

Second Quarter 2017 Groundwater Monitoring Summary Report

County Road 20 and Highway 85 Release Fort Lupton, Colorado

Prepared for:



370 17th St., Suite 2500
Denver, CO 80202

Prepared by:



6899 Pecos Street, Unit C
Denver, Colorado 80221

August 1, 2017

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1. Introduction

This report summarizes the groundwater monitoring and remediation activities conducted during the second quarter 2017 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 May 8, 2017.

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 0.20 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.

3. Groundwater Monitoring

This section describes the field and laboratory activities performed during the second quarter 2017 groundwater monitoring event. Quarterly monitoring activities were conducted on May 8, 2017, and included Site-wide groundwater gauging and sampling. Figure 2 illustrates the groundwater monitoring network utilized to perform these activities at 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 second quarter 2017, groundwater levels were measured at six (6) monitoring well locations (BH01-BH03 and BH05-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 were later converted to elevation (feet above mean sea level [AMSL]). Measured groundwater levels and the calculated groundwater elevations are presented in Table 1.

A second quarter 2017 groundwater elevation contour map, included as Figure 3, indicates that groundwater flows generally east. Previous monitoring events indicate that groundwater flow has varied from the north and/or east. The differences in flow direction that have been observed may be attributed to several factors including increased use of the irrigation ditch to the west of the Site, flooding or increased irrigation of the farm to the north of the Site, and/or shallow groundwater use for irrigation to the east of the Site. Groundwater elevations will continue to be monitored for flow direction 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

	Second Quarter 2017 (5/8/17)
Maximum Elevation (Well ID)	4,860.24 (BH03)
Minimum Elevation (Well ID)	4,860.08 (BH06)
Average Change from Previous Monitoring Event – All Wells	1.07 feet
Average Hydraulic Gradient (ft/ft) / (Well IDs)	0.0022 (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) monitoring wells on-Site using dedicated polyethylene bailers.

A minimum of three well casing volumes of groundwater were purged from each monitor 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 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 reporting period. Historic analytical results up to and including the second quarter 2017 event are included in Appendix A and the laboratory analytical report for the second quarter 2017 is included in Appendix B. Analytical results are also displayed on Figure 4.

Analytical results/observations are summarized below:

- BTEX concentrations from all of the Site monitoring wells were below the COGCC Table 910-1 standards and/or laboratory detection limits during the second quarter 2017 monitoring event.

4. Remediation Activities

This Section includes a description of the active 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 during the third quarter 2015 on July 22, 2015. Between July 22 and November 23, 2015, 9 EFR remediation events were conducted at monitoring wells BH02, BH03, BH05 and BH07 for a minimum 6-hour period. Due to the decrease in LNAPL volumes

observed at the Site between the third and fourth quarter 2015, EFR remediation was discontinued at the Site. Mobile EFR events were re-initiated during the second quarter 2016 due to the presence of LNAPL that was observed and were continued through the fourth quarter 2016. Between September 30, and November 18, 2016, six EFR events were conducted at the Site for a project total of 15 events. A total of approximately 307 bbls of groundwater has been removed since EFR remediation activities were initiated at the Site. Recovered groundwater was disposed of at the NGL Water Solutions DJ, LLC, C-3 disposal well in LaSalle, CO. EFR events were discontinued subsequent to November 18, 2016 due to the absence of LNAPL at the Site.

5. Conclusions

Comparison of the second quarter 2017 monitoring data and historic information provides the following general observations:

- The groundwater flow direction at the Site continues to fluctuate when compared to previous quarterly sampling events as indicated by the groundwater elevation contours illustrated on Figure 3. During the second quarter 2017 monitoring event, groundwater flow was generally to the east which is similar to historic monitoring data. Groundwater flow directions will continue to be monitored during subsequent quarterly events.
- BTEX concentrations were below COGCC standards and/or laboratory detection limits during the second quarter 2017 monitoring event at all 6 monitoring well locations.
- Mobile EFR remediation activities were discontinued in November 2016 due to absence of LNAPL at the Site.

6. Recommendations

Based on evaluation of data from the second quarter 2017 and historic 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
SECOND QUARTER 2017
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	8/10/2016	12.34			18.13	4,875.68	4,863.34	3.35
BH01	11/11/2016	14.45			18.13	4,875.68	4,861.23	-2.11
BH01	2/28/2017	16.51			18.13	4,875.68	4,859.17	-2.06
BH01	5/8/2017	15.45			18.13	4,875.68	4,860.23	1.06
BH02	8/10/2016	11.62			18.73	4,874.94	4,863.32	3.40
BH02	11/11/2016	13.81			18.73	4,874.94	4,861.13	-2.19
BH02	2/28/2017	15.82			18.76	4,874.94	4,859.12	-2.01
BH02	5/8/2017	14.72			18.73	4,874.94	4,860.22	1.10
BH03	8/10/2016	11.16			18.76	4,874.51	4,863.35	3.37
BH03	11/11/2016	13.31			18.76	4,874.51	4,861.20	-2.15
BH03	2/28/2017	15.34			18.76	4,874.51	4,859.17	-2.03
BH03	5/8/2017	14.27			18.80	4,874.51	4,860.24	1.07
BH05	8/10/2016	11.33			18.99	4,874.67	4,863.34	NA
BH05	11/11/2016	13.47			18.99	4,874.67	4,861.20	-2.14
BH05	2/28/2017	15.52			18.99	4,874.67	4,859.15	-2.05
BH05	5/8/2017	14.47			18.97	4,874.67	4,860.20	1.05
BH06	8/10/2016	12.61			18.56	4,874.95	4,862.34	2.41
BH06	11/11/2016	13.80			18.56	4,874.95	4,861.15	-1.19
BH06	2/28/2017	15.88			18.56	4,874.95	4,859.07	-2.08
BH06	5/8/2017	14.87			18.80	4,874.95	4,860.08	1.01
BH07	8/10/2016	10.72			18.67	4,874.04	4,863.32	4.92
BH07	11/11/2016	Dry			18.70	4,874.04	NA	NA
BH07	2/28/2017	14.93			18.67	4,874.04	4,859.11	-4.21
BH07	5/8/2017	13.83			18.67	4,874.04	4,860.21	1.10
Average change in groundwater elevation (2/28/2017 TO 5/8/2017)								1.07

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
SECOND QUARTER 2017
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
COGCC Standards (µg/L)		5	560	700	1,400	
BH01	5/8/2017	<1.0	<1.0	<1.0	<2.0	
BH02	5/8/2017	<1.0	<1.0	<1.0	240	
BH03	5/8/2017	<1.0	<1.0	<1.0	130	
BH05	5/8/2017	<1.0	<1.0	<1.0	<2.0	
BH06	5/8/2017	<1.0	<1.0	<1.0	<2.0	
BH07	5/8/2017	<1.0	<1.0	<1.0	730	

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

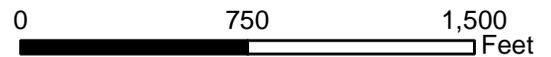
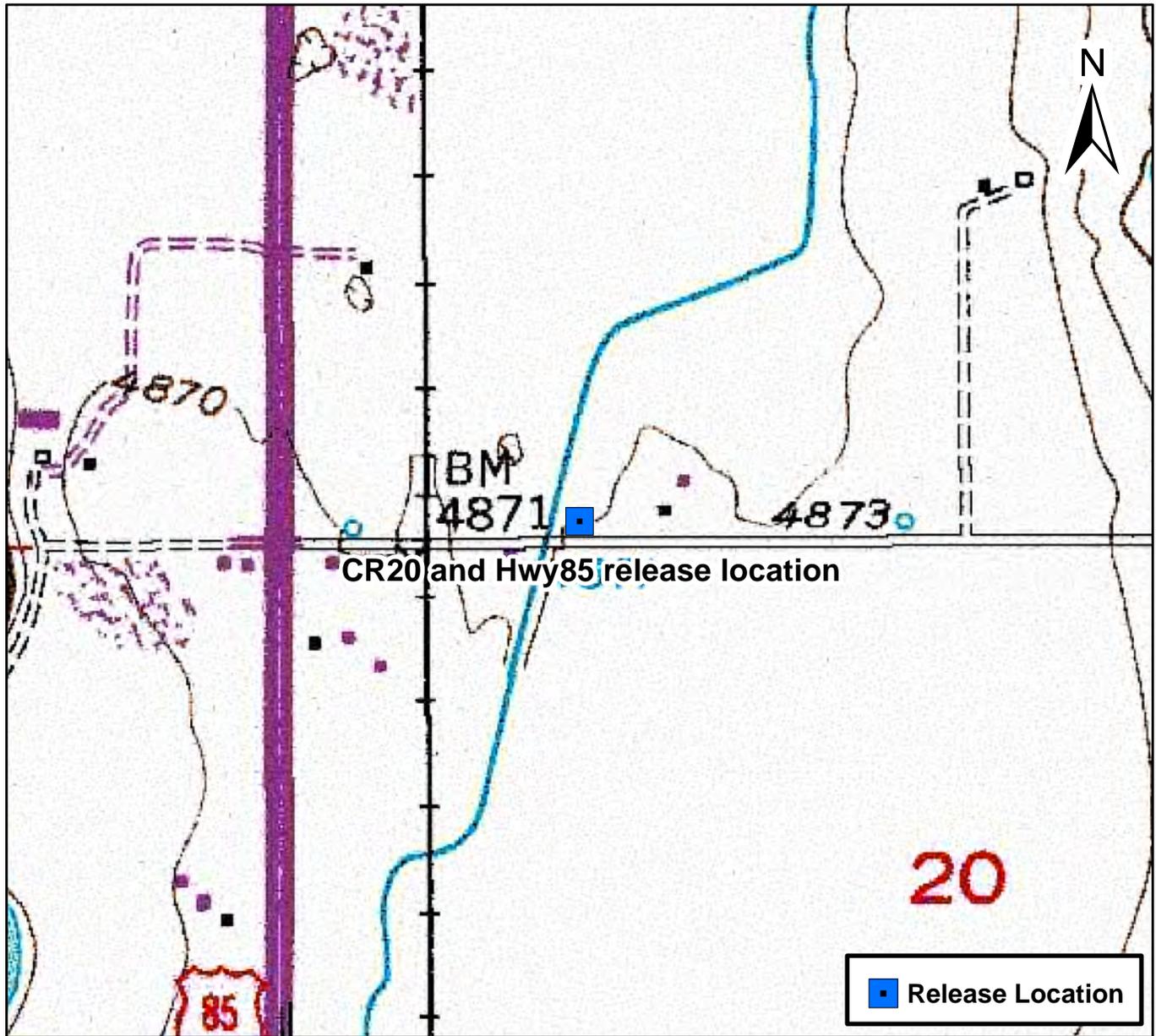


Figure 1

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

Drawn By: DBA
 Date: 06/04/2014





Imagery Source: Google Earth, 2015 Google

DATE:	May 2017
DESIGNED BY:	B. Humphrey
DRAWN BY:	D. Arnold



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



Imagery Source: Google Earth; 2015 Google

DATE:	May 2017
DESIGNED BY:	B. Humphrey
DRAWN BY:	D. Arnold

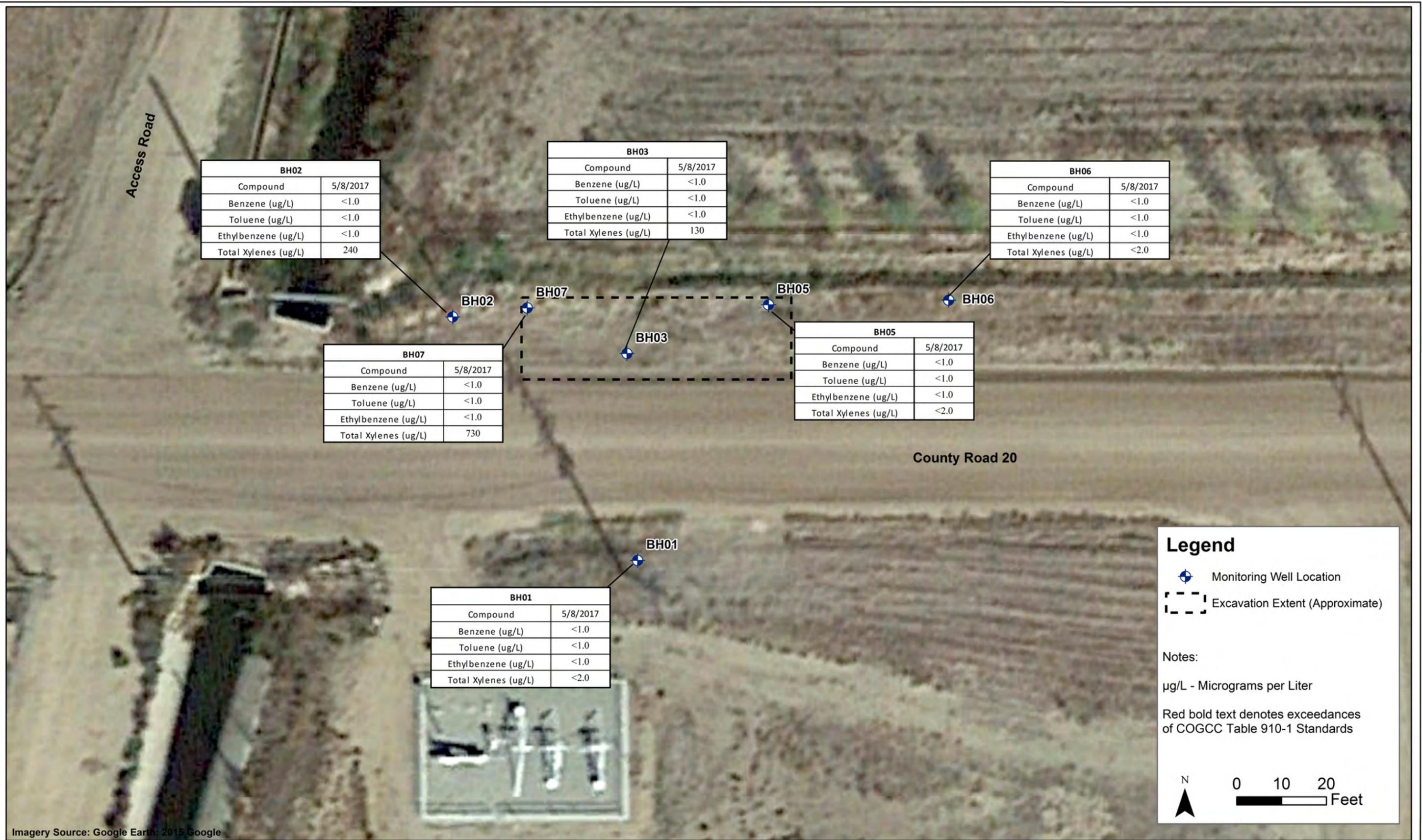


TASMAN
GEOSCIENCES
Tasman Geosciences, Inc
6899 Pecos Street - Unit C
Denver, CO 80221

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

Groundwater Elevation
Contour Map
(May 8, 2017)

Figure
3



DATE: May 2017
 DESIGNED BY: B. Humphrey
 DRAWN BY: D. Arnold



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
 (May 8, 2017)

Figure
 4

Appendix A
Historic Analytical Results

**APPENDIX A
HISTORICAL ANALYTICAL 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
COGCC Standards (µg/L)		5	560	700	1,400	
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	
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	
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	
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	
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	

**APPENDIX A
HISTORICAL ANALYTICAL 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
COGCC Standards (µg/L)		5	560	700	1,400	
BH07	5/14/2015	44	310	200	2,600	
BH07	9/24/2015	NS	NS	NS	NS	Trace amount of LNAPL
BH07	11/17/2015	85	1.1	210	3,100	
BH07	2/15/2016	NS	NS	NS	NS	LNAPL - 0.03 ft
BH07	5/13/2016	52	<1.0	500	3,300	
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	1,400	
BH07	5/8/2017	<1.0	<1.0	<1.0	730	

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 1705079

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 15, 2017

Steve Weathers
DCP Operating Company
370 17th Street #2500
Denver, CO 80202
RE: CR20 + Hwy 85 Release

Enclosed are the results of analyses for samples received by Summit Scientific on 05/08/17 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury
President



DCP Operating Company
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Steve Weathers

Reported:
05/15/17 08:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1705079-01	Water	05/08/17 14:11	05/08/17 17:00
BH02	1705079-02	Water	05/08/17 14:40	05/08/17 17:00
BH03	1705079-03	Water	05/08/17 14:26	05/08/17 17:00
BH05	1705079-04	Water	05/08/17 14:28	05/08/17 17:00
BH06	1705079-05	Water	05/08/17 14:12	05/08/17 17:00
BH07	1705079-06	Water	05/08/17 14:42	05/08/17 17:00

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.



DCP Operating Company
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Steve Weathers

Reported:
05/15/17 08:49

Summit Scientific

741 Corporate Circle Suite 1 ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

1705079

Page 1 of 1

Client: Tasman Geosciences for DCP Midstream
Address: 6999 Peas St, Unit C
City/State/Zip: Denver, CO 80221
Phone: _____ Fax: _____
Sampler Name: Mitch Weller

Project Manager: Steve Weathers
E-Mail: swweathers@dcpmidstream.com; kmumphrey@tasman-gco.com
Project Name: CR 20 + 85
Project Number: _____

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:										Special Instructions		
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)												
BH 01	5-8-17	1411	3		X			X				X	BTX										
BH 02		1440																					
BH 03		1426																					
BH 05		1428																					
BH 06		1412																					
BH 07		1442																					
Relinquished by: <u>Mitch Weller</u>		Date/Time: <u>5-8-17</u>	Received by: _____		Date/Time: _____	Turn Around Time (Check)		Notes:															
		Date/Time: _____	Received by: _____		Date/Time: _____	Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>		ON ICE															
		Date/Time: _____	Received by: _____		Date/Time: _____	24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>																	
Relinquished by: _____		Date/Time: _____	Received in Lab by: _____		Date/Time: <u>5-8-17 1700</u>	Sample Integrity:																	
		Date/Time: _____			Date/Time: _____	Temperature Upon Receipt: <u>4.9</u>																	
		Date/Time: _____			Date/Time: _____	Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																	

www.s2scientific.com

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.

S₂

DCP Operating Company
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Steve Weathers

Reported:
05/15/17 08:49

Sample Receipt Checklist

S2 Work Order: 1705079

Client: Tasman/DCP Client Project ID: CR 20 + 85

Shipped Via: PLU Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Cooler ID					
Temp (°C)	<u>4.9</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			<u>on ice</u>
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
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 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Paul Strewsbur
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

5-8-17 1730
Date/Time

[Signature]



DCP Operating Company
 370 17th Street #2500
 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
 Project Manager: Steve Weathers

Reported:
 05/15/17 08:49

BH01
1705079-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/08/17 14:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1705087	05/10/17	05/10/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **05/08/17 14:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		104 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.9 %	45-146		"	"	"	"	

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.



DCP Operating Company
 370 17th Street #2500
 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
 Project Manager: Steve Weathers

Reported:
 05/15/17 08:49

BH02
1705079-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/08/17 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1705087	05/10/17	05/10/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	240	2.0	"	"	"	"	"	"	

Date Sampled: **05/08/17 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>106 %</i>	<i>37-154</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>		<i>104 %</i>	<i>45-149</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>111 %</i>	<i>45-146</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

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.



DCP Operating Company
 370 17th Street #2500
 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
 Project Manager: Steve Weathers

Reported:
 05/15/17 08:49

BH03
1705079-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/08/17 14:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1705087	05/10/17	05/10/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	130	2.0	"	"	"	"	"	"	

Date Sampled: **05/08/17 14:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		110 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		106 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		107 %	45-146		"	"	"	"	

Summit Scientific

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DCP Operating Company
 370 17th Street #2500
 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
 Project Manager: Steve Weathers

Reported:
 05/15/17 08:49

BH05
1705079-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/08/17 14:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1705087	05/10/17	05/10/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **05/08/17 14:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		109 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		105 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		107 %	45-146		"	"	"	"	

Summit Scientific

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DCP Operating Company
 370 17th Street #2500
 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
 Project Manager: Steve Weathers

Reported:
 05/15/17 08:49

BH06
1705079-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/08/17 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1705087	05/10/17	05/10/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **05/08/17 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		106 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %	45-146		"	"	"	"	

Summit Scientific

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DCP Operating Company
 370 17th Street #2500
 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
 Project Manager: Steve Weathers

Reported:
 05/15/17 08:49

BH07
1705079-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/08/17 14:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1705087	05/10/17	05/10/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	730	20	"	10	"	"	"	"	

Date Sampled: **05/08/17 14:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		106 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		109 %	45-146		"	"	"	"	

Summit Scientific

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DCP Operating Company
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Steve Weathers

Reported:
05/15/17 08:49

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1705087 - EPA 5030 Water MS

Blank (1705087-BLK1)

Prepared & Analyzed: 05/10/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.1		"	13.3		106	37-154			
Surrogate: Toluene-d8	13.6		"	13.3		102	45-149			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102	45-146			

LCS (1705087-BS1)

Prepared & Analyzed: 05/10/17

Benzene	32.6	1.0	ug/l	33.3		97.8	51-132			
Toluene	36.2	1.0	"	33.3		109	51-138			
Ethylbenzene	38.6	1.0	"	33.1		117	58-146			
m,p-Xylene	72.1	2.0	"	66.5		108	57-144			
o-Xylene	35.8	1.0	"	32.7		110	53-146			
Surrogate: 1,2-Dichloroethane-d4	14.7		"	13.3		110	37-154			
Surrogate: Toluene-d8	14.0		"	13.3		105	45-149			
Surrogate: 4-Bromofluorobenzene	13.7		"	13.3		103	45-146			

Matrix Spike (1705087-MS1)

Source: 1705079-01

Prepared & Analyzed: 05/10/17

Benzene	31.0	1.0	ug/l	33.3	ND	93.0	34-141			
Toluene	34.6	1.0	"	33.3	ND	104	27-151			
Ethylbenzene	38.3	1.0	"	33.1	ND	116	29-160			
m,p-Xylene	70.2	2.0	"	66.5	ND	106	20-166			
o-Xylene	35.0	1.0	"	32.7	ND	107	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.8		"	13.3		111	37-154			
Surrogate: Toluene-d8	13.5		"	13.3		101	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		98.9	45-146			

Summit Scientific

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DCP Operating Company
 370 17th Street #2500
 Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
 Project Manager: Steve Weathers

Reported:
 05/15/17 08:49

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1705087 - EPA 5030 Water MS

Matrix Spike Dup (1705087-MSD1)	Source: 1705079-01			Prepared & Analyzed: 05/10/17						
Benzene	31.8	1.0	ug/l	33.3	ND	95.4	34-141	2.55	32	
Toluene	35.0	1.0	"	33.3	ND	105	27-151	1.32	25	
Ethylbenzene	38.8	1.0	"	33.1	ND	117	29-160	1.27	50	
m,p-Xylene	72.2	2.0	"	66.5	ND	109	20-166	2.79	36	
o-Xylene	35.7	1.0	"	32.7	ND	109	33-159	1.78	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>15.3</i>		<i>"</i>	<i>13.3</i>		<i>115</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.6</i>		<i>"</i>	<i>13.3</i>		<i>102</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.7</i>		<i>"</i>	<i>13.3</i>		<i>103</i>	<i>45-146</i>			

Summit Scientific

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DCP Operating Company
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Steve Weathers

Reported:
05/15/17 08:49

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