



SITE NAME: Leonard 21-16I4 Flowline							DATE: 7/18/2024	REM. PROJECT #: 34728	WEATHER: 70s sunny
SITE DIRECTIONS: CR 53 X CR 42, E 0.7 mi on 42, N on access rd 0.2 mi into							CLIENT: Noble		
LEGALS AND LAT/LONG: 40.293520, -104.550350							TASMAN PERSONNEL: JR, RY		
SOIL TYPES: Well Graded Sand - SW							SURFACE GRADIENT: South		
SOIL SAMPLING							FACILITY INFRASTRUCTURE		
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT	Quantity	Photo?
							Above Ground Storage Tank (AST)		
7/18/2024 11:12	FL01R-W@2'	5.9	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel		
7/18/2024 11:16	FL01-01@2'	23.9	No Staining	No Odor	Yes	Lab	Separator		
7/18/2024 11:55	BKG01@2'	0.1	No Staining	No Odor	Yes	Lab	Emission Control Device (ECD)		
							Dump Line		
							Wellhead		
							Flowline	1	
							Other:		
							Soil Loads Removed		
							IMPACTED SOIL IDENTIFIED?		
							ESTIMATED VOLUME OF IMPACTS:		
							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:		



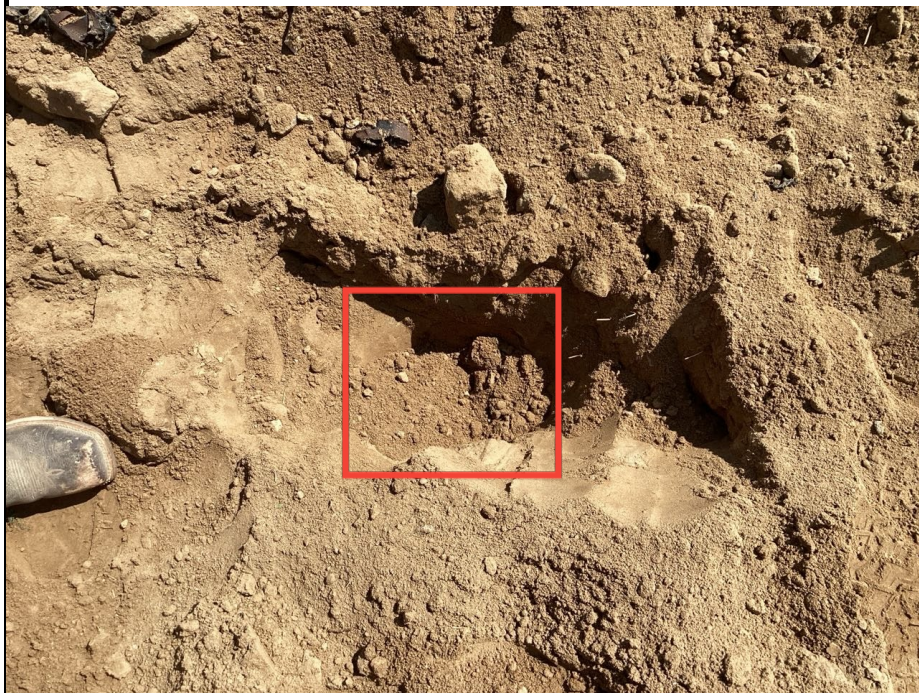

Site Area/AOC: Leonard 21-1614 Flowline Client: Noble


Daily Forecast/Weather: 70s sunny Personnel: JR, RY

Task/Location Description: Flowline Decommissioning

Need photo log?





											
Equipment ID: FL01R-W@2'		Equipment Type:		Equipment ID: FL01-01@2'		Equipment Type:					
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					



					
Equipment ID: BKG01@2'		Equipment Type:	Equipment ID:		Equipment Type:
Material:	Volume:	Contents:	Material:	Volume:	Contents:
Notes/Conditions:			Notes/Conditions:		







SITE NAME: Novacek C 28-27D Tank Battery							DATE: 7/18/2024	REM. PROJECT #: 34704	WEATHER: 70s sunny	
SITE DIRECTIONS: CR 53 X CR 42, 0.7 mi E on 42, N on access rd 0.1 mi into							CLIENT: Noble			
LEGALS AND LAT/LONG: 40.293100, -104.549780							TASMAN PERSONNEL: JR, RY			
SOIL TYPES: Well Graded Sand - SW							SURFACE GRADIENT: South			
SOIL SAMPLING							FACILITY INFRASTRUCTURE			
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT	Quantity	Photo?	
							Above Ground Storage Tank (AST)	2		
7/18/2024 07:55	AST01@0-6"	3.4	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel	2		
7/18/2024 07:58	AST02@0-6"	4.5	No Staining	No Odor	Yes	Lab	Separator	2		
7/18/2024 08:15	SEP01-DL01@3'	5.0	No Staining	No Odor	Yes	Lab	Emission Control Device (ECD)	1		
7/18/2024 08:20	SEP01-DL02@3'	3.4	No Staining	No Odor	Yes	Lab	Dump Line	4		
7/18/2024 08:23	MH01@0-6"	5.8	No Staining	No Odor	Yes	Grab	Wellhead			
7/18/2024 08:30	FLARE01@0-6"	6.0	No Staining	No Odor	Yes	Grab	Flowline			
7/18/2024 08:35	SEP01-FL@3'	5.9	No Staining	No Odor	Yes	Lab	Other: Meter House	1		
7/18/2024 08:38	SEP02-DL01@3'	4.2	No Staining	No Odor	Yes	Lab	Soil Loads Removed			
7/18/2024 08:40	SEP02-DL02@3'	3.9	No Staining	No Odor	Yes	Lab	IMPACTED SOIL IDENTIFIED?			
7/18/2024 09:15	PWV01-B@5'	1.2	No Staining	No Odor	Yes	Lab	ESTIMATED VOLUME OF IMPACTS:			
7/18/2024 09:17	PWV01-N@2.5'	4.6	No Staining	No Odor	Yes	On-hold	Date	Number	CY	
7/18/2024 09:19	PWV01-E@2.5'	8.9	No Staining	No Odor	Yes	Lab				
7/18/2024 09:21	PWV01-S@2.5'	4.9	No Staining	No Odor	Yes	On-hold				
7/18/2024 09:23	PWV02-B@5'	7.6	No Staining	No Odor	Yes	Lab				
7/18/2024 09:25	PWV02-N@2.5'	6.3	No Staining	No Odor	Yes	On-hold				
7/18/2024 09:27	PWV02-S@2.5'	5.6	No Staining	No Odor	Yes	On-hold	Total Removed	0	0	
7/18/2024 09:29	PWV02-W@2.5'	9.6	No Staining	No Odor	Yes	Lab	Disposal Facility:			
7/18/2024 11:44	BKG01@0-6"	2.3	No Staining	No Odor	Yes	Lab	Groundwater Recovery			
7/18/2024 11:45	BKG01@2.5'	1.6	No Staining	No Odor	Yes	Lab	DATE GW ENCOUNTERED:	DEPTH:		
7/18/2024 11:46	BKG01@3'	1.8	No Staining	No Odor	Yes	Lab	GROUNDWATER IN CONTACT WITH IMPACTED SOIL?			
7/18/2024 11:47	BKG01@5'	0.2	No Staining	No Odor	Yes	Lab				
							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:			

Need photo log?

							
Equipment ID: AST01		Equipment Type:		Equipment ID: AST02		Equipment Type:	
Material:		Volume:		Contents:		Material:	
Volume:		Contents:		Material:		Volume:	
Notes/Conditions:				Notes/Conditions:			

							
Equipment ID: SEP01-DL01		Equipment Type:		Equipment ID: SEP01-DL02		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			



							
Equipment ID: MH01		Equipment Type:		Equipment ID: FLARE01		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

											
Equipment ID: SEP01-FL		Equipment Type:		Equipment ID: SEP02-DL01		Equipment Type:					
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					

					
Equipment ID: SEP02-DL02		Equipment Type:			
Material:	Volume:	Contents:			
Notes/Conditions:					
Equipment ID:		Equipment Type:			
Material:	Volume:	Contents:			
Notes/Conditions: DUMPLINES BEING PULLED					

							
Equipment ID: PWV01-B		Equipment Type:		Equipment ID: PWV01-N		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

							
Equipment ID: PWV01-E		Equipment Type:		Equipment ID: PWV01-S		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

							
Equipment ID: PWV02-B		Equipment Type:		Equipment ID: PWV02-N		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

							
Equipment ID: PWV02-S		Equipment Type:		Equipment ID: PWV02-W		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

											
Equipment ID: BKG01		Equipment Type:		Equipment ID:		Equipment Type:					
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE ENERGY, INC. - 100322
LEONARD 21-1614, WELD COUNTY, COLORADO
REM # 34728

Sample ID	Sample Date	Depth (ft. bgs)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
FL01R-W@2'	7/18/2024	2	40.293516	-104.550327	0.8	5.9
FL01-01@2'	7/18/2024	2	40.293343	-104.550120	0.8	23.9
SEP01-FL@3' ^(a)	7/18/2024	3	40.293144	-104.549971	0.9	5.9
BKG01@0-6" ^(b)	7/18/2024	0.5	40.292233	-104.549285	1.1	2.3
BKG01@2.5' ^(b)	7/18/2024	2.5	40.292233	-104.549285	1.1	1.6
BKG01@3' ^(b)	7/18/2024	3	40.292233	-104.549285	1.1	1.8
BKG01@5' ^(b)	7/18/2024	5	40.292233	-104.549285	1.1	0.2
BKG01@2'	7/18/2024	2	40.293564	-104.550190	0.8	0.1

Notes:

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum (NAD) 83 UTMZone 13 North.
2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).
 - a. Flowline riser sample at the separator collected during decommissioning of the associated Novacek C28-27D Tank Battery, Remediation number 3470.
 - b. Background soil samples collected during decommissioning of the associated Novacek C28-27D Tank Battery, Remediation number 34704.

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

bgs = Below ground surface

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY, INC. - 100322
LEONARD 21-1614, WELD COUNTY, COLORADO
REM # 34728

Sample ID	Sample Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4- Trimethyl- Benzene (mg/kg)	1,3,5- Trimethyl- Benzene (mg/kg)	Naphthalene (mg/kg)	TPH (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	500**		
FL01R-W@2'	7/18/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01-01@2'	7/18/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01-FL@3' ^(a)	7/18/2024	3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

Notes:

1. **Bold** values exceed the ECMC Table 915-1 limit(s)
 2. Pink & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
 3. * Indicates laboratory minimum detection limit in excess of SSL
 4. ** Summation of GRO+DRO+ORO must be less than 500 mg/kg
- a. Flowline riser sample at the separator collected during decommissioning of the associated Novacek C28-27D Tank Battery, Remediation number 3470.
- ECMC = Energy & Carbon Management Commission
- (<) = Analytical result is less than the indicated laboratory reporting limit.
- TPH-GRO = Total petroleum hydrocarbons - gasoline range organics
- TPH-DRO = Total petroleum hydrocarbons - diesel range organics
- TPH-ORO = Total petroleum hydrocarbons - oil range organics
- mg/kg = Milligrams per kilogram
- ft. = Feet
- bgs = Below ground surface

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY, INC. - 100322
LEONARD 21-16I4, WELD COUNTY, COLORADO
REM # 34728

Sample ID	Sample Date	Depth (ft. bgs)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3- cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01R-W@2'	7/18/2024	2	<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
FL01-01@2'	7/18/2024	2	<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
SEP01-FL@3' ^(a)	7/18/2024	3	<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:
1. **Bold** values exceed the ECMC Table 915-1 limit(s)
2. Pink & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
3. * Indicates laboratory minimum detection limit in excess of SSL
a. Flowline riser sample at the separator collected during decommissioning of the associated Novacek C28-27D Tank Battery, Remediation number 3470.
ECMC = Colorado Energy & Carbon Management Commission
(<) = Analytical result is less than the indicated laboratory reporting limit.
ft. = Feet
bgs = Below ground surface
mg/kg = Milligrams per kilogram

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY, INC. - 100322
LEONARD 21-1614, WELD COUNTY, COLORADO
REM # 34728

Sample ID	Sample Date	Depth (ft. bgs)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
FL01R-W@2'	7/18/2024	2	8.86	0.114	0.131	<2.00
FL01-01@2'	7/18/2024	2	6.72	4.92	0.0345	<2.00
SEP01-FL@3' ^(a)	7/18/2024	3	8.05	0.0783	0.0417	<2.00
BKG01@0-6" ^(b)	7/18/2024	0.5	5.81	0.255	0.743	<2.00
BKG01@2.5' ^(b)	7/18/2024	2.5	8.14	0.0144	0.243	<2.00
BKG01@3' ^(b)	7/18/2024	3	8.05	0.0476	0.625	<2.00
BKG01@5' ^(b)	7/18/2024	5	8.36	0.367	1.14	<2.00
BKG01@2'	7/18/2024	2	8.10	0.0426	0.055	<2.00
Maximum Background Concentration			8.36	0.3670	-	-

Notes:

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
 2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.
 3. Brown highlighted soil analytical values indicate a regulatory exceedance.
- a. Flowline riser sample at the separator collected during decommissioning of the associated Novacek C28-27D Tank Battery, Remediation number 34704.
- b. Background soil samples collected during decommissioning of the associated Novacek C28-27D Tank Battery, Remediation number 34704.
- ECMC = Colorado Energy & Carbon Management Commission
- EC = Electrical conductivity
- SAR = Sodium adsorption ratio
- mmhos/cm = millimhos per centimeter
- mg/L = milligram per liter
- (<) = Analytical result is less than the indicated laboratory reporting limit.
- ft. = Feet
- bgs = Below ground surface

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY, INC. - 100322
LEONARD 21-1614, WELD COUNTY, COLORADO
REM # 34728

Sample ID	Sample Date	Depth (ft. bgs)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) ^[4] (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01R-W@2'	7/18/2024	2	1.23	42.9	<0.200	<0.30 ^[4]	3.62	8.25	2.24	<0.260	<0.0200	12.1
FL01-01@2'	7/18/2024	2	1.16	33.3	<0.200	<0.30 ^[4]	2.07	2.98	2.06	<0.260	<0.0200	8.61
SEP01-FL@3' ^(a)	7/18/2024	3	1.47	32.6	<0.200	<0.30 ^[4]	2.15	3.15	2.18	<0.260	0.0273	9.71
BKG01@0-6' ^(b)	7/18/2024	0.5	1.34	30.7	<0.200	<0.30 ^[4]	2.08	5.93	1.89	<0.260	0.0261	11.2
BKG01@2.5' ^(b)	7/18/2024	2.5	1.05	29.8	<0.200	<0.30 ^[4]	1.40	3.68	1.82	<0.260	<0.0200	9.83
BKG01@3' ^(b)	7/18/2024	3	0.701	15.0	<0.200	<0.30 ^[4]	0.804	2.84	1.38	<0.260	<0.0200	7.56
BKG01@5' ^(b)	7/18/2024	5	1.19	17.2	<0.200	<0.30 ^[4]	0.646	3.33	1.34	<0.260	<0.0200	8.11
BKG01@2'	7/18/2024	2	2.78	65.7	<0.200	<0.30 ^[4]	2.76	5.69	3.73	<0.260	0.0355	14.6
Maximum Background Concentration			2.78	-	-	-	-	-	-	-	-	-
Maximum Background Concentration X 1.25			3.48	-	-	-	-	-	-	-	-	-

Notes:

- Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
- Red** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.
- Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
- Compound falls within ECMC Table 915-1 Footnote 9.
- Non-detect background results accounted for in the highest background concentration by using the reporting limit.
- a. Flowline riser sample at the separator collected during decommissioning of the associated Novacek C28-27D Tank Battery, Remediation number 3470.
- b. Background soil samples collected during decommissioning of the associated Novacek C28-27D Tank Battery, Remediation number 34704.

ECMC = Energy & Carbon Management Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

