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Q1 2012 GWMR

07 / 11 / 2012

LAT 2D-1LP (OLMERU) 2011



July 11, 2012

Glenn von Gonten New Mexico Oil Conservation Division 1220 S. St. Francis Drive Santa Fe, New Mexico 87505 624 E. Comanche Farmington, NM 87401 505-564-2281

> Durango, Colorado 970-403-3274

RE: 1st Quarter 2012 Groundwater Monitoring Report Enterprise Products Company

2D-1LP (Olmer #4) Pipeline August 2011 Release San Juan County, New Mexico

Dear Mr. von Gonten:

Animas Environmental Services, LLC (AES), on behalf of Enterprise Products Company, has prepared this 1st Quarter 2012 Groundwater Monitoring Report for the 2D-1LP Pipeline August 2011 Release in accordance with New Mexico Oil Conservation Division (NMOCD) and New Mexico Environment Department (NMED) Ground Water Quality Bureau (GWQB) regulations. This is the second quarterly monitoring and sampling event for the subject release location.

A quarterly groundwater monitoring and sampling event was completed March 9, 2012, in accordance with a workplan previously prepared by AES and dated September 28, 2011. The workplan was submitted to the NMOCD for review prior to implementing the proposed scope of work.

1.0 Site Information

1.1 Site Location

The release is located along the Enterprise Lateral 2D-1LP leading from the Olmer #4 well tie within the SW½ NE½, Section 26, T28N, R10W, San Juan County, New Mexico. Latitude and longitude of the release were recorded as N36.63388 by W107.86387, respectively. A topographic site location map is included as Figure 1, and an aerial map with the release location is included as Figure 2.

The location of the release is within a floodplain associated with Armenta Wash. Surface runoff drains north to an unnamed arroyo which discharges into the Armenta Wash, and depth of groundwater is approximately 8 feet below ground surface (bgs). A topographic site location map is included as Figure 1, and a General Site Plan is presented as Figure 2.

1.2 Spill History

A release was reported at the location on August 2, 2011, by Shane Cooley of Enterprise. The cause of the release was attributed to a line leak due to corrosion.

Remedial excavation activities were conducted on August 8, 2011, and AES collected soil samples from the base and mid-walls of the excavation, which measured approximately 20 feet by 20 feet by 8 feet deep. Benzene, toluene, ethylbenzene, and xylene (BTEX) and total petroleum hydrocarbon (TPH) concentrations for all three soil samples collected were either below laboratory detection limits or below applicable NMOCD action levels. A grab sample from shallow groundwater was also collected from near the base of the excavation for laboratory analysis. Dissolved phase benzene, toluene, and total xylene concentrations were reported above the New Mexico Water Quality Control Commission (WQCC) standards for groundwater.

On August 23, 2011, the excavation was extended to approximately 4 feet below the pipeline, for a total depth of 12 feet bgs. The excavation was extended horizontally resulting in an excavation area approximately 30 feet by 20 feet. Prior to backfilling the excavation, one groundwater sample was collected from the excavation for laboratory analysis. Dissolved phase benzene concentrations were reported above the WQCC standard with 31 μ g/L. No soil samples were collected during the August 23, 2011, excavation activities since the soil samples collected from the excavation on August 8, 2011, were below NMOCD action levels.

On November 29, 2011, a groundwater investigation was conducted by AES in order to delineate the full extent of petroleum hydrocarbon impact on groundwater resulting from the release. The investigation included the installation of four soil borings (SB-1 through SB-4), which were completed as groundwater monitor wells (MW-1 through MW-4). The monitor wells were developed on December 16, 2011, and groundwater samples were collected on December 29, 2011.

Soil analytical results confirmed that soil samples collected from SB-1 through SB-4 were below NMOCD action levels or below laboratory detection limits for benzene, total BTEX, and TPH. Analytical results for samples collected from MW-1 through MW-4 showed that concentrations for BTEX were below applicable WQCC standards and TPH were below laboratory detection limits.

Based upon the results of the groundwater investigation associated with the Olmer #4 Pipeline release, it was determined groundwater has not been impacted within the source area above applicable WQCC standards and, AES recommended at least three additional quarterly groundwater monitoring and sampling events to confirm contaminant concentrations remain below WQCC standards.

2.0 Groundwater Monitoring and Sampling March - 2012

On March 9, 2012, groundwater monitoring and sampling were conducted by AES in MW-1 through MW-4. Work was completed in accordance with the workplan prepared by AES and dated September 28, 2011, and also in accordance with U.S. Environmental Protection Agency (USEPA) Environmental Response Team's Standard Operating Procedures (SOPs), and applicable American Society of Testing and Materials (ASTM) standards.

2.1 Groundwater Measurements and Water Quality

Prior to sample collection, depth to groundwater in each well was measured with a Keck Water Level Indicator, and water quality data was measured with a YSI Water Quality Meter. Water quality measurements were recorded and included pH, temperature, conductivity, dissolved oxygen (DO), and oxidation reduction potential (ORP). Depth to groundwater measurements and water quality data were recorded onto Water Sample Collection forms. Depths to groundwater varied across the site and were observed to range from 7.75 feet below top of casing (TOC) in MW-3 to 11.33 feet below TOC in MW-4. The groundwater gradient was calculated to be approximately 0.026 foot/foot to the northeast, which is consistent with previous site data.

Following depth to water measurement, each well was purged with a disposable bailer until recorded temperature, pH, conductivity, and DO measurements were stabilized. All data was recorded onto Water Sample Collection Forms. Groundwater temperature ranged from 9.51°C in MW-3 to 11.22°C in MW-2, and conductivity ranged from 4.648 mS in MW-1 to 9.782 mS in MW-3. DO concentrations were between 1.18 mg/L in MW-2 and 4.30 mg/L in MW-4, and pH ranged from 6.70 in MW-3 to 7.46 in MW-1. Although DO was recorded during field activities, it should be noted that due to the use of bailers, the accuracy of dissolved oxygen measurements is limited. Depth to groundwater measurements and water quality data are summarized in Table 1, and groundwater elevation contours are presented in Figure 2. Water Sample Collection forms are presented in Appendix A.

2.2 Groundwater Laboratory Analyses

Groundwater samples were collected with new disposable bailers from a total of four monitor wells and transferred into appropriate sample containers, labeled accordingly, and documented on Water Sample Collection Forms. Samples were shipped in insulated coolers containing ice at less than 6°C to Hall Environmental Analytical Laboratory (Hall) in Albuquerque, New Mexico. All groundwater analytical samples were analyzed for BTEX per USEPA Method 8021B and TPH as GRO and DRO per USEPA Method 8015M.

2.2.1 Groundwater Analytical Results

Analytical results from groundwater samples collected during the March 2012 sampling event showed that BTEX concentrations were reported below the laboratory detection limits in MW-1, MW-2, and MW-4. Dissolved phase benzene concentrations were reported at 2.2 μ g/L, and the ethyl-benzene concentration was 5.1 μ g/L in MW-3. TPH concentrations were reported at or below the laboratory detection limits for all the monitor wells (MW-1 through MW-4). Groundwater analytical results are included in Table 2 and on Figure 3. Groundwater analytical laboratory reports are presented in Appendix A.

3.0 Conclusion and Recommendations

On March 9, 2012, AES personnel conducted groundwater monitoring and sampling at the 2D-1LP (Olmer #4) Pipeline August 2011 Release location. Depths to groundwater varied across the site and were observed to exist at about 7.75 to 11.33 feet below TOC, and groundwater gradient was calculated to be approximately 0.026 foot/foot to the northeast, which is consistent with previous site data.

Groundwater analytical results showed that contaminants of concern (BTEX) were below applicable WQCC standards for the second consecutive quarter for all the monitor wells (MW-1 through MW-4). TPH concentrations were below laboratory detection limits, except in MW-3 with 0.10 mg/kg.

Based on current site data and in accordance with the project workplan, AES will conduct two additional quarterly sampling events to ensure four consecutive quarters of groundwater contaminant concentrations below WQCC standards. The next sampling event is tentatively scheduled for June 2012.

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

Sincerely,

Heather Woods Staff Geologist

Elizabeth McNally, P.E.

Elizabeth V Merelly

Heather M. Winds

New Mexico Registration #15799

Attachments:

Tables

Table 1. Summary of Groundwater Measurement and Water Quality Data

Table 2. Summary of Groundwater Analytical Results

Figures

Figure 1. Topographic Site Location Map

Figure 2. General Site Plan and Groundwater Elevations, March 2012

Figure 3. Groundwater Analytical Results, March 2012

Appendix A

Water Sample Collection Forms
Groundwater Analytical Laboratory Reports (Hall 1203412)

cc: Brandon Powell

New Mexico Oil Conservation Division

1000 Rio Brazos Road Aztec, New Mexico 87410

Aaron Dailey

Enterprise Products Company

614 Reilly Avenue

Farmington, New Mexico 87401

S:\Animas 2000\2012 Projects\Enterprise\Olmer #4\Reports\Olmer#4 1st Qtr Monitoring Report 071112.docx

1st Quarterly Monitoring Report 2012 July 11, 2012

TABLE 1
SUMMARY OF GROUNDWATER MEASUREMENTS AND WATER QUALITY DATA
Enterprise Products Company Lateral 2D-1LP (Olmer #4) Pipeline Release
San Juan County, New Mexico

		Depth to					Dissolved		
		Water	Surveyed	GW Elev.		Conductivity	Oxygen	Temp.	ORP
Well ID	Date	(L t)	TOC (ft)	(£)	Н	(ms)	(mg/r)	(5ō)	(mV)
MW-1	29-Dec-11	9.92	5467.98	5458.06	7.14	4.53	1.48	12.47	382.3
MW-1	09-Mar-12	9.74	5467.98	5458.24	7.46	4.648	1.46	10.97	78.3
MW-2	29-Dec-11	9.10	5468.10	5459.00	7.13	4.624	1.28	12.06	382.1
MW-2	09-Mar-12	8.92	5468.10	5459.18	7.25	4.691	1.18	11.22	57.3
MW-3	29-Dec-11	7.94	5468.56	5460.62	6.67	8.44	2.29	10.44	295.1
MW-3	09-Mar-12	7.75	5468.56	5460.81	6.70	9.782	2.20	9.51	-100.7
MW-4	29-Dec-11	11.51	5467.99	5456.48	6.42	4.712	3.19	13.15	374.7
MW-4	09-Mar-12	11.33	5467.99	5456.66	7.30	5.345	4.30	10.77	6.66

Enterprise Products Company Lateral 2D-1LP (Olmer #4) Pipeline Release SUMMARY OF GROUNDWATER ANALYTICALS RESULTS

San Juan County, New Mexico

Well ID	Date Sampled	Benzene	Toluene	Ethyl- benzene	Xylenes	GRO C6-C10	DRO C10-C22
		1/6Ħ	1/6н	1/6n	1/6n	1/бш	1/bw
Sa	Sample Method		EPA Method 8021	nod 8021		EPA Meth	EPA Method 8015M
WQ	WQCC STANDARD	70	750	750	979	ЭN	NE
MW-1	29-Dec-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
MW-1	09-Mar-12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
MW-2	29-Dec-11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
MW-2	09-Mar-12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
MW-3	29-Dec-11	<2.0	<2.0	2.4	<4.0	<0.10	<1.0
MW-3	09-Mar-12	2.2	<1.0	5.1	<2.0	0.10	<1.0
MW-4	29-Dec-11	<2.0	<2.0	<2.0	<4.0	<0.10	<1.0
MW-4	09-Mar-12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	Michael						

Notes:

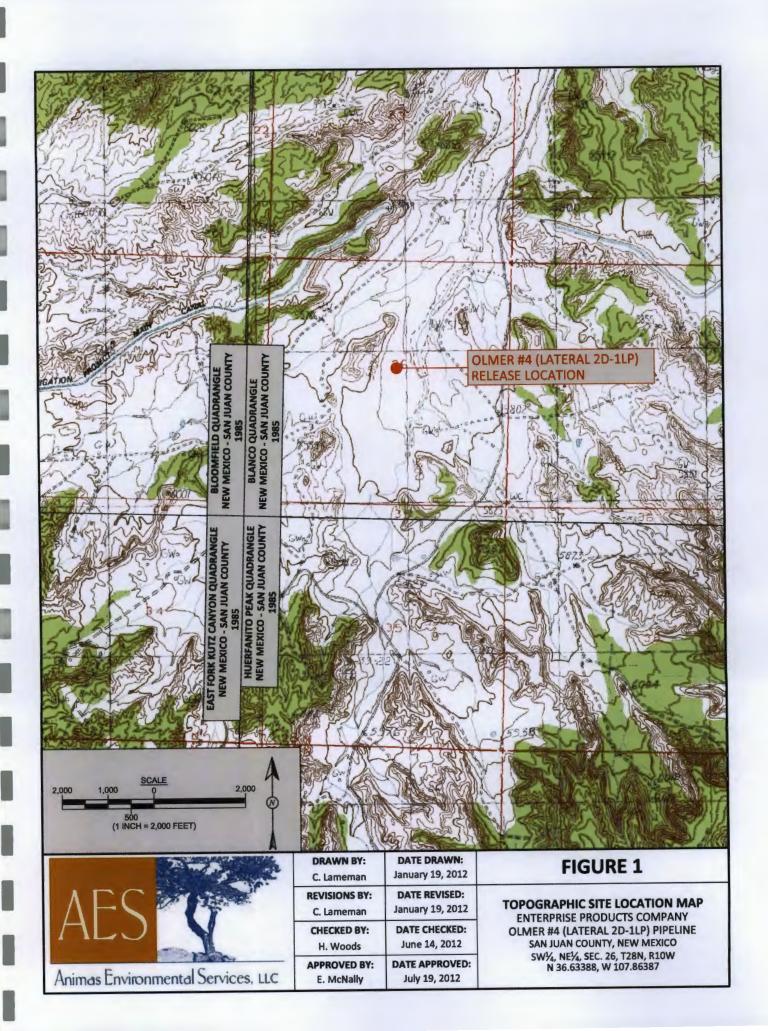
Analyte not detected above listed method limit Not analyzed

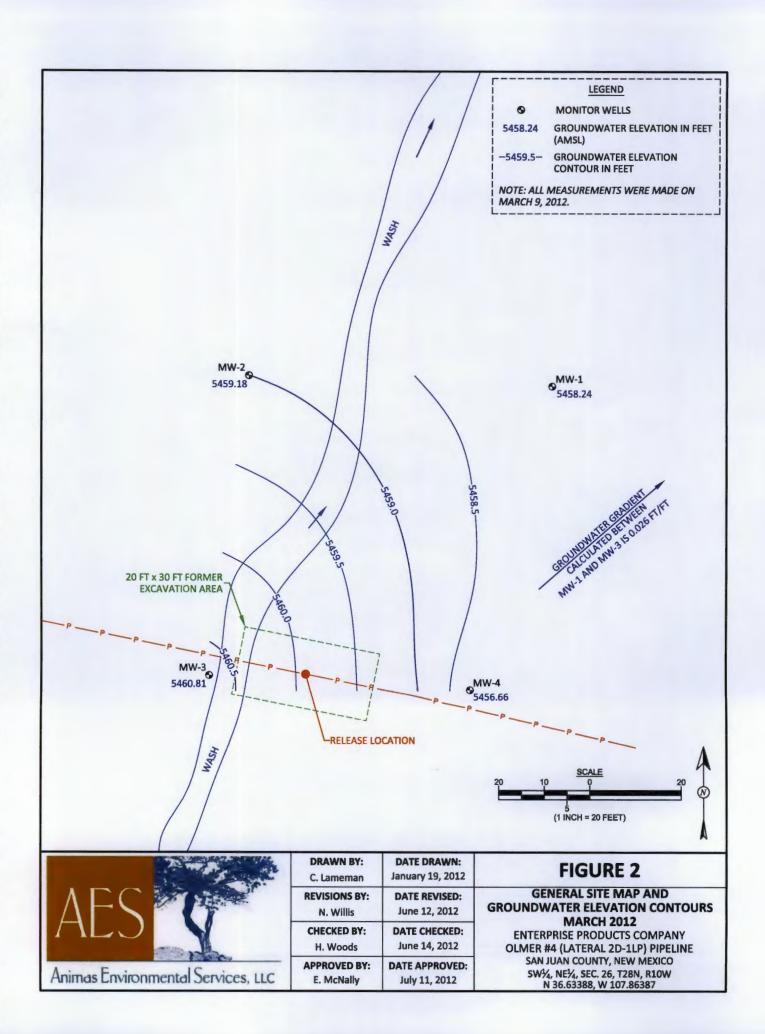
Not established

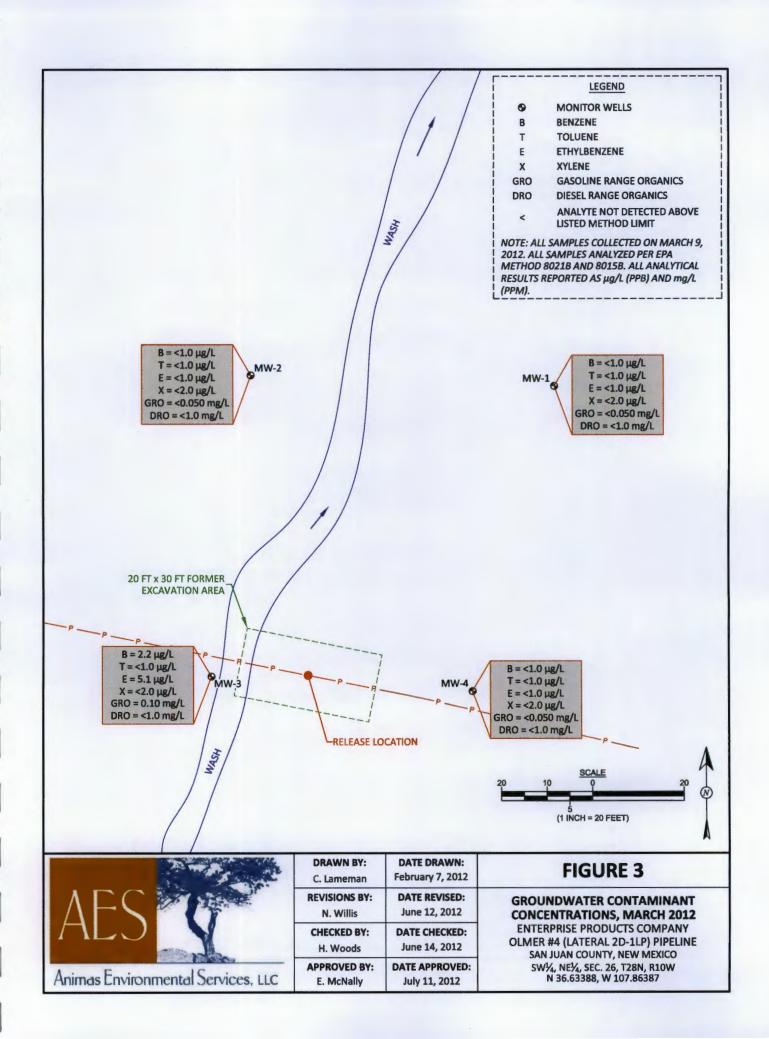
Micrograms per liter (ppb) Milligrams per liter (ppm) NA
NB
μg/L
mg/L
GRO
DRO
MRO

Gasoline range organics Diesel range organics

Motor oil range organics







DEPTH TO GROUNDWATER MEASUREMENT FORM

Animas Environmental Services

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

Project: Groundwater Sampling

Site: Enterprise Olmer #4 (Lateral 2D-1LP)

Location: 36.62766°N, 107.85458°W Corvin lameman Tech:

Project No.: AES 110802 Date: 3-9-12

Time: 1/36 -Form: 1 of 1

Well I.D.	Time	Depth to NAPL (ft.)	Depth to Water (ft.)	NAPL Thickness (ft.)	Notes / Observations
MW-1	1336		9.74		
MW-2	1305		8.92		
MW-3	1231	_	7.75	_	
MW-4	1/48	_	11-33		
\$					
			,		
	1				

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

MONI	TORING W	ELL SAMPLI	NG REC	ORD	Ar	nimas Environme	ntal Services	
Mon	itor Well No:	MW-	-1	_	i	24 E. Comanche, Farmi	-	
						Tel. (505) 564-2281 Fax		
		mer #4 (Lateral	2D-1LP)		•	Project No.: AES 1108		
1		107.85458°W		Manufacture .	-	Date: 3-9-		
Project:	Groundwater	Sampling	1.		- '	Arrival Time: 1333	>	
Sampling	j Technician:	DESIGNATION C	Lamem	an	- то	Air Temp: .C. Elev. (ft):		
	e / No Purge: Diameter (in):		е			ell Depth (ft): /5.3	1	
Initi	al D.T.W. (ft):		Time:	nue .	TOtal VVC	(taken at initial gauging		
	m D.T.W. (ft):		Time:	133	0	(taken prior to purging		
Fin	al D.T.W. (ft):		Time:			(taken after sample col		
If N	APL Present:	D.T.P.:	D.T.W	The second section of the second second second	Th	ickness:Ti	me:	
	ν	Vater Quality	Paramete	rs - Rec	orded E	Ouring Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(μS) (mS)	(mg/L)	рН	(mV)	(see reverse for calc.)	Notes/Observations	
13+2	11.46	4.827	2.23	7.57	79.2	0.25	Clear	
1344	10.99	4.693	1.58	7.52	79.2	0.75	Clear	
1346	10.89	4.671	1.70		81.5	.5	Clear Clear St. Gray	
1347	10.93	4.693	1.32	7.48	79.8	.5	Clear	
1349	10.95	4.655	1.37	7.46	78.4	.5	Clear Clear Sample's Collected	
1351	10.97	4.648	1.46	7.46	78.3	.5	Clear	
1359					<u> </u>		Sumpres Collected	
			, , , , , , , , , , , , , , , , , , , ,					
				<u> </u>				
Analyt	ical Parame	ters (include	analysis r	nethod	and nur	nber and type of sar	nple containers)	
		BTEX by EPA	Method 802	21 (5 - 40	mL glas	s preserved w/ HCI)		
	TP	PH (C6 - C36) b	y EPA Meti	nod 8015	(1 - 40 n	nL glass non-preserved)		
	1, J., J., J., J., J., J., J., J., J., J.							
	D	isposal of Purg	ed Water:	55 G	79//04	Drum		
Colle	cted Samples	s Stored on Ice	in Cooler:	Yas				
	Chain of Cu	ustody Record	Complete:	Yes				
		Analytical La	aboratory:	Hall Envi	ronment	al Analysis Laboratory, A	Albuquerque, NM	
Equipm	ent Used Dui	ring Sampling:	Keck Wate	r Level or	Keck Int	terface Level, YSI Water	Quality Meter	
		and	New Dispo	sable Bai	ler			
Notes/Com	ments:							
					The state of the s			

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MONI	TORING W	ELL SAMPLI	NG REC	ORD	Ar	nimas Environme	ntal Services	
Moni	itor Well No:	MW-	2	-	1	24 E. Comanche, Farmi	-	
						Tel. (505) 564-2281 Fax		
		mer #4 (Lateral 2	2D-1LP)			Project No.: AES 1108		
•	36.62766°N,				. ,	Date: 3-5-1		
Project:	Groundwater	Sampling	01000		. <i>*</i>	Arrival Time: /304		
Sampling	e / No Purge:	Meditar Millis	camer	un	. то	Air Temp: .C. Elev. (ft):		
_	Diameter (in):					II Depth (ft): 14.1	8	
	al D.T.W. (ft):		Time:	-	otal Wo	(taken at initial gauging		
	m D.T.W. (ft):		Time:	130	5	(taken prior to purging		
Fina	al D.T.W. (ft):		Time:			(taken after sample col		
If N	APL Present:	D.T.P.:	D.T.W	.:	Thi	ickness:Ti	me:	
	٧	Vater Quality I	Paramete	rs - Rec	orded D	Ouring Well Purging		
	Temp	Conductivity	DO		ORP	PURGED VOLUME		
Time	(deg C)	(µS) (mS)	(mg/L)	pН	(mV)	(see reverse for calc.)	Notes/Observations	
13/0	11.30	4.730	2.41	7.31	26.7	0.25	Clear	
1312	11.00	4.691	1.53	7.27	41.0	0.5	SI. Gray	
1314	11.14	4.681	1.31	7.26	47.2	0.5	(1'	
13 16	/1. 18	4.687	1.34	7.24	52.0	0.5	11	
13 18	11.40	4.684	1.11	7.25	\$5.3	0.5	/1	
1320	11.72	4.691	1.18	7.25	57.3	0.5	11	
			4				Samples Collected	
		-Monte o						
				<u> </u>				
Analyt	tical Parame	ters (include a	analysis r	nethod	and nur	mber and type of sar	mple containers)	
		BTEX by EPA	Method 80:	21 (5 - 40	mL glas	s preserved w/ HCI)		
	TP	H (C6 - C36) b	y EPA Met	hod 8015	(1 - 40 n	nL glass non-preserved))	
		isposal of Purg			nallon	Drum		
Colle		s Stored on Ice						
	Chain of Cu	ustody Record		$\boldsymbol{\nu}$		THE RESERVE OF THE PROPERTY OF		
		Analytical La	aboratory:	Hall Env	ironment	al Analysis Laboratory,	Albuquerque, NM	
Equipm	ent Used Dui	ring Sampling:	Keck Wate	r Level or	Keck In	terface Level, YSI Wate	r Quality Meter	
		and	New Dispo	sable Ba	iler			
Notes/Com	ments:							
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		and the second s						
revised: 1	2/29/11							

MON	TORING W	ELL SAMPLI	NG REC	ORD	Ai	nimas Environme	ental Services		
Mon	itor Well No:	MW-	-3		6	24 E. Comanche, Farm	ington NM 87401		
				-	-	Tel. (505) 564-2281 Fax	(505) 324-2022		
Site:	Enterprise Ol	mer #4 (Lateral	2D-1LP)			Project No.: AES 1108			
	36.62766°N,				-	Date: 3-9-12			
	Groundwater				-	Arrival Time: 1230			
		Madagra WHIE	Clamen	in	-	Air Temp:			
	e / No Purge:		е		T.O	.C. Elev. (ft):			
Well (Diameter (in):	2		-	Total We	II Depth (ft): /3.	7		
Initi	al D.T.W. (ft):		Time:			(taken at initial gauging			
Confir	m D.T.W. (ft):	7.75	Time:	123	/	(taken prior to purging	well)		
						(taken after sample col	lection)		
If N	APL Present:	D.T.P.:	D.T.W	!.:	Thi	(taken after sample col ckness: T	ime:		
	٧	Vater Quality	Paramete	rs - Rec	orded D	Ouring Well Purging			
	Temp	Conductivity	DO		ORP	PURGED VOLUME			
Time	(deg C)	(μS) (mS)	(mg/L)	pН	(mV)	(see reverse for calc.)	Notes/Observations		
1235	9.44	10.05	1.25	6.85	-115.1	0.25	Yellow		
1238	9.16	10.04	2.31	6.75	104.1	, ~	Yellow/cloudy		
1243	9.55	9.879	2.22	6.71	-102.3		Grayish / Cuts of		
1249	9.51	9.782	2.20	6.70	- 100.7	.5	Lotion Sed . SLOW LOW Yell Rechar		
12-55							Very Low Yield Samples Collected		
						· E ct	Samples Collected		
						· £ .			

Analyt	ical Parame	ters (include :	analysis r	nethod	and nur	mber and type of sai	mple containers)		
		BTEX by EPA	Method 802	21 (5 - 40	mL glas	s preserved w/ HCl)			
	TP	H (C6 - C36) b	y EPA Metl	hod 8015	(1 - 40 n	nL glass non-preserved)		
	D	isposal of Purg	ged Water:	55 6	allan	Drum			
Colle		Stored on Ice							
	Chain of Cu	stody Record	Complete:	Yes					
		Analytical L	aboratory:	Hall Env	ironment	al Analysis Laboratory,	Albuquerque, NM		
Equipm	ent Used Dui	ing Sampling:	Keck Wate	r Level o	r Keck In	terface Level, YSI Wate	r Quality Meter		
			New Dispo						
Notes/Com	ments: Rec	harge very	, slow a	nd l	sw yi	eld. Went ahe	ed and sampled		
before a	rater beco	me less o	waile 51	۸,	•		ad and sampled		
-	No. of the last of				the state of the s	A STATE AND COMPANY OF THE STATE OF THE STAT	V. 1984 24 18 18 18 18 18 18 18 18 18 18 18 18 18		
				- (Partition of the Control of the C					

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MONI	TORING W	ELL SAMPLI	NG REC	ORD	Ar	nimas Environme	ntal Services			
Mon	itor Well No:	MW-	-4		6	24 E. Comanche, Farm	ington NM 87401			
					-	Tel. (505) 564-2281 Fax	(505) 324-2022			
Site:	Enterprise Ol	mer #4 (Lateral:	2D-1LP)			Project No.: AES 1108				
Location:	36.62766°N,	107.85458°W			_	Date: 3-9-1	2			
	Groundwater				_ /	Arrival Time: 147				
Sampling	g Technician:	Nation Willis	C. Lamerna	ધ મ	_	Air Temp:	44.4			
Purg	e / No Purge:	Purg	e			.C. Elev. (ft):				
	Diameter (in):				Total We	ell Depth (ft):اهـــ				
	al D.T.W. (ft):		Time:			_(taken at initial gauging	•			
Confir	m D.T.W. (ft):	11.33	Time:	114	8	(taken prior to purging	•			
Fin	al D.T.W. (ft):		Time:			(taken after sample co				
If N	APL Present:	D.T.P.:	D.T.W	/.:	Th	ickness:T	ime:			
	٧	Vater Quality	Paramete	rs - Rec	orded D	Ouring Well Purging				
	Temp	Conductivity	DO		ORP	PURGED VOLUME				
Time	(deg C)	(μS) (mS)	(mg/L)	pН	(mV)	(see reverse for calc.)	Notes/Observations			
1154	11.88	6.092	53.9	7.28	111.)	.0.25	Clear			
1157	11-29	6.042	4.74	7.78	10.8%	.5	Sediments			
1201	1107	5.642	5.25	7.37	99.5	`2	Sediments			
1203	10.92	5.491	4.94	7.40	94.2	.5	f c			
1207	10.83	5-383	4.73	3.38	99.3	.5	Cloudy			
1211	10.77	5.345	4.30	7.30	99.9	.5	Clear			
1215							Clear Samples Collected			
						-				
Analy	tical Parame	eters (include	analysis ı	method	and nui	mber and type of sa	mple containers)			
		BTEX by EPA	Method 80	21 (5 - 40) mL glas	s preserved w/ HCI)				
	TF	PH (C6 - C36) b	y EPA Met	hod 8015	5 (1 - 40 r	mL glass non-preserved)			
			-5							
		Disposal of Purg	ged Water:	55 1	Gallo	n Drum				
Colle		s Stored on Ice								
		ustody Record								
		Analytical L	aboratory:	: Hall Env	vironment	tal Analysis Laboratory,	Albuquerque, NM			
Equipn	nent Used Du	ring Sampling:	Keck Wate	er Level o	r Keck In	terface Level, YSI Wate	er Quality Meter			
		and	New Dispo	osable Ba	iler					
Notes/Con	nments:									
							· · · · · · · · · · · · · · · · · · ·			
		A CONTRACTOR OF THE PROPERTY O								

revised: 12/29/1



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

OrderNo.: 1203412

March 16, 2012

Tami Ross Animas Environmental Services 624 East Comanche Farmington, NM 87401 TEL: (505) 793-2072

FAX

RE: Enterprise Products Olmer #4

Dear Tami Ross:

Hall Environmental Analysis Laboratory received 5 sample(s) on 3/10/2012 for the analyses presented in the following report.

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

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order 1203412

Date Reported: 3/16/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Enterprise Products Olmer #4

Client Sample ID: TRIP BLANK

Collection Date:

Lab ID: 1203412-001

Project:

Matrix: TRIP BLANK Received Date: 3/10/2012 10:40:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	1.0	μg/L	1	3/15/2012 4:08:56 AM
Toluene	ND	1.0	μg/L	1	3/15/2012 4:08:56 AM
Ethylbenzene	ND	1.0	μg/L	1	3/15/2012 4:08:56 AM
Xylenes, Total	ND	2.0	μg/L	1	3/15/2012 4:08:56 AM
Surr: 4-Bromofluorobenzene	91.8	76.5-115	%REC	1	3/15/2012 4:08:56 AM

Qualifiers:

*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

Page 1 of 8

Lab Order 1203412

Date Reported: 3/16/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Project: Enterprise Products Olmer #4

1203412-002 Lab ID:

Client Sample ID: MW-1

Collection Date: 3/9/2012 1:59:00 PM

Matrix: AQUEOUS Received Date: 3/10/2012 10:40:00 AM

Analyses	Result	RL (Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RAN	GE				•	Analyst: JMP
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/13/2012 7:56:21 PM
Surr: DNOP	99.9	61.3-164		%REC	1	3/13/2012 7:56:21 PM
EPA METHOD 8015B: GASOLINE R	ANGE					Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	3/15/2012 4:39:10 AM
Surr: BFB	71.0	69.3-120		%REC	1	3/15/2012 4:39:10 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		μg/L	1	3/15/2012 4:39:10 AM
Toluene	ND	1.0		μg/L	1	3/15/2012 4:39:10 AM
Ethylbenzene	ND	1.0		μg/L	1	3/15/2012 4:39:10 AM
Xylenes, Total	ND	2.0		μg/L	1	3/15/2012 4:39:10 AM
Surr: 4-Bromofluorobenzene	73.2	76.5-115	S	%REC	1	3/15/2012 4:39:10 AM

- */X Value exceeds Maximum Contaminant Level.
- Value above quantitation range
- Analyte detected below quantitation limits
- RPD outside accepted recovery limits
- Spike Recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- Reporting Detection Limit

Lab Order 1203412

Date Reported: 3/16/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-2

Project: Enterprise Products Olmer #4

Collection Date: 3/9/2012 1:25:00 PM

Lab ID: 1203412-003

Matrix: AQUEOUS

Received Date: 3/10/2012 10:40:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANG	GE				Analyst: JMP
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	3/13/2012 8:17:42 PM
Surr: DNOP	97.1	61.3-164	%REC	1	3/13/2012 8:17:42 PM
EPA METHOD 8015B: GASOLINE R	ANGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	3/15/2012 5:09:27 AM
Surr: BFB	85.3	69.3-120	%REC	1	3/15/2012 5:09:27 AM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	1.0	μg/L	1	3/15/2012 5:09:27 AM
Toluene	ND	1.0	μg/L	1	3/15/2012 5:09:27 AM
Ethylbenzene	ND	1.0	μg/L	1	3/15/2012 5:09:27 AM
Xylenes, Total	ND	2.0	μg/L	1	3/15/2012 5:09:27 AM
Surr: 4-Bromofluorobenzene	84.2	76.5-1 1 5	%REC	1	3/15/2012 5:09:27 AM

^{*/}X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

Lab Order 1203412

Date Reported: 3/16/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Project: Enterprise Products Olmer #4

Lab ID: 1203412-004

Client Sample ID: MW-3

Collection Date: 3/9/2012 12:55:00 PM

Received Date: 3/10/2012 10:40:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RAN	GE				Analyst: JMP
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	3/13/2012 8:39:10 PM
Surr: DNOP	98.8	61.3-164	%REC	1	3/13/2012 8:39:10 PM
EPA METHOD 8015B: GASOLINE R	ANGE				Analyst: NSB
Gasoline Range Organics (GRO)	0.10	0.050	mg/L	1	3/15/2012 5:39:42 AM
Surr: BFB	93.3	69.3-120	%REC	1	3/15/2012 5:39:42 AM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	2.2	1.0	μg/L	1	3/15/2012 5:39:42 AM
Toluene	ND	1.0	μg/L	1	3/15/2012 5:39:42 AM
Ethylbenzene	5.1	1.0	μg/L	1	3/15/2012 5:39:42 AM
Xylenes, Total	ND	2.0	μg/L	1	3/15/2012 5:39:42 AM
Surr: 4-Bromofluorobenzene	94.5	76.5-115	%REC	1	3/15/2012 5:39:42 AM

Matrix: AQUEOUS

- */X Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
 - RL Reporting Detection Limit

Lab Order 1203412

Date Reported: 3/16/2012

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Animas Environmental Services

Client Sample ID: MW-4

Project: Enterprise Products Olmer #4

Collection Date: 3/9/2012 12:15:00 PM

Lab ID: 1203412-005

Matrix: AQUEOUS

Received Date: 3/10/2012 10:40:00 AM

Analyses	Result	RL (Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANG	GE					Analyst: JMP
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	3/13/2012 9:00:30 PM
Surr: DNOP	97.4	61.3-164		%REC	1	3/13/2012 9:00:30 PM
EPA METHOD 8015B: GASOLINE R	ANGE					Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	3/15/2012 6:09:53 AM
Surr: BFB	68.8	69.3-120	S	%REC	1	3/15/2012 6:09:53 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		μg/L	1	3/15/2012 6:09:53 AM
Toluene	ND	1.0		μg/L	1	3/15/2012 6:09:53 AM
Ethylbenzene	ND	1.0		μg/L	1	3/15/2012 6:09:53 AM
Xylenes, Total	ND	2.0		μg/L	1	3/15/2012 6:09:53 AM
Surr: 4-Bromofluorobenzene	70.3	76.5-115	s	%REC	1	3/15/2012 6:09:53 AM

Qualifiers:

*/X Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RL Reporting Detection Limit

Page 5 of 8

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#:

1203412

16-Mar-12

Client:

Animas Environmental Services

Project:

Enterprise Products Olmer #4

Sample ID MB-1058	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015B: Diese	el Range		
Client ID: PBW	Batch	1D: 10 :	58	R	RunNo: 14	441				
Prep Date: 3/13/2012	Analysis D	ate: 3/	13/2012	S	SeqNo: 40	0461	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0				·				
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		100	61.3	164			

Sample ID LCS-1058	SampT	ype: LC	S	Tes	tCode: E	PA Method	8015B: Diese	el Range		
Client ID: LCSW	Batch	ID: 10	58	F	RunNo: 1	441				
Prep Date: 3/13/2012	Analysis D	ate: 3/	13/2012	8	SeqNo: 4	0462	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.1	1.0	5.000	0	103	74	157			
Surr: DNOP	0.52		0.5000		105	61.3	164			

Sample ID LCSD-1058	SampT	ype: LC	SD	Tes	tCode: E	PA Method	8015B: Diese	l Range		
Client ID: LCSS02	Batch	D: 10	58	F	RunNo: 1	441				
Prep Date: 3/13/2012	Analysis D	ate: 3/	13/2012	S	SeqNo: 4	0463	Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	4.1	1.0	5.000	0	82.1	74	157	22.3	23	
Surr: DNOP	0.51		0.5000		101	61.3	164	Λ	0	

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Detection Limit

^{*/}X Value exceeds Maximum Contaminant Level.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#:

1203412

16-Mar-12

Client:

Animas Environmental Services

Project:

Enterprise Products Olmer #4

Sample ID 5ML-RB

SampType: MBLK

TestCode: EPA Method 8015B: Gasoline Range

LowLimit

69.3

Client ID:

PBW

Batch ID: R1476

RunNo: 1476

HighLimit

Prep Date:

Analysis Date: 3/14/2012

Units: mg/L

Analyte

SPK value SPK Ref Val Result **PQL**

SeqNo: 41440 %REC

RPDLimit Qual

Gasoline Range Organics (GRO) Surr: BFB

ND 18

20.00

88.4

120

SampType: LCS

TestCode: EPA Method 8015B: Gasoline Range

%RPD

Sample ID 2.5UG GRO LCS

MW-1

Sample ID 1203412-002A MSD

MW-1

Batch ID: R1476

0.050

Batch ID: R1476

Analysis Date: 3/14/2012

2.5

0.050

RunNo: 1476

Prep Date:

Client ID: LCSW Analysis Date: 3/14/2012

SeqNo: 41441

Units: mg/L

Analyte Gasoline Range Organics (GRO) Result **PQL**

0.60

Result

29

29

730

19

SPK value SPK Ref Val

LowLimit

HighLimit

%RPD **RPDLimit**

Surr: BFB

Client ID:

Prep Date:

0.5000 20.00 %REC 120

101 69.3 123 120

Qual

Sample ID 1203412-002A MS

SampType: MS

TestCode: EPA Method 8015B: Gasoline Range

SPK value SPK Ref Val

SPK value SPK Ref Val

RunNo: 1476

SeqNo: 41477

115

%REC

92.5

LowLimit

75.4

69.3

Units: mg/L

HighLimit

121

120

%RPD

RPDLimit Qual

Gasoline Range Organics (GRO)

Client ID:

Prep Date:

Surr: BFB

950 SampType: MSD

25.00

1,000

25.00

1,000

95.0 TestCode: EPA Method 8015B: Gasoline Range

RunNo: 1476

Units: mg/L

120

RPDLimit 10.5

0

Qual

Analyte Surr: BFB

Gasoline Range Organics (GRO)

Analysis Date: 3/15/2012 Result **PQL**

Batch ID: R1476

2.5

SeqNo: 41482

%REC

118

72.7

LowLimit

75.4

69.3

HighLimit 121

%RPD 1.96

0

Qualifiers:

R

Value exceeds Maximum Contaminant Level. */X

E Value above quantitation range

Analyte detected below quantitation limits RPD outside accepted recovery limits

В Analyte detected in the associated Method Blank

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

RLReporting Detection Limit Page 7 of 8

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#:

1203412

16-Mar-12

Client:

Animas Environmental Services

Project:

Enterprise Products Olmer #4

Sample ID 5ML-RB	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8021B: Volati	les		
Client ID: PBW	Batch	n ID: R1	476	F	RunNo: 1	476				
Prep Date:	Analysis D	ate: 3/	14/2012	S	SeqNo: 4	1493	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	19		20.00		97.2	76.5	115			

Sample ID 100NG BTEX LC	CS SampT	ype: LC	s	Tes	tCode: E	PA Method	8021B: Volat	iles		
Client ID: LCSW	Batch	n ID: R1	476	F	RunNo: 1	476				
Prep Date:	Analysis D	oate: 3/	14/2012	S	SeqNo: 4	1494	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	80	120			
Toluene	21	1.0	20.00	0	106	80	120			
Ethylbenzene	21	1.0	20.00	0	103	80	120			
Xylenes, Total	62	2.0	60.00	0	103	80	120			
Surr: 4-Bromofluorobenzene	20		20.00		101	76.5	115			

Sample ID 1203371-001A N	IS Samp	Type: MS	3	Tes	tCode: E	PA Method	8021B: Volat	iles		
Client ID: BatchQC	Bato	h ID: R1	476	F	RunNo: 1	476				
Prep Date:	Analysis I	Date: 3/	15/2012	S	SeqNo: 4	1513	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1,200	50	1,000	146.4	105	70.1	118			
Toluene	1,400	50	1,000	340.5	104	72.3	117			
Ethylbenzene	1,100	50	1,000	43.10	103	73.5	117			
Xylenes, Total	3,400	100	3,000	311.4	104	73.1	119			
Surr: 4-Bromofluorobenzene	1,000		1,000		101	76.5	115			

Sample ID 1203371-001A	MSD SampT	ype: MS	BD	Tes	tCode: E	PA Method	8021B: Volat	iles		
Client ID: BatchQC	Batch	n ID: R1	476	F	RunNo: 1	476				
Prep Date:	Analysis D	ate: 3/	15/2012	S	SeqNo: 4	1514	Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1,200	50	1,000	146.4	104	70.1	118	1.33	16.4	
Toluene	1,400	50	1,000	340.5	105	72.3	117	0.709	13.9	
Ethylbenzene	1,100	50	1,000	43.10	103	73.5	117	0.624	13.5	
Xylenes, Total	3,400	100	3,000	311.4	104	73.1	119	0.253	12.9	
Surr: 4-Bromofluorobenzene	1,000		1,000		102	76.5	115	0	0	

- */X Value exceeds Maximum Contaminant Level.
 - Value above quantitation range
 - J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Detection Limit



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87105 TEL: 505-345-3975 FAX: 505-345-410;

Website: www.hallenvironmental.com

Sample Log-In Check List

Clier	nt Name: Animas Environmental	Work Order Number: 1203412	
Rec	eived by/date: 4		
Logg	ged By: Ashley Gallegos 3/10/2012 10:40:00	AM	
Com	pieted By: Ashley Gallegos 3/13/2012 8:55:57 A	AM Ag	
Revi	ewed By: 4 03/13/12	•	
Cha	in of Custody		
	Were seals intact?	Yes ☐ No ☐ Not Present ☑	
• • •	Is Chain of Custody complete?	Yes ✓ No Not Present	
	How was the sample delivered?	Courier	
Log	In		
	Coolers are present? (see 19. for cooler specific information)	Yes ♥ No □ NA □	
4.	Coolers are present: (see 15. for cooler special minimator)	100 E 100 E 100 E	
5.	Was an attempt made to cool the samples?	Yes ☑ No ☐ NA ☐	
_	NATURE OF CONTRACTOR OF CONTRA	Yes ☑ No ☐ NA ☐	
6.	Were all samples received at a temperature of >0° C to 6.0°C	Tes IV INO L. NA L.	
7.	Sample(s) in proper container(s)?	Yes ☑ No 🗌	
• •	Sufficient sample volume for indicated test(s)?	Yes 🗹 No 🗌	
9.	Are samples (except VOA and ONG) properly preserved?	Yes 🗹 No 🗌	
10.	Was preservative added to bottles?	Yes 🗌 No 🗹 NA 🗌	
11	VOA vials have zero headspace?	Yes ☐ No ☐ No VOA Vials 🗹	
	Were any sample containers received broken?	Yes No 🗹	
	Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑ No ☐ # of preserved bottles checked	
	Are matrices correctly identified on Chain of Custody?	for pH: Yes ✓ No ☐ (<2 or >12 unless noted	d)
	Is it clear what analyses were requested?	Yes ✓ No ☐ Adjusted?	,
	Were all holding times able to be met?	Yes ✓ No □	
	(If no, notify customer for authorization.)	Checked by:	
Spe	cial Handling (if applicable)		
17.	Was client notified of all discrepancies with this order?	Yes □ No □ NA 🗹	
	Person Notified: Date	e:	
	By Whom: Via:	•	
	Regarding:		
	Client Instructions:		
18.	Additional remarks:		
19.	Cooler No Temp °C Condition Seal Intact Seal No	Seal Date Signed By	
	1 3.2 Good Yes	Cost. Date Olymon Dy	

ر ر	<u>-</u>	ے ا	CHAIR-OI-CHAIDAY NECOLA						
Client:	1	Environ	Animas Environmental Services, LLC.	. □ Standard	. □ Rush			HALL ENVIKONMENTAL ANALYSTSTABORATORY	
				Project Name:				www.hallenvironmental.com	
Mailing	Mailing Address	624 E Cc	624 E Comanche Farmington NM	43	Products Olmer #4		4901 Haw	4901 Hawkins NE - Albuquerque, NM 87109	
		87401		Project #:			Tel. 505-345-3975	45-3975 Fax 505-345-4107	ı
Phone #:		505-564-2281	2281	AES 110802				Analysis Request	
email or Fax#:		505-324-2022	2022	Project Manager:	ger:				
QA/QC	QA/QC Package:								
□ Standard	ndard		☐ Level 4 (Full Validation)	Tami Ross			0		
Accreditation:	itation:			Sampler: -		Prinches En	7 <u>1</u> 9108		(17 -
	□ EDD (Type) _								۸,
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		ВТЕХ 8021 ТРН (С6 - С		oolddii9 ii∆
39-12		O ² H	Trip Blank	2 - 40 mL glass	ij	100-	×		
-	1359	H ₂ O	MW - 1	6 - 40 mL glass	5 - HCi 1 - Non	- 002	×××		
	1325	O,H	MW - 2	6 - 40 mL glass	5 - HCi 1 - Non	-003	×××		
_	1255	H ₂ O	MW - 3	6 - 40 mL glass	5 - HCI 1 - Non	h00-	× ×		
	1215	H ₂ O	MW - 4	6 - 40 mL glass	5 - HCl 1 - Non	-002	* * *		
							<u></u> .		
			•			ľ			_
Date: -9 - 12	Time: (Le 09	Refinduished by:	ed by:	Reserved by:	Labeter	3/4/12 (1005)	Remarks: BUL	L to ANTERPLISE PRODUCTS	
Date:	1	Removish	Aushed by: Charles	Received By:) Date, Time			
+	T Decessary	ؠڹ	pmitted to Hall Environmental may be sub	contracted to other a	ccredited laboratories.	This serves as notice of this	possibility. Any sub-	The serves as notice of this possibility. Any sub-contracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.	