DCP Midstream
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January 16, 2012

Mr. Leonard Lowe
Environmental Engineer
New Mexico Oil Conservation Division
1220 S. St. Francis Dr.
Santa Fe, NM 87505

RE: 3rd Quarter 2011 Groundwater Results
DCP Midstream, LP RR Ext. Pipeline Release (AP #55)
Unit C, Section 19, Township 20 South, Range 37 East
Lea County, New Mexico

Dear Mr. Lowe:

DCP Midstream, LP (DCP) is pleased to submit for your review, one copy of the 3rd Quarter 2011 Groundwater Results for the DCP RR Ext. Pipeline Release located in Lea County, New Mexico (Unit C, Section 19, Township 20 South, Range 37 East).

If you have any questions regarding the report, please call at 303-605-1718 or e-mail me swweathers@dcpmidstream.com .

Sincerely

DCP Midstream, LP

Stephen Weathers, PG
Principal Environmental Specialist

cc: Larry Johnson, OCD Hobbs District Office (Copy on CD)
Environmental Files

Third Quarter 2011 Groundwater Monitoring Summary Report

RR Extension Pipeline Release
Lea County, New Mexico
AP #55

Prepared for:

dcp Midstream

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Prepared by:

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November 22, 2011

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1. Introduction

Tasman Geosciences, LLC (Tasman) is submitting to DCP Midstream (DCP) the results of the third quarter 2011 groundwater monitoring activities conducted on September 17, 2011 at the RR-Extension pipeline release (Site) in Lea County, New Mexico (Figure 1). The field activities were conducted with the purpose of monitoring groundwater flow and quality conditions and assessing the presence of light non-aqueous phase liquid (LNAPL) hydrocarbons in the Site subsurface. Prior to the third quarter 2011 sampling event, groundwater monitoring activities were performed by American Environmental Consulting LLC (AEC). Current Site conditions were evaluated from field data and analytical laboratory results collected during the reporting period and data collected prior by AEC.

2. Site Location and Background

The Site is located in the northeastern quarter of the northwestern quarter of Section 19, Township 20 South, Range 37 East (approximate coordinates 32.562339 degrees north and 103.291739 degrees west). It is approximately 4.25 miles south of the intersection of US Highway 322 and County Road 41. The area is sparsely populated and land use is primarily associated with livestock grazing and oil and gas extraction and conveyance.

Based on information included in previous Site investigation reports, a natural gas condensate release of approximately 30 barrels (bbl) was reported on December 13, 2006 (Assigned Site Reference #130040). Subsequent to preliminary investigation and characterization activities, an excavation was conducted at the Site (November 10, 2008 to December 7, 2008) whereby approximately 11,356 cubic yards of impacted material were removed. The excavation extended to approximately 20-feet below ground surface over a surface area of approximately 14,800 square feet. Backfill material was placed into the excavation and surface restoration was completed by January 12, 2009. These activities are described within the document *Closure Report – RR Extension Release Site* dated February 2009 prepared by Environmental Plus, Inc.

LNAPL has been identified immediately above the water table, which is at a depth of approximately 30-feet below the ground surface. LNAPL continues to be observed at monitoring well locations to the south and east of the original release and excavation limits. These observations suggest that a portion of the original release was beyond the extent of excavation activities.

Investigation activities conducted at the Site include installation of groundwater monitoring wells and excavation during the time periods listed below:

- MW-1 through MW-5: Installed March 2008.

- MW-6 through MW-8: Installed June 2008.
- Excavation and Backfill: Initiated – November 10, 2008; Completed – January 12, 2009.
- MW-9 through MW-12: Installed June 2010.
- MW-13 through MW-16: Installed January 2011.

Ongoing monitoring and sampling of the Site wells listed above has been conducted on an approximate quarterly basis following installation. The historical monitoring data indicate the presence of LNAPL and dissolved-phase impacts in the area of the original release. Progressive installation of monitoring wells has delineated the area in which these impacts are observed.

Boring logs for the Site monitoring wells indicate that the subsurface geology is typical of unconsolidated fine grain sand, silt, and clay sediments. This general characteristic has been utilized in evaluating the historic and current LNAPL behavior.

3. Groundwater Monitoring

This section describes the groundwater field and laboratory activities performed during the third quarter 2011 monitoring event. Monitoring activities included Site-wide groundwater gauging, LNAPL measurements, and groundwater sampling. Figure 2 illustrates the groundwater monitoring network utilized to perform these activities at the Site.

3.1 Groundwater and LNAPL Elevation Monitoring

Groundwater and LNAPL levels were measured in order to evaluate hydraulic characteristics and provide information regarding seasonal and annual fluctuations in groundwater elevations at the Site. During the third quarter 2011, groundwater levels were measured at sixteen (16) Site 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 were later converted to elevation (feet above mean sea level [AMSL]). Measured groundwater levels and calculated groundwater elevation data are presented in Table 1 and a third quarter 2011 groundwater elevation contour map is illustrated on Figure 3. LNAPL levels, where detected by the IP, are also presented in Table 1.

Groundwater elevations ranged from 3,504.16 feet AMSL at monitoring well MW-3 to 3,505.40 feet AMSL at monitoring well MW-9. As illustrated on Figure 3, groundwater flow at the Site generally trends to the southeast with a gradient of approximately 0.0014 foot per foot between monitoring wells MW-8 and MW-11.

Groundwater elevations from the highest and lowest measured wells were not used in calculating hydraulic gradient due to the presence of LNAPL and corrections required. The selected elevations were directly measured and are representative of the general observed gradient and flow direction.

LNAPL was detected at the following locations, with measured thickness indicated in parenthesis:

- MW-3 (4.55-ft)
- MW-4 (0.66-ft)
- MW-5 (0.92-ft)
- MW-9 (0.02-ft)
- MW-10 (1.52-ft)

3.2 Groundwater Quality Monitoring

Subsequent to collection of groundwater level measurements at each monitoring well, groundwater samples were collected for each of the eleven monitoring wells that did not exhibit LNAPL. The monitoring wells not sampled due to the detected presence of LNAPL were MW-3, MW-4, MW-5, MW-9, and MW-10.

During sampling, a minimum of three well casing volumes of groundwater were purged from each monitoring well prior to collecting groundwater samples. Groundwater samples were collected using dedicated polyethylene bailers, placed in clean laboratory supplied containers for the selected analytical methods and packed in an ice-filled cooler and maintained at approximately four (4) degrees Celsius (^{0}C) for transportation to the laboratory. Groundwater samples were shipped under chain-of-custody procedures to Accutest Laboratories (Accutest) in Wheat Ridge, 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 and chloride by USEPA Method 300.

Detections/observations which exceed the applicable remediation standard are summarized below:

- Benzene was detected at concentrations in excess of the New Mexico Water Quality Control Commission Standard of 0.01 milligrams per liter (mg/L) at two (2) locations:
  - **MW-1**: 0.144 mg/L.
  - **MW-2:** 4.07 mg/L.
- LNAPL was detected at five (5) locations as indicated in Section 3.1 above.

Figure 4 displays all analytical results from the third quarter 2011 event and in addition second quarter 2011 analytical results.

In addition, Table 2 presents third quarter 2011 monitoring data along with data collected during previous monitoring events. Laboratory analytical reports for the event are included in Appendix A.

Chloride was detected in all eleven (11) of the sampled wells with concentrations ranging from 294 mg/L in MW-15 to 507 mg/L in MW-8. Chloride values in all of the wells exceeded the NMWQCC standard of 250 mg/L.

Water quality parameters were not collected during the monitoring event due to a malfunctioning field instrument. However, based on evaluation of previous monitoring field data sheets (second quarter 2011), the Site monitoring wells did not require collection of more than three (3) purge volumes to achieve parameter stabilization. As such, the analytical data are considered to be representative of site conditions in that a minimum 3 purge volumes were evacuated from all sampled monitoring wells during the third quarter 2011 event.

4. Remediation Activities

Remediation activities conducted during the third quarter 2011 event included performance of a LNAPL bail-down and recovery test at three monitoring wells where LNAPL is present (MW-3, MW-5, and MW-10). This activity was performed in order to evaluate the time needed to allow the wells to recharge should a LNAPL vacuum recovery event be performed at the Site. This activity also helped in assessing LNAPL thickness in the surrounding aquifer material, since long-term accumulation of LNAPL in a well is often in excess of the true product thickness. On September 17, 2011, LNAPL was removed from the wells using dedicated bailers. Groundwater was also purged from the wells during bail-down in order to lower the water level and observe the amount of LNAPL re-entering the well casing, and the speed at which it recovered. The subject wells were then allowed to recharge over an approximate 24-hour period in order to evaluate the rate at which LNAPL recovered within the wells. The table below provides the initial product thickness, volumes of LNAPL removed from each well, the recovered LNAPL thickness over an approximate 24-hour period, and the subsequent LNAPL recovery rates.

Well ID	Initial LNAPL Thickness (feet)	Volume Removed	Subsequent LNAPL Thickness[1] (feet)	Approximate LNAPL Recovery Rate[2]
MW-3	4.55	0.33 Gallons	Not Observed	NA
MW-5	0.92	0.25 Gallons	0.3	0.25 Gal/Day
MW-10	1.52	0.5 Gallons	0.11	0.09 Gal/Day

Notes:
NA = Not Applicable
1) Subsequent LNAPL thickness measured on the following day (9/18/11)
2) Recovery rate calculated based on the time observed for LNAPL to recover to 80% of the maximum thickness following bail-down.

As seen in the table above, the greatest LNAPL recovery rate was observed in MW-5 which had the smallest LNAPL thickness at the beginning of the test. Inversely, the well with the largest LNAPL thickness did not have any product recovery within the 24-hour period. This may indicate areas of highly transmissive soils in which LNAPL travels more readily, and therefore, does not accumulate within the wells. Likewise, areas in which LNAPL does not travel readily will eventually accumulate in greater volumes within the well.

During LNAPL removal activities a total of approximately 1 gallon of product was purged from the monitoring wells. The removed LNAPL was transferred to the truck-mounted purge water storage tank

and subsequently transported and disposed of at the DCP Linam Ranch facility. Bailers used for product collection were replaced in the monitoring wells at the product/water interface.

5. Conclusions

Comparison of the third quarter 2011 monitoring data and historic information provides the following general observations:

- Based on historic groundwater elevations, the groundwater elevation surface beneath the Site has remained stable with minor seasonal and annual fluctuations since monitoring was initiated in 2008. There has not been significant deviation from this trend during the third quarter 2011.
- Dissolved phase BTEX continues to be observed at MW-1 and MW-2 with steadily decreasing concentrations.
- The observed LNAPL and dissolved phase detections (current and historic) indicate that the contaminant mass has continued migrating towards the southeast in the direction of the approximate groundwater gradient.
- Dissolved-phase impacts precede LNAPL observations over a relatively short period of time with minor lateral dispersion. This indicates that the dissolved phase BTEX plume has not extended well in advance of the LNAPL, possibly due to attenuation, low permeability aquifer material, low hydraulic gradient, and/or a combination of these factors.
- It is anticipated that the LNAPL plume will eventually reach the current down gradient wells (MW-6, MW-7, MW-11, MW-12, MW-15, and MW-16) unless the migration is halted.

Based on the observations above, it is suggested that additional remediation measures be considered. Without additional remedial efforts, the LNAPL mass will continue to migrate and progressively impact down gradient areas. As this occurs, the lateral extent of subsurface impacts will increase.

While it is suggested that remediation be employed at this Site, the following additional observations will assist with outlining the urgency of this requirement:

- The plume does not appear to be migrating rapidly, nor creating a large down gradient dissolved phase BTEX plume.
- Based on decreasing dissolved phase BTEX concentrations behind the LNAPL plume, these impacts are being attenuated. This reduction is likely a combination of previous excavation activities and/or degradation, dissolution, volatilization, and other attenuation mechanisms. However, the major and minor components of this effect cannot be determined from existing data. This observation is important in that it displays the potential for the system to attenuate dissolved phase concentrations in the absence of LNAPL.

6. Recommendations

Based on evaluation of 2011 and historical Site observations and monitoring results, recommendations have been developed for future activities, as included below:

- Continue groundwater monitoring and sampling at the monitoring locations illustrated on Figure 2.
- Based on the information gathered during historic and the most recent monitoring event, future investigations of remedial options to mitigate downgradient migration of dissolved phase benzene and LNAPL impacts may be warranted.

Tables

TABLE 1
THIRD QUARTER 2011
SUMMARY OF GROUNDWATER ELEVATION DATA
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location	Date	Depth to Groundwater (1) (feet)	Depth to Product (1) (feet)	Free Phase Hydrocarbon Thickness (feet)	Total Depth (2) (feet)	TOC Elevation (feet amsl)	Groundwater Elevation* (feet amsl)	Change in Groundwater Elevation Since Previous Event (3) (feet)
MW-1	6/29/2010					3534.57	3504.67	0.07
MW-1	9/28/2010					3534.57	3505.07	0.40
MW-1	12/9/2010					3534.57	3505.31	0.24
MW-1	3/30/2011	29.01				3534.57	3505.56	0.25
MW-1	6/22/2011	29.16				3505.41	3476.25	-29.31
MW-1	9/17/2011	29.46			39.05	3534.57	3505.11	28.86
MW-2	6/29/2010					3535.18	3404.50	-99.92
MW-2	9/28/2010					3535.18	3504.88	100.38
MW-2	12/9/2010					3535.18	3504.13	-0.75
MW-2	3/30/2011	29.90				3535.18	3505.28	1.15
MW-2	6/22/2011	29.91				3505.27	3475.36	-29.92
MW-2	9/17/2011	30.23			39.81	3535.18	3504.95	29.59
MW-3	6/29/2010					3536.57	3504.66	0.14
MW-3	9/28/2010					3536.57	3505.04	0.38
MW-3	12/9/2010					3536.57	3505.25	0.21
MW-3	3/30/2011	31.53	31.05	0.48		3536.57	3505.40	0.15
MW-3	6/22/2011	31.45	31.01	0.44		3505.45	3474.33	-31.07
MW-3	9/17/2011	35.82	31.27	4.55		3536.57	3504.16	29.83
MW-4	6/29/2010			1.56		3535.20	3504.22	0.10
MW-4	9/28/2010			0.58		3535.20	3504.65	0.43
MW-4	12/9/2010			1.06		3535.20	3504.58	-0.07
MW-4	3/30/2011	30.58	30.03	0.55		3535.20	3505.03	0.45
MW-4	6/22/2011	30.40	30.01	0.39		3505.09	3474.98	-30.05
MW-4	9/17/2011	30.94	30.28	0.66		3535.20	3504.76	29.77
MW-5	6/29/2010			1.62		3535.92	3504.27	0.13
MW-5	9/28/2010			1.28		3535.92	3504.68	0.41
MW-5	12/9/2010			1.07		3535.92	3504.62	-0.06
MW-5	3/30/2011	31.20	30.75	0.45		3535.92	3505.06	0.44
MW-5	6/22/2011	31.14	30.71	0.43		33505.10	33474.28	29969.23
MW-5	9/17/2011	31.83	30.91	0.92		3535.92	3504.78	-29969.50
MW-6	6/29/2010					3536.16	3504.21	0.08
MW-6	9/28/2010					3536.16	3504.55	0.34
MW-6	12/9/2010					3536.16	3504.76	0.21
MW-6	3/30/2011	31.19				3536.16	3504.97	0.21
MW-6	6/22/2011	31.21				3504.95	3473.74	-31.23
MW-6	9/17/2011	31.48			40.35	3536.16	3504.68	30.94
MW-7	6/29/2010					3537.09	3504.43	0.10
MW-7	9/28/2010					3537.09	3504.74	0.31
MW-7	12/9/2010					3537.09	3509.98	5.24
MW-7	3/30/2011	31.89				3537.09	3505.20	-4.78
MW-7	6/22/2011	31.95				3504.14	3472.19	-33.01
MW-7	9/17/2011	32.22			40.25	3537.09	3504.87	32.68
MW-8	6/29/2010					3536.41	3504.80	0.04
MW-8	9/28/2010					3536.41	3505.16	0.36
MW-8	12/9/2010					3536.41	3505.43	0.27
MW-8	3/30/2011	30.84				3536.41	3505.57	0.14
MW-8	6/22/2011	30.89				3505.52	3474.63	-30.94
MW-8	9/17/2011	31.19			39.42	3536.41	3505.22	30.59
MW-9	6/30/2010			1.33		3534.20		
MW-9	9/28/2010			1.20		3534.20		
MW-9	12/9/2010			1.10		3534.20		
MW-9	3/30/2011	29.53	28.50	1.03		3534.20	3505.44	1.04
MW-9	6/22/2011	29.38	28.50	0.88		3535.20	3506.48	-1.09
MW-9	9/17/2011	28.82	28.80	0.02		3534.20	3505.40	

TABLE 1
THIRD QUARTER 2011
SUMMARY OF GROUNDWATER ELEVATION DATA
RR-EXTENSION PIPELINE RELEASE
LEA COUNTY, NEW MEXICO

Location	Date	Depth to Groundwater (1) (feet)	Depth to Product (1) (feet)	Free Phase Hydrocarbon Thickness (feet)	Total Depth (2) (feet)	TOC Elevation (feet amsl)	Groundwater Elevation* (feet amsl)	Change in Groundwater Elevation Since Previous Event (3) (feet)
MW-10	3/30/2011	29.49	28.59	0.90		3534.21	3505.40	-29.07
MW-10	6/22/2011	29.97	28.60	1.37		3505.27	3476.33	28.59
MW-10	9/17/2011	30.43	28.91	1.52		3534.21	3504.92	
MW-11	3/30/2011	31.05				3536.19	3505.14	-30.97
MW-11	6/22/2011	31.10				3505.27	3474.17	30.47
MW-11	9/17/2011	31.55			39.69	3536.19	3504.64	
MW-12	3/30/2011	29.28				3534.47	3505.19	-29.34
MW-12	6/22/2011	29.31				3505.16	3475.85	28.95
MW-12	9/17/2011	29.67			38.56	3534.47	3504.80	
MW-13	3/30/2011	30.44				3536.08	3505.64	-30.48
MW-13	6/22/2011	30.46				3505.62	3475.16	30.17
MW-13	9/17/2011	30.75			39.31	3536.08	3505.33	
MW-14	3/30/2011	29.48				3534.96	3505.48	-29.70
MW-14	6/22/2011	29.59				3505.37	3475.78	29.28
MW-14	9/17/2011	29.90			42.05	3534.96	3505.06	
MW-15	3/30/2011	29.66				3534.90	3505.24	-30.14
MW-15	6/22/2011	29.90				3505.00	3475.10	29.70
MW-15	9/17/2011	30.10			36.55	3534.90	3504.80	
MW-16	3/30/2011	28.53				3533.68	3505.15	-28.89
MW-16	6/22/2011	28.74				3505.00	3476.26	28.49
MW-16	9/17/2011	28.93			42.91	3533.68	3504.75	
						Average Change in groundwater elevation since the previous monitoring event		-3719.65

Notes:

1- Depths measured from the north edge of the well casing.

2- Total depths were collected and recorded during the third quarter 2011 monitoring event (with the exception of wells that contained LNAPL).

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

Data presented for well locations includes previous four sampling events, when available. Historic groundwater elevation data for these locations are available upon request.

Sample locations are shown on Figure 2 and a groundwater elevation contour map is shown on Figure 3 .

amsl - feet above mean sea level.

TOC - top of casing

NM - not measured

* For wells that contained LNAPL, groundwater elevation was corrected for product thickness using the following calculation:

Groundwater elevation = (TOC Elevation - Measured Depth to Water) + (LNAPL Thickness in Well * LNAPL Density)
LNAPL density was assumed to be approximately 0.75 grams per cubic centimeter

TABLE 2
THIRD QUARTER 2011
SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION 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
New Mexico Water Quality Control Comission Groundwater Standards		0.01 (mg/l)	0.75(mg/l)	0.75 (mg/l)	0.62 (mg/l)	250 (mg/l)	
MW-1	6-2010	**0.339**	0.0539	0.0329	0.0079	510	
MW-1	9-2010	**1.99**	0.0951	0.084	0.0219	442	
MW-1	12-2010	**0.708**	0.0796	0.0099	0.0047	448	
MW-1	3/30/2011	**0.0241**	<0.001	0.0136	0.0055	457	
MW-1	6/22/2011	**0.0735**	<0.01	0.0293	<0.02	467	
MW-1	9/17/2011	**0.144**	0.038	0.0069	0.0087	472	Duplicate sample collected
MW-2	6-2010	**22.9**	0.485	0.39	0.128	233	
MW-2	9-2010	**17**	0.329	0.257	<0.8	263	
MW-2	12-2010	**16.9**	0.458	0.399	0.0926	278	
MW-2	3/30/2011	**16.6**	0.165	0.403	0.116	320	
MW-2	6/22/2011	**9.21**	0.0231	0.377	<0.4	370	
MW-2	9/17/2011	**4.07**	0.415	0.329	0.203	375	
MW-3	6-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	9-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	12-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	3/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	6/22/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-3	9/17/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	6-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	9-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	12-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	3/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	6/22/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-4	9/17/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	6-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	9-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	12-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	3/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	6/22/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-5	9/17/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-6	6-2010	<0.001	<0.002	<0.002	<0.002	402	
MW-6	9-2010	<0.001	<0.002	<0.002	<0.004	337	
MW-6	12-2010	<0.001	<0.002	<0.002	<0.004	359	
MW-6	3/30/2011	<0.001	<0.002	<0.002	<0.002	386	
MW-6	6/22/2011	<0.001	<0.002	<0.002	<0.004	376	
MW-6	9/17/2011	<0.001	<0.002	<0.002	<0.004	383	
MW-7	6-2010	0.0005	<0.002	<0.002	<0.006	385	
MW-7	9-2010	0.00042	<0.002	<0.002	<0.004	326	
MW-7	12-2010	<0.002	<0.002	<0.002	<0.006	345	
MW-7	3/30/2011	<0.001	<0.002	<0.002	<0.002	382	
MW-7	6/22/2011	<0.001	<0.002	<0.002	<0.004	390	
MW-7	9/17/2011	<0.001	<0.002	<0.002	<0.004	374	
MW-8	6-2010	<0.001	<0.002	<0.002	<0.002	553	
MW-8	9-2010	<0.001	<0.002	<0.002	<0.004	486	
MW-8	12-2010	<0.001	<0.002	<0.002	<0.004	533	
MW-8	3/30/2011	<0.001	<0.002	<0.002	<0.002	529	
MW-8	6/22/2011	<0.001	<0.002	<0.002	<0.004	524	
MW-8	9/17/2011	<0.001	<0.002	<0.002	<0.004	507	
MW-9	6-2010	LNAPL	LNAPL	LNAPL	LNAPL	532**	
MW-9	9-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	12-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	3/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	6/22/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-9	9/17/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	

TABLE 2
THIRD QUARTER 2011
SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER
RR-EXTENSION 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
New Mexico Water Quality Control Comission Groundwater Standards		**0.01 (mg/l)**	**0.75(mg/l)**	**0.75 (mg/l)**	**0.62 (mg/l)**	**250 (mg/1)**	
MW-10	6-2010	LNAPL	LNAPL	LNAPL	LNAPL	656**	
MW-10	9-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	12-2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	3/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	6/22/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-10	9/17/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-11	6-2010	<0.001	<0.002	<0.002	<0.004	407	
MW-11	9-2010	<0.001	<0.002	<0.002	<0.004	365	
MW-11	12-2010	<0.001	<0.002	<0.002	<0.004	383	
MW-11	3/30/2011	<0.001	<0.002	<0.002	<0.002	406	
MW-11	6/22/2011	<0.001	<0.002	<0.002	<0.004	405	
MW-11	9/17/2011	<0.001	<0.002	<0.002	<0.004	390	
MW-12	6-2010	<0.001	<0.002	<0.002	<0.004	514	
MW-12	9-2010	<0.001	<0.002	<0.002	<0.004	464	
MW-12	12-2010	<0.001	<0.002	<0.002	<0.004	501	
MW-12	3/30/2011	<0.001	<0.002	<0.002	<0.002	498	
MW-12	6/22/2011	<0.001	<0.002	<0.002	<0.004	497	
MW-12	9/17/2011	<0.001	<0.002	<0.002	<0.004	493	
MW-13	3/30/2011	<0.001	<0.002	<0.002	<0.002	326	
MW-13	6/22/2011	<0.001	<0.002	<0.002	<0.004	340	
MW-13	9/17/2011	<0.001	<0.002	<0.002	<0.004	317	
MW-14	3/30/2011	<0.001	<0.002	<0.002	<0.002	520	
MW-14	6/22/2011	<0.001	<0.002	<0.002	<0.004	494	
MW-14	9/17/2011	<0.001	<0.002	<0.002	<0.004	478	
MW-15	3/30/2011	<0.001	<0.002	<0.002	<0.002	303	
MW-15	6/22/2011	<0.001	<0.002	<0.002	<0.004	297	
MW-15	9/17/2011	<0.001	<0.002	<0.002	<0.004	294	
MW-16	3/30/2011	<0.001	<0.002	<0.002	<0.002	295	
MW-16	6/22/2011	<0.001	<0.002	<0.002	<0.004	292	
MW-16	9/17/2011	<0.001	<0.002	<0.002	<0.004	295	

Notes:

1.) The environmental cleanup standards for water that are applicable to the RR-Extension Pipeline Release site are the New Mexico Water Quality Control Commission (NMWQCC) Groundwater Standards.

2.) Data presented for all well locations includes previous four sampling events, when available. Historic groundwater analytical results for these locations are available upon request.

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

Sample locations are shown on Figure 2 and analytical results are illustrated on Figure 4.

* Chlorides are subject to the National Secondary Drinking Water Regulations (NSDWR) secondary maximum contaminant levels (SMCLs) and not an enforceably regulated constituent. The 250 mg/L standard is established only as a guideline to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor.

** Chloride sample was collected with LNAPL in well.

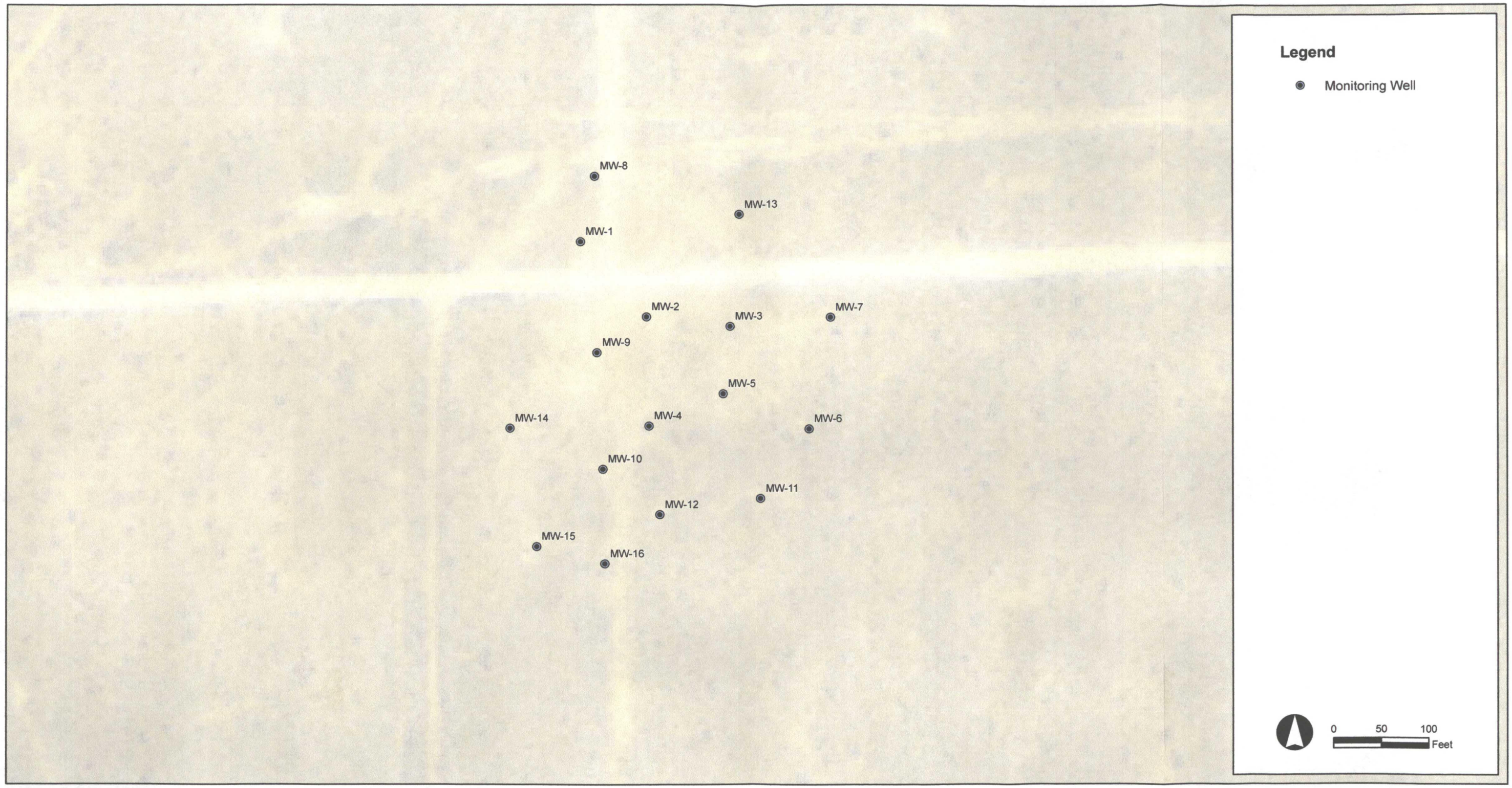
LNAPL = Light Non-Aqueous Phase Liquid

NM = Not measured.

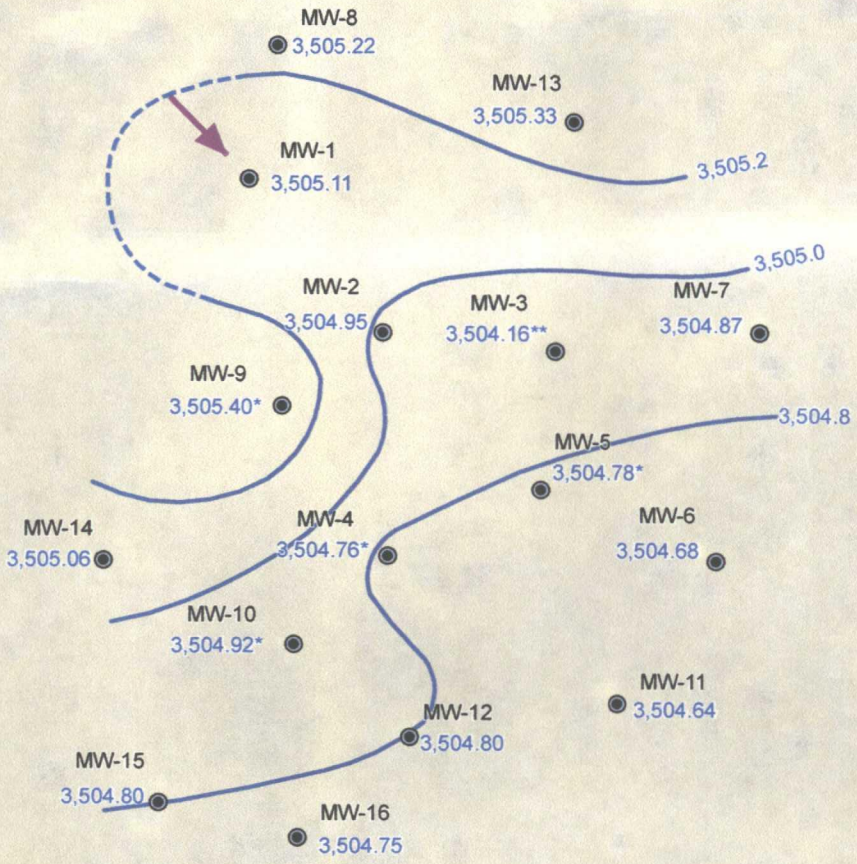
mg/L = milligrams per liter.

Figures

DESIGNED BY: B. Humphrey DRAWN BY: J. Clonts SHEET CHK'D BY: CROSS CHK'D BY: APPROVED BY: APPROVED BY:	Tasman Geosciences	Tasman Geosciences, LLC 5690 Webster St. Arvada, CO 8002 720-988-2024	**RR - EXTENSION PIPELINE RELEASE** *Third Quarter 2011 Groundwater Monitoring Summary Report*	SITE LOCATION	FIGURE 1



DESIGNED BY: B. Humphrey DRAWN BY: J. Clonts SHEET CHK'D BY: CROSS CHK'D BY: APPROVED BY: APPROVED BY:	Tasman Geosciences Tasman Geosciences, LLC 5690 Webster St. Arvada, CO 8002 720-988-2024	**RR - EXTENSION PIPELINE RELEASE** *Third Quarter 2011 Groundwater Monitoring Summary Report*	SITE MAP	FIGURE 2



Legend

- Monitoring Well
- Groundwater Elevation Contour Line (feet AMSL), Dashed Where Inferred
- 3,710.33 Measured Groundwater Elevation (feet AMSL)
- Groundwater Flow Direction

Notes:
AMSL - Above Mean Sea Level

* - Monitoring Point contained LNAPL. Correction applied to measured groundwater elevation. (See notes in Table 1).
** - The groundwater elevation for this well was not used for contouring due to the relatively large correction applied.

0 50 100 Feet

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GROUNDWATER ELEVATION CONTOUR MAP (SEPTEMBER 17, 2011)

FIGURE 3

MW-1		
Compound	6/11/2011 (mg/L)	9/17/2011 (mg/L)
Benzene	0.0735	0.144
Toluene	<0.01	0.038
Ethylbenzene	0.0293	0.0069
Total Xylenes	<0.02	0.0087
Chlorides	467	472

MW-2		
Compound	6/11/2011 (mg/L)	9/17/2011 (mg/L)
Benzene	9.21	4.07
Toluene	0.231	0.415
Ethylbenzene	0.377	0.329
Total Xylenes	<0.4	0.203
Chlorides	370	375

MW-8		
Compound	6/11/2011 (mg/L)	9/17/2011 (mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.004
Chlorides	524	507

MW-13		
Compound	6/11/2011 (mg/L)	9/17/2011 (mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.004
Chlorides	340	317

MW-7		
Compound	6/11/2011 (mg/L)	9/17/2011 (mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.004
Chlorides	390	374

MW-3
(4.55)

MW-9
(0.02)

MW-5
(0.92)

MW-4
(0.66)

MW-10
(1.52)

MW-6		
Compound	6/11/2011 (mg/L)	9/17/2011 (mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.004
Chlorides	376	383

MW-14		
Compound	6/11/2011 (mg/L)	9/17/2011 (mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.004
Chlorides	494	478

MW-15		
Compound	6/11/2011 (mg/L)	9/17/2011 (mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.004
Chlorides	297	294

MW-16		
Compound	6/11/2011 (mg/L)	9/17/2011 (mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.004
Chlorides	292	295

MW-12		
Compound	6/11/2011 (mg/L)	9/17/2011 (mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.004
Chlorides	497	493

MW-11		
Compound	6/11/2011 (mg/L)	9/17/2011 (mg/L)
Benzene	<0.001	<0.001
Toluene	<0.002	<0.002
Ethylbenzene	<0.002	<0.002
Total Xylenes	<0.004	<0.004
Chlorides	405	390

Legend

- Monitoring Well
- (0.02) Measured LNAPL Thickness

Notes:

Data reported for the March 30, 2011 monitoring event were collected by AEC and provided in the first quarter 2011 groundwater monitoring summary report.

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

LNAPL - Light Non-Aqueous Phase Liquid

0 50 100 Feet

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RR - EXTENSION PIPELINE RELEASE

Third Quarter 2011 Groundwater Monitoring Summary Report

ANALYTICAL RESULTS MAP

FIGURE 4

Appendix A

Laboratory Analytical Reports