

Bury Crandell C Unit 1

NENE Sec. 23-T1N-R68W

API #: 014-12407

Remediation Project #: 33233

Wellhead & Flowline Decommissioning Data Package

February 2024

Prepared by Tasman, Inc.



On behalf of Crestone Peak Resources Operating, LLC



FIELD NOTES AND PHOTO LOG

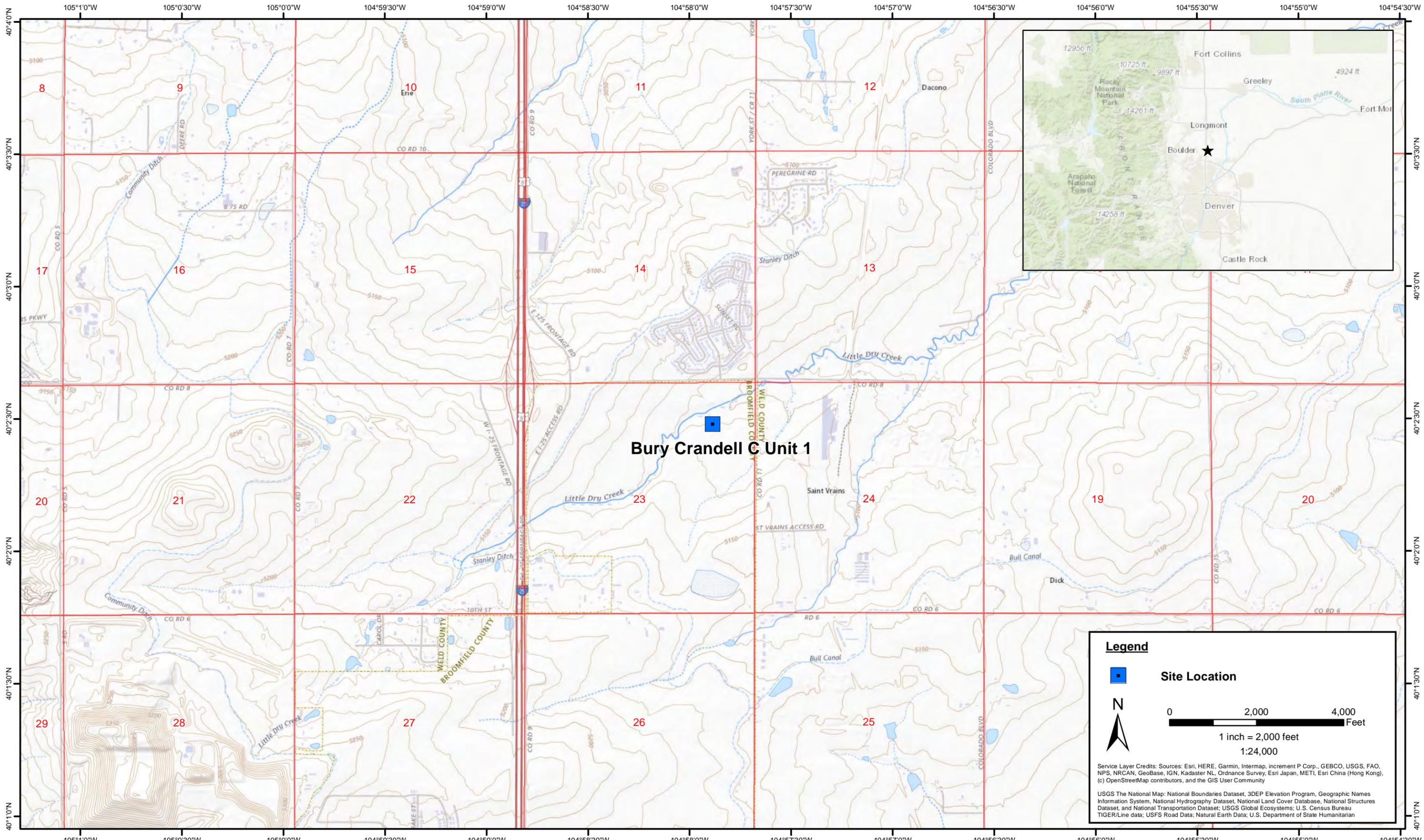
SITE NAME: Bury Crandell C Unit 1								DATE: 2/14/2024	REM. PROJECT #: 33233	WEATHER: 50 F Windy
SITE DIRECTIONS: Weld County Rd 8 and County Road 11 - S 0.24mi, NW 0.15mi INTO								CLIENT: Crestone Peak Resources Operating, LLC		
LEGALS AND LAT/LONG: 40.041358, -104.964768								TASMAN PERSONNEL: Sean Clarke		
SOIL TYPES: CL - lean clay								SURFACE GRADIENT: Northeast		
SURROUNDING LAND USE: Other								CROP: None		
SOIL SAMPLING								FACILITY INFRASTRUCTURE		
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo? (Y/N)	USCS	Lab (Y/N)	EQUIPMENT	Quantity	
								Above Ground Storage Tank (AST)		
2/14/2024 12:20	WH-B01@5'	0.9	No Staining	No Odor	Y	CL	Y	Produced Water Vessel (PWV)		
2/14/2024 12:25	WH-N01@4'	1.7	No Staining	No Odor	Y	CL	N	Separator (SEP)		
2/14/2024 12:30	WH-S01@4'	1.7	No Staining	No Odor	Y	CL	N	Emission Control Device (ECD)		
2/14/2024 12:35	WH-E01@4'	1.1	No Staining	No Odor	Y	CL	N	Dump Line (DL)		
2/14/2024 12:40	WH-W01@4'	1.2	No Staining	No Odor	Y	CL	N	Wellhead (WH)	1	
2/14/2024 12:45	FL-B01@4'	32.3	No Staining	Slight HC Odor	Y	CL	Y	Flowline (FL)	1	
2/14/2024 12:50	FL-B02@4'	38.8	No Staining	Slight HC Odor	Y	CL	Y	FL Method of Closure	Abandoned in place	
2/14/2024 12:55	SP-CS01	2.3	No Staining	No Odor	N	CL	Y	FL Footage Removed		
								Footaged Abandoned in Place	100	
								Other:		
								Soil Loads Removed		
								IMPACTED SOIL IDENTIFIED? Yes		
								ESTIMATED VOLUME OF IMPACTS: Ongoing Assessment		
								Date	Number	CY
								Total Removed	0	0
								Disposal Facility:		
								Groundwater Recovery		
								DATE GW ENCOUNTERED:	DEPTH:	
								GROUNDWATER IN CONTACT WITH IMPACTED SOIL?		
								LNAPL OR SHEEN OBSERVED ON GW?		
GROUNDWATER SAMPLING								Date	BBLS	
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?				
								Total Removed	0	
								Disposal Facility:		



Photographic Log

<p>☀ 49°NE (T) ● 40°2'28"N, 104°57'53"W ±16ft ▲ 5109ft</p> <p>14 Feb 2024 12:19:36</p>			<p>☀ 78°E (T) ● 40°2'27"N, 104°57'53"W ±16ft ▲ 5111ft</p> <p>14 Feb 2024 12:25:04</p>				
Equipment ID:		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: Soil sample and screening locations.				Notes/Conditions: Soil sample location.			

FIGURES



DATE: February 2024
 DESIGNED BY: S. Vogt
 DRAWN BY: L. Reed



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

Crestone Peak Resources Operating, LLC
Bury Crandell C Unit 1
 NENE Sec. 23-T1N-R68W
 Broomfield County, Colorado

Site Location Map

Figure
1

WH-B01 @5'	
Compound	02/14/2024
Arsenic (mg/kg)	3.08
Barium (mg/kg)	321
Lead (mg/kg)	14.9
Selenium (mg/kg)	0.273
pH	9.44

FL-B01 @4'	
Compound	02/14/2024
Arsenic (mg/kg)	4.21
Barium (mg/kg)	341
Cadmium (mg/kg)	0.641
Selenium (mg/kg)	0.370
pH	8.71

SP-CS01	
Compound	02/14/2024
Arsenic (mg/kg)	3.44
Barium (mg/kg)	833
Selenium (mg/kg)	0.286

Legend

-  Soil sample location – Field Screened (Collected via Trimble GPS)
-  Soil sample location – Exceeded ECMC Table 915-1 Soil Standards (Collected via Trimble GPS)
-  Excavation extent (Collected via Trimble GPS)
-  Stockpile location – Composite Sample Exceeded ECMC Table 915-1 Soil Standards (Collected via Trimble GPS)
-  Flowline Location

ECMC Table 915-1 Soil Standards	
Compound	Date
Arsenic (mg/kg)	0.29 / 0.68
Barium (mg/kg)	82 / 15,000
Cadmium (mg/kg)	0.38 / 71
Lead (mg/kg)	14 / 400
Selenium (mg/kg)	0.26 / 390
pH	6 - 8.3

Notes

All locations are approximate unless otherwise noted.

Crestone Peak Resources Operating, LLC wellhead site infrastructure has been removed

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

BOLD = Analytical result is in exceedance of ECMC Table 915-1 Protection of Groundwater Soil Screening Level Concentrations or Soil Suitability for Reclamation Parameters

mg/kg = milligrams per kilogram

GPS = Global Positioning System

ECMC = Colorado Energy & Carbon Management Commission

0 ft. 10 ft. 20 ft.



Image Source: Google Earth



DATE:	November 13, 2024
DESIGNED BY:	S. Vogt
DRAWN BY:	L. Bakel

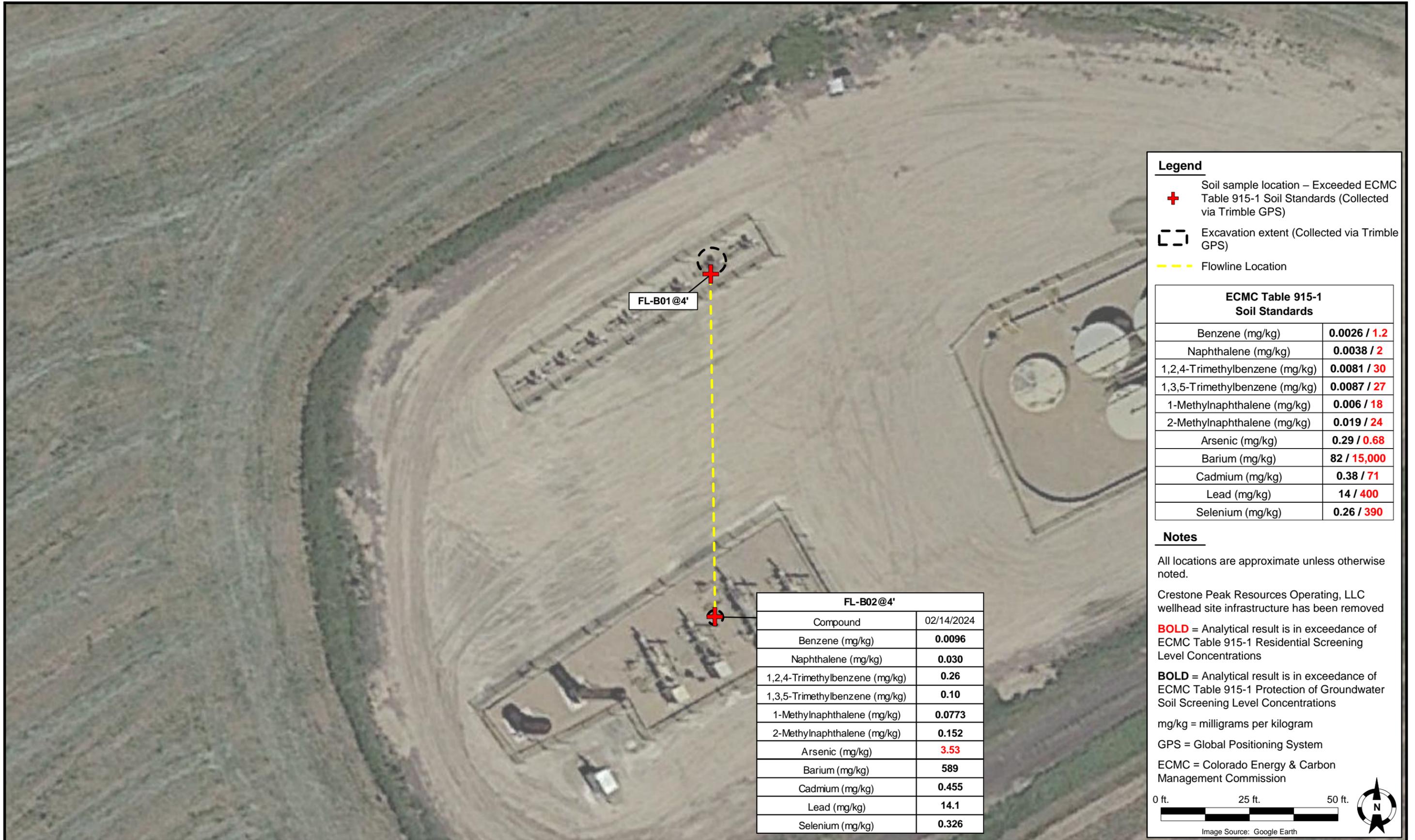


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Wellhead Soil Sample
Location Map
(02/14/2024)

Figure
2



- Legend**
- + Soil sample location – Exceeded ECMC Table 915-1 Soil Standards (Collected via Trimble GPS)
 - Excavation extent (Collected via Trimble GPS)
 - Flowline Location

ECMC Table 915-1 Soil Standards	
Benzene (mg/kg)	0.0026 / 1.2
Naphthalene (mg/kg)	0.0038 / 2
1,2,4-Trimethylbenzene (mg/kg)	0.0081 / 30
1,3,5-Trimethylbenzene (mg/kg)	0.0087 / 27
1-Methylnaphthalene (mg/kg)	0.006 / 18
2-Methylnaphthalene (mg/kg)	0.019 / 24
Arsenic (mg/kg)	0.29 / 0.68
Barium (mg/kg)	82 / 15,000
Cadmium (mg/kg)	0.38 / 71
Lead (mg/kg)	14 / 400
Selenium (mg/kg)	0.26 / 390

Notes

All locations are approximate unless otherwise noted.

Crestone Peak Resources Operating, LLC wellhead site infrastructure has been removed

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

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

mg/kg = milligrams per kilogram

GPS = Global Positioning System

ECMC = Colorado Energy & Carbon Management Commission

0 ft. 25 ft. 50 ft.

Image Source: Google Earth

FL-B02@4'	
Compound	02/14/2024
Benzene (mg/kg)	0.0096
Naphthalene (mg/kg)	0.030
1,2,4-Trimethylbenzene (mg/kg)	0.26
1,3,5-Trimethylbenzene (mg/kg)	0.10
1-Methylnaphthalene (mg/kg)	0.0773
2-Methylnaphthalene (mg/kg)	0.152
Arsenic (mg/kg)	3.53
Barium (mg/kg)	589
Cadmium (mg/kg)	0.455
Lead (mg/kg)	14.1
Selenium (mg/kg)	0.326

DATE: November 13, 2024

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DRAWN BY: L. Bakel



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Flowline Soil Sample Location Map (02/14/2024)

Figure 3

TABLES

TABLE 1
BURY CRANDELL C UNIT 1
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@5'	5'	02/14/2024	0.9	40.041351	-104.964761	1.0	Y
WH-N01@4'	4'	02/14/2024	1.7	40.041358	-104.964774	1.2	N
WH-S01@4'	4'	02/14/2024	1.7	40.041344	-104.964752	1.1	N
WH-E01@4'	4'	02/14/2024	1.1	40.041364	-104.964755	1.2	N
WH-W01@4'	4'	02/14/2024	1.2	40.041337	-104.964768	1.1	N
SP-CS01	-	02/14/2024	2.3	40.041402	-104.964789	-	Y
FL-B01@4'	4'	02/14/2024	32.3	40.041340	-104.964776	1.1	Y
FL-B02@4'	4'	02/14/2024	38.8	40.041077	-104.964758	0.9	Y

Notes:

PID = Photoionization Detector

ppm = parts per million

GPS = Global Positioning System

PDOP = Position Dilution of Precision

- = Not Applicable

TABLE 2
BURY CRANDELL C UNIT 1
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 - GSSL ⁽¹⁾			0.0026	0.69	0.78	9.9	0.0038	500			0.0081	0.0087
ECMC Organic Compounds in Soils - RSL ⁽²⁾			1.2	490	5.8	58	2	500			30	27
WH-B01@5'	5'	02/14/2024	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
SP-CS01	-	02/14/2024	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
FL-B01@4'	4'	02/14/2024	<0.0020	0.11	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
FL-B02@4'	4'	02/14/2024	0.0096	0.14	0.041	0.61	0.030	5.4	<50	<50	0.26	0.10

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

TABLE 3
BURY CRANDELL C UNIT 1
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 - GSSL ⁽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 - RSL ⁽²⁾			360	1,800	1.1	1.1	11	0.11	110	0.11	240	240	1.1	18	24	180
WH-B01@5'	5'	02/14/2024	<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
SP-CS01	-	02/14/2024	<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
FL-B01@4'	4'	02/14/2024	<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
FL-B02@4'	4'	02/14/2024	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00611	<0.00500	0.0773	0.152	<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 & 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

TABLE 4
BURY CRANDELL C UNIT 1
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 - GSSL ⁽¹⁾			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
ECMC Metals in Soils - RSL ⁽²⁾			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
WH-B01@5'	5'	02/14/2024	3.08	321	0.265	-	4.11	14.9	3.65	0.273	0.0598	18.5
SP-CS01	-	02/14/2024	3.44	833	0.279	-	6.63	10.4	2.94	0.286	0.0516	11.0
FL-B01@4'	4'	02/14/2024	4.21	341	0.641	-	3.93	12.3	5.15	0.370	0.0678	12.7
FL-B02@4'	4'	02/14/2024	3.53	589	0.455	-	5.50	14.1	4.84	0.326	0.0601	16.7

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

- = Constituent not analyzed, hexavalent chromium hold time expired for these samples, therefore analysis was cancelled.

TABLE 5
BURY CRANDELL C UNIT 1
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
WH-B01@5'	5'	02/14/2024	9.44	1.33	1.69	<2.00
SP-CS01	-	02/14/2024	8.25	1.79	0.808	<2.00
FL-B01@4'	4'	02/14/2024	8.71	1.12	0.359	<2.00
FL-B02@4'	4'	02/14/2024	8.14	0.432	1.04	<2.00

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