

**FOUNDATION ENERGY INC.**  
**Groseclose 32-30**

**FORM 27 SUPPLEMENTAL**  
**SECOND QUARTER 2023 RESUBMISSION - SOIL SAMPLING SUMMARY REPORT**

**ATTACHMENTS**

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-2306661F (Soil)

**Attachments**

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Table 1  
Groseclose 32-30  
Volatile Organic Compound (VOC) Soil Sample Results  
Yuma County, Colorado

Sample ID	Date Sampled	Lab Report Number	PID Reading (ppm)		Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4-Trimethylbenzene (mg/kg)	1,3,5-Trimethylbenzene (mg/kg)	Naphthalene (mg/kg)		GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TPH (mg/kg)	Comments
ECMC Residential Soil Screening Level Standards (mg/kg) <sup>(3)</sup>	-	-	-		1.2	490	5.8	58	30	27	2		-	-	-	500	
ECMC Protection of Groundwater Soil Screening Level Standards <sup>(1 &amp; 2)</sup> (mg/kg)	-	-	-		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038		-	-	-	500	
Tank	6/9/2021	-	-		<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038		<0.50	<50	-	-	
Wellhead	7/8/2021	-	-		<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038		<0.50	<50	-	-	
Separator	7/8/2021	-	-		<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038		<0.50	<50	-	-	
Separator @ 12-24" - Groseclose	6/29/2023	2306661	0		NA	NA	NA	NA	NA	NA	NA		<0.50	<50	<50	<500	
Tank @ 12-24" - Groseclose	6/29/2023	2306661	4.0		NA	NA	NA	NA	NA	NA	NA		<0.50	<50	<50	<500	
HA-1 @ 12-24" - Groseclose	6/29/2023	2306661	4.9		NA	NA	NA	NA	NA	NA	NA		<0.50	<50	<50	<500	
HA-2 @ 12-24" - Groseclose	6/29/2023	2306661	5.3		NA	NA	NA	NA	NA	NA	NA		<0.50	<50	<50	<500	
HA-3 @ 12-24" - Groseclose	6/29/2023	2306661	5.4		NA	NA	NA	NA	NA	NA	NA		<0.50	<50	<50	<500	

Notes:

1). The environmental cleanup standards for soil that are applicable to this site are the Colorado Energy & Carbon Management Commission (ECMC) standards for contaminants in soil according to Table 915-1 (Post January 15, 2021) of the ECMC 900 Series Rule for E&P Waste Management.

2). If there is no pathway for communication with Groundwater, then residential soil screening levels apply for organic compounds and metals. If the Director determines that a pathway to Groundwater exists, then the protection of Groundwater soil screening levels will apply, secondary to actual measured concentrations of the contaminants of concern in Groundwater.

TPH - Total volatile (C<sub>6</sub> - C<sub>10</sub>) and extractable (C<sub>10</sub> - C<sub>36</sub>) petroleum hydrocarbons.

PID - Photoionization Detector

mg/kg= Milligrams per kilogram.

ppm - Parts per million

NA - Not Analyzed

**Bold** values indicate an exceedance of ECMC Protection of Groundwater Standards

**Bold red** values indicate an exceedance of ECMC Residential Soil Standards

Table 2  
Groseclose 32-30  
Soil Suitability and Metals Soil Sample Results  
Yuma County, Colorado

Sample ID	Date Sampled	Lab Report Number	PID Reading (ppm)	pH (pH units)	Specific Conductance (EC) (mmhos/cm)	Sodium Adsorption Ratio (SAR)	Boron (mg/l)	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)	Comments
ECMC Residential Soil Screening Level Standards (mg/kg) <sup>(3)</sup>				6-8.3	<4 mmhos/cm	<6	2 (mg/l)	0.68	15000	71	0.3	3100	400	1500	390	390	23000	
ECMC Protection of Groundwater Soil Screening Level Standards Risk & MCL Based <sup>(1 &amp; 2)</sup> (mg/kg)				6-8.3	<4 mmhos/cm	<6	2	0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370	
Tank	6/9/2021	-	-	9.04	0.839	7.24	0.575	-	-	-	-	-	-	-	-	-	-	
Separator	7/8/2021	-	-	7.77	0.38	0.53	<0.0100	-	-	-	-	-	-	-	-	-	-	
Wellhead	7/8/2021	-	-	8.25	0.299	0.741	<0.0100	-	-	-	-	-	-	-	-	-	-	
Separator @ 12-24" - Groseclose	6/29/2023	2306661	0.0	7.90	0.305	0.458	0.139	0.931	152	0.343	<0.30	1.90	8.75	2.67	<0.308	0.0615	7.12	
Tank @ 12-24" - Groseclose	6/29/2023	2306661	4.0	7.81	0.447	0.645	0.115	1.09	222	0.334	<0.30	2.46	9.03	2.54	<0.306	0.0617	7.72	
HA-1 @ 12-24" - Groseclose	6/29/2023	2306661	4.9	8.27	0.591	0.849	0.208	0.961	170	0.352	<0.30	2.23	8.58	2.40	<0.305	0.0488	7.83	
HA-2 @ 12-24" - Groseclose	6/29/2023	2306661	5.3	7.60	0.514	0.220	0.103	0.961	148	0.256	<0.30	2.22	8.15	2.54	<0.297	0.0603	6.85	
HA-3 @ 12-24" - Groseclose	6/29/2023	2306661	5.4	7.65	0.305	0.170	0.0617	0.891	146	0.298	<0.30	1.98	8.16	2.39	<0.304	0.0379	7.25	

Notes:

- 1). The environmental cleanup standards for soil that are applicable to this site are the Colorado Energy & Carbon Management Commission (ECMC) standards for contaminants in soil according to Table 915-1 (Post January 15, 2021) of the ECMC 900 Series Rule for E&P Waste Management.
- 2). If there is no pathway for communication with Groundwater, then residential soil screening levels apply for organic compounds and metals. If the Director determines that a pathway to Groundwater exists, then the protection of Groundwater soil screening levels will apply, secondary to actual measured concentrations of the contaminants of concern in Groundwater.

mg/kg= Milligrams per kilogram.

ppm - Parts per million

PID - Photoionization Detector

NA - Not Analyzed

**Bold** values indicate metals concentrations greater than the ECMC Protection of Groundwater Standard.

**Bold red** values indicate an exceedance of the ECMC Residential Soil Standard for the Site.

**TABLE 3**  
**SITE SPECIFIC SOIL AND GROUNDWATER SAMPLING AND ANALYSIS PLAN**  
**FEM - GROSECLOSE 32-30**

Site Specific Constituent of Concern for Soil Analysis	ECMC Protection of Groundwater Soil Screening Level Standards Risk & MCL Based <sup>(1 &amp; 2)</sup>	ECMC Residential Soil Screening Level Standards <sup>(3)</sup>
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm	
Sodium adsorption ratio (SAR) (by saturated paste method)	<6	
pH (by saturated paste method)	6-8.3	
boron (hot water soluble soil extract)	2mg/l	
Arsenic (mg/kg)	0.29 (M)	0.68
Barium (mg/kg) *	82 (M)	15000

1). Standards for Soil are referenced from the 2 CCR 404-1, Table 915-1, effective January 15, 2021.

2). Standards for Soil are referenced from the 2 CCR 404-1, Table 915-1, effective January 15, 2021. The letter “(R)” following a protection of Groundwater soil screening level indicates the concentration is derived from a risk-based approach. The letter “(M)” following a protection of Groundwater soil screening level indicates the concentration is derived from the drinking water MCL.

3). EC, SAR, pH, and boron will be analyzed from soil samples collected in the root bearing zone subsequent to invasive remediation activities and prior to reclamation planning.

4). The environmental cleanup standards for groundwater that are applicable to this site are the Colorado Energy and Carbon Management Commission (ECMC) standards for contaminants in groundwater according to Table 915-1 of the ECMC 900 Series Rule for E&P Waste Management.

\* With approval of Residential Soil Standards, Barium would be removed from the sampling plan. All samples are below the Residential Standard for barium

TPH - Total volatile (C<sub>6</sub> - C<sub>10</sub>) and extractable (C<sub>10</sub> - C<sub>36</sub>) hydrocarbons

mg/kg= Milligrams per kilogram.

µg/l - Micrograms per liter