

3R – 448

2010 GWMR

02 / 22 / 2010

Animas Environmental Services, LLC

624 E. Comanche . Farmington, NM 87401 . TEL 505-564-2281 . FAX 505-324-2022 . www.animasenvironmental.com

February 22, 2010

Brad Jones
Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

Dixon Sandoval
Jicarilla Apache Nation
Environmental Protection Office
P.O. Box 507
Dulce, NM 87528

Re: Periodic Progress Report and Request for No Further Action for the Benson-Montin-Greer Highway 537 Truck Receiving Station Llaves Pipeline 2007 Oil Spill, Rio Arriba County, New Mexico

Dear Sirs:

Animas Environmental Services, LLC (AES), on behalf of Benson-Montin-Greer Drilling Corporation (BMG), conducted groundwater sampling of monitor wells at the BMG Highway 537 Truck Receiving Station 2007 Spill Location on January 13, 2010. Work was conducted in accordance with a Sampling and Analysis Plan (SAP) submitted to the Jicarilla Apache Nation Environmental Protection Office (JEPO) and the U.S. Environmental Protection Agency (USEPA) on April 4, 2007.

The release occurred in March 2007 on the Schmitz Ranch within the SW¼ NW¼ of Section 18, T25N, R3W (latitude and longitude recorded as N36° 23' 59.781" and W107° 11' 26.450"). Petroleum hydrocarbons flowed into the Los Ojitos Arroyo and then downstream to a livestock pond located on Jicarilla Apache Nation Land within the SE¼ SE¼ of Section 13, T25N, R4W (latitude and longitude recorded as N36° 23' 40.417" and W107° 11' 53.337"), Rio Arriba County, New Mexico. The locations of the release and flow route are shown on Figures 1 and 2.

1.0 Site History

On March 7, 2007, Schmitz Ranch personnel observed oil leaking into the Los Ojitos Canyon Arroyo. BMG personnel discovered that a small corrosion hole in the Llaves



Pipeline, which runs parallel to the south side of Highway 537, was the source of the leaking oil, and the pipeline was removed from service until the pipeline was repaired and clean up action was completed.

Approximately 25,230 cubic yards of petroleum-contaminated soils were excavated from the origin of the oil pipeline leak toward the Los Ojitos Arroyo and within the arroyo during March and April 2007. The soils were then transported off-site to a New Mexico Oil Conservation Division (NMOCD) permitted facility, the Schmitz Ranch Landfarm. Confirmation samples were collected by AES personnel for soil confirmation during excavation activities and from surface water at Vigil Pond on April 3, 2007. Excavation and clean up efforts were discussed in detail within the SAP prepared by AES and dated April 5, 2007, which was submitted to the JEPO and USEPA.

On July 16 and 17, 2007, AES installed 11 monitor wells along the route of the release in order to define the lateral and vertical extent of near surface and subsurface soil contamination and potential groundwater contamination.

Quarterly groundwater sampling has been conducted throughout 2007, 2008, and 2009. Analytical results from groundwater samples collected during the October 2009 sampling event showed that benzene, toluene, ethylbenzene, and xylene (BTEX) and total petroleum hydrocarbons (TPH) C₆-C₃₆ concentrations in all wells sampled remained below laboratory detection limits. Details of groundwater sampling were presented within the AES *Periodic Progress Report*, dated December 7, 2009.

2.0 Groundwater Monitoring and Sampling, January 2010

AES personnel conducted groundwater monitoring and sampling at the project area on January 13, 2010. Groundwater samples were laboratory analyzed for BTEX and TPH C₆-C₃₆ per EPA Methods 8021/8015 at Hall Environmental Analysis Laboratory (Hall), Albuquerque, New Mexico.

2.1 Groundwater Measurements and Water Quality Data

During the January 2010 sampling event, groundwater measurements were recorded for MW-1 through MW-7 and MW-10. Monitor wells MW-8, MW-9, and MW-11 were previously destroyed and therefore were not measured. Groundwater elevations were measured with a Keck water level with accuracy to 0.01 foot and found to range from 7,027.23 feet above mean sea level (amsl) in MW-10 and 7,040.39 feet amsl in MW-4. Groundwater elevations generally decreased approximately 0.35 feet across the project area since the last sampling event in October 2009.

Water quality measurements were made with an YSI Water Quality Meter, and temperature ranged from 9.33°C in MW-6 and 13.07°C in MW-1. Groundwater pH measurements ranged from 6.98 to 7.16, and dissolved oxygen concentrations were between 2.33 mg/L in MW-10 and 3.73 mg/L in MW-1. Oxidation reduction potential (ORP) measurements were between -25.0 mV and 38.7 mV, and conductivity readings were between 2.287 mS and 6.371 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 Groundwater Analytical Results

Groundwater samples were collected by AES personnel from MW-1 through MW-6 and MW-10 for laboratory analysis on January 13, 2010. In each of the wells sampled, analytical results for BTEX showed that concentrations remained below laboratory detection limits, and therefore also below applicable New Mexico Water Quality Control Commission (WQCC) standards for BTEX. TPH concentrations were also below laboratory detection limits in each of the wells sampled. Tabulated laboratory analytical results are included in Table 2, and laboratory analytical reports are included in Appendix A.

3.0 Conclusions and Recommendations

Petroleum hydrocarbon impacts to groundwater have not been detected since the monitor wells were installed in July 2007. Groundwater laboratory analytical results continue to show non-detectable concentrations of BTEX and TPH for all eight consecutive quarterly groundwater sampling events conducted to date.

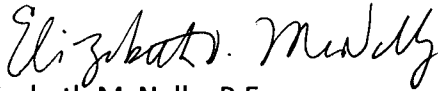
AES, on behalf of BMG, requests evaluation for granting No Further Action status at the BMG Highway 537 Truck Receiving Station 2007 Spill Location. Between July 2007 and January 2010, eight consecutive quarters of groundwater sampling have been conducted at the BMG Highway 537 Truck Receiving Station 2007 Spill Location. In August 2007, MW-11 had a reported DRO concentration of 1.4 mg/L, just above the laboratory detection limit of 1.0 mg/L. With the exception of the August 2007 result for MW-11, no contaminants of concern have ever been reported above laboratory detection limits at the site.

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,



Corwin Lameman
Geologist Intern



Elizabeth McNally, P.E.

Attachments:

Tables

Table 1. Summary of Groundwater and Water Quality Data

Table 2. Summary of Groundwater Analytical Results

Figures

Figure 1. Topographic Site Location Map

Figure 2. General Site Plan

Appendices

Appendix A. Water Sample Collection Forms
Laboratory Analytical Reports

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

Mike Dimond
Benson-Montin-Greer Drilling Corp.
4900 College Blvd
Farmington NM 87402

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENT AND WATER QUALITY DATA
BMG HWY 537 LLAVES PIPELINE 2007 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	10-Aug-07	47.38	7086.81	7039.43	7.36	1.998	3.62	16.61	-121.0
MW-1	27-Mar-08	36.97	7086.81	7049.84	7.78	3.419	5.62	13.48	122.3
MW-1	25-Sep-08	47.12	7086.81	7039.69	7.02	3.859	2.31	16.76	30.0
MW-1	31-Dec-08	47.26	7086.81	7039.55	6.25	3.925	NM	11.43	104.9
MW-1	06-Apr-09	47.21	7086.81	7039.60	7.22	4.063	1.97	12.45	9.4
MW-1	07-Jul-09	47.15	7086.81	7039.66	6.91	3.226	2.21	19.35	-9.1
MW-1	13-Oct-09	47.50	7086.81	7039.31	7.04	2.107	3.31	13.05	90.6
MW-1	13-Jan-10	47.75	7086.81	7039.06	6.98	2.812	3.73	13.07	23.2
MW-2	10-Aug-07	36.53	7076.43	7039.90	7.44	2.216	2.34	17.09	-138.0
MW-2	27-Mar-08	36.19	7076.43	7040.24	7.13	4.089	1.16	13.05	76.6
MW-2	25-Sep-08	36.34	7076.43	7040.09	6.88	3.415	6.48	15.05	60.1
MW-2	05-Jan-09	36.43	7076.43	7040.00			NM		
MW-2	06-Apr-09	36.29	7076.43	7040.14	7.37	5.308	2.47	13.74	8.8
MW-2	07-Jul-09	36.29	7076.43	7040.14	6.90	4.025	2.00	16.12	-26.8
MW-2	13-Oct-09	36.70	7076.43	7039.73	6.92	2.529	2.91	12.84	80.0
MW-2	13-Jan-10	36.95	7076.43	7039.48	7.01	3.239	3.64	12.36	35.9
MW-3	10-Aug-07	29.35	7069.66	7040.31	7.57	1.797	2.41	16.91	-165.1
MW-3	27-Mar-08	28.94	7069.66	7040.72	7.38	2.735	0.86	13.16	67.6
MW-3	25-Sep-08	NM	7069.66	NM	6.74	2.776	2.61	14.35	50.1
MW-3	05-Jan-09	29.51	7069.66	7040.15			NM		
MW-3	06-Apr-09	29.11	7069.66	7040.55	6.98	3.233	1.63	12.88	10.9
MW-3	07-Jul-09	29.15	7069.66	7040.51	7.12	2.858	1.30	15.44	-24.9
MW-3	13-Oct-09	29.64	7069.66	7040.02	7.11	2.299	1.71	12.37	60.5
MW-3	13-Jan-10	29.80	7069.66	7039.86	7.10	2.616	3.31	11.66	38.7

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENT AND WATER QUALITY DATA
BMG HWY 537 LLAVES PIPELINE 2007 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-4	10-Aug-07	22.34	7068.11	7045.77	7.49	1.517	2.40	14.47	-164.6
MW-4	27-Mar-08	26.92	7068.11	7041.19	7.46	2.340	1.89	12.40	76.1
MW-4	25-Sep-08	27.21	7068.11	7040.90	6.89	2.434	3.70	14.76	43.1
MW-4	06-Jan-09	27.23	7068.11	7040.88	6.71	2.902	4.36	11.91	230.9
MW-4	06-Apr-09	27.06	7068.11	7041.05	6.92	2.828	2.07	13.62	8.3
MW-4	07-Jul-09	27.14	7068.11	7040.97	7.13	3.301	2.29	17.52	-14.0
MW-4	13-Oct-09	27.59	7068.11	7040.52	7.20	2.070	3.50	12.71	59.4
MW-4	13-Jan-10	27.72	7068.11	7040.39	7.16	2.287	3.35	11.35	28.5
MW-5	10-Aug-07	20.44	7059.97	7039.53	7.81	7.155	2.40	15.72	-122.0
MW-5	28-Mar-08	19.80	7059.97	7040.17	NM - LOW YIELD				
MW-5	25-Sep-08	20.26	7059.97	7039.71	6.97	19.17	1.62	16.26	9.9
MW-5	06-Jan-09	20.16	7059.97	7039.81	6.52	23.84	2.22	8.91	231.2
MW-5	06-Apr-09	20.11	7059.97	7039.86	7.01	22.69	2.52	12.10	9.7
MW-5	07-Jul-09	20.07	7059.97	7039.90	7.60	18.17	1.20	15.57	-10.6
MW-5	13-Oct-09	20.48	7059.97	7039.49	7.58	10.92	1.14	12.65	60.2
MW-5	13-Jan-10	20.62	7059.97	7039.35	7.08	2.571	2.55	9.96	-23.2
MW-6	10-Aug-07	22.32	7061.97	7039.65	7.47	1.842	2.11	17.01	-138.7
MW-6	28-Mar-08	21.61	7061.97	7040.36	7.34	3.261	3.22	14.11	303.9
MW-6	25-Sep-08	22.45	7061.97	7039.52	6.76	3.092	2.92	16.55	32.4
MW-6	06-Jan-09	22.54	7061.97	7039.43	6.94	4.537	2.77	7.77	21.8
MW-6	06-Apr-09	22.24	7061.97	7039.73	7.19	4.246	2.08	12.77	10.6
MW-6	07-Jul-09	22.28	7061.97	7039.69	7.11	2.553	2.09	15.64	-15.2
MW-6	13-Oct-09	22.89	7061.97	7039.08	7.23	3.545	1.85	13.42	49.7

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENT AND WATER QUALITY DATA
BMG HWY 537 LLAVES PIPELINE 2007 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	13-Jan-10	22.96	7061.97	7039.01	7.10	2.893	2.93	9.33	-23.5
MW-7	13-Aug-07	13.31	7051.30	7037.99	NM - BENTONITE FOUND IN WELL				
MW-7	28-Mar-08	12.11	7051.30	7039.19	NM - LOW YIELD				
MW-7	25-Sep-08	13.64	7051.30	7037.66	6.98	3.308	3.19	15.65	44.9
MW-7	07-Jan-09	NM	7051.30		NM - WATER IN WELL FROZEN				
MW-7	06-Apr-09	13.32	7051.30	7037.98	6.60	3.191	2.29	10.78	13.1
MW-7	07-Jul-09	13.27	7051.30	7038.03	6.73	2.429	1.61	16.65	-18.4
MW-7	13-Oct-09	14.16	7051.30	7037.14	6.88	1.837	1.66	15.41	60.2
MW-7	13-Jan-10	Dry	7051.30		NM - WELL DRY				
MW-8	13-Aug-07	13.39	7049.96	7036.57	7.33	1.550	3.02	15.97	-26.6
MW-8	28-Mar-08	11.44	7049.96	7038.52	NM - LOW YIELD				
MW-8	25-Sep-08	13.55	7049.96	7036.41	6.50	2.090	1.56	16.77	17.4
MW-8	06-Jan-09	13.65	7049.96	7036.31	6.48	2.430	2.25	6.78	41.0
MW-8	06-Apr-09		7049.96		NM - OBSTRUCTION IN WELL				
MW-8	07-Jul-09				NM - WELL DESTROYED				
MW-9	13-Aug-07		7045.47	7045.47	NM - WELL DRY				
MW-9	28-Mar-08		7045.47	7063.00	NM - WELL DAMAGED				
MW-9	25-Sep-08	12.74	7045.47	7032.73	6.85	14.65	3.62	16.54	40.5
MW-9	07-Jan-09				NM - WELL DESTROYED				
MW-10	10-Aug-07	5.95	7038.05	7032.10	7.17	2.727	2.17	21.07	-138.0
MW-10	28-Mar-08	5.57	7038.05	7032.48	NM - WELL DAMAGED				
MW-10	25-Sep-08	8.66	7038.05	7029.39	7.17	9.857	2.41	14.83	-5.8

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENT AND WATER QUALITY DATA
BMG HWY 537 LLAVES PIPELINE 2007 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-10	07-Jan-09		7038.05		NM - WATER IN WELL FROZEN				
MW-10	06-Apr-09	7.61	7038.05	7030.44	6.74	4.835	1.90	9.44	14.5
MW-10	07-Jul-09	7.09	7038.05	7030.96	7.15	3.255	1.45	21.37	-22.6
MW-10	13-Oct-09	9.57	7038.05	7028.48	7.05	6.185	1.36	14.20	18.4
MW-10	13-Jan-10	11.02	7038.05	7027.03	7.05	6.371	2.33	9.81	-25.0
MW-11	10-Aug-07	16.78	7042.00	7025.22	7.45	10.34	11.21	22.98	-135.7
MW-11	28-Mar-08	11.59	7042.00	7030.41	7.07	10.14	5.78	10.38	495.8
MW-11	28-Mar-08	11.59	7042.00	7030.41	NM - WELL DESTROYED				
MW-11	07-Jan-09	DRY	7042.00		NM - WELL DRY				
MW-11	06-Apr-09	NM - WELL DESTROYED							

NOTE: NM = NOT MEASURED

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2007 OIL SPILL
Rio Arriba County, New Mexico

Well ID	Date Sampled	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl- benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	DRO (mg/L)	GRO (mg/L)
Analytical Method		8021B	8021B	8021B	8021B	8015B	8015B
New Mexico WQCC		10	750	750	620	NE	NE
MW-1	10-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-1	27-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-1	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-1	31-Dec-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-1	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-1	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-1	13-Oct-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-1	13-Jan-10	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	10-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	27-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	05-Jan-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	13-Oct-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	13-Jan-10	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	10-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	27-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	05-Jan-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	13-Oct-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	13-Jan-10	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	10-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	27-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	06-Jan-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	10-13-090	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	13-Jan-10	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	13-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050

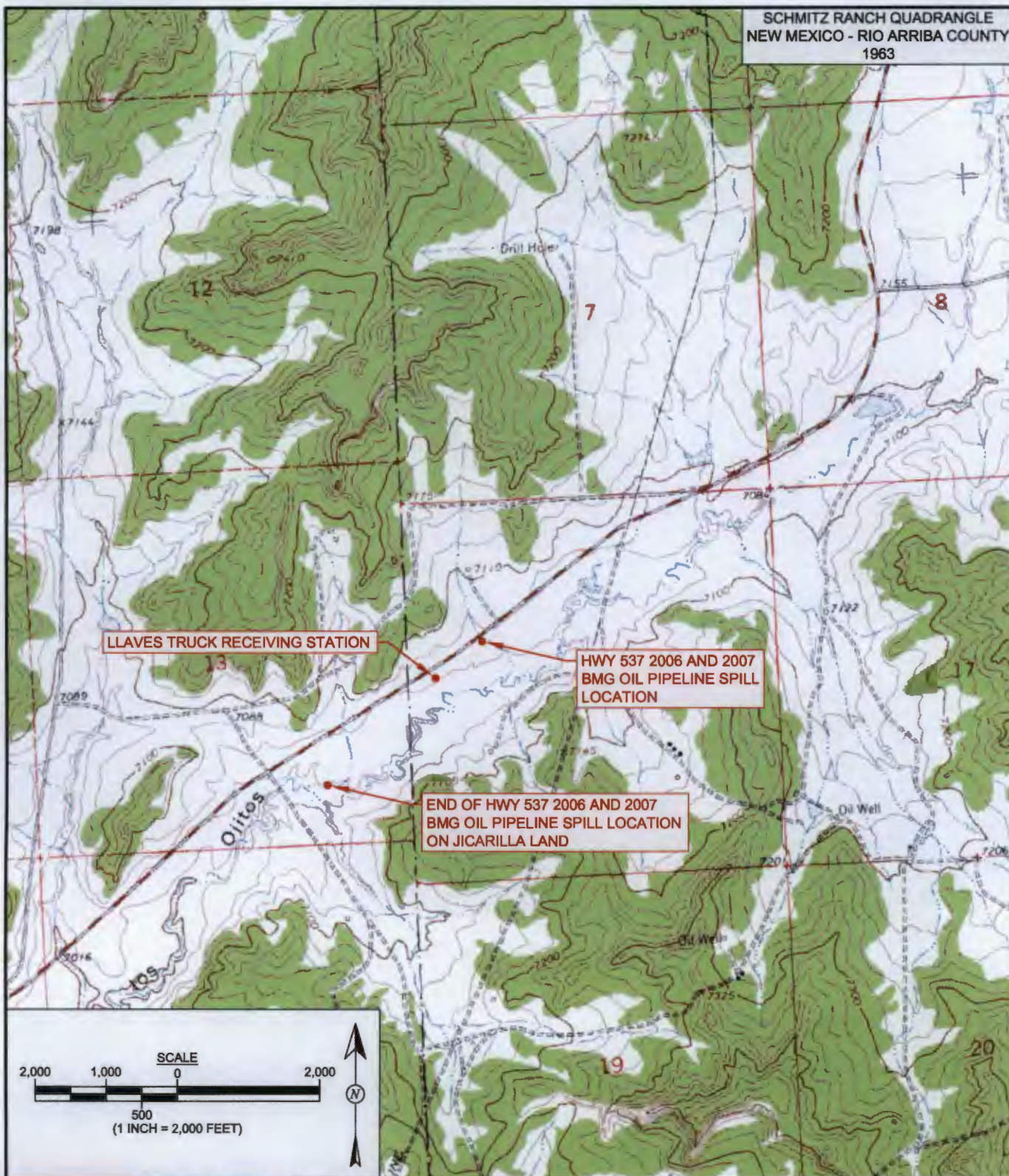
TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2007 OIL SPILL
Rio Arriba County, New Mexico

Well ID	Date Sampled	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl- benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	DRO (mg/L)	GRO (mg/L)
Analytical Method		8021B	8021B	8021B	8021B	8015B	8015B
New Mexico WQCC		10	750	750	620	NE	NE
MW-5	28-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	06-Jan-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	13-Oct-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	13-Jan-10	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	13-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	28-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	06-Jan-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	13-Oct-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	13-Jan-10	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-7	13-Aug-07	NS - Bentonite Found in Well					
MW-7	28-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-7	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-7	07-Jan-09	NS - Water Frozen in Well					
MW-7	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-7	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-7	13-Oct-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-7	13-Oct-09	NS - Well Dry					
MW-8	13-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-8	28-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-8	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-8	06-Jan-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-8	06-Apr-09	NS - Obstruction in Well					
MW-8	07-Jul-09	NS - Well Destroyed					
MW-9	13-Aug-07	NS - Well Dry					
MW-9	28-Mar-08	NS - Well Damaged					
MW-9	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-9	07-Jan-09	NS - Well Destroyed					

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BMG HWY 537 LLAVES PIPELINE 2007 OIL SPILL
Rio Arriba County, New Mexico

Well ID	Date Sampled	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl- benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	DRO (mg/L)	GRO (mg/L)
Analytical Method		8021B	8021B	8021B	8021B	8015B	8015B
New Mexico WQCC		10	750	750	620	NE	NE
MW-10	10-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-10	28-Mar-08	NS - Well Damaged					
MW-10	25-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-10	07-Jan-09	NS - Water Frozen in Well					
MW-10	06-Apr-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-10	07-Jul-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-10	13-Oct-09	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-10	13-Jan-10	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-11	13-Aug-07	<1.0	<1.0	<1.0	<2.0	1.4	<0.050
MW-11	28-Mar-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-11	25-Sep-08	NS - Well Destroyed					
MW-11	07-Jan-09	NS - Well Dry					
MW-11	06-Apr-09	NS - Well Destroyed					

NOTE: NS = Not Sampled



DRAWN BY: N. Willis	DATE DRAWN: May 5, 2009
REVISIONS BY: C. Lameman	DATE REVISED: February 25, 2010
CHECKED BY: E. McNally	DATE CHECKED: February 25, 2010
APPROVED BY: E. McNally	DATE APPROVED: February 25, 2010

FIGURE 1
TOPOGRAPHIC SITE LOCATION MAP
BMG HIGHWAY 537
TRUCK RECEIVING STATION
LLAVES PIPELINE 2007 OIL SPILL
RIO ARriba COUNTY, NEW MEXICO

FIGURE 2
GENERAL SITE PLAN WITH
GROUNDWATER CONTAMINANT
CONCENTRATIONS
JANUARY 2010
BMG HIGHWAY 537
TRUCK RECEIVING STATION
LLAVES PIPELINE 2007 OIL SPILL
RIO ARRIBA COUNTY, NEW MEXICO

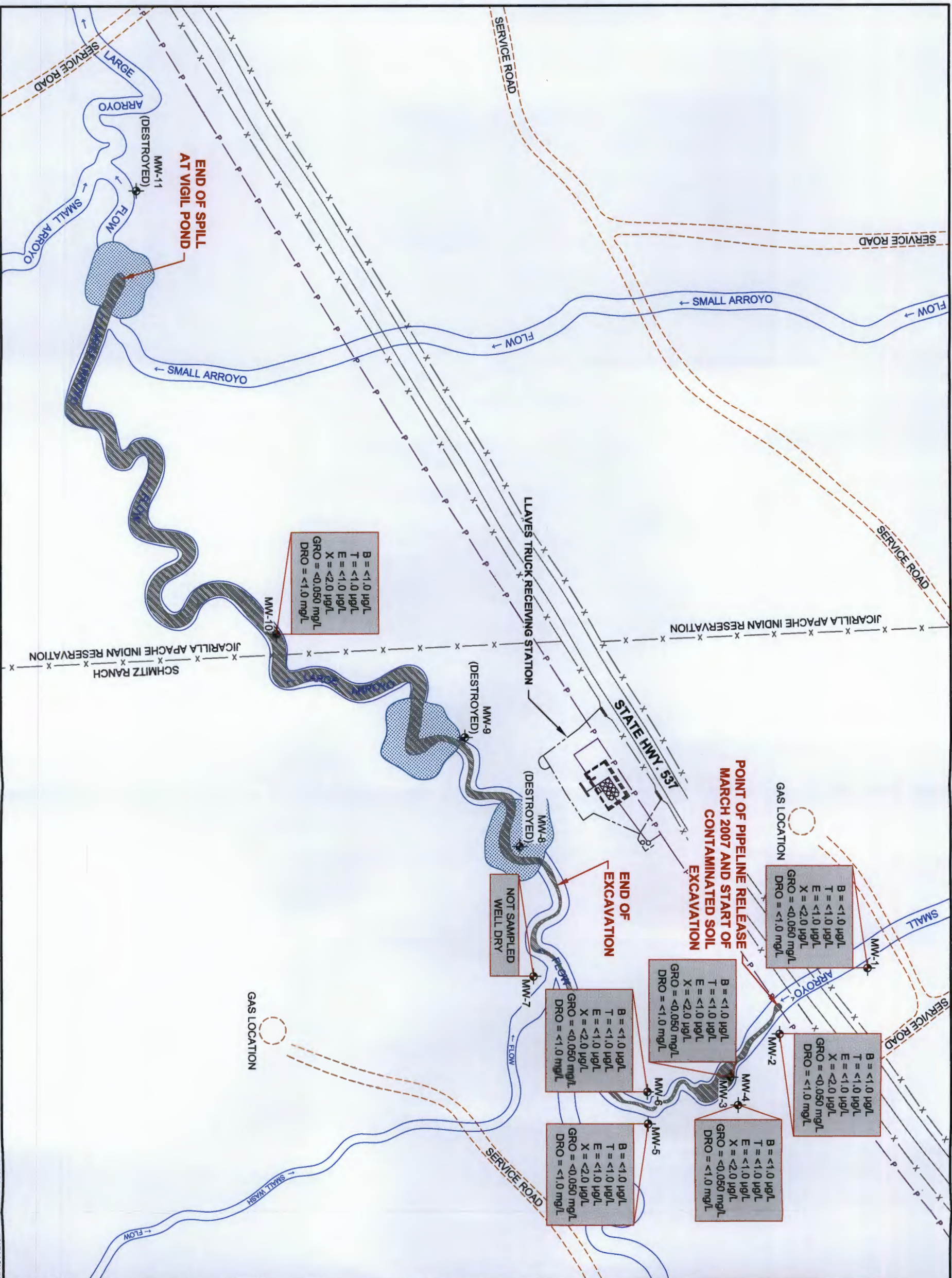
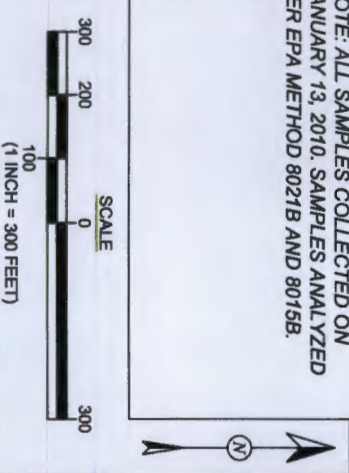


Animas Environmental Services, LLC

DRAWN BY: N. Willis	DATE DRAWN: March 16, 2009
REVISIONS BY: C. Lammeman	DATE REVISED: February 25, 2010
CHECKED BY: D. Watson	DATE CHECKED: January 26, 2010
APPROVED BY: E. McNelly	DATE APPROVED: February 25, 2010

- LEGEND**
- MONITORING WELL LOCATIONS
(INSTALLED JULY 2007)
 - X — FENCE
 - P — BMG LLAVES 4 INCH OIL PIPELINE
 - DIRT ROAD
 - HIGHWAY
 - WASHES AND ARROYOS
 - FLOOD PLANS AND WET LANDS
 - OIL SPILL ROUTE
 - B BENZENE
 - T TOLUENE
 - E ETHYLBENZENE
 - X TOTAL XYLENE
 - GRO GASOLINE RANGE ORGANICS
 - DRO DIESEL RANGE ORGANICS
 - µg/L PARTS PER MILLION
 - < ANALYTE NOT DETECTED ABOVE LISTED METHOD LIMIT

NOTE: ALL SAMPLES COLLECTED ON
JANUARY 13, 2010. SAMPLES ANALYZED
PER EPA METHOD 8021B AND 8015B.



Animas Environmental Services

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

Project No.:	AES 070302
Date:	1-13-10
Arrival Time:	1034
Air Temp:	31°F
M.C. Elev. (ft):	7086.81
Well Depth (ft):	52.93
(taken at initial gauging of all wells)	
(taken prior to purging well)	
(taken after sample collection)	
Thickness:	Time:

[illegible]

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: <u>Hall Environmental Analysis Laboratory, Albuquerque, NM</u>
Equipment Used During Sampling: <u>Keck Water Level or Keck Interface Level, YSI Water Quality Meter</u> and New Disposable Bailer

[illegible]

Animas Environmental Services

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

Project No.: AES 070302

Date: 1-13-10

Arrival Time: 1150

Air Temp: 32°F

T.O.C. Elev. (ft): 7069.66

Total Well Depth (ft): 38.02

Confirm D.T.W. (ft): 29.80 Time: 1159 (taken prior to purging well)

If NAPL Present: D.T.P.: D.T.W.: Thickness: Time:

[illegible]

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:

Monitor Well No: **MW-4**

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

D.T.W.: Thickness: Time:

[illegible]

Equipment Used During Sampling: Keck Water Level or Keck Interface Level, YSI Water Quality Meter
and New Disposable Bailer

Notes/Comments:

Animas Environmental Services

Monitor Well No: MW-6

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

Site: Highway 537 2006 and 2007 Spill

Project No.: AES 070302

Location: Rio Arriba County, New Mexico

Date: 1-13-10

Project: Groundwater Monitoring and Sampling

Arrival Time: 1329

Sampling Technician: AJ/KJ

Air Temp: 37°F

Sampling Technician: AJK

Purge / No Purge: No Purge

T.O.C. Elev. (ft): 7061.97

Well Diameter (in): 0.75

Total Well Depth (ft): 33.39

Initial D.T.W. (ft):

Time:

(taken at initial gauging of all wells)

Confirm D.T.W. (ft): 22.96

Time: 13:34

(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

[illegible]**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:

Monitor Well No: **MW-7**

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

Thickness: _____ Time: _____

COVER LETTER

Monday, January 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 '06-'07 Spill

Order No.: 1001233

Dear Ross Kennemer:

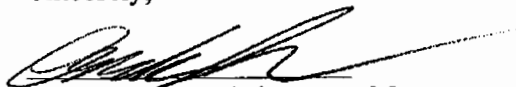
Hall Environmental Analysis Laboratory, Inc. received 8 sample(s) on 1/16/2010 for the analyses presented in the following report.

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. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't 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-Jan-10

CLIENT: Animas Environmental Services
Lab Order: 1001233
Project: BMG Highway 537 '06-'07 Spill
Lab ID: 1001233-01

Client Sample ID: MW-1
Collection Date: 1/13/2010 10:48:00 AM
Date Received: 1/16/2010
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/20/2010 10:38:38 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/20/2010 10:38:38 AM
Surr: DNOP	116	58-140		%REC	1	1/20/2010 10:38:38 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/22/2010 1:49:03 AM
Surr: BFB	84.0	55.2-107		%REC	1	1/22/2010 1:49:03 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	1/22/2010 1:49:03 AM
Toluene	ND	1.0		µg/L	1	1/22/2010 1:49:03 AM
Ethylbenzene	ND	1.0		µg/L	1	1/22/2010 1:49:03 AM
Xylenes, Total	ND	2.0		µg/L	1	1/22/2010 1:49:03 AM
Surr: 4-Bromofluorobenzene	88.2	65.9-130		%REC	1	1/22/2010 1:49:03 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: 25-Jan-10

CLIENT: Animas Environmental Services
Lab Order: 1001233
Project: BMG Highway 537 '06-'07 Spill
Lab ID: 1001233-02

Client Sample ID: MW-2
Collection Date: 1/13/2010 11:40:00 AM
Date Received: 1/16/2010
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/20/2010 11:15:13 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/20/2010 11:15:13 AM
Surr: DNOP	118	58-140		%REC	1	1/20/2010 11:15:13 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/22/2010 2:19:28 AM
Surr: BFB	89.2	55.2-107		%REC	1	1/22/2010 2:19:28 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	1/22/2010 2:19:28 AM
Toluene	ND	1.0		µg/L	1	1/22/2010 2:19:28 AM
Ethylbenzene	ND	1.0		µg/L	1	1/22/2010 2:19:28 AM
Xylenes, Total	ND	2.0		µg/L	1	1/22/2010 2:19:28 AM
Surr: 4-Bromofluorobenzene	95.2	65.9-130		%REC	1	1/22/2010 2:19:28 AM

Qualifiers: * Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: 25-Jan-10

CLIENT: Animas Environmental Services
Lab Order: 1001233
Project: BMG Highway 537 '06-'07 Spill
Lab ID: 1001233-03

Client Sample ID: MW-3
Collection Date: 1/13/2010 12:08:00 PM
Date Received: 1/16/2010
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/20/2010 11:51:59 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/20/2010 11:51:59 AM
Surr: DNOP	115	58-140		%REC	1	1/20/2010 11:51:59 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/22/2010 2:49:43 AM
Surr: BFB	84.7	55.2-107		%REC	1	1/22/2010 2:49:43 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	1/22/2010 2:49:43 AM
Toluene	ND	1.0		µg/L	1	1/22/2010 2:49:43 AM
Ethylbenzene	ND	1.0		µg/L	1	1/22/2010 2:49:43 AM
Xylenes, Total	ND	2.0		µg/L	1	1/22/2010 2:49:43 AM
Surr: 4-Bromofluorobenzene	88.3	65.9-130		%REC	1	1/22/2010 2:49:43 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: 25-Jan-10

CLIENT: Animas Environmental Services
Lab Order: 1001233
Project: BMG Highway 537 '06-'07 Spill
Lab ID: 1001233-04

Client Sample ID: MW-4
Collection Date: 1/13/2010 1:08:00 PM
Date Received: 1/16/2010
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/20/2010 12:28:59 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/20/2010 12:28:59 PM
Surr: DNOP	129	58-140		%REC	1	1/20/2010 12:28:59 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/22/2010 3:19:58 AM
Surr: BFB	92.8	55.2-107		%REC	1	1/22/2010 3:19:58 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	1/22/2010 3:19:58 AM
Toluene	ND	1.0		µg/L	1	1/22/2010 3:19:58 AM
Ethylbenzene	ND	1.0		µg/L	1	1/22/2010 3:19:58 AM
Xylenes, Total	ND	2.0		µg/L	1	1/22/2010 3:19:58 AM
Surr: 4-Bromofluorobenzene	99.5	65.9-130		%REC	1	1/22/2010 3:19:58 AM

Qualifiers: * Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: 25-Jan-10

CLIENT: Animas Environmental Services
Lab Order: 1001233
Project: BMG Highway 537 '06-'07 Spill
Lab ID: 1001233-05

Client Sample ID: MW-5
Collection Date: 1/13/2010 1:25:00 PM
Date Received: 1/16/2010
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/20/2010 1:05:43 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/20/2010 1:05:43 PM
Surr: DNOP	117	58-140		%REC	1	1/20/2010 1:05:43 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/22/2010 3:50:13 AM
Surr: BFB	97.6	55.2-107		%REC	1	1/22/2010 3:50:13 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	1/22/2010 3:50:13 AM
Toluene	ND	1.0		µg/L	1	1/22/2010 3:50:13 AM
Ethylbenzene	ND	1.0		µg/L	1	1/22/2010 3:50:13 AM
Xylenes, Total	ND	2.0		µg/L	1	1/22/2010 3:50:13 AM
Surr: 4-Bromofluorobenzene	107	65.9-130		%REC	1	1/22/2010 3:50:13 AM

Qualifiers: * Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: 25-Jan-10

CLIENT: Animas Environmental Services
Lab Order: 1001233
Project: BMG Highway 537 '06-'07 Spill
Lab ID: 1001233-06

Client Sample ID: MW-6
Collection Date: 1/13/2010 1:43:00 PM
Date Received: 1/16/2010
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/20/2010 1:42:43 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/20/2010 1:42:43 PM
Surr: DNOP	119	58-140		%REC	1	1/20/2010 1:42:43 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/22/2010 12:47:28 PM
Surr: BFB	89.6	55.2-107		%REC	1	1/22/2010 12:47:28 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	1/22/2010 12:47:28 PM
Toluene	ND	1.0		µg/L	1	1/22/2010 12:47:28 PM
Ethylbenzene	ND	1.0		µg/L	1	1/22/2010 12:47:28 PM
Xylenes, Total	ND	2.0		µg/L	1	1/22/2010 12:47:28 PM
Surr: 4-Bromofluorobenzene	96.1	65.9-130		%REC	1	1/22/2010 12:47:28 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: 25-Jan-10

CLIENT: Animas Environmental Services
Lab Order: 1001233
Project: BMG Highway 537 '06-'07 Spill
Lab ID: 1001233-07

Client Sample ID: MW-10
Collection Date: 1/13/2010 2:48:00 PM
Date Received: 1/16/2010
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	1/20/2010 2:19:43 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/20/2010 2:19:43 PM
Surr: DNOP	127	58-140		%REC	1	1/20/2010 2:19:43 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/22/2010 1:17:45 PM
Surr: BFB	91.8	55.2-107		%REC	1	1/22/2010 1:17:45 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	1/22/2010 1:17:45 PM
Toluene	ND	1.0		µg/L	1	1/22/2010 1:17:45 PM
Ethylbenzene	ND	1.0		µg/L	1	1/22/2010 1:17:45 PM
Xylenes, Total	ND	2.0		µg/L	1	1/22/2010 1:17:45 PM
Surr: 4-Bromofluorobenzene	98.9	65.9-130		%REC	1	1/22/2010 1:17:45 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Date: 25-Jan-10

CLIENT: Animas Environmental Services
Lab Order: 1001233
Project: BMG Highway 537 '06-'07 Spill
Lab ID: 1001233-08

Client Sample ID: Trip Blank
Collection Date:
Date Received: 1/16/2010
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	1/22/2010 1:48:00 PM
Surr: BFB	93.1	55.2-107		%REC	1	1/22/2010 1:48:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	1/22/2010 1:48:00 PM
Toluene	ND	1.0		µg/L	1	1/22/2010 1:48:00 PM
Ethylbenzene	ND	1.0		µg/L	1	1/22/2010 1:48:00 PM
Xylenes, Total	ND	2.0		µg/L	1	1/22/2010 1:48:00 PM
Surr: 4-Bromofluorobenzene	101	65.9-130		%REC	1	1/22/2010 1:48:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

QA/QC SUMMARY REPORT

Client: Animas Environmental Services
 Project: BMG Highway 537 '06-'07 Spill

Work Order: 1001233

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range											
Sample ID: MB-21183		MBLK									
Batch ID:	21183	Analysis Date:	1/20/2010 8:49:19 AM								
Diesel Range Organics (DRO)	ND	mg/L	1.0								
Motor Oil Range Organics (MRO)	ND	mg/L	5.0								
Sample ID: LCS-21183		LCS									
Batch ID:	21183	Analysis Date:	1/20/2010 9:26:04 AM								
Diesel Range Organics (DRO)	6.181	mg/L	1.0	5	0	124	74	157			
Sample ID: LCSD-21183		LCSD									
Batch ID:	21183	Analysis Date:	1/20/2010 10:02:11 AM								
Diesel Range Organics (DRO)	5.014	mg/L	1.0	5	0	100	74	157	20.8	23	
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 5ML RB		MBLK									
Batch ID:	R37065	Analysis Date:	1/21/2010 9:38:32 AM								
Gasoline Range Organics (GRO)	ND	mg/L	0.050								
Sample ID: 5ML RB		MBLK									
Batch ID:	R37069	Analysis Date:	1/22/2010 9:15:10 AM								
Gasoline Range Organics (GRO)	ND	mg/L	0.050								
Sample ID: 2.5UG GRO LCS		LCS									
Batch ID:	R37065	Analysis Date:	1/21/2010 6:44:25 PM								
Gasoline Range Organics (GRO)	0.4818	mg/L	0.050	0.5	0	96.4	80	115			
Sample ID: 2.5UG GRO LCS		LCS									
Batch ID:	R37069	Analysis Date:	1/22/2010 7:21:58 PM								
Gasoline Range Organics (GRO)	0.4996	mg/L	0.050	0.5	0	99.9	80	115			
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		MBLK									
Batch ID:	R37065	Analysis Date:	1/21/2010 9:38:32 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: 5ML RB		MBLK									
Batch ID:	R37069	Analysis Date:	1/22/2010 9:15:10 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:	R37065	Analysis Date:	1/21/2010 8:15:33 PM								
Benzene	19.98	µg/L	1.0	20	0	99.9	85.9	113			
Toluene	19.44	µg/L	1.0	20	0	97.2	86.4	113			
Ethylbenzene	19.76	µg/L	1.0	20	0	98.8	83.5	118			
Xylenes, Total	60.05	µg/L	2.0	60	0	100	83.4	122			
Sample ID: 100NG BTEX LCS		LCS									
Batch ID:	R37069	Analysis Date:	1/22/2010 8:52:53 PM								
Benzene	20.72	µg/L	1.0	20	0	104	85.9	113			
Toluene	20.44	µg/L	1.0	20	0	102	86.4	113			
Ethylbenzene	20.79	µg/L	1.0	20	0	104	83.5	118			
Xylenes, Total	63.16	µg/L	2.0	60	0	105	83.4	122			

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name ANIMAS ENVIRONMENTAL

Date Received:

1/16/2010

Work Order Number 1001233

Received by: AT

Checklist completed by:

Signature

Sample ID labels checked by:

Initials

Date

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?

2.7°

<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: Amigas Environmental Services

Mailing Address: 624 E. Cimarrone

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)

Project Manager: Ross Kennermer

Sampler: N. Willis

Container Type and #

Preservative Type

Sample Request ID

Matrix

Date

Time

1-13-10

1048

H₂O

MW-1

MW-2

MW-3

MW-4

MW-5

MW-6

MW-10

Trip Blank

Relinquished by: Nat W

Relinquished by: Debrah Watson

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

BMG HWY 537 '06-'07 Spill

Project #:

070301

Project Manager:

Ross Kennermer

Sampler: N. Willis

Container Type and #

Preservative Type

Sample Request ID

Matrix

Date

Time

1-13-10

1048

H₂O

MW-1

MW-2

MW-3

MW-4

MW-5

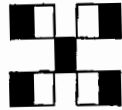
MW-6

MW-10

Trip Blank

Relinquished by: Nat W

Relinquished by: Debrah Watson



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Analysis Request	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)
BTEX + MTBE + TPH (Gas only)	X								
BTEX + MTBE + TPH (Gas/Diesel)	X								
TPH Method 8015B (Gas/Diesel)	X								
TPH (Method 418.1)	X								
EDB (Method 504.1)	X								
8310 (PNA or PAH)	X								
RCRA 8 Metals	X								
Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	X								
8081 Pesticides / 8082 PCB's	X								
8260B (VOA)	X								
8270 (Semi-VOA)	X								
Air Bubbles (Y or N)	X								

Remarks:

Date:	1/15/10	Time:	0830	Relinquished by:	<u>Nat W</u>	Date:	1/15/10	Time:	0830	Received by:	<u>Debrah Watson</u>
Date:	1/15/10	Time:	1600	Relinquished by:	<u>Debrah Watson</u>	Date:	1/15/10	Time:	1605	Received by:	<u>Debrah Watson</u>

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.