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January 14, 2013

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

**RE: 3rd Quarter 2012 Groundwater Monitoring Results
DCP Midstream, LP J-4-2 Pipeline Release (1RP-1728)
Unit C, Section 27, Township 19 South, Range 35 East
Lea County, New Mexico**

Dear Mr. Lowe:

DCP Midstream, LP (DCP) is pleased to submit for your review, a copy of the 3rd Quarter 2012 Groundwater Monitoring Results for the DCP J-4-2 Pipeline Release located in Lea County, New Mexico (Unit C, Section 27, Township 19 South, Range 35 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: Geoffrey Leking, Hobbs District (Copy on CD)
Environmental Files

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Third Quarter 2012 Groundwater Monitoring and Activities Summary Report

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

Prepared for:



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

Prepared by:



Tasman Geosciences

6899 Pecos Street, Unit C
Denver, CO 80221

November 15, 2012

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1. Introduction

This report summarizes the groundwater monitoring and remediation activities conducted during the third quarter of 2012 at the J-4-2 pipeline release (Site) in Lea County, New Mexico (Figure 1). Tasman Geosciences, LLC (Tasman) conducted these activities on behalf of DCP Midstream, LP (DCP). The field activities described herein were performed with the purpose of monitoring groundwater flow and quality and assessing the presence of light non-aqueous phase liquid (LNAPL) hydrocarbons within the Site subsurface. The data collected during the reporting period were used to develop a groundwater elevation figure, an analytical results figure and LNAPL versus time and groundwater elevation graphs to evaluate 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 extraction and conveyance.

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 and chloride had impacted groundwater at the Site in the vicinity of monitoring wells MW-1 and MW-2. In addition, LNAPL was detected at monitoring wells MW-1 and MW-2.

3. Groundwater Monitoring

This section describes the field and laboratory activities performed during the third quarter 2012 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 and LNAPL Elevation Monitoring

Groundwater and LNAPL levels were measured in order to evaluate hydraulic characteristics and provide information regarding seasonal fluctuations in groundwater elevations at the Site. During the third quarter 2012, groundwater levels were measured at six monitoring well locations. MW-6 could not be measured due to an obstruction of sediment fines above the potentiometric surface.

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]). LNAPL levels, where indicated by the IP, were also recorded.

Groundwater elevation measurements collected during the reporting period as well as historical elevations are presented in Table 1, and a third quarter 2012 groundwater elevation contour map is illustrated on Figure 3. Groundwater elevations ranged from 3,704.71 feet AMSL at monitoring well MW-8 to 3,708.68 feet AMSL at monitoring well MW-4. As illustrated on Figure 3, groundwater flow at the Site generally trends to the southeast with a gradient of approximately 0.0053 foot per foot between monitoring wells MW-4 and MW-8.

LNAPL was detected only at MW-2 (0.05-feet) prior to remediation activities during the third quarter 2012 monitoring event. Following remediation activities, measureable LNAPL was removed and a subsequent groundwater sample was collected.

3.2 Groundwater Quality Monitoring

Groundwater levels and total well depth were measured at each of the Site monitoring wells prior to collecting groundwater samples. 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 collected using dedicated polyethylene bailers, placed in clean laboratory supplied containers for the selected analytical methods, packed in an ice-filled cooler, and maintained at approximately four (4) degrees Celsius ($^{\circ}\text{C}$) for transportation. Groundwater samples were then shipped under chain-of-custody procedures to Accutest Laboratories (Accutest) in Wheat Ridge, Colorado, for analysis.

Water quality samples were collected from six wells and 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. MW-6 was not sampled due to an obstruction of sediment fines above the potentiometric surface.

Table 2 summarizes BTEX and chloride concentrations in groundwater samples collected during the reporting period in addition to concentrations from the previous 4 quarters. Laboratory analytical reports for the event are included in Appendix A and historical analytical results up to and including the September 2012 event are contained in Appendix B. Analytical results are summarized on Figure 4. The

groundwater samples collected from the Site monitoring wells did not contain concentrations of dissolved phase BTEX above laboratory reporting limits. Chloride was detected in all six of the sampled wells with concentrations ranging from 308 milligrams per liter (mg/L) in MW-8 to 2,280 mg/L in MW-2.

3.3 Data Quality Assurance / Quality Control

A trip blank, matrix spike or matrix spike duplicate (MS/MSD) and field duplicate (MW-4) 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. Chain of custody forms were in order and properly executed and indicate that samples were received at the proper temperature with no headspace. All data were reported using the correct method number and reporting units. The trip blank was fully in control, having no detections of targets.

The duplicate sample collected at MW-4 was in compliance with the QA/QC standard. MW-4 and duplicate samples both returned results below laboratory detection limits.

The overall QA/QC assessment of the data, based on the data review, indicate that both field precision and overall data precision and accuracy are acceptable.

4. Remediation Activities

4.1 Vacuum Enhanced LNAPL Recovery

During the third quarter 2012 event, Tasman conducted an 8.5-hour vacuum enhanced LNAPL recovery event at monitoring wells MW-2 and MW-1 utilizing a vacuum truck. No measurable thickness of LNAPL was detected within the wells prior to vacuum enhanced recovery although the presence of a light sheen was observed on water purged from MW-2, possibly from LNAPL collection bailer present in the well.

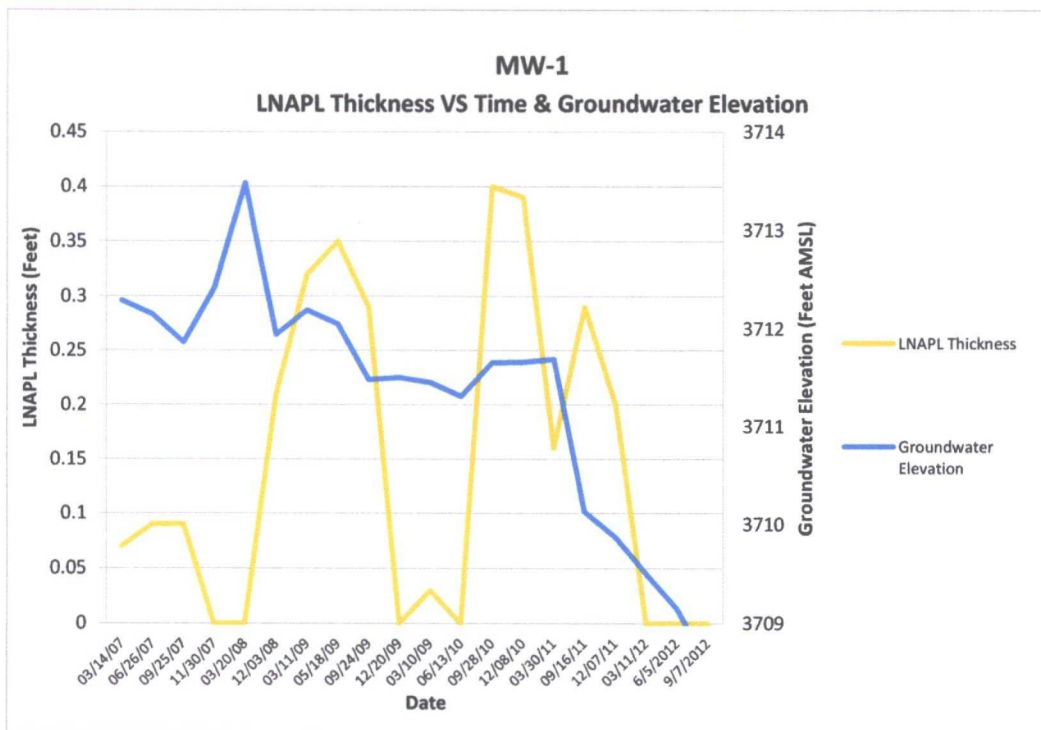
Approximately 335 gallons of mixed liquids were recovered during the vacuum event. The recovered liquids were subsequently transported to and disposed of at the Cooper Disposal Facility in Hobbs, New Mexico.

4.2 LNAPL Collection Bailer

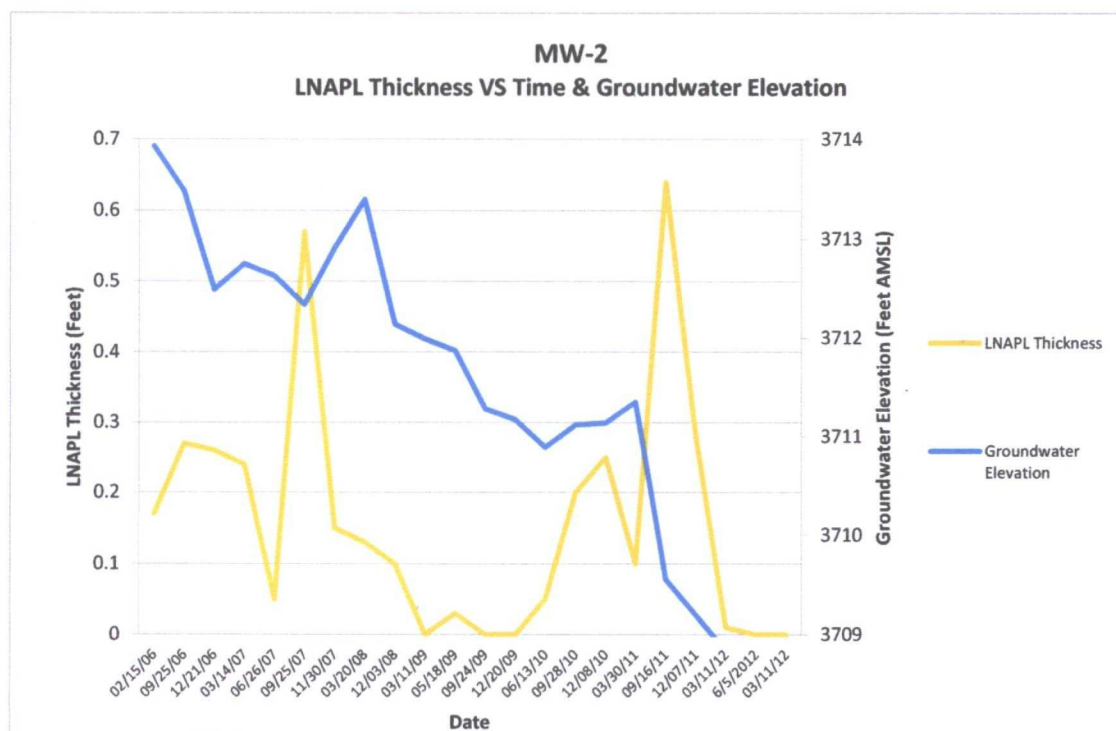
A passive LNAPL collection bailer is installed at monitoring well MW-2. During the third quarter 2012 groundwater monitoring event, there was no measurable LNAPL recorded in the collection bailer. The LNAPL collection bailer was set in the monitoring well at the level of groundwater elevation after the vacuum enhanced LNAPL recovery event was completed.

4.3 LNAPL Trends

As illustrated in the graphs below, the LNAPL thickness in MW-1 and MW-2 does not appear to exhibit any seasonal fluctuation trends or a relationship to groundwater levels.



Groundwater elevations have exhibited a steady decrease in elevation over time, whereas product thickness has fluctuated sporadically over time with no apparent correlation to groundwater elevation.



5. Conclusions

While the dissolved phase hydrocarbon impacts did not exceed the regulatory limits in any of the sampled monitoring wells during this event, a light sheen was observed in MW-2. The vacuum recovery events conducted during the first, second, and third quarters 2012 have been successful in removing LNAPL thickness and have allowed analytical sample collection from MW-01 and MW-02.

All groundwater monitoring wells sampled during the reporting period returned BTEX concentrations below laboratory detection limits for the first time. Results from MW-1 and MW-2 which have historically have had a measurable thickness of LNAPL, indicate that three quarter of vacuum enhanced LNAPL recovery events have been successful in removing constituents of concern from the groundwater.

Given the success of vacuum recovery events in decreasing benzene concentrations in MW-1 and MW-2 to below laboratory detection limits, additional recovery events may no longer be warranted.

Ongoing quarterly groundwater sampling will provide for continued monitoring of Site conditions, BTEX, and LNAPL trends.

6. Recommendations

Based on evaluation of third quarter 2012 and historical Site observations and monitoring results, recommendations for future activities include:

- Continue groundwater monitoring and sampling at the monitoring locations illustrated on Figure 2;
- Continue to conduct and evaluate the success of vacuum enhanced recovery of LNAPL at monitoring well MW-2 for an additional quarter, and;
- Evaluate the continued use of the LNAPL recovery bailer at MW-2.

Tables

TABLE 1
THIRD QUARTER 2012
SUMMARY OF GROUNDWATER ELEVATION DATA
J-4-2 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 (3) (feet amsl)	Groundwater Elevation (feet amsl)	Change in Groundwater Elevation Since Previous Event (4) (feet)
MW-1*	9/16/2011	30.54	30.25	0.29	43.05	3740.45	3710.13	-0.96
MW-1*	12/7/2011	30.73	30.53	0.2	43.05	3740.45	3709.87	-0.26
MW-1	3/11/2012	30.95			43.05	3740.45	3709.50	-0.37
MW-1	6/5/2012	31.30			43.05	3740.45	3709.15	-0.35
MW-1	9/7/2012	31.87			43.05	3740.45	3708.58	-0.57
MW-2*	9/16/2011	31.54	30.90	0.64	43.30	3740.62	3709.56	-0.66
MW-2*	12/7/2011	31.63	31.35	0.28	43.30	3740.62	3709.20	-0.36
MW-2*	3/11/2012	31.79	31.78	0.01	43.30	3740.62	3708.84	-0.36
MW-2	6/5/2012	32.05			43.30	3740.62	3708.57	-0.27
MW-2	9/7/2012	32.70			43.30	3740.62	3707.92	-0.65
MW-3	9/16/2011	29.62			35.20	3739.39	3709.77	-0.86
MW-3	12/7/2011	30.10			35.20	3739.39	3709.29	-0.48
MW-3	3/11/2012	30.25			35.20	3739.39	3709.14	-0.15
MW-3	6/5/2012	30.54			35.20	3739.39	3708.85	-0.29
MW-3	9/7/2012	31.16			35.20	3739.39	3708.23	-0.62
MW-4	9/16/2011	29.91			37.95	3740.24	3710.33	-0.79
MW-4	12/7/2011	30.46			37.95	3740.24	3709.78	-0.55
MW-4	3/11/2012	30.57			37.95	3740.24	3709.67	-0.11
MW-4	6/5/2012	30.92			37.95	3740.24	3709.32	-0.35
MW-4	9/7/2012	31.56			37.95	3740.24	3708.68	-0.64
MW-6	9/16/2011	30.55			34.31	3739.96	3709.41	-0.74
MW-6	12/7/2011	30.09			34.31	3739.96	3709.87	0.46
MW-6	3/11/2012	31.03			34.31	3739.96	3708.93	-0.94
MW-6	6/5/2012	31.41			34.31	3739.96	3708.55	-0.38
MW-6	9/7/2012	NM ⁽⁵⁾			34.31	3739.96	NM	NM
MW-7	9/16/2011	33.76			40.41	3740.73	3706.97	-0.62
MW-7	12/7/2011	34.04			40.41	3740.73	3706.69	-0.28
MW-7	3/11/2012	34.15			40.41	3740.73	3706.58	-0.11
MW-7	6/5/2012	34.51			40.41	3740.73	3706.22	-0.36
MW-7	9/7/2012	34.95			40.41	3740.73	3705.78	-0.44
MW-8	9/16/2011	31.67			38.58	3737.32	3705.65	-1.04
MW-8	12/7/2011	31.83			38.58	3737.32	3705.49	-0.16
MW-8	3/11/2012	32.00			38.58	3737.32	3705.32	-0.17
MW-8	6/5/2012	32.30			38.58	3737.32	3705.02	-0.30
MW-8	9/7/2012	32.61			38.58	3737.32	3704.71	-0.31
Average change in groundwater elevation since the previous monitoring event								-0.54

Notes:

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

2-Total depths were collected and recorded during the third quarter 2012 monitoring event. Total depths were not collected in wells that had LNAPL.

3-TOC elevations for monitoring wells MW-4, MW-6, MW-7, & MW-8 were calculated by adding the PVC stick-up length (in feet) to the surveyed ground surface elevations (in feet amsl).

4- 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.

5- MW-6 was not measured due to an obstruction of sediment fines at 31.15 feet bgs.

Monitoring well location MW-5 was not installed due geologic refusal that was encountered during drilling activities.

Data presented for all other well locations includes previous four sampling events, when available. Historic groundwater elevation data for these locations may be found in

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

* 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 2012
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
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	250*	
MW-1	9/16/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	12/7/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	3/11/2012	<0.001	<0.002	<0.002	<0.004	2970	
MW-1	6/5/2012	<0.001	<0.002	<0.002	<0.003	2480	
MW-1	9/7/2012	<0.001	<0.002	<0.002	<0.003	2060	
MW-2	9/16/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	12/7/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	3/11/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	6/5/2012	0.00043	<0.002	0.0024	0.0069	2450	
MW-2	9/7/2012	<0.001	<0.002	<0.002	<0.003	2280	
MW-3	9/16/2011	<0.001	<0.002	<0.002	<0.004	2190	Duplicate sample collected
MW-3	12/7/2011	<0.001	<0.002	<0.002	<0.004	2230	Duplicate sample collected
MW-3	3/11/2012	<0.001	<0.002	<0.002	<0.004	2210	
MW-3	6/5/2012	<0.001	<0.002	<0.002	<0.003	2080	
MW-3	9/7/2012	<0.001	<0.002	<0.002	<0.003	2180	
MW-4	9/16/2011	<0.001	<0.002	<0.002	<0.004	1980	
MW-4	12/7/2011	<0.001	<0.002	<0.002	<0.004	2010	
MW-4	3/11/2012	<0.001	<0.002	<0.002	<0.004	1960	Duplicate sample collected
MW-4	6/5/2012	<0.001	<0.002	<0.002	<0.003	1790	Duplicate sample collected
MW-4	9/7/2012	<0.001	<0.002	<0.002	<0.003	1910	Duplicate sample collected
MW-6	9/16/2011	<0.001	<0.002	<0.002	<0.004	476	
MW-6	12/7/2011	<0.001	<0.002	<0.002	<0.004	526	
MW-6	3/11/2012	<0.001	<0.002	<0.002	<0.004	522	
MW-6	6/5/2012	<0.001	<0.002	<0.002	<0.003	532	
MW-6 ⁽⁴⁾	9/7/2012	NS	NS	NS	NS	NS	
MW-7	9/16/2011	<0.001	<0.002	<0.002	<0.004	1170	
MW-7	12/7/2011	<0.001	<0.002	<0.002	<0.004	1200	
MW-7	3/11/2012	<0.001	<0.002	<0.002	<0.004	1220	
MW-7	6/5/2012	<0.001	<0.002	<0.002	<0.003	1120	
MW-7	9/7/2012	<0.001	<0.002	<0.002	<0.003	1140	
MW-8	9/16/2011	<0.001	<0.002	<0.002	<0.004	368	
MW-8	12/7/2011	<0.001	<0.002	<0.002	<0.004	348	
MW-8	3/11/2012	<0.001	<0.002	<0.002	<0.004	345	
MW-8	6/5/2012	<0.001	<0.002	<0.002	<0.003	316	
MW-8	9/7/2012	<0.001	<0.002	<0.002	<0.003	308	

Notes:

- 1.) The environmental cleanup standards for water that are applicable to this site are the New Mexico Water Quality Control Commission (NMWQCC) Groundwater Standards.
- 2.) Monitoring well location MW-5 was not installed due geologic refusal that was encountered during drilling activities.
- 3.) Data presented for all other well locations includes previous four sampling events, when available. Historic groundwater analytical results for these locations may be found in Appendix B.
- 4.) MW-6 was not sampled due to an obstruction in the well.

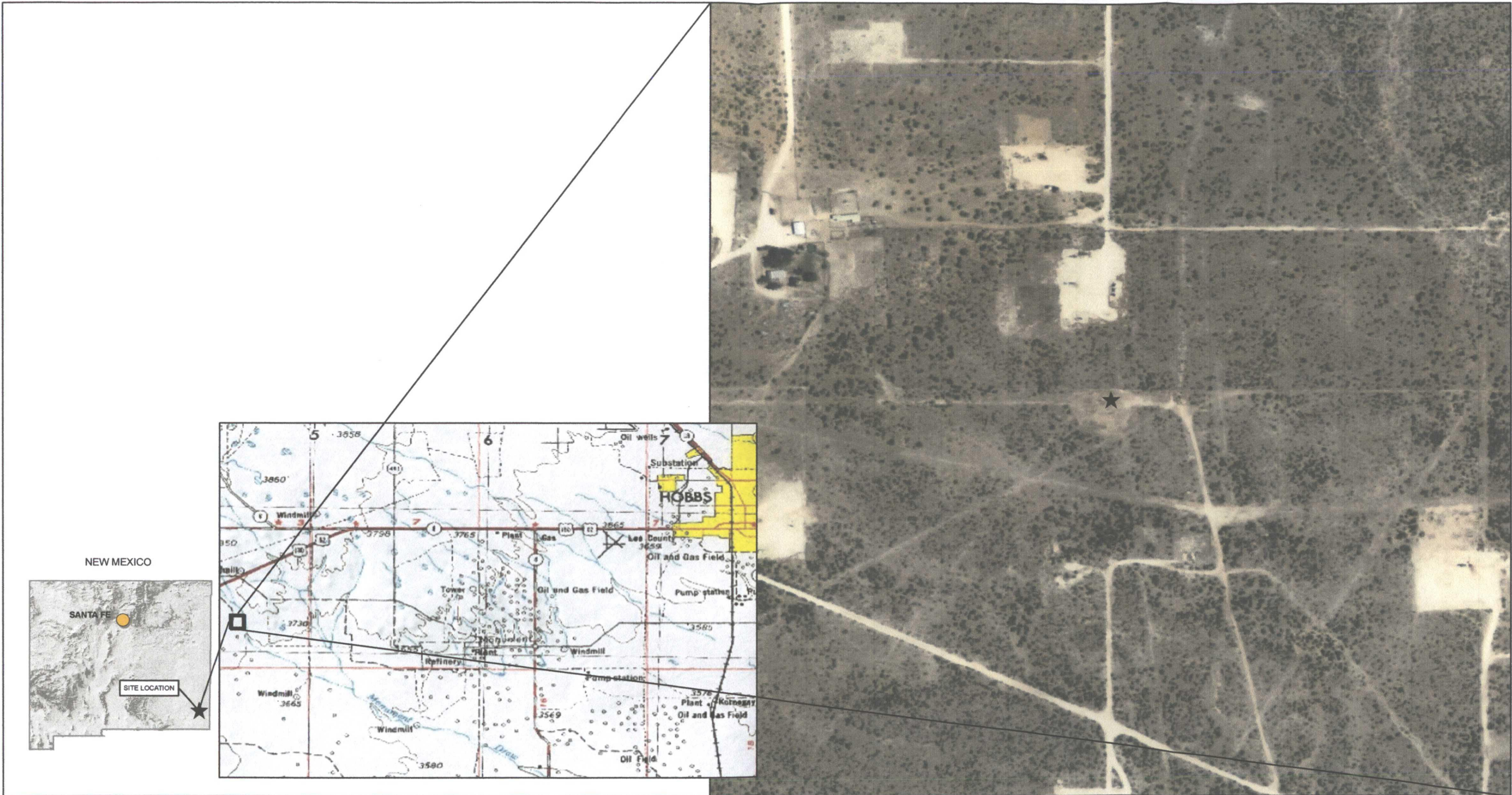
Sample locations are shown on Figure 2 and analytical results are illustrated on Figure 4.

* 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.

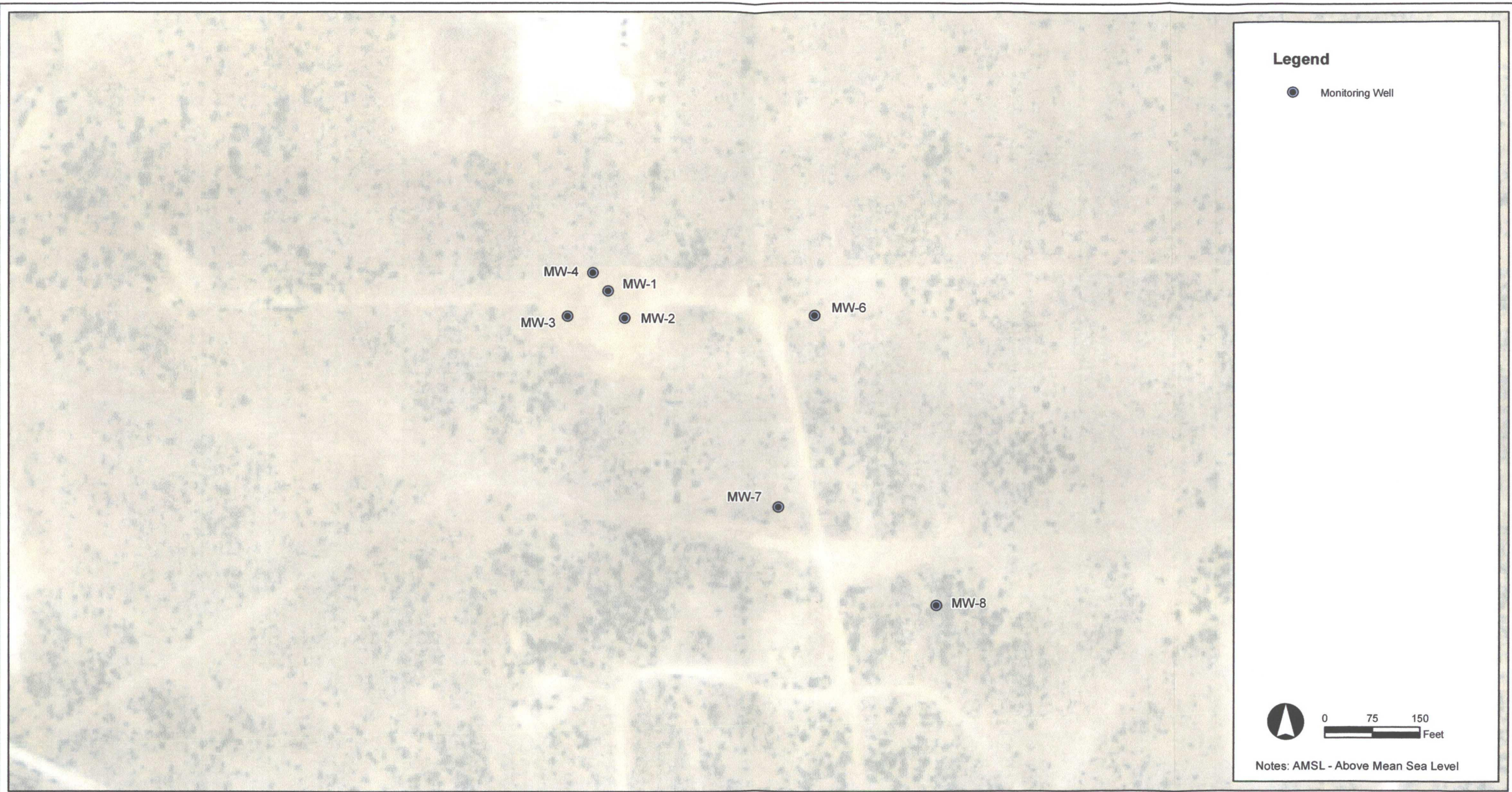
LNAPL = Light Non-Aqueous Phase Liquid

mg/L = milligrams per liter.

Figures



DESIGNED BY: <u>C. Wasko</u> DRAWN BY: <u>J. Clonts</u> SHEET CHK'D BY: _____ CROSS CHK'D BY: _____ APPROVED BY: _____ APPROVED BY: _____	 Tasman Geosciences, LLC 5690 Webster St. Arvada, CO 8002 720-988-2024 Tasman Geosciences	J-4-2 PIPELINE RELEASE Third Quarter 2012 Groundwater Monitoring Summary Report	SITE LOCATION	FIGURE 1
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DESIGNED BY: C. Wasko
DRAWN BY: J. Clonts
SHEET CHK'D BY: _____
CROSS CHK'D BY: _____
APPROVED BY: _____
APPROVED BY: _____



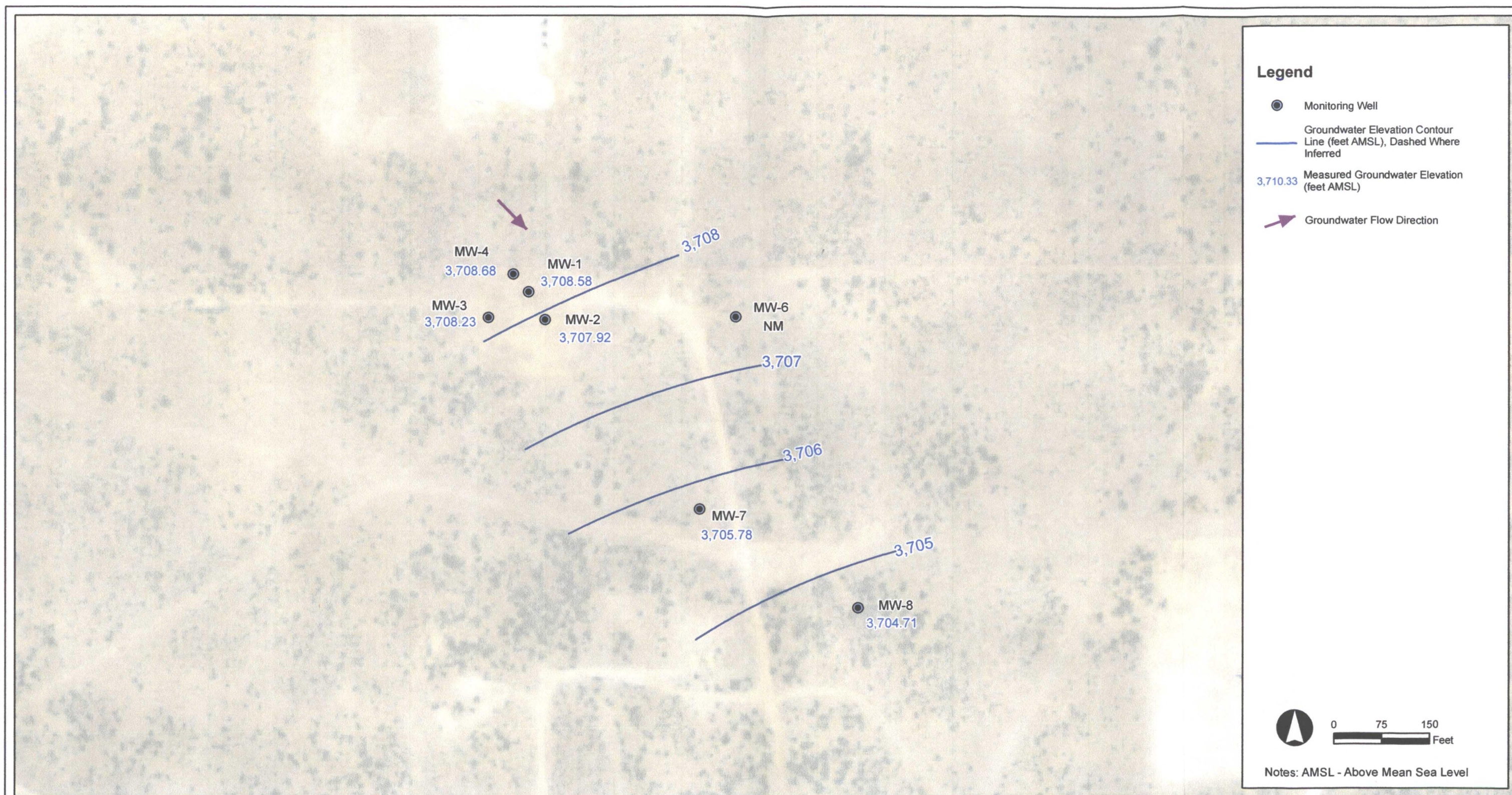
Tasman Geosciences

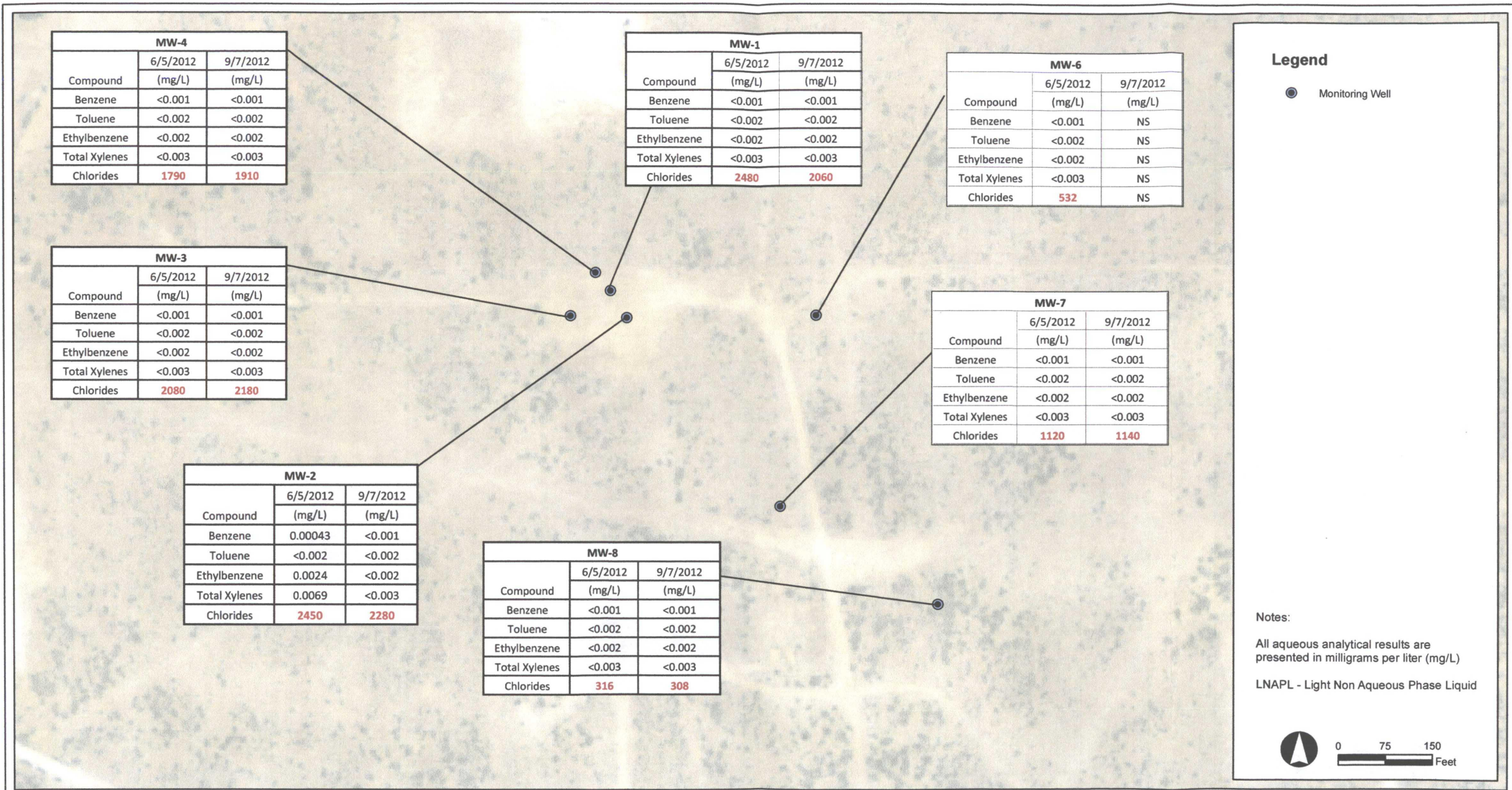
Tasman Geosciences, LLC
5690 Webster St.
Arvada, CO 8002
720-988-2024

J-4-2 PIPELINE RELEASE
*Third Quarter 2012 Groundwater Monitoring
Summary Report*

SITE MAP

**FIGURE
2**





Appendix A
Laboratory Analytical Report

Appendix B

Historical Groundwater Analytical Results

**APPENDIX B
HISTORICAL DATA
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
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	250*	
MW-1	2/1/2006	0.139	0.326	0.34	0.31	NA	
MW-1	9/1/2006	0.0487	0.0058	0.0284	0.0694	NA	
MW-1	9/25/2006	0.042	0.025	0.0048	0.061		
MW-1	9/25/2006	0.056	0.032	0.0068	0.078		
MW-1	12/1/2006	LNAPL	LNAPL	LNAPL	LNAPL	NA	
MW-1	3/1/2007	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	6/1/2007	LNAPL	LNAPL	0.004	LNAPL	LNAPL	
MW-1	9/1/2007	0.011	0.003	0.04	0.098	NA	
MW-1	1/1/2007	0.107	0.024	0.014	0.39	NA	
MW-1	11/30/2007	0.107	0.0243	0.0401	0.39		
MW-1	3/1/2008	0.037	0.0155	LNAPL	0.215	NA	
MW-1	3/20/2008	0.0416	0.0186	0.0177	0.26		
MW-1	6/1/2008	LNAPL	LNAPL	LNAPL	LNAPL	NA	
MW-1	9/1/2008	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	12/1/2008	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	3/11/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	3/11/2009	<0.00046	<0.00048	<0.00045	<0.0014		
MW-1	5/18/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	9/24/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	12/20/2009	<0.002	<0.002	.0014J	0.0418	2680	
MW-1	12/20/2009	<0.00050	<0.00043	0.0014	0.0418		
MW-1	3/10/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	6/13/2010	0.0016	<0.001	<0.0003	0.0095	1800	
MW-1	6/14/2010	0.0016	<1.0	<0.30	-		
MW-1	9/29/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	12/8/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	3/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	9/16/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	12/7/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-1	3/11/2012	<0.001	<0.002	<0.002	<0.004	2970	
MW-1	6/5/2012	<0.001	<0.002	<0.002	<0.003	2480	
MW-1	9/7/2012	<0.001	<0.002	<0.002	<0.003	2060	

APPENDIX B
HISTORICAL DATA
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
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	250*	
MW-2	2/1/2006	0.026	0.038	0.04	0.335		
MW-2	9/1/2006	0.0045	<0.001	0.0027	0.0471		
MW-2	12/1/2006	0.006	0.003	0.003	0.0613		
MW-2	3/1/2007	0.188	0.006	0.026	0.125		
MW-2	6/1/2007	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	9/1/2007	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	11/1/2007	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	11/30/2007	0.006	0.0033	0.0025	0.0613		
MW-2	3/1/2008	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	3/20/2008	0.188	0.0062	0.0262	0.125		
MW-2	6/1/2008	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	9/1/2008	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	12/1/2008	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	3/11/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	5/18/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	9/24/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	12/20/2009	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	3/10/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	6/13/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	9/29/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	12/8/2010	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	3/30/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	9/16/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	12/7/2011	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	3/11/2012	LNAPL	LNAPL	LNAPL	LNAPL	LNAPL	
MW-2	6/5/2012	0.00043	<0.002	0.0024	0.0069	2450	
MW-2	9/7/2012	<0.001	<0.002	<0.002	<0.003	2280	

**APPENDIX B
HISTORICAL DATA
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
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	250*	
MW-3	2/1/2006	<0.001	<0.001	<0.001	<0.002	NA	
MW-3	9/1/2006	<0.002	<0.002	<0.002	<0.006	NA	
MW-3	9/25/2006	<0.23	<0.54	<0.48	<1.1		
MW-3	3/14/2007	<0.00023	<0.00054	<0.00048	<0.0011		
MW-3	11/30/2007	0.0011	<0.00048	<0.00045	<0.0060		
MW-3	12/1/2006	<0.002	<0.002	<0.002	<0.006	NA	
MW-3	3/1/2007	<0.002	<0.002	<0.002	<0.006	7800	
MW-3	6/1/2007	0.003	0.005	0.002	0.01	10800	
MW-3	9/1/2007	<0.001	<0.001	<0.001	<0.001	NA	
MW-3	11/1/2007	0.0011J	<0.002	<0.002	<0.006	NA	
MW-3	3/1/2008	<0.002	<0.002	<0.002	<0.006	NA	
MW-3	3/20/2008	<0.00046	<0.00048	<0.00045	<0.0014		
MW-3	6/1/2008	<0.002	<0.002	<0.002	0.007	NA	
MW-3	9/1/2008	<0.002	<0.002	<0.002	<0.006	4070	
MW-3	12/1/2008	<0.002	<0.002	<0.002	<0.006	2625	
MW-3	12/3/2008	<0.00046	<0.00048	<0.00045	<0.0014		
MW-3	3/11/2009	<0.002	<0.002	<0.002	<0.002	2860	
MW-3	3/11/2009	<0.00046	<0.00048	<0.00045	<0.0014		
MW-3	5/18/2009	<0.002	<0.002	<0.002	<0.002	3270	
MW-3	5/18/2009	<0.00046	<0.00048	<0.00045	<0.0014		
MW-3	9/24/2009	<0.002	<0.002	<0.002	<0.006	3195	
MW-3	9/24/2009	<0.00050	<0.00043	<0.00055	<0.0017		
MW-3	12/20/2009	<0.002	<0.002	<0.002	<0.006	3605	
MW-3	12/20/2009	<0.00050	<0.00043	<0.00055	<0.0017		
MW-3	3/10/2010	<0.001	<0.002	<0.002	<0.004	3030	
MW-3	3/10/2010	<0.40	<1.0	<1.0	-		
MW-3	6/13/2010	<0.0003	<0.001	<0.0003	<0.0006	2130	
MW-3	6/13/2010	<0.30	<1.0	<0.30	-		
MW-3	9/29/2010	<0.001	<0.002	<0.002	<0.004	2220	
MW-3	9/29/2010	<0.00030	<0.0010	<0.00030	-		
MW-3	12/8/2010	<0.001	<0.002	<0.002	<0.004	2530	
MW-3	12/8/2010	<0.00030	<0.0010	<0.00030	-		
MW-3	3/30/2011	<0.001	<0.002	<0.002	<0.002	2230	
MW-3	3/30/2011	<0.00030	<0.0010	<0.00030	<0.00060		
MW-3	6/11/2011	<0.001	<0.002	<0.002	<0.004	2210	
MW-3	6/20/2011	<0.00025	<0.0010	<0.00050	<0.0020		
MW-3	9/16/2011	<0.001	<0.002	<0.002	<0.004	2190	Duplicate sample collected
MW-3	12/7/2011	<0.001	<0.002	<0.002	<0.004	2230	Duplicate sample collected
MW-3	3/11/2012	<0.001	<0.002	<0.002	<0.004	2210	
MW-3	6/5/2012	<0.001	<0.002	<0.002	<0.003	2080	
MW-3	9/7/2012	<0.001	<0.002	<0.002	<0.003	2180	

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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
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	250*	
MW-4	2/1/2006	NI	NI	NI	NI	NA	
MW-4	6/1/2006	0.0086	0.0093	0.0092	0.0061	NA	
MW-4	9/27/2006	0.0086	0.0092	0.00093	0.0061		
MW-4	12/1/2006	0.025	0.005	<0.002	0.0065	NA	
MW-4	3/1/2007	0.004	6E-04	<0.002	0.003	1300	
MW-4	3/14/2007	0.0044	0.0006	<0.00048	0.0032		
MW-4	6/1/2007	<0.001	<0.001	<0.001	<0.001	1380	
MW-4	9/1/2007	<0.001	<0.001	<0.001	<0.001	NA	
MW-4	11/1/2007	<0.002	<0.002	<0.002	<0.006	NA	
MW-4	11/30/2007	<0.00046	<0.00048	<0.00045	<0.0060		
MW-4	3/1/2008	<0.002	<0.002	<0.002	<0.006	NA	
MW-4	3/20/2008	<0.00046	<0.00048	<0.00045	<0.0014		
MW-4	6/1/2008	<0.002	<0.002	<0.002	<0.006	NA	
MW-4	9/1/2008	<0.002	<0.002	<0.002	0.0041	1440	
MW-4	12/1/2008	<0.002	<0.002	<0.002	<0.006	70	
MW-4	12/3/2008	<0.00046	<0.00048	<0.00045	<0.0014		
MW-4	3/11/2009	<0.002	<0.002	<0.002	<0.002	1390	
MW-4	5/18/2009	<0.002	<0.002	<0.002	<0.002	1440	
MW-4	5/18/2009	<0.00046	<0.00048	<0.00045	<0.0014		
MW-4	9/24/2009	<0.002	<0.002	<0.002	<0.006	1490	
MW-4	9/24/2009	<0.00050	<0.00043	<0.00055	<0.0017		
MW-4	12/20/2009	<0.002	<0.002	<0.002	<0.006	1740	
MW-4	12/20/2009	<0.00050	<0.00043	<0.00055	<0.0017		
MW-4	3/10/2010	<0.001	<0.002	<0.002	<0.004	1950	
MW-4	3/10/2010	<0.40	<1.0	<1.0	-		
MW-4	6/13/2010	<0.0003	<0.001	<0.0003	<0.0006	2150	
MW-4	6/13/2010	<0.30	<1.0	<0.30	-		
MW-4	9/29/2010	<0.001	<0.002	<0.002	<0.004	2130	
MW-4	9/29/2010	<0.00030	<0.0010	<0.00030	-		
MW-4	12/8/2010	<0.001	<0.002	<0.002	<0.004	2740	
MW-4	12/8/2010	<0.00030	<0.0010	<0.00030	-		
MW-4	3/30/2011	<0.001	<0.002	<0.002	<0.002	2300	
MW-4	3/30/2011	<0.00030	<0.0010	<0.00030	<0.00060		
MW-4	6/11/2011	<0.001	<0.002	<0.002	<0.004	2230	
MW-4	6/20/2011	<0.00025	<0.0010	<0.00050	<0.0020		
MW-4	9/16/2011	<0.001	<0.002	<0.002	<0.004	1980	
MW-4	12/7/2001	<0.001	<0.002	<0.002	<0.004	2010	
MW-4	3/11/2012	<0.001	<0.002	<0.002	<0.004	1960	Duplicate sample collected
MW-4	6/5/2012	<0.001	<0.002	<0.002	<0.003	1790	Duplicate sample collected
MW-4	9/7/2012	<0.001	<0.002	<0.002	<0.003	1910	Duplicate sample collected

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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
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	250*	
MW-6	2/1/2006	NI	NI	NI	NI	NA	
MW-6	9/1/2006	<0.002	<0.002	<0.002	<0.006	NA	
MW-6	9/27/2006	<0.23	<0.54	<0.48	<1.1		
MW-6	12/1/2006	<0.002	<0.002	<0.002	<0.006	NA	
MW-6	3/1/2007	<0.002	<0.002	<0.002	<0.006	669	
MW-6	3/14/2007	<0.00023	<0.00054	<0.00048	<0.0011		
MW-6	6/1/2007	<0.001	<0.001	<0.001	<0.001	544	
MW-6	9/1/2007	<0.001	<0.001	<0.001	<0.001	NA	
MW-6	11/1/2007	<0.002	<0.002	<0.002	<0.006	NA	
MW-6	11/30/2007	<0.00023	<0.00054	<0.00048	<0.0011		
MW-6	3/1/2008	<0.002	<0.002	<0.002	<0.006	NA	
MW-6	3/20/2008	<0.00046	<0.00048	<0.00045	<0.0014		
MW-6	6/1/2008	<0.002	<0.002	<0.002	<0.006	NA	
MW-6	9/1/2008	<0.002	<0.002	<0.002	<0.006	537	
MW-6	12/1/2008	<0.002	<0.002	<0.002	<0.002	391	
MW-6	12/3/2008	<0.00046	<0.00048	<0.00045	<0.0014		
MW-6	3/11/2009	<0.002	<0.002	<0.002	<0.002	363	
MW-6	3/11/2009	<0.00046	<0.00048	<0.00045	<0.0014		
MW-6	5/18/2009	<0.002	<0.002	<0.002	<0.006	383	
MW-6	5/18/2009	<0.00046	<0.00048	<0.00045	<0.0014		
MW-6	9/24/2009	<0.002	<0.002	<0.002	<0.006	373	
MW-6	9/24/2009	<0.00050	<0.00043	<0.00055	<0.0017		
MW-6	12/20/2009	<0.002	<0.002	<0.002	<0.006	1090	
MW-6	12/20/2009	<0.00050	<0.00043	<0.00055	<0.0017		
MW-6	3/10/2010	NA	NA	NA	NA	NA	
MW-6	6/13/2010	<0.0003	<0.001	<0.0003	<0.006	533	
MW-6	6/13/2010	<0.30	<1.0	<0.30	-		
MW-6	9/29/2010	<0.001	<0.002	<0.002	<0.004	445	
MW-6	9/29/2010	<0.00030	<0.0010	<0.00030	-		
MW-6	12/8/2010	<0.001	<0.002	<0.002	<0.004	513	
MW-6	12/8/2010	<0.00030	<0.0010	<0.00030	-		
MW-6	3/30/2011	<0.001	<0.002	<0.002	<0.002	491	
MW-6	3/30/2011	<0.00030	<0.0010	<0.00030	<0.00060		
MW-6	6/11/2011	<0.001	<0.002	<0.002	<0.004	503	
MW-6	6/20/2011	<0.00025	<0.0010	<0.00050	<0.0020		
MW-6	9/16/2011	<0.001	<0.002	<0.002	<0.004	476	
MW-6	12/7/2011	<0.001	<0.002	<0.002	<0.004	526	
MW-6	3/11/2012	<0.001	<0.002	<0.002	<0.004	522	
MW-6	6/5/2012	<0.001	<0.002	<0.002	<0.003	532	
MW-6 ^(d)	9/7/2012	NS	NS	NS	NS	NS	

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J-4-2 PIPELINE RELEASE
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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
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	250*	
MW-7	2/1/2006	NI	NI	NI	NI	NA	
MW-7	6/1/2006	<0.002	<0.002	<0.002	<0.006	NA	
MW-7	9/27/2006	<0.23	<0.54	<0.48	<1.1		
MW-7	12/1/2006	<0.002	<0.002	<0.002	<0.006	NA	
MW-7	3/1/2007	<0.002	<0.002	<0.002	<0.006	1230	
MW-7	3/14/2007	<0.00023	<0.00054	<0.00048	<0.0011		
MW-7	6/1/2007	<0.001	<0.001	<0.001	0.003	1150	
MW-7	9/1/2007	<0.001	<0.001	<0.001	<0.001	NA	
MW-7	11/1/2007	<0.002	<0.002	<0.002	<0.006	NA	
MW-7	11/30/2007	<0.00023	<0.00054	<0.00048	<0.0011		
MW-7	3/1/2008	<0.002	<0.002	<0.002	<0.006	NA	
MW-7	3/20/2008	<0.00046	<0.00048	<0.00045	<0.0014		
MW-7	6/1/2008	<0.002	<0.002	<0.002	<0.006	NA	
MW-7	9/1/2008	<0.002	<0.002	<0.002	<0.006	1180	
MW-7	12/1/2008	<0.002	<0.002	<0.002	<0.002	1050	
MW-7	12/3/2008	<0.00046	<0.00048	<0.00045	<0.0014		
MW-7	3/11/2009	<0.002	<0.002	<0.002	<0.002	944	
MW-7	3/11/2009	<0.00046	<0.00048	<0.00045	<0.0014		
MW-7	5/18/2009	<0.002	<0.002	<0.002	<0.006	1090	
MW-7	5/18/2009	<0.00046	<0.00048	<0.00045	<0.0014		
MW-7	9/24/2009	<0.002	<0.002	<0.002	<0.006	1140	
MW-7	9/24/2009	<0.00050	<0.00043	<0.00055	<0.0017		
MW-7	12/20/2009	<0.002	<0.002	<0.002	<0.006	1440	
MW-7	12/20/2009	<0.00050	<0.00043	<0.00055	<0.0017		
MW-7	3/10/2010	<0.001	<0.002	<0.002	<0.004	1230	
MW-7	3/10/2010	<0.40	<1.0	<1.0	-		
MW-7	6/13/2010	<0.0003	<0.001	<0.0003	<0.006	1280	
MW-7	6/13/2010	<0.30	<1.0	<0.30	-		
MW-7	9/29/2010	<0.001	<0.002	<0.002	<0.004	1210	
MW-7	9/29/2010	<0.00030	<0.0010	<0.00030	-		
MW-7	12/8/2010	<0.001	<0.002	<0.002	<0.004	1180	
MW-7	12/8/2010	<0.00030	<0.0010	<0.00030	-		
MW-7	3/30/2011	<0.001	<0.002	<0.002	<0.002	1210	
MW-7	3/30/2011	<0.00030	<0.0010	<0.00030	<0.00060		
MW-7	6/11/2011	<0.001	<0.002	<0.002	<0.004	1210	
MW-7	6/20/2011	<0.00025	<0.0010	<0.00050	<0.0020		
MW-7	9/16/2011	<0.001	<0.002	<0.002	<0.004	1170	
MW-7	12/7/2011	<0.001	<0.002	<0.002	<0.004	1200	
MW-7	3/11/2012	<0.001	<0.002	<0.002	<0.004	1220	
MW-7	6/5/2012	<0.001	<0.002	<0.002	<0.003	1120	
MW-7	9/7/2012	<0.001	<0.002	<0.002	<0.003	1140	

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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
New Mexico Water Quality Control Commission Groundwater Standards (mg/L)		0.01	0.75	0.75	0.62	250*	
MW-8	12/1/2006	NI	NI	NI	NI	NA	
MW-8	9/1/2006	<0.002	<0.002	<0.002	<0.006	NA	
MW-8	9/27/2006	<0.23	<0.54	<0.48	<1.1		
MW-8	12/1/2006	<0.002	<0.002	<0.002	<0.006	NA	
MW-8	3/1/2007	<0.002	<0.002	<0.002	<0.006	609	
MW-8	3/14/2007	<0.00023	<0.00054	<0.00048	<0.0011		
MW-8	3/14/2007	-	-	-	-		
MW-8	6/1/2007	<0.001	<0.001	<0.001	<0.001	617	
MW-8	9/1/2007	<0.001	<0.001	<0.001	<0.001	NA	
MW-8	11/1/2007	<0.002	<0.002	<0.002	<0.006	NA	
MW-8	11/30/2007	<0.00046	<0.00048	<0.00045	<0.0060		
MW-8	3/1/2008	<0.002	<0.002	<0.002	<0.006	NA	
MW-8	3/20/2008	<0.00046	<0.00048	<0.00045	<0.0014		
MW-8	6/1/2008	<0.002	<0.002	<0.002	<0.006	NA	
MW-8	9/1/2008	<0.002	<0.002	<0.002	<0.006	735	
MW-8	12/1/2008	<0.002	<0.002	<0.002	<0.002	480	
MW-8	12/3/2008	<0.00046	<0.00048	<0.00045	<0.0014		
MW-8	3/11/2009	<0.002	<0.002	<0.002	<0.002	417	
MW-8	3/11/2009	<0.00046	<0.00048	<0.00045	<0.0014		
MW-8	5/18/2009	<0.002	<0.002	<0.002	<0.006	378	
MW-8	5/18/2009	<0.00046	<0.00048	<0.00045	<0.0014		
MW-8	9/24/2009	<0.002	<0.002	<0.002	<0.006	403	
MW-8	9/24/2009	<0.00050	<0.00043	<0.00055	<0.0017		
MW-8	12/20/2009	<0.002	<0.002	<0.002	<0.006	308	
MW-8	12/20/2009	<0.00050	<0.00043	<0.00055	<0.0017		
MW-8	3/10/2010	<0.001	<0.002	<0.002	<0.004	414	
MW-8	3/10/2010	<0.40	<1.0	<1.0	-		
MW-8	6/13/2010	<0.0003	<0.001	<0.0003	<0.006	415	
MW-8	6/13/2010	<0.30	<1.0	<0.30	-		
MW-8	9/29/2010	<0.001	<0.002	<0.002	<0.004	347	
MW-8	9/29/2010	<0.00030	<0.0010	<0.00030	-		
MW-8	12/8/2010	<0.001	<0.002	<0.002	<0.004	336	
MW-8	12/8/2010	<0.00030	<0.0010	<0.00030	-		
MW-8	3/30/2011	<0.001	<0.002	<0.002	<0.002	383	
MW-8	3/30/2011	<0.00030	<0.0010	<0.00030	<0.00060		
MW-8	6/11/2011	<0.001	<0.002	<0.002	<0.004	454	
MW-8	6/20/2011	<0.00025	<0.0010	<0.00050	<0.0020		
MW-8	9/16/2011	<0.001	<0.002	<0.002	<0.004	368	
MW-8	12/7/2011	<0.001	<0.002	<0.002	<0.004	348	
MW-8	3/11/2012	<0.001	<0.002	<0.002	<0.004	345	
MW-8	6/5/2012	<0.001	<0.002	<0.002	<0.003	316	
MW-8	9/7/2012	<0.001	<0.002	<0.002	<0.003	308	

Notes:

- 1.) The environmental cleanup standards for water that are applicable to this site are the New Mexico Water Quality Control Commission (NMWQCC) Groundwater
- 2.) Monitoring well location MW-5 was not installed due geologic refusal that was encountered during drilling activities.
- 3.) Data presented for all other well locations includes previous four sampling events, when available. Historic groundwater analytical results for these locations may be found in Appendix B.

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 LNAPL = Light Non-Aqueous Phase Liquid
mg/L = milligrams per liter.