



## **PDC Energy, Inc.**

### **Third Quarter 2024 Groundwater Monitoring Summary**

October 21, 2024

Former Churchill 5 Wellhead  
NWNW Section 28 T5N R64W  
Remediation # 20066

This groundwater monitoring summary has been prepared by Tasman, Inc. for the former Churchill 5 Wellhead location.

#### **Site History and Background**

On October 10, 2021, groundwater was encountered within the former wellhead excavation at approximately 6 feet below ground surface (bgs) during wellhead decommissioning activities. Analytical results received from the groundwater sample (GW05) collected from the base of the excavation indicated that the benzene concentration was in exceedance of the applicable ECMC Table 915-1 regulatory standards. No impacted soil was identified or removed during decommissioning activities. On August 12, 2022, five monitoring wells (BH01 – BH05) were installed to delineate dissolved-phase hydrocarbon impacts within and adjacent to the former excavation extent (Figure 1). Per the approved Supplemental Form 27 (Document No. 403540311), total dissolved solids (TDS), chloride, and sulfate were removed from the quarterly sampling and analysis plan following the third quarter 2023.

#### **Groundwater Monitoring Activities**

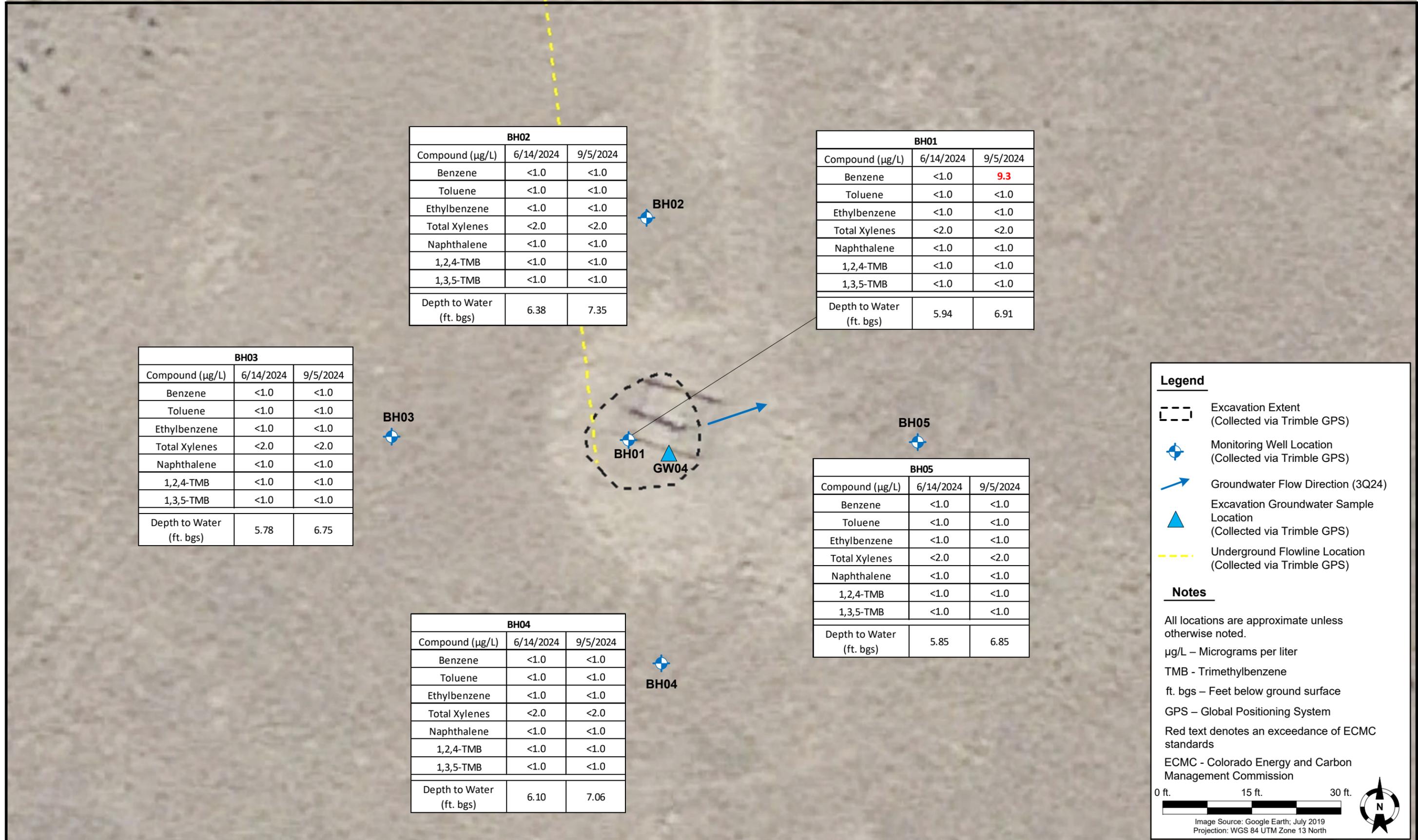
On September 5, 2024, groundwater monitoring was conducted at all five monitoring wells (BH01 – BH05). Five groundwater samples were submitted to Summit Scientific Laboratory for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB by EPA Method 8260B in accordance with Table 915-1 standards.

Third quarter 2024 analytical results indicated that organic compound concentrations were in compliance with the applicable regulatory standards in four of the five monitoring well locations, with monitoring well BH01 having Benzene concentrations above ECMC standards. Sample locations and corresponding analytical results are illustrated on Figure 1. Groundwater elevation data is illustrated on Figure 2. Groundwater analytical results are summarized in Table 1. The laboratory analytical report will be included with the associated Form 27 Supplemental submittal.

#### **Current Remediation Activities and Path Forward**

Monitored natural attenuation (MNA) was selected as the remediation strategy for this site during the third quarter 2022 and will remain the selected remediation strategy through the fourth quarter 2024.

Fourth quarter 2024 groundwater sampling will be conducted in December 2024.



DATE: October 21, 2024

DESIGNED BY: C. Hamlin

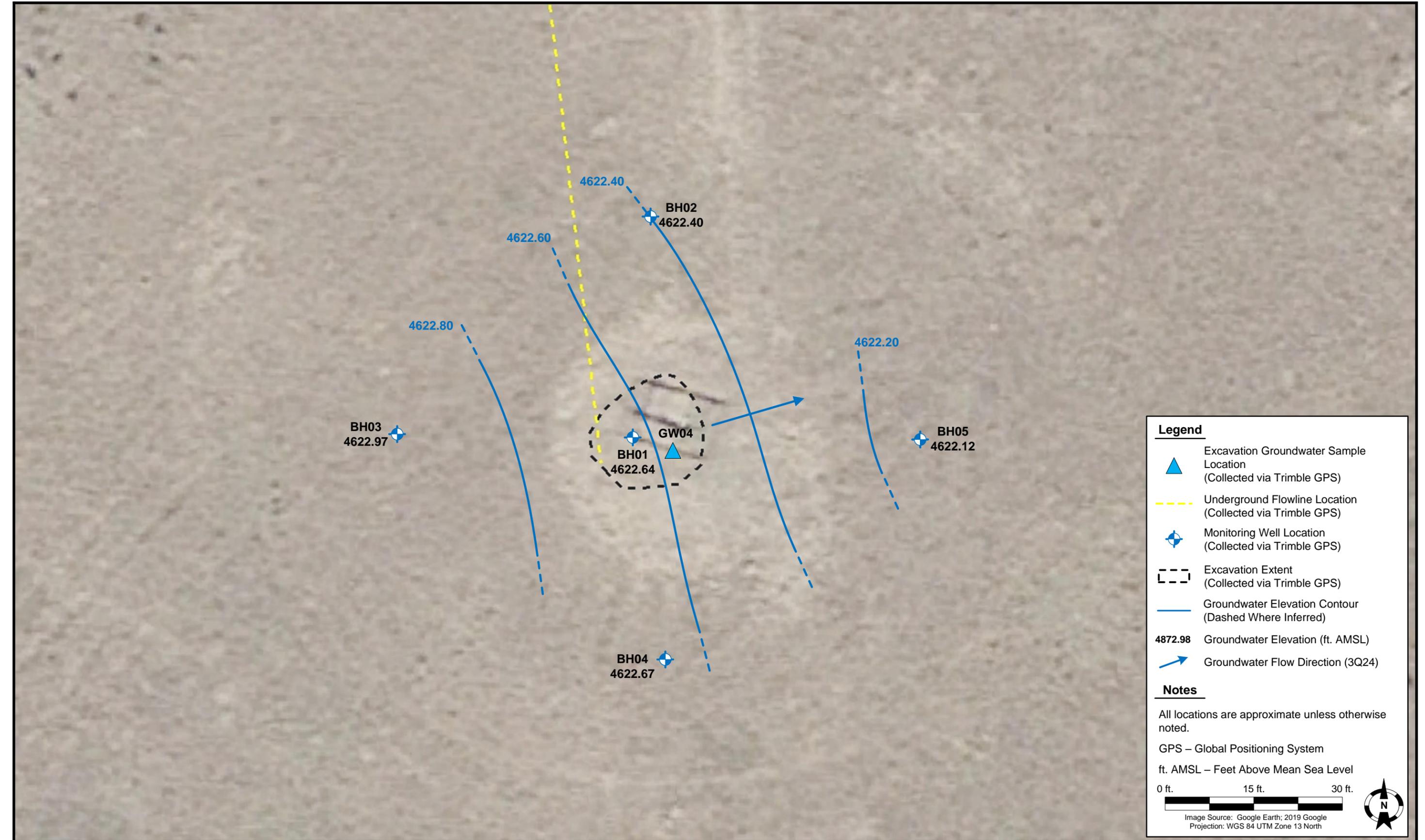
DRAWN BY: S. Bousquet



**PDC Energy, Inc. (69175) – DJ Basin**  
**Former Churchill 5 Wellhead**  
 NWNW, Section 28, Township 5 North, Range 64 West  
 Weld County, Colorado

**GROUNDWATER**  
**ANALYTICAL RESULTS**  
**MAP**

**FIGURE**  
**1**



DATE: October 21, 2024

DESIGNED BY: B. Nelson

DRAWN BY: J. Woffinden



**Tasman, Inc.**  
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**PDC Energy, Inc. (69175) – DJ Basin**  
**Former Churchill 5 Wellhead**  
NWNW, Section 28, Township 5 North, Range 64 West  
Weld County, Colorado

**GROUNDWATER  
ELEVATION CONTOUR  
MAP (09/05/2024)**

**FIGURE  
2**

**TABLE 1**  
**FORMER CHURCHILL 5 WELLHEAD**  
**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 <sup>(2)</sup> (ft.)	Groundwater Elevation (ft. AMSL)
<b>ECMC Table 915-1 Groundwater Standard (µg/L) <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	<b>140</b>	<b>67</b>	<b>67</b>	-	-
GW04	10/19/2021	<b>7.1</b>	13	<1.0	11	<1.0	1.3	<1.0	6	NA
BH01	9/14/2022	2.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.93	4622.62
BH01	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.70	4622.85
BH01	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.43	4623.12
BH01	6/1/2023	<b>18</b>	44	<1.0	6.6	<1.0	<1.0	<1.0	4.04	4625.51
BH01	9/5/2023	1.8	4.5	<1.0	<2.0	<1.0	<1.0	<1.0	5.34	4624.21
BH01	12/28/2023	<b>44</b>	<1.0	<1.0	5.5	<1.0	<1.0	<1.0	5.59	4623.96
BH01	3/13/2024	<b>8.4</b>	<1.0	<1.0	2.1	<1.0	<1.0	<1.0	5.59	4623.73
BH01	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.94	4623.61
BH01	9/5/2024	<b>9.3</b>	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.91	4622.64
BH02	9/14/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.39	4622.36
BH02	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.14	4622.61
BH02	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.85	4622.90
BH02	6/1/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.45	4625.30
BH02	9/5/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.76	4623.99
BH02	12/28/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.61	4624.14
BH02	3/13/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.76	4623.99
BH02	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.38	4623.37
BH02	9/5/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.35	4622.40
BH03	9/14/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.76	4622.96
BH03	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.58	4623.14
BH03	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.25	4623.47
BH03	6/1/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.87	4625.85
BH03	9/5/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.17	4624.55
BH03	12/28/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.13	4624.59
BH03	3/13/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.33	4624.39
BH03	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.78	4623.94
BH03	9/5/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.75	4622.97
BH04	9/14/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.06	4622.67
BH04	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.77	4622.96
BH04	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.50	4623.23
BH04	6/1/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.16	4625.57
BH04	9/5/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.52	4624.21
BH04	12/28/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.48	4624.25
BH04	3/13/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.62	4624.11
BH04	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.10	4623.63
BH04	9/5/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.06	4622.67
BH05	9/14/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.85	4622.12
BH05	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.56	4622.41
BH05	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.30	4622.67
BH05	6/1/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.94	4625.03
BH05	9/5/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.28	4623.69
BH05	12/28/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.22	4623.75
BH05	3/13/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.36	4623.61
BH05	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.85	4623.12
BH05	9/5/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.85	4622.12

**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.
- TMB = Trimethylbenzene  
ECMC = 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  
NA = Not applicable  
**BOLD** = Analytical result in exceedance of applicable ECMC standards