

# Third Quarter 2018 Groundwater Monitoring Summary Report

## County Road 20 and Highway 85 Release Fort Lupton, Colorado

Prepared for:



370 17<sup>th</sup> St., Suite 2500  
Denver, CO 80202

*Prepared by:*



6899 Pecos Street, Unit C  
Denver, Colorado 80221

**September 4, 2018**

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## **1. Introduction**

This report summarizes the groundwater monitoring and remediation activities conducted during the third quarter 2018 at the County Road (CR) 20 and Highway (Hwy) 85 pipeline release (Site) in Fort Lupton, Colorado (Figure 1). Tasman Geosciences (Tasman) performed these activities on behalf of DCP Midstream, LP (DCP). The field activities were conducted with the purpose of monitoring groundwater flow and quality conditions. Current Site conditions were evaluated from field data and analytical laboratory results collected during the reporting period on August 8, 2018.

## **2. Site Location and Background**

The Site is located in the southwestern quarter of the southwestern quarter of Section 17, Township 2 North, Range 66 West (approximate coordinates 40.130908 degrees north and 104.806673 degrees west). It is approximately 0.2 miles east on CR 20 from the intersection with Hwy 85, Ft. Lupton, Colorado.

On May 28, 2014, a petroleum hydrocarbon release was discovered following pipeline repair activities. An initial Form 19 was submitted to the Colorado Oil and Gas Conservation Commission (COGCC) on June 5, 2014. Quarterly groundwater monitoring activities were initiated during May 2015 at the Site.

## **3. Groundwater Monitoring**

This section describes the field and laboratory activities performed during the third quarter 2018 groundwater monitoring event. Quarterly monitoring activities were conducted on August 8, 2018 and included Site-wide groundwater gauging and sampling. Figure 2 illustrates the groundwater monitoring network locations utilized to monitor the Site.

### **3.1 Groundwater Elevation Monitoring**

Groundwater levels were measured to evaluate hydraulic characteristics and provide information regarding seasonal fluctuations in groundwater elevations at the Site. During the third quarter 2018, groundwater levels were measured at six (6) monitoring well locations (BH01 to BH03 and BH05 to BH07).

Groundwater levels were measured on the north side of the well casing to the nearest 0.01-foot using an oil-water interface probe (IP). Groundwater level data was later converted to elevation (feet above mean sea level [AMSL]). Measured groundwater levels and the calculated groundwater elevations are presented in Table 1.

A third quarter 2018 groundwater elevation map, included as Figure 3, indicates that a minimal groundwater gradient is present, and that groundwater generally flows to the north/northeast. However, previous quarterly groundwater data indicated that the groundwater elevations appeared to be mounded through the center of the Site, between BH01 and BH03, and that groundwater flow trended towards the east and west from the center of the Site. This trend changed during the third quarter 2018 monitoring event and the mounding appeared to shift towards the north east. This change is likely attributed to the increased Sitewide groundwater elevations as described below and summarized on Table 1. Groundwater elevations will continue to be monitored during subsequent events. The range of groundwater elevations,

average elevation change from the previous monitoring event, and the calculated average hydraulic gradient (using elevations from BH03 and BH06) at the Site are summarized in the table below.

#### Summary of Measured Hydraulic Parameters

	Third Quarter 2018 (8/8/18)
Maximum Elevation (Well ID)	4,861.72 (BH03)
Minimum Elevation (Well ID)	4,861.62 (BH06)
Average Change from Previous Monitoring Event – All Wells	2.29 feet
Average Hydraulic Gradient (ft/ft) / (Well IDs)	0.0014 (BH03 to BH06)

## 3.2 Groundwater Quality Monitoring

Subsequent to recording groundwater level measurements at each monitoring well, groundwater samples were collected from the six (6) Site monitoring wells using disposable polyethylene bailers.

A minimum of three well casing volumes of groundwater were purged from each monitoring well prior to collecting groundwater samples. Groundwater samples were placed in clean laboratory supplied containers for the selected analytical methods, packed in an ice-filled cooler and maintained at approximately four (4) degrees Celsius (°C) for transportation to the laboratory. Groundwater samples were then delivered under chain-of-custody procedures to Summit Scientific Laboratories (Summit) in Golden, Colorado for analysis.

Water quality samples were submitted for analysis of benzene, toluene, ethylbenzene, and xylene (BTEX) by United States Environmental Protection Agency (USEPA) Method 8260B.

Table 2 summarizes BTEX concentrations in groundwater samples collected during the third quarter 2018 monitoring event. Historical analytical results up to and including the third quarter 2018 event are included in Appendix A and the laboratory analytical report for the third quarter 2018 is included in Appendix B. Analytical results are also displayed on Figure 4.

Analytical results/observations are summarized below:

- BTEX concentrations at all 6 Site monitoring wells sampled during the third quarter 2018 were below the respective COGCC Table 910-1 standards for each constituent.

## 4. Remediation Activities

This Section includes a description of the remediation activities at the Site along with observations during remediation efforts.

### 4.1 Groundwater Remediation Activities

As reported in previous quarterly monitoring reports, mobile, vacuum enhanced fluid recovery (EFR) groundwater remediation events were initiated at the Site starting the third quarter 2015 and

discontinued during the fourth quarter 2016 due to the absence of light non-aqueous phase liquid (LNAPL) as well as decreased dissolved phase BTEX concentrations. Supplemental groundwater remediation activities were last performed at the Site during December 2016.

## **5. Conclusions**

Comparison of the third quarter 2018 monitoring data and historical information provides the following general observations:

- Groundwater elevations and flow direction at the Site continue to fluctuate when compared to previous quarterly sampling events as indicated by the groundwater elevations depicted on Figure 3 and summarized on Table 1. During the third quarter 2018 monitoring event, groundwater flow shifted towards the northeast with mounding through the center of the Site. Groundwater elevation and flow directions will continue to be monitored during subsequent quarterly events.
- At BH02 and BH07, concentrations of benzene and/or total xylenes have periodically fluctuated from below to above COGCC Table 910-1 standards since groundwater monitoring was initiated in May 2015. Variability in concentrations is likely a result of residual impacts in soils contacting the fluctuating groundwater levels due to seasonal runoff and local irrigation practices. During the third quarter 2018 event, BTEX concentrations at all 6 monitoring wells were below the respective COGCC standards.

## **6. Recommendations**

Based on evaluation of data from the third quarter 2018 and historical Site observations and monitoring results, recommendations for future activities include:

- Continue quarterly groundwater monitoring and sampling at the monitoring well locations illustrated on Figure 2.

## Tables

**TABLE 1**  
**THIRD QUARTER 2018**  
**SUMMARY OF GROUNDWATER ELEVATION DATA**  
**DCP CR 20 AND HWY 85 RELEASE**  
**WELD COUNTY, COLORADO**

Location	Date	Depth to Groundwater (feet)	Depth to Product (feet)	Free Phase Hydrocarbon Thickness (feet)	Total Depth (feet)	TOC Elevation (feet amsl)	Groundwater Elevation (feet amsl)	Change in Groundwater Elevation Since Previous Event (1) (feet)
BH01	11/1/2017	12.70			18.13	4,875.68	4,862.98	-1.70
BH01	2/13/2018	16.25			18.10	4,875.68	4,859.43	-3.55
BH01	5/4/2018	16.24			18.04	4,875.68	4,859.44	0.01
BH01	8/8/2018	13.98			NM	4,875.68	4,861.70	2.26
BH02	11/1/2017	12.11			18.80	4,874.94	4,862.83	-1.82
BH02	2/13/2018	15.62			18.71	4,874.94	4,859.32	-3.51
BH02	5/4/2018	15.58			18.71	4,874.94	4,859.36	0.04
BH02	8/8/2018	13.29			NM	4,874.94	4,861.65	2.29
BH03	11/1/2017	11.59			18.84	4,874.51	4,862.92	-1.79
BH03	2/13/2018	15.11			18.77	4,874.51	4,859.40	-3.52
BH03	5/4/2018	15.09			18.78	4,874.51	4,859.42	0.02
BH03	8/8/2018	12.79			NM	4,874.51	4,861.72	2.30
BH05	11/1/2017	12.09			18.80	4,874.67	4,862.58	-2.12
BH05	2/13/2018	15.29			18.88	4,874.67	4,859.38	-3.20
BH05	5/4/2018	15.28			18.89	4,874.67	4,859.39	0.01
BH05	8/8/2018	12.97			NM	4,874.67	4,861.70	2.31
BH06	11/1/2017	11.75			19.00	4,874.95	4,863.20	-1.45
BH06	2/13/2018	15.64			18.75	4,874.95	4,859.31	-3.89
BH06	5/4/2018	15.63			18.74	4,874.95	4,859.32	0.01
BH06	8/8/2018	13.33			NM	4,874.95	4,861.62	2.30
BH07	11/1/2017	11.22			18.75	4,874.04	4,862.82	-1.85
BH07	2/13/2018	14.72			18.67	4,874.04	4,859.32	-3.50
BH07	5/4/2018	14.67			18.67	4,874.04	4,859.37	0.05
BH07	8/8/2018	12.37			NM	4,874.04	4,861.67	2.30
Average change in groundwater elevation (5/4/2018 to 8/8/18 )								2.29

Notes:

1- Changes in groundwater elevation calculated by subtracting the measurement collected during the previous monitoring event from the measurement

amsl = feet above mean sea level

TOC = top of casing

Groundwater elevation = (TOC Elevation - Measured Depth to Water)

NM = Not Measured

NA = Not Applicable

**TABLE 2**  
**THIRD QUARTER 2018**  
**SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER**  
**DCP CR 20 AND HWY 85 RELEASE**  
**WELD COUNTY, COLORADO**

Location Identification	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Comments
<b>COGCC Standards (µg/L)</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
BH01	8/8/2018	<1.0	<1.0	<1.0	<2.0	
BH02	8/8/2018	<1.0	<1.0	130	720	
BH03	8/8/2018	1.4	<1.0	120	1,000	
BH05	8/8/2018	<1.0	<1.0	<1.0	<2.0	
BH06	8/8/2018	<1.0	<1.0	<1.0	<2.0	
BH07	8/8/2018	3.3	<1.0	130	740	

Notes:

1). The environmental cleanup standards for groundwater that are applicable to this site are the Colorado Oil and Gas Conservation Commission (COGCC) standards for contaminants in groundwater according to Table 910-1 of the COGCC 900 Series Rule for E&P Waste Management.

**Bold red** values indicate an exceedance of the COGCC groundwater standards for the Site.

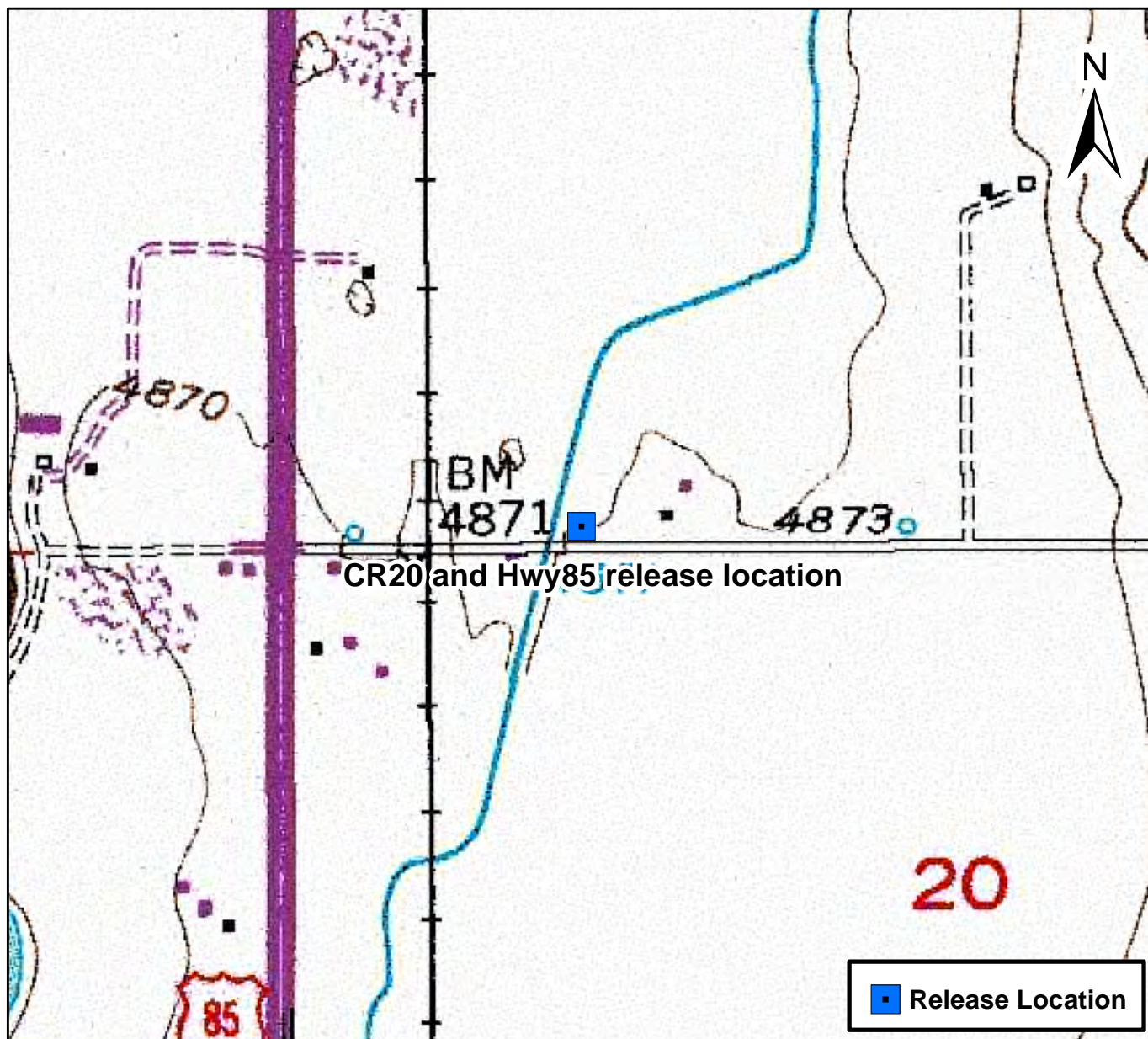
NS = Not sampled.

µg/L = micrograms per liter.

LNAPL - Light non-aqueous phase liquid



## Figures



0 750 1,500 Feet



## Figure 1

Site Location Map  
CR20 and Hwy85 release location  
SWSW S17 T2N R66W  
Weld County, Colorado

Drawn By: DBA  
Date: 06/04/2014







DATE:	August 2018
DESIGNED BY:	B. Humphrey
DRAWN BY:	D. Cavinder



Tasman Geosciences, Inc  
6899 Pecos Street - Unit C  
Denver, CO 80221

**DCP Midstream**  
**County Road 20 and Highway 85 Release**  
SWSW Section 17, Township 2 North, Range 66 West  
Weld County, Colorado

Site Overview  
Map

Figure  
2

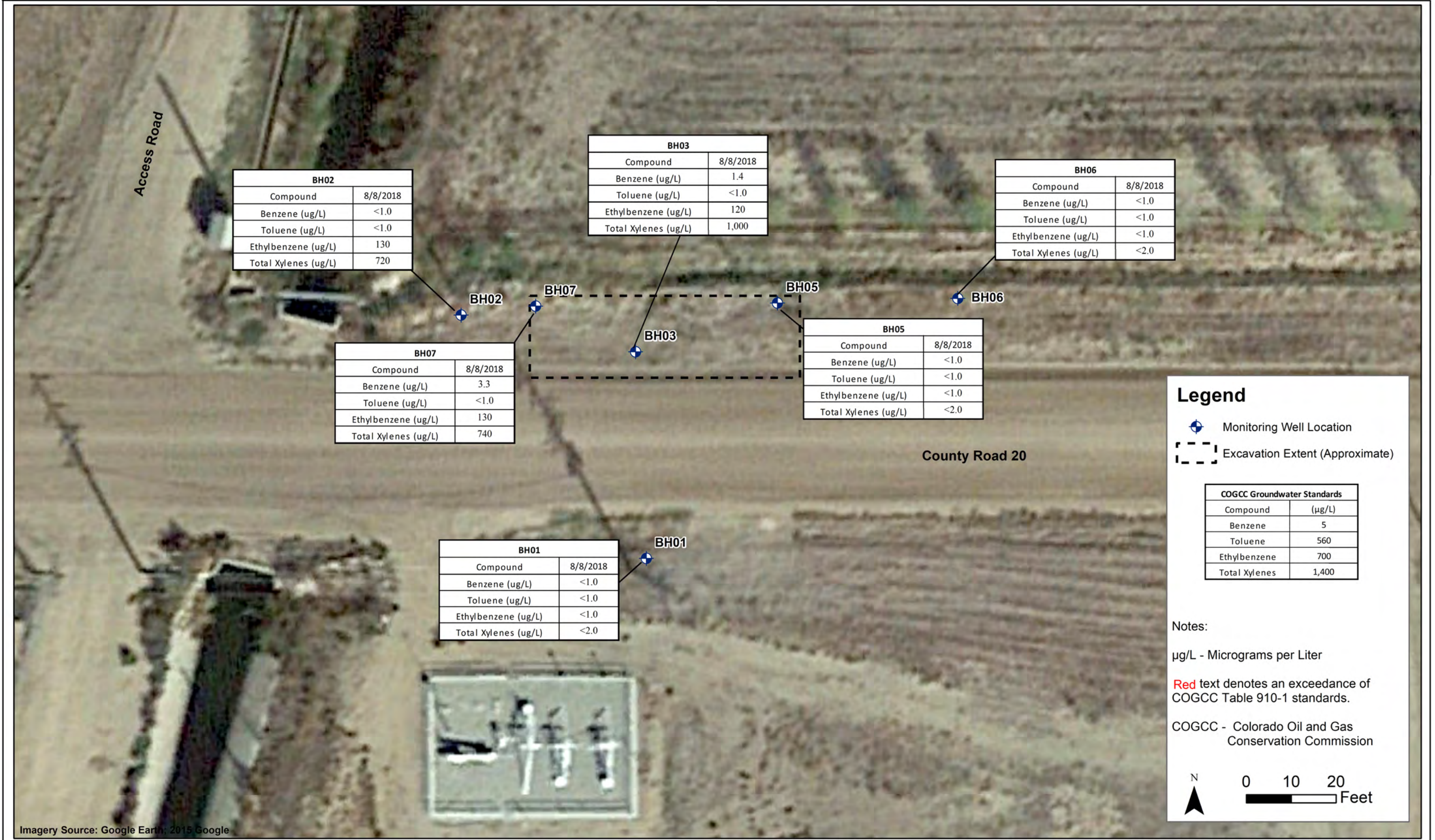




**DCP Midstream**  
**County Road 20 and Highway 85 Release**  
 SWSW Section 17, Township 2 North, Range 66 West  
 Weld County, Colorado

Figure  
3





DATE:	August 2018
DESIGNED BY:	B. Humphrey
DRAWN BY:	D. Cavinder



**TASMAN**  
GEOSCIENCES

Tasman Geosciences, Inc  
6899 Pecos Street - Unit C  
Denver, CO 80221

DCP Midstream  
County Road 20 and Highway 85 Release  
SWSW Section 17, Township 2 North, Range 66 West  
Weld County, Colorado

Groundwater Analytical  
Results Map  
(August 8, 2018)

Figure  
4



## Appendix A

### Historical Analytical Groundwater Data

**APPENDIX A**  
**HISTORICAL ANALYTICAL GROUNDWATER DATA**  
**DCP CR 20 AND HWY 85 RELEASE**  
**WELD COUNTY, COLORADO**

Location Identification	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Comments
<b>COGCC Standards (µg/L)</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
BH01	5/14/2015	<1.0	<1.0	<1.0	<1.0	
BH01	9/24/2015	<1.0	<1.0	<1.0	<1.0	
BH01	11/17/2015	<1.0	<1.0	<1.0	<1.0	
BH01	2/15/2016	<1.0	<1.0	<1.0	<1.0	
BH01	5/13/2016	<1.0	<1.0	<1.0	<1.0	
BH01	8/10/2016	<1.0	<1.0	<1.0	<1.0	
BH01	11/11/2016	<1.0	<1.0	<1.0	<1.0	
BH01	2/28/2017	<1.0	<1.0	<1.0	<1.0	
BH01	5/8/2017	<1.0	<1.0	<1.0	<2.0	
BH01	8/1/2017	<1.0	<1.0	<1.0	<2.0	
BH01	11/1/2017	<1.0	<1.0	<1.0	<2.0	
BH01	2/13/2018	<1.0	<1.0	<1.0	<2.0	
BH01	5/4/2018	<1.0	<1.0	<1.0	<2.0	
BH01	8/8/2018	<1.0	<1.0	<1.0	<2.0	
BH02	5/14/2015	120	5	210	2,000	
BH02	9/24/2015	20	<1.0	48	370	
BH02	11/17/2015	14	<1.0	72	490	
BH02	2/15/2016	2.4	1.4	260	730	
BH02	5/13/2016	2.2	<1.0	160	1,100	
BH02	8/10/2016	<1.0	<1.0	13	340	
BH02	11/11/2016	1.5	<1.0	17	910	
BH02	2/28/2017	<1.0	<1.0	<1.0	560	
BH02	5/8/2017	<1.0	<1.0	<1.0	240	
BH02	8/1/2017	<1.0	<1.0	150	700	
BH02	11/1/2017	<1.0	<1.0	<1.0	770	
BH02	2/13/2018	<1.0	<1.0	230	2,100	
BH02	5/4/2018	<1.0	<1.0	110	620	
BH02	8/8/2018	<1.0	<1.0	130	720	
BH03	5/14/2015	220	130	400	3,500	
BH03	9/24/2015	1.8	<1.0	7.0	150	
BH03	11/17/2015	<1.0	<1.0	43	400	
BH03	2/15/2016	<1.0	<1.0	42	280	
BH03*	5/17/2016	5.3	<1.0	79	590	
BH03	8/10/2016	3.1	<1.0	230	1,400	
BH03	11/11/2016	<1.0	<1.0	<1.0	1,200	
BH03	2/28/2017	<1.0	<1.0	<1.0	410	
BH03	5/8/2017	<1.0	<1.0	<1.0	130	
BH03	8/1/2017	4.6	<1.0	97	1,300	
BH03	11/1/2017	<1.0	<1.0	<1.0	110	
BH03	2/13/2018	<1.0	<1.0	<1.0	72	
BH03	5/4/2018	<1.0	<1.0	13	100	
BH03	8/8/2018	1.4	<1.0	120	1,000	

**APPENDIX A**  
**HISTORICAL ANALYTICAL GROUNDWATER DATA**  
**DCP CR 20 AND HWY 85 RELEASE**  
**WELD COUNTY, COLORADO**

Location Identification	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Comments
<b>COGCC Standards (µg/L)</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
BH05	5/14/2015	<1.0	<1.0	3	22	
BH05	9/24/2015	<1.0	<1.0	<1.0	<1.0	
BH05	11/17/2015	<1.0	<1.0	<1.0	<1.0	
BH05	2/15/2016	<1.0	<1.0	<1.0	<1.0	
BH05	5/13/2016	NS	NS	NS	NS	Well was dry
BH05	8/10/2016	<1.0	<1.0	<1.0	<1.0	
BH05	11/11/2016	<1.0	<1.0	<1.0	<1.0	
BH05	2/28/2017	<1.0	<1.0	<1.0	<1.0	
BH05	5/8/2017	<1.0	<1.0	<1.0	<2.0	
BH05	8/1/2017	<1.0	<1.0	<1.0	<2.0	
BH05	11/1/2017	<1.0	<1.0	<1.0	<2.0	
BH05	2/13/2018	<1.0	<1.0	<1.0	<2.0	
BH05	5/4/2018	<1.0	<1.0	<1.0	<2.0	
BH05	8/8/2018	<1.0	<1.0	<1.0	<2.0	
BH06	5/14/2015	<1.0	<1.0	<1.0	5	
BH06	9/24/2015	<1.0	<1.0	<1.0	<1.0	
BH06	11/17/2015	<1.0	<1.0	<1.0	<1.0	
BH06	2/15/2016	<1.0	<1.0	<1.0	<1.0	
BH06	5/13/2016	<1.0	<1.0	<1.0	<1.0	
BH06	8/10/2016	<1.0	<1.0	<1.0	<1.0	
BH06	11/11/2016	<1.0	<1.0	<1.0	<1.0	
BH06	2/28/2017	<1.0	<1.0	<1.0	<1.0	
BH06	5/8/2017	<1.0	<1.0	<1.0	<2.0	
BH06	8/1/2017	<1.0	<1.0	<1.0	<2.0	
BH06	11/1/2017	<1.0	<1.0	<1.0	<2.0	
BH06	2/13/2018	<1.0	<1.0	<1.0	<2.0	
BH06	5/4/2018	<1.0	<1.0	<1.0	<2.0	
BH06	8/8/2018	<1.0	<1.0	<1.0	<2.0	



**APPENDIX A**  
**HISTORICAL ANALYTICAL GROUNDWATER DATA**  
**DCP CR 20 AND HWY 85 RELEASE**  
**WELD COUNTY, COLORADO**

Location Identification	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Comments
<b>COGCC Standards (µg/L)</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
BH07	5/14/2015	<b>44</b>	310	200	<b>2,600</b>	
BH07	9/24/2015	NS	NS	NS	NS	Trace amount of LNAPL
BH07	11/17/2015	<b>85</b>	1.1	210	<b>3,100</b>	
BH07	2/15/2016	NS	NS	NS	NS	LNAPL - 0.03 ft
BH07	5/13/2016	<b>52</b>	<1.0	500	<b>3,300</b>	
BH07	8/10/2016	1.8	<1.0	<1.0	560	Trace amount of LNAPL
BH07	11/11/2016	DRY				
BH07	2/28/2017	4.1	<1.0	90	<b>1,400</b>	
BH07	5/8/2017	<1.0	<1.0	<1.0	730	
BH07	8/1/2017	1.2	<1.0	17	210	
BH07	11/1/2017	<b>31</b>	<1.0	7.2	890	
BH07	2/13/2018	<b>8.1</b>	<1.0	230	560	
BH07	5/4/2018	<1.0	<1.0	210	<b>1,600</b>	
BH07	8/8/2018	3.3	<1.0	130	740	

Notes:

1). The environmental cleanup standards for groundwater that are applicable to this site are the Colorado Oil and Gas Conservation Commission (COGCC) standards for contaminants in groundwater according to Table 910-1 of the COGCC 900 Series Rule for E&P Waste Management.

\* Monitoring well BH03 was sampled on May 17, 2016 subsequent to purging apparent LNAPL from the well.

**Bold red** values indicate an exceedance of the COGCC groundwater standards for the Site.

NS = Not sampled.

µg/L = micrograms per liter.

LNAPL - Light non-aqueous phase liquid

## Appendix B

### Laboratory Analytical Report

- Summit Scientific 1808107

# Summit Scientific

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 16, 2018

Steve Weathers

DCP Midstream

370 17th Street, Suite 2500

Denver, CO 80202-5604

RE: CR 20 & HWY 85 Release

Enclosed are the results of analyses for samples received by Summit Scientific on 08/08/18 18:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



DCP Midstream  
370 17th Street, Suite 2500  
Denver CO, 80202-5604

Project: CR 20 & HWY 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

**Reported:**  
08/16/18 15:48

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1808107-01	Water	08/08/18 12:50	08/08/18 18:40
BH02	1808107-02	Water	08/08/18 12:55	08/08/18 18:40
BH03	1808107-03	Water	08/08/18 13:00	08/08/18 18:40
BH05	1808107-04	Water	08/08/18 13:20	08/08/18 18:40
BH06	1808107-05	Water	08/08/18 13:08	08/08/18 18:40
BH07	1808107-06	Water	08/08/18 13:20	08/08/18 18:40

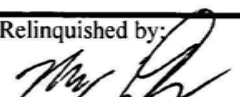
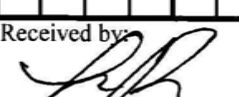
Summit Scientific

*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.*

## 1808107

Page 1 of 1

Project Manager: Steve Weathers  
E-Mail: SWeathers@DCP.midstream.com  
Project Name: CR20 & HLN 85  
Project Number: —

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:										Special Instructions						
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	B	T	E	X												
BH01	8/8/18	1250	3	X				X				X															
BH02		1255	1																								
BH03		1300	1																								
BH05		1320	1																								
BH06		1308	1																								
BH07		1320	1																								
Relinquished by: 				Date/Time: 8/8/18 1840				Received by: 				Date/Time: 8-8-18 1840				Turn Around Time (Check)										Notes:	
Relinquished by:				Date/Time:				Received by:				Date/Time:				Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>											
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				Sample Integrity:											
																Temperature Upon Receipt: 6.5											
																Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											

# Sample Receipt Checklist

S2 Work Order 1808107

Client: DEP Client Project ID: CR220 3 HWY 85

Shipped Via: Pickup Airbill #: \_\_\_\_\_  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: \_\_\_\_\_  
(Describe)

Temp (°C)	<u>6.5</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ?				
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			
Were all samples received intact <sup>(1)</sup> ?	✓			
Was adequate sample volume provided <sup>(1)</sup> ?	✓			
If custody seals are present, are they intact <sup>(1)</sup> ?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	✓			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	✓			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		✓		
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?	✓			HCl
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?			✓	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			✓	

Additional Comments (if any):

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

WD  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

8.8.18 1845  
Date/Time



DCP Midstream  
370 17th Street, Suite 2500  
Denver CO, 80202-5604

Project: CR 20 & HWY 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

**Reported:**  
08/16/18 15:48

**BH01**  
**1808107-01 (Water)**

**Summit Scientific**

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

Date Sampled: **08/08/18 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	1808124	08/09/18	08/10/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **08/08/18 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		93.9 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		93.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.0 %		21-167		"	"	"	"	

Summit Scientific

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DCP Midstream  
370 17th Street, Suite 2500  
Denver CO, 80202-5604

Project: CR 20 & HWY 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

**Reported:**  
08/16/18 15:48

**BH02**  
**1808107-02 (Water)**

**Summit Scientific**

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

Date Sampled: **08/08/18 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1808124	08/09/18	08/16/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>130</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>720</b>	20	"	10	"	"	08/16/18	"	

Date Sampled: **08/08/18 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.5 %	23-173		"	"	08/16/18	"	
Surrogate: Toluene-d8		99.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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DCP Midstream  
370 17th Street, Suite 2500  
Denver CO, 80202-5604

Project: CR 20 & HWY 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

**Reported:**  
08/16/18 15:48

**BH03**  
**1808107-03 (Water)**

**Summit Scientific**

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

Date Sampled: **08/08/18 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Benzene</b>	<b>1.4</b>	1.0		ug/l	1	1808124	08/09/18	08/16/18	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>120</b>	1.0		"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>1000</b>	20		"	10	"	"	08/16/18	"	

Date Sampled: **08/08/18 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		97.7 %		23-173		"	"	08/16/18	"	
Surrogate: Toluene-d8		101 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		21-167		"	"	"	"	

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DCP Midstream  
370 17th Street, Suite 2500  
Denver CO, 80202-5604

Project: CR 20 & HWY 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

**Reported:**  
08/16/18 15:48

**BH05**  
**1808107-04 (Water)**

**Summit Scientific**

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

Date Sampled: **08/08/18 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1808124	08/09/18	08/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/08/18 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		96.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.5 %	21-167		"	"	"	"	

Summit Scientific

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DCP Midstream  
370 17th Street, Suite 2500  
Denver CO, 80202-5604

Project: CR 20 & HWY 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

**Reported:**  
08/16/18 15:48

**BH06**  
**1808107-05 (Water)**

**Summit Scientific**

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

Date Sampled: **08/08/18 13:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1808124	08/09/18	08/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **08/08/18 13:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.3 %	21-167		"	"	"	"	

Summit Scientific

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DCP Midstream  
370 17th Street, Suite 2500  
Denver CO, 80202-5604

Project: CR 20 & HWY 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

**Reported:**  
08/16/18 15:48

**BH07**  
**1808107-06 (Water)**

**Summit Scientific**

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

Date Sampled: **08/08/18 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>Benzene</b>	<b>3.3</b>	1.0	ug/l	1	1808124	08/09/18	08/10/18	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>130</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>740</b>	200	"	100	"	"	"	"	

Date Sampled: **08/08/18 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		94.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.0 %	21-167		"	"	"	"	

Summit Scientific

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DCP Midstream  
370 17th Street, Suite 2500  
Denver CO, 80202-5604

Project: CR 20 & HWY 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

**Reported:**  
08/16/18 15:48

## 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 1808124 - EPA 5030 Water MS

##### Blank (1808124-BLK1)

Prepared: 08/09/18 Analyzed: 08/10/18

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.0		"	13.2		91.1	23-173			
Surrogate: Toluene-d8	12.7		"	13.3		95.3	20-170			
Surrogate: 4-Bromofluorobenzene	12.2		"	13.3		91.5	21-167			

##### LCS (1808124-BS1)

Prepared: 08/09/18 Analyzed: 08/10/18

Benzene	27.3	1.0	ug/l	33.3		81.8	70-130			
Toluene	30.4	1.0	"	33.3		91.3	70-130			
Ethylbenzene	33.3	1.0	"	33.3		99.8	70-130			
m,p-Xylene	50.6	2.0	"	66.7		76.0	70-130			
o-Xylene	31.6	1.0	"	33.3		94.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.1		"	13.2		91.6	23-173			
Surrogate: Toluene-d8	12.8		"	13.3		95.8	20-170			
Surrogate: 4-Bromofluorobenzene	12.0		"	13.3		90.4	21-167			

##### Matrix Spike (1808124-MS1)

Source: 1808089-02

Prepared: 08/09/18 Analyzed: 08/10/18

Benzene	29.4	1.0	ug/l	33.3	ND	88.4	70-130			
Toluene	31.5	1.0	"	33.3	ND	94.5	70-130			
Ethylbenzene	51.5	1.0	"	33.3	15.1	109	70-130			
m,p-Xylene	146	2.0	"	66.7	73.5	109	70-130			
o-Xylene	32.5	1.0	"	33.3	ND	97.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.7		"	13.2		95.9	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		99.0	20-170			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.4	21-167			

Summit Scientific

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DCP Midstream  
370 17th Street, Suite 2500  
Denver CO, 80202-5604

Project: CR 20 & HWY 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

**Reported:**  
08/16/18 15:48

**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 1808124 - EPA 5030 Water MS**

Matrix Spike Dup (1808124-MSD1)	Source: 1808089-02			Prepared: 08/09/18 Analyzed: 08/10/18						
Benzene	29.0	1.0	ug/l	33.3	ND	87.0	70-130	1.51	30	
Toluene	30.9	1.0	"	33.3	ND	92.6	70-130	2.08	30	
Ethylbenzene	47.7	1.0	"	33.3	15.1	97.8	70-130	7.68	30	
m,p-Xylene	126	2.0	"	66.7	73.5	78.5	70-130	14.9	30	
o-Xylene	32.9	1.0	"	33.3	ND	98.6	70-130	1.16	30	
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.2		105	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.3	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.1	21-167			

Summit Scientific

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DCP Midstream  
370 17th Street, Suite 2500  
Denver CO, 80202-5604

Project: CR 20 & HWY 85 Release

Project Number: [none]  
Project Manager: Steve Weathers

**Reported:**  
08/16/18 15:48

### Notes and Definitions

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