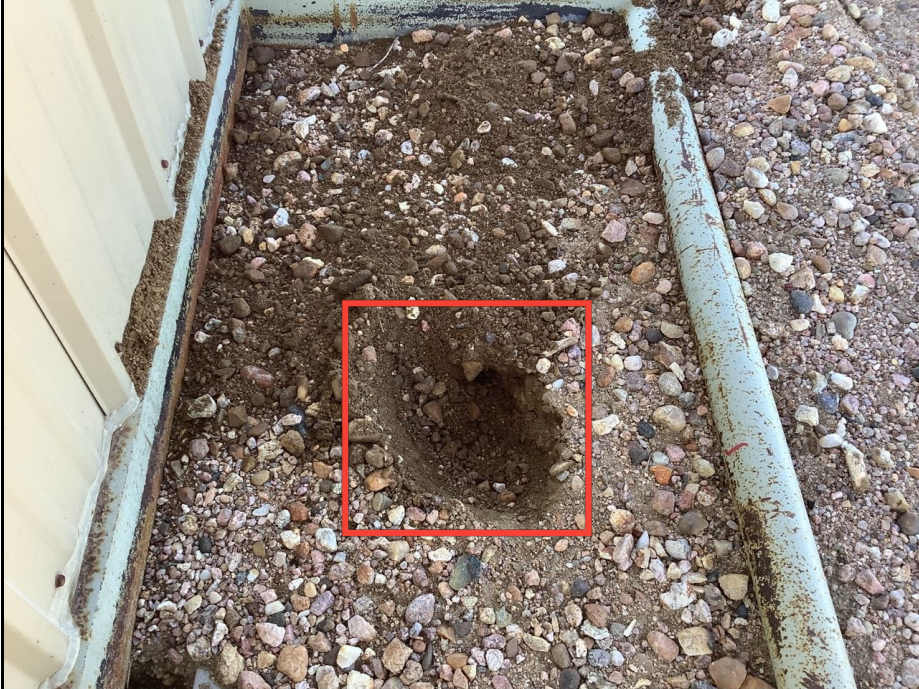







<b>SITE NAME:</b> Five Rivers K9-21D FAC							<b>DATE:</b> 3/20/2024	<b>REM. PROJECT #:</b> 29938		<b>WEATHER:</b> Clear, 40s	
<b>SITE DIRECTIONS:</b> CR 29 & 46, N. 0.4mi into							<b>CLIENT:</b> Noble				
<b>LEGALS AND LAT/LONG:</b> 40.325936, -104.790718							<b>TASMAN PERSONNEL:</b> MW				
<b>SOIL TYPES:</b> Well Graded Sand - SW							<b>SURFACE GRADIENT:</b> West				
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		
3/20/2024 08:50	MH01@0.5'	0.2	No Staining	No Odor	Yes	Grab	Buried or Partially Buried Vessel		4		
3/20/2024 08:53	FLARE01@0.5'	0.1	No Staining	No Odor	Yes	Grab	Separator		2		
3/20/2024 08:56	FLARE02@0.5'	0.1	No Staining	No Odor	Yes	Grab	Emission Control Device (ECD)				
3/20/2024 09:00	PIPE01@0.5'	0.3	No Staining	No Odor	Yes	Grab	Dump Line		2		
3/20/2024 10:46	FS01@4'	1.0	No Staining	No Odor	Yes	Lab	Wellhead				
3/20/2024 10:49	FS02@4'	1.4	No Staining	No Odor	Yes	Lab	Flowline				
3/20/2024 10:52	FS03@4'	0.9	No Staining	No Odor	Yes	Lab	Other:				
3/20/2024 10:55	FS04@4'	0.0	No Staining	No Odor	Yes	Lab	Soil Loads Removed				
3/20/2024 11:02	SS01@2'	0.0	No Staining	No Odor	Yes	On-hold	IMPACTED SOIL IDENTIFIED?				
3/20/2024 11:04	SS02@2'	0.7	No Staining	No Odor	Yes	On-hold	ESTIMATED VOLUME OF IMPACTS:				
3/20/2024 11:06	SS03@2'	0.5	No Staining	No Odor	Yes	On-hold	Date		Number	CY	
3/20/2024 11:09	SS04@2'	0.2	No Staining	No Odor	Yes	On-hold					
3/20/2024 11:12	SS05@2'	19.3	No Staining	No Odor	Yes	Lab					
3/20/2024 11:15	SS06@2'	1.8	No Staining	No Odor	Yes	On-hold					
3/20/2024 11:18	SS07@2'	6.0	No Staining	No Odor	Yes	On-hold					
3/20/2024 11:20	SS08@2'	1.6	No Staining	No Odor	Yes	On-hold	Total Removed		0	0	
3/20/2024 12:52	AST01@0.5'	0.3	No Staining	No Odor	Yes	Lab	Disposal Facility:				
3/20/2024 12:54	AST02@0.5'	4.0	No Staining	No Odor	Yes	Lab	Groundwater Recovery				
3/20/2024 12:56	AST03@0.5'	0.8	No Staining	No Odor	Yes	Lab	DATE GW ENCOUNTERED:			DEPTH:	
3/20/2024 12:58	AST04@0.5'	0.1	No Staining	No Odor	Yes	Lab	GROUNDWATER IN CONTACT WITH IMPACTED SOIL?				
3/20/2024 11:24	SEP01-DL@2'	3.6	No Staining	No Odor	Yes	Lab					
3/20/2024 11:26	SEP02-DL@2'	0.3	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:				

## Photographic Log

							
<b>Equipment ID:</b> MH01@0.5'		<b>Equipment Type:</b>		<b>Equipment ID:</b> FLARE01@0.5'		<b>Equipment Type:</b>	
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>		<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing west				<b>Notes/Conditions:</b> Facing west			





## Photographic Log

											
<b>Equipment ID:</b> FLARE02 @ 0.5'		<b>Equipment Type:</b>		<b>Equipment ID:</b> PIPE01 @ 0.5'		<b>Equipment Type:</b>					
<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>		<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing west						<b>Notes/Conditions:</b> Facing west					





## Photographic Log

					
<b>Equipment ID:</b> FS01 @4'			<b>Equipment Type:</b>		
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>
<b>Notes/Conditions:</b> Facing south			<b>Notes/Conditions:</b> Facing south		





## Photographic Log

							
Equipment ID: FS03@4'		Equipment Type:		Equipment ID: FS04@4'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: Facing south				Notes/Conditions: Facing south			







## Photographic Log

											
<b>Equipment ID:</b> SS01 @2'		<b>Equipment Type:</b>		<b>Equipment ID:</b> SS02 @2'		<b>Equipment Type:</b>					
<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>		<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing. North						<b>Notes/Conditions:</b> Facing north					





## Photographic Log

					
<b>Equipment ID:</b> SS03@2'		<b>Equipment Type:</b>			
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>			
<b>Notes/Conditions:</b> Facing north					
					
<b>Equipment ID:</b> SS04@2'		<b>Equipment Type:</b>			
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>			
<b>Notes/Conditions:</b> Facing east					





## Photographic Log

											
<b>Equipment ID:</b> SS05@2'		<b>Equipment Type:</b>		<b>Equipment ID:</b> SS06@2'		<b>Equipment Type:</b>					
<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>		<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing south						<b>Notes/Conditions:</b> Facing south					





## Photographic Log

							
Equipment ID: SS07 @ 2'		Equipment Type:		Equipment ID: SS08 @ 2'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: Facing south				Notes/Conditions: Facing west			





## Photographic Log

							
Equipment ID: AST01@0.5'		Equipment Type:		Equipment ID: AST02@0.5'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: Facing south				Notes/Conditions: Facing south			





## Photographic Log

					
<b>Equipment ID:</b> AST03@0.5'		<b>Equipment Type:</b>			
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>			
<b>Notes/Conditions:</b> Facing south					

<b>Equipment ID:</b> AST04@0.5'		<b>Equipment Type:</b>			
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>			
<b>Notes/Conditions:</b> Facing south					



## Photographic Log

											
<b>Equipment ID:</b> SEP01-DL@2'		<b>Equipment Type:</b>		<b>Equipment ID:</b> SEP02-DL@2'		<b>Equipment Type:</b>					
<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>		<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>	
<b>Notes/Conditions:</b> Facing west						<b>Notes/Conditions:</b> Facing west					



**TABLE 1**  
**FIELD DATA SUMMARY TABLE**  
**OPERATOR (NOBLE 100322)**  
**FIVE RIVERS K09-28D FACILITY, WELD COUNTY,**  
**COLORADO REM # 29938**

Sample ID	Sample Date	Depth (ft)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
AST01@0.5'	3/20/2024	0.5	40.325583	-104.790846	NC	0.3
AST02@0.5'	3/20/2024	0.5	40.325618	-104.790803	NC	4.0
AST03@0.5'	3/20/2024	0.5	40.325646	-104.790776	NC	0.8
AST04@0.5'	3/20/2024	0.5	40.325680	-104.790745	NC	0.1
FLARE01@0.5'	3/20/2024	0.5	40.325987	-104.790555	NC	0.1
FLARE02@0.5'	3/20/2024	0.5	40.325952	-104.790480	NC	0.1
FS01@4'	3/20/2024	4	40.325641	-104.790869	NC	1.0
FS02@4'	3/20/2024	4	40.325664	-104.790849	NC	1.4
FS03@4'	3/20/2024	4	40.325704	-104.790816	NC	0.9
FS04@4'	3/20/2024	4	40.325739	-104.790794	NC	0.0
MH01@0.5'	3/20/2024	0.5	40.325945	-104.790800	NC	0.2
PIPE01@0.5'	3/20/2024	0.5	40.325696	-104.790564	NC	0.3
SS01@2'	3/20/2024	2	40.325657	-104.790881	NC	0.0
SS02@2'	3/20/2024	2	40.325692	-104.790852	NC	0.7
SS03@2'	3/20/2024	2	40.325732	-104.790820	NC	0.5
SS04@2'	3/20/2024	2	40.325757	-104.790781	NC	0.2
SS05@2'	3/20/2024	2	40.325720	-104.790779	NC	19.3
SS06@2'	3/20/2024	2	40.325667	-104.790809	NC	1.8
SS07@2'	3/20/2024	2	40.325633	-104.790848	NC	6.0
SS08@2'	3/20/2024	2	40.325624	-104.790886	NC	1.6
SEP01-DL@2'	3/20/2024	2	40.325892	-104.790703	NC	3.6
SEP02-DL@2'	3/20/2024	2	40.325873	-104.790674	NC	0.3

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

ft = Feet

bgs = Below ground surface

NC = Data not collected



TABLE 2  
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA  
OPERATOR (NOBLE 100322)  
FIVE RIVERS K09-28D FACILITY, WELD COUNTY, COLORADO  
REM # 29938

Sample ID	Sample Date	Depth (ft)	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@0.5'	03/20/2024	0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST02@0.5'	03/20/2024	0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST03@0.5'	03/20/2024	0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST04@0.5'	03/20/2024	0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	0.0083	<0.0038	<500	<0.50	<50	<50
FS01@4'	03/20/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FS02@4'	03/20/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FS03@4'	03/20/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FS04@4'	03/20/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01-DL@2'	03/20/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP02-DL@2'	03/20/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SS05@2'	03/20/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	0.020	<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
- ECMC = Colorado Energy & Carbon Management Commission  
(<) = Analytical result is less than the indicated laboratory reporting limit.  
TPH-GRO = Total petroleum hydrocarbons - gasoline range organics  
TPH-DRO = Total petroleum hydrocarbons - diesel range organics  
TPH-ORO = Total petroleum hydrocarbons - oil range organics  
mg/kg = Milligrams per kilogram  
ft = feet



TABLE 3  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
OPERATOR (NOBLE 100322)  
FIVE RIVERS K09-28D FACILITY, WELD COUNTY, COLORADO  
REM # 29938

Sample ID	Sample Date	Depth (ft)	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@0.5'	03/20/2024	0.5	<0.00500	<0.00500	<0.00500	0.0078	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST02@0.5'	03/20/2024	0.5	<0.00500	<0.00500	<0.00500	0.00772	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST03@0.5'	03/20/2024	0.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST04@0.5'	03/20/2024	0.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01@4'	03/20/2024	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
FS02@4'	03/20/2024	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
FS03@4'	03/20/2024	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
FS04@4'	03/20/2024	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@2'	03/20/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP02-DL@2'	03/20/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS05@2'	03/20/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

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

ECMC = Colorado Energy & Carbon Management Commission

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

PAHs = Polycyclic aromatic hydrocarbons

mg/kg = Milligrams per kilogram

ft. = Feet



TABLE 4  
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION  
OPERATOR (NOBLE 100322)  
FIVE RIVERS K09-28D FACILITY, WELD COUNTY, COLORADO  
REM # 29938

Sample ID	Sample Date	Depth (ft)	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@0.5'	03/20/2024	0.5'	8.02	1.12	2.49	<2.00
AST02@0.5'	03/20/2024	0.5'	7.86	2.84	4.24	<2.00
AST03@0.5'	03/20/2024	0.5'	7.97	2.31	4.28	<2.00
AST04@0.5'	03/20/2024	0.5'	8.06	2.41	5.41	<2.00
FS01@4'	03/20/2024	4'	<b>8.83</b>	1.14	1.70	<2.00
FS02@4'	03/20/2024	4'	8.16	0.615	0.826	<2.00
FS03@4'	03/20/2024	4'	8.14	0.843	1.60	<2.00
FS04@4'	03/20/2024	4'	7.69	1.47	1.72	<2.00
SEP01-DL@2'	03/20/2024	2'	8.05	0.347	0.122	<2.00
SEP02-DL@2'	03/20/2024	2'	7.98	0.427	0.32	<2.00
SS05@2'	03/20/2024	2'	8.23	2.23	<b>6.91</b>	<2.00

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.

ECMC = Colorado Energy & Carbon Management Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

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

ft. = Feet



TABLE 5  
SUMMARY OF METALS IN SOIL CHEMISTRY DATA  
OPERATOR (NOBLE 100322)  
FIVE RIVERS K09-28D FACILITY, WELD COUNTY, COLORADO  
REM # 29938

Sample ID	Sample Date	Depth (ft)	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@0.5'	03/20/2024	0.5'	2.88	69.4	0.260	<0.30	6.12	7.20	5.31	0.515	0.0396	26.7
AST02@0.5'	03/20/2024	0.5'	3.16	78.9	0.271	<0.30	6.11	8.60	5.46	1.23	0.0570	25.2
AST03@0.5'	03/20/2024	0.5'	2.58	68.9	0.210	<0.30	5.08	6.35	4.38	0.621	0.0418	21.0
AST04@0.5'	03/20/2024	0.5'	1.98	50.6	<0.200	<0.30	4.63	5.31	3.47	0.394	0.0306	21.8
FS01@4'	03/20/2024	4'	0.952	23.3	<0.200	<0.30	2.59	2.86	1.68	<0.260	<0.0200	20.2
FS02@4'	03/20/2024	4'	1.48	45.3	<0.200	<0.30	5.39	4.81	2.52	<0.260	0.0266	27.8
FS03@4'	03/20/2024	4'	1.08	40.5	<0.200	<0.30	5.83	4.90	2.22	<0.260	0.0284	29.6
FS04@4'	03/20/2024	4'	1.49	42.3	<0.200	<0.30	4.96	5.30	2.65	<0.260	0.0336	25.2
SEP01-DL@2'	03/20/2024	2'	1.52	44.0	<0.200	<0.30	4.99	4.89	2.86	<0.260	0.0309	23.2
SEP02-DL@2'	03/20/2024	2'	2.58	62.4	0.208	<0.30	5.77	5.98	4.39	<0.260	0.0333	25.3
SS05@2'	03/20/2024	2'	1.79	44.0	<0.200	<0.30	5.52	5.50	2.91	<0.260	0.029	24.8

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

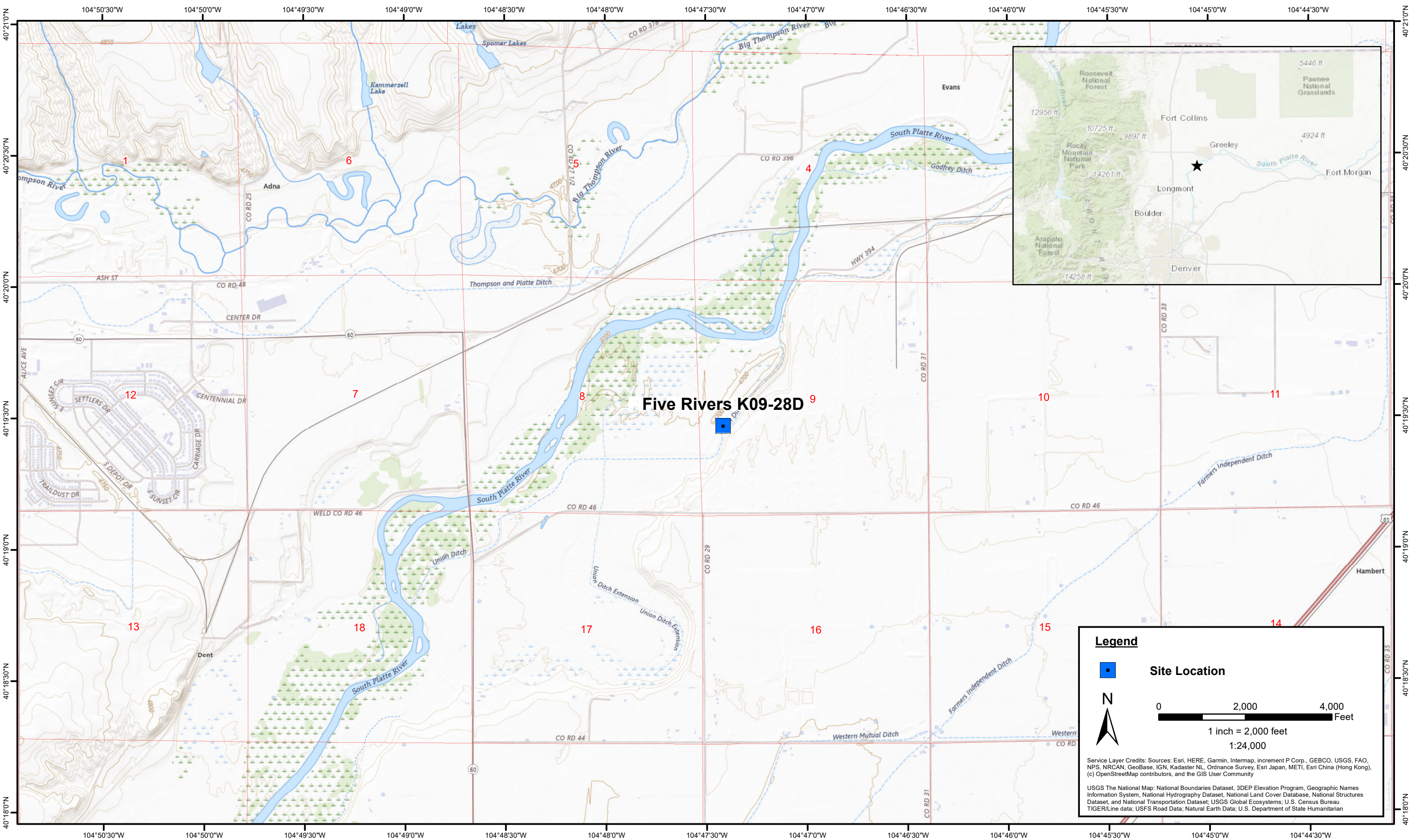
ECMC = Energy & Carbon Management Commission

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

mg/kg = Milligrams per kilogram

ft. = Feet





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



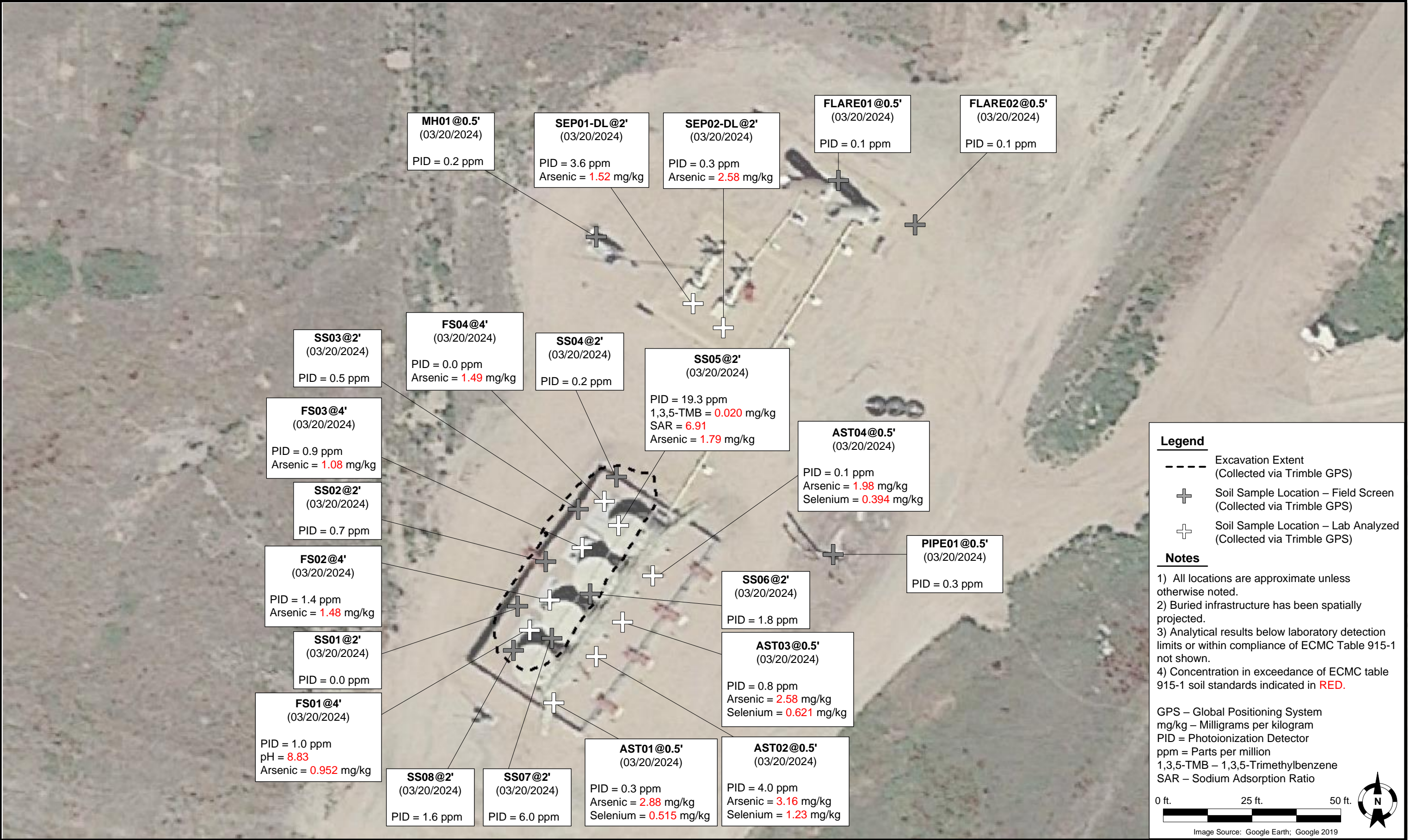
Tasman, Inc.  
6855 W. 119th Ave  
Broomfield, CO 80020

Noble Energy, Inc. 100322 - DJ Basin  
Five Rivers K09-28D  
NWSW, Section 9, Township 4 North, Range 66 West  
Weld County, Colorado

Site Location Map

Figure  
1







# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 22, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Five Rivers K09-28D

Work Order #2403315

Enclosed are the results of analyses for samples received by Summit Scientific on 03/20/24 17:46. 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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS01@4'	2403315-01	Soil	03/20/24 10:46	03/20/24 17:46
FS02@4'	2403315-02	Soil	03/20/24 10:49	03/20/24 17:46
FS03@4'	2403315-03	Soil	03/20/24 10:52	03/20/24 17:46
FS04@4'	2403315-04	Soil	03/20/24 10:55	03/20/24 17:46
SS05@2'	2403315-09	Soil	03/20/24 11:12	03/20/24 17:46
SEP01-DL@2'	2403315-13	Soil	03/20/24 11:24	03/20/24 17:46
SEP02-DL@2'	2403315-14	Soil	03/20/24 11:26	03/20/24 17:46
AST01@0.5'	2403315-15	Soil	03/20/24 12:52	03/20/24 17:46
AST02@0.5'	2403315-16	Soil	03/20/24 12:54	03/20/24 17:46
AST03@0.5'	2403315-17	Soil	03/20/24 12:56	03/20/24 17:46
AST04@0.5'	2403315-18	Soil	03/20/24 12:58	03/20/24 17:46

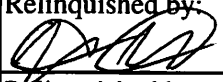
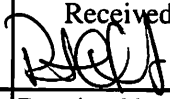
Summit Scientific

*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.*



<b>Client:</b> Noble/Tasman		<b>Send Data To:</b>		<b>Send Invoice To:</b>	
<b>Address:</b> 6855 W. 119th Ave.		<b>Project Manager:</b> Jake Whritenour		<b>Company:</b> Chevron	
<b>City/State/Zip:</b> Broomfield/CO/ 80020		<b>E-Mail:</b> Jwhritenour@tasman-geo.com		<b>Project Name/Location:</b> Five Rivers K09-21D FAC	
<b>Phone:</b> 978-857-4408		<b>Project Location:</b> Five Rivers K09-21D FAC		<b>AFE#:</b>	
<b>Sampler Name:</b> Matthew Wentzel		<b>Project Number:</b>		<b>PO/Billing Codes:</b>	
				<b>Contact:</b> Miguel Barron	

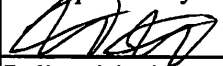
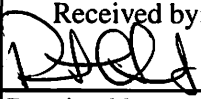
				Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD	
1	FS01 @ 4'	3-20-24	1046	3			X			X			X	X	X	X	X	X		
2	FS02 @ 4'		1049	1									X	X	X	X	X	X		
3	FS03 @ 4'		1052	1									X	X	X	X	X	X		
4	FS04 @ 4'		1055	1									X	X	X	X	X	X		
5	SS01 @ 2'		1102	1									X	X	X	X	X	X	X	
6	SS02 @ 2'		1104	1									X	X	X	X	X	X	X	
7	SS03 @ 2'		1106	1									X	X	X	X	X	X	X	
8	SS04 @ 2'		1109	1									X	X	X	X	X	X	X	
9	SS05 @ 2'		1112	1									X	X	X	X	X	X	X	
10	SS06 @ 2'		1115	1									X	X	X	X	X	X	X	
11	SS07 @ 2'		1118	1									X	X	X	X	X	X	X	
12	SS08 @ 2'		1120	1									X	X	X	X	X	X	X	
13	SEF01-DL @ 2'		1124	1									X	X	X	X	X	X		
14	SEF02-DL @ 2'		1126	1									X	X	X	X	X	X		
15	AST01 @ 0.5'		1252	1									X	X	X	X	X	X		

Relinquished by: 	Date/Time: 3-20-24 1500	Received by: Tasman Lock Box	Date/Time: 3-20-24 1500	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Lock Box	Date/Time: 3-20-24 1740	Received by: 	Date/Time: 3-20-24 1740	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	X Field Turb.	
Temperature Upon Receipt: 7.9	Corrected Temperature: 8	IR gun #: 1	HNO3 lot #:			



<b>Client:</b> Noble/Tasman		<b>Send Data To:</b>		<b>Send Invoice To:</b>	
<b>Address:</b> 6855 W. 119th Ave.		<b>Project Manager:</b> Jake Whritenour		<b>Company:</b> Clevion	
<b>City/State/Zip:</b> Broomfield/CO/ 80020		<b>E-Mail:</b> Jwhritenour@tasman-geo.com		<b>Project Name/Location:</b> Five Rivers KOG-210 FAC	
<b>Phone:</b> 978-857-4408		<b>Project Location:</b> Five Rivers KOG-210 FAC		<b>AFE#:</b>	
<b>Sampler Name:</b> Matthew Wentzel		<b>Project Number:</b>		<b>PO/Billing Codes:</b>	
				<b>Contact:</b> Miguel Barron	

					Preservative				Matrix			Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD	
1	AST02@0.5'	3.20.24	1254	3			X			X			X	X	X	X	X	X		
2	AST03@0.5'	1	1256	1			1			1			1	1	1	1	1	1		
3	AST04@0.5'	1	1258	1			1			1			1	1	1	1	1	1		
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 3.20.24 1500	Received by: Tasman Lock Box	Date/Time: 3.20.24 1500	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lock Box	Date/Time: 3.20.24 1740	Received by: 	Date/Time: 3.20.24 1740	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: 7.9		Corrected Temperature: 8		IR gun #: 1		HNO3 lot #:

S<sub>2</sub>

2/2

## Sample Receipt Checklist

S2 Work Order# 2403315

Client: Noble Frisman

Client Project ID:

Five Rivers Koa-21D FAC

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

--	--	--	--	--

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

7.9

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> 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"/>	on ice
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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 <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , 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? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<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)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS

Custodian Printed Name

3/20/24

Date/Time





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

Project: Noble - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS01@4'**  
**2403315-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/20/24 10:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHC0825	03/21/24	03/23/24	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: **03/20/24 10:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0493	123 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0430	107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0421	105 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/24 10:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0827	03/21/24	03/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/20/24 10:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.56	76.5 %	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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS01@4'**  
**2403315-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0900	03/25/24	03/25/24	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: **03/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0155	46.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0135	40.6 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0805	03/21/24	05/22/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS01@4'**  
**2403315-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.952	0.200	mg/kg dry	1	BHC0813	03/21/24	04/06/24	EPA 6020B
Barium	23.3	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.59	0.400	"	"	"	"	"	"
Lead	2.86	0.200	"	"	"	"	"	"
Nickel	1.68	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	20.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0795	03/21/24	03/25/24	EPA 7196A	

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

Date Sampled: **03/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	81.1	0.0500	mg/L dry	1	BHD0091	04/03/24	04/22/24	EPA 6020B	
Magnesium	14.6	0.0500	"	"	"	"	"	"	
Sodium	63.2	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.70	0.00100	units	1	BHD0808	04/23/24	04/23/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS01@4'**  
**2403315-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.8		%	1	BHC0799	03/21/24	03/26/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.14	0.0100	mmhos/cm	1	BHD0097	04/03/24	04/04/24	EPA 120.1	

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

Date Sampled: **03/20/24 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.83		pH Units	1	BHD0095	04/03/24	04/04/24	EPA 9045D	

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 - Five Rivers K09-28D

Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS02@4'**  
**2403315-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/20/24 10:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHC0825	03/21/24	03/23/24	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: **03/20/24 10:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0471	118 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0446	112 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0417	104 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/24 10:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0827	03/21/24	03/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/20/24 10:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.46	67.6 %	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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS02@4'**  
**2403315-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0900	03/25/24	03/25/24	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: **03/20/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0243	72.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0179	53.7 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/20/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0805	03/21/24	05/22/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS02@4'**  
**2403315-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.48	0.200	mg/kg dry	1	BHC0813	03/21/24	04/06/24	EPA 6020B
Barium	45.3	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.39	0.400	"	"	"	"	"	"
Lead	4.81	0.200	"	"	"	"	"	"
Nickel	2.52	0.400	"	"	"	"	"	"
Silver	0.0266	0.0200	"	"	"	"	"	"
Zinc	27.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0795	03/21/24	03/25/24	EPA 7196A	

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

Date Sampled: **03/20/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	170	0.0500	mg/L dry	1	BHD0091	04/03/24	04/22/24	EPA 6020B	
Magnesium	29.1	0.0500	"	"	"	"	"	"	
Sodium	44.3	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.826	0.00100	units	1	BHD0808	04/23/24	04/23/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS02@4'**  
**2403315-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/20/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.1		%	1	BHC0799	03/21/24	03/26/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/20/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.615	0.0100	mmhos/cm	1	BHD0097	04/03/24	04/04/24	EPA 120.1	

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

Date Sampled: **03/20/24 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.16		pH Units	1	BHD0095	04/03/24	04/04/24	EPA 9045D	

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS03@4'**  
**2403315-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/20/24 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHC0825	03/21/24	03/23/24	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: **03/20/24 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0413	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0413	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0402	100 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/24 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0827	03/21/24	03/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/20/24 10:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.86	62.9 %	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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS03@4'**  
**2403315-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0900	03/25/24	03/25/24	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: **03/20/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0156	46.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0138	41.4 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/20/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0805	03/21/24	05/22/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS03@4'**  
**2403315-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.08	0.200	mg/kg dry	1	BHC0813	03/21/24	04/06/24	EPA 6020B
Barium	40.5	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.83	0.400	"	"	"	"	"	"
Lead	4.90	0.200	"	"	"	"	"	"
Nickel	2.22	0.400	"	"	"	"	"	"
Silver	0.0284	0.0200	"	"	"	"	"	"
Zinc	29.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0795	03/21/24	03/25/24	EPA 7196A	

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

Date Sampled: **03/20/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	99.5	0.0500	mg/L dry	1	BHD0091	04/03/24	04/22/24	EPA 6020B	
Magnesium	17.8	0.0500	"	"	"	"	"	"	
Sodium	65.8	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.60	0.00100	units	1	BHD0808	04/23/24	04/23/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS03@4'**  
**2403315-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/20/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.4		%	1	BHC0799	03/21/24	03/26/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/20/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.843	0.0100	mmhos/cm	1	BHD0097	04/03/24	04/04/24	EPA 120.1	

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

Date Sampled: **03/20/24 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.14		pH Units	1	BHD0095	04/03/24	04/04/24	EPA 9045D	

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS04@4'**  
**2403315-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/20/24 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHC0825	03/21/24	03/23/24	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: **03/20/24 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0424	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0421	105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	102 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/24 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0827	03/21/24	03/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/20/24 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.41	75.3 %	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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS04@4'**  
**2403315-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0900	03/25/24	03/25/24	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: **03/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0267	80.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0187	56.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0805	03/21/24	05/22/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS04@4'**  
**2403315-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.49	0.200	mg/kg dry	1	BHC0813	03/21/24	04/06/24	EPA 6020B
Barium	42.3	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.96	0.400	"	"	"	"	"	"
Lead	5.30	0.200	"	"	"	"	"	"
Nickel	2.65	0.400	"	"	"	"	"	"
Silver	0.0336	0.0200	"	"	"	"	"	"
Zinc	25.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0795	03/21/24	03/25/24	EPA 7196A	

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

Date Sampled: **03/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	101	0.0500	mg/L dry	1	BHD0091	04/03/24	04/22/24	EPA 6020B	
Magnesium	26.9	0.0500	"	"	"	"	"	"	
Sodium	75.2	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.72	0.00100	units	1	BHD0808	04/23/24	04/23/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**FS04@4'**  
**2403315-04 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.2		%	1	BHC0799	03/21/24	03/26/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.47	0.0100	mmhos/cm	1	BHD0097	04/03/24	04/04/24	EPA 120.1	

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

Date Sampled: **03/20/24 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.69		pH Units	1	BHD0095	04/03/24	04/04/24	EPA 9045D	

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**SS05@2'**  
**2403315-09 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHC0825	03/21/24	03/23/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.020</b>	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0391	97.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0409	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0416	104 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0827	03/21/24	03/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	7.06	56.5 %	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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**SS05@2'**  
**2403315-09 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0900	03/25/24	03/25/24	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: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0283	85.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0183	54.8 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0805	03/21/24	05/22/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**SS05@2'**  
**2403315-09 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.79	0.200	mg/kg dry	1	BHC0813	03/21/24	04/06/24	EPA 6020B
Barium	44.0	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	5.52	0.400	"	"	"	"	"	"
Lead	5.50	0.200	"	"	"	"	"	"
Nickel	2.91	0.400	"	"	"	"	"	"
Silver	0.0290	0.0200	"	"	"	"	"	"
Zinc	24.8	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0795	03/21/24	03/25/24	EPA 7196A	

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

Date Sampled: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	49.8	0.0500	mg/L dry	1	BHD0091	04/03/24	04/22/24	EPA 6020B	
Magnesium	24.3	0.0500	"	"	"	"	"	"	
Sodium	238	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.91	0.00100	units	1	BHD0808	04/23/24	04/23/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**SS05@2'**  
**2403315-09 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.4		%	1	BHC0799	03/21/24	03/26/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.23	0.0100	mmhos/cm	1	BHD0097	04/03/24	04/04/24	EPA 120.1	

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

Date Sampled: **03/20/24 11:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.23		pH Units	1	BHD0095	04/03/24	04/04/24	EPA 9045D	

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**SEP01-DL@2'**  
**2403315-13 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/20/24 11:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHC0825	03/21/24	03/23/24	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: **03/20/24 11:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0404	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0431	108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/24 11:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0827	03/21/24	03/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/20/24 11:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.95	71.6 %	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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**SEP01-DL@2'**  
**2403315-13 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/24 11:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHC0900	03/25/24	03/25/24	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: **03/20/24 11:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0209	62.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0166	49.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/20/24 11:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHC0805	03/21/24	05/22/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/24 11:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**SEP01-DL@2'**  
**2403315-13 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.52	0.200	mg/kg dry	1	BHC0813	03/21/24	04/06/24	EPA 6020B
Barium	44.0	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.99	0.400	"	"	"	"	"	"
Lead	4.89	0.200	"	"	"	"	"	"
Nickel	2.86	0.400	"	"	"	"	"	"
Silver	0.0309	0.0200	"	"	"	"	"	"
Zinc	23.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/24 11:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0795	03/21/24	03/25/24	EPA 7196A	

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

Date Sampled: **03/20/24 11:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	169	0.0500	mg/L dry	1	BHD0091	04/03/24	04/22/24	EPA 6020B	
Magnesium	25.6	0.0500	"	"	"	"	"	"	
Sodium	6.43	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/24 11:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.122	0.00100	units	1	BHD0808	04/23/24	04/23/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**SEP01-DL@2'**  
**2403315-13 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/20/24 11:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	90.5			%	1	BHC0799	03/21/24	03/26/24	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/20/24 11:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.347	0.0100		mmhos/cm	1	BHD0097	04/03/24	04/04/24	EPA 120.1	

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

Date Sampled: **03/20/24 11:24**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.05			pH Units	1	BHD0095	04/03/24	04/04/24	EPA 9045D	

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**SEP02-DL@2'**  
**2403315-14 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/20/24 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHC0825	03/21/24	03/23/24	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: **03/20/24 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0399	99.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0417	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0413	103 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/24 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0827	03/21/24	03/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/20/24 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.53	68.3 %	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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**SEP02-DL@2'**  
**2403315-14 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/24 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHC0900	03/25/24	03/25/24	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: **03/20/24 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0246	73.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0163	48.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/20/24 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHC0805	03/21/24	05/22/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/24 11:26**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**SEP02-DL@2'**  
**2403315-14 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.58	0.200	mg/kg dry	1	BHC0813	03/21/24	04/06/24	EPA 6020B
Barium	62.4	0.400	"	"	"	"	"	"
Cadmium	0.208	0.200	"	"	"	"	"	"
Copper	5.77	0.400	"	"	"	"	"	"
Lead	5.98	0.200	"	"	"	"	"	"
Nickel	4.39	0.400	"	"	"	"	"	"
Silver	0.0333	0.0200	"	"	"	"	"	"
Zinc	25.3	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/24 11:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0795	03/21/24	03/25/24	EPA 7196A	

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

Date Sampled: **03/20/24 11:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	60.0	0.0500	mg/L dry	1	BHD0091	04/03/24	04/22/24	EPA 6020B	
Magnesium	10.2	0.0500	"	"	"	"	"	"	
Sodium	10.2	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/24 11:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.320	0.00100	units	1	BHD0808	04/23/24	04/23/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/20/24 11:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**SEP02-DL@2'**  
**2403315-14 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	87.7	%	1	BHC0799	03/21/24	03/26/24	Calculation
----------	------	---	---	---------	----------	----------	-------------

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/20/24 11:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.427</b>	0.0100	mmhos/cm	1	BHD0097	04/03/24	04/04/24	EPA 120.1	

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

Date Sampled: **03/20/24 11:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>7.98</b>		pH Units	1	BHD0095	04/03/24	04/04/24	EPA 9045D	

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST01@0.5'**  
**2403315-15 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/20/24 12:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHC0825	03/21/24	03/23/24	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: **03/20/24 12:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0441	110 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0424	106 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0409	102 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/24 12:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0827	03/21/24	03/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/20/24 12:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.56	68.5 %	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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST01@0.5'**  
**2403315-15 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/24 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0900	03/25/24	03/25/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Benzo (a) pyrene</b>	<b>0.00780</b>	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: **03/20/24 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0423	127 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0293	87.9 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/20/24 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0805	03/21/24	05/22/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/24 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST01@0.5'**  
**2403315-15 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.88	0.200	mg/kg dry	1	BHC0813	03/21/24	04/06/24	EPA 6020B	
Barium	69.4	0.400	"	"	"	"	"	"	
Cadmium	0.260	0.200	"	"	"	"	"	"	
Copper	6.12	0.400	"	"	"	"	"	"	
Lead	7.20	0.200	"	"	"	"	"	"	
Nickel	5.31	0.400	"	"	"	"	"	"	
Silver	0.0396	0.0200	"	"	"	"	"	"	
Zinc	26.7	0.400	"	"	"	"	"	"	
Selenium	0.515	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/24 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0795	03/21/24	03/25/24	EPA 7196A	

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

Date Sampled: **03/20/24 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	57.2	0.0500	mg/L dry	1	BHD0091	04/03/24	04/22/24	EPA 6020B	
Magnesium	17.4	0.0500	"	"	"	"	"	"	
Sodium	83.7	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/24 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.49	0.00100	units	1	BHD0808	04/23/24	04/23/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/20/24 12:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST01@0.5'**  
**2403315-15 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	87.9	%	1	BHC0799	03/21/24	03/26/24	Calculation
----------	------	---	---	---------	----------	----------	-------------

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/20/24 12:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	1.12	0.0100		mmhos/cm	1	BHD0097	04/03/24	04/04/24	EPA 120.1	

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

Date Sampled: **03/20/24 12:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.02			pH Units	1	BHD0095	04/03/24	04/04/24	EPA 9045D	

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST02@0.5'**  
**2403315-16 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/20/24 12:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHC0825	03/21/24	03/23/24	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: **03/20/24 12:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0427	107 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/24 12:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0827	03/21/24	03/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/20/24 12:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.83	78.7 %	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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST02@0.5'**  
**2403315-16 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/24 12:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0900	03/25/24	03/25/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Benzo (a) pyrene</b>	<b>0.00772</b>	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: **03/20/24 12:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0396	119 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0268	80.4 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/20/24 12:54**

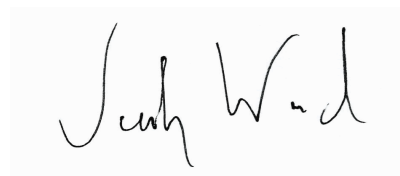
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0805	03/21/24	05/22/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/24 12:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST02@0.5'**  
**2403315-16 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.16	0.200	mg/kg dry	1	BHC0813	03/21/24	04/06/24	EPA 6020B	
Barium	78.9	0.400	"	"	"	"	"	"	
Cadmium	0.271	0.200	"	"	"	"	"	"	
Copper	6.11	0.400	"	"	"	"	"	"	
Lead	8.60	0.200	"	"	"	"	"	"	
Nickel	5.46	0.400	"	"	"	"	"	"	
Silver	0.0570	0.0200	"	"	"	"	"	"	
Zinc	25.2	0.400	"	"	"	"	"	"	
Selenium	1.23	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/24 12:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0795	03/21/24	03/25/24	EPA 7196A	

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

Date Sampled: **03/20/24 12:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	162	0.0500	mg/L dry	1	BHD0091	04/03/24	04/22/24	EPA 6020B	
Magnesium	64.1	0.0500	"	"	"	"	"	"	
Sodium	252	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/24 12:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.24	0.00100	units	1	BHD0808	04/23/24	04/23/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/20/24 12:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST02@0.5'**  
**2403315-16 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	87.1	%	1	BHC0799	03/21/24	03/26/24	Calculation
----------	------	---	---	---------	----------	----------	-------------

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/20/24 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	2.84	0.0100		mmhos/cm	1	BHD0097	04/03/24	04/04/24	EPA 120.1	

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

Date Sampled: **03/20/24 12:54**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.86			pH Units	1	BHD0095	04/03/24	04/04/24	EPA 9045D	

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 - Five Rivers K09-28D

Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST03@0.5'**  
**2403315-17 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/20/24 12:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHC0825	03/21/24	03/23/24	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: **03/20/24 12:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0404	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0409	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0409	102 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/24 12:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0827	03/21/24	03/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/20/24 12:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.27	74.2 %	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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST03@0.5'**  
**2403315-17 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/24 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0900	03/25/24	03/25/24	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: **03/20/24 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0491	147 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0242	72.7 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/20/24 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0805	03/21/24	05/22/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/24 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST03@0.5'**  
**2403315-17 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	2.58	0.200	mg/kg dry	1	BHC0813	03/21/24	04/06/24	EPA 6020B
Barium	68.9	0.400	"	"	"	"	"	"
Cadmium	0.210	0.200	"	"	"	"	"	"
Copper	5.08	0.400	"	"	"	"	"	"
Lead	6.35	0.200	"	"	"	"	"	"
Nickel	4.38	0.400	"	"	"	"	"	"
Silver	0.0418	0.0200	"	"	"	"	"	"
Zinc	21.0	0.400	"	"	"	"	"	"
Selenium	0.621	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/24 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0795	03/21/24	03/25/24	EPA 7196A	

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

Date Sampled: **03/20/24 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	110	0.0500	mg/L dry	1	BHD0091	04/03/24	04/22/24	EPA 6020B	
Magnesium	44.8	0.0500	"	"	"	"	"	"	
Sodium	211	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/24 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.28	0.00100	units	1	BHD0808	04/23/24	04/23/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/20/24 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST03@0.5'**  
**2403315-17 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	90.9	%	1	BHC0799	03/21/24	03/26/24	Calculation
----------	------	---	---	---------	----------	----------	-------------

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/20/24 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.31	0.0100	mmhos/cm	1	BHD0097	04/03/24	04/04/24	EPA 120.1	

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

Date Sampled: **03/20/24 12:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.97		pH Units	1	BHD0095	04/03/24	04/04/24	EPA 9045D	

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST04@0.5'**  
**2403315-18 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/20/24 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHC0825	03/21/24	03/23/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.0083</b>	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/20/24 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0445	111 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0431	108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0412	103 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/20/24 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0827	03/21/24	03/22/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/20/24 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.42	67.3 %	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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST04@0.5'**  
**2403315-18 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/20/24 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0900	03/25/24	03/25/24	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: **03/20/24 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0432	130 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0237	71.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **03/20/24 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0805	03/21/24	05/22/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/20/24 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST04@0.5'**  
**2403315-18 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	1.98	0.200	mg/kg dry	1	BHC0813	03/21/24	04/06/24	EPA 6020B
Barium	50.6	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.63	0.400	"	"	"	"	"	"
Lead	5.31	0.200	"	"	"	"	"	"
Nickel	3.47	0.400	"	"	"	"	"	"
Silver	0.0306	0.0200	"	"	"	"	"	"
Zinc	21.8	0.400	"	"	"	"	"	"
Selenium	0.394	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/20/24 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0795	03/21/24	03/25/24	EPA 7196A	

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

Date Sampled: **03/20/24 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	110	0.0500	mg/L dry	1	BHD0091	04/03/24	04/22/24	EPA 6020B	
Magnesium	37.7	0.0500	"	"	"	"	"	"	
Sodium	258	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/20/24 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.41	0.00100	units	1	BHD0808	04/23/24	04/23/24	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/20/24 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**AST04@0.5'**  
**2403315-18 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

% Solids	90.1	%	1	BHC0799	03/21/24	03/26/24	Calculation
----------	------	---	---	---------	----------	----------	-------------

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **03/20/24 12:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	2.41	0.0100		mmhos/cm	1	BHD0097	04/03/24	04/04/24	EPA 120.1	

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

Date Sampled: **03/20/24 12:58**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.06			pH Units	1	BHD0095	04/03/24	04/04/24	EPA 9045D	

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

## 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 BHC0825 - EPA 5030 Soil MS

##### Blank (BHC0825-BLK1)

Prepared: 03/21/24 Analyzed: 03/23/24

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	0.0433		"	0.0400		108	50-150			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	50-150			

##### LCS (BHC0825-BS1)

Prepared: 03/21/24 Analyzed: 03/23/24

Benzene	0.0919	0.0020	mg/kg	0.100		91.9	70-130			
Toluene	0.103	0.0050	"	0.100		103	70-130			
Ethylbenzene	0.0897	0.0050	"	0.100		89.7	70-130			
m,p-Xylene	0.183	0.010	"	0.200		91.4	70-130			
o-Xylene	0.0921	0.0050	"	0.100		92.1	70-130			
1,2,4-Trimethylbenzene	0.0801	0.0050	"	0.100		80.1	70-130			
1,3,5-Trimethylbenzene	0.0813	0.0050	"	0.100		81.3	70-130			
Naphthalene	0.0955	0.0038	"	0.100		95.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0416		"	0.0400		104	50-150			
Surrogate: Toluene-d8	0.0430		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		101	50-150			

##### Matrix Spike (BHC0825-MS1)

Source: 2403305-01

Prepared: 03/21/24 Analyzed: 03/23/24

Benzene	0.104	0.0020	mg/kg	0.100	ND	104	70-130			
Toluene	0.0850	0.0050	"	0.100	ND	85.0	70-130			
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130			
m,p-Xylene	0.192	0.010	"	0.200	ND	95.9	70-130			
o-Xylene	0.0887	0.0050	"	0.100	ND	88.7	70-130			
1,2,4-Trimethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130			
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130			
Naphthalene	0.0955	0.0038	"	0.100	ND	95.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0446		"	0.0400		111	50-150			
Surrogate: Toluene-d8	0.0423		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	50-150			

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**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 BHC0825 - EPA 5030 Soil MS**

Matrix Spike Dup (BHC0825-MSD1)		Source: 2403305-01			Prepared: 03/21/24 Analyzed: 03/23/24					
Benzene	0.0999	0.0020	mg/kg	0.100	ND	99.9	70-130	3.89	30	
Toluene	0.107	0.0050	"	0.100	ND	107	70-130	22.7	30	
Ethylbenzene	0.0964	0.0050	"	0.100	ND	96.4	70-130	4.80	30	
m,p-Xylene	0.181	0.010	"	0.200	ND	90.7	70-130	5.64	30	
o-Xylene	0.109	0.0050	"	0.100	ND	109	70-130	20.7	30	
1,2,4-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	3.48	30	
1,3,5-Trimethylbenzene	0.0937	0.0050	"	0.100	ND	93.7	70-130	9.05	30	
Naphthalene	0.0900	0.0038	"	0.100	ND	90.0	70-130	5.89	30	
Surrogate: 1,2-Dichloroethane-d4		0.0438	"	0.0400		110	50-150			
Surrogate: Toluene-d8		0.0427	"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene		0.0415	"	0.0400		104	50-150			

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**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 BHC0827 - EPA 3550A**

**Blank (BHC0827-BLK1)**

Prepared: 03/21/24 Analyzed: 03/22/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	16.3		"	12.5		130	30-150			

**LCS (BHC0827-BS1)**

Prepared: 03/21/24 Analyzed: 03/22/24

C10-C28 (DRO)	618	50	mg/kg	500		124	70-130			
Surrogate: o-Terphenyl	14.5		"	12.5		116	30-150			

**Matrix Spike (BHC0827-MS1)**

Source: 2403305-01

Prepared: 03/21/24 Analyzed: 03/22/24

C10-C28 (DRO)	623	50	mg/kg	500	43.1	116	70-130			
Surrogate: o-Terphenyl	10.3		"	12.5		82.7	30-150			

**Matrix Spike Dup (BHC0827-MSD1)**

Source: 2403305-01

Prepared: 03/21/24 Analyzed: 03/22/24

C10-C28 (DRO)	486	50	mg/kg	500	43.1	88.6	70-130	24.6	20	QR-02
Surrogate: o-Terphenyl	9.28		"	12.5		74.2	30-150			

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

## 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 BHC0900 - EPA 5030 Soil MS

##### Blank (BHC0900-BLK1)

Prepared & Analyzed: 03/25/24

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	0.0214		"	0.0333		64.1	40-150			
Surrogate: Fluoranthene-d10	0.0215		"	0.0333		64.6	40-150			

##### LCS (BHC0900-BS1)

Prepared & Analyzed: 03/25/24

Acenaphthene	0.0261	0.00500	mg/kg	0.0333		78.3	31-137			
Anthracene	0.0244	0.00500	"	0.0333		73.3	30-120			
Benzo (a) anthracene	0.0234	0.00500	"	0.0333		70.3	30-120			
Benzo (a) pyrene	0.0216	0.00500	"	0.0333		64.8	30-120			
Benzo (b) fluoranthene	0.0205	0.00500	"	0.0333		61.4	30-120			
Benzo (k) fluoranthene	0.0240	0.00500	"	0.0333		71.9	30-120			
Chrysene	0.0251	0.00500	"	0.0333		75.2	30-120			
Dibenz (a,h) anthracene	0.0208	0.00500	"	0.0333		62.3	30-120			
Fluoranthene	0.0242	0.00500	"	0.0333		72.7	30-120			
Fluorene	0.0258	0.00500	"	0.0333		77.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0210	0.00500	"	0.0333		63.0	30-120			
Pyrene	0.0267	0.00500	"	0.0333		80.0	35-142			
1-Methylnaphthalene	0.0278	0.00500	"	0.0333		83.3	35-142			
2-Methylnaphthalene	0.0281	0.00500	"	0.0333		84.2	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0290		"	0.0333		87.1	40-150			
Surrogate: Fluoranthene-d10	0.0241		"	0.0333		72.2	40-150			

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BHC0900 - EPA 5030 Soil MS

##### Matrix Spike (BHC0900-MS1)

Source: 2403315-01

Prepared & Analyzed: 03/25/24

Acenaphthene	0.0151	0.00500	mg/kg	0.0333	ND	45.3	31-137		
Anthracene	0.0159	0.00500	"	0.0333	ND	47.8	30-120		
Benzo (a) anthracene	0.0153	0.00500	"	0.0333	ND	45.8	30-120		
Benzo (a) pyrene	0.0172	0.00500	"	0.0333	ND	51.6	30-120		
Benzo (b) fluoranthene	0.0143	0.00500	"	0.0333	ND	42.9	30-120		
Benzo (k) fluoranthene	0.0138	0.00500	"	0.0333	ND	41.4	30-120		
Chrysene	0.0151	0.00500	"	0.0333	ND	45.3	30-120		
Dibenz (a,h) anthracene	0.0166	0.00500	"	0.0333	ND	49.9	30-120		
Fluoranthene	0.0158	0.00500	"	0.0333	ND	47.5	30-120		
Fluorene	0.0158	0.00500	"	0.0333	ND	47.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0169	0.00500	"	0.0333	ND	50.6	30-120		
Pyrene	0.0170	0.00500	"	0.0333	ND	50.9	35-142		
1-Methylnaphthalene	0.0222	0.00500	"	0.0333	ND	66.7	15-130		
2-Methylnaphthalene	0.0227	0.00500	"	0.0333	ND	68.0	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0196		"	0.0333		58.9	40-150		
Surrogate: Fluoranthene-d10	0.0158		"	0.0333		47.5	40-150		

##### Matrix Spike Dup (BHC0900-MSD1)

Source: 2403315-01

Prepared & Analyzed: 03/25/24

Acenaphthene	0.0138	0.00500	mg/kg	0.0333	ND	41.5	31-137	8.62	30
Anthracene	0.0138	0.00500	"	0.0333	ND	41.4	30-120	14.4	30
Benzo (a) anthracene	0.0141	0.00500	"	0.0333	ND	42.4	30-120	7.80	30
Benzo (a) pyrene	0.0139	0.00500	"	0.0333	ND	41.8	30-120	20.9	30
Benzo (b) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.8	30-120	2.16	30
Benzo (k) fluoranthene	0.0152	0.00500	"	0.0333	ND	45.6	30-120	9.61	30
Chrysene	0.0134	0.00500	"	0.0333	ND	40.1	30-120	12.2	30
Dibenz (a,h) anthracene	0.0160	0.00500	"	0.0333	ND	48.0	30-120	3.88	30
Fluoranthene	0.0142	0.00500	"	0.0333	ND	42.6	30-120	11.0	30
Fluorene	0.0147	0.00500	"	0.0333	ND	44.2	30-120	6.74	30
Indeno (1,2,3-cd) pyrene	0.0162	0.00500	"	0.0333	ND	48.7	30-120	3.87	30
Pyrene	0.0142	0.00500	"	0.0333	ND	42.6	35-142	17.7	30
1-Methylnaphthalene	0.0209	0.00500	"	0.0333	ND	62.7	15-130	6.16	50
2-Methylnaphthalene	0.0216	0.00500	"	0.0333	ND	64.7	15-130	5.04	50
Surrogate: 2-Methylnaphthalene-d10	0.0177		"	0.0333		53.0	40-150		
Surrogate: Fluoranthene-d10	0.0141		"	0.0333		42.3	40-150		

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**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 BHC0805 - EPA 3050B**

**Blank (BHC0805-BLK1)**

Prepared: 03/21/24 Analyzed: 05/21/24

Boron ND 2.00 mg/L

**LCS (BHC0805-BS1)**

Prepared: 03/21/24 Analyzed: 05/21/24

Boron 5.19 2.00 mg/L 5.00 104 80-120

**Duplicate (BHC0805-DUP1)**

**Source: 2403299-01**

Prepared: 03/21/24 Analyzed: 05/21/24

Boron 0.133 2.00 mg/L 0.206 43.0 20 QR-01

**Matrix Spike (BHC0805-MS1)**

**Source: 2403299-01**

Prepared: 03/21/24 Analyzed: 05/21/24

Boron 5.00 2.00 mg/L 5.00 0.206 95.9 75-125

**Matrix Spike Dup (BHC0805-MSD1)**

**Source: 2403299-01**

Prepared: 03/21/24 Analyzed: 05/21/24

Boron 5.22 2.00 mg/L 5.00 0.206 100 75-125 4.34 25

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**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 BHC0813 - EPA 3050B**

**Blank (BHC0813-BLK1)**

Prepared: 03/21/24 Analyzed: 04/06/24

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 (BHC0813-BS1)**

Prepared: 03/21/24 Analyzed: 04/06/24

Arsenic	40.4	0.200	mg/kg wet	40.0	101	80-120
Barium	40.8	0.400	"	40.0	102	80-120
Cadmium	1.96	0.200	"	2.00	97.9	80-120
Copper	41.4	0.400	"	40.0	104	80-120
Lead	19.7	0.200	"	20.0	98.6	80-120
Nickel	40.4	0.400	"	40.0	101	80-120
Silver	1.96	0.0200	"	2.00	98.2	80-120
Zinc	40.7	0.400	"	40.0	102	80-120
Selenium	4.59	0.260	"	4.00	115	80-120

**Duplicate (BHC0813-DUP1)**

Source: 2402324-01

Prepared: 03/21/24 Analyzed: 04/06/24

Arsenic	1.91	0.200	mg/kg dry	1.52	23.0	20	QR-01
Barium	61.5	0.400	"	55.1	11.0	20	
Cadmium	0.139	0.200	"	0.114	19.2	20	
Copper	3.25	0.400	"	2.99	8.47	20	
Lead	4.50	0.200	"	3.98	12.1	20	
Nickel	2.77	0.400	"	2.40	14.3	20	
Silver	0.0186	0.0200	"	0.0163	12.7	20	
Zinc	13.9	0.400	"	12.3	11.8	20	
Selenium	ND	0.260	"	ND		20	

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**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 BHC0813 - EPA 3050B**

Matrix Spike (BHC0813-MS1)		Source: 2402324-01			Prepared: 03/21/24 Analyzed: 04/06/24					
Arsenic	45.0	0.200	mg/kg dry	44.2	1.52	98.4	75-125			
Barium	94.7	0.400	"	44.2	55.1	89.6	75-125			
Cadmium	2.31	0.200	"	2.21	0.114	99.6	75-125			
Copper	36.0	0.400	"	44.2	2.99	74.7	75-125			QM-07
Lead	25.6	0.200	"	22.1	3.98	97.9	75-125			
Nickel	35.6	0.400	"	44.2	2.40	75.3	75-125			
Silver	2.18	0.0200	"	2.21	0.0163	98.0	75-125			
Zinc	45.8	0.400	"	44.2	12.3	75.7	75-125			
Selenium	4.71	0.260	"	4.42	ND	107	75-125			

Matrix Spike Dup (BHC0813-MSD1)		Source: 2402324-01			Prepared: 03/21/24 Analyzed: 04/06/24					
Arsenic	45.6	0.200	mg/kg dry	44.2	1.52	99.9	75-125	1.48	25	
Barium	96.2	0.400	"	44.2	55.1	93.0	75-125	1.57	25	
Cadmium	2.30	0.200	"	2.21	0.114	98.9	75-125	0.690	25	
Copper	37.0	0.400	"	44.2	2.99	77.1	75-125	2.87	25	
Lead	25.8	0.200	"	22.1	3.98	98.8	75-125	0.725	25	
Nickel	36.7	0.400	"	44.2	2.40	77.6	75-125	2.85	25	
Silver	2.16	0.0200	"	2.21	0.0163	97.1	75-125	0.936	25	
Zinc	47.4	0.400	"	44.2	12.3	79.4	75-125	3.55	25	
Selenium	4.75	0.260	"	4.42	ND	108	75-125	0.934	25	

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**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 BHC0795 - 3060A Mod**

**Blank (BHC0795-BLK1)**

Prepared: 03/21/24 Analyzed: 03/25/24

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BHC0795-BS1)**

Prepared: 03/21/24 Analyzed: 03/25/24

Chromium, Hexavalent 23.1 0.30 mg/kg wet 25.0 92.4 80-120

**Duplicate (BHC0795-DUP1)**

**Source: 2403309-02**

Prepared: 03/21/24 Analyzed: 03/25/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BHC0795-MS1)**

**Source: 2403309-02**

Prepared: 03/21/24 Analyzed: 03/25/24

Chromium, Hexavalent 26.6 0.30 mg/kg dry 27.0 ND 98.4 75-125

**Matrix Spike Dup (BHC0795-MSD1)**

**Source: 2403309-02**

Prepared: 03/21/24 Analyzed: 03/25/24

Chromium, Hexavalent 26.5 0.30 mg/kg dry 27.0 ND 98.2 75-125 0.203 20

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**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 BHD0091 - General Preparation**

**Blank (BHD0091-BLK1)**

Prepared: 04/03/24 Analyzed: 04/22/24

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

**LCS (BHD0091-BS1)**

Prepared: 04/03/24 Analyzed: 04/22/24

Calcium	6.12	0.0500	mg/L wet	5.00	122	70-130
Magnesium	4.71	0.0500	"	5.00	94.3	70-130
Sodium	5.07	0.0500	"	5.00	101	70-130

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 - Five Rivers K09-28D

Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**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 BHC0799 - General Preparation**

Duplicate (BHC0799-DUP1)		Source: 2402132-06		Prepared: 03/21/24 Analyzed: 03/26/24						
% Solids	96.6		%		96.9			0.241	20	

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 - Five Rivers K09-28D  
Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**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 BHD0097 - General Preparation**

**Blank (BHD0097-BLK1)**

Prepared: 04/03/24 Analyzed: 04/04/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHD0097-BS1)**

Prepared: 04/03/24 Analyzed: 04/04/24

Specific Conductance (EC) 0.158 0.0100 mmhos/cm 0.150 105 95-105

**Duplicate (BHD0097-DUP1)**

**Source: 2402494-02**

Prepared: 04/03/24 Analyzed: 04/04/24

Specific Conductance (EC) 0.0725 0.0100 mmhos/cm 0.0737 1.64 20

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 - Five Rivers K09-28D

Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control**  
**Summit Scientific**

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

**Batch BHD0095 - General Preparation**

**LCS (BHD0095-BS1)**

Prepared: 04/03/24 Analyzed: 04/04/24

pH	9.24	pH Units	9.18	101	95-105
----	------	----------	------	-----	--------

**Duplicate (BHD0095-DUP1)**

**Source: 2402322-08**

Prepared: 04/03/24 Analyzed: 04/04/24

pH	8.97	pH Units	9.11	1.55	20
----	------	----------	------	------	----

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 - Five Rivers K09-28D

Project Number: UWRWE-A3349-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
05/22/24 13:52

### Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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.
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