3R – 448

Q3 + Q4 2011
GWMR

12 / 23 / 2011

December 23, 2011

Glenn von Gonten
Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

Re: Periodic Progress Report for 3rd and 4th Quarters 2011 for the Benson-Montin-Greer Highway 537 Llaves Pipeline 2008 Oil Release, Rio Arriba County, New Mexico

Dear Mr. von Gonten:

On behalf of Benson-Montin-Greer Drilling Corporation (BMG), Animas Environmental Services, LLC (AES) has prepared this Periodic Progress Report detailing remedial activities at the BMG Highway 537 Llaves Pipeline 2008 release location detailing remediation activities and groundwater monitoring and sampling between July and December 2011. Remediation activities were conducted in accordance with recommendations presented in the Corrective Action Plan (CAP) prepared by AES and submitted to the New Mexico Oil Conservation Division (NMOCD) on January 11, 2011. Groundwater monitoring and sampling was conducted in accordance with recommendations presented in the Site Investigation Report prepared by AES and submitted in June 2008.

The 2008 release originated on the Schmitz Ranch, on the south side of Highway 537, within the NW¼ NE¼ of Section 18, T25N, R3W (latitude and longitude recorded as N36° 24.214' and W107° 11.053') and flowed south and southwest through a small unnamed arroyo for a distance of approximately 920 linear feet. A topographic site location map is presented as Figure 1, and a general site plan is presented as Figure 2.

1.0 Release History

On December 31, 2007, a Western Refining truck driver discovered the Llaves pipeline leak and immediately contacted BMG. BMG personnel confirmed the release and shut down the Llaves pipeline pumps and block valve located about one mile upstream. BMG contracted with TNT Excavating to remove the oil that had pooled along the surface of the small arroyo. Approximately 40 barrels (bbls) of oil were recovered and placed in storage tanks at the BMG Hwy 537 Transfer Station. A total of 3,932 cubic yards of contaminated soils were excavated and transported to the TNT Landfarm facility for disposal.

On January 9, 2008, the Llaves pipeline was repaired. BMG notified the National Response Center of the spill on January 23, 2008, and the release was given identification number 860429.

AES conducted a site investigation during April and May 2008, which included the installation of nine groundwater monitoring wells (MW-1 through MW-9). Details of the investigation were presented in the AES Site Investigation Report submitted to NMOCD and dated June 23, 2008.

2.0 Groundwater Monitoring and Sampling - August and November 2011

AES personnel conducted groundwater monitoring and sampling at the project area on August 10 and November 21, 2011. Groundwater samples were laboratory analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) and total petroleum hydrocarbons (TPH) per EPA Methods 8021/8015 at Hall Environmental Analysis Laboratory (Hall), Albuquerque, New Mexico.

2.1 August 2011

2.1.1 Groundwater Measurements and Water Quality Data, August 2011

During the August 2011 sampling event, groundwater measurements were recorded for MW-1 through MW-4 and MW-6 through MW-8. A groundwater measurement was not recorded for MW-5 because the well was dry, and water quality measurements were not collected from MW-9 because the well contained non-aqueous phase liquid (NAPL or "free product"). Groundwater elevations were measured with a Keck water level (with accuracy to 0.01 foot) ranged from 7,049.13 feet above mean sea level (AMSL) in MW-2 to 7,050.89 feet AMSL in MW-7. Groundwater gradient was calculated to be 0.005 ft/ft in a southwest direction, which is consistent with historical site data.

Water quality measurements were made with an YSI Water Quality Meter in MW-8 prior to sample collection. Water quality measurements for MW-8 were recorded as 17.56°C temperature, 7.42 pH, 3.67 mg/L dissolved oxygen (DO), -124.4 mV oxidation reduction potential (ORP), and 1.717 mS/cm conductivity. Depth to groundwater measurements and water quality data are presented in Table 1. Groundwater elevation contours for August 2011 are presented on Figure 3, and Water Sample Collection Forms are included in Appendix A.

2.1.2 Non-Aqueous Phase Liquid (NAPL), August 2011

NAPL or "free product" was first observed in MW-9 during the January 2010 sampling event, with a measured thickness of 2.37 feet. Free product was once again observed in MW-9 during the August 2011 sampling event with a measured thickness of 2.22 feet. Note that remediation wells MPE-1 through MPE-7 were installed around MW-9 in order to remove free product.

2.1.3 Groundwater Analytical Results, August 2011

Groundwater samples were collected from MW-8 for laboratory analysis of BTEX and TPH. BTEX concentrations were reported below applicable New Mexico Water Quality Control Commission (WQCC) standards in MW-8. TPH concentrations for gasoline, diesel and motor oil range organics were also below laboratory detection limits in MW-8. Tabulated laboratory analytical results are included in Table 2, and laboratory analytical reports are presented in Appendix A.

2.2 November 2011

2.2.1 Groundwater Measurements and Water Quality Data, November 2011

During the November 2011 sampling event, groundwater measurements were recorded for MW-1 through MW-4 and MW-6 through MW-8. A groundwater measurement was not recorded for MW-5 because the well was dry, and water quality measurements were not collected from MW-9 because the well contained free product. Groundwater elevations were measured with a Keck water level accurate to 0.01 foot and ranged from 7,049.59feet above mean sea level (AMSL) in MW-1 to 7,050.88 feet AMSL in MW-7. Groundwater gradient was calculated to be 0.004 ft/ft in a southwest direction, which is consistent with historical site data.

Water quality measurements were made with an YSI Water Quality Meter in MW-8 prior to sample collection. Water quality measurements for MW-8 were recorded as 11.77°C temperature, 7.38 pH, 1.83 mg/L DO, 95.8 mV ORP, and 1.430 mS/cm conductivity. Depth to groundwater measurements and water quality data are presented in Table 1. Groundwater elevation contours for November 2011 are presented on Figure 4, and Water Sample Collection Forms are included in Appendix A.

2.2.2 Non-Aqueous Phase Liquid (NAPL), November 2011

NAPL or "free product" was first observed in MW-9 during the January 2010 sampling event, with a measured thickness of 2.37 feet. Free product has since been observed in MW-9 and was recorded in November with a measured thickness of 2.12 feet. Remediation wells MPE-1 through MPE-7 were installed around MW-9 in order to remove free product.

2.2.3 Groundwater Analytical Results, November 2011

Groundwater samples were collected from MW-8 on November 21, 2011, for laboratory analysis of BTEX and TPH. BTEX concentrations were reported below applicable New Mexico WQCC standards in MW-8. TPH concentrations for gasoline, diesel and motor oil range organics were also below laboratory detection limits in MW-8. Tabulated laboratory analytical results are included in Table 2, and laboratory analytical reports are presented in Appendix A.

3.0 Measurement of Groundwater and Free Product in MPE Wells

AES personnel measured depth to groundwater and measured free product thickness in the recently installed MPE wells on August 15, October 7, and November 21, 2011. MPE well data is included in Table 1, and free product thickness contours from November 2011 are presented on Figure 5.

4.0 MPE System Operation & Maintenance

The MPE system was operated intermittently since its startup on May 10, 2011. The system operated with approximately 45 percent run time during July, 23 percent run time during August, 87 percent during September, 2011, and was in operation for just a few days during October. The MPE unit was removed from the site in October 2011 for the winter season of 2011/2012.

4.1 MPE Operations

AES personnel conducted on-site inspections of the system and recorded performance data on a weekly basis. During these visits, AES personnel performed routine maintenance on the unit. Maintenance included cleaning pitot tubes, checking fluid levels, changing fluids as needed, checking and replacing filters, and inspecting the catox unit.

MPE Unit MPE Well Summary
2008 Highway 537 Pipeline Release, Rio Arriba County, New Mexico

DATE	***Remediation Wells Active***
July 1, 2011	MPE-1 and MPE-5
July 15, 2011	MPE-3 and MPE-4
July 19, 2011	MPE-2 and MPE-6, then MPE-1 and MPE-5
July 25, 2011	MPE-2 and MPE-6, then MPE-3 and MPE-4, then MPE-3 and MPE-6
July 28, 2011	MPE-2 and MPE-4
August 1, 2011	MPE-1 and MPE-5

DATE	***Remediation Wells Active***
August 9, 2011	MPE-3 and MPE-6
August 16, 2011	MPE-2 and MPE-4
August 22, 2011	MPE-1 and MPE-5, then MPE-1 and MPE-3
September 1, 2011	MPE-5 and MPE-6
September 6, 2011	MPE-2 and MPE-4
September 12, 2011	MPE-1 and MPE-3
September 20, 2011	MPE-5 and MPE-6
September 26, 2011	MPE-2 and MPE-4
October 3, 2011	MPE-1 and MPE-3

A 210-bbl capacity tank was installed on-site to collect and store recovered water and product during operation of the MPE remediation unit. As of September 30, 2011, an estimated 45,750 gallons of water and free product have been recovered since the unit was installed on May 10, 2011. Of this total volume, approximately 3,500 gallons were free product. The produced water and product were drained from the on-site tank into a tank truck and transported to the TNT Landfarm in Lindrith, New Mexico, for disposal.

Based on system operations from June 1 through October 03, 2011, the following remediation summary is presented:

MPE Remediation System Summary
2008 Highway 537 Pipeline Release, Rio Arriba County, New Mexico

Parameters	***Reporting Period (6/01/2011 – 10/03/2011)***
Estimated Petroleum Hydrocarbons Removed (lbs) through free product recovery	24,500
Estimated Petroleum Hydrocarbons Removed (gal) through free product recovery	3,500
Estimated Petroleum Hydrocarbons Removed (lbs) through catox unit	1,750
Equivalent Gallons Oil Removed (gal) through catox unit	2250
Total Cubic Feet Processed (ACF)	4,006,653

4.2 Air Emissions Sampling

Influent and effluent total volatile hydrocarbon samples were collected from the pre-engine and post-cat sample ports, respectively, on August 31, 2011. Air samples were collected in

Tedlar bags and subsequently submitted to Hall for analysis of BTEX per EPA Method 8021B and EPA Method 8015B for TPH gasoline range organics (GRO).

Analytical results for the pre-engine sample were reported as:

- Benzene – 8.33 parts per million by volume (ppmv);
- Toluene – 21.419 ppmv;
- Ethylbenzene – 2.75 ppmv;
- Xylenes – 13.9 ppmv; and
- TPH-GRO – 1,656 ppmv.

The analytical results for the post-cat sample were:

- Benzene – 0.034 ppmv;
- Toluene – 0.185 ppmv;
- Ethylbenzene – 0.074 ppmv;
- Xylenes – 0.486 ppmv; and
- TPH-GRO – 24 ppmv.

The analytical results indicate that a 99.9 percent reduction in contaminant emissions was achieved through combustion and post-combustion catalytic oxidation. Air sample laboratory analytical results have been summarized in Table 3, and the laboratory analytical report is included in Appendix A.

5.0 Conclusions and Recommendations

AES conducted groundwater monitoring and sampling events on August 15 and November 21, 2011. MW-8, the only sampled well during each event, remained below the applicable WQCC standards for contaminants of concern.

Free product was observed in MW-9 in August 2011 (2.22 feet) and November 2011 (2.12 feet). The MPE system operated between May and October 2011, and the remediation unit was removed from the site in October 2011 for the winter season. An estimated 26,250 lbs of petroleum hydrocarbons have been removed via the MPE system. MPE operations will resume in later winter/early spring 2012.

Based on recent laboratory analytical results, AES recommends continued quarterly monitoring and sampling of MW-8 and MW-9, and the next sampling event is tentatively scheduled for February 2012. Remediation wells MPE-1 through MPE-6 will also be measured at this time.

If you have any questions regarding this report or site conditions, please do not hesitate to contact me or Ross Kennemer at (505) 564-2281.

Sincerely,

Elizabeth McNally, P.E.

Tables

Table 1. Summary of Groundwater Measurement Data
Table 2. Summary of Groundwater Laboratory Analytical Results
Table 3. Summary of Air Laboratory Analytical Results

Figures

Figure 1. Topographic Site Location Map
Figure 2. General Site Plan
Figure 3. Groundwater Elevation Contours, August 2011
Figure 4. Groundwater Elevation Contours, November 2011
Figure 5. Free Product Thickness Contours, November 2011

Appendices

Appendix A. Water Sample Collection Forms
Laboratory Groundwater and Air Analytical Results

cc: Mike Dimond
Benson-Montin-Greer Drilling Corp.
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Brandon Powell
New Mexico Oil Conservation Division
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Private Landowner
C/O Mike Dimond
Benson-Montin-Greer Drilling Corp.

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TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENT AND WATER QUALITY DATA
BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE
Rio Arriba County, New Mexico

Well ID	Date Sampled	Surveyed TOC (ft)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	GW Elev. (ft)	pH	Conductivity (mS)	DO (mg/L)	Temperature (C)	ORP (mV)
MW-1	05-May-08	7082.57		31.45		7051.12	7.62	4.051	1.48	15.57	141.9
MW-1	24-Sep-08	7082.57		31.91		7050.66	6.80	3.588	2.97	15.32	18.1
MW-1	02-Jan-09	7082.57		31.90		7050.67	NM				
MW-1	07-Apr-09	7082.57		31.92		7050.65	7.31	4.536	3.19	13.86	16.8
MW-1	07-Jul-09	7082.57		31.95		7050.62	7.31	3.161	1.48	16.43	52.6
MW-1	12-Oct-09	7082.57		32.20		7050.37	7.43	2.553	5.91	13.97	293.3
MW-1	12-Jan-10	7082.57		32.41		7050.16	7.72	4.035	3.35	11.12	-11.2
MW-1	13-Oct-10	7082.57		32.62		7049.95	7.38	3.596	0.50	14.60	-75.8
MW-1	20-Jan-11	7082.57		32.64		7049.93	7.48	3.726	1.50	11.89	44.6
MW-1	09-May-11	7082.57		32.27		7050.30	7.61	3.543	1.69	13.38	-5.4
MW-1	15-Aug-11	7082.57		33.07		7049.50	NM	NM	NM	NM	NM
MW-1	21-Nov-11	7082.57		32.98		7049.59	NM	NM	NM	NM	NM
MW-2	05-May-08	7079.94		29.01		7050.93	7.59	2.276	2.21	16.43	90.8
MW-2	24-Sep-08	7079.94		29.61		7050.33	6.93	2.073	2.75	14.93	36.0
MW-2	02-Jan-09	7079.94		29.52		7050.42	NM				
MW-2	07-Apr-09	7079.94		29.50		7050.44	6.93	2.560	1.93	13.38	21.5
MW-2	07-Jul-09	7079.94		29.65		7050.29	7.22	2.067	1.07	15.28	45.9
MW-2	12-Oct-09	7079.94		29.93		7050.01	7.37	1.665	5.63	14.10	178.1
MW-2	12-Jan-10	7079.94		30.01		7049.93	7.51	2.297	2.82	10.88	-2.9
MW-2	13-Oct-10	7079.94				7079.94	NM - Well Filled with Roots				
MW-2	20-Jan-11	7079.94		30.33		7049.61	NM - Well Filled with Roots				
MW-2	09-May-11	7079.94		29.99		7049.95	7.62	2.134	2.54	13.64	-34.1
MW-2	15-Aug-11	7079.94		30.81		7049.13	NM	NM	NM	NM	NM
MW-2	21-Nov-11	7079.94		29.79		7050.15	NM	NM	NM	NM	NM
MW-3	05-May-08	7081.10		29.49		7051.61	7.79	4.083	2.42	15.91	75.7

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MW-3	24-Sep-08	7081.10		30.07		7051.03	6.85	2.778	2.80	14.44	18.5
MW-3	02-Jan-09	7081.10		30.01		7051.09	NM				
MW-3	07-Apr-09	7081.10		30.02		7051.08	6.86	4.596	2.08	12.19	24.7
MW-3	07-Jul-09	7081.10		30.16		7050.94	NM - FILLED WITH SEDIMENT				
MW-3	12-Oct-09	7081.10		30.41		7050.69	7.23	2.316	2.24	13.88	8.3
MW-3	12-Jan-10	7081.10		30.50		7050.60	7.35	2.985	2.87	11.75	-27.2
MW-3	13-Oct-10	7081.10		30.84		7050.26	7.51	3.973	1.71	13.71	-49.8
MW-3	20-Jan-11	7081.10		30.85		7050.25	7.43	3.528	3.30	10.48	53.4
MW-3	10-May-11	7081.10		30.54		7050.56	7.55	3.270	2.06	13.47	-69.3
MW-3	15-Aug-11	7081.10		31.23		7049.87	NM	NM	NM	NM	NM
MW-3	21-Nov-11	7081.10		31.19		7049.91	NM	NM	NM	NM	NM
MW-4	05-May-08	7084.79		32.74		7052.05	7.70	2.699	2.36	14.62	-37.5
MW-4	24-Sep-08	7084.79		33.21		7051.58	6.98	2.163	3.04	13.70	42.9
MW-4	02-Jan-09	7084.79		33.29		7051.50	NM				
MW-4	07-Apr-09	7084.79		33.27		7051.52	6.91	2.779	1.35	11.90	21.1
MW-4	07-Jul-09	7084.79		33.32		7051.47	7.20	2.124	0.80	17.17	-41.5
MW-4	12-Oct-09	7084.79		33.56		7051.23	7.29	1.792	2.00	13.70	43.7
MW-4	12-Jan-10	7084.79		33.68		7051.11	7.36	2.374	2.03	11.53	-26.7
MW-4	13-Oct-10	7084.79		33.93		7050.86	7.42	2.233	1.18	14.11	-56.8
MW-4	20-Jan-11	7084.79		34.01		7050.78	7.55	2.292	2.14	11.57	126.2
MW-4	09-May-11	7084.79		33.79		7051.00	7.65	2.234	1.85	13.05	-20.0
MW-4	15-Aug-11	7084.79		34.37		7050.42	NM	NM	NM	NM	NM
MW-4	21-Nov-11	7084.79		34.33		7050.46	NM	NM	NM	NM	NM
MW-5	05-May-08	7087.98				NA	NM - WELL DRY				
MW-5	24-Sep-08	7087.98				NA	NM - WELL DRY				

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MW-5	02-Jan-09	7087.98				NA	NM - WELL DRY				
MW-5	07-Apr-09	7087.98				NA	NM - WELL DRY				
MW-5	07-Jul-09	7087.98				NA	NM - WELL DRY				
MW-5	12-Oct-09	7087.98				NA	NM - WELL DRY				
MW-5	12-Jan-10	7087.98				NA	NM - WELL DRY				
MW-5	13-Oct-10	7087.98				NA	NM - WELL DRY				
MW-5	20-Jan-11	7087.98				NA	NM - WELL DRY				
MW-5	09-May-11	7087.98				NA	NM - WELL DRY				
MW-5	15-Aug-11	7087.98				NA	NM - WELL DRY				
MW-5	21-Nov-11	7087.98				NA	NM - WELL DRY				
MW-6	05-May-08	7088.43		36.03		7052.40	7.73	1.764	2.43	13.95	87.3
MW-6	24-Sep-08	7088.43		36.44		7051.99	7.00	1.464	3.95	14.19	50.3
MW-6	02-Jan-09	7088.43		36.50		7051.93	NM				
MW-6	07-Apr-09	7088.43		36.46		7051.97	7.00	1.854	2.21	11.98	22.2
MW-6	07-Jul-09	7088.43		36.67		7051.76	7.27	1.557	1.35	17.51	57.8
MW-6	12-Oct-09	7088.43		36.78		7051.65	7.43	1.297	2.06	13.11	66.0
MW-6	12-Jan-10	7088.43		36.92		7051.51	7.44	1.615	2.24	11.82	-19.2
MW-6	13-Oct-10	7088.43		37.19		7051.24	7.54	1.502	1.68	14.44	57.9
MW-6	20-Jan-11	7088.43		37.18		7051.25	7.85	1.539	1.83	11.52	174.9
MW-6	09-May-11	7088.43		37.05		7051.38	7.80	1.526	3.31	13.01	31.9
MW-6	15-Aug-11	7088.43		37.59		7050.84	NM	NM	NM	NM	NM
MW-6	21-Nov-11	7088.43		37.65		7050.78	NM	NM	NM	NM	NM
MW-7	05-May-08	7090.15		37.71		7052.44	NM - LOW YIELD				
MW-7	24-Sep-08	7090.15		38.16		7051.99	7.08	1.572	6.11	13.99	36.3
MW-7	02-Jan-09	7090.15		38.21		7051.94	NM				

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Well ID	Date Sampled	Surveyed TOC (ft)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	GW Elev. (ft)	pH	Conductivity (mS)	DO (mg/L)	Temperature (C)	ORP (mV)
MW-7	07-Apr-09	7090.15		38.16		7051.99	6.87	1.955	1.46	12.80	22.0
MW-7	07-Jul-09	7090.15		38.29		7051.86	7.06	1.599	2.27	16.48	92.6
MW-7	12-Oct-09	7090.15		38.49		7051.66	7.18	1.365	4.64	13.48	77.0
MW-7	12-Jan-10	7090.15		38.64		7051.51	7.22	1.679	1.97	11.02	-6.5
MW-7	13-Oct-10	7090.15		38.89		7051.26	7.57	2.227	1.68	16.25	66.3
MW-7	20-Jan-11	7090.15		38.92		7051.23	8.20	2.569	2.63	10.71	193.4
MW-7	09-May-11	7090.15		38.72		7051.43	7.67	2.066	2.19	14.93	86.8
MW-7	15-Aug-11	7090.15		39.26		7050.89	NM	NM	NM	NM	NM
MW-7	21-Nov-11	7090.15		39.27		7050.88	NM	NM	NM	NM	NM
MW-8	05-May-08	7085.20		33.71		7051.49	NM - LOW YIELD				
MW-8	24-Sep-08	7085.20		34.20		7051.00	6.88	1.672	3.06	15.24	-9.6
MW-8	05-Jan-09	7085.20		34.21		7050.99	NM				
MW-8	07-Apr-09	7085.20		34.28		7050.92	6.98	2.061	1.81	13.30	-108.8
MW-8	07-Jul-09	7085.20		34.31		7050.89	7.11	1.811	1.17	16.26	-74.0
MW-8	12-Oct-09	7085.20		34.54		7050.66	7.00	1.416	1.48	13.27	-102.1
MW-8	12-Jan-10	7085.20		34.69		7050.51	7.02	1.699	1.73	11.13	-159.8
MW-8	13-Oct-10	7085.20		34.92		7050.28	7.32	1.786	0.77	14.65	-126.5
MW-8	20-Jan-11	7085.20		34.99		7050.21	7.40	1.776	1.32	11.42	-71.1
MW-8	20-Jan-11	7085.20		34.99		7050.21	7.40	1.776	1.32	11.42	-71.1
MW-8	10-May-11	7085.20		34.67		7050.53	7.44	1.698	1.06	12.74	-52.5
MW-8	15-Aug-11	7085.20		35.33		7049.87	7.42	1.717	3.67	17.56	-124.4
MW-8	21-Nov-11	7085.20		35.25		7049.95	7.38	1.430	1.83	11.77	95.8
MW-9	05-May-08	7083.64		31.81		7051.83	7.85	1.955	2.59	15.01	-37.9
MW-9	24-Sep-08	7083.64		32.26		7051.38	7.08	1.515	2.84	14.03	43.3
MW-9	05-Jan-09	7083.64				7083.64	NM - WELL DRY				

TABLE 1

SUMMARY OF GROUNDWATER MEASUREMENT AND WATER QUALITY DATA

BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE

Rio Arriba County, New Mexico

Well ID	Date Sampled	Surveyed TOC (ft)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	GW Elev. (ft)	pH	Conductivity (mS)	DO (mg/L)	Temperature (C)	ORP (mV)
MW-9	07-Apr-09	7083.64		32.34		7051.30	6.89	1.876	1.11	12.85	7.0
MW-9	07-Jul-09	7083.64		32.41		7051.23	7.19	1.672	1.14	16.77	-9.7
MW-9	12-Oct-09	7083.64		32.63		7051.01	7.22	1.352	2.10	13.78	72.9
MW-9	12-Jan-10	7083.64	32.43	34.80	2.37	7050.68	NM - 2.37 feet of Crude oil or Free Product				
MW-9	13-Oct-10	7083.64	32.63	35.29	2.66	7050.42	NM - 2.66 feet of Crude oil or Free Product				
MW-9	20-Jan-11	7083.64	32.71	35.21	2.50	7050.38	NM - 2.50 feet of Crude oil or Free Product				
MW-9	09-May-11	7083.64	32.43	34.96	2.53	7050.65	NM - 2.53 feet of Crude oil or Free Product				
MW-9	15-Aug-11	7083.64	33.11	35.33	2.22	7050.04	NM - 2.22 feet of Crude oil or Free Product				
MW-9	07-Oct-11	7083.64	33.14	35.23	2.09	7050.04	NM - 2.09 feet of Crude oil or Free Product				
MW-9	11-211	7083.64	33.25	35.37	2.12	7049.92	NM - 2.09 feet of Crude oil or Free Product				
MPE-1	09-May-11	TBS	33.87	36.87	3.00	NA	NM - 3.00 feet of Crude oil or Free Product				
MPE-1	15-Aug-11	TBS	34.68	36.47	1.79	NA	NM - 1.79 feet of Crude oil or Free Product				
MPE-1	07-Oct-11	TBS	34.87	35.81	0.94	NA	NM - 94 feet of Crude oil or Free Product				
MPE-1	21-Nov-11	TBS	34.60	36.85	2.25	NA	NM - 94 feet of Crude oil or Free Product				
MPE-2	09-May-11	TBS	32.50	33.73	1.23	NA	NM - 1.23 feet of Crude oil or Free Product				
MPE-2	15-Aug-11	TBS	33.28	33.69	0.41	NA	NM - 0.41 feet of Crude oil or Free Product				
MPE-2	07-Oct-11	TBS	33.33	33.34	0.01	NA	NM - 0.01 feet of Crude oil or Free Product				
MPE-2	21-Nov-11	TBS	33.28	33.41	0.13	NA	NM - 0.01 feet of Crude oil or Free Product				
MPE-3	09-May-11	TBS	32.43	34.65	2.22	NA	NM - 2.22 feet of Crude oil or Free Product				
MPE-3	15-Aug-11	TBS	33.25	34.51	1.26	NA	NM - 1.26 feet of Crude oil or Free Product				
MPE-3	07-Oct-11	TBS	33.40	33.74	0.34	NA	NM - 0.34 feet of Crude oil or Free Product				
MPE-3	21-Nov-11	TBS	33.28	34.13	0.85	NA	NM - 0.34 feet of Crude oil or Free Product				
MPE-4	09-May-11	TBS	33.45	35.74	2.29	NA	NM - 2.29 feet of Crude oil or Free Product				

TABLE 1

SUMMARY OF GROUNDWATER MEASUREMENT AND WATER QUALITY DATA

BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE

Rio Arriba County, New Mexico

Well ID	Date Sampled	Surveyed TOC (ft)	Depth to Product (ft)	Depth to Water (ft)	NAPL Thickness (ft)	GW Elev. (ft)	pH	Conductivity (mS)	DO (mg/L)	Temperature (C)	ORP (mV)
MPE-4	15-Aug-11	TBS	34.26	35.85	1.59	NA	NM - 1.59 feet of Crude oil or Free Product				
MPE-4	07-Oct-11	TBS	34.46	34.67	0.21	NA	NM - 0.21 feet of Crude oil or Free Product				
MPE-4	21-Nov-11	TBS	34.20	35.92	1.72	NA	NM - 0.21 feet of Crude oil or Free Product				
MPE-5	09-May-11	TBS	34.93	37.70	2.77	NA	NM - 2.77 feet of Crude oil or Free Product				
MPE-5	15-Aug-11	TBS	35.68	37.80	2.12	NA	NM - 2.12 feet of Crude oil or Free Product				
MPE-5	07-Oct-11	TBS	35.69	37.82	2.13	NA	NM - 2.13 feet of Crude oil or Free Product				
MPE-5	21-Nov-11	TBS	35.58	38.16	2.58	NA	NM - 2.13 feet of Crude oil or Free Product				
MPE-6	09-May-11	TBS		33.05		NA	NM - DUE TO HIGH CONTAMINATION OF CRUDE OIL				
MPE-6	15-Aug-11	TBS	33.72	33.81	0.09	NA	NM - 0.09 feet of Crude Oil or Free Product				
MPE-6	07-Oct-11	TBS	33.67	34.05	0.38	NA	NM - 0.38 feet of Crude Oil or Free Product				
MPE-6	21-Nov-11	TBS	33.51	34.64	1.13	NA	NM - 0.38 feet of Crude Oil or Free Product				
MPE-7	09-May-11	TBS	30.87	30.88	0.01	NA	NM - 0.01 feet of Crude oil or Free Product				
MPE-7	15-Aug-11	TBS		31.59		NA	NM	NM	NM	NM	NM
MPE-7	07-Oct-11	TBS		31.60		NA	NM	NM	NM	NM	NM
MPE-7	21-Nov-11	TBS	31.54	31.55	0.01	NA	NM	NM	NM	NM	NM

NOTE: NS = NOT SAMPLED
NM = NOT MEASURED
NA = NOT AVAILABLE
TBS = TO BE SURVEYED

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE
Rio Arriba County, New Mexico

Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	GRO	DRO	MRO
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Analytical Method		8021B	8021B	8021B	8021B	8015B	8015B	8015B
New Mexico WQCC		*10*	*750*	*750*	*620*	*NE*	*NE*	*NE*
MW-1	05-May-08	<1.0	<1.0	<1.0	<2.0	0.092	<1.0	<5.0
MW-1	24-Sep-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	02-Jan-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	07-Apr-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	12-Oct-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	12-Jan-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	13-Oct-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	20-Jan-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-1	10-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	05-May-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	24-Sep-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	02-Jan-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	07-Apr-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	12-Oct-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	12-Jan-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-2	13-Oct-10	NS - Well filled with Roots						
MW-2	20-Jan-11	NS - Well filled with Roots						
MW-2	10-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	05-May-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	24-Sep-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	02-Jan-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	07-Apr-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	07-Jul-09	NS - Well filled with sediment						
MW-3	12-Oct-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	12-Jan-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	13-Oct-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	20-Jan-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-3	10-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	05-May-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	24-Sep-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	02-Jan-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	07-Apr-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE
Rio Arriba County, New Mexico

Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	GRO	DRO	MRO
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Analytical Method		8021B	8021B	8021B	8021B	8015B	8015B	8015B
New Mexico WQCC		*10*	*750*	*750*	*620*	*NE*	*NE*	*NE*
MW-4	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	12-Oct-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	12-Jan-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	13-Oct-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	20-Jan-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-4	09-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-5	05-May-08	NS - Well Dry						
MW-5	24-Sep-08	NS - Well Dry						
MW-5	02-Jan-09	NS - Well Dry						
MW-5	07-Apr-09	NS - Well Dry						
MW-5	07-Jul-09	NS - Well Dry						
MW-5	12-Oct-09	NS - Well Dry						
MW-5	12-Jan-10	NS - Well Dry						
MW-5	13-Oct-10	NS - Well Dry						
MW-5	20-Jan-11	NS - Well Dry						
MW-5	09-May-11	NS - Well Dry						
MW-6	05-May-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	24-Sep-08	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	02-Jan-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	07-Apr-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	12-Oct-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	12-Jan-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	13-Oct-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	20-Jan-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-6	09-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	05-May-08	2.8	<1.0	<1.0	<2.0	0.40	<1.0	<5.0
MW-7	24-Sep-08	<1.0	<1.0	<1.0	<2.0	0.069	<1.0	<5.0
MW-7	02-Jan-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	07-Apr-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	12-Oct-09	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	12-Jan-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	13-Oct-10	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE
Rio Arriba County, New Mexico

Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	GRO	DRO	MRO
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)
Analytical Method		**8021B**	**8021B**	**8021B**	**8021B**	**8015B**	**8015B**	**8015B**
New Mexico WQCC		***10***	***750***	***750***	***620***	***NE***	***NE***	***NE***
MW-7	20-Jan-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-7	09-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-8	05-May-08	**26**	10	<1.0	<2.0	1.10	<1.0	<5.0
MW-8	24-Sep-08	**65**	26	<1.0	<2.0	0.90	<1.0	<5.0
MW-8	05-Jan-09	**45**	25	<1.0	2.2	1.0	<1.0	<5.0
MW-8	07-Apr-09	**25**	20	<1.0	2.9	0.89	<1.0	<5.0
MW-8	07-Jul-09	7.5	4.5	<1.0	<2.0	0.21	<1.0	<5.0
MW-8	12-Oct-09	**15**	11	<1.0	<2.0	0.52	<1.0	<5.0
MW-8	12-Jan-10	<1.0	<1.0	<1.0	<2.0	0.088	<1.0	<5.0
MW-8	13-Oct-10	**12**	<1.0	1.7	16	0.25	<1.0	<5.0
MW-8	20-Jan-11	**35**	<1.0	6.5	6.3	0.16	<1.0	<5.0
MW-8	10-May-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
MW-8	15-Aug-11	<2.0	<2.0	<2.0	<4.0	<0.10	<1.0	<5.0
MW-9	05-May-08	6.2	7.5	<1.0	2.3	0.90	<1.0	<5.0
MW-9	24-Sep-08	**17**	12	<1.0	<2.0	0.32	<1.0	<5.0
MW-9	05-Jan-09	NS - Well Dry						
MW-9	07-Apr-09	**12**	6.2	<1.0	<2.0	0.32	<1.0	<5.0
MW-9	07-Jul-09	7.0	5.3	<1.0	<2.0	0.28	<1.0	<5.0
MW-9	12-Oct-09	**26**	2.0	<1.0	<2.0	0.31	<1.0	<5.0
MW-9	12-Jan-10	NS - 2.37 FEET OF CRUDE OIL						
MW-9	13-Oct-10	NS - 2.66 FEET OF CRUDE OIL						
MW-9	20-Jan-11	NS - 2.50 FEET OF CRUDE OIL						
MW-9	09-May-11	NS - 2.53 FEET OF CRUDE OIL						
MW-9	15-Aug-11	NS - 2.22 FEET OF CRUDE OIL						

NOTE: NS = Not Sampled
GRO = Gasoline Range Organics
DRO = Diesel Range Organics
MRO = Motor Oil Range Organics

TABLE 3
SUMMARY OF AIR LABORATORY ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2008 OIL RELEASE
Rio Arriba County, New Mexico

Sample ID	*Sample Date*	*Lab Analytical Method*	*Benzene (ppmv)*	*Toluene (ppmv)*	*Ethyl-benzene (ppmv)*	*Xylene (ppmv)*	*TPH GRO (ppmv)*
Engine #1 Pre-Engine†	11-May-11	8021/8015	19.24	29.208	2.75	13.9	1,752
Engine #1 Pre-Engine†	31-Aug-11	8021/8015	8.33	21.419	2.75	13.9	1,656
Engine #1 Post-Cat†	11-May-11	8021/8015	0.373	1.801	0.486	3.168	60
Engine #1 Post-Cat†	31-Aug-11	8021/8015	0.034	0.185	0.074	0.486	24
Percent Contaminant Reduction by Catox (%) May 2011			**99.981**	**99.938**	**99.823**	**99.772**	**99.966**
Percent Contaminant Reduction by Catox (%) August 2011			**99.996**	**99.991**	**99.973**	**99.965**	**99.986**

Notes:

< Analyte not detected above listed method limit

ppmv Parts per million (by volume)

† These results were reported in µg/L, they were converted to ppmv using the following formulas

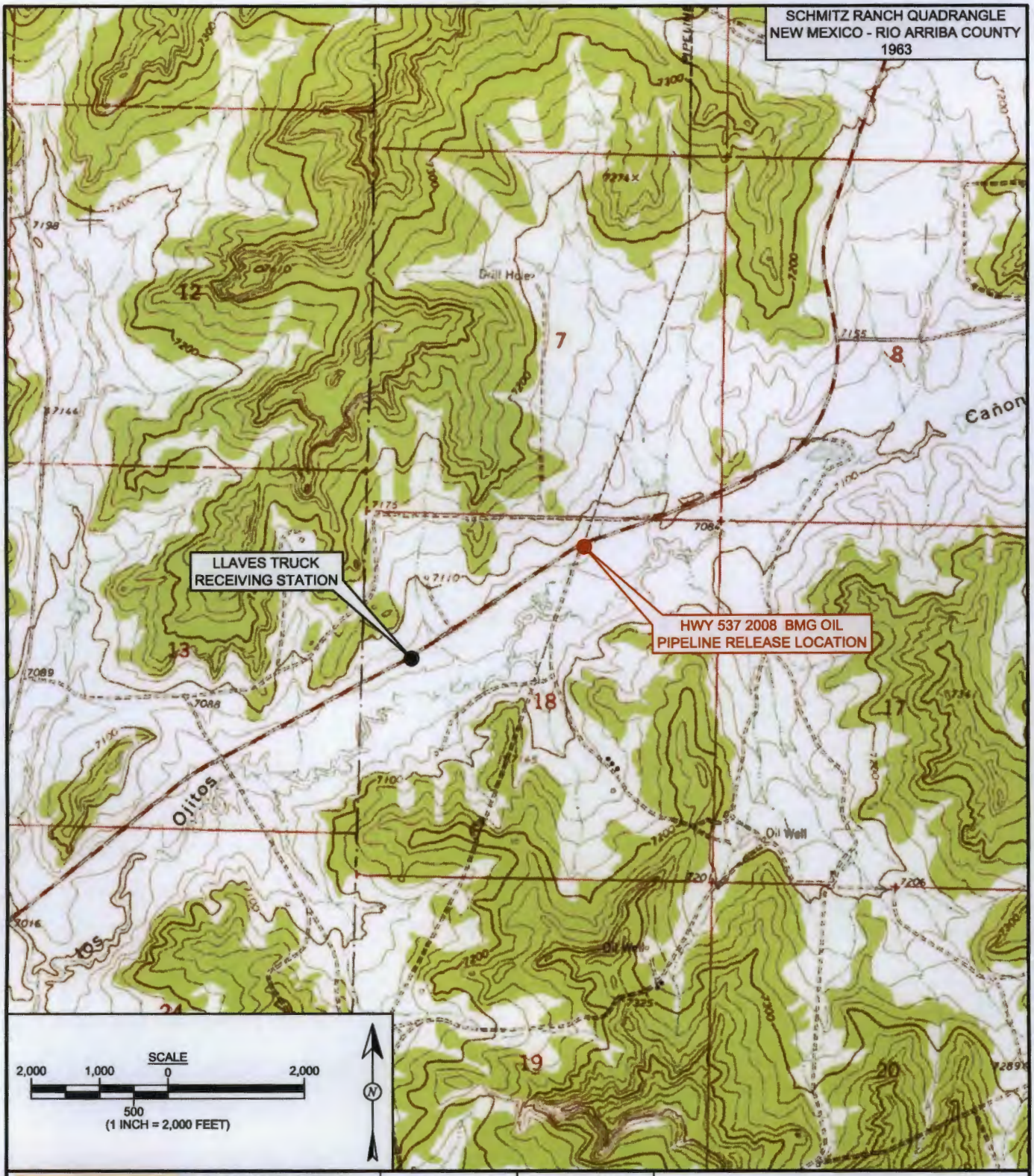
Benzene ppmv = µg/L x 0.2871

Toluene ppmv = µg/L x 0.2434

Ethylbenzene ppmv = µg/L x 0.2112

Xylenes ppmv = µg/L x 0.2112

GRO ppmv = µg/L x 0.24 **GRO is an est.



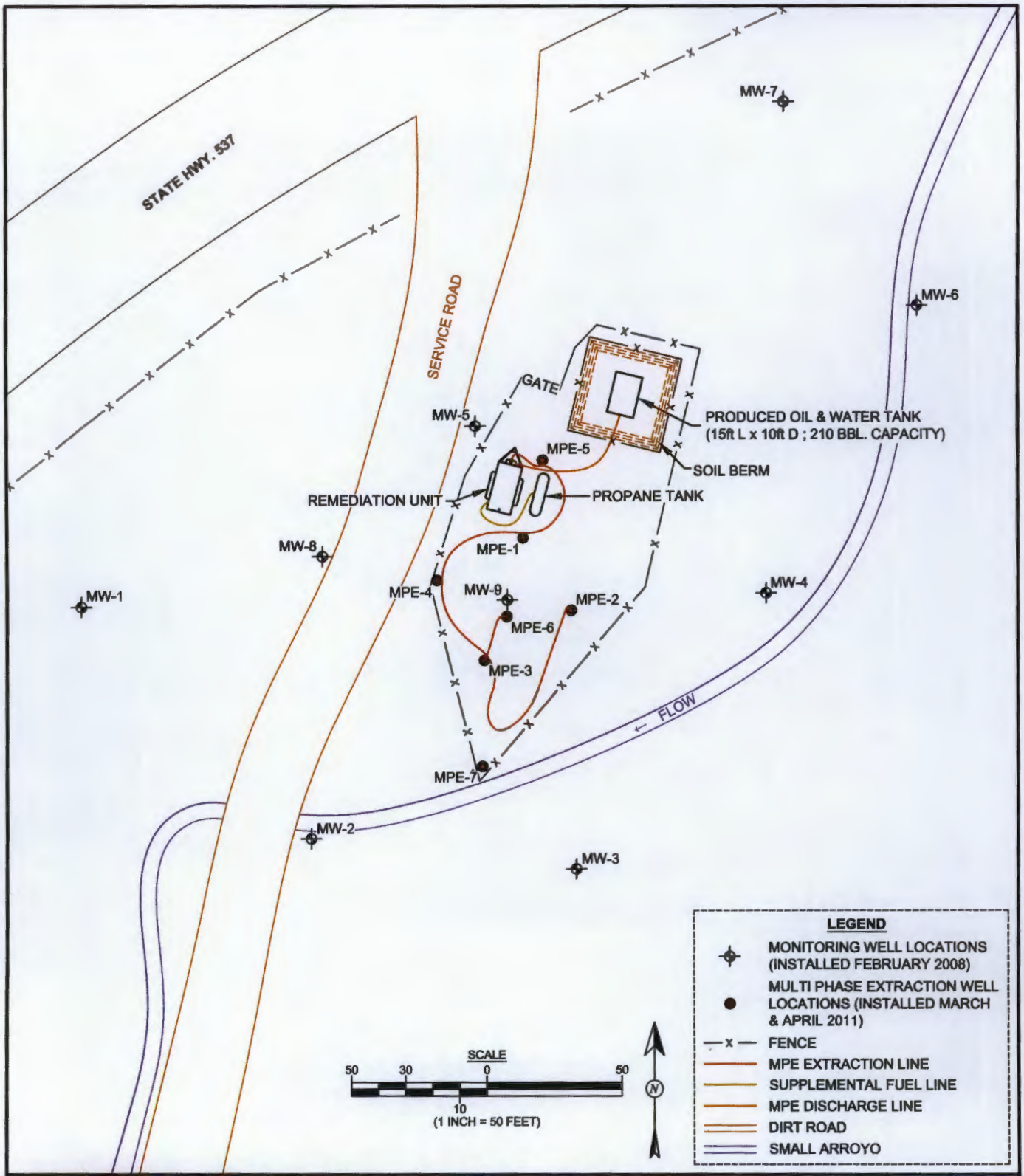
Animas Environmental Services, LLC

DRAWN BY: N. Willis	DATE DRAWN: April 4, 2011
REVISIONS BY: C. Lameman	DATE REVISED: December 13, 2011
CHECKED BY: E. McNally	DATE CHECKED: December 23, 2011
APPROVED BY: E. McNally	DATE APPROVED: December 23, 2011

FIGURE 1

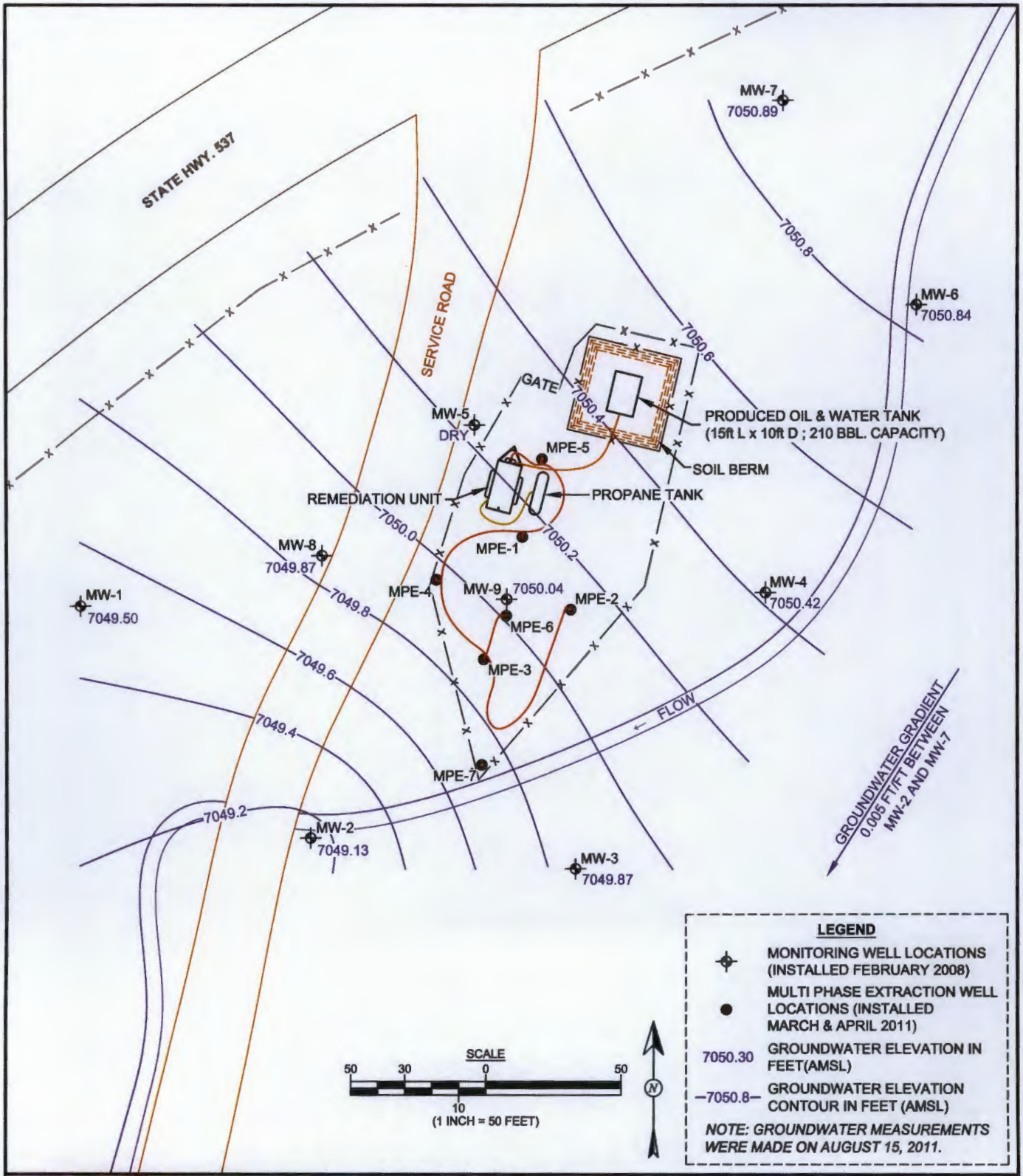
TOPOGRAPHIC SITE LOCATION MAP

BMG HIGHWAY 537
LLAVES 2008 PIPELINE OIL RELEASE
NW¼, NE¼, SEC. 18, T25N, R3W
SCHMITZ RANCH
RIO ARRIBA COUNTY, NEW MEXICO
N 36°24.214', W 107°11.053'



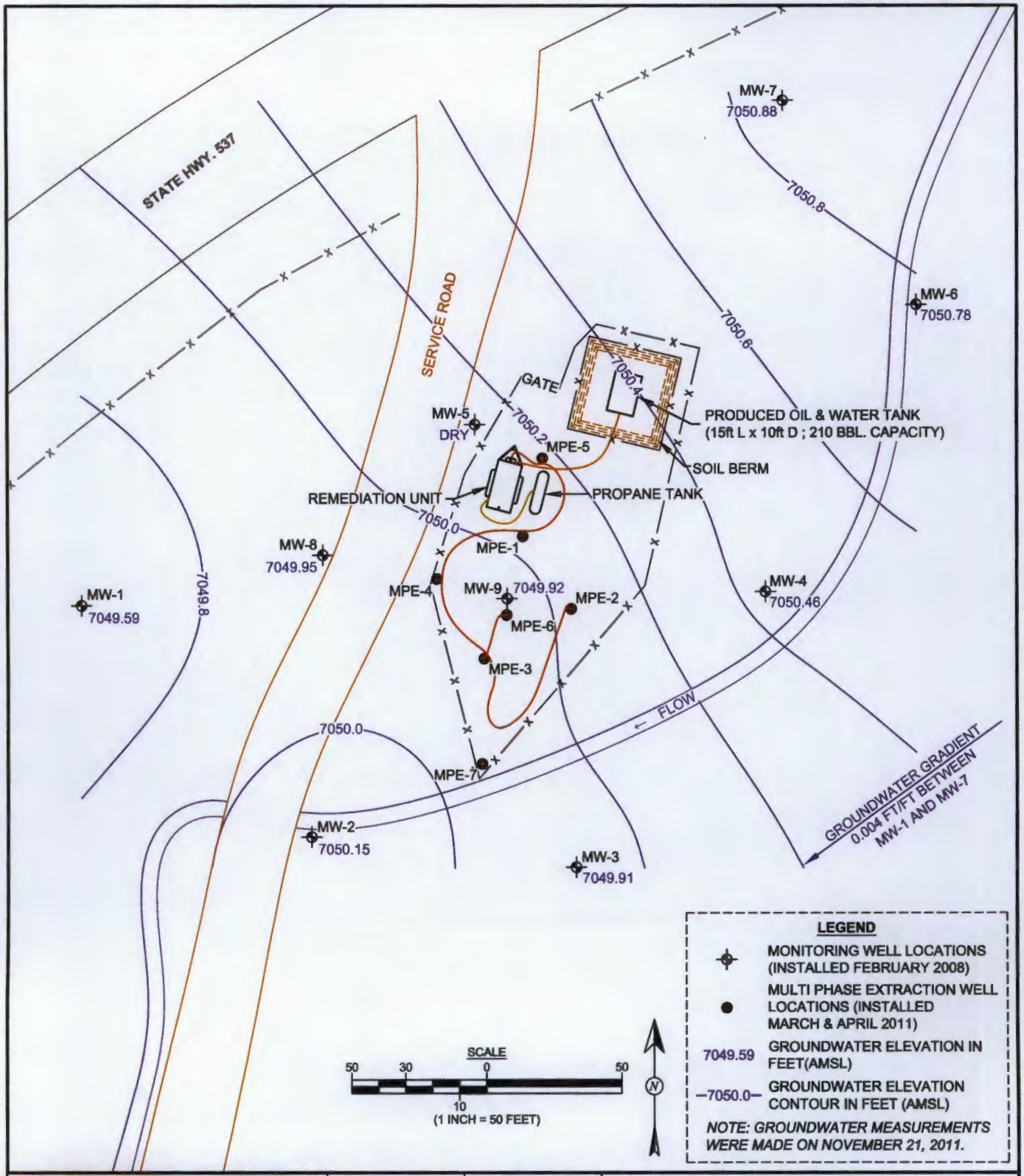
Animas Environmental Services, LLC

DRAWN BY: N. Willis	**DATE DRAWN:** April 4, 2011	**FIGURE 2**
REVISIONS BY: C. Lameman	**DATE REVISED:** December 13, 2011	**GENERAL SITE PLAN**
CHECKED BY: E. McNally	**DATE CHECKED:** December 23, 2011	BMG HIGHWAY 537 LLAVES 2008 PIPELINE OIL RELEASE NW¼, NE¼, SEC. 18, T25N, R3W SCHMITZ RANCH RIO ARRIBA COUNTY, NEW MEXICO N 36°24.214', W 107°11.053'
APPROVED BY: E. McNally	**DATE APPROVED:** December 23, 2011	



Animas Environmental Services, LLC

DRAWN BY: N. Willis	**DATE DRAWN:** April 4, 2011	**FIGURE 3**
REVISIONS BY: C. Lameman	**DATE REVISED:** August 17, 2011	**GROUNDWATER ELEVATION CONTOURS, AUGUST 2011**
CHECKED BY: E. McNally	**DATE CHECKED:** December 23, 2011	BMG HIGHWAY 537
APPROVED BY: E. McNally	**DATE APPROVED:** December 23, 2011	LLAVES 2008 PIPELINE OIL RELEASE NW¼, NE¼, SEC. 18, T25N, R3W SCHMITZ RANCH, RIO ARRIBA COUNTY, NEW MEXICO N 36°24.214', W 107°11.053'



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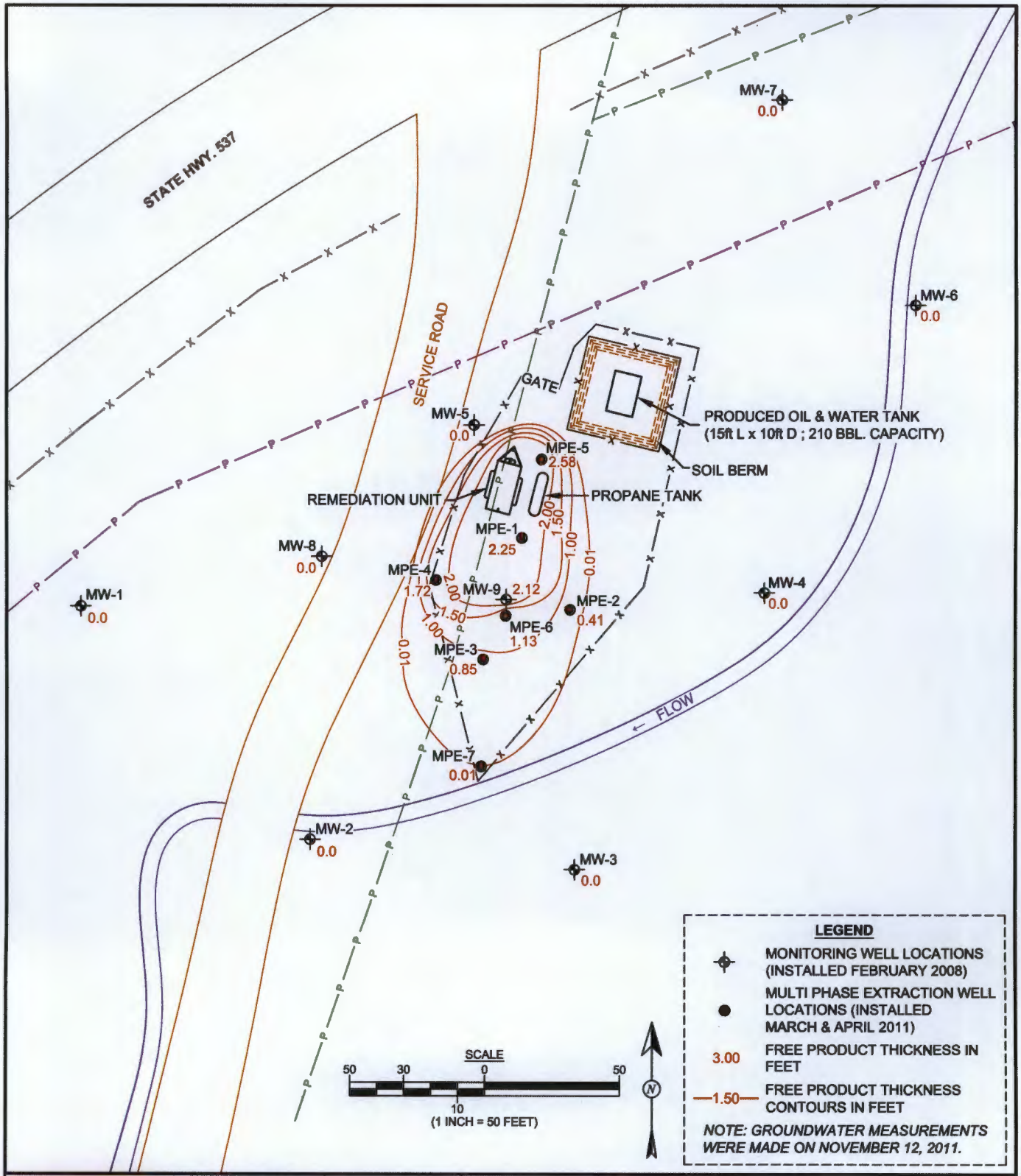
DRAWN BY: N. Willis	**DATE DRAWN:** April 4, 2011	**FIGURE 4**
REVISIONS BY: C. Lameman	**DATE REVISED:** December 13, 2011	**GROUNDWATER ELEVATION CONTOURS, NOVEMBER 2011**
CHECKED BY: E. McNally	**DATE CHECKED:** December 23, 2011	BMG HIGHWAY 537
APPROVED BY: E. McNally	**DATE APPROVED:** December 23, 2011	LLAVES 2008 PIPELINE OIL RELEASE NW¼, NE¼, SEC. 18, T25N, R3W SCHMITZ RANCH, RIO ARRIBA COUNTY, NEW MEXICO N 36°24.214', W 107°11.053'



Animas Environmental Services, LLC

DRAWN BY: N. Willis	**DATE DRAWN:** April 4, 2011
REVISIONS BY: C. Lameman	**DATE REVISED:** December 13, 2011
CHECKED BY: E. McNally	**DATE CHECKED:** December 23, 2011
APPROVED BY: E. McNally	**DATE APPROVED:** December 23, 2011

FIGURE 5

FREE PRODUCT THICKNESS CONTOURS, NOVEMBER 2011

BMG HIGHWAY 537
LLAVES 2008 PIPELINE OIL RELEASE
NW¼, NE¼, SEC. 18, T25N, R3W
SCHMITZ RANCH, RIO ARRIBA COUNTY, NEW MEXICO
N 36°24.214', W 107°11.053'

DEPTH TO GROUNDWATER MEASUREMENT FORM

Animas Environmental Services
624 E. Comanche, Farmington NM 87401
Tel. (505) 564-2281 Fax (505) 324-2022

Project: Groundwater Monitoring
Site: Hwy 537 2008 Spill
Location: Rio Arriba County, New Mexico
Tech: N. WILLIS

Project No.: AES 080101
Date: 8-15-11
Time: 1003
Form: 1 of 1

Well I.D.	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	NAPL Thickness (ft.)	Notes / Observations
MW-1	1022		33.07		
MW-2	1019		30.81		Well has roots in it
MW-3	1017		31.23		
MW-4	1013		34.37		
MW-5	1006		DRY		
MW-6	1011		37.59		
MW-7	1008		39.26		
MW-8	1044		35.33		
MW-9	1144	33.11	35.33	2.22	MPE-6 NEXT TO MW-9 WAS RUNNING ON UNIT
MPE-1	1152	34.68	36.47	1.79	
MPE-2	1159	33.28	33.69	0.41	
MPE-3	1201	33.25	34.51	1.26	
MPE-4	1155	34.26	35.85	1.59	
MPE-5	1148	35.68	37.80	2.12	
MPE-6	1157	33.72	33.81	0.09	
MPE-7	1203		31.59		

Wells measured with KECK water level or KECK interface tape, decontaminated between each well measurement.

MONITORING WELL SAMPLING RECORD

Monitor Well No: MW-8

Animas Environmental Services
624 E. Comanche, Farmington NM 87401
Tel. (505) 564-2281 Fax (505) 324-2022

Site: Highway 537 2008 Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring and Sampling
Sampling Technician: D. Wills
Purge / No Purge: No Purge
Well Diameter (in): 0.75
Initial D.T.W. (ft): _____ **Time:** _____
Confirm D.T.W. (ft): 35.33 **Time:** 1044
Final D.T.W. (ft): _____ **Time:** _____
If NAPL Present: **D.T.P.:** _____ **D.T.W.:** _____ **Thickness:** _____ **Time:** _____

Project No.: AES 080101
Date: 8-15-11
Arrival Time: 1042
Air Temp: 80°F
T.O.C. Elev. (ft): 7085.2
Total Well Depth (ft): _____
(taken at initial gauging of all wells)
(taken prior to purging well)
(taken after sample collection)

Water Quality Parameters - Recorded During Well Purging

Time	Temp (deg C)	Conductivity (µS) (mS)	DO (mg/L)	pH	ORP (mV)	PURGED VOLUME (see reverse for calc.)	Notes/Observations
1104	17.56	1.717	3.67	7.42	-124.4	1/16	
1109							Samples Collected

Analytical Parameters (include analysis method and number and type of sample containers)

BTEX per EPA Method 8021 (3 40mL Vials w/ HCl preserve)
TPH C6-C36 per EPA Method 8015B (3 40mL Vials w/ HCl preserve)
TPH C6-C36 per EPA Method 8015B (40mL Vial w/ no preservative)

Disposal of Purged Water: _____
Collected Samples Stored on Ice in Cooler: _____
Chain of Custody Record Complete: _____
Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM
Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter and New Disposable Bailer

Notes/Comments:

MONITORING WELL SAMPLING RECORD

Monitor Well No: MW-9

Animas Environmental Services
624 E. Comanche, Farmington NM 87401
Tel. (505) 564-2281 Fax (505) 324-2022

Site: Highway 537 2008 Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring and Sampling
Sampling Technician: N. Willis
Purge / No Purge: No Purge
Well Diameter (in): 0.75
Initial D.T.W. (ft): _____ **Time:** _____ *(taken at initial gauging of all wells)*
Confirm D.T.W. (ft): _____ **Time:** _____ *(taken prior to purging well)*
Final D.T.W. (ft): _____ **Time:** _____ *(taken after sample collection)*
If NAPL Present: **D.T.P.:** 33.11 **D.T.W.:** 35.33 **Thickness:** 2.22 **Time:** 1144

Project No.: AES 080101
Date: 8-16-11
Arrival Time: 1143
Air Temp: 85°F
T.O.C. Elev. (ft): 7083.64
Total Well Depth (ft): [redacted]

Water Quality Parameters - Recorded During Well Purging

Time	Temp (deg C)	Conductivity (µS) (mS)	DO (mg/L)	pH	ORP (mV)	PURGED VOLUME (see reverse for calc.)	Notes/Observations

Analytical Parameters (include analysis method and number and type of sample containers)

BTEX per EPA Method 8021 (3 40mL Vials w/ HCl preserve)
TPH C6-C36 per EPA Method 8015B (3 40mL Vials w/ HCl preserve)
TPH C6-C36 per EPA Method 8015B (40mL Vial w/ no preservative)

Disposal of Purged Water: _____
Collected Samples Stored on Ice in Cooler: _____
Chain of Custody Record Complete: _____
Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM
Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter and New Disposable Bailer

Notes/Comments:

DEPTH TO GROUNDWATER MEASUREMENT FORM

Animas Environmental Services
624 E. Comanche, Farmington NM 87401
Tel. (505) 564-2281 Fax (505) 324-2022

Project: Groundwater Monitoring
Site: Hwy 537 2008 Spill
Location: Rio Arriba County, New Mexico
Tech: Nathan Willis

Project No.: AES 080101
Date: 11-21-11
Time: 0900
Form: 1 of 1

Well I.D.	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	NAPL Thickness (ft.)	Notes / Observations
MW-1	0921	—	32.98	—	
MW-2	0918	—	29.79	—	Well has a lot of root inside
MW-3	0914	—	31.19	—	
MW-4	0911	—	34.33	—	
MW-5	0925	—	Dry	—	
MW-6	0909	—	37.65	—	
MW-7	0907	—	39.27	—	
MW-8	0924	—	35.26	—	
MW-9	0947	33.[illegible]25	35.37	2.12	
MPE-1	0952	34.60	36.85	2.25	
MPE-2	0949	33.28	33.41	0.13	
MPE-3	0933	33.28	34.13	0.85	
MPE-4	0941	34.20	35.92	1.72	
MPE-5	0954	35.58	38.16	2.58	
MPE-6	0945	33.51	34.64	1.13	
MPE-7	0929	31.54	31.55	0.01	

Wells measured with KECK water level or KECK interface tape, decontaminated between each well measurement.

MONITORING WELL SAMPLING RECORD	Animas Environmental Services
Monitor Well No: MW-8	624 E. Comanche, Farmington NM 87401 Tel. (505) 564-2281 Fax (505) 324-2022

Site: Highway 537 2008 Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring and Sampling
Sampling Technician: Nathan Willis
Purge / No Purge: No Purge
Well Diameter (in): 0.75
Initial D.T.W. (ft): 35.26 **Time:** 0924 *(taken at initial gauging of all wells)*
Confirm D.T.W. (ft): 35.26 **Time:** 1011 *(taken prior to purging well)*
Final D.T.W. (ft): **Time:** *(taken after sample collection)*
If NAPL Present: **D.T.P.:** **D.T.W.:** **Thickness:** **Time:**

Project No.: AES 080101
Date: 11-21-11
Arrival Time: 1009
Air Temp: 38°F
T.O.C. Elev. (ft): 7085.2
Total Well Depth (ft): 39.15

Water Quality Parameters - Recorded During Well Purging

Time	Temp (deg C)	Conductivity (µS) (mS)	DO (mg/L)	pH	ORP (mV)	PURGED VOLUME (see reverse for calc.)	Notes/Observations
1017	11.77	1.430	1.83	7.38	95.8	1/16 gal.	
1022							Samples Collected

Analytical Parameters (include analysis method and number and type of sample containers)

BTEX per EPA Method 8021 (3 40mL Vials w/ HCl preserve)
TPH C6-C36 per EPA Method 8015B (2 40mL Vials w/ HCl preserve)
TPH C6-C36 per EPA Method 8015B (40mL Vial w/ no preservative)

Disposal of Purged Water: NA
Collected Samples Stored on Ice in Cooler: YES
Chain of Custody Record Complete: YES
Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM
Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter and New Disposable Bailer

Notes/Comments:

revised: 01/06/10

MONITORING WELL SAMPLING RECORD	Animas Environmental Services
Monitor Well No: MW-9	624 E. Comanche, Farmington NM 87401 Tel. (505) 564-2281 Fax (505) 324-2022

Site: Highway 537 2008 Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring and Sampling
Sampling Technician: Nathan Willis
Purge / No Purge: No Purge
Well Diameter (in): 0.75
Initial D.T.W. (ft): _____ **Time:** _____ *(taken at initial gauging of all wells)*
Confirm D.T.W. (ft): _____ **Time:** _____ *(taken prior to purging well)*
Final D.T.W. (ft): _____ **Time:** _____ *(taken after sample collection)*
If NAPL Present: **D.T.P.:** 33.25 **D.T.W.:** 35.37 **Thickness:** 2.12 **Time:** 0947

Project No.: AES 080101
Date: 11-21-11
Arrival Time: [redacted] 0946
Air Temp: 38°F
T.O.C. Elev. (ft): 7083.64
Total Well Depth (ft): _____

Water Quality Parameters - Recorded During Well Purging

Time	Temp (deg C)	Conductivity (µS) (mS)	DO (mg/L)	pH	ORP (mV)	PURGED VOLUME (see reverse for calc.)	Notes/Observations

No Sample Collected Free Product Present

Analytical Parameters (include analysis method and number and type of sample containers)

BTEX per EPA Method 8021 (3 40mL Vials w/ HCl preserve)
TPH C6-C36 per EPA Method 8015B (2 40mL Vials w/ HCl preserve)
TPH C6-C36 per EPA Method 8015B (40mL Vial w/ no preservative)

Disposal of Purged Water: _____
Collected Samples Stored on Ice in Cooler: _____
Chain of Custody Record Complete: _____
Analytical Laboratory: Hall Environmental Analysis Laboratory, Albuquerque, NM
Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter and New Disposable Bailer

Notes/Comments:

revised: 01/06/10

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Friday, August 26, 2011

Debbie Watson
Animas Environmental Services
624 East Comanche
Farmington, NM 87401

TEL: (505) 564-2281
FAX (505) 324-2022

RE: BMG Highway 537 2008 Spill

Order No.: 1108741

Dear Debbie Watson:

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 8/17/2011 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682

Hall Environmental Analysis Laboratory, Inc. **Date:** *26-Aug-11*

CLIENT:	Animas Environmental Services
Project:	BMG Highway 537 2008 Spill
Lab Order:	1108741

CASE NARRATIVE

Analytical Comments for METHOD 8015GRO_W, SAMPLE 1108741-02A: Dilution due to sediment in vial. Analytical Comments for METHOD 8021BTEX_W, SAMPLE 1108741-02A: Dilution due to sediment in vial.

Hall Environmental Analysis Laboratory, Inc.

D
A

CLIENT:	Animas Environmental Services	**Client Sample ID:**	Trip Blank
Lab Order:	1108741	**Collection Date:**	
Project:	BMG Highway 537 2008 Spill	**Date Received:**	8/17/2011
Lab ID:	1108741-01	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date
EPA METHOD 8021B: VOLATILES						
Benzene	ND	1.0		µg/L	1	8/22/20
Toluene	ND	1.0		µg/L	1	8/22/20
Ethylbenzene	ND	1.0		µg/L	1	8/22/20
Xylenes, Total	ND	2.0		µg/L	1	8/22/20
Surr: 4-Bromofluorobenzene	94.8	89.6-125		%REC	1	8/22/20

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Chain-of-Custody Record

Client: Animas Environmental Services

Mailing Address: 624 E Comanche Farmington NM 87401

Phone #: 505-564-2281

email or Fax#: 505-324-2022

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: BMG HWY 537 2008 Spill

Project #: AES 080101

Project Manager: D. Watson

Sampler: N. Willis

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.1°

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1108741	BTEX + [redacted] (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
		H_2O	TRIP BLANK	2-Glass 40mL	HCl	-1	X											
5-11	1109	H_2O	MW-8	6-Glass 40 mL	5-HCl 1-NON	-2	X		X									

Date:	Time:	Relinquished by:	Received by:	Date	Time	Remarks:
8/11	1358	[signature]	[signature] Christine Walters	8/16/11	1350	
8/11	1511	Christine Walters	[signature] Michelle Garcia	8/17/11	9:00	

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, September 12, 2011

Ross Kennemer
Animas Environmental Services
624 East Comanche
Farmington, NM 87401

TEL: (505) 564-2281
FAX (505) 324-2022

RE: BMG Highway 537 2008 Spill

Order No.: 1109077

Dear Ross Kennemer:

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 9/2/2011 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682

Hall Environmental Analysis Laboratory, Inc.

Date: *12-Sep-11*

Analytical Report

CLIENT:	Animas Environmental Services	**Client Sample ID:**	Pre-Engine
Lab Order:	1109077	**Collection Date:**	8/31/2011 11:30:00 AM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	9/2/2011
Lab ID:	1109077-01	**Matrix:**	AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	6900	100		µg/L	20	9/9/2011 1:21:49 PM
Surr: BFB	287	49.7-209	S	%REC	20	9/9/2011 1:21:49 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	29	2.0		µg/L	20	9/9/2011 1:21:49 PM
Toluene	88	2.0		µg/L	20	9/9/2011 1:21:49 PM
Ethylbenzene	13	2.0		µg/L	20	9/9/2011 1:21:49 PM
Xylenes, Total	66	6.0		µg/L	20	9/9/2011 1:21:49 PM
Surr: 4-Bromofluorobenzene	93.8	76.5-115		%REC	20	9/9/2011 1:21:49 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: *12-Sep-11*

Analytical Report

CLIENT:	Animas Environmental Services	**Client Sample ID:**	Post-Cat
Lab Order:	1109077	**Collection Date:**	8/31/2011 11:33:00 AM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	9/2/2011
Lab ID:	1109077-02	**Matrix:**	AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	100	5.0		µg/L	1	9/9/2011 2:17:35 PM
Surr: BFB	193	49.7-209		%REC	1	9/9/2011 2:17:35 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	0.12	0.10		µg/L	1	9/9/2011 2:17:35 PM
Toluene	0.76	0.10		µg/L	1	9/9/2011 2:17:35 PM
Ethylbenzene	0.35	0.10		µg/L	1	9/9/2011 2:17:35 PM
Xylenes, Total	2.3	0.30		µg/L	1	9/9/2011 2:17:35 PM
Surr: 4-Bromofluorobenzene	114	76.5-115		%REC	1	9/9/2011 2:17:35 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Animas Environmental Services
Project: BMG Highway 537 2008 Spill **Work Order:** 1109077

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 5ML-RB		*MBLK*				Batch ID:	**R47658**	Analysis Date:	9/9/2011 9:53:38 AM		
Gasoline Range Organics (GRO)	ND	mg/L	0.050								
Sample ID: 2.5UG GRO LCS		*LCS*				Batch ID:	**R47658**	Analysis Date:	9/9/2011 11:54:01 AM		
Gasoline Range Organics (GRO)	0.5746	mg/L	0.050	0.5	0	115	92.1	117			
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML-RB		*MBLK*				Batch ID:	**R47658**	Analysis Date:	9/9/2011 9:53:38 AM		
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID:	**R47658**	Analysis Date:	9/9/2011 12:24:02 PM		
Benzene	20.36	µg/L	1.0	20	0	102	80	120			
Toluene	21.25	µg/L	1.0	20	0	106	80	120			
Ethylbenzene	20.78	µg/L	1.0	20	0	104	80	120			
Xylenes, Total	63.34	µg/L	2.0	60	0	106	80	120			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name ANIMAS ENVIRONMENTAL | Date Received: 9/2/2011

Work Order Number 1109077 | Received by: MMG

Checklist completed by: _____ Signature _____ Date 9/2/11 | Sample ID labels checked by: MG Initials

Matrix: | Carrier name: Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
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 ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Number of preserved bottles checked for pH: _____

<2 >12 unless noted below.

Container/Temp Blank temperature? *<6° C Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: ANIMAS ENVIRONMENTAL SERVICES, LLC.

Mailing Address: 624 E. COMANCHE FARMINGTON, NM 87401

Phone #: 505-564-2281

email or Fax#: 505-324-2022

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: BMG HWY 537 2008 SPILL

Project #: AES 080101

Project Manager: ROSS KENNEMER

Sampler: N. WILLIS

On Ice: ☐ Yes ☐ No

Sample Temperature:

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1109177	BTEX (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8015B (GRO/DRO) (C_6-C_{36})				Air Bubbles (Y or N)
31-11	1130	AIR	PRE-ENGINE	2- TEDLAR BAGS	/	-1	X											X				
31-11	1133	AIR	POST-CAT	2- TEDLAR BAGS	/	-2	X											X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
/11	1442			9/1/11	1442
/11	1612			9/2/11	9:00

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Friday, December 02, 2011

Debbie Watson
Animas Environmental Services
624 East Comanche
Farmington, NM 87401

TEL: (505) 564-2281
FAX (505) 324-2022

RE: BMG Highway 537 2008 Spill

Order No.: 1111900

Dear Debbie Watson:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 11/23/2011 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. Below is a list of our accreditations. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please do not hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Laboratory Manager

NM Lab # NM9425 NM0901
AZ license # AZ0682

Hall Environmental Analysis Laboratory, Inc.

Date: *02-Dec-11*

Analytical Report

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-8
Lab Order:	1111900	**Collection Date:**	11/21/2011 10:22:00 AM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	11/23/2011
Lab ID:	1111900-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	2.2	1.0		mg/L	1	11/28/2011 1:41:41 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/28/2011 1:41:41 PM
Surr: DNOP	108	81.1-147		%REC	1	11/28/2011 1:41:41 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	2.0		µg/L	2	12/1/2011 4:51:26 PM
Toluene	ND	2.0		µg/L	2	12/1/2011 4:51:26 PM
Ethylbenzene	ND	2.0		µg/L	2	12/1/2011 4:51:26 PM
Xylenes, Total	ND	4.0		µg/L	2	12/1/2011 4:51:26 PM
Surr: 4-Bromofluorobenzene	77.5	76.5-115		%REC	2	12/1/2011 4:51:26 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Animas Environmental Services
Project: BMG Highway 537 2008 Spill **Work Order:** 1111900

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range											
Sample ID: MB-29514		*MBLK*				Batch ID:	**29514**	Analysis Date:		11/28/2011 10:49:32 AM	
Diesel Range Organics (DRO)	ND	mg/L	1.0								
Motor Oil Range Organics (MRO)	ND	mg/L	5.0								
Sample ID: LCS-29514		*LCS*				Batch ID:	**29514**	Analysis Date:		11/28/2011 11:23:52 AM	
Diesel Range Organics (DRO)	5.330	mg/L	1.0	5	0	107	74	157			
Sample ID: LCSD-29514		*LCSD*				Batch ID:	**29514**	Analysis Date:		11/28/2011 11:58:32 AM	
Diesel Range Organics (DRO)	5.697	mg/L	1.0	5	0	114	74	157	6.66	23	
Method: EPA Method 8021B: Volatiles											
Sample ID: 1111900-02A MSD		*MSD*				Batch ID:	**R49380**	Analysis Date:		12/1/2011 5:51:34 PM	
Benzene	38.94	µg/L	2.0	40	0	97.4	76.6	119	0.226	16.4	
Toluene	37.60	µg/L	2.0	40	0	94.0	77.3	118	0.0851	13.9	
Ethylbenzene	37.21	µg/L	2.0	40	0.244	92.4	76.6	114	1.21	13.5	
Xylenes, Total	112.2	µg/L	4.0	120	0	93.5	82	113	0.295	12.9	
Sample ID: 5ML-RB		*MBLK*				Batch ID:	**R49380**	Analysis Date:		12/1/2011 1:07:51 PM	
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID:	**R49380**	Analysis Date:		12/1/2011 12:37:35 PM	
Benzene	19.83	µg/L	1.0	20	0.126	98.5	80	120			
Toluene	19.38	µg/L	1.0	20	0	96.9	80	120			
Ethylbenzene	19.00	µg/L	1.0	20	0.14	94.3	80	120			
Xylenes, Total	56.39	µg/L	2.0	60	0	94.0	80	120			
Sample ID: 1111900-02A MS		*MS*				Batch ID:	**R49380**	Analysis Date:		12/1/2011 5:21:32 PM	
Benzene	38.85	µg/L	2.0	40	0	97.1	76.6	119			
Toluene	37.57	µg/L	2.0	40	0	93.9	77.3	118			
Ethylbenzene	37.66	µg/L	2.0	40	0.244	93.6	76.6	114			
Xylenes, Total	112.5	µg/L	4.0	120	0	93.8	82	113			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **ANIMAS ENVIRONMENTAL** Date Received: 11/23/2011

Work Order Number 1111900 Received by: AMG

Checklist completed by: Signature 11/23/11 Date Sample ID labels checked by: Initials

Matrix: Carrier name: Courier

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
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 ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**1.6°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Animas Environmental Services

Mailing Address: 624 E Comanche Farmington NM 87401

Phone #: 505-564-2281

email or Fax#: 505-324-2022

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other_____
☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush_____

Project Name:
BMG HWY 537 2008 SPILL

Project #:
AES 080101

Project Manager:
Debbie Watson

Sampler: Nathan Willis

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1111900	BTEX 8021	TPH 8015 (C6 - C36) (GRO, DRO, MRO)												Air Bubbles (Y or N)
		~~H_2O~~	~~Trip Blank~~	Glass 2 - 40 mL	HCl	-1	X		NO TRIP BLANK											
11-21-11	1022	H_2O	MW-8	Glass 6 - 40 mL	5 - HCl 1 - Non	-2	X	X												
		~~H_2O~~	~~MW-9~~	Glass 6 - 40 mL	~~6 - HCl~~ 1 - Non	NW														

Date:	Time:	Relinquished by:	Received by:	Date	Time	Remarks:
11/22/11	1659	Nathan Willis	Christine Walker	11/22/11	1659	SPOKE W/ CLIENT. SAID TRIP BLANK WRITTEN BY MISTAKE 11/28/11
11/22/11	1722	Christine Walker		11/23/11	1012	

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.