3R – 448

2009 GWMR

02 / 11 / 2009

Animas Environmental Services, LLC

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

February 11, 2009

Wayne Price
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 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 monitoring wells at the BMG Highway 537 Truck Receiving Station 2007 Spill Location on December 31, 2008, and January 5 and 6, 2009. 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 originated 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 surface water at Vigil Pond on April 3, 2007. Excavation and clean up efforts are 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 monitoring wells along the route of the release in order to define the lateral and vertical extent of near surface and subsurface soil contamination. Analytical results from groundwater samples collected during the September 2008 sampling event show that benzene, toluene, ethylbenzene, and xylene (BTEX) and total petroleum hydrocarbons (TPH) C_6-C_{36} concentrations in all wells sampled remained below laboratory detection limits. Note that two wells, MW-9 and MW-11, were not sampled during the September 2008 sampling event. Details of groundwater sampling were presented within the AES *Groundwater Monitoring Report,* dated October 30, 2008.

2.0 Groundwater Monitoring and Sampling

AES personnel conducted groundwater monitoring and sampling at the project area on December 31, 2008, and January 5 and 6, 2009. Groundwater samples were laboratory analyzed for BTEX and 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 December 2008 and January 2009 sampling event, groundwater measurements were recorded for MW-1 through MW-6 and MW-8. Groundwater measurements were not recorded for MW-7, MW-10, and MW-11 because the wells were dry or contained ice. MW-9 had been destroyed and therefore was not measured. Groundwater elevations were measured with a Keck water level with accuracy to 0.01 foot and found to range from 7,031.74 feet above mean sea level (amsl) in MW-1 up to 7,052.35 feet amsl in MW-8. Groundwater elevations were noted to have decreased from the September 2008 sampling event.

Water quality measurements were made with an YSI Water Quality Meter in MW-1, MW-5, MW-6, and MW-8. The YSI was not functioning during measurement of MW-2, and MW-3. Out of the wells measured for water quality data, temperature ranged from 6.78°C in MW-8 to 11.91°C in MW-4. pH ranged from 6.25 to 6.94, and dissolved oxygen concentrations ranged between 2.22 mg/L in MW-5 and 4.36 mg/L in MW-4. Oxidation reduction potential (ORP) measurements were between 21.8 mV to 231.2 mV, and conductivity readings were between 2.430 mS and 23.84 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 from MW-1 through MW-6 and MW-8 for laboratory analysis on December 31, 2008, and January 5 and 6, 2009. 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 attached as Appendix B.

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 continued to show non-detectable concentrations of BTEX and TPH in December 2008 and January 2009. AES recommends that the site be considered for no further action status.

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.

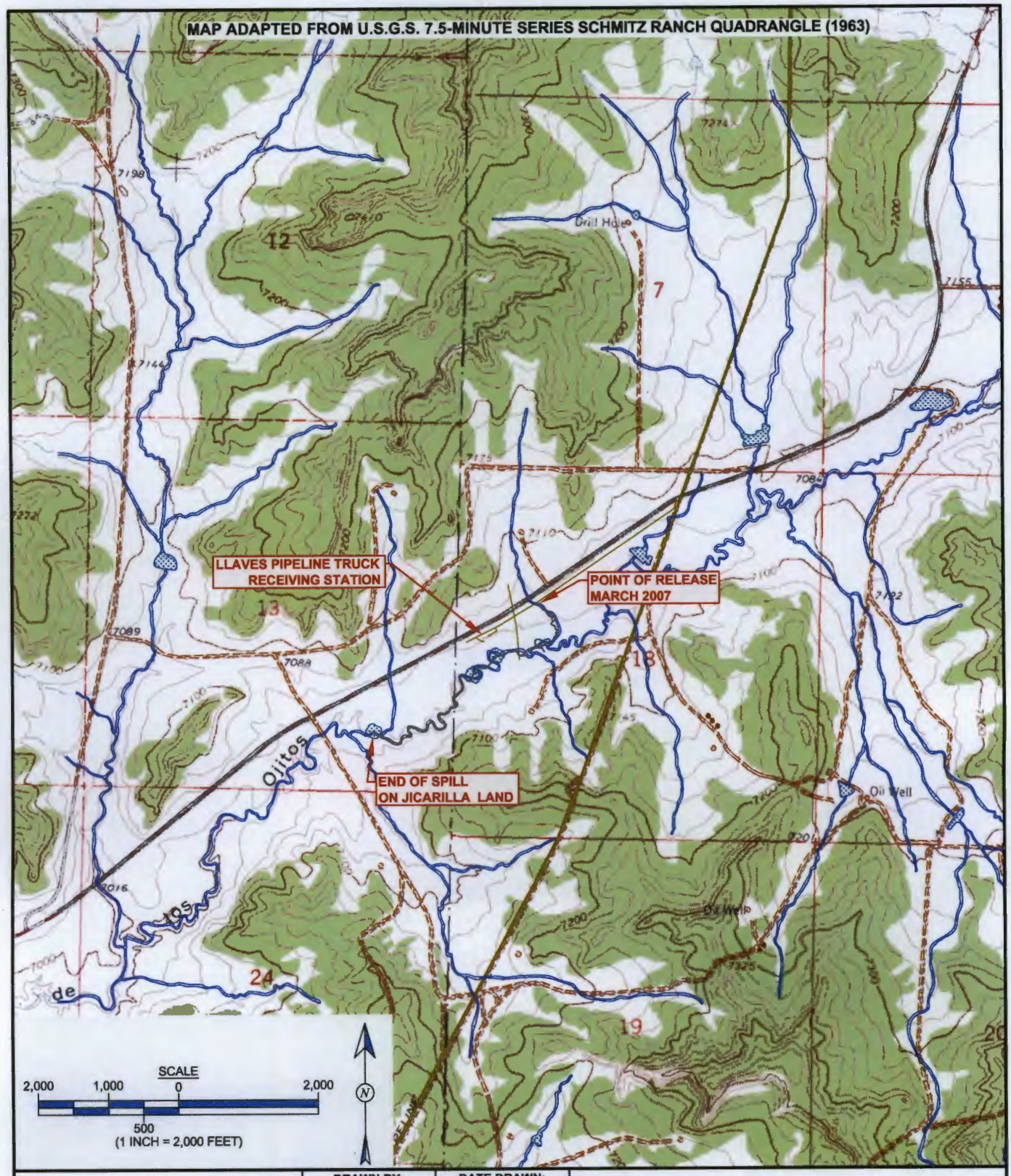
Attachment:

Figures
Tables
Appendix A. Water Sample Collection Forms
Appendix B. 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

File: 2009\BMG\Hwy. 537 2007-2006 Spills\Reports\gc Letter Report 013009



DRAWN BY: N. Willis	DATE DRAWN: February 12, 2009	**FIGURE 1** **TOPOGRAPHICAL SITE LOCATION MAP** BMG HIGHWAY 537 TRUCK RECEIVING STATION LLAVES PIPELINE 2007 OIL SPILL RIO ARRIBA COUNTY, NEW MEXICO
REVISIONS BY: N. Willis	DATE REVISED: February 12, 2009	
CHECKED BY: E. McNally	DATE CHECKED: February 12, 2009	
APPROVED BY: E. McNally	DATE APPROVED: February 12, 2009	

AES
Animas Environmental Services, LLC

S:\ANIMAS 2000\2009 PROJECTS\BMG\HWY. 537 2007-2006 SPILLS\DRAWINGS\FIGURE 1 TOPOGRAPHICAL SITE LOCATION MAP

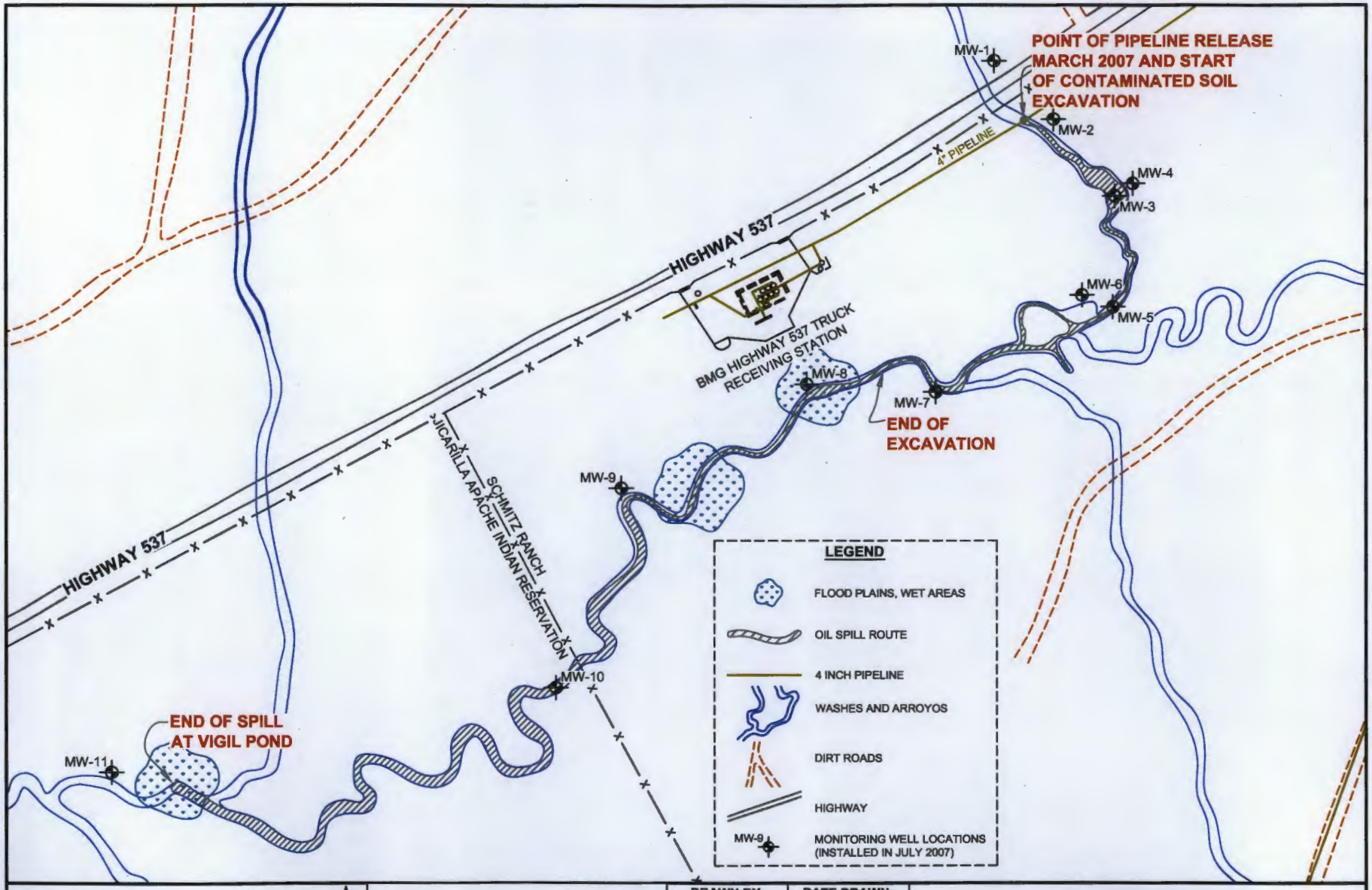


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FIGURE 2
GENERAL SITE PLAN
BMG HIGHWAY 537
TRUCK RECEIVING STATION
LLAVES PIPELINE 2007 OIL SPILL
RIO ARRIBA COUNTY, NEW MEXICO

S:\ANIMAS 2000\2009 PROJECTS\BMG\HWY. 537 2007-2006 SPILLS\DRAWINGS\FIGURE 2 GENERAL SITE PLAN

TABLE 1
GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
BMG LLAVES PIPELINE SPILL 2006 and 2007
Rio Arriba County, New Mexico

Well ID	Date Sampled	Depth to Water (ft)	Surveyed TOC (ft)	GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temperature (C)	ORP (mV)
MW-1	08-Aug-07		7109		NM - WELL DRY				
MW-1	07-Nov-07		7109		NM - WELL DRY				
MW-1	16-Apr-08	10.05	7109	7098.95	NM - LOW YIELD				
MW-1	26-Sep-08		7109		NM - WELL DRY				
MW-1	31-Dec-08		7109		NM - WELL DRY				
MW-2	08-Aug-07	7.92	7103	7095.08	NM	NM	NM	NM	NM
MW-2	07-Nov-07	8.96	7103	7094.04	8.02	4.754	6.08	11.67	95.7
MW-2	16-Apr-08	5.66	7103	7097.34	8.60	1.896	3.70	9.82	-65.3
MW-2	26-Sep-08	7.31	7103	7095.69	6.86	3.605	1.17	17.44	-90.1
MW-2	31-Dec-08	8.96	7103	7094.04	6.14	4.500	NM	6.88	67.8
MW-3	08-Aug-07	31.08	7124	7092.92	NM	NM	NM	NM	NM
MW-3	07-Nov-07	31.75	7124	7092.25	NM - LOW YIELD				
MW-3	16-Apr-08	29.81	7124	7094.19	8.23	5.352	3.79	11.56	5.4
MW-3	26-Sep-08	31.29	7124	7092.71	NM - LOW YIELD				
MW-3	31-Dec-08	31.71	7124	7092.29	2.60	6.170	NM	8.67	93.1
MW-4	08-Aug-07	6.80	7064	7057.20	NM	NM	NM	NM	NM
MW-4	07-Nov-07	7.14	7064	7056.86	7.96	4.904	5.73	13.89	-45.6
MW-4	16-Apr-08	6.11	7064	7057.89	8.69	4.141	4.61	9.22	-35.4
MW-4	26-Sep-08	7.49	7064	7056.51	NM - LOW YIELD				
MW-4	31-Dec-08	7.27	7064	7056.73	6.25	5.153	NM	8.11	-59.4
MW-5	08-Aug-07	33.01	7084	7050.99	NM	NM	NM	NM	NM
MW-5	07-Nov-07	33.20	7084	7050.80	8.34	2.900	6.40	12.84	12.5
MW-5	15-Apr-08	32.23	7084	7051.77	9.14	2.937	1.94	13.75	-22.5

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Well ID	Date Sampled	Depth to Water (ft)	Surveyed TOC (ft)	GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temperature (C)	ORP (mV)
MW-5	26-Sep-08	33.60	7084	7050.40	NM - LOW YIELD				
MW-5	31-Dec-08	33.33	7084	7050.67	6.02	3.510	NM	10.01	9.1
MW-6	08-Aug-07	11.81	7058	7046.19	NM - LOW YIELD				
MW-6	07-Nov-07	12.23	7058	7045.77	NM - LOW YIELD				
MW-6	15-Apr-08	10.02	7058	7047.98	8.55	6.950	2.70	12.71	43.3
MW-6	26-Sep-08	12.45	7058	7045.55	NM - LOW YIELD				
MW-6	31-Dec-08	12.32	7058	7045.68	NM - LOW YIELD				
MW-7	08-Aug-07	28.14	7070	7041.86	NM - LOW YIELD				
MW-7	07-Nov-07		7070		NM - WELL DRY				
MW-7	15-Apr-08	26.48	7070	7043.52	NM-LOW YIELD				
MW-7	26-Sep-08	28.10	7070	7041.90	NM-LOW YIELD				
MW-7	31-Dec-08		7070		NM - WELL DRY				
MW-8	08-Aug-07		7056		NM - WELL DRY				
MW-8	08-Nov-07		7056		NM - WELL DRY				
MW-8	15-Apr-08	12.78	7056	7043.22	NM-LOW YIELD				
MW-8	26-Sep-08		7056		NM - WELL DRY				
MW-8	30-Dec-08		7056		NM - WELL DRY				
MW-9	08-Aug-07	5.49	7029	7023.51	NM	NM	NM	NM	NM
MW-9	07-Nov-07	5.41	7029	7023.59	7.97	1.277	2.63	11.51	-54.7
MW-9	15-Apr-08	4.18	7029	7024.82	9.00	1.667	2.44	9.02	-68.2
MW-9	26-Sep-08	5.65	7029	7023.35	6.87	1.692	1.39	15.73	-37.8
MW-9	30-Dec-08	5.08	7029	7023.92	6.42	1.759	NM	5.40	-83.6

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GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
BMG LLAVES PIPELINE SPILL 2006 and 2007
Rio Arriba County, New Mexico

Well ID	Date Sampled	Depth to Water (ft)	Surveyed TOC (ft)	GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temperature (C)	ORP (mV)
MW-10	08-Aug-07	4.50	7019	7014.50	NM	NM	NM	NM	NM
MW-10	07-Nov-07	4.77	7019	7014.23	7.54	4.942	2.96	13.62	-1.3
MW-10	15-Apr-08	4.10	7019	7014.90	8.76	4.668	2.65	10.96	-13.4
MW-10	26-Sep-08	6.01	7019	7012.99	6.44	4.302	2.58	17.37	15.9
MW-10	30-Dec-08	5.42	7019	7013.58	5.98	4.393	NM	4.94	-90.9
MW-11	08-Aug-07	15.99	7043	7027.01	NM	NM	NM	NM	NM
MW-11	07-Nov-07	15.91	7043	7027.09	8.14	1.144	2.84	13.12	40.2
MW-11	15-Apr-08	14.78	7043	7028.22	9.31	1.162	2.55	13.07	-67.7
MW-11	26-Sep-08	16.14	7043	7026.86	6.78	1.297	3.50	15.74	-74.5
MW-11	30-Dec-08	15.49	7043	7027.51	5.89	1.545	NM	9.86	-148.0
MW-12	08-Aug-07	3.97	7015	7011.03	NM	NM	NM	NM	NM
MW-12	07-Nov-07	3.45	7015	7011.55	8.04	1.152	3.60	10.09	-102.6
MW-12	15-Apr-08		7015	7015.00	UNABLE TO REACH WELL - SURROUNDED BY WATER				
MW-12	26-Sep-08	4.38	7015	7010.62	6.68	1.221	1.46	15.83	-81.8
MW-12	30-Dec-08		7015		NM - FROZEN WATER IN WELL				
MW-13	8-Aug-07	4.47	6988	6983.53	NM - EQUIPMENT FAILURE				
MW-13	07-Nov-07	4.44	6988	6983.56	7.52	8.288	4.35	11.27	42.5
MW-13	15-Apr-08	3.70	6988	6984.30	8.46	7.006	3.85	10.04	40.5
MW-13	26-Sep-08	5.99	6988	6982.01	6.75	7.561	2.73	17.06	-10.4
MW-13	30-Dec-08	3.58	6988	6984.42	6.26	6.284	NM	4.80	24.1
MW-14	8-Aug-07	4.61	6978	6973.39	7.45	2.500	2.10	19.55	114.7
MW-14	7-Nov-07	4.50	6978	6973.50	7.59	1.800	7.64	6.85	-86.1
MW-14	15-Apr-08	3.66	6978	6974.34	8.71	3.081	3.88	9.86	-111.8

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GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
BMG LLAVES PIPELINE SPILL 2006 and 2007
Rio Arriba County, New Mexico

Well ID	Date Sampled	Depth to Water (ft)	Surveyed TOC (ft)	GW Elev. (ft)	pH	Conductivity (mS)	Dissolved Oxygen (mg/L)	Temperature (C)	ORP (mV)
MW-14	26-Sep-08	6.29	6978	6971.71	7.16	2.095	4.47	15.30	-35.9
MW-14	30-Dec-08		6978		NM - FROZEN WATER IN WELL				

NOTE: NM = NOT MEASURED

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL DATA
BMG LLAVES PIPELINE SPILL 2006 and 2007
Rio Arriba County, New Mexico

Sample I.D.	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	DRO	GRO
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)
Analytical Method		8021B	8021B	8021B	8021B	8015B	8015B
New Mexico WQCC		*10*	*750*	*750*	*620*	*NE*	*NE*
MW-1	08-Aug-07	NS - Well Dry					
MW-1		NS - Well Dry					
MW-1	16-Apr-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-1	26-Sep-08	NS - Well Dry					
MW-1	31-Dec-08	NS - Well Dry					
MW-2	08-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	07-Nov-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	16-Apr-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	26-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-2	31-Dec-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	08-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	07-Nov-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	16-Apr-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	26-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-3	31-Dec-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	08-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	07-Nov-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	16-Apr-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	26-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-4	31-Dec-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	08-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	07-Nov-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	15-Apr-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	26-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-5	31-Dec-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	08-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	07-Nov-07	NS - Low Yield					
MW-6	15-Apr-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	26-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-6	31-Dec-08	NS - Low Yield					
MW-7	08-Aug-07	NS - Low Yield					

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL DATA
BMG LLAVES PIPELINE SPILL 2006 and 2007
Rio Arriba County, New Mexico

Sample I.D.	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	DRO	GRO
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(mg/L)	(mg/L)
Analytical Method		8021B	8021B	8021B	8021B	8015B	8015B
New Mexico WQCC		*10*	*750*	*750*	*620*	*NE*	*NE*
MW-7	07-Nov-07	NS - Well Dry					
MW-7	15-Apr-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-7	26-Sep-08	NS - Low Yield					
MW-7	31-Dec-08	NS - Well Dry					
MW-8	08-Aug-07	NS - Well Dry					
MW-8	07-Nov-07	NS - Well Dry					
MW-8	15-Apr-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-8	26-Sep-08	NS - Well Dry					
MW-8	30-Dec-08	NS - Well Dry					
MW-9	08-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-9	07-Nov-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-9	15-Apr-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-9	26-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-9	30-Dec-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-10	08-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-10	07-Nov-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-10	15-Apr-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-10	26-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-10	30-Dec-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-11	08-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-11	07-Nov-07	<1.0	<1.0	<1.0	<2.0	**1.2**	<0.050
MW-11	15-Apr-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-11	26-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-11	30-Dec-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-12	08-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-12	07-Nov-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-12	15-Apr-08	NS	NS	NS	NS	NS	NS
MW-12	26-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-12	30-Dec-08	NS - Water in Well Frozen					
MW-13	08-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-13	07-Nov-07	<1.0	<1.0	<1.0	<2.0	**1.0**	<0.050

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL DATA
BMG LLAVES PIPELINE SPILL 2006 and 2007
Rio Arriba County, New Mexico

Sample I.D.	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	DRO	GRO
		(µg/L)	*(µg/L)*	*(µg/L)*	*(µg/L)*	*(mg/L)*	*(mg/L)*
Analytical Method		**8021B**	**8021B**	**8021B**	**8021B**	**8015B**	**8015B**
New Mexico WQCC		***10***	***750***	***750***	***620***	***NE***	***NE***
MW-13	15-Apr-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-13	26-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-13	30-Dec-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-14	08-Aug-07	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-14	07-Nov-07	<1.0	<1.0	<1.0	<2.0	**1.1**	<0.050
MW-14	15-Apr-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-14	26-Sep-08	<1.0	<1.0	<1.0	<2.0	<1.0	<0.050
MW-14	30-Dec-08	NS - Water in Well Frozen					

NOTE: NS = Not Sampled

Note: DRO samples for MW-9, MW-10, MW-11, and MW-12, collected December 30, 2008 were analyzed one day past the holding time.

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 Station Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring
Sampling Technician: N. Willis/C. Laverman
Purge / No Purge: Purge
Well Diameter (in): 2
Initial D.T.W. (ft): ____ **Time:** ____ *(taken at initial gauging of all wells)*
Confirm D.T.W. (ft): 47.26 **Time:** 15:27 *(taken prior to purging well)*
Final D.T.W. (ft): ____ **Time:** ____ *(taken after sample collection)*

Project No.: AES 070302
Date: 12-21-08
Arrival Time: 13:25
Air Temp: 35°
T.O.C. Elev. (ft): ____
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
15:32	11:43	3.925	9.83	6.25	104.9	.25	
15:37							

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

BTEX per EPA Method 8021 (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (40mL Vials 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, YSI Water Quality Meter, and New Disposable Bailer

Notes/Comments

revised: 05/23/07

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 Station Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring
Sampling Technician:
Purge / No Purge: Purge
Well Diameter (in): 2
Initial D.T.W. (ft): **Time:** *(taken at initial gauging of all wells)*
Confirm D.T.W. (ft): 36.43 **Time:** 1259 *(taken prior to purging well)*
Final D.T.W. (ft): **Time:** *(taken after sample collection)*

Project No.: AES 070302
Date: 1-5-08
Arrival Time: 1255
Air Temp: 22°F
T.O.C. Elev. (ft):
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
1305						0.25	Samples Collected

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

BTEX per EPA Method 8021 (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (40mL Vials 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, YSI Water Quality Meter, and New Disposable Bailer

Notes/Comments

YSI Malfunction, NO Water Quality Taken

revised: 05/23/07

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 Station Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring
Sampling Technician:
Purge / No Purge: Purge
Well Diameter (in): 2
Initial D.T.W. (ft): Time:
Confirm D.T.W. (ft): 29.51 Time: 1318
Final D.T.W. (ft): Time:

Project No.: AES 070302
Date: 1-5-09
Arrival Time: 1315
Air Temp: 22°F
T.O.C. Elev. (ft):
Total Well Depth (ft):
(taken at initial gauging of all wells)
(taken prior to purging well)
(taken after sample collection)

Water Quality Parameters - Recorded During Well Purging

Time	Temp (deg C)	Conductivity (µS) (mS)	DO (mg/L)	pH	ORP (mV)	PURGED VOLUME (see reverse for calc.)	Notes/Observations
1324						0.25	Samples collected

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

BTEX per EPA Method 8021 (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (40mL Vials 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, YSI Water Quality Meter, and New Disposable Bailer

Notes/Comments

YSI Malfunction, No Water Quality Taken

revised: 05/23/07

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 Station Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring
Sampling Technician:
Purge / No Purge: Purge
Well Diameter (in): 2
Initial D.T.W. (ft): 27.23 **Time:** 1135 *(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 070302
Date: 1-6-09
Arrival Time: 1132
Air Temp: 18°F
T.O.C. Elev. (ft):
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
1144	11.91	2.902	4.36	6.71	230.9	0.25	
1150							Samples Collected

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

BTEX per EPA Method 8021 (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (40mL Vials 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, YSI Water Quality Meter, and New Disposable Bailer

Notes/Comments

revised: 05/23/07

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 Station Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring
Sampling Technician:
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): 20.16 Time: 1209 *(taken prior to purging well)*
Final D.T.W. (ft): Time: *(taken after sample collection)*

Project No.: AES 070302
Date: 1-6-09
Arrival Time: 1205
Air Temp: 18°F
T.O.C. Elev. (ft):
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
1214	8.91	23.84	2.22	6.52	231.2	1/16	
1220							Samples Collected

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

BTEX per EPA Method 8021 (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (40mL Vials 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, YSI Water Quality Meter, and New Disposable Bailer

Notes/Comments

revised: 05/23/07

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 Station Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring
Sampling Technician:
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): 22.54 Time: 1238 *(taken prior to purging well)*
Final D.T.W. (ft): Time: *(taken after sample collection)*

Project No.: AES 070302
Date: 1-6-09
Arrival Time: 1234
Air Temp: 18°F
T.O.C. Elev. (ft):
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
1243	7.77	4,537	2.77	6.94	21.8	1/16	
1250							Samples Collected

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

BTEX per EPA Method 8021 (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (40mL Vials 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, YSI Water Quality Meter, and New Disposable Bailer

Notes/Comments

revised: 05/23/07

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 Station Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring
Sampling Technician:
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): NA **Time:** *(taken prior to purging well)*
Final D.T.W. (ft): **Time:** *(taken after sample collection)*

Project No.: AES 070302
Date: 1-7-09
Arrival Time: 1058
Air Temp: 15°F
T.O.C. Elev. (ft):
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 See Note

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

BTEX per EPA Method 8021 (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (40mL Vials 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, YSI Water Quality Meter, and New Disposable Bailer

Notes/Comments

Water in Well frozen, unable to get water quality or samples

revised: 05/23/07

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 Station Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring
Sampling Technician:
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): 13.65 **Time:** 1358 *(taken prior to purging well)*
Final D.T.W. (ft): **Time:** *(taken after sample collection)*

Project No.: AES 070302
Date: 1-6-09
Arrival Time: 1354
Air Temp: 18°F
T.O.C. Elev. (ft):
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
1402	6.78	2.430	2.25	6.48	41.0	1/16	
1408							Samples Collected

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

BTEX per EPA Method 8021 (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (40mL Vials 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, YSI Water Quality Meter, and New Disposable Bailer

Notes/Comments

revised: 05/23/07

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 Station Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring
Sampling Technician:
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): NA Time: *(taken prior to purging well)*
Final D.T.W. (ft): Time: *(taken after sample collection)*

Project No.: AES 070302
Date: 1-7-09
Arrival Time: 1107
Air Temp: 15°F
T.O.C. Elev. (ft):
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

Well Destroyed
No Sample

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

BTEX per EPA Method 8021 (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (40mL Vials 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, YSI Water Quality Meter, and New Disposable Bailer

Notes/Comments

revised: 05/23/07

MONITORING WELL SAMPLING RECORD

Monitor Well No: **MW-10**

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

Site: Highway 537 Station Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring
Sampling Technician:
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 070302
Date: 1-4-09
Arrival Time: 1125
Air Temp: 15°F
T.O.C. Elev. (ft):
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 See Note

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

BTEX per EPA Method 8021 (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (40mL Vials 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, YSI Water Quality Meter, and New Disposable Bailer

Notes/Comments

Well Water in Well was Frozen, No water quality or sample

revised: 05/23/07

MONITORING WELL SAMPLING RECORD

Monitor Well No: **MW-11**

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

Site: Highway 537 Station Spill
Location: Rio Arriba County, New Mexico
Project: Groundwater Monitoring
Sampling Technician:
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:** 1229 *(taken prior to purging well)*
Final D.T.W. (ft): **Time:** *(taken after sample collection)*

Project No.: AES 070302
Date: 1-7-09
Arrival Time: 1225
Air Temp: 15°F
T.O.C. Elev. (ft):
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

Well Dry
No Sample

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

BTEX per EPA Method 8021 (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (2 40mL Vials w/ HCl)
TPH C_6-C_{36} per EPA Method 8015B (40mL Vials 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, YSI Water Quality Meter, and New Disposable Bailer

Notes/Comments

revised: 05/23/07

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Thursday, January 15, 2009

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.: 0901110

Dear Ross Kennemer:

Hall Environmental Analysis Laboratory, Inc. received 8 sample(s) on 1/8/2009 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, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001
Texas Lab# T104704424-08-TX

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory, Inc. **Date:** *15-Jan-09*

CLIENT: Animas Environmental Services
Project: BMG Highway 537 06&07 Spill
Lab Order: 0901110

CASE NARRATIVE

MW-1 was received past the holding time for 8015B diesel range.

Hall Environmental Analysis Laboratory, Inc.

Date: *15-Jan-09*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-1
Lab Order:	0901110	**Collection Date:**	12/31/2008 3:37:00 PM
Project:	BMG Highway 537 06&07 Spill	**Date Received:**	1/8/2009
Lab ID:	0901110-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **SCC**
Diesel Range Organics (DRO)	ND	1.0	H	mg/L	1	1/13/2009
Motor Oil Range Organics (MRO)	ND	5.0	H	mg/L	1	1/13/2009
Surr: DNOP	125	58-140	H	%REC	1	1/13/2009
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **DAM**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/10/2009 10:18:05 AM
Surr: BFB	79.0	59.9-122		%REC	1	1/10/2009 10:18:05 AM
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	ND	1.0		µg/L	1	1/10/2009 10:18:05 AM
Toluene	ND	1.0		µg/L	1	1/10/2009 10:18:05 AM
Ethylbenzene	ND	1.0		µg/L	1	1/10/2009 10:18:05 AM
Xylenes, Total	ND	2.0		µg/L	1	1/10/2009 10:18:05 AM
Surr: 4-Bromofluorobenzene	82.2	65.9-130		%REC	1	1/10/2009 10:18:05 AM

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
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *15-Jan-09*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-2
Lab Order:	0901110	**Collection Date:**	1/5/2009 1:05:00 PM
Project:	BMG Highway 537 06&07 Spill	**Date Received:**	1/8/2009
Lab ID:	0901110-02	**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	1/13/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/13/2009
Surr: DNOP	127	58-140		%REC	1	1/13/2009
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **DAM**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/10/2009 10:48:26 AM
Surr: BFB	78.4	59.9-122		%REC	1	1/10/2009 10:48:26 AM
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	ND	1.0		µg/L	1	1/10/2009 10:48:26 AM
Toluene	ND	1.0		µg/L	1	1/10/2009 10:48:26 AM
Ethylbenzene	ND	1.0		µg/L	1	1/10/2009 10:48:26 AM
Xylenes, Total	ND	2.0		µg/L	1	1/10/2009 10:48:26 AM
Surr: 4-Bromofluorobenzene	81.0	65.9-130		%REC	1	1/10/2009 10:48:26 AM

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
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *15-Jan-09*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-3
Lab Order:	0901110	**Collection Date:**	1/5/2009 1:24:00 PM
Project:	BMG Highway 537 06&07 Spill	**Date Received:**	1/8/2009
Lab ID:	0901110-03	**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	1/13/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/13/2009
Surr: DNOP	119	58-140		%REC	1	1/13/2009
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **DAM**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/10/2009 11:18:53 AM
Surr: BFB	73.9	59.9-122		%REC	1	1/10/2009 11:18:53 AM
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	ND	1.0		µg/L	1	1/10/2009 11:18:53 AM
Toluene	ND	1.0		µg/L	1	1/10/2009 11:18:53 AM
Ethylbenzene	ND	1.0		µg/L	1	1/10/2009 11:18:53 AM
Xylenes, Total	ND	2.0		µg/L	1	1/10/2009 11:18:53 AM
Surr: 4-Bromofluorobenzene	74.1	65.9-130		%REC	1	1/10/2009 11:18:53 AM

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
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *15-Jan-09*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-4
Lab Order:	0901110	**Collection Date:**	1/6/2009 11:50:00 AM
Project:	BMG Highway 537 06&07 Spill	**Date Received:**	1/8/2009
Lab ID:	0901110-04	**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	1/13/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/13/2009
Surr: DNOP	119	58-140		%REC	1	1/13/2009
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **DAM**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/10/2009 11:49:19 AM
Surr: BFB	83.1	59.9-122		%REC	1	1/10/2009 11:49:19 AM
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	ND	1.0		µg/L	1	1/10/2009 11:49:19 AM
Toluene	ND	1.0		µg/L	1	1/10/2009 11:49:19 AM
Ethylbenzene	ND	1.0		µg/L	1	1/10/2009 11:49:19 AM
Xylenes, Total	ND	2.0		µg/L	1	1/10/2009 11:49:19 AM
Surr: 4-Bromofluorobenzene	87.9	65.9-130		%REC	1	1/10/2009 11:49:19 AM

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
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *15-Jan-09*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-5
Lab Order:	0901110	**Collection Date:**	1/6/2009 12:20:00 PM
Project:	BMG Highway 537 06&07 Spill	**Date Received:**	1/8/2009
Lab ID:	0901110-05	**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	1/13/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/13/2009
Surr: DNOP	116	58-140		%REC	1	1/13/2009
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **DAM**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/10/2009 12:19:39 PM
Surr: BFB	78.6	59.9-122		%REC	1	1/10/2009 12:19:39 PM
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	ND	1.0		µg/L	1	1/10/2009 12:19:39 PM
Toluene	ND	1.0		µg/L	1	1/10/2009 12:19:39 PM
Ethylbenzene	ND	1.0		µg/L	1	1/10/2009 12:19:39 PM
Xylenes, Total	ND	2.0		µg/L	1	1/10/2009 12:19:39 PM
Surr: 4-Bromofluorobenzene	81.3	65.9-130		%REC	1	1/10/2009 12:19:39 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
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *15-Jan-09*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-6
Lab Order:	0901110	**Collection Date:**	1/6/2009 12:50:00 PM
Project:	BMG Highway 537 06&07 Spill	**Date Received:**	1/8/2009
Lab ID:	0901110-06	**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	1/13/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/13/2009
Surr: DNOP	119	58-140		%REC	1	1/13/2009
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **DAM**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/10/2009 2:52:04 PM
Surr: BFB	81.1	59.9-122		%REC	1	1/10/2009 2:52:04 PM
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	ND	1.0		µg/L	1	1/10/2009 2:52:04 PM
Toluene	ND	1.0		µg/L	1	1/10/2009 2:52:04 PM
Ethylbenzene	ND	1.0		µg/L	1	1/10/2009 2:52:04 PM
Xylenes, Total	ND	2.0		µg/L	1	1/10/2009 2:52:04 PM
Surr: 4-Bromofluorobenzene	84.6	65.9-130		%REC	1	1/10/2009 2:52:04 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
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *15-Jan-09*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	MW-8
Lab Order:	0901110	**Collection Date:**	1/6/2009 2:08:00 PM
Project:	BMG Highway 537 06&07 Spill	**Date Received:**	1/8/2009
Lab ID:	0901110-07	**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	1/13/2009
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	1/13/2009
Surr: DNOP	121	58-140		%REC	1	1/13/2009
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **DAM**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/10/2009 3:22:31 PM
Surr: BFB	79.2	59.9-122		%REC	1	1/10/2009 3:22:31 PM
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	ND	1.0		µg/L	1	1/10/2009 3:22:31 PM
Toluene	ND	1.0		µg/L	1	1/10/2009 3:22:31 PM
Ethylbenzene	ND	1.0		µg/L	1	1/10/2009 3:22:31 PM
Xylenes, Total	ND	2.0		µg/L	1	1/10/2009 3:22:31 PM
Surr: 4-Bromofluorobenzene	81.4	65.9-130		%REC	1	1/10/2009 3:22:31 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
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *15-Jan-09*

CLIENT:	Animas Environmental Services	**Client Sample ID:**	FIELD BLANK
Lab Order:	0901110	**Collection Date:**	
Project:	BMG Highway 537 06&07 Spill	**Date Received:**	1/8/2009
Lab ID:	0901110-08	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **DAM**
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	1/10/2009 3:52:59 PM
Surr: BFB	77.4	59.9-122		%REC	1	1/10/2009 3:52:59 PM
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	1/10/2009 3:52:59 PM
Benzene	ND	1.0		µg/L	1	1/10/2009 3:52:59 PM
Toluene	ND	1.0		µg/L	1	1/10/2009 3:52:59 PM
Ethylbenzene	ND	1.0		µg/L	1	1/10/2009 3:52:59 PM
Xylenes, Total	ND	2.0		µg/L	1	1/10/2009 3:52:59 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	1/10/2009 3:52:59 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	1/10/2009 3:52:59 PM
Surr: 4-Bromofluorobenzene	79.2	65.9-130		%REC	1	1/10/2009 3:52:59 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
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: Animas Environmental Services
Project: BMG Highway 537 06&07 Spill **Work Order:** 0901110

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015B: Diesel Range									
Sample ID: MB-18062		*MBLK*			Batch ID: **18062**		Analysis Date:		1/13/2009
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-18062		*LCS*			Batch ID: **18062**		Analysis Date:		1/13/2009
Diesel Range Organics (DRO)	5.359	mg/L	1.0	107	74	157			
Sample ID: LCSD-18062		*LCSD*			Batch ID: **18062**		Analysis Date:		1/13/2009
Diesel Range Organics (DRO)	6.023	mg/L	1.0	120	74	157	11.7	23	
Method: EPA Method 8015B: Gasoline Range									
Sample ID: 5ML RB		*MBLK*			Batch ID: **R31961**		Analysis Date:		1/9/2009 8:54:30 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Sample ID: 5ML RB II		*MBLK*			Batch ID: **R31961**		Analysis Date:		1/10/2009 5:44:25 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Sample ID: 2.5UG GRO LCS		*LCS*			Batch ID: **R31961**		Analysis Date:		1/9/2009 7:04:46 PM
Gasoline Range Organics (GRO)	0.5454	mg/L	0.050	109	80	115			
Sample ID: 2.5UG GRO LCS II		*LCS*			Batch ID: **R31961**		Analysis Date:		1/10/2009 5:13:55 AM
Gasoline Range Organics (GRO)	0.5124	mg/L	0.050	102	80	115			

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

QA/QC SUMMARY REPORT

Client: Animas Environmental Services
Project: BMG Highway 537 06&07 Spill **Work Order:** 0901110

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 5ML RB		*MBLK*			Batch ID:	**R31961**	Analysis Date:	1/9/2009 8:54:30 AM	
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
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						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
Sample ID: 5ML RB II		*MBLK*			Batch ID:	**R31961**	Analysis Date:	1/10/2009 5:44:25 AM	
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
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						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
Sample ID: 100NG BREX LCS		*LCS*			Batch ID:	**R31961**	Analysis Date:	1/9/2009 5:33:24 PM	
Methyl tert-butyl ether (MTBE)	20.24	µg/L	2.5	101	51.2	138			
Benzene	22.46	µg/L	1.0	112	85.9	113			
Toluene	21.22	µg/L	1.0	106	86.4	113			
Ethylbenzene	20.65	µg/L	1.0	103	83.5	118			
Xylenes, Total	61.87	µg/L	2.0	103	83.4	122			
1,2,4-Trimethylbenzene	19.63	µg/L	1.0	97.8	83.5	115			
1,3,5-Trimethylbenzene	19.29	µg/L	1.0	95.5	85.2	113			
Sample ID: 100NG LCS II		*LCS*			Batch ID:	**R31961**	Analysis Date:	1/10/2009 3:42:09 AM	
Methyl tert-butyl ether (MTBE)	21.43	µg/L	2.5	107	51.2	138			
Benzene	22.96	µg/L	1.0	114	85.9	113			S
Toluene	21.96	µg/L	1.0	108	86.4	113			
Ethylbenzene	21.46	µg/L	1.0	107	83.5	118			
Xylenes, Total	64.70	µg/L	2.0	108	83.4	122			
1,2,4-Trimethylbenzene	20.90	µg/L	1.0	104	83.5	115			
1,3,5-Trimethylbenzene	20.33	µg/L	1.0	102	85.2	113			

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: 1/8/2009

Work Order Number 0901110 Received by: TLS

Sample ID labels checked by: TS (Initials)

Checklist completed by: _____ 1/8/09 (Signature / 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 ☑	
Container/Temp Blank temperature?	4°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: Animas Environmental Services, LLC

Address: 624 E. Comanche Farmington, NM 87401

Phone #: 505-564-2281

email or Fax#:

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: BMG HWY 537 06 & 07 spill

Project #:

Project Manager: Ross Kennemer

Sampler: Nathan Willis

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.2 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0901110	BTEX + ~~MTBE + TMB's~~ (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	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)
12/31/08	1537	MW-1	5-40mL glass	4-HCl 1-none	1	X		X									
1/5/09	1305	MW-2			2	X		X									
1/5/09	1324	MW-3			3	X		X									
1/6/09	1150	MW-4			4	X		X									
1/6/09	1220	MW-5			5	X		X									
1/6/09	1250	MW-6			6	X		X									
1/6/09	1408	MW-8			7	X		X									
		Field Blank 1/5/09	(2) 40mL glass	HCL	8												

Date:	Time:	Relinquished by:	Received by:	Remarks:
1/6/09	1430	Nathan Willis	Deborah Watson 1/6/09 14:30	
1/8/09	0850	Deborah Watson	1/8/09 1523	

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.