



DATE: 07/03/2024

DESIGNED BY: JW

DRAWN BY: L. Bohannon



TASMAN
GEOSCIENCES

Tasman Geosciences, Inc.
6855 W 119th Avenue
Broomfield, CO 80020

Noble Energy, Inc. – 100322 – DJ Basin
Hagemeister USX AA07-05
 Lot 2, Section 7, Township 6 North, Range 63 West
 Weld County, Colorado

Tank Battery Closure & Soil
 Analytical Results Map
 (06/13/2024)

FIGURE
1



Legend

-  Proposed Soil Boring Location
-  Excavation Extent (Collected via Trimble GPS)

Notes

1) All locations are approximate unless otherwise noted.

GPS – Global Positioning System

0 ft. 30 ft. 60 ft.




Image Source: Google Earth; Google 2013
Projection: WGS 1984, UTM Zone 13 North

DATE:	July 8, 2024
DESIGNED BY:	J. Whritenour
DRAWN BY:	L. Bohannon



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

Noble Energy, Inc. – 100322 – DJ Basin
Hagemeister USX AA07-05 Tank Battery
SWNW, Section 7, Township 6 North, Range 63 West
Weld County, Colorado

PROPOSED SOIL BORING
LOCATION MAP

FIGURE
2

Attachment A

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE ENERGY, INC. - 100322
HAGEMEISTER USX AA07-05 TANK BATTERY, WELD COUNTY, COLORADO
REM # 34079

Sample ID	Sample Date	Depth (ft. bgs)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
GS01@0-6"	06/13/2024	0-0.5	40.503896	-104.488199	0.7	0.0
GS02@0-6"	06/13/2024	0-0.5	40.503793	-104.488316	0.8	0.1
AST01@0-6"	06/13/2024	0-0.5	40.503845	-104.488214	0.8	0.1
AST02@0-6"	06/13/2024	0-0.5	40.503805	-104.488218	0.8	0.0
PWV01-B@4'	06/13/2024	4	40.503769	-104.488199	0.9	4.9
PWV01-N@2.5'	06/13/2024	2.5	40.503789	-104.488195	0.9	26.8
PWV01-W@2.5'	06/13/2024	2.5	40.503774	-104.488227	1.0	4.1
PWV01-S@2.5'	06/13/2024	2.5	40.503749	-104.488203	0.9	0.3
PWV01-E@2.5'	06/13/2024	2.5	40.503766	-104.488174	1.0	4.1
SEP01-DL@3'	06/13/2024	3	40.503576	-104.488155	0.9	0.7
MH01@0-6"	06/13/2024	0-0.5	40.503520	-104.488197	0.9	0.4
FLARE01@0-6"	06/13/2024	0-0.5	40.503468	-104.488276	0.8	0.2
FLARE02@0-6"	06/13/2024	0-0.5	40.503472	-104.488223	0.8	0.0
FL01R-S@3' ^[a]	06/13/2024	3	40.503523	-104.488143	0.9	0.1
BKG01@1'	06/13/2024	1	40.504102	-104.488445	0.8	0.0
BKG01@2'	06/13/2024	2	40.504102	-104.488445	0.8	0.0
BKG01@3'	06/13/2024	3	40.504102	-104.488445	0.8	0.0
BKG01@4'	06/13/2024	4	40.504102	-104.488445	0.8	0.1

Notes:

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum (NAD) 83 UTM Zone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

[a] Soil sample collected under the nearby Hagemeister USX AA07-05 Flowline, Rem #34083.

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
HAGEMEISTER USX AA07-05 TANK BATTERY, WELD COUNTY, COLORADO
REM # 34079

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**		
AST01@0-6"	06/13/2024	0-0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST02@0-6"	06/13/2024	0-0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV01-B@4'	06/13/2024	4	<0.0020	<0.0050	<0.0050	0.015	0.0064	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV01-N@2.5'	06/13/2024	2.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	0.0064	<0.0038	0.54	0.54	<50	<50
SEP01-DL@3'	06/13/2024	3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01R-S@3' ^[a]	06/13/2024	3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

Notes:

- Bold** values exceed the ECMC Table 915-1 limit(s).
- Pink & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL).
- * Indicates laboratory minimum detection limit in excess of SSL.
- ** Summation of GRO+DRO+ORO must be less than 500 mg/kg.

[a] Soil sample collected under the nearby Hagemeister USX AA07-05 Flowline, Rem #34083.

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
HAGEMEISTER USX AA07-05 TANK BATTERY, WELD COUNTY, COLORADO
REM # 34079

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
AST01@0-6"	06/13/2024	0-0.5	<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
AST02@0-6"	06/13/2024	0-0.5	<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
PWV01-B@4'	06/13/2024	4	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00574	<0.00500
PWV01-N@2.5'	06/13/2024	2.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00580	0.0169
SEP01-DL@3'	06/13/2024	3	<0.00500	<0.00500	0.0108	0.00567	0.00890	<0.00500	0.00941	<0.00500	0.0259	<0.00500	<0.00500	0.0252	<0.00500	<0.00500
FL01R-S@3 ^[a]	06/13/2024	3	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00562	<0.00500	<0.00500	0.00644	<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] Soil sample collected under the nearby Hagemeister USX AA07-05 Flowline, Rem #34083.

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
HAGEMEISTER USX AA07-05 TANK BATTERY, WELD COUNTY, COLORADO
REM # 34079

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
AST01@0-6'	06/13/2024	0-0.5	8.22	0.0853	0.00859	<2.00
AST02@0-6'	06/13/2024	0-0.5	7.89	0.0828	0.0319	<2.00
PWV01-B@4'	06/13/2024	4	9.05	0.248	0.281	<2.00
PWV01-N@2.5'	06/13/2024	2.5	8.47	0.320	1.08	<2.00
SEP01-DL@3'	06/13/2024	3	8.00	0.505	0.225	<2.00
FL01R-S@3' ^[a]	06/13/2024	3	8.35	0.306	0.0641	<2.00
BKG01@1'	06/13/2024	1	7.71	0.194	0.0417	NA
BKG01@2'	06/13/2024	2	8.18	0.185	0.0938	NA
BKG01@3'	06/13/2024	3	7.96	0.818	0.441	NA
BKG01@4'	06/13/2024	4	7.90	1.38	1.22	NA
Maximum Background Concentration			8.18	-	-	-

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) and are above native background concentrations.
3. Brown highlighted soil analytical values indicate a regulatory exceedance.

[a] Soil sample collected under the nearby Hagemester USX AA07-05 Flowline, Rem #34083.

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

NA = Constituent not analyzed

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY, INC. - 100322
HAGEMEISTER USX AA07-05 TANK BATTERY, WELD COUNTY, COLORADO
REM # 34079

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
AST01@0-6"	06/13/2024	0-0.5	1.84	23.9	<0.200	<0.30 ⁽⁴⁾	2.12	3.31	1.92	<0.260	<0.0200	9.97
AST02@0-6"	06/13/2024	0-0.5	2.36	32.9	<0.200	<0.30 ⁽⁴⁾	2.00	5.16	1.85	<0.260	<0.0200	9.25
PWV01-B@4'	06/13/2024	4	2.96	62.3	<0.200	<0.30 ⁽⁴⁾	3.08	4.34	3.47	<0.260	<0.0200	13.4
PWV01-N@2.5'	06/13/2024	2.5	1.79	29.3	<0.200	<0.30 ⁽⁴⁾	2.39	3.45	1.96	<0.260	<0.0200	11.1
SEP01-DL@3'	06/13/2024	3	2.76	46.2	<0.200	<0.30 ⁽⁴⁾	3.34	4.32	3.13	<0.260	<0.0200	14.6
FL01R-S@3' ^[a]	06/13/2024	3	2.49	47.7	0.193	<0.30 ⁽⁴⁾	3.55	4.71	3.19	<0.232	<0.0179	33.2
BKG01@1'	06/13/2024	1	1.96	21.5	<0.181	<0.30 ⁽⁴⁾	2.13	4.05	2.01	<0.236	<0.0181	10.2
BKG01@2'	06/13/2024	2	2.19	12.9	<0.200	<0.30 ⁽⁴⁾	1.70	2.53	1.49	<0.260	<0.0200	7.62
BKG01@3'	06/13/2024	3	2.34	43.4	<0.200	<0.30 ⁽⁴⁾	2.85	5.29	2.61	<0.260	<0.0200	12.4
BKG01@4'	06/13/2024	4	1.77	30.7	<0.200	<0.30 ⁽⁴⁾	2.39	3.16	2.24	<0.260	<0.0200	9.61
Maximum Background Concentration			2.34	-	-	-	-	-	-	-	-	-
Maximum Background Concentration X 1.25			2.93	-	-	-	-	-	-	-	-	-
Mean Background Concentration			2.07	-	-	-	-	-	-	-	-	-
Mean Background Concentration X 1.25			2.58	-	-	-	-	-	-	-	-	-

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) and are above native background concentrations.
- 3.** Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL).
- 4.** Compound falls within ECMC Table 915-1 Footnote 9.
- 5.** Non-detect background results accounted for in the highest background concentration by using the reporting limit.

[a] Soil sample collected under the nearby Hagemeister USX AA07-05 Flowline, Rem #34083.

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

Attachment B



SITE NAME: Hagemeister USX AA07-05 Tank Battery							DATE: 6/13/2024	REM. PROJECT #: 34079	WEATHER: 80s sunny		
SITE DIRECTIONS: CR61/CR70, 0.7N, E into							CLIENT: Noble				
LEGALS AND LAT/LONG: 40.503551, -104.488165							TASMAN PERSONNEL: David Vigil				
SOIL TYPES: Well Graded Sand - SW							SURFACE GRADIENT: North				
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			
6/13/2024 11:18	GS01 @ 0-6"	0.0	No Staining	No Odor	Yes	Grab	Buried or Partially Buried Vessel	1			
6/13/2024 11:20	GS02 @ 0-6"	0.1	No Staining	No Odor	Yes	Grab	Separator	1			
6/13/2024 11:25	AST01 @ 0-6"	0.1	No Staining	No Odor	Yes	Lab	Emission Control Device (ECD)	2			
6/13/2024 11:27	AST02 @ 0-6"	0.0	No Staining	No Odor	Yes	Lab	Dump Line	1			
6/13/2024 11:45	PWV01-B @ 4'	4.9	No Staining	No Odor	Yes	Lab	Wellhead				
6/13/2024 11:47	PWV01-N @ 2.5'	26.8	No Staining	No Odor	Yes	Lab	Flowline				
6/13/2024 11:50	PWV01-W @ 2.5'	4.1	No Staining	No Odor	Yes	On-hold	Other: Meter House	1			
6/13/2024 11:53	PWV01-S @ 2.5'	0.3	No Staining	No Odor	Yes	On-hold	Soil Loads Removed				
6/13/2024 11:56	PWV01-E @ 2.5'	4.1	No Staining	No Odor	Yes	On-hold	IMPACTED SOIL IDENTIFIED?				
6/13/2024 12:26	SEP01-DL @ 3'	0.7	No Staining	No Odor	Yes	Lab	ESTIMATED VOLUME OF IMPACTS:				
6/13/2024 12:28	MH01 @ 0-6"	0.4	No Staining	No Odor	Yes	Grab	Date	Number	CY		
6/13/2024 12:32	FLARE01 @ 0-6"	0.2	No Staining	No Odor	Yes	Grab					
6/13/2024 12:34	FLARE02 @ 0-6"	0.0	No Staining	No Odor	Yes	Grab					
6/13/2024 12:50	BKG01 @ 1'	0.0	No Staining	No Odor	Yes	Lab					
6/13/2024 12:52	BKG01 @ 2'	0.0	No Staining	No Odor	Yes	Lab					
6/13/2024 12:54	BKG01 @ 3'	0.0	No Staining	No Odor	Yes	Lab	Total Removed	0	0		
6/13/2024 12:56	BKG01 @ 4'	0.1	No Staining	No Odor	Yes	Lab	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:				



Equipment ID: GS01 @ 0-6"		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: W facing No facility equipment/infrastructure located at the proposed field screening location north of pad Field screen sample collected in approximate area of proposed location			

Equipment ID: GS02 @ 0-6"		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: E facing No facility equipment/infrastructure located at the proposed field screening location west of pad Field screen sample collected in approximate area of proposed location			



Equipment ID: AST01 @ 0-6"		Equipment Type:		Equipment ID: AST02 @ 0-6"		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: Sample taken from approximate footprint of north AST01 Tank removed prior to arrival on site (good condition) W facing				Notes/Conditions: Sample taken from approximate footprint of AST02 Tank removed prior to arrival on site (good condition) W facing			



Equipment ID: PWV01-B @ 4'		Equipment Type:		Equipment ID: PWV02-N @ 2.5'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: N facing				Notes/Conditions: N facing			



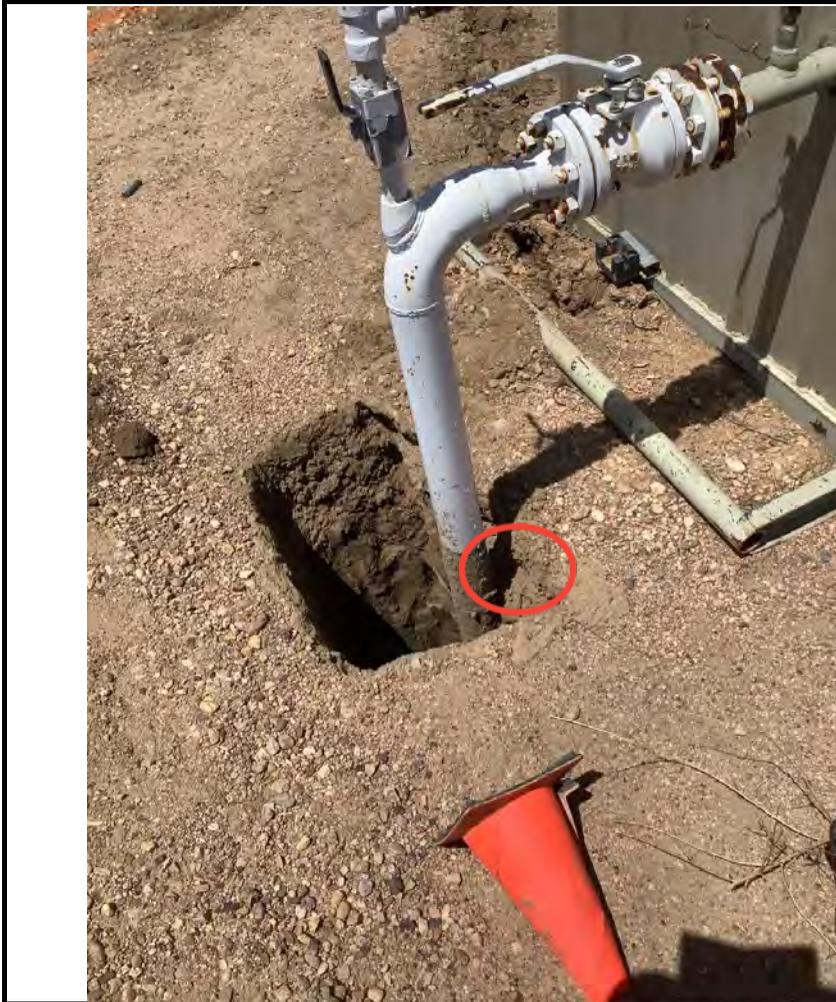
Equipment ID: PWV01-W		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: W facing			

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



Equipment ID: PWW01-E		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: E facing			

Equipment ID: SEP01-DL		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: N facing Separator/dump lines removed prior to arrival on site sample collected from underneath approximate area of dump line riser			



Equipment ID: MH01		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: W facing			

Equipment ID: FLARE01		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: N facing FLARE removed prior to arrival on site Sample collected from approximate location of flare			



Equipment ID: FLARE02		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: N facing FLARE removed prior to arrival on site Sample collected from approximate location of flare			

Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: dump lines removed prior to arrival on site Lines placed on ground, west side of pad N facing			



Equipment ID: BKG01		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: BKG01 collected N/NW of facility pad				Notes/Conditions:			



SITE NAME: Hagemeister USX AA07-05 Flowline							DATE: 6/13/2024	REM. PROJECT #: 34083	WEATHER: 80s sunny
SITE DIRECTIONS: CR61/CR70, 0.7N, E 100', 0.1SE into site area							CLIENT: Noble		
LEGALS AND LAT/LONG: 40.502430, -104.487010							TASMAN PERSONNEL: David Vigil		
SOIL TYPES: Silty Sand - SM							SURFACE GRADIENT: Northeast		
SOIL SAMPLING							FACILITY INFRASTRUCTURE		
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT	Quantity	Photo?
6/13/2024 11:00	FL01R-W@3'	0.7	No Staining	No Odor	Yes	Lab	Above Ground Storage Tank (AST)		
6/13/2024 12:23	FL01R-S@3'	0.1	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel		
							Separator		
							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:		



Equipment ID: FL01R-W @ 3'		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: Sample collected beneath flowline riser at the former wellhead S facing			

Equipment ID: FL01R-S@3'		Equipment Type: Flowline	
Material: Steel	Volume:	Contents: Pill / Gas / Water	
Notes/Conditions: S facing			