) = 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

Pending = Analytical results pending final laboratory reporting

**TABLE 5  
WARREN H WIGGET 13-2**



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

Soil Sample Location	Depth	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
<b>ECMC Soil Suitability for Reclamation<sup>(1)</sup></b>			<b>6 - 8.3</b>	<b>&lt; 6</b>	<b>&lt; 4</b>	<b>2</b>
WH-B01@6'	6'	08/19/2024	Pending	Pending	Pending	Pending
WH-N01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending
WH-S01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending
WH-E01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending
WH-W01@5'	5'	08/19/2024	Pending	Pending	Pending	Pending
FL-B01@4'	4'	08/19/2024	Pending	Pending	Pending	Pending
FL-B02@4'	4'	08/19/2024	Pending	Pending	Pending	Pending
SP-CS01	-	08/19/2024	Pending	Pending	Pending	Pending

**Notes:**

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

ECMC = Colorado Energy & 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

Pending = Analytical results pending final laboratory reporting