3R – 447

2010 – 2011 GWMR

03 / 29 / 2011

Animas Environmental Services, LLC

3R-447

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March 29, 2011

Wayne Price
New Mexico Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

Re: Periodic Progress Report for the Benson-Montin-Greer Highway 537 Llaves Pipeline 2008 Oil Spill, Rio Arriba County, New Mexico

Dear Mr. Price:

Animas Environmental Services, LLC (AES) conducted groundwater sampling of monitoring wells on behalf of Benson-Montin-Greer Drilling Corporation (BMG) at the BMG Highway 537 Llaves Pipeline 2008 Spill Location on October 13, 2010, and January 20, 2011. The sampling events were conducted in accordance with recommendations presented in the Site Investigation Report prepared by AES and submitted to New Mexico Oil Conservation Division (NMOCD) on June 23, 2008.

The spill originated on the Schmitz Ranch in December 2007, on the south side of Highway 537, within the NW¼ NE¼ of Section 18, T25N, R3W (latitude and longitude recorded as N36° 24' 5.25" and W107° 11' 053"). The released oils 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 map of the spill investigation area is presented as Figure 2.

1.0 Spill History

On December 31, 2007, a Western Refining truck driver discovered the Llaves pipeline leak and immediately contacted BMG. BMG personnel confirmed the leak 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 an identification number of 860429.

AES conducted a site investigation during April and May 2008 and installed 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 - October 2010

AES personnel conducted groundwater monitoring and sampling at the project area on October 13, 2010. 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 Groundwater Measurements and Water Quality Data

During the October 2010 sampling event, groundwater and water quality measurements were recorded for MW-1, MW-3, MW-4, and MW-6 through MW-8. Groundwater measurements and water quality data were not recorded for MW-2 (filled with roots), MW-5 (dry), and MW-9 (contained free product). Groundwater elevations were measured with a Keck water level (with accuracy to 0.01 foot) and ranged from 30.84 feet below ground surface (bgs) in MW-3 to 38.89 feet bgs in MW-7.

Water quality measurements were made with a YSI water quality meter. Temperatures ranged from 13.71 °C in MW-3 to 16.25 °C in MW-7. Groundwater pH measurements ranged from 7.32 to 7.57, and dissolved oxygen concentrations were between 0.50 mg/L in MW-1 and 1.71 mg/L in MW-3. Oxidation reduction potential (ORP) measurements were between -126.5 mV and 66.3 mV, and conductivity readings were between 1.502 mS and 3.973 mS. Depth to groundwater measurements and water quality data are presented in Table 1. Water Sample Collection Forms are included as Appendix A.

2.2 Non-Aqueous Phase Liquid

Non-aqueous phase liquid (NAPL) or "free product" was first observed in MW-9 during the January 2010 sampling event, with a thickness of 2.37 feet. Free product was once again observed during the October 2010 sampling event in MW-9 (2.66 feet).

2.3 Groundwater Analytical Results

Groundwater samples were collected from MW-1, MW-3, MW-4, and MW-6 through MW-8 for laboratory analysis. Benzene concentrations were above the applicable New Mexico Water Quality Control Commission (WQCC) standard (10 µg/L) in MW-8, with 12 µg/L. Benzene concentrations were below laboratory detection limits, and therefore well below applicable WQCC standards, for each of the other wells sampled. Toluene, ethylbenzene, and xylene concentrations were below applicable WQCC standards in each of the wells sampled. Gasoline range organics (GRO) concentrations were above laboratory detection limit (0.050 mg/L) in MW-8, with 0.25 mg/L. Diesel and motor oil range organics concentrations were below laboratory detection limits in each of the wells sampled.

Tabulated laboratory analytical results are included in Table 2, and laboratory analytical reports are presented in Appendix B.

3.0 Groundwater Monitoring and Sampling - January 2011

AES personnel conducted groundwater monitoring and sampling at the project area on January 20, 2011. Groundwater samples were laboratory analyzed for BTEX and TPH per EPA Methods 8021/8015 at Hall, Albuquerque, New Mexico.

3.1 Groundwater Measurements and Water Quality Data

During the January 2011 sampling event, groundwater and water quality measurements were recorded for MW-1, MW-3, MW-4, and MW-6 through MW-8. Groundwater measurements and water quality data were not recorded for MW-2 (filled with roots), MW-5 (dry), and MW-9 (contained free product). Groundwater elevations were measured with a Keck water level (with accuracy to 0.01 foot) and ranged from 30.33 feet below ground surface (bgs) in MW-2 to 38.92 feet bgs in MW-7.

Water quality measurements were made with a YSI water quality meter. Temperatures ranged from 10.48 °C in MW-3 to 11.89 °C in MW-1. Groundwater pH measurements ranged from 7.40 to 8.20, and dissolved oxygen concentrations were between 1.32 mg/L in MW-8 and 3.30 mg/L in MW-3. ORP measurements were between -71.1 mV and 193.4 mV, and conductivity readings were between 1.539 mS and 3.726 mS. Depth to groundwater measurements and water quality data are presented in Table 1. Water Sample Collection Forms are included as Appendix A.

3.2 Non-Aqueous Phase Liquid

Free product was first observed in MW-9 during the January and October 2010 sampling events. Measured free product thickness in January 2011 was 2.50 feet.

3.3 Groundwater Analytical Results

Groundwater samples were collected from MW-1, MW-3, MW-4, and MW-6 through MW-8 for laboratory analysis. Benzene concentrations were below laboratory detection limits, and therefore well below the WQCC standard (10 µg/L), for each well sampled, except MW-8. Benzene concentrations increased in MW-8 from 12 µg/L in October 2010 to 35 µg/L in January 2011.

Toluene, ethylbenzene, and xylene concentrations were below applicable WQCC standards in each of the wells sampled. GRO concentrations were above laboratory detection limit (0.050 mg/L) in MW-8, with 0.16 mg/L. Diesel and motor oil range organics concentrations were below laboratory detection limits in each of the wells sampled.

Tabulated laboratory analytical results are included in Table 2, and laboratory analytical reports are presented in Appendix B.

4.0 Conclusions and Recommendations

AES conducted groundwater monitoring and sampling events on October 13, 2010, and January 20, 2011. Free product was observed within MW-9 in October 2010 (2.66 feet) and January 2011 (2.50 feet). Analytical results show that MW-8 was above the WQCC standard for benzene in October 2010 and January 2011, with 12 µg/L and 35 µg/L, respectively. All remaining sampled wells were below applicable standards for all analyzed contaminants in October 2010 and January 2011.

AES has recently installed remediation wells at the site, with activation of the remediation unit anticipated for April 2011. Remedial efforts at the site are in accordance with recommendations contained within the corrective action plan (CAP) submitted to NMOCD. An update on remedial activities at the site will be included within the next periodic progress report.

The next sampling event has been scheduled for April 2011 and will follow activation of the remediation system. If you have any questions about site conditions or this report, please feel free to contact Elizabeth McNally or Ross Kennemer at (505) 564-2281.

Sincerely,

Deborah Watson
Project Manager

Elizabeth McNally, P.E.

Tables

Table 1. Summary of Groundwater Measurement Data
Table 2. Summary of Groundwater Analytical Results

Figures

Figure 1. Topographic Site Location Map
Figure 2. Site Plan with Laboratory Analytical Results

Appendices

Appendix A. Water Sample Collection Forms (October 2010 and January 2011)
Laboratory Analytical Results (October 2010 and January 2011)

cc: Brandon Powell
New Mexico Oil Conservation Division
1000 Rio Brazos Rd.
Aztec, NM 87410

Craig Schmitz
#70 CR 405
Lindrith, NM 87029

Private Landowner
C/O Mike Dimond
Benson-Montin-Greer Drilling Corp.

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 SPILL
Rio Arriba County, New Mexico

Well ID	Date Sampled	Depth to Water (ft)	Surveyed TOC (ft)	GW Elev. (ft)	pH	Conductivity (mS)	DO (mg/L)	Temperature (C)	ORP (mV)
MW-1	05-May-08	31.45	7082.57	7051.12	7.62	4.051	1.48	15.57	141.9
MW-1	24-Sep-08	31.91	7082.57	7050.66	6.80	3.588	2.97	15.32	18.1
MW-1	02-Jan-09	31.90	7082.57	7050.67	NM				
MW-1	07-Apr-09	31.92	7082.57	7050.65	7.31	4.536	3.19	13.86	16.8
MW-1	07-Jul-09	31.95	7082.57	7050.62	7.31	3.161	1.48	16.43	52.6
MW-1	12-Oct-09	32.20	7082.57	7050.37	7.43	2.553	5.91	13.97	293.3
MW-1	12-Jan-10	32.41	7082.57	7050.16	7.72	4.035	3.35	11.12	-11.2
MW-1	13-Oct-10	32.62	7082.57	7049.95	7.38	3.596	0.50	14.60	-75.8
MW-1	20-Jan-11	32.64	7082.57	7049.93	7.48	3.726	1.50	11.89	44.6
MW-2	05-May-08	29.01	7079.94	7050.93	7.59	2.276	2.21	16.43	90.8
MW-2	24-Sep-08	29.61	7079.94	7050.33	6.93	2.073	2.75	14.93	36.0
MW-2	02-Jan-09	29.52	7079.94	7050.42	NM				
MW-2	07-Apr-09	29.50	7079.94	7050.44	6.93	2.560	1.93	13.38	21.5
MW-2	07-Jul-09	29.65	7079.94	7050.29	7.22	2.067	1.07	15.28	45.9
MW-2	12-Oct-09	29.93	7079.94	7050.01	7.37	1.665	5.63	14.10	178.1
MW-2	12-Jan-10	30.01	7079.94	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	30.33	7079.94	7049.61	NM - Well Filled with Roots				
MW-3	05-May-08	29.49	7081.10	7051.61	7.79	4.083	2.42	15.91	75.7
MW-3	24-Sep-08	30.07	7081.10	7051.03	6.85	2.778	2.80	14.44	18.5
MW-3	02-Jan-09	30.01	7081.10	7051.09	NM				
MW-3	07-Apr-09	30.02	7081.10	7051.08	6.86	4.596	2.08	12.19	24.7
MW-3	07-Jul-09	30.16	7081.10	7050.94	NM - FILLED WITH SEDIMENT				
MW-3	12-Oct-09	30.41	7081.10	7050.69	7.23	2.316	2.24	13.88	8.3
MW-3	12-Jan-10	30.50	7081.10	7050.60	7.35	2.985	2.87	11.75	-27.2

TABLE 1

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BMG HWY 537 LLAVES PIPELINE 2008 OIL SPILL

Rio Arriba County, New Mexico

Well ID	Date Sampled	Depth to Water (ft)	Surveyed TOC (ft)	GW Elev. (ft)	pH	Conductivity (mS)	DO (mg/L)	Temperature (C)	ORP (mV)
MW-3	13-Oct-10	30.84	7081.10	7050.26	7.51	3.973	1.71	13.71	-49.8
MW-3	20-Jan-11	30.85	7081.10	7050.25	7.43	3.528	3.30	10.48	53.4
MW-4	05-May-08	32.74	7084.79	7052.05	7.70	2.699	2.36	14.62	-37.5
MW-4	24-Sep-08	33.21	7084.79	7051.58	6.98	2.163	3.04	13.70	42.9
MW-4	02-Jan-09	33.29	7084.79	7051.50	NM				
MW-4	07-Apr-09	33.27	7084.79	7051.52	6.91	2.779	1.35	11.90	21.1
MW-4	07-Jul-09	33.32	7084.79	7051.47	7.20	2.124	0.80	17.17	-41.5
MW-4	12-Oct-09	33.56	7084.79	7051.23	7.29	1.792	2.00	13.70	43.7
MW-4	12-Jan-10	33.68	7084.79	7051.11	7.36	2.374	2.03	11.53	-26.7
MW-4	13-Oct-10	33.93	7084.79	7050.86	7.42	2.233	1.18	14.11	-56.8
MW-4	20-Jan-11	34.01	7084.79	7050.78	7.55	2.292	2.14	11.57	126.2
MW-5	05-May-08		7087.98	NA	NM - WELL DRY				
MW-5	24-Sep-08		7087.98	NA	NM - WELL DRY				
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-6	05-May-08	36.03	7088.43	7052.40	7.73	1.764	2.43	13.95	87.3
MW-6	24-Sep-08	36.44	7088.43	7051.99	7.00	1.464	3.95	14.19	50.3
MW-6	02-Jan-09	36.50	7088.43	7051.93	NM				
MW-6	07-Apr-09	36.46	7088.43	7051.97	7.00	1.854	2.21	11.98	22.2

TABLE 1
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BMG HWY 537 LLAVES PIPELINE 2008 OIL SPILL
Rio Arriba County, New Mexico

Well ID	Date Sampled	Depth to Water (ft)	Surveyed TOC (ft)	GW Elev. (ft)	pH	Conductivity (mS)	DO (mg/L)	Temperature (C)	ORP (mV)
MW-6	07-Jul-09	36.67	7088.43	7051.76	7.27	1.557	1.35	17.51	57.8
MW-6	12-Oct-09	36.78	7088.43	7051.65	7.43	1.297	2.06	13.11	66.0
MW-6	12-Jan-10	36.92	7088.43	7051.51	7.44	1.615	2.24	11.82	-19.2
MW-6	13-Oct-10	37.19	7088.43	7051.24	7.54	1.502	1.68	14.44	57.9
MW-6	20-Jan-11	37.18	7088.43	7051.25	7.85	1.539	1.83	11.52	174.9
MW-7	05-May-08	37.71	7090.15	7052.44	NM - LOW YIELD				
MW-7	24-Sep-08	38.16	7090.15	7051.99	7.08	1.572	6.11	13.99	36.3
MW-7	02-Jan-09	38.21	7090.15	7051.94	NM				
MW-7	07-Apr-09	38.16	7090.15	7051.99	6.87	1.955	1.46	12.80	22.0
MW-7	07-Jul-09	38.29	7090.15	7051.86	7.06	1.599	2.27	16.48	92.6
MW-7	12-Oct-09	38.49	7090.15	7051.66	7.18	1.365	4.64	13.48	77.0
MW-7	12-Jan-10	38.64	7090.15	7051.51	7.22	1.679	1.97	11.02	-6.5
MW-7	13-Oct-10	38.89	7090.15	7051.26	7.57	2.227	1.68	16.25	66.3
MW-7	20-Jan-11	38.92	7090.15	7051.23	8.20	2.569	2.63	10.71	193.4
MW-8	05-May-08	33.71	7085.20	7051.49	NM - LOW YIELD				
MW-8	24-Sep-08	34.20	7085.20	7051.00	6.88	1.672	3.06	15.24	-9.6
MW-8	05-Jan-09	34.21	7085.20	7050.99	NM				
MW-8	07-Apr-09	34.28	7085.20	7050.92	6.98	2.061	1.81	13.30	-108.8
MW-8	07-Jul-09	34.31	7085.20	7050.89	7.11	1.811	1.17	16.26	-74.0
MW-8	12-Oct-09	34.54	7085.20	7050.66	7.00	1.416	1.48	13.27	-102.1
MW-8	12-Jan-10	34.69	7085.20	7050.51	7.02	1.699	1.73	11.13	-159.8
MW-8	13-Oct-10	34.92	7085.20	7050.28	7.32	1.786	0.77	14.65	-126.5
MW-8	20-Jan-11	34.99	7085.20	7050.21	7.40	1.776	1.32	11.42	-71.1
MW-9	05-May-08	31.81	7083.64	7051.83	7.85	1.955	2.59	15.01	-37.9

TABLE 1

SUMMARY OF GROUNDWATER MEASUREMENT AND WATER QUALITY DATA

BMG HWY 537 LLAVES PIPELINE 2008 OIL SPILL

Rio Arriba County, New Mexico

Well ID	Date Sampled	Depth to Water (ft)	Surveyed TOC (ft)	GW Elev. (ft)	pH	Conductivity (mS)	DO (mg/L)	Temperature (C)	ORP (mV)
MW-9	24-Sep-08	32.26	7083.64	7051.38	7.08	1.515	2.84	14.03	43.3
MW-9	05-Jan-09		7083.64	NA	NM - WELL DRY				
MW-9	07-Apr-09	32.34	7083.64	7051.30	6.89	1.876	1.11	12.85	7.0
MW-9	07-Jul-09	32.41	7083.64	7051.23	7.19	1.672	1.14	16.77	-9.7
MW-9	12-Oct-09	32.63	7083.64	7051.01	7.22	1.352	2.10	13.78	72.9
MW-9	12-Jan-09	34.80	7083.64	NA	NM - 2.37 feet of Crude oil or Free Product				
MW-9	13-Oct-10	35.29	7083.64	NA	NM - 2.66 feet of Crude oil or Free Product				
MW-9	20-Jan-11	35.21	7083.64	NA	NM - 2.50 feet of Crude oil or Free Product				

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 SPILL
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-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-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-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
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

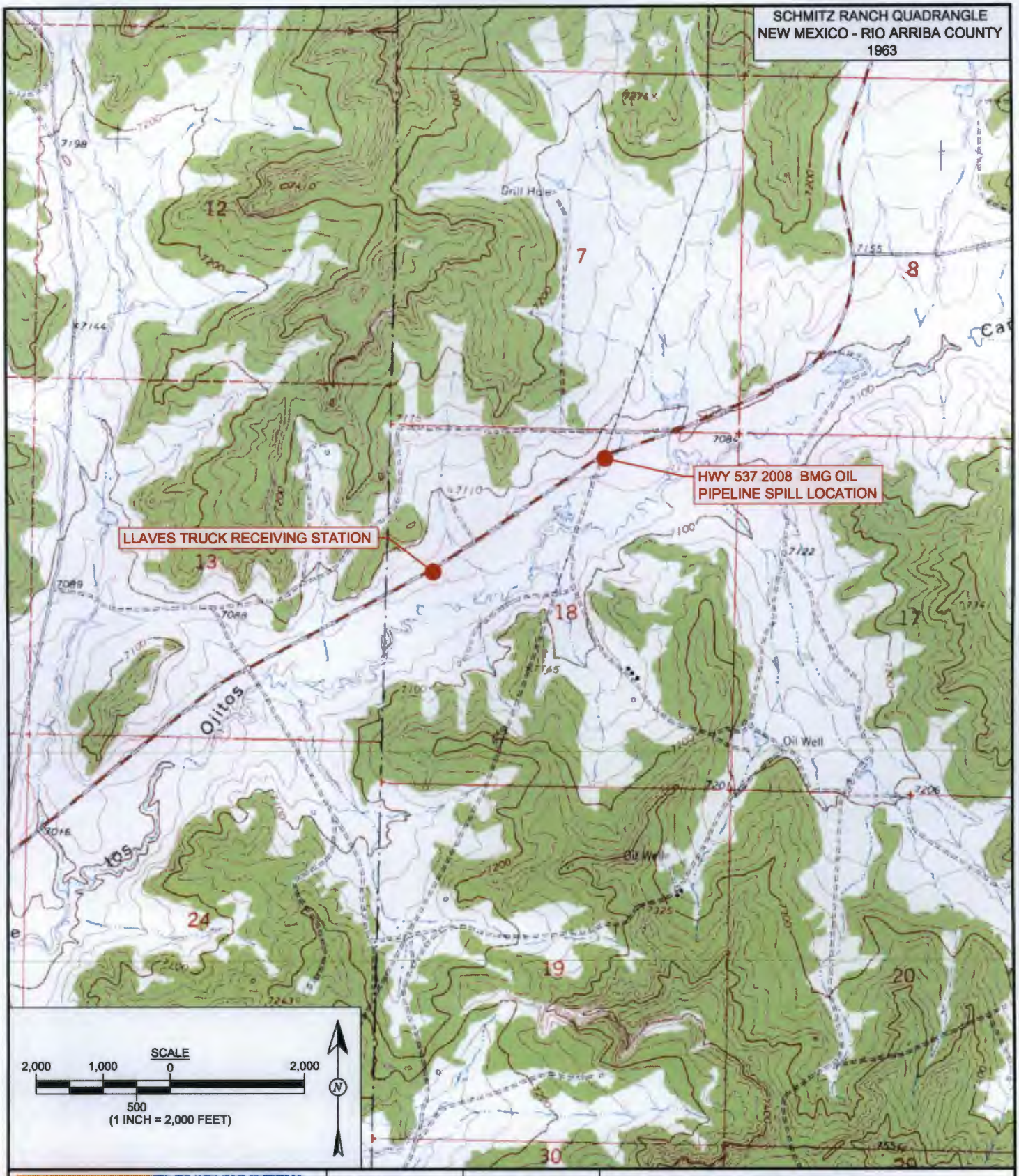
TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2008 OIL SPILL
Rio Arriba County, New Mexico

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	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-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-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-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
MW-7	20-Jan-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

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2008 OIL SPILL
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-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-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						

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



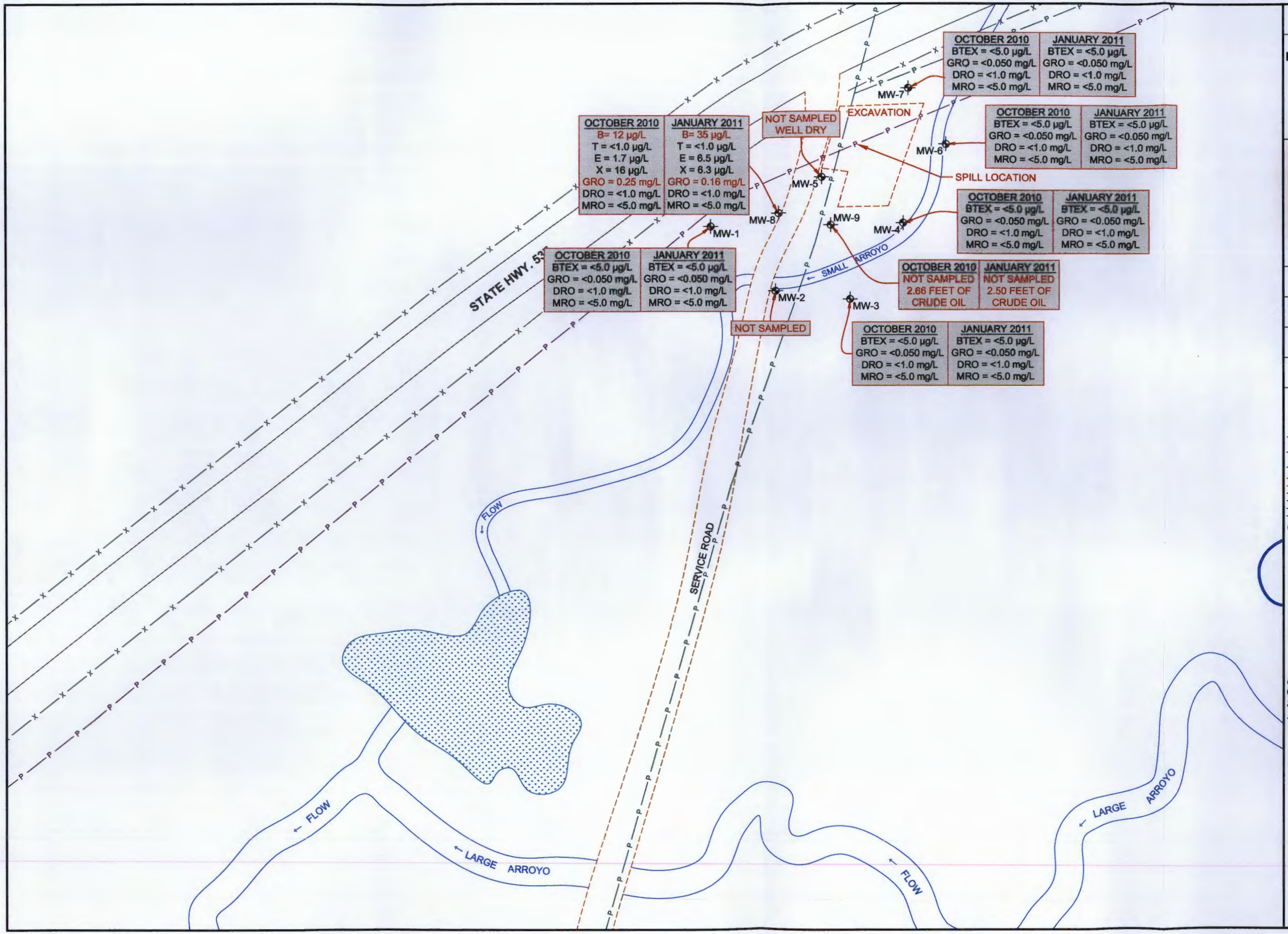
DRAWN BY: N. Willis	**DATE DRAWN:** May 5, 2009	**FIGURE 1**
REVISIONS BY: C. Lameman	**DATE REVISED:** March 29, 2011	**TOPOGRAPHIC SITE LOCATION MAP**
CHECKED BY: D. Watson	**DATE CHECKED:** March 29, 2011	BMG HIGHWAY 537 LLAVES 2008 PIPELINE OIL SPILL NW ¼ NE ¼, SEC. 18, T25N, R3W SCHMITZ RANCH, RIO ARRIBA COUNTY, NEW MEXICO N36°24.214', W107°11.053'
APPROVED BY: E. McNally	**DATE APPROVED:** March 29, 2011	

AES
Animas Environmental Services, LLC

FIGURE 2

GENERAL SITE PLAN AND LABORATORY ANALYTICAL RESULTS OCTOBER 2010 & JANUARY 2011

BMG HIGHWAY 537
LLAVES 2008 PIPELINE OIL SPILL
NW ¼ NE ¼, SEC. 18, T25N, R3W
SCHMITZ RANCH,
RIO ARRIBA COUNTY, NEW MEXICO



Animas Environmental Services, LLC

DRAWN BY: N. Willis	**DATE DRAWN:** May 5, 2009
REVISIONS BY: C. Lameman	**DATE REVISED:** March 29, 2011
CHECKED BY: E. McNally	**DATE CHECKED:** March 29, 2011
APPROVED BY: E. McNally	**DATE APPROVED:** March 29, 2011

LEGEND

- MONITORING WELL LOCATIONS (INSTALLED FEBRUARY 2008)
- FENCE
- BMG LLAVES 4 INCH OIL PIPELINE
- ENTERPRISE 4 INCH OIL PIPELINE
- DIRT ROAD
- HIGHWAY
- WASHES AND ARROYOS
- FLOOD PLANS AND WETLANDS
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X XYLENES
- GRO GASOLINE RANGE ORGANICS
- DRO DIESEL RANGE ORGANICS
- MRO MOTOR OIL RANGE ORGANICS
- < BELOW THE DETECTION LIMIT OF ANY OF ABOVE

NOTE: SAMPLES WERE COLLECTED ON OCTOBER 3, 2010 AND JANUARY 21, 2011. ALL SAMPLES ANALYZED PER EPA METHOD 8021B AND 8015B.

N

SCALE
125 75 0 125
25
(1 INCH = 125 FEET)

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: D. Willis

Project No.: AES 080101
Date: 10-13-10
Time: 1143
Form: 1 of 1

Well I.D.	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	NAPL Thickness (ft.)	Notes / Observations
MW-1	1400	—	32.62	—	
MW-2	1353	—		—	Filled with Roots
MW-3	1312	—	30.84	—	
MW-4	1249	—	33.93	—	
MW-5	1146	—	Dry	—	
MW-6	1226	—	37.19	—	
MW-7	1155	—	38.89	—	
MW-8	1421	—	34.92	—	
MW-9	1443	32.63	35.29	2.66	

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-1	624 E. Comanche, Farmington NM 87401 Tel. (505) 564-2281 Fax (505) 324-2022

Site: Highway 537 2008 Spill — **Project No.:** AES 080101
Location: Rio Arriba County, New Mexico — **Date:** 10-13-10
Project: Groundwater Monitoring and Sampling — **Arrival Time:** 1356
Sampling Technician: NW — **Air Temp:** 75°F
Purge / No Purge: No Purge — **T.O.C. Elev. (ft):** 7082.57
Well Diameter (in): 0.75 — **Total Well Depth (ft):** 39.87
Initial D.T.W. (ft): _____ **Time:** _____ *(taken at initial gauging of all wells)*
Confirm D.T.W. (ft): 32.62 **Time:** 1400 *(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:** _____

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
1403	14.60	3.596	0.50	7.38	-75.8	1/16	
1408							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: _____
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-2

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: NW
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): Filled w/ Boots **Time:** 1353 *(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: 10-13-10
Arrival Time: 1342
Air Temp: 75°F
T.O.C. Elev. (ft): 7079.94
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
							Samples Collected
NO Sample Well Filled With Roots							

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:

MONITORING WELL SAMPLING RECORD

Monitor Well No: MW-3

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: NW
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): 30.84 **Time:** 1312 *(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: 10-13-10
Arrival Time: 1308
Air Temp: 72°F
T.O.C. Elev. (ft): 7081.1
Total Well Depth (ft): 35.10

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
1321	13.71	3.973	1.71	7.51	-49.8	1/6	
1326							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: ____
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-4

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: NW
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): 33.93 **Time:** 1249 *(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: 10-13-10
Arrival Time: 1246
Air Temp: 70°F
T.O.C. Elev. (ft): 7084.79
Total Well Depth (ft): 39.53

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
1252	14.11	2,233	1.18	7.42	-56.8	1/16	
1257							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: _____
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-5

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: NW
Purge / No Purge: No Purge
Well Diameter (in): 0.75
Initial D.T.W. (ft): _____ **Time:** _____
Confirm D.T.W. (ft): Dry **Time:** 1146
Final D.T.W. (ft): _____ **Time:** _____
If NAPL Present: **D.T.P.:** _____ **D.T.W.:** _____ **Thickness:** _____ **Time:** _____

Project No.: AES 080101
Date: 10-13-10
Arrival Time: 1143
Air Temp: 70°F
T.O.C. Elev. (ft): 7087.98
Total Well Depth (ft): [redacted]
(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

No Sample

Dry

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:

MONITORING WELL SAMPLING RECORD

Monitor Well No: MW-6

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: NW
Purge / No Purge: No Purge
Well Diameter (in): 0.75
Initial D.T.W. (ft): _____ **Time:** _____
Confirm D.T.W. (ft): 37.19 **Time:** 1226
Final D.T.W. (ft): _____ **Time:** _____
If NAPL Present: **D.T.P.:** _____ **D.T.W.:** _____ **Thickness:** _____ **Time:** _____

Project No.: AES 080101
Date: 10-13-10
Arrival Time: 1221
Air Temp: 70°F
T.O.C. Elev. (ft): 7088.43
Total Well Depth (ft): 43.12
(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
1228	14.44	1.502	1.68	7.54	57.9	1/16	
1233							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: _____
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-7

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: NW
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): 38.89 **Time:** 1155 *(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: 10-13-10
Arrival Time: 1148
Air Temp: 70°F
T.O.C. Elev. (ft): 7090.15
Total Well Depth (ft): 43.54

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
1200	16.25	2.227	1.68	7.57	66.3	1/16	
1205							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: ____
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-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: NW
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): 34.92 **Time:** 1421 *(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: 10-13-10
Arrival Time: 1418
Air Temp: 75°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
1424	14.65	1.786	0.77	7.32	-126.5	1/16	
1429							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: _____
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: NW
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)*

Project No.: AES 080101
Date: 10-13-10
Arrival Time: 1341
Air Temp: 75°F
T.O.C. Elev. (ft): 7083.64
Total Well Depth (ft): [redacted]

If NAPL Present: **D.T.P.:** 32.63 **D.T.W.:** 35.29 **Thickness:** 2.66 **Time:** 1443

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
Free Product

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:

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: 1-20-11
Time: 1016
Form: 1 of 1

Well I.D.	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	NAPL Thickness (ft.)	Notes / Observations
MW-1	1307		32.64		
MW-2	1051		30.33		Well filled with roots @ 31.26
MW-3	1249		30.85		
MW-4	1232		34.01		
MW-5	1037		Dry		
MW-6	1205		37.18		
MW-7	1140		38.92		
MW-8	1326		34.99		
MW-9	1045	32.71	35.21	2.5	

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

MONITORING WELL SAMPLING RECORD

Monitor Well No: MW-1

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): 32.64 **Time:** 1307 *(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: 1-20-11
Arrival Time: 1305
Air Temp: 34°F
T.O.C. Elev. (ft): 7082.57
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
1310	11.89	3.726	1.50	7.48	44.6	1/16	
1315							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: _____
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-2

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): 30.33 **Time:** 1051 *(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: 1-20-11
Arrival Time: 1048
Air Temp: 30°F
T.O.C. Elev. (ft): 7079.94
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						
	Well Filled With						
	Roots						

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: Roots blocked well @ 31.26 feet. Tryed to break through but was unable to due so.

MONITORING WELL SAMPLING RECORD

Monitor Well No: MW-3

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): 30.85 **Time:** 1249 *(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: 1-20-11
Arrival Time: 1247
Air Temp: 34°F
T.O.C. Elev. (ft): 7081.1
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
1251	10.48	3.528	3.30	7.43	53.4	1/16	
1256							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: _____
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-4

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): 34.01 **Time:** 1232 *(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: 1-20-11
Arrival Time: 1230
Air Temp: 32°F
T.O.C. Elev. (ft): 7084.79
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
1234	11.57	2.292	2.14	7.55	126.2	1/16	
1239							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: _____
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-5

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): Dry **Time:** 1037 *(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: 1-20-11
Arrival Time: 1030
Air Temp: 30°F
T.O.C. Elev. (ft): 7087.98
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

No Sample
Well Dry

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:

MONITORING WELL SAMPLING RECORD

Monitor Well No: MW-6

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): 37.18 **Time:** 1205 *(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: 1-20-11
Arrival Time: 1203
Air Temp: 32°F
T.O.C. Elev. (ft): 7088.43
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
1207	11.52	1.539	1.83	7.85	174.9	1/16	
1212	—						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: _____
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-7

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): 38.92 **Time:** 1140 *(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: 1-20-11
Arrival Time: 1138
Air Temp: 32°F
T.O.C. Elev. (ft): 7090.15
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
1145	10.71	2.569	2.63	8.20	193.4	1/16	
1150							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: _____
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-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: 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): 34.99 **Time:** 1326 *(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: 1-20-11
Arrival Time: 1324
Air Temp: 34°F
T.O.C. Elev. (ft): 7085.2
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
1329	11.42	1.776	1.32	7.40	-71.1	1/16	
1334							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: _____
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.:** 32.71 **D.T.W.:** 35.21 **Thickness:** 2.5 **Time:** 1045

Project No.: AES 080101
Date: 1-20-11
Arrival Time: 1043
Air Temp: 30°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

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:

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Monday, October 25, 2010

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.: 1010806

Dear Ross Kennemer:

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 10/19/2010 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.

Reporting limits are determined by EPA methodology.

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
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Oct-10*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	TRIP BLANK
Lab Order:	1010806	**Collection Date:**	
Project:	BMG Highway 537 2008 Spill	**Date Received:**	10/19/2010
Lab ID:	1010806-01	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	10/23/2010 4:18:40 PM
Toluene	ND	1.0		µg/L	1	10/23/2010 4:18:40 PM
Ethylbenzene	ND	1.0		µg/L	1	10/23/2010 4:18:40 PM
Xylenes, Total	ND	2.0		µg/L	1	10/23/2010 4:18:40 PM
Surr: 4-Bromofluorobenzene	102	81.3-151		%REC	1	10/23/2010 4:18:40 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: *25-Oct-10*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-1
Lab Order:	1010806	**Collection Date:**	10/13/2010 2:08:00 PM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	10/19/2010
Lab ID:	1010806-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/20/2010 10:55:35 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/20/2010 10:55:35 PM
Surr: DNOP	122	86.9-151		%REC	1	10/20/2010 10:55:35 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/23/2010 4:49:05 PM
Surr: BFB	94.1	84.5-118		%REC	1	10/23/2010 4:49:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	10/23/2010 4:49:05 PM
Toluene	ND	1.0		µg/L	1	10/23/2010 4:49:05 PM
Ethylbenzene	ND	1.0		µg/L	1	10/23/2010 4:49:05 PM
Xylenes, Total	ND	2.0		µg/L	1	10/23/2010 4:49:05 PM
Surr: 4-Bromofluorobenzene	102	81.3-151		%REC	1	10/23/2010 4:49:05 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: *25-Oct-10*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-3
Lab Order:	1010806	**Collection Date:**	10/13/2010 1:26:00 PM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	10/19/2010
Lab ID:	1010806-03	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/20/2010 11:29:26 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/20/2010 11:29:26 PM
Surr: DNOP	128	86.9-151		%REC	1	10/20/2010 11:29:26 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/23/2010 5:19:40 PM
Surr: BFB	89.4	84.5-118		%REC	1	10/23/2010 5:19:40 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	10/23/2010 5:19:40 PM
Toluene	ND	1.0		µg/L	1	10/23/2010 5:19:40 PM
Ethylbenzene	ND	1.0		µg/L	1	10/23/2010 5:19:40 PM
Xylenes, Total	ND	2.0		µg/L	1	10/23/2010 5:19:40 PM
Surr: 4-Bromofluorobenzene	91.6	81.3-151		%REC	1	10/23/2010 5:19:40 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: *25-Oct-10*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-4
Lab Order:	1010806	**Collection Date:**	10/13/2010 12:57:00 PM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	10/19/2010
Lab ID:	1010806-04	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/21/2010 12:03:18 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/21/2010 12:03:18 AM
Surr: DNOP	122	86.9-151		%REC	1	10/21/2010 12:03:18 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/23/2010 5:50:05 PM
Surr: BFB	93.7	84.5-118		%REC	1	10/23/2010 5:50:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	10/23/2010 5:50:05 PM
Toluene	ND	1.0		µg/L	1	10/23/2010 5:50:05 PM
Ethylbenzene	ND	1.0		µg/L	1	10/23/2010 5:50:05 PM
Xylenes, Total	ND	2.0		µg/L	1	10/23/2010 5:50:05 PM
Surr: 4-Bromofluorobenzene	99.5	81.3-151		%REC	1	10/23/2010 5:50:05 PM

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Date: *25-Oct-10*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-6
Lab Order:	1010806	**Collection Date:**	10/13/2010 12:33:00 PM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	10/19/2010
Lab ID:	1010806-05	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/21/2010 12:37:10 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/21/2010 12:37:10 AM
Surr: DNOP	125	86.9-151		%REC	1	10/21/2010 12:37:10 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/23/2010 6:20:33 PM
Surr: BFB	94.7	84.5-118		%REC	1	10/23/2010 6:20:33 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	10/23/2010 6:20:33 PM
Toluene	ND	1.0		µg/L	1	10/23/2010 6:20:33 PM
Ethylbenzene	ND	1.0		µg/L	1	10/23/2010 6:20:33 PM
Xylenes, Total	ND	2.0		µg/L	1	10/23/2010 6:20:33 PM
Surr: 4-Bromofluorobenzene	102	81.3-151		%REC	1	10/23/2010 6:20:33 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: *25-Oct-10*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-7
Lab Order:	1010806	**Collection Date:**	10/13/2010 12:05:00 PM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	10/19/2010
Lab ID:	1010806-06	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/21/2010 1:44:56 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/21/2010 1:44:56 AM
Surr: DNOP	124	86.9-151		%REC	1	10/21/2010 1:44:56 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	10/23/2010 6:51:11 PM
Surr: BFB	88.6	84.5-118		%REC	1	10/23/2010 6:51:11 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	10/23/2010 6:51:11 PM
Toluene	ND	1.0		µg/L	1	10/23/2010 6:51:11 PM
Ethylbenzene	ND	1.0		µg/L	1	10/23/2010 6:51:11 PM
Xylenes, Total	ND	2.0		µg/L	1	10/23/2010 6:51:11 PM
Surr: 4-Bromofluorobenzene	92.3	81.3-151		%REC	1	10/23/2010 6:51:11 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: *25-Oct-10*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-8
Lab Order:	1010806	**Collection Date:**	10/13/2010 2:29:00 PM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	10/19/2010
Lab ID:	1010806-07	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JB
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	10/21/2010 2:18:48 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/21/2010 2:18:48 AM
Surr: DNOP	122	86.9-151		%REC	1	10/21/2010 2:18:48 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	0.25	0.050		mg/L	1	10/23/2010 7:21:38 PM
Surr: BFB	94.6	84.5-118		%REC	1	10/23/2010 7:21:38 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	12	1.0		µg/L	1	10/23/2010 7:21:38 PM
Toluene	ND	1.0		µg/L	1	10/23/2010 7:21:38 PM
Ethylbenzene	1.7	1.0		µg/L	1	10/23/2010 7:21:38 PM
Xylenes, Total	16	2.0		µg/L	1	10/23/2010 7:21:38 PM
Surr: 4-Bromofluorobenzene	106	81.3-151		%REC	1	10/23/2010 7:21:38 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:** 1010806

Analyte	Result	Units	PQL	SPK Val	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range											
Sample ID: MB-24190		*MBLK*				Batch ID:	**24190**	Analysis Date:		10/20/2010 1:49:30 PM	
Diesel Range Organics (DRO)	ND	mg/L	1.0								
Motor Oil Range Organics (MRO)	ND	mg/L	5.0								
Sample ID: LCS-24190		*LCS*				Batch ID:	**24190**	Analysis Date:		10/20/2010 2:23:37 PM	
Diesel Range Organics (DRO)	5.295	mg/L	1.0	5	0	106	74	157			
Sample ID: LCSD-24190		*LCSD*				Batch ID:	**24190**	Analysis Date:		10/20/2010 2:57:44 PM	
Diesel Range Organics (DRO)	5.559	mg/L	1.0	5	0	111	74	157	4.86	23	
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 1010806-02A MSD		*MSD*				Batch ID:	**R41734**	Analysis Date:		10/23/2010 10:24:37 PM	
Gasoline Range Organics (GRO)	0.5320	mg/L	0.050	0.5	0	106	74.6	134	2.90	17	
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R41734**	Analysis Date:		10/23/2010 1:45:44 PM	
Gasoline Range Organics (GRO)	ND	mg/L	0.050								
Sample ID: 2.5UG GRO LCS		*LCS*				Batch ID:	**R41734**	Analysis Date:		10/23/2010 10:54:49 PM	
Gasoline Range Organics (GRO)	0.5888	mg/L	0.050	0.5	0	118	83.7	124			
Sample ID: 1010806-02A MS		*MS*				Batch ID:	**R41734**	Analysis Date:		10/23/2010 9:54:14 PM	
Gasoline Range Organics (GRO)	0.5168	mg/L	0.050	0.5	0	103	74.6	134			
Method: EPA Method 8021B: Volatiles											
Sample ID: 1010806-03A MSD		*MSD*				Batch ID:	**R41734**	Analysis Date:		10/23/2010 11:55:58 PM	
Benzene	20.59	µg/L	1.0	20	0	103	87.7	108	0.233	13.8	
Toluene	20.92	µg/L	1.0	20	0	105	84.2	115	1.34	17.1	
Ethylbenzene	20.85	µg/L	1.0	20	0	104	81.3	115	0.983	15.3	
Xylenes, Total	64.36	µg/L	2.0	60	0	107	83	118	2.66	13	
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R41734**	Analysis Date:		10/23/2010 1:45:44 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:	**R41734**	Analysis Date:		10/24/2010 12:26:33 AM	
Benzene	20.97	µg/L	1.0	20	0	105	84.7	118			
Toluene	21.43	µg/L	1.0	20	0	107	82	123			
Ethylbenzene	21.47	µg/L	1.0	20	0	107	83	118			
Xylenes, Total	66.78	µg/L	2.0	60	0	111	85.4	119			
Sample ID: 1010806-03A MS		*MS*				Batch ID:	**R41734**	Analysis Date:		10/23/2010 11:25:19 PM	
Benzene	20.64	µg/L	1.0	20	0	103	87.7	108			
Toluene	21.20	µg/L	1.0	20	0	106	84.2	115			
Ethylbenzene	20.65	µg/L	1.0	20	0	103	81.3	115			
Xylenes, Total	62.67	µg/L	2.0	60	0	104	83	118			

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: 10/19/2010

Work Order Number 1010806 Received by: MLW

Checklist completed by: Signature 10/19/10 Date Sample ID labels checked by: MG 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?	**5.7°**	*<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:
BLG HWY 537 2008 Spill

Project #:
AES 080101

Project Manager:
Ross Kennemer

Sampler: Nathan Willis

On Ice: ☒ Yes ☐ No

Sample temperature: 5.7

HEAL No. 1010806

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		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)					Air Bubbles (Y or N)
		H_2O	Trip Blank	2-glass 40mL	HCl	1	X		X	NO												
10-13-10	1408		MW-1	glass 6-40mL	1-Non 5-HCl	2	X		X													
	1326		MW-3			3	X		X													
	1257		MW-4			4	X		X													
			~~MW-5~~				~~X~~		~~X~~	NO												
	1233		MW-6			5	X		X													
	1205		MW-7			6	X		X													
↓	1429	↓	MW-8	↓	↓	7	X		X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
10-14-10	0830	Nathan Willis	Deborah Watson	10-14-10	0830
10-14-10	1500	Deborah Watson	M. Walters	10-19-10	1140

Remarks:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Thursday, February 03, 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.: 1101796

Dear Ross Kennemer:

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 1/25/2011 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.

Reporting limits are determined by EPA methodology.

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
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

Hall Environmental Analysis Laboratory, Inc.

Date: *03-Feb-11*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	Trip Blank
Lab Order:	1101796	**Collection Date:**	
Project:	BMG Highway 537 2008 Spill	**Date Received:**	1/25/2011
Lab ID:	1101796-01	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/1/2011 12:50:38 PM
Surr: BFB	86.6	79.4-132		%REC	1	2/1/2011 12:50:38 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	2/1/2011 12:50:38 PM
Toluene	ND	1.0		µg/L	1	2/1/2011 12:50:38 PM
Ethylbenzene	ND	1.0		µg/L	1	2/1/2011 12:50:38 PM
Xylenes, Total	ND	2.0		µg/L	1	2/1/2011 12:50:38 PM
Surr: 4-Bromofluorobenzene	97.5	81.3-151		%REC	1	2/1/2011 12:50:38 PM

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Date: *03-Feb-11*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-1
Lab Order:	1101796	**Collection Date:**	1/20/2011 1:15:00 PM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	1/25/2011
Lab ID:	1101796-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/29/2011 2:43:34 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/29/2011 2:43:34 AM
Surr: DNOP	121	86.9-151		%REC	1	1/29/2011 2:43:34 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/1/2011 1:19:24 PM
Surr: BFB	86.3	79.4-132		%REC	1	2/1/2011 1:19:24 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	2/1/2011 1:19:24 PM
Toluene	ND	1.0		µg/L	1	2/1/2011 1:19:24 PM
Ethylbenzene	ND	1.0		µg/L	1	2/1/2011 1:19:24 PM
Xylenes, Total	ND	2.0		µg/L	1	2/1/2011 1:19:24 PM
Surr: 4-Bromofluorobenzene	96.9	81.3-151		%REC	1	2/1/2011 1:19:24 PM

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Date: *03-Feb-11*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-1
Lab Order:	1101796	**Collection Date:**	1/20/2011 12:56:00 PM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	1/25/2011
Lab ID:	1101796-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/29/2011 2:43:34 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/29/2011 2:43:34 AM
Surr: DNOP	121	86.9-151		%REC	1	1/29/2011 2:43:34 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/1/2011 1:19:24 PM
Surr: BFB	86.3	79.4-132		%REC	1	2/1/2011 1:19:24 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	2/1/2011 1:19:24 PM
Toluene	ND	1.0		µg/L	1	2/1/2011 1:19:24 PM
Ethylbenzene	ND	1.0		µg/L	1	2/1/2011 1:19:24 PM
Xylenes, Total	ND	2.0		µg/L	1	2/1/2011 1:19:24 PM
Surr: 4-Bromofluorobenzene	96.9	81.3-151		%REC	1	2/1/2011 1:19:24 PM

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Date: *03-Feb-11*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-3
Lab Order:	1101796	**Collection Date:**	1/20/2011 12:56:00 PM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	1/25/2011
Lab ID:	1101796-03	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/29/2011 3:16:56 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/29/2011 3:16:56 AM
Surr: DNOP	131	86.9-151		%REC	1	1/29/2011 3:16:56 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/1/2011 1:48:18 PM
Surr: BFB	85.9	79.4-132		%REC	1	2/1/2011 1:48:18 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	2/1/2011 1:48:18 PM
Toluene	ND	1.0		µg/L	1	2/1/2011 1:48:18 PM
Ethylbenzene	ND	1.0		µg/L	1	2/1/2011 1:48:18 PM
Xylenes, Total	ND	2.0		µg/L	1	2/1/2011 1:48:18 PM
Surr: 4-Bromofluorobenzene	96.8	81.3-151		%REC	1	2/1/2011 1:48:18 PM

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Date: *03-Feb-11*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-4
Lab Order:	1101796	**Collection Date:**	1/20/2011 12:39:00 PM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	1/25/2011
Lab ID:	1101796-04	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/29/2011 3:50:18 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/29/2011 3:50:18 AM
Surr: DNOP	130	86.9-151		%REC	1	1/29/2011 3:50:18 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/1/2011 2:17:13 PM
Surr: BFB	79.8	79.4-132		%REC	1	2/1/2011 2:17:13 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	2/1/2011 2:17:13 PM
Toluene	ND	1.0		µg/L	1	2/1/2011 2:17:13 PM
Ethylbenzene	ND	1.0		µg/L	1	2/1/2011 2:17:13 PM
Xylenes, Total	ND	2.0		µg/L	1	2/1/2011 2:17:13 PM
Surr: 4-Bromofluorobenzene	87.8	81.3-151		%REC	1	2/1/2011 2:17:13 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: *03-Feb-11*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-6
Lab Order:	1101796	**Collection Date:**	1/20/2011 12:12:00 PM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	1/25/2011
Lab ID:	1101796-05	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/29/2011 4:23:40 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/29/2011 4:23:40 AM
Surr: DNOP	127	86.9-151		%REC	1	1/29/2011 4:23:40 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/1/2011 2:46:07 PM
Surr: BFB	80.2	79.4-132		%REC	1	2/1/2011 2:46:07 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	2/1/2011 2:46:07 PM
Toluene	ND	1.0		µg/L	1	2/1/2011 2:46:07 PM
Ethylbenzene	ND	1.0		µg/L	1	2/1/2011 2:46:07 PM
Xylenes, Total	ND	2.0		µg/L	1	2/1/2011 2:46:07 PM
Surr: 4-Bromofluorobenzene	89.0	81.3-151		%REC	1	2/1/2011 2:46:07 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: *03-Feb-11*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-7
Lab Order:	1101796	**Collection Date:**	1/20/2011 11:50:00 AM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	1/25/2011
Lab ID:	1101796-06	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/29/2011 4:57:02 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/29/2011 4:57:02 AM
Surr: DNOP	127	86.9-151		%REC	1	1/29/2011 4:57:02 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/1/2011 3:14:58 PM
Surr: BFB	80.3	79.4-132		%REC	1	2/1/2011 3:14:58 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	2/1/2011 3:14:58 PM
Toluene	ND	1.0		µg/L	1	2/1/2011 3:14:58 PM
Ethylbenzene	ND	1.0		µg/L	1	2/1/2011 3:14:58 PM
Xylenes, Total	ND	2.0		µg/L	1	2/1/2011 3:14:58 PM
Surr: 4-Bromofluorobenzene	87.0	81.3-151		%REC	1	2/1/2011 3:14:58 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: *03-Feb-11*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-8
Lab Order:	1101796	**Collection Date:**	1/20/2011 1:34:00 PM
Project:	BMG Highway 537 2008 Spill	**Date Received:**	1/25/2011
Lab ID:	1101796-07	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JB**
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/29/2011 5:30:23 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/29/2011 5:30:23 AM
Surr: DNOP	132	86.9-151		%REC	1	1/29/2011 5:30:23 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	0.16	0.050		mg/L	1	2/1/2011 3:43:47 PM
Surr: BFB	86.7	79.4-132		%REC	1	2/1/2011 3:43:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	35	1.0		µg/L	1	2/1/2011 3:43:47 PM
Toluene	ND	1.0		µg/L	1	2/1/2011 3:43:47 PM
Ethylbenzene	6.5	1.0		µg/L	1	2/1/2011 3:43:47 PM
Xylenes, Total	6.3	2.0		µg/L	1	2/1/2011 3:43:47 PM
Surr: 4-Bromofluorobenzene	93.2	81.3-151		%REC	1	2/1/2011 3:43:47 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:** 1101796

Analyte	Result	Units	PQL	SPK Val	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range											
Sample ID: MB-25423		*MBLK*				Batch ID:	**25423**	Analysis Date:		1/29/2011 1:03:31 AM	
Diesel Range Organics (DRO)	ND	mg/L	1.0								
Motor Oil Range Organics (MRO)	ND	mg/L	5.0								
Sample ID: LCS-25423		*LCS*				Batch ID:	**25423**	Analysis Date:		1/29/2011 1:36:52 AM	
Diesel Range Organics (DRO)	6.594	mg/L	1.0	5	0	132	74	157			
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 1101796-02A MSD		*MSD*				Batch ID:	**R43460**	Analysis Date:		2/1/2011 6:36:59 PM	
Gasoline Range Organics (GRO)	0.5326	mg/L	0.050	0.5	0	107	74.6	134	3.07	17	
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R43460**	Analysis Date:		2/1/2011 8:59:34 AM	
Gasoline Range Organics (GRO)	ND	mg/L	0.050								
Sample ID: 2.5UG GRO LCS		*LCS*				Batch ID:	**R43460**	Analysis Date:		2/1/2011 11:53:01 AM	
Gasoline Range Organics (GRO)	0.5616	mg/L	0.050	0.5	0	112	83.7	124			
Sample ID: 1101796-02A MS		*MS*				Batch ID:	**R43460**	Analysis Date:		2/1/2011 6:08:04 PM	
Gasoline Range Organics (GRO)	0.5492	mg/L	0.050	0.5	0	110	74.6	134			
Method: EPA Method 8021B: Volatiles											
Sample ID: 1101796-03A MSD		*MSD*				Batch ID:	**R43460**	Analysis Date:		2/1/2011 7:34:42 PM	
Benzene	20.07	µg/L	1.0	20	0	100	87.7	108	3.36	13.8	
Toluene	20.17	µg/L	1.0	20	0	101	84.2	115	2.10	17.1	
Ethylbenzene	20.45	µg/L	1.0	20	0	102	81.3	115	0.677	15.3	
Xylenes, Total	61.31	µg/L	2.0	60	0	102	83	118	2.61	13	
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R43460**	Analysis Date:		2/1/2011 8:59:34 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:	**R43460**	Analysis Date:		2/1/2011 12:21:49 PM	
Benzene	20.01	µg/L	1.0	20	0	100	84.7	118			
Toluene	20.50	µg/L	1.0	20	0	102	82	123			
Ethylbenzene	20.35	µg/L	1.0	20	0	102	83	118			
Xylenes, Total	62.40	µg/L	2.0	60	0	104	85.4	119			
Sample ID: 1101796-03A MS		*MS*				Batch ID:	**R43460**	Analysis Date:		2/1/2011 7:05:50 PM	
Benzene	20.75	µg/L	1.0	20	0	104	87.7	108			
Toluene	20.59	µg/L	1.0	20	0	103	84.2	115			
Ethylbenzene	20.59	µg/L	1.0	20	0	103	81.3	115			
Xylenes, Total	62.94	µg/L	2.0	60	0	105	83	118			

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: 1/25/2011

Work Order Number 1101796 Received by: AT

Checklist completed by: _____ 01/25/11 Sample ID labels checked by: _____

Signature Date 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 ☐		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?	1.3°	*<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:
Ross Kennemer

Sampler:

On Ice: ☒ Yes ☐ No

Sample Temperature: 13

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1101794
		H_2O	Trip Blank	2-40 mL glass	HCl	-1
1-20-11	1315		MW-1	6-40mL glass	1-Non 6-HCl	-2
	1256		MW-3			-3
	1239		MW-4			-4
	1212		MW-6			-5
	1150		MW-7			-6
	1334		MW-8			-7

Analysis Request

BTEX + [redacted] (8021)	BTEX + MTBE + TPH (Gas only) (24-036)	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)
X															
X		X													
X		X													
X		X													
X		X													
X		X													
X		X													

Date:	Time:	Relinquished by:	Received by:	Date	Time
1-20-11	1545			1-20-11	1545
Date:	Time:	Relinquished by:	Received by:	Date	Time
1-24-11	1630			01/25/11	0957

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.