

PDC Energy, Inc.
Second Quarter 2024 Groundwater Monitoring Summary

July 24, 2024

Former Seele 31, 41, 42-31 Tank Battery
NENE Section 31 T4N R67W
Remediation # 6926

This groundwater monitoring summary has been prepared by Tasman, Inc. for the former Seele 31, 41, 42-31 tank battery location.

Site History and Background

On January 9, 2012, a historic hydrocarbon release was discovered beneath a dump line on location during equipment upgrade activities. Following the discovery, mitigation efforts were initiated and on January 10, 2012, approximately 100 cubic yards of impacted material were removed from location. During excavation activities, groundwater was encountered within the excavation at approximately 9 feet below ground surface. Between first quarter 2012, and first quarter 2017, eight monitoring wells (BH01 – BH03, BH07 – BH11) were advanced within and adjacent to the former excavation extent to delineate dissolved phase hydrocarbon impacts and establish point of compliance (POC) on site.

In November 2022, tank battery decommissioning activities were completed, and a tank battery closure request was submitted under ECMC Document No. 403258722 for Remediation Project No. 25742. Further mitigation efforts were initiated on December 12, 2022, under Remediation No. 6926, to remove the remaining source mass material beneath the former tank battery. To date, approximately 2,400 cubic yards were removed from the excavation and transported off-site for disposal. During excavation activities, all eight site monitoring wells were destroyed. Between July 13, and August 28, 2023, eleven (11) monitoring wells (BH12 – BH22) were installed within and surrounding the former excavation extent to delineate dissolved-phase hydrocarbon impacts and replace monitoring wells destroyed during excavation activities.

Groundwater Monitoring Activities

On June 7, 2024, groundwater monitoring was conducted at all 11 monitoring well locations (BH12 – BH22). Eleven groundwater samples were submitted to Summit Scientific Laboratory for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260B, chloride and sulfate anions by EPA Method 300.0, and total dissolved solids (TDS) by Method SM 2540C.

Second quarter 2024 analytical results indicated that organic compound concentrations were in compliance with the applicable ECMC regulatory standards in the 11 monitoring well locations. Inorganic parameter trends were examined over time and compared to historic background data and groundwater

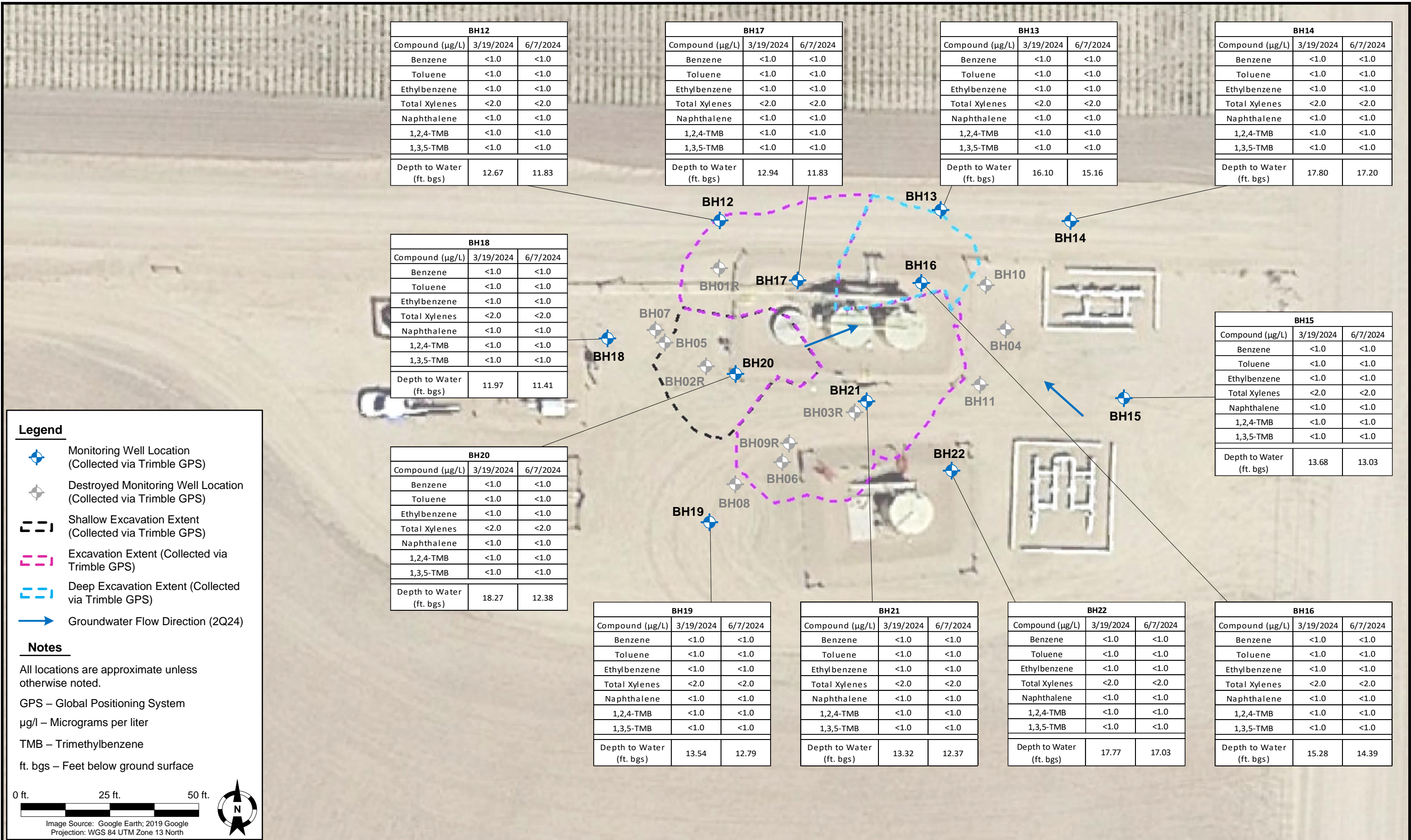
flow direction. Based on this data, TDS and sulfate anion concentrations were in compliance with the applicable regulatory standards or within the 125% threshold of the historic maximum background concentration recorded in the up-/cross-gradient monitoring wells (BH15, BH18, and BH19) in all monitoring well locations. Chloride anion concentrations were in compliance with the applicable regulatory standards in all 11 monitoring well locations. The graphs illustrating the data are included as Attachment A. Sample locations and corresponding analytical results are illustrated on Figures 1 and 2. Groundwater elevation data is illustrated on Figure 3. Groundwater analytical results are summarized in Tables 1 and 2. The laboratory analytical report is included in Attachment B.

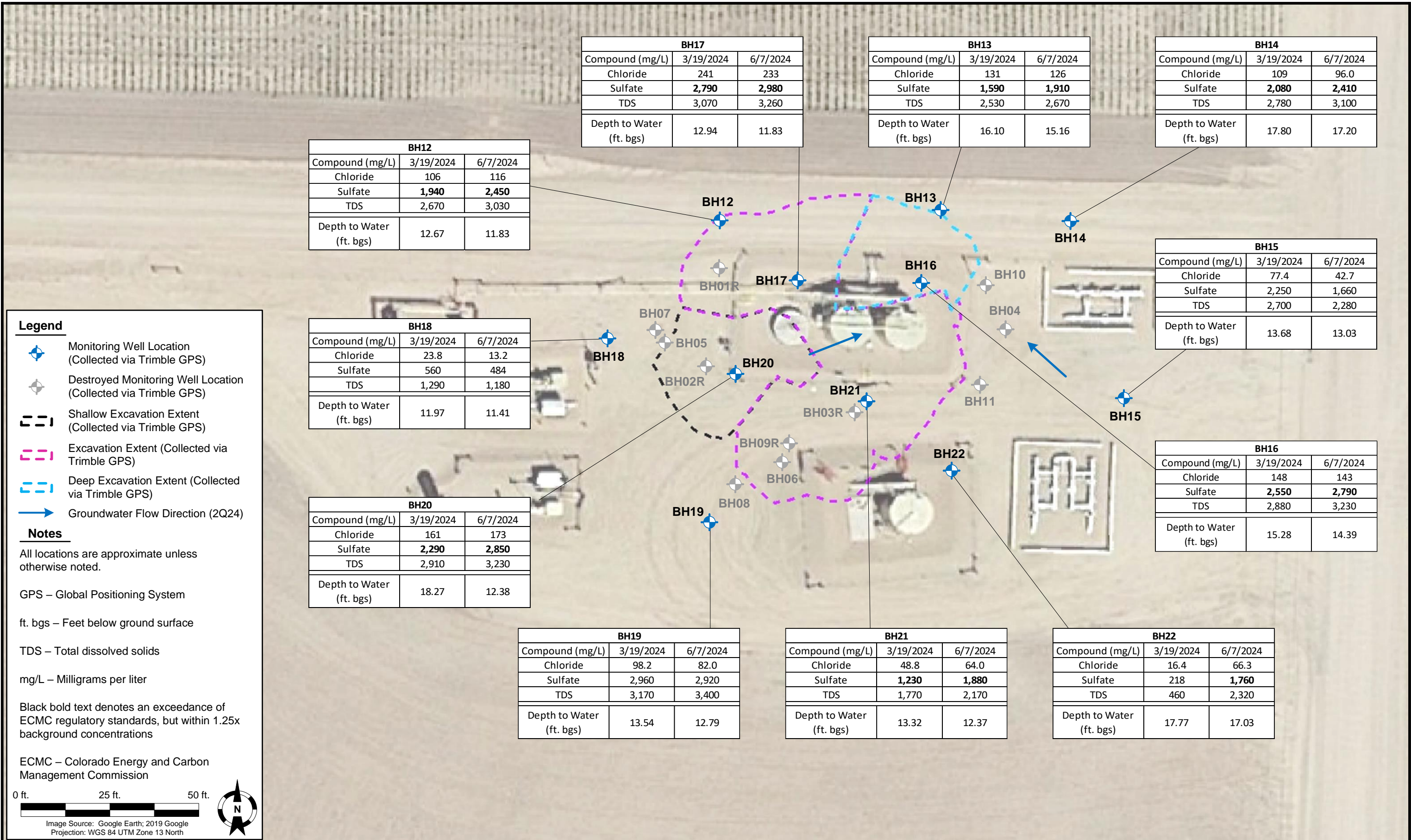
Current Remediation Activities and Path Forward

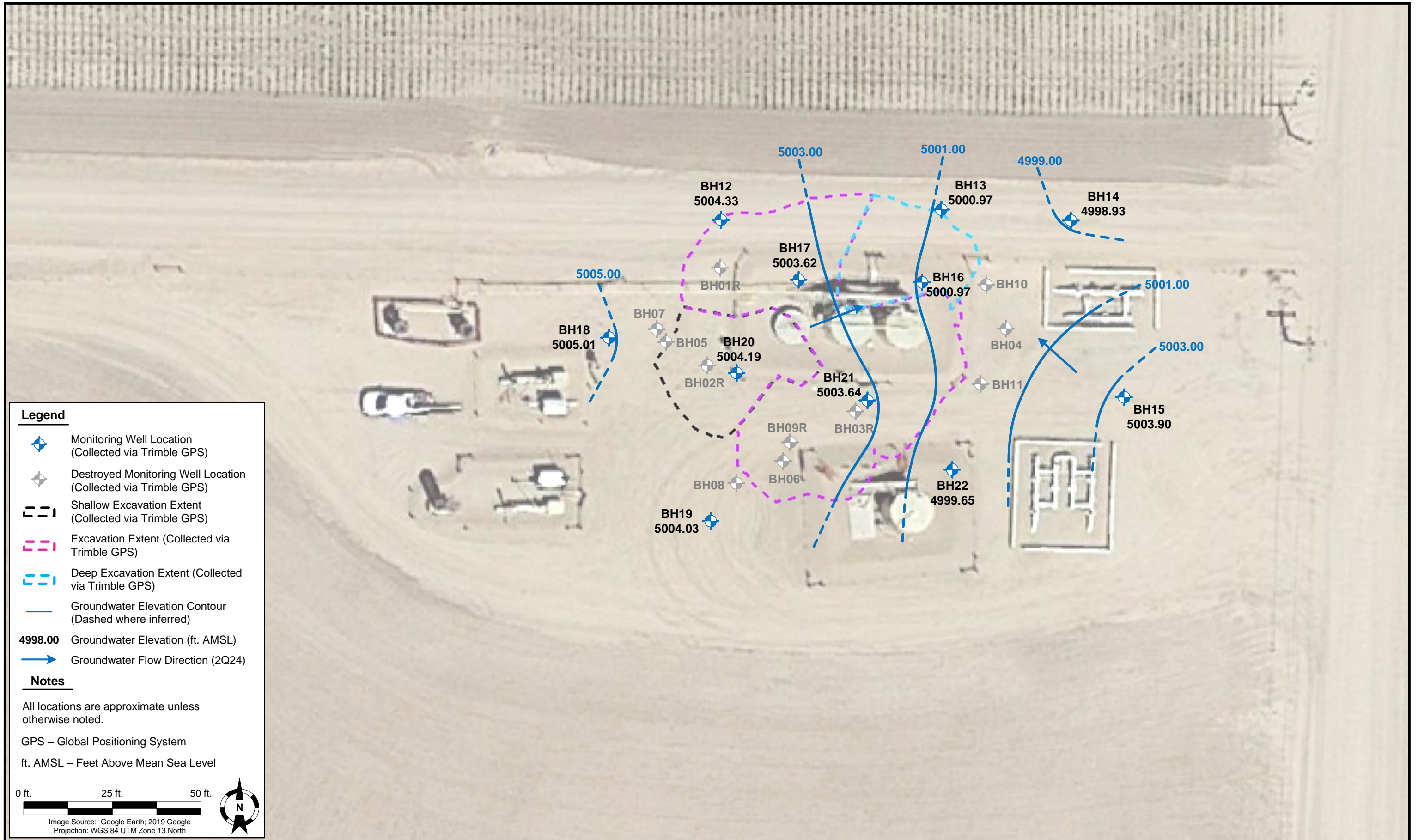
Enhanced fluid recovery (EFR) with air sparge (AS) was initiated in the third quarter 2012 and continued through the fourth quarter 2015. Based on the analytical results received from quarterly groundwater monitoring events, monitored natural attenuation (MNA) was implemented as the selected remediation strategy during the fourth quarter 2015 and continued into the second quarter 2016. EFR/AS was reinitiated during the second quarter 2016 due to a rebound in dissolved-phase hydrocarbon concentrations. EFR/AS continued as the selected remediation strategy through the fourth quarter 2022. MNA was reinitiated following source mass removal activities during the third quarter 2023 and will remain the selected remediation strategy through the third quarter 2024.

During the second quarter 2024, four consecutive quarters of TDS and sulfate anion concentrations in compliance with the applicable ECMC regulatory standards were achieved. Consequently, PDC is requesting to remove TDS and sulfate from the quarterly sampling and analysis plan.

Third quarter 2024 groundwater sampling will be conducted in September 2024.







Legend

- Monitoring Well Location (Collected via Trimble GPS)
- Destroyed Monitoring Well Location (Collected via Trimble GPS)
- Shallow Excavation Extent (Collected via Trimble GPS)
- Excavation Extent (Collected via Trimble GPS)
- Deep Excavation Extent (Collected via Trimble GPS)
- Groundwater Elevation Contour (Dashed where inferred)
- Groundwater Flow Direction (2Q24)

Notes

All locations are approximate unless otherwise noted.

GPS – Global Positioning System

ft. AMSL – Feet Above Mean Sea Level

0 ft. 25 ft. 50 ft.

Image Source: Google Earth; 2019 Google
Projection: WGS 84 UTM Zone 13 North

TABLE 1
FORMER SEELE 31, 41, 42-31 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
ECMC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
BH01R	4/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.17	4998.72
BH01R	7/9/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.43	4999.46
BH01R	10/5/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.18	4999.71
BH01R	1/5/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.72	4998.17
BH01R	4/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.16	4997.73
BH01R	7/29/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.13	4997.76
BH01R	10/26/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.07	4997.82
BH01R	Monitoring Well Destroyed									
BH02R	4/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.21	4999.08
BH02R	7/9/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.11	4998.18
BH02R	10/5/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.30	4997.99
BH02R	1/5/2022	Not Sampled - Dry							Dry	Dry
BH02R	4/15/2022	Not Sampled - Dry							Dry	Dry
BH02R	7/29/2022	Not Sampled - Dry							Dry	Dry
BH02R	10/26/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.27	4999.02
BH02R	Monitoring Well Destroyed									
BH03R	4/8/2021	49	<1.0	<1.0	19	<1.0	<1.0	2.2	11.94	4999.01
BH03R	7/9/2021	950	47	9.3	82	1.6	1.8	3.4	11.56	4999.39
BH03R	10/5/2021	820	7.0	2.6	60	2.0	<1.0	2.0	11.86	4999.09
BH03R	1/5/2022	180	1.8	6.9	34	<1.0	4.9	<1.0	13.05	4997.90
BH03R	4/15/2022	410	2.8	9.8	30	1.4	8.8	4.0	13.21	4997.74
BH03R	7/29/2022	640	1.7	17	79	2.8	21	1.8	13.19	4997.76
BH03R	10/26/2022	1,400	<1.0	47	100	5.2	50	8.0	12.45	4998.50
BH03R	Monitoring Well Destroyed									
BH07	4/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.36	4999.96
BH07	7/9/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.00	5000.32
BH07	10/5/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	9.69	5000.63
BH07	1/5/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.10	4999.22
BH07	4/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.50	4998.82
BH07	7/29/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.50	4998.82
BH07	10/26/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.30	4998.02
BH07	Monitoring Well Destroyed									
BH08	4/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.86	4999.97
BH08	7/9/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.06	5000.77
BH08	10/5/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.65	5000.18
BH08	1/5/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.16	4998.67
BH08	4/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.37	4998.46
BH08	7/29/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.35	4998.48
BH08	10/26/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.02	4999.81
BH08	Monitoring Well Destroyed									
BH09	4/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.99	4999.85
BH09	7/9/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.98	4999.86
BH09	10/5/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.08	4999.76
BH09	1/5/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.39	4998.45
BH09	4/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.58	4998.26
BH09	7/29/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.57	4998.27
BH09	10/26/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.42	4999.42
BH09	Monitoring Well Destroyed									
BH10	4/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.49	4997.86
BH10	7/9/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.09	4998.26
BH10	10/5/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.29	4998.06
BH10	1/5/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	14.66	4994.69
BH10	4/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	14.61	4994.74

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ECMC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
BH10	7/29/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	14.58	4994.77
BH10	10/26/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	15.58	4993.77
BH10	Monitoring Well Destroyed									
BH11	4/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.97	4999.28
BH11	7/9/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.41	4999.84
BH11	10/5/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.87	4999.38
BH11	1/5/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.01	4998.24
BH11	4/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.56	4998.69
BH11	7/29/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.55	4998.70
BH11	10/26/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.73	4998.52
BH11	Monitoring Well Destroyed									
BH12	9/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.13	5005.03
BH12 ⁽³⁾	12/29/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.28	5003.88
BH12	3/19/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.67	5003.49
BH12	6/7/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.83	5004.33
BH13	9/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	13.93	5002.20
BH13 ⁽³⁾	12/29/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	15.52	5000.61
BH13	3/19/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	16.10	5000.03
BH13	6/7/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	15.16	5000.97
BH14	9/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	16.22	4999.91
BH14 ⁽³⁾	12/29/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	17.37	4998.76
BH14	3/19/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	17.80	4998.33
BH14	6/7/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	17.20	4998.93
BH15	9/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.02	5004.91
BH15	12/12/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	18.55	4998.38
BH15	3/19/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	13.68	5003.25
BH15	6/7/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	13.03	5003.90
BH16	9/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.88	5002.48
BH16	12/12/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	17.24	4998.12
BH16	3/19/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	15.28	5000.08
BH16	6/7/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	14.39	5000.97
BH17	9/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.76	5004.69
BH17	12/12/2023	5.8	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.11	5003.34
BH17	3/19/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.94	5002.51
BH17	6/7/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.83	5003.62
BH18	9/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.36	5006.06
BH18	12/12/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.39	5005.03
BH18	3/19/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.97	5004.45
BH18	6/7/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.41	5005.01
BH19	9/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	11.17	5005.65
BH19	12/12/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.65	5004.17
BH19	3/19/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	13.54	5003.28
BH19	6/7/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.79	5004.03
BH20	9/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.83	5005.74
BH20	12/12/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.30	5004.27
BH20	3/19/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	18.27	4998.30
BH20	6/7/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.38	5004.19
BH21	9/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10.46	5005.55
BH21	12/12/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.24	5003.77
BH21	3/19/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	13.32	5002.69

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ORGANIC COMPOUNDS

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
ECMC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
BH21	6/7/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	12.37	5003.64
BH22	9/15/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	16.21	5000.47
BH22	12/12/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	17.30	4999.38
BH22	3/19/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	17.77	4998.91
BH22	6/7/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	17.03	4999.65

Notes:

- Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.
 - Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.
 - Due to these monitoring wells being buried, sampling activities were completed on December 29, 2023.
- TMB = Trimethylbenzene
ECMC = Colorado Energy and Carbon Management Commission
µg/L = Micrograms per liter
(<) = Analytical result is less than the indicated laboratory reporting limit.
ft. = Feet
AMSL = Above Mean Sea Level
BOLD = Analytical result is in exceedance of ECMC groundwater standard.

TABLE 2
FORMER SEELE 31, 41, 42-31 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC PARAMETERS

Sample ID	Date Sampled	TDS* (unit)	Chloride Ion* (mg/L)	Sulfate Ion* (mg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
ECMC Table 915-1 Groundwater Standard (mg/L) ⁽¹⁾		<1.25 x BCKG	250 or <1.25 x BCKG	250 or <1.25 x BCKG	-	-
BH12	9/15/2023	3,360	139	1,920	11.13	5005.03
BH12 ⁽³⁾	12/29/2023	3,300	135	2,320	12.28	5003.88
BH12	3/19/2024	2,670	106	1,940	12.67	5003.49
BH12	6/7/2024	3,030	116	2,450	11.83	5004.33
BH13	9/15/2023	3,380	169	1,780	13.93	5002.20
BH13 ⁽³⁾	12/29/2023	3,020	125	1,940	15.52	5000.61
BH13	3/19/2024	2,530	131	1,590	16.10	5000.03
BH13	6/7/2024	2,670	126	1,910	15.16	5000.97
BH14	9/15/2023	3,380	63.6	2,100	16.22	4999.91
BH14 ⁽³⁾	12/29/2023	3,380	103	2,230	17.37	4998.76
BH14	3/19/2024	2,780	109	2,080	17.80	4998.33
BH14	6/7/2024	3,100	96.0	2,410	17.20	4998.93
BH15	9/15/2023	2,020	24.0	832	12.02	5004.91
BH15	12/12/2023	1,990	25.8	1,170	18.55	4998.38
BH15	3/19/2024	2,700	77.4	2,250	13.68	5003.25
BH15	6/7/2024	2,280	42.7	1,660	13.03	5003.90
BH16	9/15/2023	3,350	139	2,360	12.88	5002.48
BH16	12/12/2023	3,270	148	2,510	17.24	4998.12
BH16	3/19/2024	2,880	148	2,550	15.28	5000.08
BH16	6/7/2024	3,230	143	2,790	14.39	5000.97
BH17	9/15/2023	3,740	257	2,610	10.76	5004.69
BH17	12/12/2023	3,400	227	2,660	12.11	5003.34
BH17	3/19/2024	3,070	241	2,790	12.94	5002.51
BH17	6/7/2024	3,260	233	2,980	11.83	5003.62
BH18	9/15/2023	1,540	37.0	420	10.36	5006.06
BH18	12/12/2023	1,110	118	351	11.39	5005.03
BH18	3/19/2024	1,290	23.8	560	11.97	5004.45
BH18	6/7/2024	1,180	13.2	484	11.41	5005.01
BH19	9/15/2023	2,820	45.6	1,500	11.17	5005.65
BH19	12/12/2023	2,500	33.0	1,540	12.65	5004.17
BH19	3/19/2024	3,170	98.2	2,960	13.54	5003.28
BH19	6/7/2024	3,400	82.0	2,920	12.79	5004.03
BH20	9/15/2023	3,480	149	2,430	10.83	5005.74

TABLE 2
FORMER SEELE 31, 41, 42-31 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC PARAMETERS

Sample ID	Date Sampled	TDS* (unit)	Chloride Ion* (mg/L)	Sulfate Ion* (mg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
ECMC Table 915-1 Groundwater Standard (mg/L) ⁽¹⁾		<1.25 x BCKG	250 or <1.25 x BCKG	250 or <1.25 x BCKG	-	-
BH20	12/12/2023	2,910	85.4	2,430	12.30	5004.27
BH20	3/19/2024	2,910	161	2,290	18.27	4998.30
BH20	6/7/2024	3,230	173	2,850	12.38	5004.19
BH21	9/15/2023	2,180	56.4	1,290	10.46	5005.55
BH21	12/12/2023	2,140	57.6	1,570	12.24	5003.77
BH21	3/19/2024	1,770	48.8	1,230	13.32	5002.69
BH21	6/7/2024	2,170	64.0	1,880	12.37	5003.64
BH22	9/15/2023	2,960	72.4	1,740	16.21	5000.47
BH22	12/12/2023	2,800	96.4	1,880	17.30	4999.38
BH22	3/19/2024	460	16.4	218	17.77	4998.91
BH22	6/7/2024	2,320	66.3	1,760	17.03	4999.65

Notes:

- Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.
 - Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.
 - Due to these monitoring wells being buried, sampling activities were completed on December 29, 2023.
- * = Maximum historic background concentration used to compare to site inorganic parameters.

TDS = Total dissolved solids

ECMC= Colorado Energy and Carbon Management Commission

BCKG = Background

mg/L = Milligrams per liter

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

 = Up-gradient well location used for background concentration.

 = Historic up-gradient well locations used for background concentration.

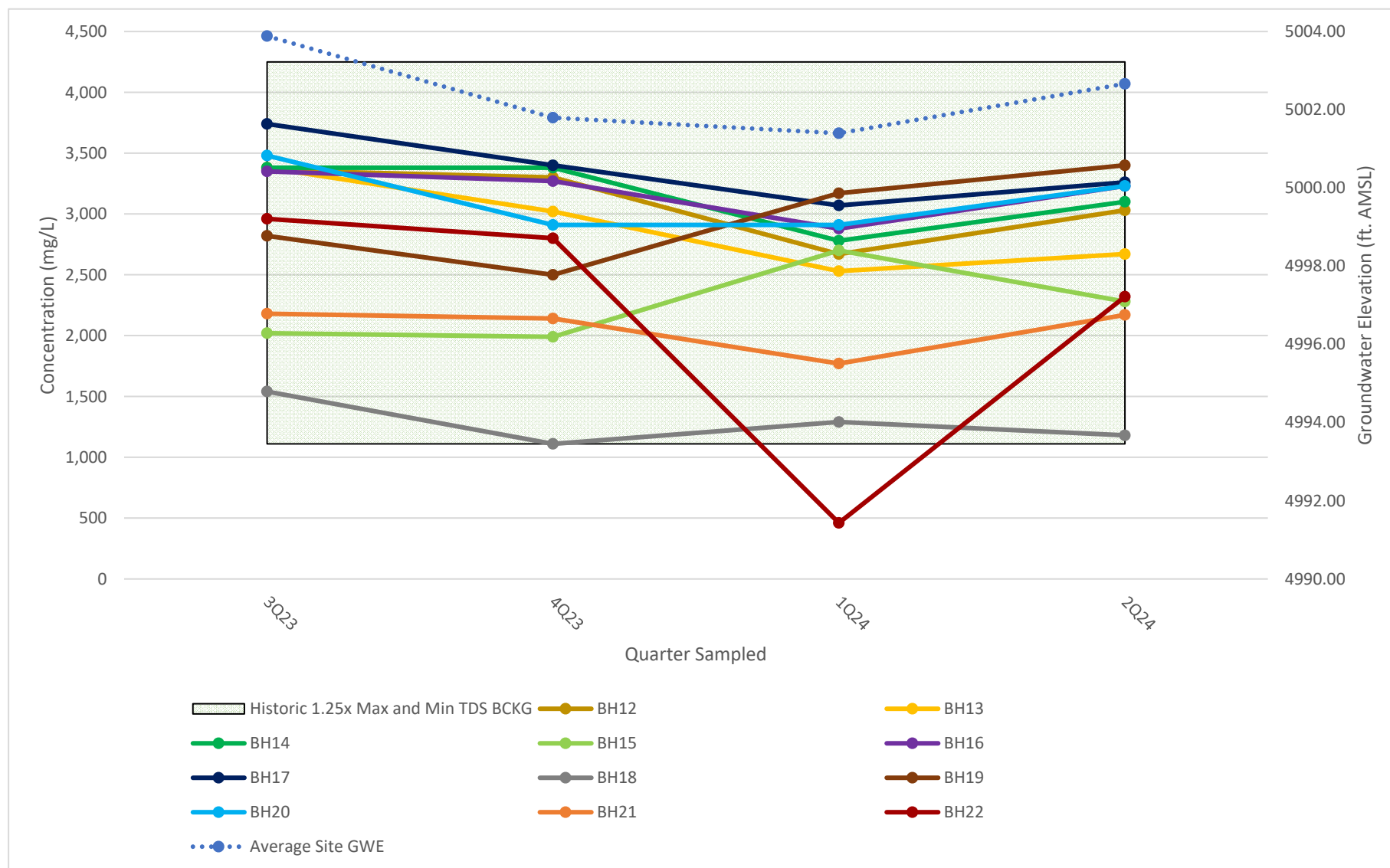
BOLD = Analytical result is in exceedance of applicable standard.

BOLD = Analytical result is in exceedance of applicable standard, but within 1.25x background concentrations.

Attachment A

Former Seele 31, 41, 42-31 Tank Battery

TDS Concentrations vs Historic Background vs Groundwater Elevation



NOTES:

TDS = total dissolved solids

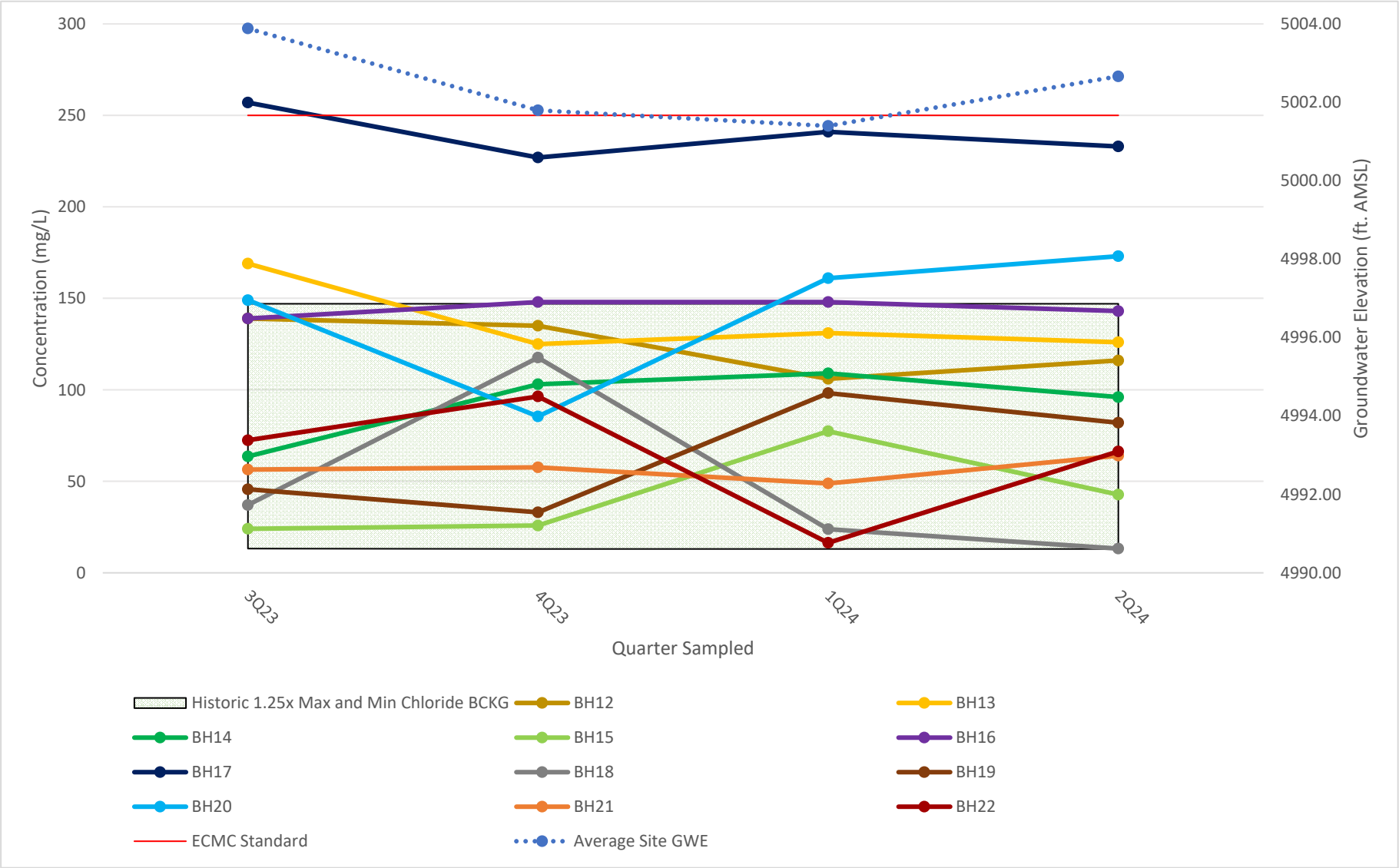
mg/L = milligrams per liter

BCKG = background

GWE = groundwater elevation

ft. AMSL = feet above mean sea level

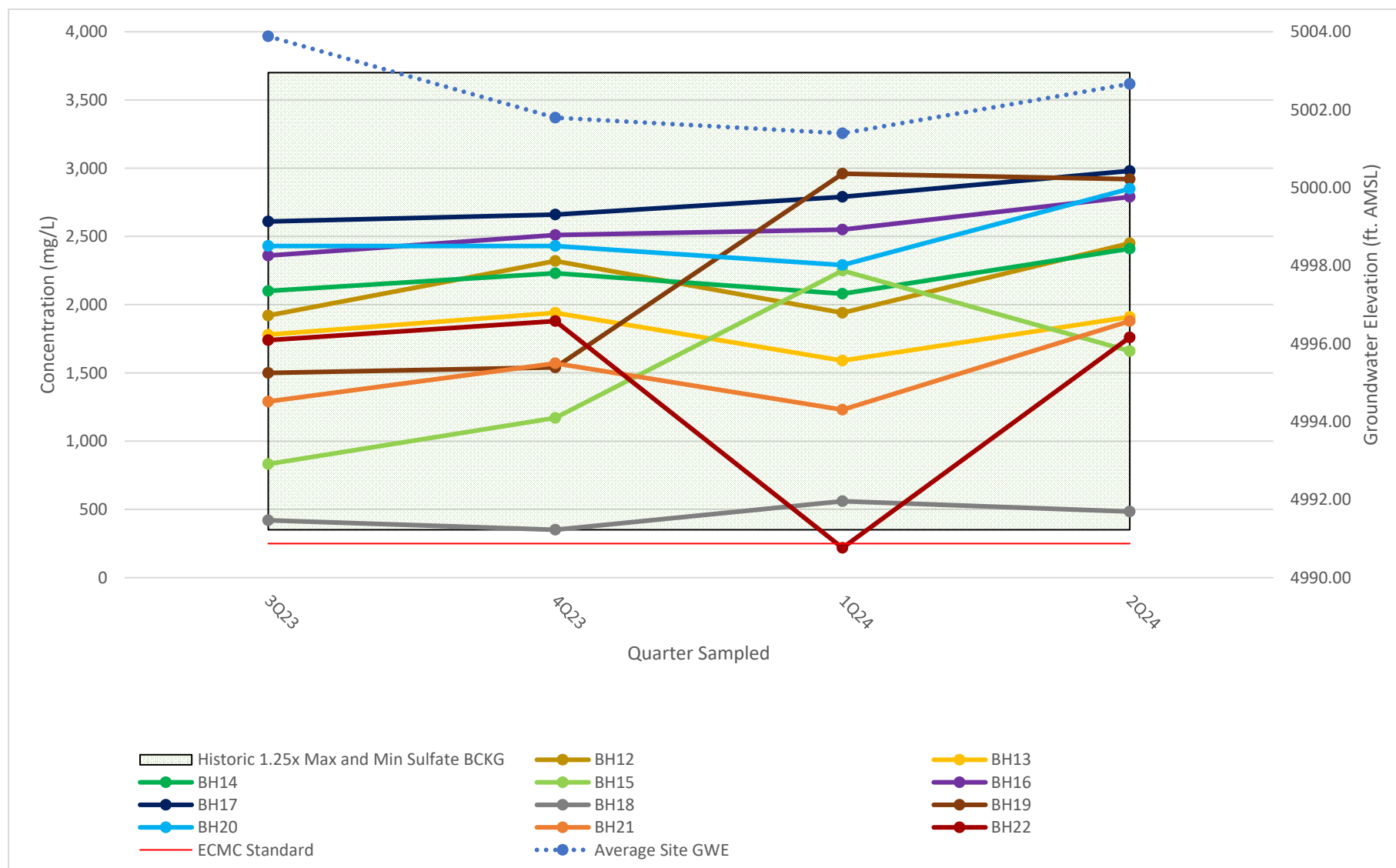
Former Seele 31, 41, 42-31 Tank Battery
Chloride Concentrations vs Historic Background vs Groundwater Elevation



NOTES:
mg/L = milligrams per liter
BCKG = background
GWE = groundwater elevation
ft. AMSL = feet above mean sea level
ECMC = Colorado Energy and Carbon Management Commission

Former Seele 31, 41, 42-31 Tank Battery

Sulfate Concentrations vs Historic Background vs Groundwater Elevation



NOTES:

mg/L = milligrams per liter

BCKG = background

GWE = groundwater elevation

ft. AMSL = feet above mean sea level

Attachment B

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 09, 2024

Karen Olson

Tasman Geosciences

6855 W. 119th Ave.

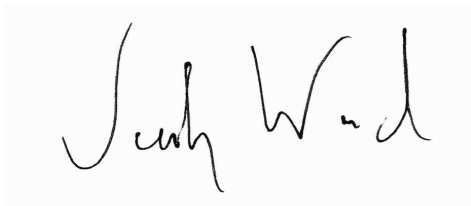
Broomfield, CO 80020

RE: PDC - Seele 31,41,42-31

Work Order #2406107

Enclosed are the results of analyses for samples received by Summit Scientific on 06/07/24 17:43. 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: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

ANALYTICAL REPORT FOR SAMPLES

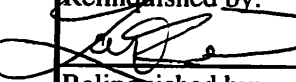
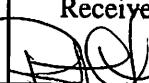
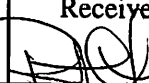
Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH12	2406107-01	Water	06/07/24 11:03	06/07/24 17:43
BH13	2406107-02	Water	06/07/24 11:04	06/07/24 17:43
BH14	2406107-03	Water	06/07/24 11:30	06/07/24 17:43
BH15	2406107-04	Water	06/07/24 11:36	06/07/24 17:43
BH16	2406107-05	Water	06/07/24 13:48	06/07/24 17:43
BH17	2406107-06	Water	06/07/24 13:53	06/07/24 17:43
BH18	2406107-07	Water	06/07/24 12:11	06/07/24 17:43
BH19	2406107-08	Water	06/07/24 13:16	06/07/24 17:43
BH20	2406107-09	Water	06/07/24 13:32	06/07/24 17:43
BH21	2406107-10	Water	06/07/24 10:23	06/07/24 17:43
BH22	2406107-11	Water	06/07/24 11:55	06/07/24 17:43

Summit Scientific

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

Client: PDC / Tasman		Send Data To: Project Manager: Karen Olson		Send Invoice To: Company: PDC Energy	
Address: 6855 W 119th Ave		E-Mail: karen.olson@chevron.com		Project Name/Location:	
City/State/Zip: Broomfield / CO / 80220				AFE#:	
Phone: 303-487-1228		Project Name: Seele 3141, 42-31		PO/Billing Codes:	
Sampler Name: Loken Bohanna + Sylvie Bousquet		Project Number:		Contact: Karen Olson	

					Preservative				Matrix				Analysis Requested								Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN	1,2,4 & 1,3,5-TMB	TDS, Cl, SO4							
1	BH12	06-7-24	11:03	4	3		1		X				X	X	X							
2	BH13		11:04	1	1		1															
3	BH14		11:30	1	1																	
4	BH15		11:36	1	1																	
5	BH16		13:48	1	1																	
6	BH17		13:53	1	1																	
7	BH18		12:11	1	1																	
8	BH19		13:16	1	1																	
9	BH20		13:32	1	1																	
10	BH21		10:23	1	1																	
11	BH22			11:55	1	1		1		1				1	1	1						
12																						
13																						
14																						
15																						

Relinquished by: 	Date/Time: 06-07-24 / 3:38pm	Received by: 	Date/Time: 06-07-24 / 1743	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Lock Box	Date/Time: 06-07-24 / 1743	Received by: 	Date/Time: 06-07-24 / 1743	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 7.9		Corrected Temperature 8		IR gun #: 1	HNO3 lot #:	

S₂

Sample Receipt Checklist

S2 Work Order# 2406107Client: Patterson Client Project ID: Seale 31,41,42-31Shipped 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? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on 2/18
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.
AS
Custodian Printed Name

6/7/24
Date/Time



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

Project: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

BH12
2406107-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/07/24 11:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BHF0300	06/11/24	06/12/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/07/24 11:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	14.1	106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.4	100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.6	94.4 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/07/24 11:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chloride	116	12.0	mg/L	200	BHF0928	06/27/24	06/28/24	EPA 300.0	
Sulfate	2450	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/07/24 11:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	3030	10.0	mg/L	1	BHF0275	06/11/24	06/12/24	SM2540C	

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: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

BH13
2406107-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/07/24 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0300	06/11/24	06/12/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/07/24 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	14.5	109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.0	97.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.0	90.3 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/07/24 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	126	12.0	mg/L	200	BHF0928	06/27/24	06/28/24	EPA 300.0	
Sulfate	1910	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/07/24 11:04**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	2670	10.0	mg/L	1	BHF0275	06/11/24	06/12/24	SM2540C	

Summit Scientific

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

Project: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

BH14
2406107-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/07/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0300	06/11/24	06/12/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/07/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	14.5	109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.4	101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.3	92.0 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/07/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	96.0	12.0	mg/L	200	BHF0928	06/27/24	06/28/24	EPA 300.0	
Sulfate	2410	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/07/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	3100	10.0	mg/L	1	BHF0275	06/11/24	06/12/24	SM2540C	

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: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

BH15
2406107-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/07/24 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0300	06/11/24	06/12/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/07/24 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	14.3	107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.4	101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.5	93.5 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/07/24 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	42.7	12.0	mg/L	200	BHF0928	06/27/24	06/28/24	EPA 300.0	
Sulfate	1660	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/07/24 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	2280	10.0	mg/L	1	BHF0275	06/11/24	06/12/24	SM2540C	

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: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

BH16
2406107-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/07/24 13:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0300	06/11/24	06/12/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/07/24 13:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	14.0	105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.4	100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.3	92.2 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/07/24 13:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	143	12.0	mg/L	200	BHF0928	06/27/24	06/28/24	EPA 300.0	
Sulfate	2790	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/07/24 13:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	3230	10.0	mg/L	1	BHF0275	06/11/24	06/12/24	SM2540C	JAN

Summit Scientific

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

Project: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

BH17
2406107-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/07/24 13:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0300	06/11/24	06/12/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/07/24 13:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	14.3	107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.4	100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.3	92.0 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/07/24 13:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	233	12.0	mg/L	200	BHF0928	06/27/24	06/28/24	EPA 300.0	
Sulfate	2980	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/07/24 13:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	3260	10.0	mg/L	1	BHF0275	06/11/24	06/12/24	SM2540C	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

BH18
2406107-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/07/24 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0300	06/11/24	06/12/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/07/24 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	14.0	105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.4	101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	11.7	88.1 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/07/24 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	13.2	12.0	mg/L	200	BHF0928	06/27/24	06/28/24	EPA 300.0	
Sulfate	484	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/07/24 12:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1180	10.0	mg/L	1	BHF0275	06/11/24	06/12/24	SM2540C	

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Tasman Geosciences
6855 W. 119th Ave.
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Project: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

BH19
2406107-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/07/24 13:16**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0300	06/11/24	06/12/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/07/24 13:16**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.4	101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.3	99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	11.2	84.3 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/07/24 13:16**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	82.0	12.0	mg/L	200	BHF0928	06/27/24	06/28/24	EPA 300.0	
Sulfate	2920	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/07/24 13:16**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	3400	10.0	mg/L	1	BHF0275	06/11/24	06/12/24	SM2540C	

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

Project: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

BH20
2406107-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/07/24 13:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0300	06/11/24	06/12/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/07/24 13:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.2	99.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.2	98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	11.3	85.1 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/07/24 13:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	173	12.0	mg/L	200	BHF0928	06/27/24	06/28/24	EPA 300.0	
Sulfate	2850	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/07/24 13:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	3230	10.0	mg/L	1	BHF0275	06/11/24	06/12/24	SM2540C	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

BH21
2406107-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/07/24 10:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0300	06/11/24	06/12/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/07/24 10:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.3	99.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.2	99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	11.7	87.5 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/07/24 10:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	64.0	12.0	mg/L	200	BHF0928	06/27/24	06/28/24	EPA 300.0	
Sulfate	1880	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/07/24 10:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	2170	10.0	mg/L	1	BHF0275	06/11/24	06/12/24	SM2540C	

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Tasman Geosciences
6855 W. 119th Ave.
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Project: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

BH22
2406107-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/07/24 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHF0300	06/11/24	06/12/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/07/24 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	13.8	103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.3	99.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	11.6	86.7 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **06/07/24 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	66.3	12.0	mg/L	200	BHF0928	06/27/24	06/28/24	EPA 300.0	
Sulfate	1760	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **06/07/24 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	2320	10.0	mg/L	1	BHF0275	06/11/24	06/12/24	SM2540C	

Summit Scientific

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

Project: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

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 BHF0300 - EPA 5030 Water MS

Blank (BHF0300-BLK1)

Prepared & Analyzed: 06/11/24

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.2		"	13.3		107	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	12.1		"	13.3		90.6	21-167			

LCS (BHF0300-BS1)

Prepared & Analyzed: 06/11/24

Benzene	38.8	1.0	ug/l	33.3		117	51-132			
Toluene	39.4	1.0	"	33.3		118	51-138			
Ethylbenzene	39.9	1.0	"	33.3		120	58-146			
m,p-Xylene	78.5	2.0	"	66.7		118	57-144			
o-Xylene	35.5	1.0	"	33.3		107	53-146			
Naphthalene	32.2	1.0	"	33.3		96.7	70-130			
1,2,4-Trimethylbenzene	38.4	1.0	"	33.3		115	70-130			
1,3,5-Trimethylbenzene	38.7	1.0	"	33.3		116	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.7		"	13.3		110	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		92.8	21-167			

Matrix Spike (BHF0300-MS1)

Source: 2406066-01

Prepared & Analyzed: 06/11/24

Benzene	26.6	1.0	ug/l	33.3	ND	79.9	34-141			
Toluene	26.6	1.0	"	33.3	ND	79.9	27-151			
Ethylbenzene	26.2	1.0	"	33.3	ND	78.7	29-160			
m,p-Xylene	51.1	2.0	"	66.7	ND	76.7	20-166			
o-Xylene	23.3	1.0	"	33.3	ND	69.9	33-159			
Naphthalene	21.3	1.0	"	33.3	ND	64.0	70-130			QM-07
1,2,4-Trimethylbenzene	22.8	1.0	"	33.3	ND	68.5	70-130			QM-07
1,3,5-Trimethylbenzene	23.1	1.0	"	33.3	ND	69.3	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	14.7		"	13.3		111	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		100	20-170			
Surrogate: 4-Bromofluorobenzene	12.1		"	13.3		90.6	21-167			

Summit Scientific

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

Project: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

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 BHF0300 - EPA 5030 Water MS

Matrix Spike Dup (BHF0300-MSD1)	Source: 2406066-01			Prepared & Analyzed: 06/11/24						
Benzene	19.2	1.0	ug/l	33.3	ND	57.5	34-141	32.6	30	QR-03
Toluene	18.8	1.0	"	33.3	ND	56.5	27-151	34.3	30	QR-03
Ethylbenzene	18.1	1.0	"	33.3	ND	54.3	29-160	36.7	30	QR-03
m,p-Xylene	35.2	2.0	"	66.7	ND	52.8	20-166	36.8	30	QR-03
o-Xylene	16.1	1.0	"	33.3	ND	48.3	33-159	36.4	30	QR-03
Naphthalene	14.0	1.0	"	33.3	ND	42.1	70-130	41.2	30	QM-07
1,2,4-Trimethylbenzene	15.9	1.0	"	33.3	ND	47.8	70-130	35.6	30	QM-07
1,3,5-Trimethylbenzene	16.0	1.0	"	33.3	ND	48.1	70-130	36.1	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	15.0		"	13.3		112	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.0	21-167			

Summit Scientific

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

Project: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

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

Batch BHF0928 - General Preparation

Blank (BHF0928-BLK1)

Prepared: 06/27/24 Analyzed: 06/28/24

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

LCS (BHF0928-BS1)

Prepared: 06/27/24 Analyzed: 06/28/24

Chloride	0.248	0.0600	mg/L	3.00	8.25	90-110	QM-01
Sulfate	1.41	0.300	"	15.0	9.38	90-110	QM-01

Duplicate (BHF0928-DUP1)

Source: 2406107-01

Prepared: 06/27/24 Analyzed: 06/28/24

Chloride	112	12.0	mg/L	116	3.50	20
Sulfate	2350	60.0	"	2450	4.31	20

Matrix Spike (BHF0928-MS1)

Source: 2406107-01

Prepared: 06/27/24 Analyzed: 06/28/24

Chloride	783	12.0	mg/L	600	116	111	80-120
Sulfate	5690	60.0	"	3000	2450	108	80-120

Summit Scientific

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

Project: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BHF0275 - General Preparation

Blank (BHF0275-BLK1)

Prepared: 06/11/24 Analyzed: 06/12/24

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BHF0275-DUP1)

Source: 2406107-01

Prepared: 06/11/24 Analyzed: 06/12/24

Total Dissolved Solids 2920 10.0 mg/L 3030 3.83 20

Summit Scientific

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

Project: PDC - Seele 31,41,42-31

Project Number: [none]
Project Manager: Karen Olson

Reported:
07/09/24 09:18

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
QM-01	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
JAN	The reported TDS concentration is a qualitative estimate based on Total Anion Value + 10%. This has been adjusted to account for the sum of major anions as measured by ion chromatography.
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