Third Quarter 2016 Groundwater Monitoring Summary Report

J-4-2 Pipeline Release
Lea County, New Mexico
1RP-1728

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December 2, 2016

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1. Introduction

This report summarizes groundwater monitoring activities conducted during the third quarter 2016 at the J-4-2 pipeline release (Site) in Lea County, New Mexico (Figure 1). Tasman Geosciences, LLC (Tasman) performed these activities on behalf of DCP Midstream, LP (DCP). The field activities described herein were conducted on September 28, 2016, with the purpose of monitoring groundwater flow and quality beneath the Site. The data collected during the reporting period were used to develop a groundwater elevation figure and analytical results figure to assist with evaluating current conditions at the Site.

2. Site Location and Background

The Site is located in the northeastern quarter of the northwestern quarter (Unit C) of Section 27, Township 19 South, Range 35 East approximately 3 miles south of the intersection of US Highway 82 and State Highway 483. The area is sparsely populated and land use is primarily associated with livestock grazing and oil and gas production and gathering.

Based on findings from previous Site investigations, a natural gas condensate release was reported at the Site on August 3, 2005. Environmental Plus Incorporated (EPI) of Eunice, New Mexico, performed initial Site investigation activities. EPI reported that the spill was limited to an approximate area of 2,800 square feet and it did not migrate to any surface water features. EPI installed monitoring wells MW-1, MW-2, and MW-3 as a part of the initial soil and groundwater characterization effort in February 2006. Monitoring wells MW-4, MW-6, MW-7, and MW-8 were installed in September 2006 as part of a Site investigation completed by American Environmental Consulting. Installation of monitoring well MW-5 was not completed during this event due to refusal while advancing the borehole. Groundwater samples collected in 2006 from the newly installed wells indicated that dissolved phase petroleum hydrocarbons had impacted groundwater at the Site in the vicinity of monitoring wells MW-1 and MW-2. MW-1 and MW-2 have also historically exhibited the presence of light non-aqueous phase liquid (LNAPL).

3. Groundwater Monitoring

This section describes the groundwater monitoring activities as well as laboratory analyses performed during the third quarter 2016 groundwater monitoring event. Monitoring activities included Site-wide groundwater gauging and groundwater 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 of groundwater elevation at the Site. During the third quarter 2016, groundwater levels were measured at seven monitoring well locations.

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]).

Groundwater elevation measurements collected during the reporting period as well as historic groundwater elevations are presented in Table 1. A third quarter 2016 groundwater elevation contour map, included as Figure 3, indicates that groundwater flow at the Site trends to the south-southeast. The range of groundwater elevations, average groundwater elevation change from the previous monitoring event, and the calculated hydraulic gradient at the Site are summarized in the table below.

Summary of Measured Hydraulic Parameters

	Third Quarter 2016 (9/28/16)
Maximum Elevation (Well ID)	3,712.15 (MW-1)
Minimum Elevation (Well ID)	3,707.52 (MW-8)
Average Change from Previous Monitoring Event – All Wells	-0.62 feet
Hydraulic Gradient (ft/ft) / (Well IDs)	0.0063 (MW-1 to MW-8)

3.2 Groundwater Quality Monitoring

Subsequent to recording groundwater level measurements, groundwater samples were collected at each of the seven monitoring wells at the Site using dedicated polyethylene bailers. A minimum of three well casing volumes of groundwater were purged from the subject well prior to the collection of groundwater samples. Groundwater samples were placed in clean laboratory supplied containers, packed in an ice-filled cooler, and maintained at approximately four degrees Celsius (^{0}C) for transportation to the laboratory. Groundwater samples were shipped under chain-of-custody procedures to ALS Laboratories (ALS) in Houston, Texas for analysis.

Water quality samples were collected from seven wells and were submitted for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency (USEPA) Method 8260B, and chloride by USEPA Method 9056.

Table 2 summarizes BTEX and chloride concentrations in groundwater samples collected during the reporting period. Historic analytical results up to and including the September 2016 event are presented in Appendix A and the Laboratory analytical report for the third quarter 2016 sampling event is included in Appendix B. Analytical results are also displayed on Figure 4.

During the third quarter 2016, BTEX concentrations were below laboratory detection limits and the New Mexico Water Quality Control Commission (NMWQCC) standards at the seven sample locations on-Site. Chloride was detected in all of the monitoring wells with concentrations ranging from 383 milligrams per liter (mg/L) in MW-8 to 2,520 mg/L in MW-3.

3.3 Data Quality Assurance / Quality Control

A trip blank and field duplicate (MW-1) were collected during the sampling event. The data were reviewed for compliance with the analytical method and the associated quality assurance/quality control (QA/QC) procedures. All samples were analyzed using the correct analytical methods and within the correct holding times. QA/QC items of note for the third quarter 2016 include the following:

- Target analytes were not detected in the trip blank; and
- The duplicate sample collected at MW-1 was in compliance with QA/QC standards.
- During shipment of the sample cooler to the laboratory, the delivery company misplaced the cooler resulting in a delay of delivery by two days. As such, the laboratory received the samples at temperature of 11.2 degrees Celsius (C^o) which is outside of the recommended temperature acceptance (0 to 6 C^o). However, due to the amount of historic data that has been collected at the Site and the analytical results that were reported, the data are considered accurate and useable.

3.4 Chloride Concentration Trends

Chloride concentrations in Site monitoring wells have remained relatively stable at levels above the standard of 250 mg/L since groundwater sampling was initiated and LNAPL has no longer been observed. The distribution and concentration gradient of chloride at the Site, illustrated on Figure 5, indicates an alternate, upgradient source. Due to the direction of groundwater flow and the chloride concentration gradient at the Site, the alternate source of the chloride impacts is likely associated with the oil and gas production site located approximately 250 feet upgradient and to the north from MW-4. As displayed in the photographs on the next page, the tank battery has an apparent abandoned pit to the west, surface staining around the pump jack, and poor housekeeping and spill prevention control and countermeasures (SPCC) procedures.

3.5 Upgradient Tank Battery Photos

4. Conclusions

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

- Trending back to third quarter 2015, groundwater elevations exhibited a slight decrease in the seven monitoring wells. These fluctuations are likely attributable to natural variations at the Site.
- Dissolved phase hydrocarbon concentrations did not exceed laboratory detection limits and NMWQCC standards in the seven sampled locations during the reporting period. The third quarter 2016 monitoring results represent the twelfth consecutive quarter or three years of results that are below the NMWQCC groundwater standards.
- Chloride concentrations in Site monitoring wells have remained relatively stable at levels above the standard of 250 mg/L. The occurrence of these detections and the distribution and gradient of chloride concentrations at the Site indicate an alternate, upgradient source for the chloride detected on-Site. The alternate source of the chloride impacts is likely associated with the oil and gas production site located approximately 250 feet upgradient and to the north from MW-4.

5. Recommendations

Based on evaluation of third quarter 2016 and historic Site observations and monitoring results, recommendations for future activities include:

- On November 17, 2015, DCP submitted a BTEX Removal Request Letter to the NMOCD requesting approval to remove the BTEX sampling requirement for the Site based on 8 consecutive quarters of analytical results below the respective standards which meets the State requirement for Site closure. This letter was also prepared due to verbal approval for the removal of the BTEX sampling requirement that was received from the NMOCD during a project meeting conducted in November 2015. Since that time, DCP has made several attempts to contact the NMOCD regarding the request to remove BTEX from the Site sampling plan. However, to date, DCP has not received written or verbal communication regarding the request letter and the non-detect concentrations for BTEX at the Site which now represent 12 consecutive quarters or three years. Therefore, DCP is formally notifying the NMOCD that groundwater samples will no longer be collected for BTEX analysis from the Site monitoring well network.
- Due to the concentration gradient throughout the Site monitoring wells, it is apparent that the observed chloride is due to an alternate, upgradient source and is not related to the natural gas condensate release that was reported by DCP on August 3, 2005. Therefore, DCP is formally requesting to remove chlorides from the analytical sampling suite for the Site.
- Contingent on approval from the NMOCD with regard to the BTEX and chloride removal requests discussed in the bullets above, DCP will submit a formal Site Closure Request.

- Should the BTEX and/or the chloride sampling removal request be denied, DCP will request to modify the groundwater sampling frequency from a quarterly to an annual sampling and reporting basis. Until such approval is received, quarterly sampling will continue.

Tables

TABLE 1
THIRD QUARTER 2016
SUMMARY OF GROUNDWATER ELEVATION DATA
J-4-2 PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

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)
MW-1	12/16/2015	27.33			NM	3,740.45	3,713.12	-0.02
MW-1	03/24/2016	27.43			NM	3,740.45	3,713.02	-0.10
MW-1	06/20/2016	27.71			38.54	3,740.45	3,712.74	-0.28
MW-1	09/28/2016	28.30			38.53	3,740.45	3,712.15	-0.59
MW-2	12/16/2015	28.03			NM	3,740.62	3,712.59	-0.03
MW-2	03/24/2016	28.11			NM	3,740.62	3,712.51	-0.08
MW-2	06/20/2016	28.41			43.03	3,740.62	3,712.21	-0.30
MW-2	09/28/2016	28.95			42.98	3,740.62	3,711.67	-0.54
MW-3	12/16/2015	26.86*			NM	3,739.39	3,712.53	-0.02
MW-3	03/24/2016	27.10*			NM	3,739.39	3,712.29	-0.24
MW-3	06/20/2016	27.24*			35.22	3,739.39	3,712.15	-0.14
MW-3	09/28/2016	27.81*			35.20	3,739.39	3,711.58	-0.57
MW-4	12/16/2015	27.16			NM	3,740.24	3,713.08	-0.08
MW-4	03/24/2016	27.29			NM	3,740.24	3,712.95	-0.13
MW-4	06/20/2016	27.59			37.56	3,740.24	3,712.65	-0.30
MW-4	09/28/2016	28.11			37.62.	3,740.24	3,712.13	-0.52
MW-6	12/16/2015	27.93			NM	3,739.96	3,712.03	-0.02
MW-6	03/24/2016	27.97			NM	3,739.96	3,711.99	-0.04
MW-6	06/20/2016	28.16			34.92	3,739.96	3,711.80	-0.19
MW-6	09/28/2016	28.66			34.95	3,739.96	3,711.30	-0.50
MW-7	12/16/2015	30.51			NM	3,740.73	3,710.22	0.59
MW-7	03/24/2016	30.39			NM	3,740.73	3,710.34	0.12
MW-7	06/20/2016	30.70			40.42	3,740.73	3,710.03	-0.31
MW-7	09/28/2016	31.67			40.55	3,740.73	3,709.06	-0.97
MW-8	12/16/2015	29.12			NM	3,737.32	3,708.20	0.47
MW-8	03/24/2016	28.92			NM	3,737.32	3,708.40	0.20
MW-8	06/20/2016	29.13			37.22	3,737.32	3,708.19	-0.21
MW-8	09/28/2016	29.80			39.25	3,737.32	3,707.52	-0.67
							Average change in groundwater elevation (6/20/16 to 9/28/2016)	-0.62

Notes:

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

amsl = feet above mean sea level

TOC = top of casing

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

* Depth measured from top of well monument. Casing too low inside surface completion to allow measurement from TOC.

NM = Not Measured

NA = Not Applicable

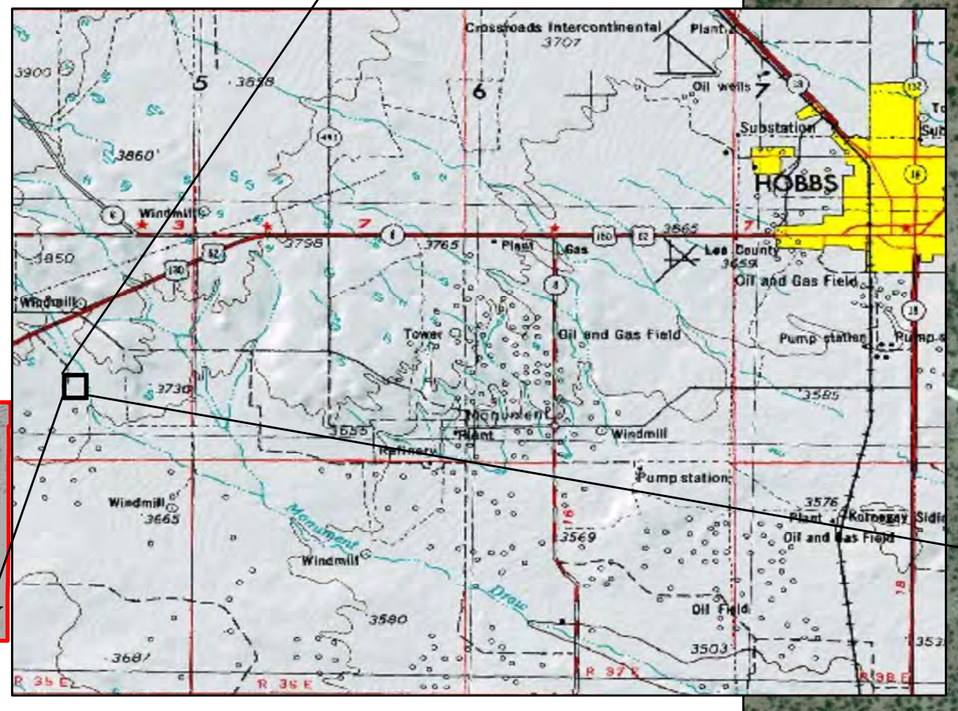
TABLE 2
THIRD QUARTER 2016
SUMMARY OF BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
J-4-2 PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

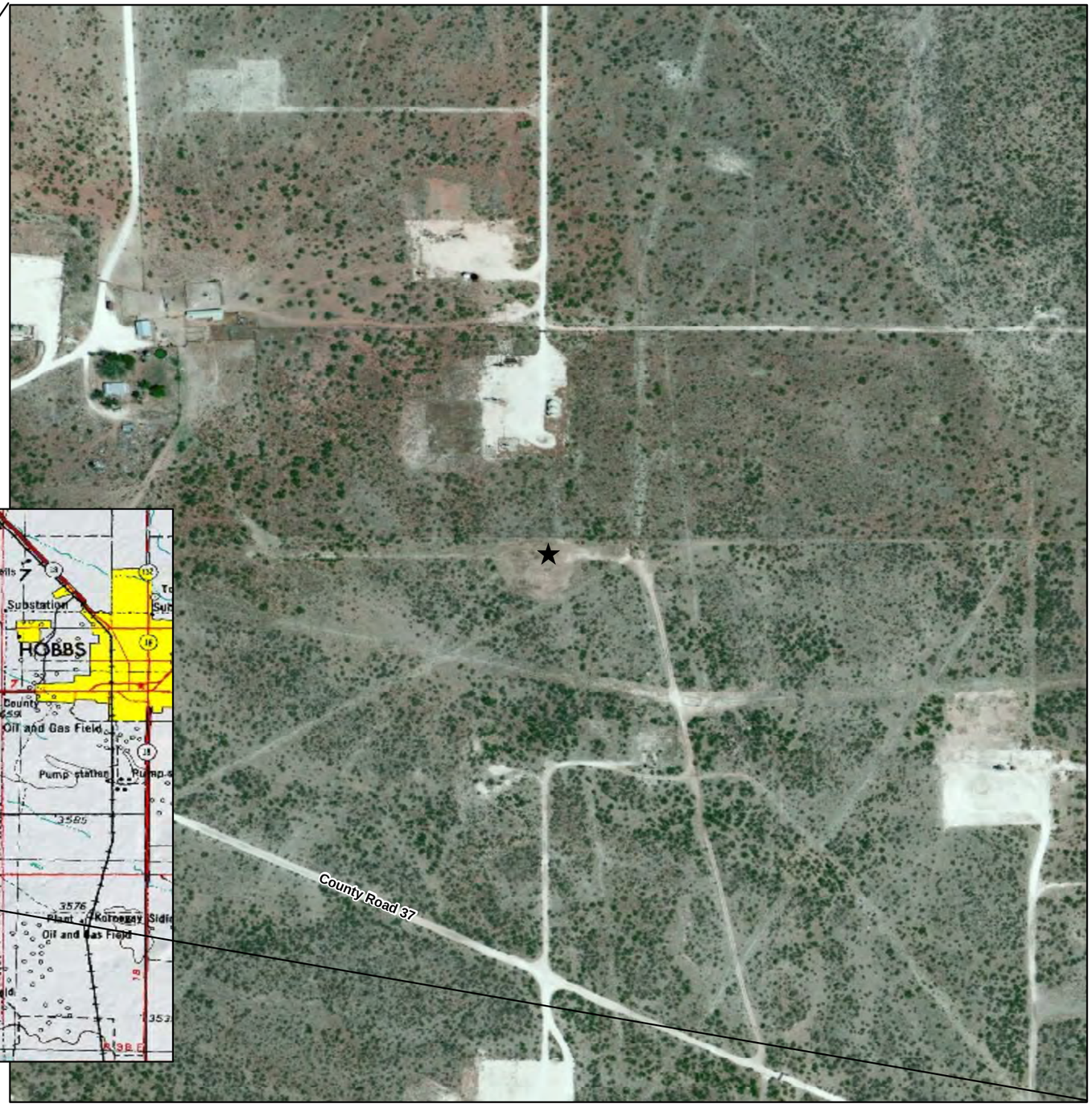
Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-1	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**2,040**	Duplicate sample collected
MW-1 (duplicate)	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**2,040**	
MW-2	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**1,790**	
MW-3	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**2,520**	
MW-4	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**2,300**	
MW-6	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**914**	
MW-7	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**799**	
MW-8	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**383**	
Trip Blank	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	NA	

Notes:
Bold red values indicate an exceedance of the NMWQCC groundwater standards for the Site
NMWQCC = New Mexico Water Quality Control Commission
NA = Not Analyzed
mg/L = milligrams per liter

Figures

N





DATE: April 2015 DESIGNED BY: T. Johansen DRAWN BY: D. Arnold	TASMAN GEOSCIENCES **Tasman Geosciences, Inc.** **6899 Pecos Street - Unit C** **Denver, CO 80221**	**DCP Midstream** **J-4-2 Pipeline Release** NE 1/4, NW 1/4, Section 27, Township 19 South, Range 35 East Lea County, New Mexico	Site Location Map	Figure 1

DATE: November 2016

DESIGNED BY: B. Humphrey

DRAWN BY: D. Cavinder

TASMAN GEOSCIENCES

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

DCP Midstream
J-4-2 Pipeline Release
Third Quarter 2016 Groundwater Monitoring Summary Report

Site Map with Monitoring Well Locations

Figure 2

DATE: November 2016 DESIGNED BY: B. Humphrey DRAWN BY: D. Cavinder	TASMAN GEOSCIENCES **Tasman Geosciences, LLC** **6899 Pecos Street - Unit C** **Denver, CO 80221**	**DCP Midstream** **J-4-2 Pipeline Release** Third Quarter 2016 Groundwater Monitoring Summary Report	Groundwater Elevation Contour Map (September 28, 2016)	Figure 3

MW-4	
	09/28/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0030
Chlorides	**2,300**

MW-1		
	09/28/2016	Duplicate
Compound	(mg/L)	(mg/L)
Benzene	<0.0010	<0.0010
Toluene	<0.0010	<0.0010
Ethylbenzene	<0.0010	<0.0010
Total Xylenes	<0.0030	<0.0030
Chlorides	**2,040**	**2,040**

MW-6	
	09/28/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0030
Chlorides	**914**

MW-3	
	09/28/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0030
Chlorides	**2,520**

MW-7	
	09/28/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0030
Chlorides	**799**

MW-2	
	09/28/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0030
Chlorides	**1,790**

MW-8	
	09/28/2016
Compound	(mg/L)
Benzene	<0.0010
Toluene	<0.0010
Ethylbenzene	<0.0010
Total Xylenes	<0.0030
Chlorides	**383**

Legend

Monitoring Well

NMWQCC Groundwater Standards	
Compound	(mg/L)
Benzene	0.01
Toluene	0.75
Ethylbenzene	0.75
Total Xylenes	0.62
Chlorides	250

Notes:

All aqueous analytical results are presented in milligrams per liter (mg/L)

N

0 65 130 Feet

Imagery Source:Google Earth; 2014 Google

DATE: November 2016

DESIGNED BY: B. Humphrey

DRAWN BY: D. Cavinder

TASMAN GEOSCIENCES

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

DCP Midstream
J-4-2 Pipeline Release
Third Quarter 2016 Groundwater Monitoring Summary Report

Analytical Results Map (September 28, 2016)

Figure 4

Appendix A

Historic Analytical Results

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
J-4-2 PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-1	02/01/2006	**0.139**	0.326	0.34	0.31		
MW-1	09/01/2006	**0.0487**	0.0058	0.0284	0.0694		
MW-1	12/01/2006	LNAPL	LNAPL	LNAPL	LNAPL		
MW-1	03/01/2007	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	06/01/2007	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	09/01/2007	**0.011**	0.003	0.004	0.098		
MW-1	11/01/2007	**0.107**	0.024	0.014	0.39		
MW-1	03/01/2008	**0.037**	0.0155	0.014	0.215		
MW-1	06/01/2008	LNAPL	LNAPL	LNAPL	LNAPL		
MW-1	09/01/2008	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	12/01/2008	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	03/11/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	05/18/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	09/24/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	12/20/2009	<0.002	<0.002	.0014J	0.0418	**2,680**	
MW-1	03/10/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	06/13/2010	0.0016	<0.001	<0.0003	0.0095	**1,800**	
MW-1	09/29/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	12/08/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	03/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	09/16/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	12/07/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	03/11/2012	<0.001	<0.002	<0.002	<0.004	**2,970**	
MW-1	06/05/2012	<0.001	<0.002	<0.002	<0.003	**2,480**	
MW-1	09/07/2012	<0.001	<0.002	<0.002	<0.003	**2,060**	
MW-1	12/04/2012	<0.001	<0.002	<0.002	<0.003	**2,240**	Duplicate sample collected
MW-1	02/22/2013	0.00027	<0.002	<0.002	<0.003	**2,110**	
MW-1	06/02/2013	<0.001	<0.002	<0.002	<0.003	**2,010**	Duplicate sample collected
MW-1	09/10/2013	<0.001	<0.002	<0.002	<0.003	**1,900**	Duplicate sample collected
MW-1	12/03/2013	<0.001	<0.002	<0.002	<0.003	**1,960**	Duplicate sample collected
MW-1	02/26/2014	<0.001	<0.002	<0.002	<0.003	**1,850**	Duplicate sample collected
MW-1 (duplicate)	02/26/2014	<0.001	<0.002	<0.002	<0.003	**1,920**	
MW-1	06/02/2014	<0.001	<0.002	<0.002	<0.003	**1,800**	Duplicate sample collected
MW-1 (duplicate)	06/02/2014	<0.001	<0.002	<0.002	<0.003	**1,850**	
MW-1	09/25/2014	<0.001	<0.001	<0.001	<0.001	**1,780**	Duplicate sample collected
MW-1 (duplicate)	09/25/2014	<0.001	<0.001	<0.001	<0.001	**1,780**	
MW-1	12/05/2014	<0.001	<0.001	<0.001	<0.003	**1,760**	Duplicate sample collected
MW-1 (duplicate)	12/05/2014	<0.001	<0.001	<0.001	<0.003	**1,770**	
MW-1	02/26/2015	<0.001	<0.001	<0.001	0.0031	**1,770**	Duplicate sample collected
MW-1 (duplicate)	02/26/2015	<0.001	<0.001	<0.001	0.0036	**1,800**	
MW-1	06/02/2015	<0.001	<0.001	<0.001	<0.003	**2,160**	Duplicate sample collected
MW-1 (duplicate)	06/02/2015	<0.001	<0.001	<0.001	<0.003	**2,190**	
MW-1	09/02/2015	<0.001	<0.001	<0.001	<0.003	**2,380**	Duplicate sample collected
MW-1 (duplicate)	09/02/2015	<0.001	<0.001	<0.001	<0.003	**2,320**	
MW-1	12/16/2015	<0.001	<0.001	<0.001	<0.003	**2,680**	Duplicate sample collected
MW-1 (duplicate)	12/16/2015	<0.001	<0.001	<0.001	<0.003	**2,630**	
MW-1	03/24/2016	<0.001	<0.001	<0.001	<0.003	**2,490**	Duplicate sample collected
MW-1(duplicate)	03/24/2016	<0.001	<0.001	<0.001	<0.003	**2,840**	
MW-1	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**2,420**	Duplicate sample collected
MW-1 (duplicate)	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**2,510**	
MW-1	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**2,040**	Duplicate sample collected
MW-1 (duplicate)	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**2,040**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
J-4-2 PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-2	02/01/2006	**0.026**	0.038	0.04	0.335		
MW-2	09/01/2006	0.0045	<0.001	0.0027	0.0471		
MW-2	12/01/2006	0.006	0.003	0.003	0.0613		
MW-2	03/01/2007	**0.188**	0.006	0.026	0.125		
MW-2	06/01/2007	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	09/01/2007	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	11/01/2007	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	03/01/2008	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	06/01/2008	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	09/01/2008	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	12/01/2008	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	03/11/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	05/18/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	09/24/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	12/20/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	03/10/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	06/13/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	09/29/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	12/08/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	03/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	09/16/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	12/07/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	03/11/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	06/05/2012	0.00043	<0.002	0.0024	0.0069	**2,450**	
MW-2	09/07/2012	<0.001	<0.002	<0.002	<0.003	**2,280**	
MW-2	12/04/2012	<0.001	<0.002	0.0008	0.0028	**2,440**	
MW-2	02/22/2013	<0.001	<0.002	<0.002	<0.003	**2,390**	Duplicate sample collected
MW-2	06/02/2013	NS	NS	NS	NS	NS	
MW-2	09/10/2013	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	12/03/2013	<0.001	<0.002	<0.002	<0.003	**2,370**	
MW-2	02/26/2014	<0.001	<0.002	<0.002	<0.003	**2,100**	
MW-2	06/02/2014	<0.001	<0.002	<0.002	<0.003	**2,000**	MS/MSD sample collected
MW-2	09/25/2014	<0.001	<0.001	<0.001	<0.001	**2,030**	
MW-2	12/05/2014	<0.001	<0.001	<0.001	<0.003	**2,000**	
MW-2	02/26/2015	<0.001	<0.001	<0.001	<0.003	**1,970**	
MW-2	06/02/2015	<0.001	<0.001	0.0024	<0.003	**1,650**	
MW-2	09/02/2015	<0.001	<0.001	<0.001	<0.003	**1,870**	
MW-2	12/16/2015	<0.001	<0.001	<0.001	<0.003	**1,980**	
MW-2	03/24/2016	<0.001	<0.001	<0.001	<0.003	**2,130**	
MW-2	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**2,160**	
MW-2	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**1,790**	

APPENDIX A
HISTORIC ANALYTICAL RESULTS
BTEX AND CHLORIDE CONCENTRATIONS IN GROUNDWATER
J-4-2 PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-3	02/01/2006	<0.001	<0.001	<0.001	<0.002		
MW-3	09/01/2006	<0.002	<0.002	<0.002	<0.006		
MW-3	12/01/2006	<0.002	<0.002	<0.002	<0.006		
MW-3	03/01/2007	<0.002	<0.002	<0.002	<0.006	**7,800**	
MW-3	06/01/2007	0.003	0.005	0.002	0.01	**10,800**	
MW-3	09/01/2007	<0.001	<0.001	<0.001	<0.001		
MW-3	11/01/2007	0.0011J	<0.002	<0.002	<0.006		
MW-3	03/01/2008	<0.002	<0.002	<0.002	<0.006		
MW-3	06/01/2008	<0.002	<0.002	<0.002	0.007		
MW-3	09/01/2008	<0.002	<0.002	<0.002	<0.006	**4,070**	
MW-3	12/01/2008	<0.002	<0.002	<0.002	<0.006	**2,625**	
MW-3	03/11/2009	<0.002	<0.002	<0.002	<0.002	**2,860**	
MW-3	05/18/2009	<0.002	<0.002	<0.002	<0.002	**3,270**	
MW-3	09/24/2009	<0.002	<0.002	<0.002	<0.006	**3,195**	
MW-3	12/20/2009	<0.002	<0.002	<0.002	<0.006	**3,605**	
MW-3	03/10/2010	<0.001	<0.002	<0.002	<0.004	**3,030**	
MW-3	06/13/2010	<0.0003	<0.001	<0.0003	<0.0006	**2,130**	
MW-3	09/29/2010	<0.001	<0.002	<0.002	<0.004	**2,220**	
MW-3	12/08/2010	<0.001	<0.002	<0.002	<0.004	**2,530**	
MW-3	03/30/2011	<0.001	<0.002	<0.002	<0.002	**2,230**	
MW-3	06/11/2011	<0.001	<0.002	<0.002	<0.004	**2,210**	
MW-3	09/16/2011	<0.001	<0.002	<0.002	<0.004	**2,190**	Duplicate sample collected
MW-3	12/07/2011	<0.001	<0.002	<0.002	<0.004	**2,230**	Duplicate sample collected
MW-3	03/11/2012	<0.001	<0.002	<0.002	<0.004	**2,210**	
MW-3	06/05/2012	<0.001	<0.002	<0.002	<0.003	**2,080**	
MW-3	09/07/2012	<0.001	<0.002	<0.002	<0.003	**2,180**	
MW-3	12/04/2012	<0.001	<0.002	<0.002	<0.003	**2,170**	
MW-3	02/22/2013	<0.001	<0.002	<0.002	<0.003	**2,050**	
MW-3	06/02/2013	<0.001	<0.002	<0.002	<0.003	**1,910**	
MW-3	09/10/2013	<0.001	<0.002	<0.002	<0.003	**1,730**	
MW-3	12/03/2013	<0.001	<0.002	<0.002	<0.003	**1,860**	
MW-3	02/26/2014	<0.001	<0.002	<0.002	<0.003	**1,570**	
MW-3	06/02/2014	<0.001	<0.002	<0.002	<0.003	**1,480**	
MW-3	09/25/2014	<0.001	<0.001	<0.001	<0.001	**1,570**	
MW-3	12/05/2014	<0.001	<0.001	<0.001	<0.003	**1,380**	
MW-3	02/26/2015	<0.001	<0.001	<0.001	<0.003	**1,530**	
MW-3	06/02/2015	<0.001	<0.001	<0.001	<0.003	**1,390**	
MW-3	09/02/2015	<0.001	<0.001	<0.001	<0.003	**1,690**	
MW-3	12/16/2015	<0.001	<0.001	<0.001	<0.003	**2,030**	
MW-3	03/24/2016	<0.001	<0.001	<0.001	<0.003	**2,230**	
MW-3	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**2,590**	
MW-3	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**2,520**	

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Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-4	06/01/2006	0.0086	.00093J	0.0092	0.0061		
MW-4	12/01/2006	**0.025**	0.005	<0.002	0.0065		
MW-4	03/01/2007	0.004	0.0006	<0.002	0.003	**1,300**	
MW-4	06/01/2007	<0.001	<0.001	<0.001	<0.001	**1,380**	
MW-4	09/01/2007	<0.001	<0.001	<0.001	<0.001		
MW-4	11/01/2007	<0.002	<0.002	<0.002	<0.006		
MW-4	03/01/2008	<0.002	<0.002	<0.002	<0.006		
MW-4	06/01/2008	<0.002	<0.002	<0.002	<0.006		
MW-4	09/01/2008	<0.002	<0.002	<0.002	0.0041 J	**1,440**	
MW-4	12/01/2008	<0.002	<0.002	<0.002	<0.006	70	
MW-4	03/11/2009	<0.002	<0.002	<0.002	<0.002	**1,390**	
MW-4	05/18/2009	<0.002	<0.002	<0.002	<0.002	**1,440**	
MW-4	09/24/2009	<0.002	<0.002	<0.002	<0.006	**1,490**	
MW-4	12/20/2009	<0.002	<0.002	<0.002	<0.006	**1,740**	
MW-4	03/10/2010	<0.001	<0.002	<0.002	<0.004	**1,950**	
MW-4	06/13/2010	<0.0003	<0.001	<0.0003	<0.0006	**2,150**	
MW-4	09/29/2010	<0.001	<0.002	<0.002	<0.004	**2,130**	
MW-4	12/08/2010	<0.001	<0.002	<0.002	<0.004	**2,740**	
MW-4	03/30/2011	<0.001	<0.002	<0.002	<0.002	**2,300**	
MW-4	06/11/2011	<0.001	<0.002	<0.002	<0.004	**2,230**	
MW-4	09/16/2011	<0.001	<0.002	<0.002	<0.004	**1,980**	
MW-4	12/07/2001	<0.001	<0.002	<0.002	<0.004	**2,010**	
MW-4	03/11/2012	<0.001	<0.002	<0.002	<0.004	**1,960**	Duplicate sample collected
MW-4	06/05/2012	<0.001	<0.002	<0.002	<0.003	**1,790**	Duplicate sample collected
MW-4	09/07/2012	<0.001	<0.002	<0.002	<0.003	**1,910**	Duplicate sample collected
MW-4	12/04/2012	<0.001	<0.002	<0.002	<0.003	**1,940**	
MW-4	02/22/2013	<0.001	<0.002	<0.002	<0.003	**1,900**	
MW-4	06/02/2013	<0.001	<0.002	<0.002	<0.003	**1,950**	
MW-4	09/10/2013	<0.001	<0.002	<0.002	<0.003	**1,860**	
MW-4	12/03/2013	<0.001	<0.002	<0.002	<0.003	**2,250**	
MW-4	02/26/2014	<0.001	<0.002	<0.002	<0.003	**2,000**	
MW-4	06/02/2014	<0.001	<0.002	<0.002	<0.003	**2,190**	
MW-4	09/25/2014	<0.001	<0.001	<0.001	<0.001	**2,260**	
MW-4	12/05/2014	<0.001	<0.001	<0.001	<0.003	**2,140**	
MW-4	02/26/2015	<0.001	<0.001	<0.001	<0.003	**1,890**	
MW-4	06/02/2015	<0.001	<0.001	<0.001	<0.003	**2,110**	
MW-4	09/02/2015	<0.001	<0.001	<0.001	<0.003	**2,450**	
MW-4	12/16/2015	<0.001	<0.001	<0.001	<0.003	**2,770**	
MW-4	03/24/2016	<0.001	<0.001	<0.001	<0.003	**2,710**	
MW-4	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**2,740**	
MW-4	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**2,300**	

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Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-6	09/01/2006	<0.002	<0.002	<0.002	<0.006		
MW-6	12/01/2006	<0.002	<0.002	<0.002	<0.006		
MW-6	03/01/2007	<0.002	<0.002	<0.002	<0.006	**669**	
MW-6	06/01/2007	<0.001	<0.001	<0.001	<0.001	**544**	
MW-6	09/01/2007	<0.001	<0.001	<0.001	<0.001		
MW-6	11/01/2007	<0.002	<0.002	<0.002	<0.006		
MW-6	03/01/2008	<0.002	<0.002	<0.002	<0.006		
MW-6	06/01/2008	<0.002	<0.002	<0.002	<0.006		
MW-6	09/01/2008	<0.002	<0.002	<0.002	<0.006	**537**	
MW-6	12/01/2008	<0.002	<0.002	<0.002	<0.002	**391**	
MW-6	03/11/2009	<0.002	<0.002	<0.002	<0.002	**363**	
MW-6	05/18/2009	<0.002	<0.002	<0.002	<0.006	**383**	
MW-6	09/24/2009	<0.002	<0.002	<0.002	<0.006	**373**	
MW-6	12/20/2009	<0.002	<0.002	<0.002	<0.006	**1,090**	
MW-6	03/10/2010	NS	NS	NS	NS	NS	
MW-6	06/13/2010	<0.0003	<0.001	<0.0003	<0.006	**533**	
MW-6	09/29/2010	<0.001	<0.002	<0.002	<0.004	**445**	
MW-6	12/08/2010	<0.001	<0.002	<0.002	<0.004	**513**	
MW-6	03/30/2011	<0.001	<0.002	<0.002	<0.002	**491**	
MW-6	06/11/2011	<0.001	<0.002	<0.002	<0.004	**503**	
MW-6	09/16/2011	<0.001	<0.002	<0.002	<0.004	**476**	
MW-6	12/07/2011	<0.001	<0.002	<0.002	<0.004	**526**	
MW-6	03/11/2012	<0.001	<0.002	<0.002	<0.004	**522**	
MW-6	06/05/2012	<0.001	<0.002	<0.002	<0.003	**532**	
MW-6	09/07/2012	NS	NS	NS	NS	NS	
MW-6	12/04/2012	<0.001	<0.002	<0.002	<0.003	**578**	
MW-6	02/22/2013	<0.001	<0.002	<0.002	<0.003	**536**	
MW-6	06/02/2013	<0.001	<0.002	<0.002	<0.003	**603**	
MW-6	09/10/2013	<0.001	<0.002	<0.002	<0.003	**619**	
MW-6	12/03/2013	<0.001	<0.002	<0.002	<0.003	**674**	
MW-6	02/26/2014	<0.001	<0.002	<0.002	<0.003	**595**	
MW-6	06/02/2014	<0.001	<0.002	<0.002	<0.003	**675**	
MW-6	09/25/2014	<0.001	<0.001	<0.001	<0.001	**757**	
MW-6	12/05/2014	<0.001	<0.001	<0.001	<0.003	**924**	
MW-6	02/26/2015	<0.001	<0.001	<0.001	<0.003	**817**	
MW-6	06/02/2015	<0.001	<0.001	<0.001	<0.003	**737**	
MW-6	09/02/2015	<0.001	<0.001	<0.001	<0.003	**858**	
MW-6	12/16/2015	<0.001	<0.001	<0.001	<0.003	**766**	
MW-6	03/24/2016	<0.001	<0.001	<0.001	<0.003	**786**	
MW-6	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**923**	
MW-6	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**914**	

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Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-7	09/01/2006	<0.002	<0.002	<0.002	<0.006		
MW-7	12/01/2006	<0.002	<0.002	<0.002	<0.006		
MW-7	03/01/2007	<0.002	<0.002	<0.002	<0.006	**1,230**	
MW-7	06/01/2007	<0.001	<0.001	<0.001	0.003	**1,150**	
MW-7	09/01/2007	<0.001	<0.001	<0.001	<0.001		
MW-7	11/01/2007	<0.002	<0.002	<0.002	<0.006		
MW-7	03/01/2008	<0.002	<0.002	<0.002	<0.006		
MW-7	06/01/2008	<0.002	<0.002	<0.002	<0.006		
MW-7	09/01/2008	<0.002	<0.002	<0.002	<0.006	**1,180**	
MW-7	12/01/2008	<0.002	<0.002	<0.002	<0.002	**1,050**	
MW-7	03/11/2009	<0.002	<0.002	<0.002	<0.002	**944**	
MW-7	05/18/2009	<0.002	<0.002	<0.002	<0.006	**1,090**	
MW-7	09/24/2009	<0.002	<0.002	<0.002	<0.006	**1,140**	
MW-7	12/20/2009	<0.002	<0.002	<0.002	<0.006	**1,440**	
MW-7	03/10/2010	<0.001	<0.002	<0.002	<0.004	**1,230**	
MW-7	06/13/2010	<0.0003	<0.001	<0.0003	<0.006	**1,280**	
MW-7	09/29/2010	<0.001	<0.002	<0.002	<0.004	**1,210**	
MW-7	12/08/2010	<0.001	<0.002	<0.002	<0.004	**1,180**	
MW-7	03/30/2011	<0.001	<0.002	<0.002	<0.002	**1,210**	
MW-7	06/11/2011	<0.001	<0.002	<0.002	<0.004	**1,210**	
MW-7	09/16/2011	<0.001	<0.002	<0.002	<0.004	**1,170**	
MW-7	12/07/2011	<0.001	<0.002	<0.002	<0.004	**1,200**	
MW-7	03/11/2012	<0.001	<0.002	<0.002	<0.004	**1,220**	
MW-7	06/05/2012	<0.001	<0.002	<0.002	<0.003	**1,120**	
MW-7	09/07/2012	<0.001	<0.002	<0.002	<0.003	**1,140**	
MW-7	12/04/2012	<0.001	<0.002	<0.002	<0.003	**1,120**	
MW-7	02/22/2013	<0.001	<0.002	<0.002	<0.003	**1,090**	
MW-7	06/02/2013	<0.001	<0.002	<0.002	<0.003	**1,040**	
MW-7	09/10/2013	<0.001	<0.002	<0.002	<0.003	**1,050**	
MW-7	12/03/2013	<0.001	<0.002	<0.002	<0.003	**1,150**	
MW-7	02/26/2014	<0.001	<0.002	<0.002	<0.003	**1,030**	
MW-7	06/02/2014	<0.001	<0.002	<0.002	<0.003	**1,020**	
MW-7	09/25/2014	<0.001	<0.001	<0.001	<0.001	**1,030**	
MW-7	12/05/2014	<0.001	<0.001	<0.001	<0.003	**915**	
MW-7	02/26/2015	<0.001	<0.001	<0.001	<0.003	**936**	
MW-7	06/02/2015	<0.001	<0.001	<0.001	<0.003	**879**	
MW-7	09/02/2015	<0.001	<0.001	<0.001	<0.003	**2,260**	
MW-7	12/16/2015	<0.001	<0.001	<0.001	<0.003	**1,250**	
MW-7	03/24/2016	<0.001	<0.001	<0.001	<0.003	**1,230**	
MW-7	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**1,230**	
MW-7	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**799**	

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Location Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Chlorides (mg/L)	Comments
NMWQCC Groundwater Standards (mg/L)		**0.01**	**0.75**	**0.75**	**0.62**	**250**	
MW-8	09/01/2006	<0.002	<0.002	<0.002	<0.006		
MW-8	12/01/2006	<0.002	<0.002	<0.002	<0.006		
MW-8	03/01/2007	<0.002	<0.002	<0.002	<0.006	**609**	
MW-8	06/01/2007	<0.001	<0.001	<0.001	<0.001	**617**	
MW-8	09/01/2007	<0.001	<0.001	<0.001	<0.001		
MW-8	11/01/2007	<0.002	<0.002	<0.002	<0.006		
MW-8	03/01/2008	<0.002	<0.002	<0.002	<0.006		
MW-8	06/01/2008	<0.002	<0.002	<0.002	<0.006		
MW-8	09/01/2008	<0.002	<0.002	<0.002	<0.006	**735**	
MW-8	12/01/2008	<0.002	<0.002	<0.002	<0.002	**480**	
MW-8	03/11/2009	<0.002	<0.002	<0.002	<0.002	**417**	
MW-8	05/18/2009	<0.002	<0.002	<0.002	<0.006	**378**	
MW-8	09/24/2009	<0.002	<0.002	<0.002	<0.006	**403**	
MW-8	12/20/2009	<0.002	<0.002	<0.002	<0.006	**308**	
MW-8	03/10/2010	<0.001	<0.002	<0.002	<0.004	**414**	
MW-8	06/13/2010	<0.0003	<0.001	<0.0003	<0.006	**415**	
MW-8	09/29/2010	<0.001	<0.002	<0.002	<0.004	**347**	
MW-8	12/08/2010	<0.001	<0.002	<0.002	<0.004	**336**	
MW-8	03/30/2011	<0.001	<0.002	<0.002	<0.002	**383**	
MW-8	06/11/2011	<0.001	<0.002	<0.002	<0.004	**454**	
MW-8	09/16/2011	<0.001	<0.002	<0.002	<0.004	**368**	
MW-8	12/07/2011	<0.001	<0.002	<0.002	<0.004	**348**	
MW-8	03/11/2012	<0.001	<0.002	<0.002	<0.004	**345**	
MW-8	06/05/2012	<0.001	<0.002	<0.002	<0.003	**316**	
MW-8	09/07/2012	<0.001	<0.002	<0.002	<0.003	**308**	
MW-8	12/04/2012	<0.001	<0.002	<0.002	<0.003	**304**	
MW-8	02/22/2013	<0.001	<0.002	<0.002	<0.003	**290**	
MW-8	06/02/2013	<0.001	<0.002	<0.002	<0.003	**291**	
MW-8	09/10/2013	<0.001	<0.002	<0.002	<0.003	**297**	
MW-8	12/03/2013	<0.001	<0.002	<0.002	<0.003	**345**	
MW-8	02/26/2014	<0.001	<0.002	<0.002	<0.003	**319**	
MW-8	06/02/2014	<0.001	<0.002	<0.002	<0.003	**336**	
MW-8	09/25/2014	<0.001	<0.001	<0.001	<0.001	**352**	
MW-8	12/05/2014	<0.001	<0.001	<0.001	<0.003	**353**	
MW-8	02/26/2015	<0.001	<0.001	<0.001	<0.003	**345**	
MW-8	06/02/2015	<0.001	<0.001	<0.001	<0.003	**349**	
MW-8	09/02/2015	<0.001	<0.001	<0.001	<0.003	**379**	
MW-8	12/16/2015	<0.001	<0.001	<0.001	<0.003	**361**	
MW-8	03/24/2016	<0.001	<0.001	<0.001	<0.003	**393**	
MW-8	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	**394**	
MW-8	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	**383**	
Trip Blank	06/02/2014	<0.001	<0.002	<0.002	<0.003	NA	
Trip Blank	09/25/2014	<0.001	<0.001	<0.001	<0.001	NA	
Trip Blank	12/05/2014	<0.001	<0.001	<0.001	<0.003	NA	
Trip Blank	02/26/2015	<0.001	<0.001	<0.001	<0.003	NA	
Trip Blank	06/02/2015	<0.001	<0.001	<0.001	<0.003	NA	
Trip Blank	09/02/2015	<0.001	<0.001	<0.001	<0.003	NA	
Trip Blank	12/16/2015	<0.001	<0.001	<0.001	<0.003	NA	
Trip Blank	03/24/2016	<0.001	<0.001	<0.001	<0.003	NA	
Trip Blank	06/20/2016	<0.0010	<0.0010	<0.0010	<0.0030	NA	
Trip Blank	09/28/2016	<0.0010	<0.0010	<0.0010	<0.0030	NA	

Notes:

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

NMWQCC = New Mexico Water Quality Control Commission

LNAPL = light non-aqueous phase liquid

J = Estimated Value

NS = Not Sampled

NA = Not Analyzed

mg/L = milligrams per liter

Appendix B

Laboratory Analytical Report

- ALS Job #: HS16100225

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

October 10, 2016

Brian Humphrey
Tasman Geosciences
6899 Pecos St
Unit C
Denver, CO 80221

Work Order: **HS16100225**

Laboratory Results for: **DCP J-4-2 Pipeline**

Dear Brian,

ALS Environmental received 9 sample(s) on Oct 04, 2016 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Sonia West

Generated By: Jumoke.Lawal
Sonia West
Project Manager

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
Work Order: HS16100225

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS16100225-01	MW-1	Water		28-Sep-2016 09:10	04-Oct-2016 08:30	☐
HS16100225-02	MW-2	Water		28-Sep-2016 09:15	04-Oct-2016 08:30	☐
HS16100225-03	MW-3	Water		28-Sep-2016 09:45	04-Oct-2016 08:30	☐
HS16100225-04	MW-4	Water		28-Sep-2016 09:40	04-Oct-2016 08:30	☐
HS16100225-05	MW-6	Water		28-Sep-2016 10:05	04-Oct-2016 08:30	☐
HS16100225-06	MW-7	Water		28-Sep-2016 10:15	04-Oct-2016 08:30	☐
HS16100225-07	MW-8	Water		28-Sep-2016 10:35	04-Oct-2016 08:30	☐
HS16100225-08	DUP-1	Water		28-Sep-2016 00:00	04-Oct-2016 08:30	☐
HS16100225-09	Trip Blank 091516-05	Water		28-Sep-2016 00:00	04-Oct-2016 08:30	☐

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
Work Order: HS16100225

CASE NARRATIVE

Work Order Comments

- The samples were received at 11.2°C which is outside of the recommended temperature acceptance (0 to 6 C°). The client was notified via email on October 4, 2016.

GCMS Volatiles by Method SW8260

Batch ID: R282702

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW9056

Batch ID: R282624

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
Sample ID: MW-1
Collection Date: 28-Sep-2016 09:10

ANALYTICAL REPORT
WorkOrder:HS16100225
Lab ID:HS16100225-01
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**2,040**		**50.0**	**mg/L**	100	06-Oct-2016 19:41
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	09-Oct-2016 10:41
Toluene	ND		0.0010	mg/L	1	09-Oct-2016 10:41
Ethylbenzene	ND		0.0010	mg/L	1	09-Oct-2016 10:41
Xylenes, Total	ND		0.0030	mg/L	1	09-Oct-2016 10:41
Surr: 1,2-Dichloroethane-d4	*79.5*		*71-125*	*%REC*	*1*	*09-Oct-2016 10:41*
Surr: 4-Bromofluorobenzene	*97.6*		*70-125*	*%REC*	*1*	*09-Oct-2016 10:41*
Surr: Dibromofluoromethane	*91.5*		*74-125*	*%REC*	*1*	*09-Oct-2016 10:41*
Surr: Toluene-d8	*94.3*		*75-125*	*%REC*	*1*	*09-Oct-2016 10:41*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
Sample ID: MW-2
Collection Date: 28-Sep-2016 09:15

ANALYTICAL REPORT
WorkOrder:HS16100225
Lab ID:HS16100225-02
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**1,790**		**50.0**	**mg/L**	100	06-Oct-2016 20:46
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	09-Oct-2016 11:05
Toluene	ND		0.0010	mg/L	1	09-Oct-2016 11:05
Ethylbenzene	ND		0.0010	mg/L	1	09-Oct-2016 11:05
Xylenes, Total	ND		0.0030	mg/L	1	09-Oct-2016 11:05
Surr: 1,2-Dichloroethane-d4	*79.2*		*71-125*	*%REC*	*1*	*09-Oct-2016 11:05*
Surr: 4-Bromofluorobenzene	*96.9*		*70-125*	*%REC*	*1*	*09-Oct-2016 11:05*
Surr: Dibromofluoromethane	*92.7*		*74-125*	*%REC*	*1*	*09-Oct-2016 11:05*
Surr: Toluene-d8	*93.4*		*75-125*	*%REC*	*1*	*09-Oct-2016 11:05*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
Sample ID: MW-3
Collection Date: 28-Sep-2016 09:45

ANALYTICAL REPORT
WorkOrder:HS16100225
Lab ID:HS16100225-03
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**2,520**		**50.0**	**mg/L**	100	06-Oct-2016 21:08
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	09-Oct-2016 13:27
Toluene	ND		0.0010	mg/L	1	09-Oct-2016 13:27
Ethylbenzene	ND		0.0010	mg/L	1	09-Oct-2016 13:27
Xylenes, Total	ND		0.0030	mg/L	1	09-Oct-2016 13:27
Surr: 1,2-Dichloroethane-d4	*78.9*		*71-125*	*%REC*	*1*	*09-Oct-2016 13:27*
Surr: 4-Bromofluorobenzene	*97.4*		*70-125*	*%REC*	*1*	*09-Oct-2016 13:27*
Surr: Dibromofluoromethane	*92.9*		*74-125*	*%REC*	*1*	*09-Oct-2016 13:27*
Surr: Toluene-d8	*94.3*		*75-125*	*%REC*	*1*	*09-Oct-2016 13:27*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
Sample ID: MW-4
Collection Date: 28-Sep-2016 09:40

ANALYTICAL REPORT
WorkOrder:HS16100225
Lab ID:HS16100225-04
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**2,300**		**50.0**	**mg/L**	100	06-Oct-2016 21:29
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	09-Oct-2016 13:51
Toluene	ND		0.0010	mg/L	1	09-Oct-2016 13:51
Ethylbenzene	ND		0.0010	mg/L	1	09-Oct-2016 13:51
Xylenes, Total	ND		0.0030	mg/L	1	09-Oct-2016 13:51
Surr: 1,2-Dichloroethane-d4	*79.4*		*71-125*	*%REC*	*1*	*09-Oct-2016 13:51*
Surr: 4-Bromofluorobenzene	*96.6*		*70-125*	*%REC*	*1*	*09-Oct-2016 13:51*
Surr: Dibromofluoromethane	*93.2*		*74-125*	*%REC*	*1*	*09-Oct-2016 13:51*
Surr: Toluene-d8	*90.6*		*75-125*	*%REC*	*1*	*09-Oct-2016 13:51*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
Sample ID: MW-6
Collection Date: 28-Sep-2016 10:05

ANALYTICAL REPORT
WorkOrder:HS16100225
Lab ID:HS16100225-05
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**914**		**25.0**	**mg/L**	50	06-Oct-2016 22:35
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	09-Oct-2016 14:15
Toluene	ND		0.0010	mg/L	1	09-Oct-2016 14:15
Ethylbenzene	ND		0.0010	mg/L	1	09-Oct-2016 14:15
Xylenes, Total	ND		0.0030	mg/L	1	09-Oct-2016 14:15
Surr: 1,2-Dichloroethane-d4	*79.6*		*71-125*	*%REC*	*1*	*09-Oct-2016 14:15*
Surr: 4-Bromofluorobenzene	*98.0*		*70-125*	*%REC*	*1*	*09-Oct-2016 14:15*
Surr: Dibromofluoromethane	*92.5*		*74-125*	*%REC*	*1*	*09-Oct-2016 14:15*
Surr: Toluene-d8	*94.1*		*75-125*	*%REC*	*1*	*09-Oct-2016 14:15*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
Sample ID: MW-7
Collection Date: 28-Sep-2016 10:15

ANALYTICAL REPORT
WorkOrder:HS16100225
Lab ID:HS16100225-06
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**799**		**25.0**	**mg/L**	50	06-Oct-2016 22:56
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	09-Oct-2016 14:39
Toluene	ND		0.0010	mg/L	1	09-Oct-2016 14:39
Ethylbenzene	ND		0.0010	mg/L	1	09-Oct-2016 14:39
Xylenes, Total	ND		0.0030	mg/L	1	09-Oct-2016 14:39
Surr: 1,2-Dichloroethane-d4	*79.5*		*71-125*	*%REC*	*1*	*09-Oct-2016 14:39*
Surr: 4-Bromofluorobenzene	*96.9*		*70-125*	*%REC*	*1*	*09-Oct-2016 14:39*
Surr: Dibromofluoromethane	*94.3*		*74-125*	*%REC*	*1*	*09-Oct-2016 14:39*
Surr: Toluene-d8	*93.3*		*75-125*	*%REC*	*1*	*09-Oct-2016 14:39*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
Sample ID: MW-8
Collection Date: 28-Sep-2016 10:35

ANALYTICAL REPORT
WorkOrder:HS16100225
Lab ID:HS16100225-07
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**383**		**10.0**	**mg/L**	20	06-Oct-2016 23:18
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	09-Oct-2016 15:03
Toluene	ND		0.0010	mg/L	1	09-Oct-2016 15:03
Ethylbenzene	ND		0.0010	mg/L	1	09-Oct-2016 15:03
Xylenes, Total	ND		0.0030	mg/L	1	09-Oct-2016 15:03
Surr: 1,2-Dichloroethane-d4	*77.4*		*71-125*	*%REC*	*1*	*09-Oct-2016 15:03*
Surr: 4-Bromofluorobenzene	*96.6*		*70-125*	*%REC*	*1*	*09-Oct-2016 15:03*
Surr: Dibromofluoromethane	*92.9*		*74-125*	*%REC*	*1*	*09-Oct-2016 15:03*
Surr: Toluene-d8	*94.5*		*75-125*	*%REC*	*1*	*09-Oct-2016 15:03*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
Sample ID: DUP-1
Collection Date: 28-Sep-2016 00:00

ANALYTICAL REPORT
WorkOrder:HS16100225
Lab ID:HS16100225-08
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
ANIONS BY SW9056A		**Method:SW9056**				Analyst: JBA
Chloride	**2,040**		**50.0**	**mg/L**	100	06-Oct-2016 23:40
LOW LEVEL VOLATILES BY SW8260C		**Method:SW8260**				Analyst: PC
Benzene	ND		0.0010	mg/L	1	09-Oct-2016 15:27
Toluene	ND		0.0010	mg/L	1	09-Oct-2016 15:27
Ethylbenzene	ND		0.0010	mg/L	1	09-Oct-2016 15:27
Xylenes, Total	ND		0.0030	mg/L	1	09-Oct-2016 15:27
Surr: 1,2-Dichloroethane-d4	*79.5*		*71-125*	*%REC*	*1*	*09-Oct-2016 15:27*
Surr: 4-Bromofluorobenzene	*97.4*		*70-125*	*%REC*	*1*	*09-Oct-2016 15:27*
Surr: Dibromofluoromethane	*91.0*		*74-125*	*%REC*	*1*	*09-Oct-2016 15:27*
Surr: Toluene-d8	*93.9*		*75-125*	*%REC*	*1*	*09-Oct-2016 15:27*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
Sample ID: Trip Blank 091516-05
Collection Date: 28-Sep-2016 00:00

ANALYTICAL REPORT
WorkOrder:HS16100225
Lab ID:HS16100225-09
Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
LOW LEVEL VOLATILES BY SW8260C	**Method:SW8260**					Analyst: PC
Benzene	ND		0.0010	mg/L	1	09-Oct-2016 13:04
Toluene	ND		0.0010	mg/L	1	09-Oct-2016 13:04
Ethylbenzene	ND		0.0010	mg/L	1	09-Oct-2016 13:04
Xylenes, Total	ND		0.0030	mg/L	1	09-Oct-2016 13:04
Surr: 1,2-Dichloroethane-d4	*79.9*		*71-125*	*%REC*	*1*	*09-Oct-2016 13:04*
Surr: 4-Bromofluorobenzene	*97.8*		*70-125*	*%REC*	*1*	*09-Oct-2016 13:04*
Surr: Dibromofluoromethane	*92.0*		*74-125*	*%REC*	*1*	*09-Oct-2016 13:04*
Surr: Toluene-d8	*94.7*		*75-125*	*%REC*	*1*	*09-Oct-2016 13:04*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
WorkOrder: HS16100225

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R282624	**Test Name :** ANIONS BY SW9056A			**Matrix:** Water		
HS16100225-01	MW-1	28 Sep 2016 09:10			06 Oct 2016 19:41	100
HS16100225-02	MW-2	28 Sep 2016 09:15			06 Oct 2016 20:46	100
HS16100225-03	MW-3	28 Sep 2016 09:45			06 Oct 2016 21:08	100
HS16100225-04	MW-4	28 Sep 2016 09:40			06 Oct 2016 21:29	100
HS16100225-05	MW-6	28 Sep 2016 10:05			06 Oct 2016 22:35	50
HS16100225-06	MW-7	28 Sep 2016 10:15			06 Oct 2016 22:56	50
HS16100225-07	MW-8	28 Sep 2016 10:35			06 Oct 2016 23:18	20
HS16100225-08	DUP-1	28 Sep 2016 00:00			06 Oct 2016 23:40	100
Batch ID R282702	**Test Name :** LOW LEVEL VOLATILES BY SW8260C			**Matrix:** Water		
HS16100225-01	MW-1	28 Sep 2016 09:10			09 Oct 2016 10:41	1
HS16100225-02	MW-2	28 Sep 2016 09:15			09 Oct 2016 11:05	1
HS16100225-03	MW-3	28 Sep 2016 09:45			09 Oct 2016 13:27	1
HS16100225-04	MW-4	28 Sep 2016 09:40			09 Oct 2016 13:51	1
HS16100225-05	MW-6	28 Sep 2016 10:05			09 Oct 2016 14:15	1
HS16100225-06	MW-7	28 Sep 2016 10:15			09 Oct 2016 14:39	1
HS16100225-07	MW-8	28 Sep 2016 10:35			09 Oct 2016 15:03	1
HS16100225-08	DUP-1	28 Sep 2016 00:00			09 Oct 2016 15:27	1
HS16100225-09	Trip Blank 091516-05	28 Sep 2016 00:00			09 Oct 2016 13:04	1

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
WorkOrder: HS16100225

QC BATCH REPORT

Batch ID: R282702 **Instrument: VOA6** **Method: SW8260**

MBLK Sample ID: **VBLKW-161009** Units: **ug/L** Analysis Date: **09-Oct-2016 10:17**
Client ID: Run ID: **VOA6_282702** SeqNo: **3852430** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
Toluene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 1,2-Dichloroethane-d4	*39.52*	*1.0*	*50*	*0*	*79.0*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*48.44*	*1.0*	*50*	*0*	*96.9*	*70 - 125*				
Surr: Dibromofluoromethane	*45.76*	*1.0*	*50*	*0*	*91.5*	*74 - 125*				
Surr: Toluene-d8	*47.36*	*1.0*	*50*	*0*	*94.7*	*75 - 125*				

LCS Sample ID: **VLCSW-161009** Units: **ug/L** Analysis Date: **09-Oct-2016 09:06**
Client ID: Run ID: **VOA6_282702** SeqNo: **3852429** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	47.26	1.0	50	0	94.5	75 - 122				
Ethylbenzene	46.24	1.0	50	0	92.5	80 - 120				
Toluene	43.63	1.0	50	0	87.3	75 - 121				
Xylenes, Total	137.5	3.0	150	0	91.7	79 - 124				
Surr: 1,2-Dichloroethane-d4	*38.98*	*1.0*	*50*	*0*	*78.0*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*49.87*	*1.0*	*50*	*0*	*99.7*	*70 - 125*				
Surr: Dibromofluoromethane	*46.48*	*1.0*	*50*	*0*	*93.0*	*74 - 125*				
Surr: Toluene-d8	*46.73*	*1.0*	*50*	*0*	*93.5*	*75 - 125*				

MS Sample ID: **HS16100225-01MS** Units: **ug/L** Analysis Date: **09-Oct-2016 11:29**
Client ID: **MW-1** Run ID: **VOA6_282702** SeqNo: **3852433** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	47.94	1.0	50	0	95.9	75 - 122				
Ethylbenzene	46.67	1.0	50	0	93.3	80 - 120				
Toluene	44.36	1.0	50	0	88.7	75 - 121				
Xylenes, Total	140	3.0	150	0	93.3	80 - 124				
Surr: 1,2-Dichloroethane-d4	*39.16*	*1.0*	*50*	*0*	*78.3*	*71 - 125*				
Surr: 4-Bromofluorobenzene	*50.73*	*1.0*	*50*	*0*	*101*	*70 - 125*				
Surr: Dibromofluoromethane	*47.02*	*1.0*	*50*	*0*	*94.0*	*74 - 125*				
Surr: Toluene-d8	*47.75*	*1.0*	*50*	*0*	*95.5*	*75 - 125*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
WorkOrder: HS16100225

QC BATCH REPORT

Batch ID: R282702 **Instrument: VOA6** **Method: SW8260**

MSD Sample ID: **HS16100225-01MSD** Units: **ug/L** Analysis Date: **09-Oct-2016 11:52**
Client ID: **MW-1** Run ID: **VOA6_282702** SeqNo: **3852434** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Benzene	49.93	1.0	50	0	99.9	75 - 122	47.94	4.07	20	
Ethylbenzene	48.63	1.0	50	0	97.3	80 - 120	46.67	4.12	20	
Toluene	45.94	1.0	50	0	91.9	75 - 121	44.36	3.51	20	
Xylenes, Total	144.6	3.0	150	0	96.4	80 - 124	140	3.24	20	
Surr: 1,2-Dichloroethane-d4	*39.64*	*1.0*	*50*	*0*	*79.3*	*71 - 125*	*39.16*	*1.23*	*20*	
Surr: 4-Bromofluorobenzene	*50.68*	*1.0*	*50*	*0*	*101*	*70 - 125*	*50.73*	*0.0996*	*20*	
Surr: Dibromofluoromethane	*46.64*	*1.0*	*50*	*0*	*93.3*	*74 - 125*	*47.02*	*0.817*	*20*	
Surr: Toluene-d8	*47.37*	*1.0*	*50*	*0*	*94.7*	*75 - 125*	*47.75*	*0.789*	*20*	

The following samples were analyzed in this batch:

HS16100225-01	HS16100225-02	HS16100225-03	HS16100225-04
HS16100225-05	HS16100225-06	HS16100225-07	HS16100225-08
HS16100225-09			

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
WorkOrder: HS16100225

QC BATCH REPORT

Batch ID: R282624 **Instrument: ICS3K2** **Method: SW9056**

MBLK Sample ID: **WBLKW1-100616** Units: **mg/L** Analysis Date: **06-Oct-2016 11:43**
Client ID: Run ID: **ICS3K2_282624** SeqNo: **3851112** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	0.500								

LCS Sample ID: **WLCSW1-100616** Units: **mg/L** Analysis Date: **06-Oct-2016 12:05**
Client ID: Run ID: **ICS3K2_282624** SeqNo: **3851113** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.23	0.500	20	0	96.1	80 - 120				

LCSD Sample ID: **WLCSDW1-100616** Units: **mg/L** Analysis Date: **06-Oct-2016 12:27**
Client ID: Run ID: **ICS3K2_282624** SeqNo: **3851114** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.08	0.500	20	0	95.4	80 - 120	19.23	0.794	20	

MS Sample ID: **HS16100225-01MS** Units: **mg/L** Analysis Date: **06-Oct-2016 20:03**
Client ID: **MW-1** Run ID: **ICS3K2_282624** SeqNo: **3851118** PrepDate: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	2987	50.0	1000	2039	94.8	80 - 120				

MSD Sample ID: **HS16100225-01MSD** Units: **mg/L** Analysis Date: **06-Oct-2016 20:24**
Client ID: **MW-1** Run ID: **ICS3K2_282624** SeqNo: **3851119** PrepDate: DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	2984	50.0	1000	2039	94.6	80 - 120	2987	0.0858	20	

The following samples were analyzed in this batch:

HS16100225-01	HS16100225-02	HS16100225-03	HS16100225-04
HS16100225-05	HS16100225-06	HS16100225-07	HS16100225-08

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Tasman Geosciences
Project: DCP J-4-2 Pipeline
WorkOrder: **HS16100225**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	16-022-1	27-Mar-2017
California	2919 2016-2018	31-Jul-2018
Illinois	003872	09-May-2017
Kansas	E-10352 2015-2016	30-Oct-2016
Kentucky	96 2016-2017	30-Apr-2017
Louisiana	03087 2016-2017	30-Jun-2017
North Carolina	624 - 2016	31-Dec-2016
North Dakota	R193 2016-2017	30-Apr-2017
Oklahoma	2016-122	31-Aug-2017
Texas	TX104704231-16-17	30-Apr-2017

Sample Receipt Checklist

Client Name: Tasman Geosciences
Work Order: HS16100225
Date/Time Received: **04-Oct-2016 08:30**
Received by: **RPG**

Checklist completed by: *Jared R. Makan* eSignature 6-Oct-2016 Date
Reviewed by: *Sonia West* eSignature 10-Oct-2016 Date

Matrices: **Water**
Carrier name: **ALS Courier**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
TX1005 solids received in hermetically sealed vials?	Yes ☐	No ☐	N/A ☑
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	10.7C/11.2C UC/C	IR5	
Cooler(s)/Kit(s):	24327		
Date/Time sample(s) sent to storage:	10/06/2016 10:35		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes: Samples shipped on 09/30/2016 and received 10/04/2016 due to FEDEX error. Samples received out of temp, logged in for analysis as per clients request

Client Contacted: Tasman Geosciences Date Contacted: 4-Oct-2016 Person Contacted: Brian Humphrey

Contacted By: 542 Regarding: Temperature

Comments: As per the clients request October 6, 2016 the lab proceeded with the analyes.

Corrective Action: Fed Ex has opened an investigation

ALS Environmental

Cincinnati, OH +1 513 733 5336 | Fort Collins, CO +1 970 490 1511 | Houston, TX +1 281 530 5656 | Spring City, PA +1 610 948 4903 | South Charleston, WV +1 304 356 3168
Everett, WA +1 425 356 2600 | Holland, MI +1 616 399 6070 | Middletown, PA +1 717 944 5541 | Salt Lake City, UT +1 801 266 7700 | York, PA +1 717 505 5280

Chain of Custody Form

Page 1 of 1

COC ID: 149208

ALS Project Manager: | ALS Work Order #:

Customer Information		Project Information	
Purchase Order		Project Name	DCP J-4-2 Pipeline
Work Order		Project Number	390660601 F210
Company Name	Tasman Geosciences	Bill To Company	
Send Report To	Brian Humphrey	Invoice Attn	Steve Weathers
Address	6899 Pecos St Unit C	Address	
City/State/Zip	Denver	City/State/Zip	
Phone	(303)-48-7-12	Phone	
Fax		Fax	
e-Mail Address	bhumphrey@tasman-geo.com	e-Mail Address	

Parameter/Method Request for Analysis

A	BTEX (8260)
B	Chloride (300)
C	
D	
E	
F	
G	
H	
I	
J	

HS16100225
Tasman Geosciences
DCP J-4-2 Pipeline

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-1	9-28-16	0910	Water	HCL/4C	4	X	X									
2	MW-2	↓	0915	Water	HCL/4C	4	X	X									
3	MW-3		0945	Water	HCL/4C	4	X	X									
4	MW-4		0940	Water	HCL/4C	4	X	X									
5	MW-6		1005	Water	HCL/4C	4	X	X									
6	MW-7		1015	Water	HCL/4C	4	X	X									
7	MW-8		1035	Water	HCL/4C	4	X	X									
8	DUP-1		—	Water	HCL/4C	4	X	X									
9	Trip Blank	↓	—	Water	HCL/4C	2	X										
10																	

Sampler(s) Please Print & Sign: Mitchell Weller

Shipment Method: FedEx Overnight

Required Turnaround Time: (Check Box) [X] Std 10 WK days [ ] 5 WK Days [ ] Other ____ [ ] 2 WK Days [ ] 24 Hour

Results Due Date:

Relinquished by:	Date:	Time:	Received by:
Mitchell Weller (signature)	9-30-16	0900	
Relinquished by:	Date:	Time:	Received by (Laboratory): R Cige 10/4/16 08:30
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes:

Cooler ID	Cooler Temp.
24327	UC 10.7
	12 S
	CF +0.5

QC Package: (Check One Box Below)
[X] Level 2 Std QC
[ ] Level 3 Std QC/Raw da
[ ] Level 4 SW846/CLP
[ ] Other/EDD
[ ] TRRP ChkList
[ ] TRRP Level 4

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.