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46

REPORTS

DATE:

2002

21246



Highlander Environmental Corp.

Midland, Texas

December 15, 2002

Mr. Michael C. Stubblefield
Environmental Bureau
Oil Conservation Division
Drawer DD
Artesia, New Mexico 88240

RE: 2002 Summary Report/Closure Report for the Well Blowout Located at the Pogo McMillan 24 State #1, Section 4, Township 20 South, Range 26 East, Eddy County, New Mexico

Dear Mr. Stubblefield:

Highlander Environmental Corp. (Highlander) was contacted by Pogo Producing Company (Pogo) to assess the impact from a well blowout on April 12, 2001, which occurred at the Pogo McMillan 24 State #1 in Eddy County, New Mexico. The Site is located in Section 24, Township 20 South, Range 26 East. The Site is shown in Figure 1.

1.0 Background

The well blowout occurred at the Site on April 12, 2001. During the initial blowout, the fluids that were not contained on location (drilling mud, produced water and condensate) flowed off the Site and down an unnamed dry wash south of the location a distance of approximately 1250'.

Trench and berm containments were constructed on the west and south sides of the location to control the runoff of fluids from the well. The contained fluid was immediately pumped into an open, lined pit located west of the Site using both vacuum trucks and trash pumps. A third trench was dug approximately 200' south of the location to be used as an overflow pit during fire fighting operations. A flare pit was constructed on the east end of Trench #3 to be used when the well flow was diverted and controlled.

After the rig was removed from the well, the fire was extinguished and gas, produced water and condensate were discharged into the air. Due to shifting winds, three major overspray areas occurred. Most of fluids fell into the reserve pit and onto the well location and were captured. The offsite overspray affected three areas that are northwest, east and southwest of the well. The areas

of offsite impact were estimated to cover approximately 9 acres. After initial remediation efforts, there was approximately seven acres of stressed vegetative cover remaining, which required additional reclamation. The well was brought under control on April 18, 2001.

2.0 Surface Remediation

As discussed in the 2001 Annual Report Dated December 15, 2001, manure was tilled into the disturbed soil areas around the well pad during the week of December 10, 2001, in preparation for Summer seeding activities. Site restoration activities, as recommended by the New Mexico State Land Office, were performed on September 5-6, 2002. The Site was seeded with an approved seeding mixture using a roll-type, tractor mounted seed spreader. Two different seed mixtures were used. For areas with a considerable amount of topsoil, a blend of Plains Bristle Grass, Sand Dropseed, and Sand Lovegrass was used. In the remaining areas where the topsoil was less abundant, a blend of Lehmanns Lovegrass, Sand Dropseed, Blue Grama and Sideoats Grama was used.

3.0 Monitor Well Sampling

The four-(4) onsite monitor wells were gauged and sampled on a quarterly basis in 2002. Sampling events were performed in February, May, August and October. The greatest fluctuations were found in MW-3, where the water levels ranged from a high of 101.52' to a low of 122.80' below ground surface. The Site groundwater gradient continues to show a southwest to northeast trend. The groundwater gradient maps for 2002 are shown in Figures 2, 3, 4 and 5. Table 1 lists the depth to water measurements for the entire monitoring period.

After water level measurements were taken, the monitor wells were purged and sampled for Benzene, Toluene, Ethylbenzene and Xylene (BTEX) and chloride evaluation. The results of sampling are shown in Table 1. The reported BTEX levels for all four sampling events were below the method detection limit, with the exception of a trace amount of toluene in MW-4 at 0.0014 mg/l in the 1st quarter sampling event. This level is well below the New Mexico Water Quality Control Commission (WQCC) Standards of 0.75 mg/l, and was not detected in subsequent sampling events. The chloride levels detected in the wells do not indicate any impact to the groundwater.

4.0 Conclusions

1. The four-(4) onsite monitor wells were gauged and sampled on a quarterly basis in 2002. Sampling events were performed in February, May, August and October. The reported BTEX levels for all four sampling events were below the method detection limit, with the exception of a trace amount of toluene in MW-4 at 0.0014 mg/l, in the 1st quarter sampling event. This level is well below the New Mexico Water Quality Control Commission (WQCC) Standards of 0.75 mg/l, and was not detected in subsequent sampling events.
2. No significant level of any constituent of concern (COC) has shown up in any of the groundwater monitoring events, and chloride levels have remained extremely low indicating that no impact to groundwater has occurred at this Site.
3. As discussed in the 2001 Annual Report Dated December 15, 2001, manure was



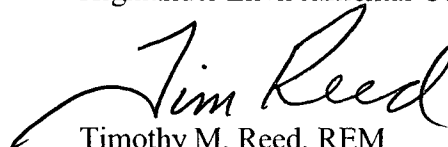
tilled into the disturbed soil areas around the well pad during the week of December 10, 2001, in preparation for Summer seeding activities. Site restoration activities, as recommended by the New Mexico State Land Office, were performed on September 5-6, 2002. The Site was seeded with an approved seeding mixture using a roll-type, tractor mounted seed spreader. Two different seed mixtures were used. For areas with a considerable amount of topsoil, a blend of Plains Bristle Grass, Sand Dropseed, and Sand Lovegrass was used. In the remaining areas where the topsoil was less abundant, a blend of Lehmanns Lovegrass, Sand Dropseed, Blue Grama and Sideoats Grama was used. As of the October monitoring event, new grass was visible in much of the seeded areas.

5.0 Recommendations

1. Based upon remediation activities previously documented in the 2001 Annual Report, and upon the above-mentioned results of quarterly groundwater sampling and seeding activities, this site should be closed and the monitor wells properly plugged.

If you require any additional information or have any questions or comments concerning the report, please call.

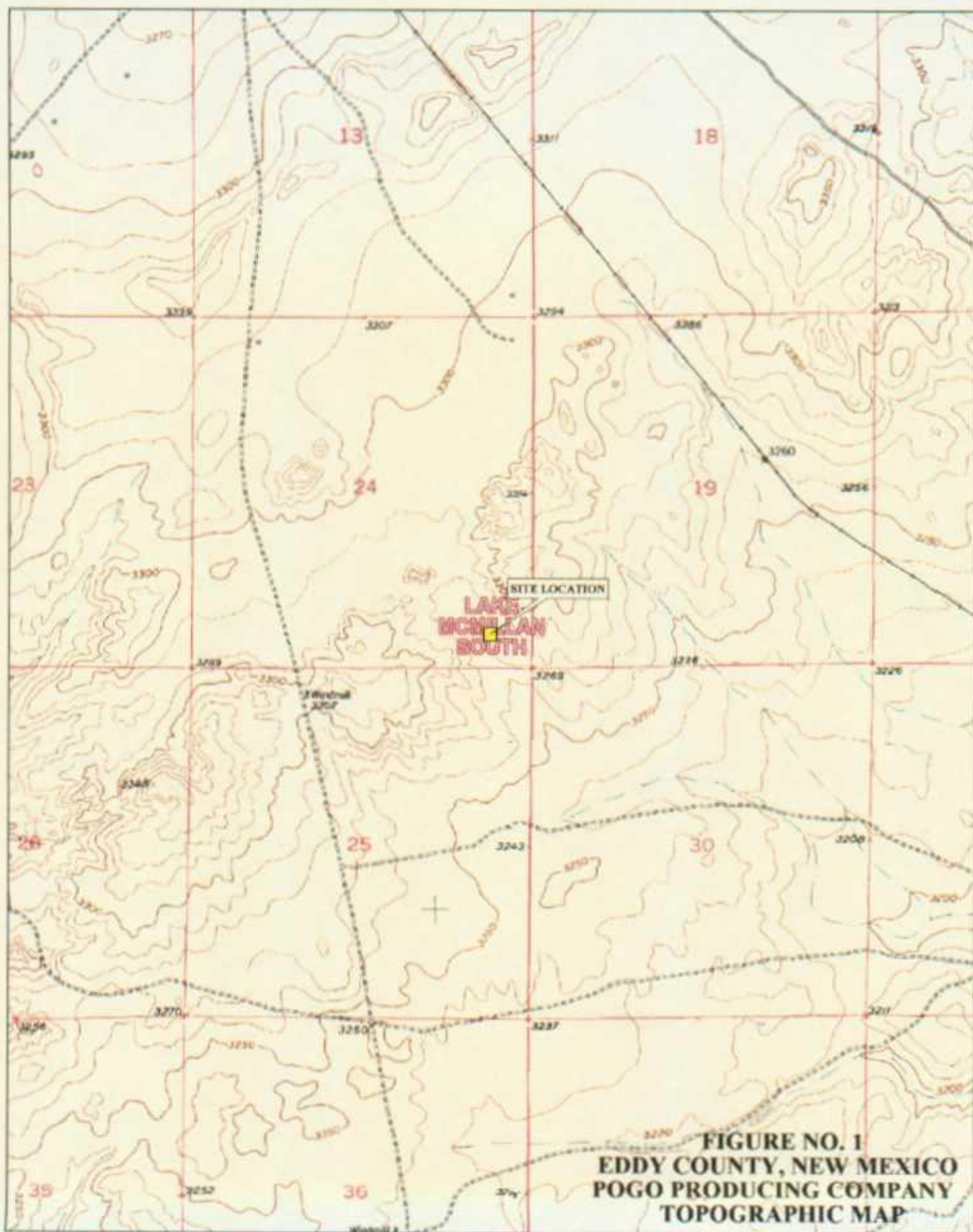
Respectfully Submitted
Highlander Environmental Corp.

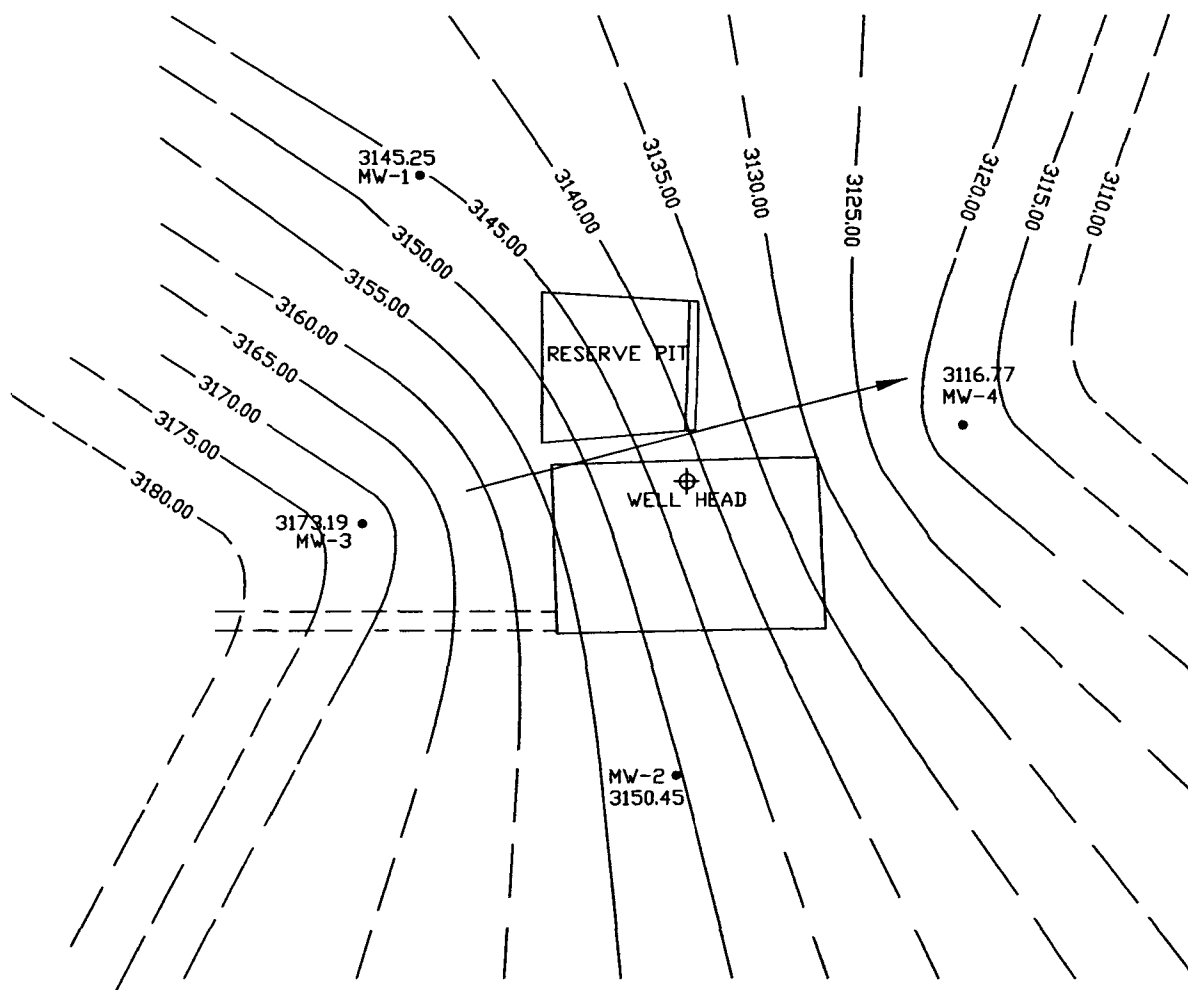

Timothy M. Reed, REM
Vice President

cc: Don Riggs – Pogo Producing Co.
Rex Jasper – Pogo Producing Co.
Jim Carr - New Mexico State Land Office
Roger Anderson – NMOCD, Santa Fe



FIGURES





T-20-S, R-26-E
T-20-S, R-27-E

24 19
25 30

MONITOR WELL	TOP OF CASING	GROUND ELEVATION	WATER LEVEL (T.O.C.) 2/6/02	GROUNDWATER ELEVATION
MW-1	3278.11	3275.74	132.86'	3145.25
MW-2	3270.29	3267.90	119.84'	3150.45
MW-3	3274.71	3272.70	101.52'	3173.19
MW-4	3284.18	3282.00	167.41'	3116.77

1ST QUARTER

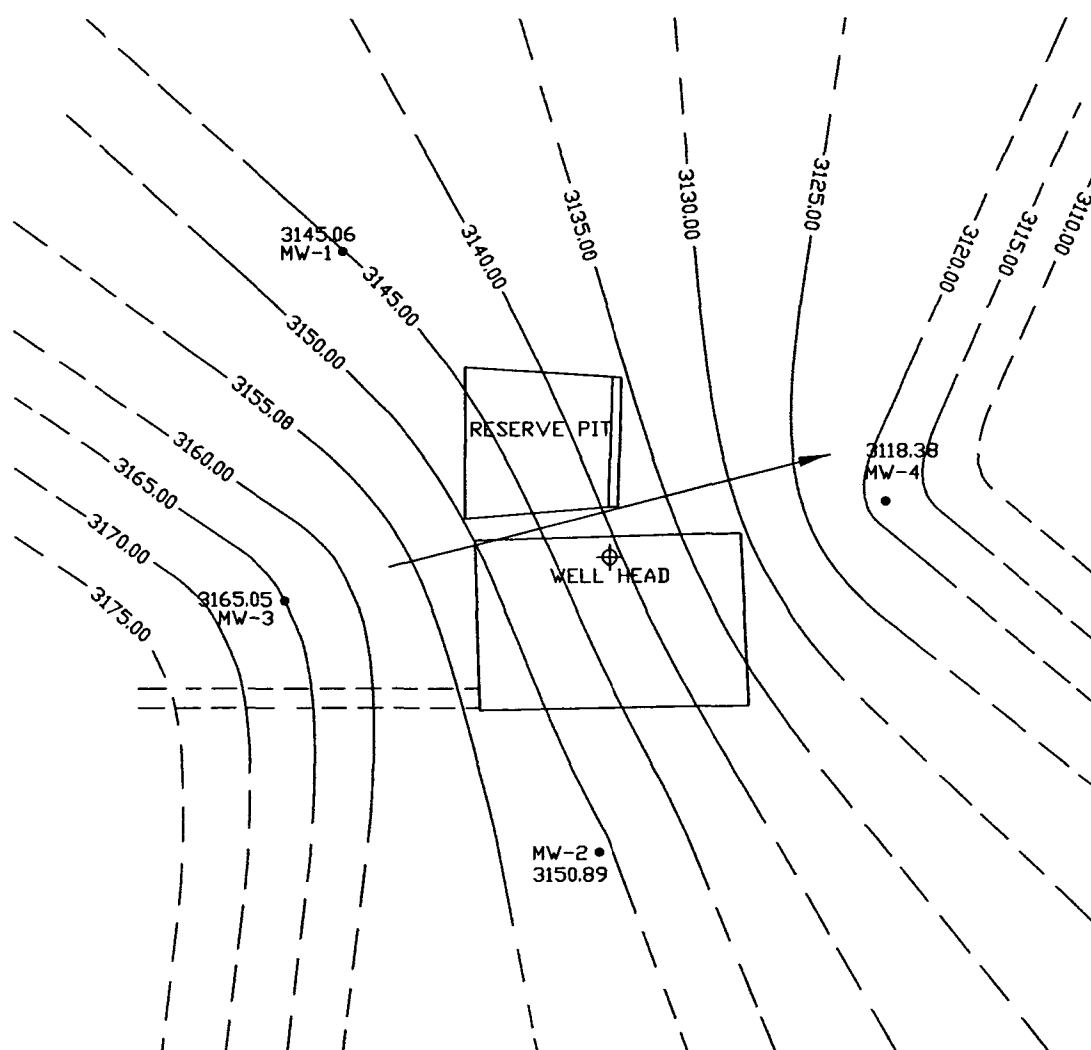
● MONITOR WELL LOCATION



DATE:
2/25/02
DWG. BY:
JDA
FILE:
C:\P000\1850\
WATER_TABLE-2-02

FIGURE NO. 2

EDDY COUNTY, NEW MEXICO
POGO PRODUCING COMPANY
MCMILLAN 24 STATE #1
GROUNDWATER TABLE MAP
2/6/02
HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS



T-20-S, R-26-E
T-20-S, R-27-E

24 19
25 30

MONITOR WELL	TOP OF CASING	GROUND ELEVATION	WATER LEVEL (T.O.C.) 5/17/02	GROUNDWATER ELEVATION
MW-1	3278.11	3275.74	133.05'	3145.06
MW-2	3270.29	3267.90	119.40'	3150.89
MW-3	3274.71	3272.70	109.66'	3165.05
MW-4	3284.18	3282.00	165.80'	3118.38

2ND QUARTER

FIGURE NO. 3

EDDY COUNTY, NEW MEXICO
POGO PRODUCING COMPANY

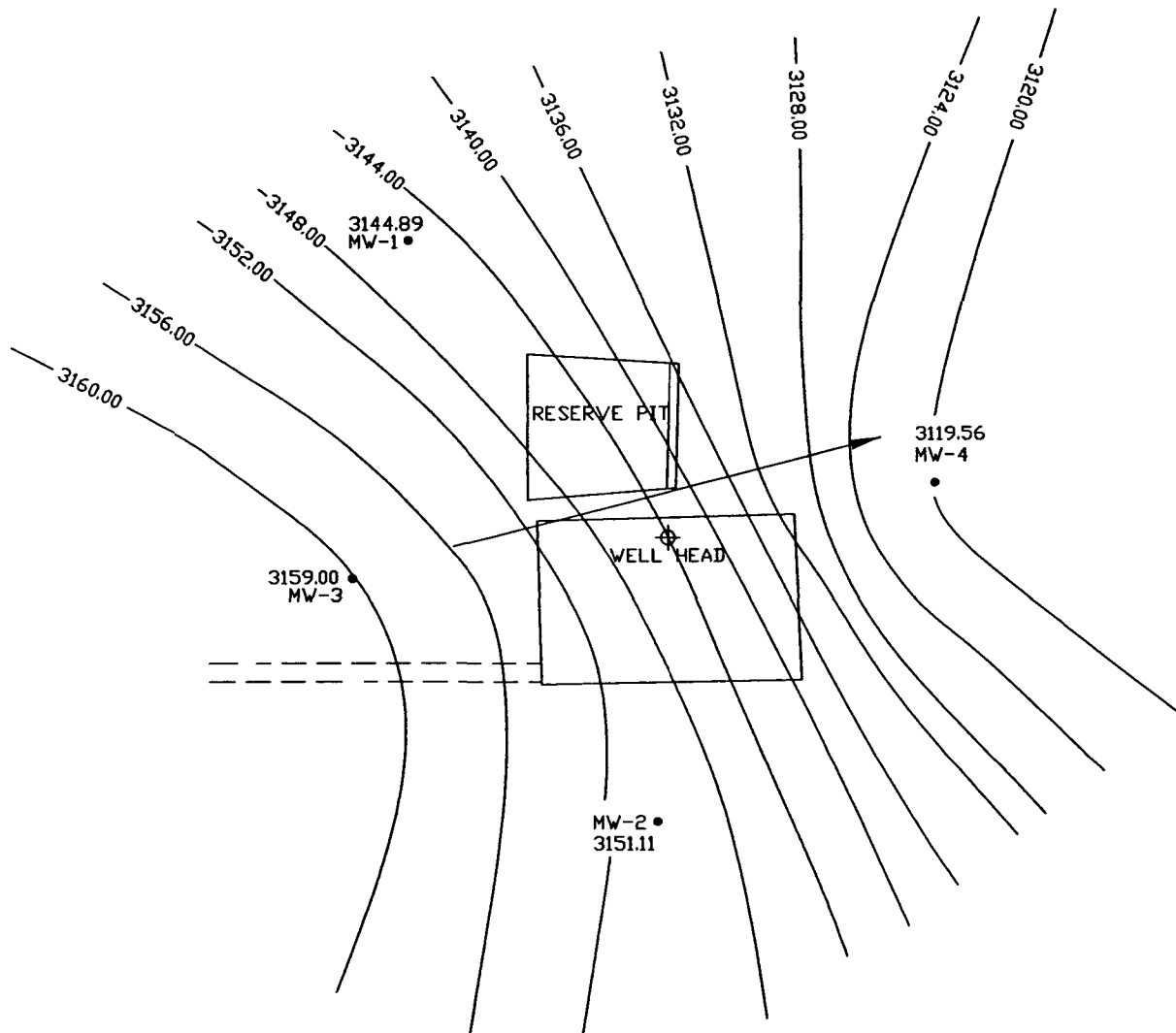
MCMILLAN 24 STATE #1
GROUNDWATER TABLE MAP
5/17/02

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

● MONITOR WELL LOCATION



DATE:
8/5/02
DWC. BY:
JDA
FILE:
C:\POGO\1800\
WATER_TABLE-5-02



T-20-S, R-26-E
T-20-S, R-27-E

24 19
25 30

MONITOR WELL	TOP OF CASING	GROUND ELEVATION	WATER LEVEL (T.O.C.) 8/22/02	GROUNDWATER ELEVATION
MW-1	3278.11	3275.74	133.22'	3144.89
MW-2	3270.29	3267.90	119.18'	3151.11
MW-3	3274.71	3272.70	114.83'	3159.88
MW-4	3284.18	3282.00	164.62'	3119.56

3RD QUARTER

FIGURE NO. 4

EDDY COUNTY, NEW MEXICO

POGO PRODUCING COMPANY

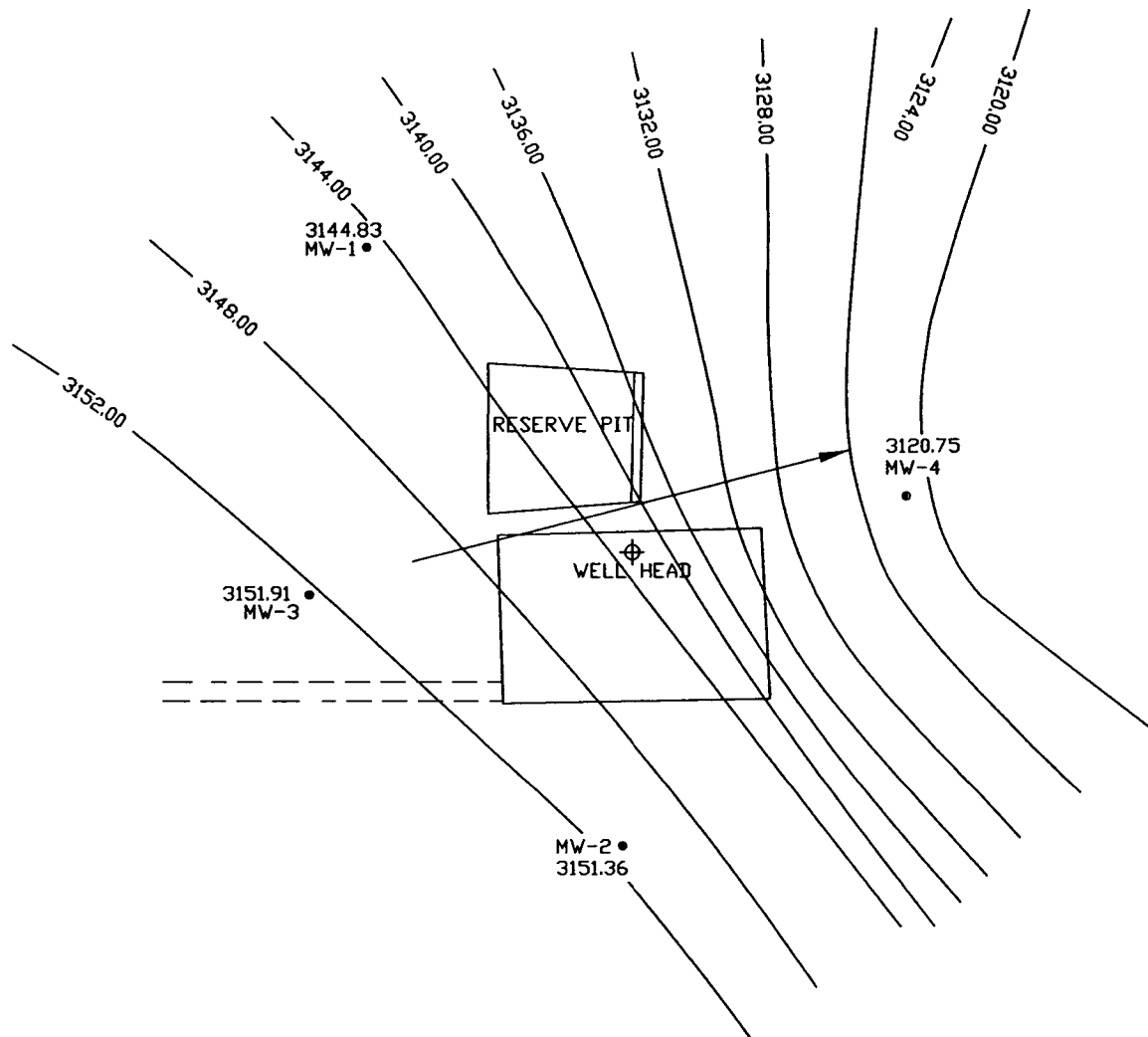
MCMILLAN 24 STATE #1
GROUNDWATER TABLE MAP
8/22/02

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

● MONITOR WELL LOCATION



DATE:
12/4/02
DWG. BY:
JDA
FILE:
C:\POGO\1000\
WATER_TABLE-8-02



T-20-S, R-26-E
T-20-S, R-27-E

24 19
25 30

MONITOR WELL	TOP OF CASING	GROUND ELEVATION	WATER LEVEL (T.O.C.) 10/5/02	GROUNDWATER ELEVATION
MW-1	3278.11	3275.74	133.28'	3144.83
MW-2	3270.29	3267.90	118.93'	3151.36
MW-3	3274.71	3272.70	122.80	3151.91
MW-4	3284.18	3282.00	163.43	3120.75

4TH QUARTER

FIGURE NO. 5

EDDY COUNTY, NEW MEXICO

POGO PRODUCING COMPANY

MCMILLAN 24 STATE #1
GROUNDWATER TABLE MAP
10/5/02

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

● MONITOR WELL LOCATION



DATE:
12/4/02
DWG. BY:
JDA
FILE:
C:\P000\1000\
WATER_TABLE-10-02

TABLES

CUMULATIVE LIST OF GROUNDWATER ANALYTICAL RESULTS
Pogo Producing Company - McMillan 24 State #1, Eddy County, New Mexico

Well ID:	MW-1	MW-2	MW-3	MW-4
Casing Elev., ft:	3278.11	3270.29	3274.71	3284.18
Total Depth, ft.:	140.00	165.00	150.00	180.00

Well Number	Depth to water ft.	Water Elevation (ft)	Chloride mg/l	BTEX (mg/l)			
				B	T	E	X
Monitoring Date: April 26, 2001							
MW-1	129.30	3148.81	13.60	*	*	*	*
MW-2	143.98	3126.31	13.60	*	*	*	*
MW-3	Dry	-	-	*	*	*	*
MW-4	Dry	-	-	*	*	*	*
Remarks: *Not Analyzed (-) No data							
Monitoring Date: May 2, 2001							
MW-1	130.07	3148.04	-	-	-	-	-
MW-2	124.20	3146.09	-	-	-	-	-
MW-3	151.95	3122.76	-	-	-	-	-
MW-4	177.03	3107.15	-	-	-	-	-
Remarks: (-) no sampling performed, collected water levels from each well							
Monitoring Date: June 2, 2001							
MW-1	131.67	3146.44	14.40	<0.001	<0.001	<0.001	<0.001
MW-2	121.95	3148.34	45.80	<0.001	<0.001	<0.001	<0.001
MW-3	142.65	3132.06	*	*	*	*	*
MW-4	173.06	3111.12	35.60	<0.001	<0.001	<0.001	<0.001
Remarks: *Not Sampled - did not have sufficient amount of groundwater in the well							
Monitoring Date: October 10, 2001							
MW-1	132.35	3145.76	9.63	0.0012	<0.001	<0.001	<0.001
MW-2	120.81	3149.48	54.3	<0.001	<0.001	<0.001	<0.001
MW-3	110.31	3164.40	72.7	<0.001	<0.001	<0.001	<0.001
MW-4	168.2	3115.98	23.60	<0.001	<0.001	<0.001	<0.001
Remarks:							

CUMULATIVE LIST OF GROUNDWATER ANALYTICAL RESULTS
Pogo Producing Company - McMillan 24 State #1, Eddy County, New Mexico

Well ID:	MW-1	MW-2	MW-3	MW-4
Casing Elev., ft:	3278.11	3270.29	3274.71	3284.18
Total Depth, ft.:	140.00	165.00	150.00	180.00

Well Number	Depth to water ft.	Water Elevation (ft)	Chloride mg/l	BTEX (mg/l)			
				B	T	E	X
Monitoring Date: February 6, 2002							
MW-1	132.86	3145.25	8.6	<0.001	<0.001	<0.001	<0.001
MW-2	119.84	3150.45	48.50	<0.001	<0.001	<0.001	<0.001
MW-3	101.52	3173.19	67.20	<0.001	<0.001	<0.001	<0.001
MW-4	167.41	3116.77	25.8	<0.001	0.0014	<0.001	<0.001
Remarks:							

Well Number	Depth to water ft.	Water Elevation (ft)	Chloride mg/l	BTEX (mg/l)			
				B	T	E	X
Monitoring Date: May 17, 2002							
MW-1	133.05	3145.06	8.61	<0.001	<0.001	<0.001	<0.001
MW-2	119.40	3150.89	27.60	<0.001	<0.001	<0.001	<0.001
MW-3	109.66	3165.05	57.70	<0.001	<0.001	<0.001	<0.001
MW-4	165.80	3118.38	24.1	<0.001	<0.001	<0.001	<0.001
Remarks:							

Well Number	Depth to water ft.	Water Elevation (ft)	Chloride mg/l	BTEX (mg/l)			
				B	T	E	X
Monitoring Date: August 22, 2002							
MW-1	133.22	3145.06	8.00	<0.001	<0.001	<0.001	<0.001
MW-2	119.18	3150.89	21.00	<0.001	<0.001	<0.001	<0.001
MW-3	114.83	3165.05	41.00	<0.001	<0.001	<0.001	<0.001
MW-4	164.62	3118.38	22.00	<0.001	<0.001	<0.001	<0.001
Remarks:							

Well Number	Depth to water ft.	Water Elevation (ft)	Chloride mg/l	BTEX (mg/l)			
				B	T	E	X
Monitoring Date: October 31, 2002							
MW-1	133.28	3145.06	8.76	<0.001	<0.001	<0.001	<0.001
MW-2	118.93	3150.89	17.50	<0.001	<0.001	<0.001	<0.001
MW-3	122.80	3165.05	36.80	<0.001	<0.001	<0.001	<0.001
MW-4	163.43	3118.38	21.00	<0.001	<0.001	<0.001	<0.001
Remarks:							

APPENDIX A
LAB ANALYSIS



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Highlander Environmental Corp

Certificate of Analysis Number:

02020290**Report To:** Pogo Producing Company

Don Riggs

P.O Box 2504

5 Greenway Plaza, Suite 2700 77042

Houston

Texas

77252-2504

ph (713) 297-5045

fax: (713) 297-4952

Project Name: Pogo Producing #1650**Site:**

McMillan 24 State #1 Eddy Co., NM

Site Address:**P.O. Number:****State:**

Texas

State Cert. No.:**Date Reported:****Fax To:**

Ike Tavaraz

fax (915) 682-3846

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	02020290-01	Water	2/6/02 3:45:00 PM	2/8/02 10:00:00 AM		<input type="checkbox"/>
MW-2	02020290-02	Water	2/6/02 3:30:00 PM	2/8/02 10:00:00 AM		<input type="checkbox"/>
MW-3	02020290-03	Water	2/6/02 3:55:00 PM	2/8/02 10:00:00 AM		<input type="checkbox"/>
MW-4	02020290-04	Water	2/6/02 3:20:00 PM	2/8/02 10:00:00 AM		<input type="checkbox"/>

2/15/02

Paul Neschich

Senior Project Manager

Date

Joel Grice

Laboratory Director

Ted Yen

Quality Assurance Officer

2/15/02 3:43:26 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 860-0901

Client Sample ID: MW-1

Collected: 2/8/02 3:45:00 P SPL Sample ID: 02020290-01

Site: McMillian 24 State #1 Eddy Co., NM

Analyses/Method	Result	Rep. Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.3	Units: mg/L		
Chloride	8.61	1	1		02/14/02 11:00	CV	1023698
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	1	1		02/11/02 22:17	DL	1019180
Ethylbenzene	ND	1	1		02/11/02 22:17	DL	1019180
Toluene	ND	1	1		02/11/02 22:17	DL	1019180
m,p-Xylene	ND	1	1		02/11/02 22:17	DL	1019180
o-Xylene	ND	1	1		02/11/02 22:17	DL	1019180
Xylenes, Total	ND	1	1		02/11/02 22:17	DL	1019180
Total BTEX	ND	1	1		02/11/02 22:17	DL	1019180
Surr: 4-Bromofluorobenzene	100 %	48-166	1		02/11/02 22:17	DL	1019180
Surr: 1,4-Difluorobenzene	102 %	72-137	1		02/11/02 22:17	DL	1019180

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and POL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution

MI - Matrix Interference

2/16/02 3:43:47 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0801

Client Sample ID: MW-2

Collected: 2/8/02 3:30:00 P SPL Sample ID: 02C20290-02

Site: McMillan 24 State #1 Eddy Co., NM

Analysis/Method	Result	Rep. Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Ssq. #
CHLORIDE, TOTAL			MCL	E325.3	Units: mg/L		
Chloride	48.6	1	1		02/14/02 11:00	CV	1023899
PURGEABLE AROMATICS			MCL	SW6021B	Units: ug/L		
Benzene	ND	1	1		02/11/02 22:43	DL	1019181
Ethylbenzene	ND	1	1		02/11/02 22:43	DL	1019181
Toluene	ND	1	1		02/11/02 22:43	DL	1019181
m,p-Xylene	ND	1	1		02/11/02 22:43	DL	1019181
o-Xylene	ND	1	1		02/11/02 22:43	DL	1019181
Xylenes, Total	ND	1	1		02/11/02 22:43	DL	1019181
Total BTEX	ND	1	1		02/11/02 22:43	DL	1019181
Surr: 4-Bromofluorobenzene	86.7	% 48-166	1		02/11/02 22:43	DL	1019181
Surr: 1,4-Difluorobenzene	105	% 72-137	1		02/11/02 22:43	DL	1019181

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

2/15/02 3:43:48 PM



HOUSTON LABORATORY
8883 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 860-0901

Client Sample ID: MW-5

Collected: 2/6/02 3:55:00 P SPL Sample ID: 02020290-03

Site: McMillan 24 State #1 Eddy Co., NM

Analyses/Method	Result	Rep. Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.3	Units: mg/L		
Chloride	87.2	1	1		02/14/02 11:00	CV	1023800
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	1	1		02/12/02 1:13	DL	1019185
Ethylbenzene	ND	1	1		02/12/02 1:13	DL	1019186
Toluene	ND	1	1		02/12/02 1:13	DL	1019185
m,p-Xylene	ND	1	1		02/12/02 1:13	DL	1019185
o-Xylene	ND	1	1		02/12/02 1:13	DL	1019186
Xylenes, Total	ND	1	1		02/12/02 1:13	DL	1019185
Total BTEX	ND	1	1		02/12/02 1:13	DL	1019185
Surr: 4-Bromofluorobenzene	102 %	48-166	1		02/12/02 1:13	DL	1019186
Surr: 1,4-Difluorobenzene	102 %	72-137	1		02/12/02 1:13	DL	1019185

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

2/15/02 3:43:48 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4

Collected: 2/6/02 3:20:00 P SPL Sample ID: C2020290-04

Site: McMillan 24 State #1 Eddy Co., NM

Analyses/Method	Result	Rep. Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.3	Units: mg/L		
Chloride	25.8	1	1		02/14/02 11:00	CV	1023601
PURGEABLE AROMATICS			MCL	8W8021B	Units: ug/L		
Benzene	ND	1	1		02/12/02 1:38	DL	1019186
Ethylbenzene	ND	1	1		02/12/02 1:38	DL	1019186
Toluene	1.4	1	1		02/12/02 1:38	DL	1019186
m,p-Xylene	ND	1	1		02/12/02 1:38	DL	1019186
o-Xylene	ND	1	1		02/12/02 1:38	DL	1019186
Xylenes, Total	ND	1	1		02/12/02 1:38	DL	1019186
Total BTEX	1.4	1	1		02/12/02 1:38	DL	1019186
Surr: 4-Bromofluorobenzene	101	% 48-166	1		02/12/02 1:38	DL	1019186
Surr: 1,4-Difluorobenzene	104	% 72-137	1		02/12/02 1:38	DL	1019186

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution

MI - Matrix Interference

2/16/02 3:43 48 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Highlander Environmental Corp

Certificate of Analysis Number:

02050671

<u>Report To:</u> Highlander Environmental Corp Ike Tavarez 1910 N. Big Spring Street Midland TX 79705- ph: (915) 682-4559 fax: (915) 682-3946	<u>Project Name:</u> McMillan 24 State #1/#1650 <u>Site:</u> Eddy Co., NM <u>Site Address:</u> <u>PO Number:</u> <u>State:</u> Texas <u>State Cert. No.:</u> <u>Date Reported:</u> 5/23/02
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This Report Contains A Total Of 11 Pages

Excluding This Page

And

Chain Of Custody

5/23/02

Date



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:
Highlander Environmental Corp

Certificate of Analysis Number:
02050671

Report To: Highlander Environmental Corp Ike Tavaréz 1910 N. Big Spring Street Midland TX 79705- ph: (915) 682-4559 fax: (915) 682-3946	Project Name: McMillan 24 State #1/#1650 Site: Eddy Co., NM Site Address: PO Number: State: Texas State Cert. No.: Date Reported: 5/23/02
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Two sets of samples were received with sample ID's of MW-4. Per our phone conversation the samples were identified by the collected date and time on the containers. Sample MW-3 was collected at 12:15 and MW-4 was collected at 11:35.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Paul Neschich
Senior Project Manager

5/23/02

Date



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Highlander Environmental Corp

Certificate of Analysis Number:

02050671

Report To: Highlander Environmental Corp
Ike Tavarez
1910 N. Big Spring Street

Midland
TX

79705-

ph: (915) 682-4559

fax: (915) 682-3946

Fax To:

Highlander Environmental Corp

Ike Tavarez

fax : (915) 682-3946

Project Name: McMillan 24 State #1/#1650

Site: Eddy Co., NM

Site Address:

PO Number:

State: Texas

State Cert. No.:

Date Reported: 5/23/02

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
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MW-1	02050671-01	Water	5/17/02 12:05:00 PM	5/21/02 10:00:00 AM		<input type="checkbox"/>
MW-2	02050671-02	Water	5/17/02 11:55:00 AM	5/21/02 10:00:00 AM		<input type="checkbox"/>
MW-3	02050671-03	Water	5/17/02 12:15:00 PM	5/21/02 10:00:00 AM		<input type="checkbox"/>
MW-4	02050671-04	Water	5/17/02 11:35:00 AM	5/21/02 10:00:00 AM		<input type="checkbox"/>

Paul Neschich
Senior Project Manager

5/23/02

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-1

Collected: 05/17/2002 12:05

SPL Sample ID: 02050671-01

Site: Eddy Co., NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.3	Units: mg/L		
Chloride	8.61	1	1		05/22/02 12:30	CV	1152168
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	1	1		05/22/02 18:47	D_R	1152702
Ethylbenzene	ND	1	1		05/22/02 18:47	D_R	1152702
Toluene	ND	1	1		05/22/02 18:47	D_R	1152702
Xylenes, Total	ND	1	1		05/22/02 18:47	D_R	1152702
Surr: 4-Bromofluorobenzene	81.0	% 48-156	1		05/22/02 18:47	D_R	1152702
Surr: 1,4-Difluorobenzene	95.2	% 72-137	1		05/22/02 18:47	D_R	1152702

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

5/23/02 3:15:16 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-2

Collected: 05/17/2002 11:55

SPL Sample ID: 02050671-02

Site: Eddy Co., NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL				MCL	E325.3	Units: mg/L	
Chloride	27.6	1	1		05/22/02 12:30	CV	1152169
PURGEABLE AROMATICS				MCL	SW8021B	Units: ug/L	
Benzene	ND	1	1		05/22/02 19:13	D_R	1152703
Ethylbenzene	ND	1	1		05/22/02 19:13	D_R	1152703
Toluene	ND	1	1		05/22/02 19:13	D_R	1152703
Xylenes, Total	ND	1	1		05/22/02 19:13	D_R	1152703
Surr: 4-Bromofluorobenzene	75.5	% 48-156	1		05/22/02 19:13	D_R	1152703
Surr: 1,4-Difluorobenzene	88.7	% 72-137	1		05/22/02 19:13	D_R	1152703

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

5/23/02 3:15:17 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-3

Collected: 05/17/2002 12:15

SPL Sample ID: 02050671-03

Site: Eddy Co., NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.3	Units: mg/L		
Chloride	57.7	1	1		05/22/02 12:30	CV	1152170
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	1	1		05/22/02 19:38	D_R	1152704
Ethylbenzene	ND	1	1		05/22/02 19:38	D_R	1152704
Toluene	ND	1	1		05/22/02 19:38	D_R	1152704
Xylenes, Total	ND	1	1		05/22/02 19:38	D_R	1152704
Surr: 4-Bromofluorobenzene	74.1	% 48-156	1		05/22/02 19:38	D_R	1152704
Surr: 1,4-Difluorobenzene	91.8	% 72-137	1		05/22/02 19:38	D_R	1152704

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4

Collected: 05/17/2002 11:35

SPL Sample ID: 02050671-04

Site: Eddy Co., NM

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.3	Units: mg/L		
Chloride	24.1	1	1		05/22/02 12:30	CV	1152172
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	1	1		05/22/02 20:03	D_R	1152705
Ethylbenzene	ND	1	1		05/22/02 20:03	D_R	1152705
Toluene	ND	1	1		05/22/02 20:03	D_R	1152705
Xylenes, Total	ND	1	1		05/22/02 20:03	D_R	1152705
Surr: 4-Bromofluorobenzene	76.7	% 48-156	1		05/22/02 20:03	D_R	1152705
Surr: 1,4-Difluorobenzene	94.6	% 72-137	1		05/22/02 20:03	D_R	1152705

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Highlander Environmental Corp

McMillan 24 State #1/#1650

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 02050671
Lab Batch ID: R59907

Method Blank

RunID: VARD_020522A-1152697 Units: ug/L
Analysis Date: 05/22/2002 15:12 Analyst: D_R

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
02050671-01A	MW-1
02050671-02A	MW-2
02050671-03A	MW-3
02050671-04A	MW-4

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Toluene	ND	1.0
Xylenes, Total	ND	1.0
Surr: 1,4-Difluorobenzene	90.3	72-130
Surr: 4-Bromofluorobenzene	74.4	70-130

Laboratory Control Sample (LCS)

RunID: VARD_020522A-1152696 Units: ug/L
Analysis Date: 05/22/2002 13:38 Analyst: D_R

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	100	110	108	70	130
Ethylbenzene	100	110	107	70	130
Toluene	100	100	105	70	130
Xylenes, Total	300	320	107	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 02050691-02
RunID: VARD_020522A-1152709 Units: ug/L
Analysis Date: 05/22/2002 22:10 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	100	98	98.3	100	100	102	4.03	21	32	164
Ethylbenzene	ND	100	93	93.5	100	96	96.0	2.63	19	52	142
Toluene	ND	100	96	96.1	100	99	98.4	2.44	20	38	159
Xylenes, Total	ND	300	290	96.7	300	300	100	3.39	18	53	144

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

5/23/02 3:15:26 PM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

Highlander Environmental Corp

McMillan 24 State #1/#1650

Analysis: Chloride, Total
Method: E325.3

WorkOrder: 02050671
Lab Batch ID: R59883

Method Blank

RunID: WET_020522G-1152159 Units: mg/L
Analysis Date: 05/22/2002 12:30 Analyst: CV

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
02050671-01B	MW-1
02050671-02B	MW-2
02050671-03B	MW-3
02050671-04B	MW-4

Analyte	Result	Rep Limit
Chloride	ND	1.0

Laboratory Control Sample (LCS)

RunID: WET_020522G-1152161 Units: mg/L
Analysis Date: 05/22/2002 12:30 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	143	141	99	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 02050557-01
RunID: WET_020522G-1152166 Units: mg/L
Analysis Date: 05/22/2002 12:30 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	1200	1250	2460	99.9	1250	2460	99.9	0	20	85	115

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

5/23/02 3:15:28 PM

*Sample Receipt Checklist
And
Chain of Custody*



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder: 02050671

Received By: DS

Date and Time Received: 5/21/02 10:00:00 AM

Carrier name: FedEx

Temperature: 4

Chilled by: Water Ice

- | | | | |
|---|---|--|--|
| 1. Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 2. Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 5. Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 6. Chain of custody agrees with sample labels?
1. Client ID#MW-3 is labeled as MW-4 with same collection date
and time on container | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | |
| 7. Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 10. All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 11. Container/Temp Blank temperature in compliance? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 12. Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input checked="" type="checkbox"/> |
| 13. Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

SPL Representative: Neschich, Paul

Contact Date & Time: 5/22/02 11:00:00 AM

Client Name Contacted: Ike Tavaréz

Non Conformance
Issues:

Client Instructions: Per Ike Tavaréz, Analyze samples log by time on sample containers

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(915) 682-4558

Fax (915) 682-3948

CLIENT NAME: **8060**

SITE MANAGER: **Ike Tavaréz**

PROJECT NO.: **1650**

PROJECT NAME:

P060/McMillan 24 State #1

LAB I.D. NUMBER

DATE

TIME

MATRIX

COMP.

GRAB

SAMPLE IDENTIFICATION

NUMBER OF CONTAINERS

FILTERED (Y/N)

HCL

HNO3

ICE

NONE

PRESERVATIVE METHOD

BTEX 8020/802

MTBE 8020/802

TPH 418.1 8015 MOD. TX1006

PAH 8270

RCRA Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Metals Ag As Ba Cd Cr Pd Hg Se

TCLP Volatiles

TCLP Semi Volatiles

RCI

GC/MS Vol. 8240/8280/824

GC/MS Semi. Vol. 8270/825

PCB's 8080/808

Pest. 808/808

BOD, TSS, pH, TDS, Chloride

Gamma Spec.

Alpha Beta (Air)

PLM (Asbestos)

Chloride

ANALYSIS REQUEST (Circle or Specify Method No.)

PAGE: 1

OF: 1

02050671

RELINQUISHED BY: (Signature) **[Signature]** Date: **5/12/02**
Time: **2:30**
RELINQUISHED BY: (Signature) **[Signature]** Date: **5/12/02**
Time: **2:30**
RELINQUISHED BY: (Signature) **[Signature]** Date: **5/12/02**
Time: **2:30**
RECEIVING LABORATORY: **SPH** RECEIVED BY: (Signature) **[Signature]** Date: **5/12/02**
Time: **10:00**
ADDRESS: **STATE: ZIP: DATE: 5/21/02 TIME: 10:00**
CITY: PHONE: MATRIX: **(T-PAH)** A-Air SD-Solid
CONTACT: SAMPLE CONDITION WHEN RECEIVED: **S-Sol** SL-Storage O-Other

RECEIVED BY: (Signature) **[Signature]** Date: **5/12/02**
Time: **10:00**
RECEIVED BY: (Signature) **[Signature]** Date: **5/12/02**
Time: **10:00**
RECEIVED BY: (Signature) **[Signature]** Date: **5/12/02**
Time: **10:00**
RECEIVED BY: (Signature) **[Signature]** Date: **5/12/02**
Time: **10:00**

SAMPLED BY: (Print & Sign) **[Signature]** Date: **5/12/02**
Time: **2:30**
SAMPLE SHIPPED BY: (Circle) **BUS** AIRBILL # **40**
HAND DELIVERED **UPS** OTHER: **None**
HIGHLANDER CONTACT PERSON: **Ike Tavaréz**
RUSH CHARGES AUTHORIZED: **Yes**



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Pogo Producing Company

Certificate of Analysis Number:

02080927

<u>Report To:</u> Highlander Environmental Corp Ike Tavaréz 1910 N. Big Spring Street Midland TX 79705- ph: (915) 682-4559 fax: (713) 522-8083	<u>Project Name:</u> McMillan 24 State #1 #1650 <u>Site:</u> Eddy County, NM. <u>Site Address:</u> <u>PO Number:</u> <u>State:</u> New Mexico <u>State Cert. No.:</u> <u>Date Reported:</u> 9/9/02
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This Report Contains A Total Of 12 Pages

Excluding This Page

And

Chain Of Custody

9/9/02

Date



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:
Pogo Producing Company

Certificate of Analysis Number:

02080927

Report To: Highlander Environmental Corp Ike Tavarez 1910 N. Big Spring Street Midland TX 79705- ph: (915) 682-4559 fax: (713) 522-8083	Project Name: McMillan 24 State #1 #1650 Site: Eddy County, NM. Site Address: PO Number: State: New Mexico State Cert. No.: Date Reported: 9/9/02
--	--

Upon receipt your sample ID "MW #3" (SPL ID: 02080927-03) one vial was broken for BTEX via Method 8021B; however, sufficient sample remained to perform the analysis.

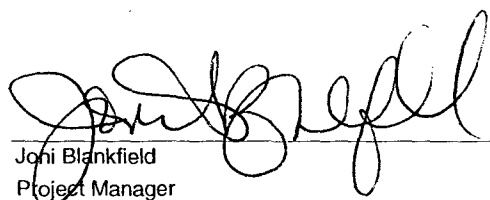
Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.


Joni Blankfield
Project Manager

9/9/02

Date



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Pogo Producing Company

Certificate of Analysis Number:

02080927

Report To: Highlander Environmental Corp
Ike Tavaréz
1910 N. Big Spring Street

Midland
TX

79705-

ph: (915) 682-4559

fax: (915) 682-3946

Fax To:

Pogo Producing Company

Don Riggs

fax : (713) 522-8083

Project Name: McMillan 24 State #1 #1650

Site: Eddy County, NM.

Site Address:

PO Number:

State: New Mexico

State Cert. No.:

Date Reported: 9/9/02

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
------------------	---------------	--------	----------------	---------------	--------	------

MW #1	02080927-01	Water	8/22/02 1:45:00 PM	8/27/02 10:00:00 AM		<input type="checkbox"/>
MW #2	02080927-02	Water	8/22/02 1:30:00 PM	8/27/02 10:00:00 AM		<input type="checkbox"/>
MW #3	02080927-03	Water	8/22/02 1:55:00 PM	8/27/02 10:00:00 AM		<input type="checkbox"/>
MW #4	02080927-04	Water	8/22/02 1:10:00 PM	8/27/02 10:00:00 AM		<input type="checkbox"/>

Joni Blankfield
Project Manager

9/9/02

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

9/9/02 8:44:30 AM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW #1

Collected: 08/22/2002 13:45

SPL Sample ID: 02080927-01

Site: Eddy County, NM.

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL							
			MCL	E325.3	Units: mg/L		
Chloride	8	1	1		09/05/02 17:00 CV		1306083
PURGEABLE AROMATICS							
			MCL	SW8021B	Units: ug/L		
Benzene	ND	1	1		09/02/02 14:35 D_R		1300806
Ethylbenzene	ND	1	1		09/02/02 14:35 D_R		1300806
Toluene	ND	1	1		09/02/02 14:35 D_R		1300806
m,p-Xylene	ND	1	1		09/02/02 14:35 D_R		1300806
o-Xylene	ND	1	1		09/02/02 14:35 D_R		1300806
Xylenes, Total	ND	1	1		09/02/02 14:35 D_R		1300806
Surr: 4-Bromofluorobenzene	106 %	56-158	1		09/02/02 14:35 D_R		1300806
Surr: 1,4-Difluorobenzene	107 %	46-160	1		09/02/02 14:35 D_R		1300806

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution

MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW #2

Collected: 08/22/2002 13:30

SPL Sample ID: 02080927-02

Site: Eddy County, NM.

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.3	Units: mg/L		
Chloride	21	1	1		09/05/02 17:00	CV	1306084
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	1	1		09/02/02 15:01	D_R	1300808
Ethylbenzene	ND	1	1		09/02/02 15:01	D_R	1300808
Toluene	ND	1	1		09/02/02 15:01	D_R	1300808
m,p-Xylene	ND	1	1		09/02/02 15:01	D_R	1300808
o-Xylene	ND	1	1		09/02/02 15:01	D_R	1300808
Xylenes, Total	ND	1	1		09/02/02 15:01	D_R	1300808
Surr: 4-Bromofluorobenzene	102	% 56-158	1		09/02/02 15:01	D_R	1300808
Surr: 1,4-Difluorobenzene	104	% 46-160	1		09/02/02 15:01	D_R	1300808

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution

MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW #3

Collected: 08/22/2002 13:55

SPL Sample ID: 02080927-03

Site: Eddy County, NM.

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.3	Units: mg/L		
Chloride	41	1	1		09/05/02 17:00 CV		1306085
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	1	1		09/02/02 15:27 D_R		1300813
Ethylbenzene	ND	1	1		09/02/02 15:27 D_R		1300813
Toluene	ND	1	1		09/02/02 15:27 D_R		1300813
m,p-Xylene	ND	1	1		09/02/02 15:27 D_R		1300813
o-Xylene	ND	1	1		09/02/02 15:27 D_R		1300813
Xylenes, Total	ND	1	1		09/02/02 15:27 D_R		1300813
Surr: 4-Bromofluorobenzene	103	% 56-158	1		09/02/02 15:27 D_R		1300813
Surr: 1,4-Difluorobenzene	104	% 46-160	1		09/02/02 15:27 D_R		1300813

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution

MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW #4

Collected: 08/22/2002 13:10

SPL Sample ID: 02080927-04

Site: Eddy County, NM.

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.3	Units: mg/L		
Chloride	22	1	1		09/05/02 17:00	CV	1306086
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	1	1		09/02/02 15:53	D_R	1300814
Ethylbenzene	ND	1	1		09/02/02 15:53	D_R	1300814
Toluene	ND	1	1		09/02/02 15:53	D_R	1300814
m,p-Xylene	ND	1	1		09/02/02 15:53	D_R	1300814
o-Xylene	ND	1	1		09/02/02 15:53	D_R	1300814
Xylenes, Total	ND	1	1		09/02/02 15:53	D_R	1300814
Surr: 4-Bromofluorobenzene	104	% 56-158	1		09/02/02 15:53	D_R	1300814
Surr: 1,4-Difluorobenzene	88.6	% 46-160	1		09/02/02 15:53	D_R	1300814

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution

MI - Matrix Interference

Quality Control Documentation



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Pogo Producing Company

McMillan 24 State #1 #1650

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 02080927
Lab Batch ID: R67093

Method Blank

RunID: VARE_020901A-1300777 Units: ug/L
Analysis Date: 09/01/2002 6:54 Analyst: D_R

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
02080927-01A	MW #1
02080927-02A	MW #2
02080927-03A	MW #3
02080927-04A	MW #4

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes, Total	ND	1.0
Surr: 1,4-Difluorobenzene	99.9	46-160
Surr: 4-Bromofluorobenzene	100.5	56-158

Laboratory Control Sample (LCS)

RunID: VARE_020901A-1300776 Units: ug/L
Analysis Date: 09/01/2002 6:02 Analyst: D_R

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	45	90	70	130
Ethylbenzene	50	51.6	103	70	130
Toluene	50	48.3	97	70	130
m,p-Xylene	100	105	105	70	130
o-Xylene	50	53	107	70	130
Xylenes, Total	150	158	105	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 02080927-01
RunID: VARE_020901A-1300815 Units: ug/L
Analysis Date: 09/02/2002 17:37 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	20	100	20	20.5	103	2.50	21	32	164
Ethylbenzene	ND	20	19.6	98.0	20	20	99.8	1.78	19	52	142
Toluene	ND	20	20.6	101	20	20.9	103	1.93	20	38	159

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Pogo Producing Company

McMillan 24 State #1 #1650

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 02080927
Lab Batch ID: R67093

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 02080927-01
RunID: VARE_020901A-1300815 Units: ug/L
Analysis Date: 09/02/2002 17:37 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
m,p-Xylene	ND	40	41	100	40	42	100	1.3	17	53	144
o-Xylene	ND	20	20	100	20	21	100	1.5	18	53	143
Xylenes, Total	ND	60	61	100	60	63	100	3.2	18	53	144

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

9/9/02 8:44:40 AM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Pogo Producing Company

McMillan 24 State #1 #1650

Analysis: Chloride, Total
Method: E325.3

WorkOrder: 02080927
Lab Batch ID: R67352

Method Blank

RunID: WET_020905A-1306080 Units: mg/L
Analysis Date: 09/05/2002 17:00 Analyst: CV

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
02080927-01B	MW #1
02080927-02B	MW #2
02080927-03B	MW #3
02080927-04B	MW #4

Analyte	Result	Rep Limit
Chloride	ND	1.0

Laboratory Control Sample (LCS)

RunID: WET_020905A-1306082 Units: mg/L
Analysis Date: 09/05/2002 17:00 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	99.1	94.9	96	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 02090043-01
RunID: WET_020905A-1306088 Units: mg/L
Analysis Date: 09/05/2002 17:00 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	8.47	50	59.3	102	50	59.3	102	0	20	85	115

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

9/9/02 8:44:40 AM

*Sample Receipt Checklist
And
Chain of Custody*



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder: 02080927

Date and Time Received: 8/27/02 10:00:00 AM

Temperature: 3

Received By: DS

Carrier name: FedEx

Chilled by: Water Ice

- | | | | |
|--|---|--|---|
| 1. Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 2. Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 5. Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 6. Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Sample containers intact? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | |
| 1. One vial was received broken for MW #3. | | | |
| 9. Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 10. All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 11. Container/Temp Blank temperature in compliance? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 12. Water - VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |
| 13. Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

SPL Representative:

Contact Date & Time:

Client Name Contacted:

Non Conformance
Issues:

Client Instructions: 1. One vial remaining for analysis

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(915) 682-4559

Fax (915) 682-3946

CLIENT NAME:

POGO

SITE MANAGER:

Ike Iavaréz

PROJECT NO.:

1650

PROJECT NAME:

POGO / Mc M. Man 24 State #1

LAB I.D. NUMBER

DATE

TIME

MATRIX
COMP.
GRAB

SAMPLE IDENTIFICATION

NUMBER OF CONTAINERS

FILTERED (Y/N)

HCL

HNO3

ICE

NONE

PRESERVATIVE
METHOD

BTEX 8020/808

MTBE 8020/808

TPH 418.1 8015 MOD. TX1006

PAH 8270

RCRA Metals Ag As Ba Cd Cr Pb Hg Se

TCPL Metals Ag As Ba Cd Cr Pd Hg Se

TCPL Volatiles

TCPL Semi Volatiles

RCI

GC/MS Vol. 8240/8260/824

GC/MS Semi. Vol. 8270/825

PCB's 8080/808

Pest. 808/808

BOD, TSS, pH, TDS, Chloride

Gamma Spec.

Alpha Beta (Air)

PLM (Asbestos)

Chloride

PAGE: 1 OF: 1
ANALYSIS REQUEST
(Circle or Specify Method No.)

02080927

RELINQUISHED BY: (Signature) <i>[Signature]</i>	Date: 8-26-02 Time: 3:40	RECEIVED BY: (Signature)	Date: _____ Time: _____
RELINQUISHED BY: (Signature)	Date: _____ Time: _____	RECEIVED BY: (Signature)	Date: _____ Time: _____
RELINQUISHED BY: (Signature)	Date: _____ Time: _____	RECEIVED BY: (Signature)	Date: _____ Time: _____
RECEIVING LABORATORY: SPE	STATE: TX	RECEIVED BY: (Signature)	Date: _____ Time: _____
CITY: Houston	ZIP: _____	DATE: 8/27/02	TIME: 1000
CONTACT: _____	PHONE: _____	REMARKS:	
SAMPLE CONDITION WHEN RECEIVED:	MATRIX: <input checked="" type="checkbox"/> Water <input type="checkbox"/> A-Air <input type="checkbox"/> SD-Solid	REMARKS:	
	8-Solid	REMARKS:	
	SL-Sludge	REMARKS:	
	0-Other	REMARKS:	

SAMPLED BY: (Print & Sign) <i>[Signature]</i>	Date: 8-27-02 Time: 12:00
SAMPLE SHIPPED BY: (Circle)	DATE: _____
FEDER	DATE: _____
HAND DELIVERED	DATE: _____
BUS	DATE: _____
UPS	DATE: _____
OTHER:	DATE: _____
Results by:	DATE: _____
FLUSH Charges	DATE: _____
Authorized:	DATE: _____
Yes	DATE: _____

Ike Iavaréz

3d

286



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Highlander Environmental Corp

Certificate of Analysis Number:

02110047

Report To:

Highlander Environmental Corp
Ike Tavaréz
1910 N. Big Spring Street

Midland
TX

79705-

ph: (915) 682-4559

fax: (915) 682-3946

Project Name:

Eddy Co.,N.M. McMillan 24-1/1650

Site:

Eddy Co.,N.M. McMillan 24-1/1650

Site Address:

PO Number:

State:

New Mexico

State Cert. No.:

Date Reported:

11/12/2002

This Report Contains A Total Of 12 Pages

Excluding This Page

And

Chain Of Custody

11/12/2002

Date



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:
Highlander Environmental Corp

Certificate of Analysis Number:

02110047

Report To: Highlander Environmental Corp Ike Tavarez 1910 N. Big Spring Street Midland TX 79705- ph: (915) 682-4559 fax: (915) 682-3946	Project Name: Eddy Co., N.M. McMillan 24-1/1650 Site: Eddy Co., N.M. McMillan 24-1/1650 Site Address: PO Number: State: New Mexico State Cert. No.: Date Reported: 11/12/2002
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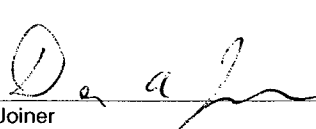
Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.


Dean Joiner
Project Manager

11/12/2002

Date



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Highlander Environmental Corp

Certificate of Analysis Number:

02110047

Report To: Highlander Environmental Corp
Ike Tavarez
1910 N. Big Spring Street

Midland

TX

79705-

ph: (915) 682-4559

fax: (915) 682-3946

Fax To:

Highlander Environmental Corp

Ike Tavarez

fax : (915) 682-3946

Project Name: Eddy Co.,N.M. McMillan 24-1/1650

Site: Eddy Co.,N.M. McMillan 24-1/1650

Site Address:

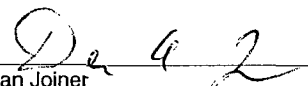
PO Number:

State: New Mexico

State Cert. No.:

Date Reported: 11/12/2002

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	02110047-01	Water	10/31/2002 10:20:00 AM	11/2/2002 10:00:00 AM		<input type="checkbox"/>
MW-2	02110047-02	Water	10/31/2002 9:45:00 AM	11/2/2002 10:00:00 AM		<input type="checkbox"/>
MW-3	02110047-03	Water	10/31/2002 10:05:00 AM	11/2/2002 10:00:00 AM		<input type="checkbox"/>
MW-4	02110047-04	Water	10/31/2002 9:30:00 AM	11/2/2002 10:00:00 AM		<input type="checkbox"/>


Dean Joiner
Project Manager

11/12/2002

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-1

Collected: 10/31/2002 10:20 SPL Sample ID: 02110047-01

Site: Eddy Co., N.M. McMillan 24-1/1650

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.3	Units: mg/L		
Chloride	8.76	1	1		11/11/02 18:00	CV	1392204
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	1	1		11/06/02 23:20	D_R	1388726
Ethylbenzene	ND	1	1		11/06/02 23:20	D_R	1388726
Toluene	ND	1	1		11/06/02 23:20	D_R	1388726
m,p-Xylene	ND	1	1		11/06/02 23:20	D_R	1388726
o-Xylene	ND	1	1		11/06/02 23:20	D_R	1388726
Xylenes, Total	ND	1	1		11/06/02 23:20	D_R	1388726
Total BTEX	ND	1	1		11/06/02 23:20	D_R	1388726
Surr: 4-Bromofluorobenzene	98.7	% 56-158	1		11/06/02 23:20	D_R	1388726
Surr: 1,4-Difluorobenzene	101	% 46-160	1		11/06/02 23:20	D_R	1388726

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-2

Collected: 10/31/2002 9:45

SPL Sample ID: 02110047-02

Site: Eddy Co., N.M. McMillan 24-1/1650

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.3	Units: mg/L		
Chloride	17.5	1	1		11/11/02 18:00	CV	1392207
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	1	1		11/06/02 23:45	D_R	1388727
Ethylbenzene	ND	1	1		11/06/02 23:45	D_R	1388727
Toluene	ND	1	1		11/06/02 23:45	D_R	1388727
m,p-Xylene	ND	1	1		11/06/02 23:45	D_R	1388727
o-Xylene	ND	1	1		11/06/02 23:45	D_R	1388727
Xylenes, Total	ND	1	1		11/06/02 23:45	D_R	1388727
Total BTEX	ND	1	1		11/06/02 23:45	D_R	1388727
Surr: 4-Bromofluorobenzene	98.6	% 56-158	1		11/06/02 23:45	D_R	1388727
Surr: 1,4-Difluorobenzene	100	% 46-160	1		11/06/02 23:45	D_R	1388727

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution

MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-3

Collected: 10/31/2002 10:05 SPL Sample ID: 02110047-03

Site: Eddy Co., N.M. McMillan 24-1/1650

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL			MCL	E325.3	Units: mg/L		
Chloride	36.8	1	1		11/11/02 18:00 CV		1392208
PURGEABLE AROMATICS			MCL	SW8021B	Units: ug/L		
Benzene	ND	1	1		11/07/02 1:01 D_R		1388729
Ethylbenzene	ND	1	1		11/07/02 1:01 D_R		1388729
Toluene	ND	1	1		11/07/02 1:01 D_R		1388729
m,p-Xylene	ND	1	1		11/07/02 1:01 D_R		1388729
o-Xylene	ND	1	1		11/07/02 1:01 D_R		1388729
Xylenes, Total	ND	1	1		11/07/02 1:01 D_R		1388729
Total BTEX	ND	1	1		11/07/02 1:01 D_R		1388729
Surr: 4-Bromofluorobenzene	98.8	% 56-158	1		11/07/02 1:01 D_R		1388729
Surr: 1,4-Difluorobenzene	100	% 46-160	1		11/07/02 1:01 D_R		1388729

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID MW-4

Collected: 10/31/2002 9:30

SPL Sample ID: 02110047-04

Site: Eddy Co., N.M. McMillan 24-1/1650

Analyses/Method	Result	Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE, TOTAL				E325.3	Units: mg/L		
Chloride	21	1	1		11/11/02 18:00 CV		1392209
PURGEABLE AROMATICS				SW8021B	Units: ug/L		
Benzene	ND	1	1		11/07/02 1:27 D_R		1388730
Ethylbenzene	ND	1	1		11/07/02 1:27 D_R		1388730
Toluene	ND	1	1		11/07/02 1:27 D_R		1388730
m,p-Xylene	ND	1	1		11/07/02 1:27 D_R		1388730
o-Xylene	ND	1	1		11/07/02 1:27 D_R		1388730
Xylenes, Total	ND	1	1		11/07/02 1:27 D_R		1388730
Total BTEX	ND	1	1		11/07/02 1:27 D_R		1388730
Surr: 4-Bromofluorobenzene	98.8	% 56-158	1		11/07/02 1:27 D_R		1388730
Surr: 1,4-Difluorobenzene	101	% 46-160	1		11/07/02 1:27 D_R		1388730

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL)

D - Surrogate Recovery Unreportable due to Dilution

MI - Matrix Interference

Quality Control Documentation



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Highlander Environmental Corp

Eddy Co., N.M. McMillan 24-1/1650

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 02110047
Lab Batch ID: R71144

Method Blank

RunID: HP_U_021106A-1388720 Units: ug/L
Analysis Date: 11/06/2002 18:15 Analyst: D_R

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
02110047-01A	MW-1
02110047-02A	MW-2
02110047-03A	MW-3
02110047-04A	MW-4

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Total BTEX	ND	1.0
Xylenes, Total	ND	1.0
Surr: 1,4-Difluorobenzene	99.8	46-160
Surr: 4-Bromofluorobenzene	98.4	56-158

Laboratory Control Sample (LCS)

RunID: HP_U_021106A-1388719 Units: ug/L
Analysis Date: 11/06/2002 17:50 Analyst: D_R

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	52.5	105	70	130
Ethylbenzene	50	51.7	103	70	130
Toluene	50	50.7	101	70	130
m,p-Xylene	100	103	103	70	130
o-Xylene	50	52.2	104	70	130
Total BTEX	300	310.1	103	70	130
Xylenes, Total	150	155.2	103	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 02100929-01
RunID: HP_U_021106A-1388721 Units: ug/L
Analysis Date: 11/06/2002 18:40 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	18.2	91.2	20	18.7	93.6	2.65	21	32	164

Qualifiers: ND/U - Not Detected at the Reporting Limit MI - Matrix Interference
B - Analyte detected in the associated Method Blank D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL * - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Highlander Environmental Corp

Eddy Co., N.M. McMillan 24-1/1650

Analysis: Purgeable Aromatics
Method: SW8021B

WorkOrder: 02110047
Lab Batch ID: R71144

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 02100929-01
RunID: HP_U_021106A-1388721 Units: ug/L
Analysis Date: 11/06/2002 18:40 Analyst: D_R

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Ethylbenzene	ND	20	17.8	88.9	20	18.2	91.1	2.46	19	52	142
Toluene	ND	20	17.1	85.6	20	16.9	84.3	1.58	20	38	159
m,p-Xylene	ND	40	36.4	90.6	40	37.2	92.7	2.24	17	53	144
o-Xylene	ND	20	18.8	93.9	20	19	95.2	1.42	18	53	143
Total BTEX	ND	120	108.3	90.25	120	110	91.67	1.557	20	32	164
Xylenes, Total	ND	60	55.2	92.0	60	56.2	93.7	1.80	18	53	144

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Highlander Environmental Corp

Eddy Co., N.M. McMillan 24-1/1650

Analysis: Chloride, Total
Method: E325.3

WorkOrder: 02110047
Lab Batch ID: R71332

Method Blank

RunID: WET_021111F-1392201 Units: mg/L
Analysis Date: 11/11/2002 18:00 Analyst: CV

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
02110047-01B	MW-1
02110047-02B	MW-2
02110047-03B	MW-3
02110047-04B	MW-4

Analyte	Result	Rep Limit
Chloride	ND	1.0

Laboratory Control Sample (LCS)

RunID: WET_021111F-1392203 Units: mg/L
Analysis Date: 11/11/2002 18:00 Analyst: CV

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Chloride	100	96.32	96	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 02110047-01
RunID: WET_021111F-1392205 Units: mg/L
Analysis Date: 11/11/2002 18:00 Analyst: CV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Chloride	8.756	50	58.67	99.82	50	59.54	101.6	1.740	20	85	115

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

11/12/2002 2:58:10 PM

*Sample Receipt Checklist
And
Chain of Custody*



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder: 02110047

Received By: NB

Date and Time Received: 11/2/2002 10:00:00 AM

Carrier name: FedEx

Temperature: 2

Chilled by: Water Ice

- | | | | |
|--|---|-----------------------------|---|
| 1. Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 2. Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 5. Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 6. Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 10. All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 11. Container/Temp Blank temperature in compliance? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 12. Water - VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |
| 13. Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

SPL Representative:

Contact Date & Time:

Client Name Contacted:

Non Conformance
Issues:

Client Instructions:

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(915) 682-4558

Fax (915) 682-3946

SITE MANAGER:

Ike Tavaraz

PRESERVATIVE METHOD

CLIENT NAME:

Pogo Producing Company

PROJECT NO.:

11050

PROJECT NAME:

Eddy Co. N.M. McMillen 24-1

LAB I.D. NUMBER

MATRIX COMP. GRAB

SAMPLE IDENTIFICATION

NUMBER OF CONTAINERS

FILTERED (Y/N)

HCL

HNO3

ICE

NONE

STEX 8020/808

MTBE 8020/808

TPH 418.1 8015 MOD. TX005

PAH 8270

RCRA Metals Ag As Ba Cd Cr Pb Hg Se

TCLP Metals Ag As Ba Cd Cr Pd Hg Se

TCLP Volatiles

TCLP Semi Volatiles

RCI

GC/MS Vol. 8240/8260/824

GC/MS Semi. Vol. 8270/825

PCB's 8080/808

Pest. 808/808

BOD, TSS, pH, TDS, Chloride

Gamma Spec.

Alpha Beta (Air)

PLM (Asbestos)

Chloride

PAGE:

OF:

ANALYSIS REQUEST
(Circle or Specify Method No.)

02110047

HIGHLANDER ENVIRONMENTAL CORP.										
1910 N. Big Spring St. Midland, Texas 79705										
(915) 682-4559										
Fax (915) 682-3946										
CLIENT NAME: Page Producing Company			SITE MANAGER: Lee Tavaraz							
PROJECT NO.: 1650			PROJECT NAME: Eddy Co. NM McMillan 24-1							
LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION				
	10/31/02	1020				X	MW-1			
		0945				X	MW-2			
		1005				X	MW-3			
		0930				X	MW-4			
	</									

RELINQUISHED BY: (Signature) *Jim Reed* Date: *11/01/02* Time: *11450*

RELINQUISHED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVING LABORATORY: *SFE* State: *TX* ZIP: *79705* DATE: *11/2/02* TIME: *1000*

CITY: ADDRESS: PHONE: MATRIX: *W-Water* A-Air S-Solid O-Other

SAMPLE CONDITION WHEN RECEIVED: REMARKS:

SAMPLED BY: (Print & Sign) *Jim Reed* Date: *11/1/02* Time: *0910*

SAMPLE SHIPPED BY: (Circle) *UPS* AIRBILL # *83445597009*

HAND DELIVERED OTHER: Results by: *Ike Tavaraz*

HIGHLANDER CONTACT PERSON: RUSH CHARGES Authorized: *No*