

Second Quarter 2016 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 16, 2016

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1. Introduction

This report summarizes the groundwater monitoring and remediation activities conducted during the second quarter 2016 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 13 and 17, 2016.

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 2016 groundwater monitoring event. Quarterly monitoring activities were conducted on May 13 and 17, 2016, 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 in order to evaluate hydraulic characteristics and provide information regarding seasonal fluctuations in groundwater elevations at the Site. During the second quarter 2016, 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 2016 groundwater elevation contour map, included as Figure 3, indicates that groundwater flow at the Site generally trends to the north. The range of groundwater elevations, average elevation change from the previous monitoring event, and the calculated average hydraulic gradient (using elevations from BH01 and BH02) at the Site are summarized in the table below.

Summary of Measured Hydraulic Parameters

	Second Quarter 2016 (5/11/16)
Maximum Elevation (Well ID)	4,859.99 (BH01)
Minimum Elevation (Well ID)	4,859.92 (BH02)
Average Change from Previous Monitoring Event – All Wells	1.50 feet
Average Hydraulic Gradient (ft/ft) / (Well IDs)	0.001 (BH01 to BH02)

3.2 Groundwater Quality Monitoring

Subsequent to recording groundwater level measurements at each monitoring well, groundwater samples were collected from each of the 6 monitor wells 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 ($^{\circ}\text{C}$) 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 2016 event are included in Appendix A and the laboratory analytical report for the second quarter 2016 is included in Appendix B. Analytical results are also displayed on Figure 4.

Analytical results/observations are summarized below:

- On May 13, 2016, during purging activities at MW03, field crews observed what appeared to be light non-aqueous phase liquid (LNAPL) enter the well during the second purge volume and discontinued purging and sampling activities at that well. Due to the abnormality of LNAPL infiltrating into the well subsequent to removing one purge volume, purging and sampling activities at BH03 were conducted on May 17, 2016 and LNAPL was not observed within the well during this event. Therefore, a groundwater sample was collected. LNAPL was not observed in any of the remaining Site monitoring wells.
- Benzene concentrations from monitoring wells BH03 and BH07 were above the COGCC Table 910-1 standard of 5.0 micrograms per liter ($\mu\text{g/L}$) with detected concentrations of 5.3 $\mu\text{g/L}$ and 52 $\mu\text{g/L}$, respectively. The remaining sample locations were below COGCC standards and/or laboratory detection limits.

- Toluene and ethylbenzene concentrations from all 6 sampled monitoring wells were below the COGCC Table 910-1 standard of 560 µg/L and 700 µg/L, respectively, and/or laboratory detection limits.
- Total xylenes concentrations from monitoring well BH07 was above the COGCC Table 910-1 standard of 1,400 µg/L with a detected concentration of 3,300 µg/L. The remaining sample locations were below COGCC standards and/or laboratory detection limits.

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

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. However, due to the observed LNAPL thickness observed during the first quarter 2016, weekly mobile EFR events were re-initiated during the second quarter 2016. Between May 20 and June 24, 2016, 6 EFR events were conducted at the Site using monitoring wells BH03 and BH07. A total of approximately 9 barrels (bbls) of groundwater was recovered during the second quarter 2016 through EFR remediation activities and was disposed of at the NGL Water Solutions DJ, LLC, C-3 disposal well in LaSalle, CO. A project total of approximately 164 bbls of groundwater has been removed since EFR remediation activities were initiated at the Site.

5. Conclusions

Comparison of the second quarter 2016 monitoring data and historic information provides the following general observations:

- The groundwater flow direction is generally to the north, which is consistent with the previous quarter.
- Monitoring well BH05 was dry during the second quarter 2016 monitoring event.
- Subsequent to observing LNAPL in BH07 during the third quarter 2015, LNAPL was again observed in BH07 during first quarter 2016 with a measured thickness of 0.03 feet. Subsequent to continued remediation activities, LNAPL was not observed in BH07 during the second quarter 2016.
- Benzene concentrations were above the COGCC standard in BH03 and BH07. The remaining sampled locations were below COGCC standards during the second quarter 2016 monitoring event.

- Toluene and ethylbenzene concentrations were below COGCC standards at all sampled locations during the second quarter 2016 monitoring event.
- Ethylbenzene was above the COGCC standard in BH07. The remaining sampled locations were below COGCC standards during the second quarter 2016 monitoring event.
- A total of 164 barrels of impacted liquids has been removed from the subsurface of the Site through mobile EFR remediation activities.

6. Recommendations

Based on evaluation of data from the second quarter 2016 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.
- Continue the mobile EFR remediation program to address residual BTEX concentrations and LNAPL at the Site.

Tables

TABLE 1
SECOND QUARTER 2016
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	5/14/2015	15.52			18.20	4,875.68	4,860.16	NA
BH01	9/24/2015	12.37			17.92	4,875.68	4,863.31	3.15
BH01	11/17/2015	14.69			18.10	4,875.68	4,860.99	-2.32
BH01	2/15/2016	17.16			18.14	4,875.68	4,858.52	-2.47
BH01	5/13/2016	15.69			18.14	4,875.68	4,859.99	1.47
BH02	5/14/2015	14.47			18.42	4,874.94	4,860.47	NA
BH02	9/24/2015	11.72			18.49	4,874.94	4,863.22	2.75
BH02	11/17/2015	14.09			18.74	4,874.94	4,860.85	-2.37
BH02	2/15/2016	16.55			18.74	4,874.94	4,858.39	-2.46
BH02	5/13/2016	15.02			18.74	4,874.94	4,859.92	1.53
BH03	5/14/2015	14.26			18.30	4,874.51	4,860.25	NA
BH03	9/24/2015	11.25			18.52	4,874.51	4,863.26	3.01
BH03	11/17/2015	13.58			18.76	4,874.51	4,860.93	-2.33
BH03	2/15/2016	16.04			18.74	4,874.51	4,858.47	-2.46
BH03	5/13/2016	14.53			18.74	4,874.51	4,859.98	1.51
BH05	5/14/2015	14.48			19.31	4,874.67	4,860.19	NA
BH05	9/24/2015	11.40			19.00	4,874.67	4,863.27	3.08
BH05	11/17/2015	13.74			19.11	4,874.67	4,860.93	-2.34
BH05	2/15/2016	16.22			19.01	4,874.67	4,858.45	-2.48
BH05	5/13/2016	Dry			19.01	4,874.67	NA	NA
BH06	5/14/2015	14.91			18.76	4,874.95	4,860.04	NA
BH06	9/24/2015	11.60			18.52	4,874.95	4,863.35	3.31
BH06	11/17/2015	13.97			18.76	4,874.95	4,860.98	-2.37
BH06	2/15/2016	16.47			18.70	4,874.95	4,858.48	-2.50
BH06	5/13/2016	15.02			18.70	4,874.95	4,859.93	1.45
BH07	5/14/2015	14.87			18.70	4,874.02	4,859.15	NA
BH07	9/24/2015	10.83		Trace	18.56	4,874.04	4,863.21	4.06
BH07	11/17/2015	13.19			18.80	4,874.04	4,860.85	-2.36
BH07	2/15/2016	15.66	15.63	0.03	NM	4,874.04	4,858.40	-2.45
BH07	5/13/2016	14.10			18.74	4,874.04	4,859.94	1.54
Average change in groundwater elevation (2/15/2016 to 5/13/2016)								1.50

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 2016
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	5/13/2016	<1.0	<1.0	<1.0	<1.0	
BH02	5/13/2016	2.2	<1.0	160	1,100	
BH03*	5/17/2016	5.3	<1.0	79	590	
BH05	5/13/2016	NS	NS	NS	NS	Well was dry
BH06	5/13/2016	<1.0	<1.0	<1.0	<1.0	
BH07	5/13/2016	52	<1.0	500	3,300	

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.

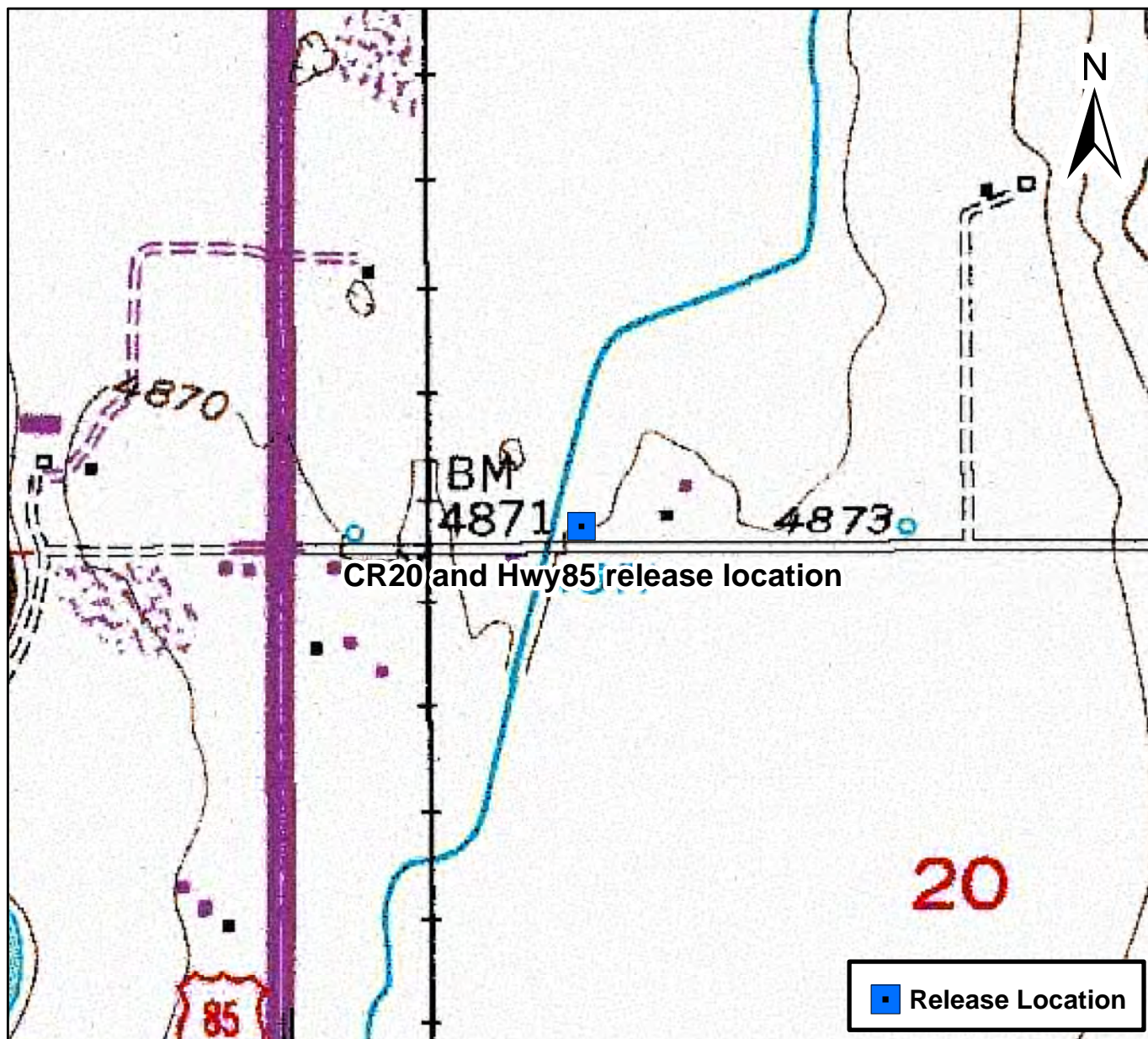
Bold red values indicate an exceedance of the COGCC groundwater standards for the Site.

NS = Not sampled.

µg/L = micrograms per liter.

LNAPL - Light non-aqueous phase liquid

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:	February 2016
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

Site Overview
Map

Figure
2



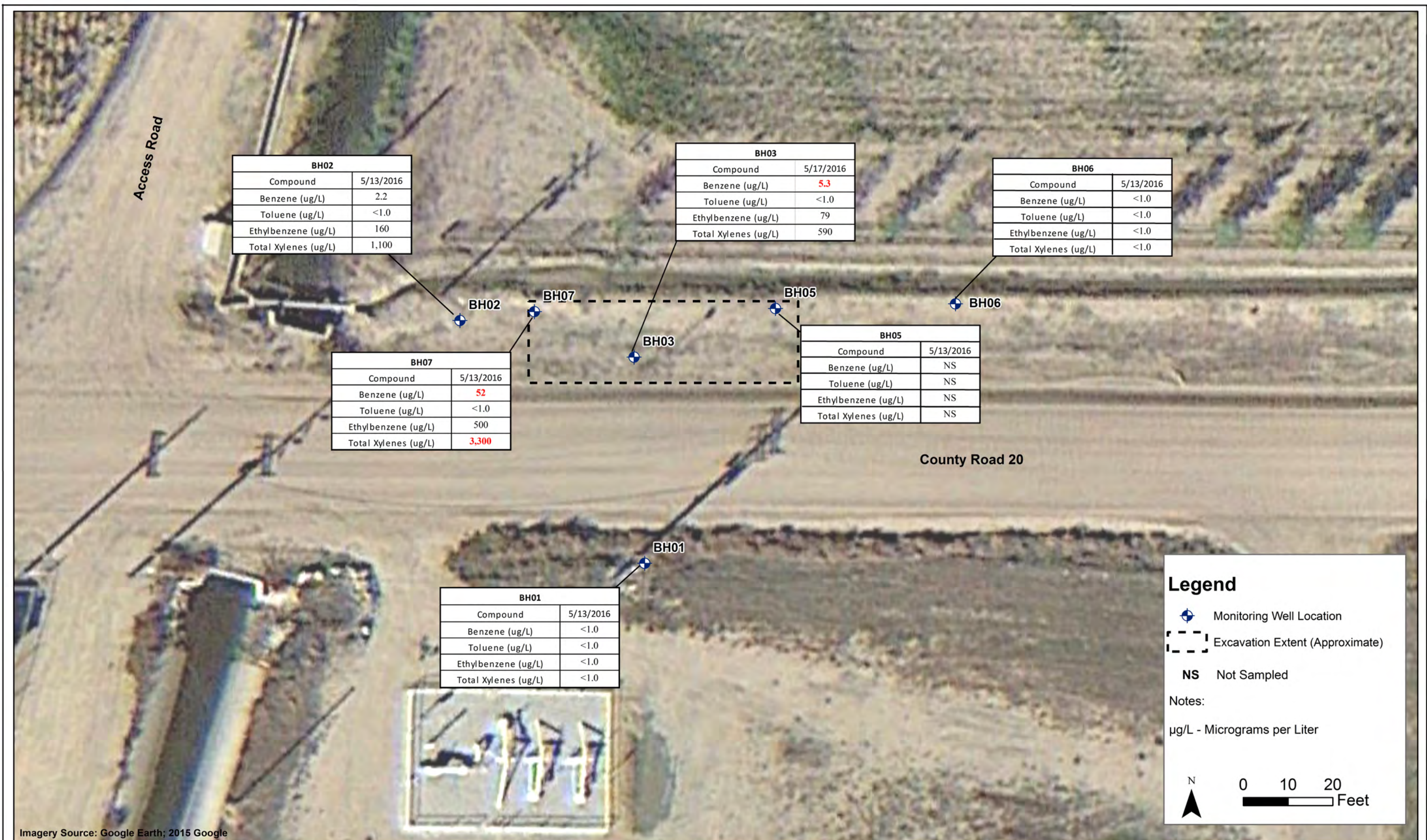
DATE:	June 2016
DESIGNED BY:	B. Humphrey
DRAWN BY:	D. Arnold



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

Groundwater Elevation
Contour Map
(May 13, 2016)

Figure
3



DATE:	June 2016
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 13, 2016)

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 L (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	
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	
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	
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
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	
BH07	5/14/2015	44	310	200	2,600	
BH07	9/24/2015	NS	NS	NS	NS	Trace 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	

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 1605137 and 1605158

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 18, 2016

Brian Humphrey
DCP Midstream
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 05/13/16 17:15. 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
President



DCP Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/18/16 15:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1605137-01	Water	05/13/16 11:38	05/13/16 17:15
BH02	1605137-02	Water	05/13/16 11:45	05/13/16 17:15
BH06	1605137-03	Water	05/13/16 11:32	05/13/16 17:15
BH07	1605137-04	Water	05/13/16 11:23	05/13/16 17:15

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 Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/18/16 15:43

Sample Receipt Checklist

S2 Work Order: 1605137

Client: Tasman DCP Client Project ID: County Road 20 + Highway 85 Release

Shipped Via: pick up
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

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

Cooler ID					
Temp (°C)		5-0°C			

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⁾ ?			✓	
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⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are short holding time analytes or samples with HTs due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		✓		
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 , ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			✓	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Nakita
Custodian Printed Name

MA
Signature or Initials of Custodian

5/13/16 18:00
Date/Time





DCP Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/18/16 15:43

BH01
1605137-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/16 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1605155	05/16/16	05/17/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **05/13/16 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		100 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	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 Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/18/16 15:43

BH02
1605137-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/16 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	2.2	1.0	ug/l	1	1605155	05/16/16	05/17/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	160	1.0	"	"	"	"	"	"	
Xylenes (total)	1100	10	"	10	"	"	"	"	

Date Sampled: **05/13/16 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		108 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		96.4 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %	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 Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release
Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/18/16 15:43

BH06
1605137-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/16 11:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	1605155	05/16/16	05/17/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **05/13/16 11:32**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		100 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	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 Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/18/16 15:43

BH07
1605137-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/13/16 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	52	1.0	ug/l	1	1605155	05/16/16	05/17/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	500	10	"	10	"	"	05/17/16	"	
Xylenes (total)	3300	10	"	"	"	"	05/17/16	"	

Date Sampled: **05/13/16 11:23**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		98.5 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	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 Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/18/16 15:43

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 1605155 - EPA 5030 Water MS

Blank (1605155-BLK1)

Prepared & Analyzed: 05/16/16

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.1		"	13.3	106	37-154				
Surrogate: Toluene-d8	12.5		"	13.3	93.7	45-149				
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3	102	45-146				

LCS (1605155-BS1)

Prepared & Analyzed: 05/16/16

Benzene	39.8	1.0	ug/l	33.3	119	51-132				
Toluene	29.4	1.0	"	33.3	88.3	51-138				
Ethylbenzene	41.0	1.0	"	33.1	124	58-146				
m,p-Xylene	79.4	2.0	"	66.5	119	57-144				
o-Xylene	37.4	1.0	"	32.7	114	53-146				
Surrogate: 1,2-Dichloroethane-d4	19.6		"	13.3	147	37-154				
Surrogate: Toluene-d8	13.3		"	13.3	99.5	45-149				
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3	99.7	45-146				

Matrix Spike (1605155-MS1)

Source: 1605137-01

Prepared: 05/16/16 Analyzed: 05/17/16

Benzene	29.7	1.0	ug/l	33.3	ND	89.2	34-141			
Toluene	29.8	1.0	"	33.3	ND	89.3	27-151			
Ethylbenzene	42.2	1.0	"	33.1	ND	128	29-160			
m,p-Xylene	80.9	2.0	"	66.5	ND	122	20-166			
o-Xylene	38.5	1.0	"	32.7	ND	118	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.3	103	37-154				
Surrogate: Toluene-d8	13.2		"	13.3	98.6	45-149				
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3	102	45-146				

Summit Scientific

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DCP Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/18/16 15:43

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 1605155 - EPA 5030 Water MS

Matrix Spike Dup (1605155-MSD1)		Source: 1605137-01			Prepared: 05/16/16 Analyzed: 05/17/16					
Benzene	28.9	1.0	ug/l	33.3	ND	86.8	34-141	2.69	32	
Toluene	30.0	1.0	"	33.3	ND	90.2	27-151	0.936	25	
Ethylbenzene	41.3	1.0	"	33.1	ND	125	29-160	2.13	50	
m,p-Xylene	79.1	2.0	"	66.5	ND	119	20-166	2.28	36	
o-Xylene	37.4	1.0	"	32.7	ND	114	33-159	2.93	26	
Surrogate: 1,2-Dichloroethane-d4	16.2		"	13.3		122	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		99.8	45-149			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	45-146			

Summit Scientific

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DCP Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/18/16 15:43

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

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 24, 2016

Brian Humphrey
DCP Midstream
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 05/17/16 17:00. 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
President



DCP Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/24/16 08:58

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH03	1605158-01	Water	05/17/16 10:10	05/17/16 17:00

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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 Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/24/16 08:58

Summit Scientific

741 Corporate Circle Suite I • Golden, Colorado 80401
303-277-9310 • 303-374-5933 Fax

Page 1 of 1

Client: Tasman/DCP

Address:

City/State/Zip:

Phone: 720-616-8883 Fax: -

Sampler Name: Jacob Whitener

Project Manager: Brian Humphrey

E-Mail: bhumphrey@tasman-geo.com

Project Name: CR20 + Hwy 85 Release

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)		BTEX
BH03	5-17-16	1010	3	X				X			X		
Relinquished by:	Date/Time: 5-17-16 1700	Received by:	Date/Time: 5/17/16 1700	Turn Around Time (Check)				Notes:					
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>				On ice					
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/>									
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Sample Integrity: 5/17/16 17:30									
				Temperature Upon Receipt: 0.0°C									
				Intact: Yes <input 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.

DCP Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/24/16 08:58

Sample Receipt Checklist

S2 Work Order: 1605158

Client: Tasman/DLP

Client Project ID: CR20 + Hwy 85 Release

Shipped Via: g/u

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

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

Cooler ID						
Temp (°C)		0°C				

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⁾ ?				
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⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are short holding time analytes or samples with HTs due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		✓		
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 , ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			✓	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

Nakita
Custodian Printed Name

MA
Signature or Initials of Custodian

5/17/16 1740
Date/Time





DCP Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/24/16 08:58

BH03
1605158-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/17/16 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	5.3	1.0	ug/l	1	1605197	05/19/16	05/21/16	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	79	1.0	"	"	"	"	"	"	
Xylenes (total)	590	1.0	"	"	"	"	"	"	

Date Sampled: **05/17/16 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>111 %</i>	<i>37-154</i>		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		<i>102 %</i>	<i>45-149</i>		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>104 %</i>	<i>45-146</i>		"	"	"	"	

Summit Scientific

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DCP Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/24/16 08:58

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 1605197 - EPA 5030 Water MS

Blank (1605197-BLK1)

Prepared & Analyzed: 05/20/16

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.2		"	13.3		106	37-154			
Surrogate: Toluene-d8	13.6		"	13.3		102	45-149			
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3		103	45-146			

LCS (1605197-BS1)

Prepared & Analyzed: 05/20/16

Benzene	43.2	1.0	ug/l	50.0		86.5	51-132			
Toluene	39.5	1.0	"	50.0		79.1	51-138			
Ethylbenzene	41.8	1.0	"	50.0		83.6	58-146			
m,p-Xylene	81.4	2.0	"	100		81.4	57-144			
o-Xylene	42.8	1.0	"	50.0		85.5	53-146			
Surrogate: 1,2-Dichloroethane-d4	14.1		"	13.3		105	37-154			
Surrogate: Toluene-d8	13.5		"	13.3		101	45-149			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.6	45-146			

Matrix Spike (1605197-MS1)

Source: 1605166-21

Prepared & Analyzed: 05/20/16

Benzene	55.0	1.0	ug/l	50.0	2.30	105	34-141			
Toluene	51.5	1.0	"	50.0	ND	103	27-151			
Ethylbenzene	56.5	1.0	"	50.0	ND	113	29-160			
m,p-Xylene	108	2.0	"	100	13.2	94.9	20-166			
o-Xylene	55.9	1.0	"	50.0	ND	112	33-159			
Surrogate: 1,2-Dichloroethane-d4	12.5		"	13.3		93.9	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		99.3	45-149			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.0	45-146			

Summit Scientific

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DCP Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/24/16 08:58

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 1605197 - EPA 5030 Water MS

Matrix Spike Dup (1605197-MSD1)	Source: 1605166-21			Prepared & Analyzed: 05/20/16						
Benzene	55.7	1.0	ug/l	50.0	2.30	107	34-141	1.16	32	
Toluene	50.5	1.0	"	50.0	ND	101	27-151	1.98	25	
Ethylbenzene	55.7	1.0	"	50.0	ND	111	29-160	1.35	50	
m,p-Xylene	106	2.0	"	100	13.2	92.4	20-166	2.33	36	
o-Xylene	54.6	1.0	"	50.0	ND	109	33-159	2.44	26	
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.3		99.3	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		99.6	45-149			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.0	45-146			

Summit Scientific

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DCP Midstream
370 17th Street #2500
Denver CO, 80202

Project: CR20 + Hwy 85 Release

Project Number: [none]
Project Manager: Brian Humphrey

Reported:
05/24/16 08:58

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

Summit Scientific

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A handwritten signature in black ink, appearing to be 'MSM'.