










SITE NAME: Darlene Dinnel 01 FAC							DATE: 4/24/2024	REM. PROJECT #: 32671	WEATHER: Sunny, 70s	
SITE DIRECTIONS:							CLIENT: Noble			
LEGALS AND LAT/LONG: 40.290908, 104.543600							TASMAN PERSONNEL: HJ, LB			
SOIL TYPES:							SURFACE GRADIENT:			
SOIL SAMPLING							FACILITY INFRASTRUCTURE			
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT		Quantity	
							Above Ground Storage Tank (AST)		4	
4/24/2024 10:21	SEP01-FL@4'	15.1	No Staining	Organic Odor	Yes	Lab	Buried or Partially Buried Vessel		4	
4/24/2024 10:22	SEP01-DL@4'	4.1	No Staining	No Odor	Yes	Lab	Separator		1	
4/24/2024 10:32	MH01@6"	0.5	No Staining	No Odor	Yes	Grab	Emission Control Device (ECD)			
4/24/2024 10:37	FLARE01@6"	1.2	No Staining	No Odor	Yes	Grab	Dump Line		1	
4/24/2024 10:38	FLARE02@6"	0.6	No Staining	No Odor	Yes	Grab	Wellhead			
4/24/2024 11:48	PWV01-B@4'	451.6	HC Staining	Strong HC Odor	Yes	Lab	Flowline			
4/24/2024 11:51	PWV01-N@3'	277.5	HC Staining	Slight HC Odor	Yes	Lab	Other: Meterhouse, 2 Flares			
4/24/2024 11:53	PWV01-W@3'	64.3	HC Staining	Slight HC Odor	Yes	Lab	Soil Loads Removed			
4/24/2024 11:54	PWV01-S@3'	46.8	HC Staining	Slight HC Odor	Yes	Lab	IMPACTED SOIL IDENTIFIED?			
4/24/2024 11:56	PWV02-B@4'	154.9	No Staining	No Odor	Yes	Lab	ESTIMATED VOLUME OF IMPACTS:			
4/24/2024 11:58	PWV02-S@3'	18.5	No Staining	No Odor	Yes	Lab	Date	Number	CY	
4/24/2024 12:00	PWV02-N@3'	147.7	No Staining	No Odor	Yes	Lab				
4/24/2024 12:01	PWV03-N@3'	6.5	HC Staining	No Odor	Yes	Lab				
4/24/2024 12:03	PWV03-B@4'	78.4	No Staining	No Odor	Yes	Lab				
4/24/2024 12:05	PWV03-S@3'	263.4	No Staining	Slight HC Odor	Yes	Lab				
4/24/2024 12:07	PWV04-N@3'	9.4	No Staining	No Odor	Yes	Lab	Total Removed		0	0
4/24/2024 12:09	PWV04-B@4'	9.2	No Staining	No Odor	Yes	Lab	Disposal Facility:			
4/24/2024 12:10	PWV04-S@3'	5.6	No Staining	No Odor	Yes	Lab	Groundwater Recovery			
4/24/2024 12:11	PWV04-E@3'	5.5	No Staining	No Odor	Yes	Lab	DATE GW ENCOUNTERED:		DEPTH:	
4/24/2024 13:14	BKG01 @ 3'	2.0	No Staining	No Odor	Yes	Lab	GROUNDWATER IN CONTACT WITH IMPACTED SOIL?			
4/24/2024 13:15	BKG01 @ 4'	2.2	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:			



[illegible]



							
Equipment ID: SEP01-FL@4'		Equipment Type:		Equipment ID: SEP01-DL@4'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			



											
Equipment ID: MH01@6"		Equipment Type:		Equipment ID: FLARE01@6"		Equipment Type:					
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					



					
Equipment ID: FLARE02@6"		Equipment Type:			
Material:	Volume:	Contents:	Equipment ID: PWV01-B@4'		Equipment Type:
			Material:		Volume:
			Contents:		
Notes/Conditions:			Notes/Conditions:		



											
Equipment ID: PWV01-N@3'		Equipment Type:		Equipment ID: PWV01-W@3'		Equipment Type:					
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					



											
Equipment ID: PWV01-S@3'		Equipment Type:		Equipment ID: PWV02-B@4'		Equipment Type:					
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					



											
Equipment ID: PWV02-S@3'		Equipment Type:		Equipment ID: PWV02-N@3'		Equipment Type:					
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					

							
Equipment ID: PWV03-N@3'		Equipment Type:		Equipment ID: PWV03-B@4'		Equipment Type:	
Material:		Volume:		Contents:		Material:	
Volume:		Contents:		Material:		Volume:	
Notes/Conditions:				Notes/Conditions:			

											
Equipment ID: PWV03-S@3'		Equipment Type:		Equipment ID: PWV04-N@3'		Equipment Type:					
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					

											
Equipment ID: PWV04-B@4'		Equipment Type:		Equipment ID: PWV04-S@3'		Equipment Type:					
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					

							
Equipment ID: PWV04-E@3'		Equipment Type:		Equipment ID: BKG01@3' and 4'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			

							
Equipment ID: AST01@6"		Equipment Type:		Equipment ID: AST02@6"		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			



											
Equipment ID: AST03@6"		Equipment Type:		Equipment ID: AST04@6"		Equipment Type:					
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					

TABLE 1
FIELD DATA SUMMARY TABLE
OPERATOR (NOBLE 100322)
DARLENE DINNEL 1 FACILITY, WELD COUNTY, COLORADO
REM # 32671

Sample ID	Sample Date	Depth (bgs)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
AST01@0-6"	4/24/2024	0-6"	40.290954	-104.544090	0.7	12.9
AST02@0-6"	4/24/2024	0-6"	40.290954	-104.544034	0.7	35.2
AST03@0-6"	4/24/2024	0-6"	40.290948	-104.543985	0.7	47.5
AST04@0-6"	4/24/2024	0-6"	40.290945	-104.543927	0.7	7.0
FLARE01@0-6"	4/24/2024	0-6"	40.290984	-104.543578	0.8	1.2
FLARE02@0-6"	4/24/2024	0-6"	40.290966	-104.543543	0.8	0.6
MH01@0-6"	4/24/2024	0-6"	40.290907	-104.543535	0.8	0.5
PWV01-B@4'	4/24/2024	4'	40.290993	-104.544075	1.0	451.6
PWV01-N@3'	4/24/2024	3'	40.291014	-104.544079	1.0	277.5
PWV01-S@3'	4/24/2024	3'	40.290979	-104.544084	1.0	46.8
PWV01-W@3'	4/24/2024	3'	40.290996	-104.544114	1.1	64.3
PWV02-B@4'	4/24/2024	4'	40.290996	-104.544029	1.0	154.9
PWV02-N@3'	4/24/2024	3'	40.291013	-104.544020	1.0	147.7
PWV02-S@3'	4/24/2024	3'	40.290968	-104.544003	1.0	18.5
PWV03-B@4'	4/24/2024	4'	40.290984	-104.543949	1.1	78.4
PWV03-N@3'	4/24/2024	3'	40.291001	-104.543946	1.1	6.5
PWV03-S@3'	4/24/2024	3'	40.290965	-104.543958	1.1	263.4
PWV04-B@4'	4/24/2024	4'	40.290987	-104.543901	1.0	9.2
PWV04-E@4'	4/24/2024	4'	40.290986	-104.543872	1.0	5.5
PWV04-N@3'	4/24/2024	3'	40.290999	-104.543887	1.0	9.4
PWV04-S@4'	4/24/2024	4'	40.290963	-104.543904	1.1	5.6
SEP01-DL@4'	4/24/2024	4'	40.290889	-104.543665	0.9	4.1
SEP01-FL@4'	4/24/2024	4'	40.290910	-104.543603	0.9	15.1
BKG01@3'	4/24/2024	3'	40.290859	-104.543264	1.0	2.0
BKG01@4'	4/24/2024	4'	40.290859	-104.543264	1.0	2.2

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).

PDOP = Position Dilution of Precision
ppm = Parts per million
in. = Inches
ft. = Feet
NC = Not Collected
bgs = Below ground surface

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
OPERATOR (NOBLE 100322)
DARLENE DINNEL 1 FACILITY, WELD COUNTY, COLORADO
REM # 32671

Sample ID	Sample Date	Depth (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"	4/24/2024	0-6"	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST02@0-6"	4/24/2024	0-6"	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST03@0-6"	4/24/2024	0-6"	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST04@0-6"	4/24/2024	0-6"	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV01-B@4'	4/24/2024	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	4.90	<50	<50
PWV01-N@3'	4/24/2024	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV01-S@3'	4/24/2024	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV01-W@3'	4/24/2024	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV02-B@4'	4/24/2024	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	1.30	<50	<50
PWV02-N@3'	4/24/2024	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	0.960	<50	<50
PWV02-S@3'	4/24/2024	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV03-B@4'	4/24/2024	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV03-N@3'	4/24/2024	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV03-S@3'	4/24/2024	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	0.600	<50	<50
PWV04-B@4'	4/24/2024	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV04-E@4'	4/24/2024	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV04-N@3'	4/24/2024	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV04-S@4'	4/24/2024	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01-DL@4'	4/24/2024	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01-FL@4'	4/24/2024	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
BKG01@3'	4/24/2024	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
BKG01@4'	4/24/2024	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

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
< = Analytical result is less than the indicated laboratory reporting limit
TPH - Total petroleum hydrocarbons
mg/kg = Milligrams per kilogram
'= Feet
" = Inches

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
OPERATOR (NOBLE 100322)
DARLENE DINNEL 1 FACILITY, WELD COUNTY, COLORADO
REM # 32671

Sample ID	Sample Date	Depth (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	1800	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"	4/24/2024	0-6"	<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"	4/24/2024	0-6"	<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
AST03@0-6"	4/24/2024	0-6"	<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
AST04@0-6"	4/24/2024	0-6"	<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'	4/24/2024	4'	0.00979	0.0301	0.00721	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0266	<0.00500	<0.00500	0.0362	0.0257
PWV01-N@3'	4/24/2024	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
PWV01-S@3'	4/24/2024	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
PWV01-W@3'	4/24/2024	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
PWV02-B@4'	4/24/2024	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	<0.00500	<0.00500
PWV02-N@3'	4/24/2024	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
PWV02-S@3'	4/24/2024	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
PWV03-B@4'	4/24/2024	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	<0.00500	<0.00500
PWV03-N@3'	4/24/2024	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
PWV03-S@3'	4/24/2024	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
PWV04-B@4'	4/24/2024	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	0.00518	0.00964
PWV04-E@4'	4/24/2024	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	<0.00500	<0.00500
PWV04-N@3'	4/24/2024	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
PWV04-S@4'	4/24/2024	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	<0.00500	<0.00500
SEP01-DL@4'	4/24/2024	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	<0.00500	<0.00500
SEP01-FL@4'	4/24/2024	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	<0.00500	<0.00500
BKG01@3'	4/24/2024	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
BKG01@4'	4/24/2024	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	<0.00500	<0.00500

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
ft. = Feet
mg/kg = Milligrams per kilogram
" = Inches
' = feet
< = Analytical result is less than the indicated laboratory reporting limit

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
OPERATOR (NOBLE 100322)
DARLENE DINNEL 1 FACILITY, WELD COUNTY, COLORADO
REM # 32671

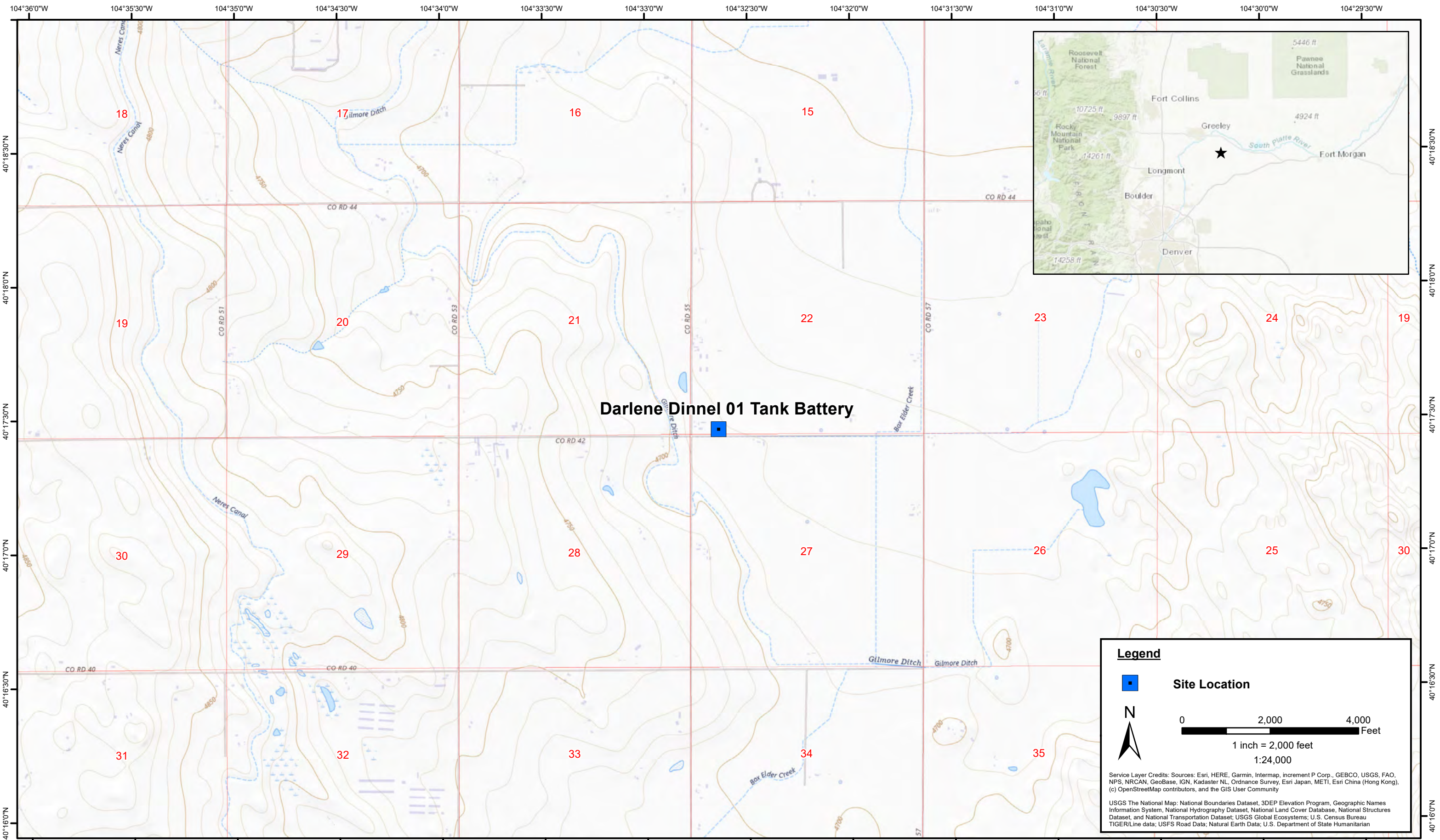
Sample ID	Sample Date	Depth (bgs)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
AST01@0-6"	4/24/2024	0-6"	8.22	2.40	2.56	<2.00
AST02@0-6"	4/24/2024	0-6"	8.70	0.530	1.63	<2.00
AST03@0-6"	4/24/2024	0-6"	9.15	0.187	0.275	<2.00
AST04@0-6"	4/24/2024	0-6"	9.04	0.299	0.373	<2.00
PWV01-B@4'	4/24/2024	4'	8.15	0.805	0.796	<2.00
PWV01-N@3'	4/24/2024	3'	8.50	0.503	2.06	<2.00
PWV01-S@3'	4/24/2024	3'	8.82	0.372	0.679	<2.00
PWV01-W@3'	4/24/2024	3'	7.98	0.710	0.197	<2.00
PWV02-B@4'	4/24/2024	4'	8.31	0.694	1.02	<2.00
PWV02-N@3'	4/24/2024	3'	8.36	0.682	1.94	<2.00
PWV02-S@3'	4/24/2024	3'	9.02	0.247	0.444	<2.00
PWV03-B@4'	4/24/2024	4'	8.76	0.619	1.42	<2.00
PWV03-N@3'	4/24/2024	3'	8.89	0.274	0.348	<2.00
PWV03-S@3'	4/24/2024	3'	8.55	0.543	1.66	<2.00
PWV04-B@4'	4/24/2024	4'	9.23	0.318	0.277	<2.00
PWV04-E@4'	4/24/2024	4'	9.25	1.18	0.209	<2.00
PWV04-N@3'	4/24/2024	3'	9.12	0.158	0.124	<2.00
PWV04-S@4'	4/24/2024	4'	9.19	0.230	0.674	3.05
SEP01-DL@4'	4/24/2024	4'	8.91	0.326	0.255	<2.00
SEP01-FL@4'	4/24/2024	4'	8.30	0.306	0.114	<2.00
BKG01@3'	4/24/2024	3'	9.05	0.405	0.597	NA
BKG01@4'	4/24/2024	4'	8.25	0.602	1.52	NA
Maximum Root Background Concentration (0 - 3 ft)			9.05			
Mean Root Background Concentration (0 - 3 ft)			9.05			
Maximum Background Concentration			9.05			
Mean Background Concentration			8.65			

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s)
- 2.Brown highlighted soil analytical values indicate a regulatory exceedance, but below background concentration.
- SAR = Sodium Adsorption Ratio
- EC = Electrical Conductivity
- mmhos/cm = Millmhos per centimeter
- mg/L = Milligrams per liter
- NA = Constituent not analyzed
- '= Feet
- " = Inches
- < = Analytical result is less than the indicated laboratory reporting limit

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
OPERATOR (NOBLE 1003225)
DARLENE DINNEL 1 FACILITY, WELD COUNTY, COLORADO
REM # 32671

Sample ID	Sample Date	Depth (bgs)	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 Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
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"	4/24/2024	0-6"	4.23	96.1	0.740	<0.30	18.0	14.5	24.5	<0.232	0.0481	25.8
AST02@0-6"	4/24/2024	0-6"	3.36	56.9	<0.200	<0.30	6.99	6.39	6.19	<0.260	<0.0200	20.6
AST03@0-6"	4/24/2024	0-6"	2.29	76.5	0.243	<0.30	8.18	6.57	6.61	<0.260	<0.0200	28.6
AST04@0-6"	4/24/2024	0-6"	1.98	54.2	0.249	<0.30	8.97	9.01	6.26	<0.234	0.022	30.9
PWV01-B@4'	4/24/2024	4'	2.90	157	<0.200	<0.30	5.95	6.50	5.84	<0.260	<0.0200	17.8
PWV01-N@3'	4/24/2024	3'	4.31	160	0.288	<0.30	13.3	11.5	13.4	<0.260	0.0355	25.5
PWV01-S@3'	4/24/2024	3'	4.15	112	0.255	<0.30	12.2	8.56	12.6	<0.260	0.0455	22.2
PWV01-W@3'	4/24/2024	3'	2.66	58.8	<0.200	<0.30	6.92	6.76	6.42	<0.260	0.0234	59.1
PWV02-B@4'	4/24/2024	4'	3.34	52.0	<0.200	<0.30	7.02	6.86	6.60	<0.260	0.0232	19.5
PWV02-N@3'	4/24/2024	3'	2.89	65.0	<0.200	<0.30	8.21	6.52	6.59	<0.260	0.0216	20.9
PWV02-S@3'	4/24/2024	3'	3.68	442	<0.200	<0.30	7.64	8.05	7.72	<0.260	<0.0200	20.5
PWV03-B@4'	4/24/2024	4'	11.8	68.4	0.240	<0.30	13.6	9.08	7.40	<0.260	0.0267	21.0
PWV03-N@3'	4/24/2024	3'	3.92	55.9	0.208	<0.30	8.01	7.43	7.88	<0.260	<0.0200	19.0
PWV03-S@3'	4/24/2024	3'	2.64	61.7	<0.200	<0.30	6.17	6.01	5.79	<0.260	0.0226	17.6
PWV04-B@4'	4/24/2024	4'	3.52	62.8	<0.200	<0.30	6.50	6.46	6.83	<0.260	0.0216	22.9
PWV04-E@4'	4/24/2024	4'	3.03	73.7	<0.200	<0.30	7.78	7.29	7.64	<0.260	0.0254	19.3
PWV04-N@3'	4/24/2024	3'	3.08	59.0	<0.200	<0.30	7.72	7.85	6.52	<0.260	<0.0200	22.6
PWV04-S@4'	4/24/2024	4'	2.89	73.5	<0.181	<0.30	6.35	6.19	7.54	<0.236	0.0424	18.4
SEP01-DL@4'	4/24/2024	4'	1.96	46.3	<0.200	<0.30	4.94	5.20	4.80	<0.260	<0.0200	14.7
SEP01-FL@4'	4/24/2024	4'	2.15	49.2	0.203	<0.30	11.6	5.75	5.26	<0.236	0.0356	20.2
BKG01@3'	4/24/2024	3'	3.63	110	<0.200	<0.30	9.02	8.12	8.68	<0.260	0.0335	20.00
BKG01@4'	4/24/2024	4'	1.86	65.5	<0.200	<0.30	4.71	4.65	4.46	<0.260	<0.0200	15.1
Maximum Root Background Concentration X 1.25 (0 - 3 ft)			4.54	138	0.300	-	-	10.2	-	-	-	-
Mean Root Background Concentration X 1.25 (0 - 3 ft)			4.54	138	0.300	-	-	10.2	-	-	-	-
Maximum Background Concentration X 1.25			4.54	138	0.300	-	-	10.2	-	-	-	-
Mean Background Concentration X 1.25			3.43	110	0.300	-	-	7.98	-	-	-	-

1. **Bold** values exceed the ECMC Table 915-1 limit(s)
2. Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
* Indicates laboratory minimum detection limit in excess of SSL
" = Inches
' = Feet
bgs= Below Ground Surface
mg/kg = Milligrams per kilogram
< = Analytical result is less than the indicated laboratory reporting limit



DATE:	June 2024
DESIGNED BY:	J. Whritenour
DRAWN BY:	L. Reed

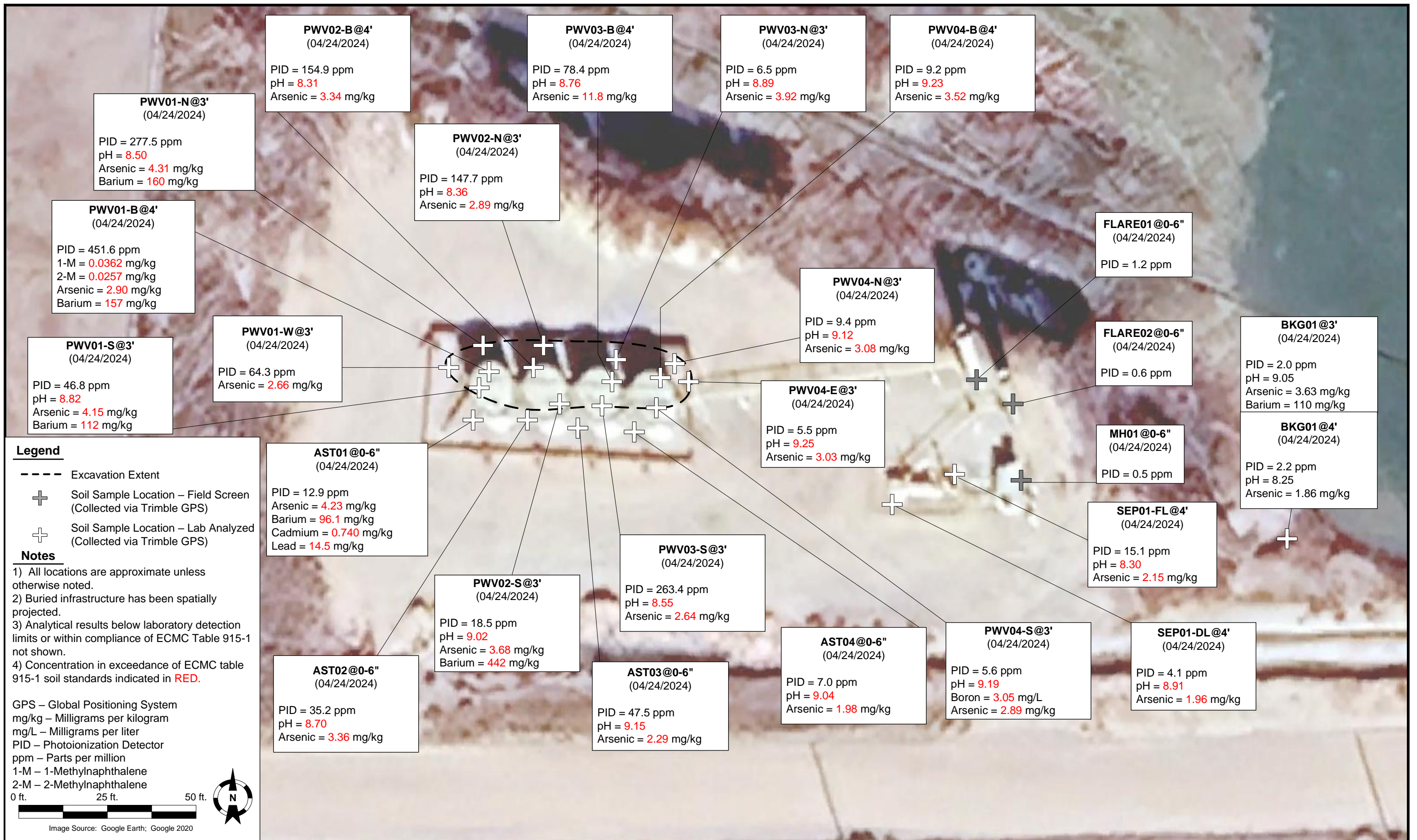


Tasman, Inc.
6855 W. 119th Ave
Broomfield, CO 80020

Noble Energy, Inc. – DJ Basin
Darlene Dinnel 01 Tank Battery
SWNW, Section 22, Township 4 North, Range 64 West
Weld County, Colorado

Site Location Map

Figure
1



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 11, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

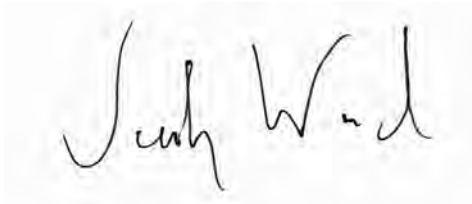
Broomfield, CO 80020

RE: Noble - Darlene Dinnel 01 Facility

Work Order #2404413

Enclosed are the results of analyses for samples received by Summit Scientific on 04/24/24 17:39. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Jacob Wood". The signature is written in a cursive, flowing style.

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

ANALYTICAL REPORT FOR SAMPLES

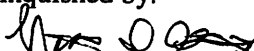

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01-FL@4'	2404413-01	Soil	04/24/24 10:21	04/24/24 17:39
SEP01-DL@4'	2404413-02	Soil	04/24/24 10:22	04/24/24 17:39
PWV01-B@4'	2404413-03	Soil	04/24/24 11:48	04/24/24 17:39
PWV01-N@3'	2404413-04	Soil	04/24/24 11:51	04/24/24 17:39
PWV01-W@3'	2404413-05	Soil	04/24/24 11:53	04/24/24 17:39
PWV01-S@3'	2404413-06	Soil	04/24/24 11:54	04/24/24 17:39
PWV02-B@4'	2404413-07	Soil	04/24/24 11:56	04/24/24 17:39
PWV02-S@3'	2404413-08	Soil	04/24/24 11:58	04/24/24 17:39
PWV02-N@3'	2404413-09	Soil	04/24/24 12:00	04/24/24 17:39
PWV03-N@3'	2404413-10	Soil	04/24/24 12:01	04/24/24 17:39
PWV03-B@4'	2404413-11	Soil	04/24/24 12:03	04/24/24 17:39
PWV03-S@3'	2404413-12	Soil	04/24/24 12:05	04/24/24 17:39
PWV04-N@3'	2404413-13	Soil	04/24/24 12:07	04/24/24 17:39
PWV04-B@4'	2404413-14	Soil	04/24/24 12:09	04/24/24 17:39
PWV04-S@3'	2404413-15	Soil	04/24/24 12:10	04/24/24 17:39
PWV04-E@3'	2404413-16	Soil	04/24/24 12:11	04/24/24 17:39
BKG01@3'	2404413-17	Soil	04/24/24 13:14	04/24/24 17:39
BKG01@4'	2404413-18	Soil	04/24/24 13:15	04/24/24 17:39
AST01@6"	2404413-19	Soil	04/24/24 13:25	04/24/24 17:39
AST02@6"	2404413-20	Soil	04/24/24 13:26	04/24/24 17:39
AST03@6"	2404413-21	Soil	04/24/24 13:27	04/24/24 17:39
AST04@6"	2404413-22	Soil	04/24/24 13:28	04/24/24 17:39

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.




Client: Noble / Tasman	Send Data To: Project Manager: Jake Whritenour	Send Invoice To: Company: Chevron
Address: 6855 W. 119th Ave	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location:
City/State/Zip: Broomfield, CO 80020		AFE#:
Phone: 517-231-8618	Project Name: Dackoe Dinnel Oil Facility	PO/Billing Codes:
Sampler Name: Hunter Sewell	Project Number:	Contact:

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	VOC - 915	TPH - 915	PAH - 915	pH,EC,SAR	Boron - HWS	Metals - 915	HOLD			
1	SEP01-FL@4'	4-24-24	1021	3			X			X			X	X	X	X	X	X	X		pH, EC, SAR by saturated paste	
2	SEP01-DL@4'		1022																			
3	PWV01-B@4'		1148																			
4	PWV01-N@3'		1151																			
5	PWV01-W@3'		1153																			
6	PWV01-S@3'		1154																			
7	PWV02-B@4'		1156																			
8	PWV02-S@3'		1158																			
9	PWV02-N@3'		1200																			
10	PWV03-N@3'		1201																			
11	PWV03-B@4'		1203																			
12	PWV03-S@3'		1205																			
13	PWV04-N@3'		1207																			
14	PWV04-B@4'		1209																			
15	PWV04-S@3'		1210																			

Relinquished by: 	Date/Time: 4-24-24 1530	Received by: Tasman Lock Box	Date/Time: 4-24-24 1530	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lock Box	Date/Time: 4-24-24 1739	Received by: 	Date/Time: 4-24-24 1739	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 13.9	Corrected Temperature: 0	IR gun #: 1	HNO3 lot #:			

Client: Noble / Tasman	Send Data To: Project Manager: Jake Whritenour	Send Invoice To:
Address: 6855 W. 119th Ave	E-Mail: Jwhritenour@tasman-geo.com	Company: Chevron
City/State/Zip: Broomfield, CO 80020		Project Name/Location:
Phone: 517-231-8618	Project Name: Darlene Diesel Oil Facility	AFE#:
Sampler Name: Hunter Jewell	Project Number:	PO/Billing Codes:
		Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	VOC - 915	TPH - 915	PAH - 915	pH,EC,SAR	Boron - HWS	Metals - 915	HOLD		
1	PWV04-E @ 3'	4-24-24	1211	3			X			X			X	X	X	X	X	X		pH, EC, SAR by saturated paste	
2	BKG01 @ 3'		1314										X	X	X	X	X	X			
3	BKG01 @ 4'		1315													X					
4	AST01 @ 6"		1325													X					
5	AST02 @ 6"		1326										X	X	X	X	X				
6	AST03 @ 6"		1327																		
7	AST04 @ 6"	↓	1328	↓				↓		↓			↓	↓	↓	↓	↓	↓			
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: 	Date/Time: 4-24-24 1534	Received by: Tasman Lock Box	Date/Time: 4-24-24 1530	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: 	Date/Time: 4/24/24 1739	Received by: 	Date/Time: 4/24/24 1739	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 13.9	Corrected Temperature: 8	IR gun #: 1	HNO3 lot #:			

S₂2/2
Sample Receipt Checklist

S2 Work Order# 2404413

Client: Noddman

Client Project ID:

Darlene Dinnel ol facilityShipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

13.9

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OK
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS
Custodian Printed Name

4/24/24
Date/Time



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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

SEP01-FL@4'
2404413-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHD0989	04/26/24	04/26/24	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0411	103 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0427	107 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.64	69.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

SEP01-FL@4'
2404413-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0238	71.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0216	64.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0927	04/25/24	05/20/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

SEP01-FL@4'
2404413-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.15	0.181	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	49.2	0.362	"	"	"	"	"	"
Cadmium	0.203	0.181	"	"	"	"	"	"
Copper	11.6	0.362	"	"	"	"	"	"
Lead	5.75	0.181	"	"	"	"	"	"
Nickel	5.26	0.362	"	"	"	"	"	"
Silver	0.0356	0.0181	"	"	"	"	"	"
Zinc	20.2	0.362	"	"	"	"	"	"
Selenium	ND	0.236	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	94.3	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	11.4	0.0500	"	"	"	"	"	"	
Sodium	4.42	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.114	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

SEP01-FL@4'
2404413-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	87.5	%	1	BHD0934	04/25/24	04/25/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.306	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.30		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

06/11/24 12:07

SEP01-DL@4'

2404413-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/26/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0406	102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0366	91.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0413	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.34	66.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

SEP01-DL@4'
2404413-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0233	69.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0205	61.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0927	04/25/24	05/20/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

SEP01-DL@4'
2404413-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.96	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	46.3	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.94	0.400	"	"	"	"	"	"
Lead	5.20	0.200	"	"	"	"	"	"
Nickel	4.80	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	14.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	278	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	55.1	0.0500	"	"	"	"	"	"	
Sodium	17.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.255	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

06/11/24 12:07

SEP01-DL@4'

2404413-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.7		%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.326	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.91		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-B@4'
2404413-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/26/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	4.9	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0292	73.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0368	92.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.77	54.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-B@4'
2404413-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.00979	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	0.0301	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.00721	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0266	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0362	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0257	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0194	58.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0238	71.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHD0927	04/25/24	05/20/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-B@4'
2404413-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.90	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	157	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.95	0.400	"	"	"	"	"	"
Lead	6.50	0.200	"	"	"	"	"	"
Nickel	5.84	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	17.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	44.4	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	12.1	0.0500	"	"	"	"	"	"	
Sodium	23.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.796	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-B@4'
2404413-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.6		%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.805	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.15		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-N@3'
2404413-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/26/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0368	91.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.26	66.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-N@3'
2404413-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0232	69.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0257	77.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHD0927	04/25/24	05/20/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-N@3'
2404413-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	4.31	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	160	0.400	"	"	"	"	"	"
Cadmium	0.288	0.200	"	"	"	"	"	"
Copper	13.3	0.400	"	"	"	"	"	"
Lead	11.5	0.200	"	"	"	"	"	"
Nickel	13.4	0.400	"	"	"	"	"	"
Silver	0.0355	0.0200	"	"	"	"	"	"
Zinc	25.5	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	103	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	11.3	0.0500	"	"	"	"	"	"	
Sodium	82.6	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.06	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-N@3'
2404413-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	78.1	%	1	BHD0934	04/25/24	04/25/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.503	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.50		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

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6855 W. 119th Ave.
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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-W@3'
2404413-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/26/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0321	80.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0400	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0489	122 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.78	54.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-W@3'
2404413-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0254	76.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0271	81.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0927	04/25/24	05/20/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-W@3'
2404413-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.66	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	58.8	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	6.92	0.400	"	"	"	"	"	"
Lead	6.76	0.200	"	"	"	"	"	"
Nickel	6.42	0.400	"	"	"	"	"	"
Silver	0.0234	0.0200	"	"	"	"	"	"
Zinc	59.1	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	42.4	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	10.7	0.0500	"	"	"	"	"	"	
Sodium	5.53	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.197	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

06/11/24 12:07

PWV01-W@3'

2404413-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.9		%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.710	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.98		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-S@3'
2404413-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/26/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0342	85.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0373	93.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0418	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.79	54.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

06/11/24 12:07

PWV01-S@3'
2404413-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0182	54.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0187	56.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-S@3'
2404413-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	4.15	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	112	0.400	"	"	"	"	"	"
Cadmium	0.255	0.200	"	"	"	"	"	"
Copper	12.2	0.400	"	"	"	"	"	"
Lead	8.56	0.200	"	"	"	"	"	"
Nickel	12.6	0.400	"	"	"	"	"	"
Silver	0.0455	0.0200	"	"	"	"	"	"
Zinc	22.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.1	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	7.30	0.0500	"	"	"	"	"	"	
Sodium	18.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.679	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV01-S@3'
2404413-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.7	%	1	BHD0934	04/25/24	04/25/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.372	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.82		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV02-B@4'
2404413-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/26/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.3	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0339	84.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0439	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0416	104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.50	60.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV02-B@4'
2404413-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0230	68.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0246	73.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV02-B@4'
2404413-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.34	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	52.0	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	7.02	0.400	"	"	"	"	"	"
Lead	6.86	0.200	"	"	"	"	"	"
Nickel	6.60	0.400	"	"	"	"	"	"
Silver	0.0232	0.0200	"	"	"	"	"	"
Zinc	19.5	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	71.6	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	25.8	0.0500	"	"	"	"	"	"	
Sodium	39.6	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.02	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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6855 W. 119th Ave.
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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV02-B@4'
2404413-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	86.1			%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.694	0.0100		mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 11:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.31			pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

06/11/24 12:07

PWV02-S@3'

2404413-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/26/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0329	82.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0373	93.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0429	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.66	61.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV02-S@3'
2404413-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0204	61.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0184	55.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV02-S@3'
2404413-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.68	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	442	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	7.64	0.400	"	"	"	"	"	"
Lead	8.05	0.200	"	"	"	"	"	"
Nickel	7.72	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	20.5	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	64.0	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	9.47	0.0500	"	"	"	"	"	"	
Sodium	14.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.444	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV02-S@3'
2404413-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	84.7			%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.247	0.0100		mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 11:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	9.02			pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV02-N@3'
2404413-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/26/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.96	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0309	77.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0419	105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.00	56.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
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Reported:
06/11/24 12:07

PWV02-N@3'
2404413-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0200	59.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0193	57.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV02-N@3'
2404413-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.89	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	65.0	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	8.21	0.400	"	"	"	"	"	"
Lead	6.52	0.200	"	"	"	"	"	"
Nickel	6.59	0.400	"	"	"	"	"	"
Silver	0.0216	0.0200	"	"	"	"	"	"
Zinc	20.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	42.1	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	11.9	0.0500	"	"	"	"	"	"	
Sodium	55.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.94	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV02-N@3'
2404413-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	88.1			%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.682	0.0100		mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.36			pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV03-N@3'
2404413-10 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/27/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0338	84.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0374	93.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0406	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.00	72.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV03-N@3'
2404413-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0216	64.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0215	64.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV03-N@3'
2404413-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.92	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	55.9	0.400	"	"	"	"	"	"
Cadmium	0.208	0.200	"	"	"	"	"	"
Copper	8.01	0.400	"	"	"	"	"	"
Lead	7.43	0.200	"	"	"	"	"	"
Nickel	7.88	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	19.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	85.4	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	9.41	0.0500	"	"	"	"	"	"	
Sodium	12.7	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.348	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV03-N@3'
2404413-10 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.9		%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.274	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.89		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV03-B@4'
2404413-11 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/27/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0333	83.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0410	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0450	112 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.32	58.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV03-B@4'
2404413-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0254	76.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0275	82.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV03-B@4'
2404413-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	11.8	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	68.4	0.400	"	"	"	"	"	"
Cadmium	0.240	0.200	"	"	"	"	"	"
Copper	13.6	0.400	"	"	"	"	"	"
Lead	9.08	0.200	"	"	"	"	"	"
Nickel	7.40	0.400	"	"	"	"	"	"
Silver	0.0267	0.0200	"	"	"	"	"	"
Zinc	21.0	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.3	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	15.1	0.0500	"	"	"	"	"	"	
Sodium	42.5	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.42	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV03-B@4'
2404413-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.8	%	1	BHD0934	04/25/24	04/25/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.619	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 12:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.76		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV03-S@3'
2404413-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/27/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.60	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0330	82.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0415	104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.95	55.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV03-S@3'
2404413-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0224	67.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0263	78.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV03-S@3'
2404413-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.64	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	61.7	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	6.17	0.400	"	"	"	"	"	"
Lead	6.01	0.200	"	"	"	"	"	"
Nickel	5.79	0.400	"	"	"	"	"	"
Silver	0.0226	0.0200	"	"	"	"	"	"
Zinc	17.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	42.2	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	14.4	0.0500	"	"	"	"	"	"	
Sodium	49.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.66	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV03-S@3'
2404413-12 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.5		%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.543	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.55		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-N@3'
2404413-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/27/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0321	80.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0387	96.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0420	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.73	61.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-N@3'
2404413-13 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0224	67.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0230	69.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-N@3'
2404413-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.08	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	59.0	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	7.72	0.400	"	"	"	"	"	"
Lead	7.85	0.200	"	"	"	"	"	"
Nickel	6.52	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	22.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	205	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	18.3	0.0500	"	"	"	"	"	"	
Sodium	6.88	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.124	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-N@3'
2404413-13 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.6		%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.158	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 12:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.12		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-B@4'
2404413-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/27/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0290	72.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0416	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.59	52.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-B@4'
2404413-14 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.00518	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.00964	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0236	70.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0301	90.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-B@4'
2404413-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.52	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	62.8	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	6.50	0.400	"	"	"	"	"	"
Lead	6.46	0.200	"	"	"	"	"	"
Nickel	6.83	0.400	"	"	"	"	"	"
Silver	0.0216	0.0200	"	"	"	"	"	"
Zinc	22.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	51.3	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	6.46	0.0500	"	"	"	"	"	"	
Sodium	7.93	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.277	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-B@4'
2404413-14 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	82.7			%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.318	0.0100		mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 12:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	9.23			pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-S@3'
2404413-15 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/27/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0316	79.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0385	96.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0427	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.04	64.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-S@3'
2404413-15 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0210	63.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0217	65.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	3.05	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-S@3'
2404413-15 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.89	0.181	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	73.5	0.362	"	"	"	"	"	"
Cadmium	ND	0.181	"	"	"	"	"	"
Copper	6.35	0.362	"	"	"	"	"	"
Lead	6.19	0.181	"	"	"	"	"	"
Nickel	7.54	0.362	"	"	"	"	"	"
Silver	0.0424	0.0181	"	"	"	"	"	"
Zinc	18.4	0.362	"	"	"	"	"	"
Selenium	ND	0.236	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	25.6	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	7.83	0.0500	"	"	"	"	"	"	
Sodium	15.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.674	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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6855 W. 119th Ave.
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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-S@3'
2404413-15 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	85.4			%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.230	0.0100		mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	9.19			pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-E@3'
2404413-16 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/27/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0342	85.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0380	94.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.80	62.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-E@3'
2404413-16 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0182	54.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0169	50.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-E@3'
2404413-16 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.03	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	73.7	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	7.78	0.400	"	"	"	"	"	"
Lead	7.29	0.200	"	"	"	"	"	"
Nickel	7.64	0.400	"	"	"	"	"	"
Silver	0.0254	0.0200	"	"	"	"	"	"
Zinc	19.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	438	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	37.2	0.0500	"	"	"	"	"	"	
Sodium	17.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.209	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PWV04-E@3'
2404413-16 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.9		%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.18	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 12:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.25		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

06/11/24 12:07

BKG01@3'
2404413-17 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/24/24 13:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.63	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B	
Barium	110	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	9.02	0.400	"	"	"	"	"	"	
Lead	8.12	0.200	"	"	"	"	"	"	
Nickel	8.68	0.400	"	"	"	"	"	"	
Silver	0.0335	0.0200	"	"	"	"	"	"	
Zinc	20.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 13:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 13:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	298	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	23.8	0.0500	"	"	"	"	"	"	
Sodium	39.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 13:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.597	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

BKG01@3'
2404413-17 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 13:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	78.4			%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 13:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.405	0.0100		mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 13:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	9.05			pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

BKG01@4'
2404413-18 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/24/24 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.86	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B	
Barium	65.5	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.71	0.400	"	"	"	"	"	"	
Lead	4.65	0.200	"	"	"	"	"	"	
Nickel	4.46	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	15.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	77.6	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	14.2	0.0500	"	"	"	"	"	"	
Sodium	55.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	1.52	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Summit Scientific

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

06/11/24 12:07

BKG01@4'
2404413-18 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	79.6			%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.602	0.0100		mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 13:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.25			pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST01@6"
2404413-19 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/27/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0303	75.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0425	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.34	66.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST01@6"
2404413-19 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0211	63.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0213	63.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST01@6"
2404413-19 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	4.23	0.179	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	96.1	0.357	"	"	"	"	"	"
Cadmium	0.740	0.179	"	"	"	"	"	"
Copper	18.0	0.357	"	"	"	"	"	"
Lead	14.5	0.179	"	"	"	"	"	"
Nickel	24.5	0.357	"	"	"	"	"	"
Silver	0.0481	0.0179	"	"	"	"	"	"
Zinc	25.8	0.357	"	"	"	"	"	"
Selenium	ND	0.232	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	31.9	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	11.3	0.0500	"	"	"	"	"	"	
Sodium	66.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.56	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

06/11/24 12:07

AST01@6"
2404413-19 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	79.5	%	1	BHD0934	04/25/24	04/25/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.40	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.22		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST02@6"
2404413-20 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0989	04/26/24	04/27/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0304	76.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0409	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0991	04/26/24	04/27/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.74	53.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST02@6"
2404413-20 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0921	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0267	80.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0266	79.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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6855 W. 119th Ave.
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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST02@6"
2404413-20 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.36	0.200	mg/kg dry	1	BHD1078	04/30/24	05/28/24	EPA 6020B
Barium	56.9	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	6.99	0.400	"	"	"	"	"	"
Lead	6.39	0.200	"	"	"	"	"	"
Nickel	6.19	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	20.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	33.4	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	9.35	0.0500	"	"	"	"	"	"	
Sodium	41.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.63	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

06/11/24 12:07

AST02@6"
2404413-20 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.3		%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.530	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.70		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

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6855 W. 119th Ave.
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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST03@6"
2404413-21 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0988	04/26/24	04/27/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0299	74.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0406	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0428	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0990	04/26/24	04/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.78	78.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST03@6"
2404413-21 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0918	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0310	93.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0298	89.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST03@6"
2404413-21 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.29	0.200	mg/kg dry	1	BHD1079	04/30/24	05/08/24	EPA 6020B
Barium	76.5	0.400	"	"	"	"	"	"
Cadmium	0.243	0.200	"	"	"	"	"	"
Copper	8.18	0.400	"	"	"	"	"	"
Lead	6.57	0.200	"	"	"	"	"	"
Nickel	6.61	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	28.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	213	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	22.8	0.0500	"	"	"	"	"	"	
Sodium	15.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.275	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST03@6"
2404413-21 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.8		%	1	BHD0934	04/25/24	04/25/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.187	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.15		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST04@6"
2404413-22 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0988	04/26/24	04/27/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0271	67.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0382	95.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0429	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0990	04/26/24	04/28/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.06	72.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST04@6"
2404413-22 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHD0918	04/25/24	04/26/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0293	87.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0272	81.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHD0923	04/25/24	05/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST04@6"
2404413-22 (Soil)

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Total Metals by EPA 6020B

Arsenic	1.98	0.180	mg/kg dry	1	BHD1079	04/30/24	05/08/24	EPA 6020B
Barium	54.2	0.360	"	"	"	"	"	"
Cadmium	0.249	0.180	"	"	"	"	"	"
Copper	8.97	0.360	"	"	"	"	"	"
Lead	9.01	0.180	"	"	"	"	"	"
Nickel	6.26	0.360	"	"	"	"	"	"
Silver	0.0220	0.0180	"	"	"	"	"	"
Zinc	30.9	0.360	"	"	"	"	"	"
Selenium	ND	0.234	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0937	04/25/24	04/26/24	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	727	0.0500	mg/L dry	1	BHE0132	05/03/24	06/07/24	EPA 6020B	
Magnesium	53.2	0.0500	"	"	"	"	"	"	
Sodium	38.7	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.373	0.00100	units	1	BHF0234	06/10/24	06/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

AST04@6"
2404413-22 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.6	%	1	BHD0934	04/25/24	04/25/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.299	0.0100	mmhos/cm	1	BHE0134	05/03/24	05/07/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/24/24 13:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.04		pH Units	1	BHE0133	05/03/24	05/07/24	EPA 9045D	

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Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHD0988 - EPA 5030 Soil MS

Blank (BHD0988-BLK1)

Prepared: 04/26/24 Analyzed: 04/27/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0296		"	0.0400		74.1	50-150			
Surrogate: Toluene-d8	0.0388		"	0.0400		96.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	50-150			

LCS (BHD0988-BS1)

Prepared: 04/26/24 Analyzed: 04/27/24

Benzene	0.0775	0.0020	mg/kg	0.100		77.5	70-130			
Toluene	0.0998	0.0050	"	0.100		99.8	70-130			
Ethylbenzene	0.103	0.0050	"	0.100		103	70-130			
m,p-Xylene	0.201	0.010	"	0.200		100	70-130			
o-Xylene	0.100	0.0050	"	0.100		100	70-130			
1,2,4-Trimethylbenzene	0.0904	0.0050	"	0.100		90.4	70-130			
1,3,5-Trimethylbenzene	0.0932	0.0050	"	0.100		93.2	70-130			
Naphthalene	0.0840	0.0038	"	0.100		84.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0281		"	0.0400		70.4	50-150			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	50-150			

Matrix Spike (BHD0988-MS1)

Source: 2404268-03

Prepared: 04/26/24 Analyzed: 04/27/24

Benzene	0.0635	0.0020	mg/kg	0.100	ND	63.5	70-130			QM-07
Toluene	0.0756	0.0050	"	0.100	ND	75.6	70-130			
Ethylbenzene	0.0660	0.0050	"	0.100	ND	66.0	70-130			QM-07
m,p-Xylene	0.154	0.010	"	0.200	ND	76.9	70-130			
o-Xylene	0.0743	0.0050	"	0.100	ND	74.3	70-130			
1,2,4-Trimethylbenzene	0.0611	0.0050	"	0.100	ND	61.1	70-130			QM-07
1,3,5-Trimethylbenzene	0.0639	0.0050	"	0.100	ND	63.9	70-130			QM-07
Naphthalene	0.0452	0.0038	"	0.100	ND	45.2	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0268		"	0.0400		66.9	50-150			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		97.0	50-150			

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Volatile Organic Compounds by EPA Method 8260B - Quality Control
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Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHD0988 - EPA 5030 Soil MS

Matrix Spike Dup (BHD0988-MSD1)			Source: 2404268-03		Prepared: 04/26/24 Analyzed: 04/27/24					
Benzene	0.0686	0.0020	mg/kg	0.100	ND	68.6	70-130	7.72	30	QM-07
Toluene	0.0851	0.0050	"	0.100	ND	85.1	70-130	11.8	30	
Ethylbenzene	0.0722	0.0050	"	0.100	ND	72.2	70-130	9.03	30	
m,p-Xylene	0.167	0.010	"	0.200	ND	83.4	70-130	8.14	30	
o-Xylene	0.0814	0.0050	"	0.100	ND	81.4	70-130	9.05	30	
1,2,4-Trimethylbenzene	0.0675	0.0050	"	0.100	ND	67.5	70-130	10.0	30	QM-07
1,3,5-Trimethylbenzene	0.0702	0.0050	"	0.100	ND	70.2	70-130	9.44	30	
Naphthalene	0.0566	0.0038	"	0.100	ND	56.6	70-130	22.5	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0252		"	0.0400		63.0	50-150			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.4	50-150			

Batch BHD0989 - EPA 5030 Soil MS

Blank (BHD0989-BLK1)			Prepared & Analyzed: 04/26/24							
Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0367		"	0.0400		91.6	50-150			
Surrogate: Toluene-d8	0.0368		"	0.0400		91.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	50-150			

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHD0989 - EPA 5030 Soil MS

LCS (BHD0989-BS1)

Prepared & Analyzed: 04/26/24

Benzene	0.0856	0.0020	mg/kg	0.100		85.6	70-130			
Toluene	0.104	0.0050	"	0.100		104	70-130			
Ethylbenzene	0.113	0.0050	"	0.100		113	70-130			
m,p-Xylene	0.223	0.010	"	0.200		111	70-130			
o-Xylene	0.109	0.0050	"	0.100		109	70-130			
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130			
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100		105	70-130			
Naphthalene	0.0892	0.0038	"	0.100		89.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0335		"	0.0400		83.7	50-150			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	50-150			

Matrix Spike (BHD0989-MS1)

Source: 2404413-01

Prepared & Analyzed: 04/26/24

Benzene	0.0871	0.0020	mg/kg	0.100	ND	87.1	70-130			
Toluene	0.0966	0.0050	"	0.100	ND	96.6	70-130			
Ethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130			
m,p-Xylene	0.197	0.010	"	0.200	ND	98.5	70-130			
o-Xylene	0.0991	0.0050	"	0.100	ND	99.1	70-130			
1,2,4-Trimethylbenzene	0.0900	0.0050	"	0.100	ND	90.0	70-130			
1,3,5-Trimethylbenzene	0.0916	0.0050	"	0.100	ND	91.6	70-130			
Naphthalene	0.0782	0.0038	"	0.100	ND	78.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0338		"	0.0400		84.5	50-150			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	50-150			

Matrix Spike Dup (BHD0989-MSD1)

Source: 2404413-01

Prepared & Analyzed: 04/26/24

Benzene	0.0939	0.0020	mg/kg	0.100	ND	93.9	70-130	7.56	30	
Toluene	0.106	0.0050	"	0.100	ND	106	70-130	9.33	30	
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	4.45	30	
m,p-Xylene	0.205	0.010	"	0.200	ND	102	70-130	3.93	30	
o-Xylene	0.103	0.0050	"	0.100	ND	103	70-130	3.66	30	
1,2,4-Trimethylbenzene	0.0918	0.0050	"	0.100	ND	91.8	70-130	1.98	30	
1,3,5-Trimethylbenzene	0.0957	0.0050	"	0.100	ND	95.7	70-130	4.39	30	
Naphthalene	0.0764	0.0038	"	0.100	ND	76.4	70-130	2.33	30	
Surrogate: 1,2-Dichloroethane-d4	0.0349		"	0.0400		87.2	50-150			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	50-150			

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Project: Noble - Darlene Dinnel 01 Facility
Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHD0990 - EPA 3550A

Blank (BHD0990-BLK1)

Prepared: 04/26/24 Analyzed: 04/27/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.5		"	12.5		100	30-150			

LCS (BHD0990-BS1)

Prepared: 04/26/24 Analyzed: 04/27/24

C10-C28 (DRO)	566	50	mg/kg	500		113	70-130			
Surrogate: o-Terphenyl	13.8		"	12.5		111	30-150			

Matrix Spike (BHD0990-MS1)

Source: 2404268-02

Prepared: 04/26/24 Analyzed: 04/27/24

C10-C28 (DRO)	578	50	mg/kg	500	18.3	112	70-130			
Surrogate: o-Terphenyl	7.44		"	12.5		59.5	30-150			

Matrix Spike Dup (BHD0990-MSD1)

Source: 2404268-02

Prepared: 04/26/24 Analyzed: 04/27/24

C10-C28 (DRO)	640	50	mg/kg	500	18.3	124	70-130	10.2	20	
Surrogate: o-Terphenyl	9.56		"	12.5		76.4	30-150			

Batch BHD0991 - EPA 3550A

Blank (BHD0991-BLK1)

Prepared: 04/26/24 Analyzed: 04/27/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.7		"	12.5		93.9	30-150			

LCS (BHD0991-BS1)

Prepared: 04/26/24 Analyzed: 04/27/24

C10-C28 (DRO)	582	50	mg/kg	500		116	70-130			
Surrogate: o-Terphenyl	10.8		"	12.5		86.8	30-150			

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

06/11/24 12:07

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHD0991 - EPA 3550A

Matrix Spike (BHD0991-MS1)

Source: 2404413-01

Prepared: 04/26/24 Analyzed: 04/27/24

C10-C28 (DRO)	476	50	mg/kg	500	20.4	91.2	70-130			
Surrogate: o-Terphenyl	9.08		"	12.5		72.6	30-150			

Matrix Spike Dup (BHD0991-MSD1)

Source: 2404413-01

Prepared: 04/26/24 Analyzed: 04/27/24

C10-C28 (DRO)	445	50	mg/kg	500	20.4	84.8	70-130	6.90	20	
Surrogate: o-Terphenyl	8.66		"	12.5		69.3	30-150			

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Reporting				Spike	Source	%REC			RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHD0918 - EPA 5030 Soil MS

Blank (BHD0918-BLK1)

Prepared: 04/25/24 Analyzed: 04/26/24

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Pyrene	ND	0.00500	"
1-Methylnaphthalene	ND	0.00500	"
2-Methylnaphthalene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0367	"	0.0333	110	40-150
Surrogate: Fluoranthene-d10	0.0368	"	0.0333	110	40-150

LCS (BHD0918-BS1)

Prepared: 04/25/24 Analyzed: 04/26/24

Acenaphthene	0.0360	0.00500	mg/kg	0.0333	108	31-137
Anthracene	0.0358	0.00500	"	0.0333	107	30-120
Benzo (a) anthracene	0.0387	0.00500	"	0.0333	116	30-120
Benzo (a) pyrene	0.0314	0.00500	"	0.0333	94.2	30-120
Benzo (b) fluoranthene	0.0313	0.00500	"	0.0333	93.8	30-120
Benzo (k) fluoranthene	0.0278	0.00500	"	0.0333	83.5	30-120
Chrysene	0.0341	0.00500	"	0.0333	102	30-120
Dibenz (a,h) anthracene	0.0335	0.00500	"	0.0333	100	30-120
Fluoranthene	0.0336	0.00500	"	0.0333	101	30-120
Fluorene	0.0340	0.00500	"	0.0333	102	30-120
Indeno (1,2,3-cd) pyrene	0.0391	0.00500	"	0.0333	117	30-120
Pyrene	0.0361	0.00500	"	0.0333	108	35-142
1-Methylnaphthalene	0.0338	0.00500	"	0.0333	101	35-142
2-Methylnaphthalene	0.0424	0.00500	"	0.0333	127	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0477	"	0.0333	143	40-150
Surrogate: Fluoranthene-d10	0.0447	"	0.0333	134	40-150

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PAH by EPA Method 8270D SIM - Quality Control

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Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BHD0918 - EPA 5030 Soil MS

Matrix Spike (BHD0918-MS1)

Source: 2404378-02

Prepared: 04/25/24 Analyzed: 04/26/24

Acenaphthene	0.0257	0.00500	mg/kg	0.0333	ND	77.0	31-137		
Anthracene	0.0258	0.00500	"	0.0333	ND	77.3	30-120		
Benzo (a) anthracene	0.0309	0.00500	"	0.0333	ND	92.8	30-120		
Benzo (a) pyrene	0.0252	0.00500	"	0.0333	ND	75.7	30-120		
Benzo (b) fluoranthene	0.0246	0.00500	"	0.0333	ND	73.9	30-120		
Benzo (k) fluoranthene	0.0223	0.00500	"	0.0333	ND	67.0	30-120		
Chrysene	0.0254	0.00500	"	0.0333	ND	76.3	30-120		
Dibenz (a,h) anthracene	0.0248	0.00500	"	0.0333	ND	74.5	30-120		
Fluoranthene	0.0280	0.00500	"	0.0333	ND	83.9	30-120		
Fluorene	0.0271	0.00500	"	0.0333	ND	81.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0274	0.00500	"	0.0333	ND	82.1	30-120		
Pyrene	0.0256	0.00500	"	0.0333	ND	76.9	35-142		
1-Methylnaphthalene	0.0306	0.00500	"	0.0333	ND	91.9	15-130		
2-Methylnaphthalene	0.0264	0.00500	"	0.0333	ND	79.2	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0279		"	0.0333		83.7	40-150		
Surrogate: Fluoranthene-d10	0.0293		"	0.0333		88.0	40-150		

Matrix Spike Dup (BHD0918-MSD1)

Source: 2404378-02

Prepared: 04/25/24 Analyzed: 04/26/24

Acenaphthene	0.0243	0.00500	mg/kg	0.0333	ND	72.9	31-137	5.44	30
Anthracene	0.0252	0.00500	"	0.0333	ND	75.5	30-120	2.40	30
Benzo (a) anthracene	0.0300	0.00500	"	0.0333	ND	90.1	30-120	2.93	30
Benzo (a) pyrene	0.0246	0.00500	"	0.0333	ND	73.9	30-120	2.42	30
Benzo (b) fluoranthene	0.0238	0.00500	"	0.0333	ND	71.4	30-120	3.50	30
Benzo (k) fluoranthene	0.0210	0.00500	"	0.0333	ND	63.1	30-120	5.99	30
Chrysene	0.0247	0.00500	"	0.0333	ND	74.0	30-120	3.05	30
Dibenz (a,h) anthracene	0.0261	0.00500	"	0.0333	ND	78.3	30-120	4.98	30
Fluoranthene	0.0256	0.00500	"	0.0333	ND	76.9	30-120	8.70	30
Fluorene	0.0238	0.00500	"	0.0333	ND	71.3	30-120	13.1	30
Indeno (1,2,3-cd) pyrene	0.0274	0.00500	"	0.0333	ND	82.3	30-120	0.257	30
Pyrene	0.0270	0.00500	"	0.0333	ND	81.1	35-142	5.35	30
1-Methylnaphthalene	0.0274	0.00500	"	0.0333	ND	82.1	15-130	11.3	50
2-Methylnaphthalene	0.0240	0.00500	"	0.0333	ND	72.0	15-130	9.47	50
Surrogate: 2-Methylnaphthalene-d10	0.0250		"	0.0333		74.9	40-150		
Surrogate: Fluoranthene-d10	0.0274		"	0.0333		82.1	40-150		

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

Project: Noble - Darlene Dinnel 01 Facility
Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHD0921 - EPA 5030 Soil MS

Blank (BHD0921-BLK1)

Prepared: 04/25/24 Analyzed: 04/26/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0397		"	0.0333	119		40-150			
Surrogate: Fluoranthene-d10	0.0367		"	0.0333	110		40-150			

LCS (BHD0921-BS1)

Prepared: 04/25/24 Analyzed: 04/26/24

Acenaphthene	0.0374	0.00500	mg/kg	0.0333	112		31-137			
Anthracene	0.0348	0.00500	"	0.0333	104		30-120			
Benzo (a) anthracene	0.0397	0.00500	"	0.0333	119		30-120			
Benzo (a) pyrene	0.0282	0.00500	"	0.0333	84.7		30-120			
Benzo (b) fluoranthene	0.0291	0.00500	"	0.0333	87.4		30-120			
Benzo (k) fluoranthene	0.0233	0.00500	"	0.0333	70.0		30-120			
Chrysene	0.0367	0.00500	"	0.0333	110		30-120			
Dibenz (a,h) anthracene	0.0346	0.00500	"	0.0333	104		30-120			
Fluoranthene	0.0317	0.00500	"	0.0333	95.1		30-120			
Fluorene	0.0361	0.00500	"	0.0333	108		30-120			
Indeno (1,2,3-cd) pyrene	0.0332	0.00500	"	0.0333	99.5		30-120			
Pyrene	0.0360	0.00500	"	0.0333	108		35-142			
1-Methylnaphthalene	0.0369	0.00500	"	0.0333	111		35-142			
2-Methylnaphthalene	0.0363	0.00500	"	0.0333	109		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0373		"	0.0333	112		40-150			
Surrogate: Fluoranthene-d10	0.0310		"	0.0333	93.1		40-150			

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

PAH by EPA Method 8270D SIM - Quality Control

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Analyte	Reporting			Spike		Source		%REC		RPD	
	Result	Limit	Units	Level		Result	%REC	Limits	RPD	Limit	Notes

Batch BHD0921 - EPA 5030 Soil MS

Matrix Spike (BHD0921-MS1)

Source: 2404413-01

Prepared: 04/25/24 Analyzed: 04/26/24

Acenaphthene	0.0235	0.00500	mg/kg	0.0333	ND	70.4	31-137				
Anthracene	0.0232	0.00500	"	0.0333	ND	69.5	30-120				
Benzo (a) anthracene	0.0285	0.00500	"	0.0333	ND	85.4	30-120				
Benzo (a) pyrene	0.0276	0.00500	"	0.0333	ND	82.8	30-120				
Benzo (b) fluoranthene	0.0293	0.00500	"	0.0333	ND	88.0	30-120				
Benzo (k) fluoranthene	0.0236	0.00500	"	0.0333	ND	70.8	30-120				
Chrysene	0.0236	0.00500	"	0.0333	ND	70.7	30-120				
Dibenz (a,h) anthracene	0.0354	0.00500	"	0.0333	ND	106	30-120				
Fluoranthene	0.0222	0.00500	"	0.0333	ND	66.7	30-120				
Fluorene	0.0241	0.00500	"	0.0333	ND	72.3	30-120				
Indeno (1,2,3-cd) pyrene	0.0341	0.00500	"	0.0333	ND	102	30-120				
Pyrene	0.0413	0.00500	"	0.0333	ND	124	35-142				
1-Methylnaphthalene	0.0253	0.00500	"	0.0333	ND	76.0	15-130				
2-Methylnaphthalene	0.0253	0.00500	"	0.0333	ND	75.9	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0252		"	0.0333		75.7	40-150				
Surrogate: Fluoranthene-d10	0.0229		"	0.0333		68.6	40-150				

Matrix Spike Dup (BHD0921-MSD1)

Source: 2404413-01

Prepared: 04/25/24 Analyzed: 04/26/24

Acenaphthene	0.0206	0.00500	mg/kg	0.0333	ND	61.7	31-137	13.2	30
Anthracene	0.0211	0.00500	"	0.0333	ND	63.2	30-120	9.54	30
Benzo (a) anthracene	0.0251	0.00500	"	0.0333	ND	75.2	30-120	12.7	30
Benzo (a) pyrene	0.0242	0.00500	"	0.0333	ND	72.6	30-120	13.1	30
Benzo (b) fluoranthene	0.0264	0.00500	"	0.0333	ND	79.3	30-120	10.5	30
Benzo (k) fluoranthene	0.0229	0.00500	"	0.0333	ND	68.6	30-120	3.11	30
Chrysene	0.0210	0.00500	"	0.0333	ND	62.9	30-120	11.7	30
Dibenz (a,h) anthracene	0.0281	0.00500	"	0.0333	ND	84.2	30-120	23.1	30
Fluoranthene	0.0203	0.00500	"	0.0333	ND	60.8	30-120	9.18	30
Fluorene	0.0210	0.00500	"	0.0333	ND	62.9	30-120	14.0	30
Indeno (1,2,3-cd) pyrene	0.0279	0.00500	"	0.0333	ND	83.6	30-120	20.2	30
Pyrene	0.0330	0.00500	"	0.0333	ND	99.1	35-142	22.3	30
1-Methylnaphthalene	0.0217	0.00500	"	0.0333	ND	65.1	15-130	15.4	50
2-Methylnaphthalene	0.0213	0.00500	"	0.0333	ND	63.8	15-130	17.4	50
Surrogate: 2-Methylnaphthalene-d10	0.0218		"	0.0333		65.4	40-150		
Surrogate: Fluoranthene-d10	0.0204		"	0.0333		61.1	40-150		

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHD0923 - EPA 3050B

Blank (BHD0923-BLK1)

Prepared: 04/25/24 Analyzed: 05/13/24

Boron ND 2.00 mg/L

LCS (BHD0923-BS1)

Prepared: 04/25/24 Analyzed: 05/13/24

Boron 5.51 2.00 mg/L 5.00 110 80-120

Duplicate (BHD0923-DUP1)

Source: 2402327-01

Prepared: 04/25/24 Analyzed: 05/13/24

Boron 0.689 2.00 mg/L 0.657 4.69 20

Matrix Spike (BHD0923-MS1)

Source: 2402327-01

Prepared: 04/25/24 Analyzed: 05/15/24

Boron 7.22 2.00 mg/L 5.00 0.657 131 75-125 QM-07

Matrix Spike Dup (BHD0923-MSD1)

Source: 2402327-01

Prepared: 04/25/24 Analyzed: 05/15/24

Boron 5.82 2.00 mg/L 5.00 0.657 103 75-125 21.5 25

Batch BHD0927 - EPA 3050B

Blank (BHD0927-BLK1)

Prepared: 04/25/24 Analyzed: 05/20/24

Boron ND 2.00 mg/L

LCS (BHD0927-BS1)

Prepared: 04/25/24 Analyzed: 05/20/24

Boron 4.89 2.00 mg/L 5.00 97.9 80-120

Duplicate (BHD0927-DUP1)

Source: 2404407-07

Prepared: 04/25/24 Analyzed: 05/20/24

Boron 0.240 2.00 mg/L 0.249 3.90 20

Matrix Spike (BHD0927-MS1)

Source: 2404407-07

Prepared: 04/25/24 Analyzed: 05/20/24

Boron 4.19 2.00 mg/L 4.98 0.249 79.3 75-125

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BHD0927 - EPA 3050B

Matrix Spike Dup (BHD0927-MSD1)				Source: 2404407-07		Prepared: 04/25/24 Analyzed: 05/20/24				
Boron	4.49	2.00	mg/L	4.98	0.249	85.2	75-125	6.76	25	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHD1078 - EPA 3050B

Blank (BHD1078-BLK1)

Prepared: 04/30/24 Analyzed: 05/28/24

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"
Selenium	ND	0.260	"

LCS (BHD1078-BS1)

Prepared: 04/30/24 Analyzed: 05/28/24

Arsenic	37.8	0.200	mg/kg wet	40.0	94.5	80-120
Barium	37.0	0.400	"	40.0	92.5	80-120
Cadmium	1.91	0.200	"	2.00	95.6	80-120
Copper	39.3	0.400	"	40.0	98.3	80-120
Lead	19.0	0.200	"	20.0	95.1	80-120
Nickel	37.6	0.400	"	40.0	93.9	80-120
Silver	1.93	0.0200	"	2.00	96.4	80-120
Zinc	40.3	0.400	"	40.0	101	80-120
Selenium	3.73	0.260	"	4.00	93.1	80-120

Duplicate (BHD1078-DUP1)

Source: 2404413-01

Prepared: 04/30/24 Analyzed: 05/28/24

Arsenic	2.28	0.200	mg/kg dry	2.15	6.11	20
Barium	52.9	0.400	"	49.2	7.20	20
Cadmium	0.194	0.200	"	0.203	4.09	20
Copper	11.1	0.400	"	11.6	4.40	20
Lead	5.69	0.200	"	5.75	1.04	20
Nickel	5.35	0.400	"	5.26	1.58	20
Silver	0.0351	0.0200	"	0.0356	1.54	20
Zinc	21.0	0.400	"	20.2	3.54	20
Selenium	ND	0.260	"	ND		20

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHD1078 - EPA 3050B

Matrix Spike (BHD1078-MS1)		Source: 2404413-01			Prepared: 04/30/24 Analyzed: 05/28/24					
Arsenic	45.2	0.200	mg/kg dry	44.7	2.15	96.5	75-125			
Barium	91.9	0.400	"	44.7	49.2	95.5	75-125			
Cadmium	2.42	0.200	"	2.23	0.203	99.2	75-125			
Copper	56.1	0.400	"	44.7	11.6	99.7	75-125			
Lead	26.8	0.200	"	22.3	5.75	94.5	75-125			
Nickel	48.6	0.400	"	44.7	5.26	96.9	75-125			
Silver	2.20	0.0200	"	2.23	0.0356	96.9	75-125			
Zinc	51.0	0.400	"	44.7	20.2	68.9	75-125			QM-07
Selenium	3.81	0.260	"	4.47	ND	85.3	75-125			

Matrix Spike Dup (BHD1078-MSD1)		Source: 2404413-01			Prepared: 04/30/24 Analyzed: 05/28/24					
Arsenic	47.2	0.200	mg/kg dry	44.7	2.15	101	75-125	4.20	25	
Barium	96.3	0.400	"	44.7	49.2	105	75-125	4.70	25	
Cadmium	2.49	0.200	"	2.23	0.203	102	75-125	2.86	25	
Copper	58.3	0.400	"	44.7	11.6	105	75-125	3.85	25	
Lead	28.2	0.200	"	22.3	5.75	101	75-125	4.96	25	
Nickel	50.6	0.400	"	44.7	5.26	101	75-125	4.09	25	
Silver	2.28	0.0200	"	2.23	0.0356	100	75-125	3.43	25	
Zinc	51.7	0.400	"	44.7	20.2	70.4	75-125	1.31	25	QM-07
Selenium	3.91	0.260	"	4.47	ND	87.6	75-125	2.70	25	

Post Spike (BHD1078-PS1)		Source: 2404413-01			Prepared: 04/30/24 Analyzed: 05/28/24					
Arsenic	109		ug/l	100	4.69	104	75-125			
Barium	224		"	100	108	116	75-125			
Cadmium	5.72		"	5.00	0.443	106	75-125			
Copper	135		"	100	25.4	110	75-125			
Lead	64.7		"	50.0	12.6	104	75-125			
Nickel	114		"	100	11.5	102	75-125			
Silver	5.29		"	5.00	0.0779	104	75-125			
Zinc	123		"	100	44.2	78.6	75-125			
Selenium	9.42		"	10.0	0.321	91.0	75-125			

Summit Scientific

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

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Total Metals by EPA 6020B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHD1079 - EPA 3050B

Blank (BHD1079-BLK1)

Prepared: 04/30/24 Analyzed: 05/08/24

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"
Selenium	ND	0.260	"

LCS (BHD1079-BS1)

Prepared: 04/30/24 Analyzed: 05/08/24

Arsenic	41.0	0.200	mg/kg wet	40.0	102	80-120
Barium	39.0	0.400	"	40.0	97.4	80-120
Cadmium	1.96	0.200	"	2.00	98.2	80-120
Copper	39.4	0.400	"	40.0	98.6	80-120
Lead	19.2	0.200	"	20.0	96.0	80-120
Nickel	38.7	0.400	"	40.0	96.8	80-120
Silver	1.97	0.0200	"	2.00	98.5	80-120
Zinc	39.0	0.400	"	40.0	97.4	80-120
Selenium	3.97	0.260	"	4.00	99.3	80-120

Duplicate (BHD1079-DUP1)

Source: 2404407-01

Prepared: 04/30/24 Analyzed: 05/08/24

Arsenic	2.38	0.200	mg/kg dry	2.31	2.98	20	
Barium	166	0.400	"	145	14.0	20	
Cadmium	0.429	0.200	"	0.408	4.84	20	
Copper	11.1	0.400	"	10.5	5.06	20	
Lead	11.4	0.200	"	15.0	27.5	20	QR-04
Nickel	9.67	0.400	"	9.59	0.814	20	
Silver	0.0563	0.0200	"	0.0550	2.25	20	
Zinc	40.4	0.400	"	38.8	3.97	20	
Selenium	0.199	0.260	"	ND	200	20	QR-01

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHD1079 - EPA 3050B

Matrix Spike (BHD1079-MS1)		Source: 2404407-01			Prepared: 04/30/24 Analyzed: 05/08/24					
Arsenic	24.5	0.200	mg/kg dry	44.7	2.31	49.8	75-125			QM-05
Barium	221	0.400	"	44.7	145	171	75-125			QM-05
Cadmium	2.70	0.200	"	2.23	0.408	103	75-125			
Copper	55.0	0.400	"	44.7	10.5	99.7	75-125			
Lead	32.0	0.200	"	22.3	15.0	76.0	75-125			
Nickel	54.8	0.400	"	44.7	9.59	101	75-125			
Silver	2.28	0.0200	"	2.23	0.0550	99.9	75-125			
Zinc	87.6	0.400	"	44.7	38.8	109	75-125			
Selenium	3.42	0.260	"	4.47	ND	76.6	75-125			

Matrix Spike Dup (BHD1079-MSD1)		Source: 2404407-01			Prepared: 04/30/24 Analyzed: 05/08/24					
Arsenic	24.8	0.200	mg/kg dry	44.7	2.31	50.3	75-125	0.923	25	QM-05
Barium	219	0.400	"	44.7	145	166	75-125	0.925	25	QM-05
Cadmium	2.72	0.200	"	2.23	0.408	103	75-125	0.709	25	
Copper	53.7	0.400	"	44.7	10.5	96.8	75-125	2.34	25	
Lead	32.1	0.200	"	22.3	15.0	76.5	75-125	0.319	25	
Nickel	53.6	0.400	"	44.7	9.59	98.6	75-125	2.12	25	
Silver	2.26	0.0200	"	2.23	0.0550	99.0	75-125	0.883	25	
Zinc	85.9	0.400	"	44.7	38.8	106	75-125	1.94	25	
Selenium	3.40	0.260	"	4.47	ND	76.1	75-125	0.655	25	

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHD0937 - 3060A Mod

Blank (BHD0937-BLK1)

Prepared: 04/25/24 Analyzed: 04/26/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHD0937-BS1)

Prepared: 04/25/24 Analyzed: 04/26/24

Chromium, Hexavalent 23.2 0.30 mg/kg wet 25.0 92.6 80-120

Duplicate (BHD0937-DUP1)

Source: 2404413-01

Prepared: 04/25/24 Analyzed: 04/26/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHD0937-MS1)

Source: 2404413-01

Prepared: 04/25/24 Analyzed: 04/26/24

Chromium, Hexavalent 25.3 0.30 mg/kg dry 28.6 ND 88.4 75-125

Matrix Spike Dup (BHD0937-MSD1)

Source: 2404413-01

Prepared: 04/25/24 Analyzed: 04/26/24

Chromium, Hexavalent 25.7 0.30 mg/kg dry 28.6 ND 90.0 75-125 1.79 20

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHE0132 - General Preparation

Blank (BHE0132-BLK1)

Prepared: 05/03/24 Analyzed: 06/07/24

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BHE0132-BS1)

Prepared: 05/03/24 Analyzed: 06/07/24

Calcium	5.56	0.0500	mg/L wet	5.00	111	70-130
Magnesium	5.36	0.0500	"	5.00	107	70-130
Sodium	5.21	0.0500	"	5.00	104	70-130

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6855 W. 119th Ave.
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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BHD0934 - General Preparation

Duplicate (BHD0934-DUP1)		Source: 2404413-01		Prepared & Analyzed: 04/25/24						
% Solids	84.8		%		87.5			3.07		20

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BHE0134 - General Preparation

Blank (BHE0134-BLK1)

Prepared: 05/03/24 Analyzed: 05/07/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHE0134-BS1)

Prepared: 05/03/24 Analyzed: 05/07/24

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BHE0134-DUP1)

Source: 2404413-01

Prepared: 05/03/24 Analyzed: 05/07/24

Specific Conductance (EC) 0.307 0.0100 mmhos/cm 0.306 0.326 20

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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD	Limit	Notes
		Limit	Units			%REC	Limits			

Batch BHE0133 - General Preparation

LCS (BHE0133-BS1)

Prepared: 05/03/24 Analyzed: 05/07/24

pH	9.24	pH Units	9.18	101	95-105
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Duplicate (BHE0133-DUP1)

Source: 2404413-01

Prepared: 05/03/24 Analyzed: 05/07/24

pH	8.28	pH Units	8.30	0.241	20
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6855 W. 119th Ave.
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Project: Noble - Darlene Dinnel 01 Facility

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
06/11/24 12:07

Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference