Highlander Environmental Corp.

Midland, Texas

January 10, 2002

Mr. Paul Sheeley
Environmental Bureau
Oil Conservation Division
1625 N. French Drive
P.O. Box 1980
Hobbs, New Mexico 88240

RE: Project 1713, Assessment and Work Plan for the Pipeline Leak located at the Duke G-28, Section 9, Township 22 South, Range 36 East Lea County, New Mexico.

Dear Mr. Sheeley,

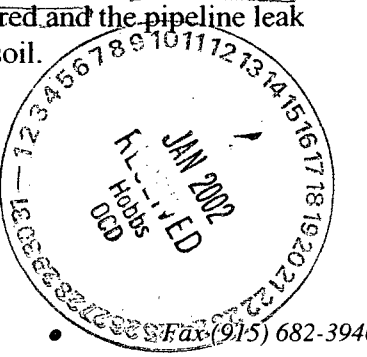
Highlander Environmental Corp. (Highlander) was contacted by Duke Energy Field Services, LP (Duke) to assess a pipeline leak, which occurred at the Duke G-28 in Lea County, New Mexico. The Site is located in Section 9, Township 22 South, Range 36 East at location 32° 24' 07"N, 103° 15' 58.6"W. The Site location is shown in Figure 1. According to published data, one water well, located in Section 4, Township 22 South, Range 36 East indicates groundwater greater than 100 feet below surface. In addition, the New Mexico State Engineers Office Well Reports indicated water wells in Section 16 and 10, Township 24 South, Range 32 East showing groundwater greater than 100 feet below surface.

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remediation action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene and xylene). Based on the regional groundwater data, the proposed recommended remedial action level (RRAL) for TPH is 5,000 mg/kg.

Background

On August 24, 2001, a leak occurred from a gas gathering line and released pipeline liquids into the surrounding soils. The leak released approximately 210 gallons (5 barrels) of petroleum oils and liquids. Approximately 42 gallons (1 barrel) of liquids were recovered and the pipeline leak was immediately repaired. No remedial action was taken for the impacted soil.

Duke - 229153
facility - fPAC0606831894
incident - nPAC0606831973
application - pPAC0606832103



1910 N. Big Spring • Midland, Texas 79705 • (915) 682-4559 • Fax (915) 682-3946

Site Inspection and Assessment

On September 5, 2001, Highlander inspected the leak area. The aerial extent of impact is shown in Figure 2 and measured approximately 25' x 75'. The area north of the release (overspray) measured 60' x 100' and appeared to surficial only.

Soil samples were collected using a stainless steel bucket-type hand auger. A total of five (5) auger holes were installed near the release point to define the extent of the impact. AH-1 was installed in the center of the release point and AH-2, AH-3, AH-4 and AH-5 were installed to define horizontal extent of the impact. The sample locations are shown in Figure 2. Deeper samples could not be collected due to a shallow, dense caliche encountered at approximately at 5.5 feet below surface. Soil samples were collected from the spill area for evaluation of TPH by method EPA 418.1, BTEX by method SW 846-8021B and chloride by method SW846-9252. Samples were selected for BTEX evaluation based upon the highest TPH levels. The soil sample results are shown in Table 1. The laboratory reports and the chain of custody documentation are attached.

Table 1
(concentration in mg/kg)

Sample ID	Depth (ft)	TPH	B	T	E	X	Total BTEX	Chloride
AH-1	0-1	10,500	<0.050	0.262	0.731	0.905	1.9	602.83
	3-3.5	3,120	<0.050	2.72	10.3	14.8	27.8	951.84
	5-5.5	3,140	<0.050	3.78	10.3	10.7	24.8	945.77
AH-2	0-1	1,180	<0.010	<0.010	0.145	0.399	0.544	-
	4-4.5	<10	-	-	-	-	-	-
AH-3	0-1	<10	-	-	-	-	-	-
	4.4.5	<10	-	-	-	-	-	-
AH-4	0-1	126	<0.010	<0.010	<0.010	<0.010	<0.010	-
	4.4.5	<10	-	-	-	-	-	-
AH-5	0-1	<10	-	-	-	-	-	-
	4-4.5	<10	-	-	-	-	-	-

(-) Not Analyzed

Referring to Table 1, one auger hole location (AH-1) exceeded the RRAL for TPH of 5,000 mg/kg. The soil sample at 0-1' showed a TPH level of 10,500 mg/kg, which decreased to 3,120 mg/kg at 3.0' below surface. The remaining auger holes (AH-2, AH-3, AH-4 and AH-5) did not show TPH levels above the RRAL. The benzene and the total BTEX levels in the auger

holes did not exceed the RRAL of 10 mg/kg and 50 mg/kg, respectively. Based on the results, the hydrocarbon impact at the Site appears to be limited to a depth of 1-2' below surface and confined to the area of the release. No samples were collected from the overspray area located north of the release, however, the impact in this area appears to surficial impact.

The chloride levels detected in AH-1 showed a level of 602.83 mg/kg at 0-1', 951.84 mg/kg at 3-3.5' and 945.77 mg/kg at 5-5.5' and appear to slightly elevated. However, due to the depth of the groundwater and volume of the release, the chloride impact doe not appear to be an environmental concern.

Conclusion

1. On August 24, 2001, a leak occurred from a gas gathering line and released pipeline liquids into the surrounding soils. The leak released approximately 210 gallons (5 barrels) of petroleum oils and liquids. Approximately 42 gallons (1 barrel) of liquids were recovered and the pipeline leak was repaired. The aerial extent of impact measured approximately 25' x 75'. The impacted area north of the release (overspray) measured 60' x 100' and was surficial.

2. According to published data, a water well located in Section 4, Township 22 South, Range 36 East has a reported water level of greater than 100 feet below surface. In addition, the New Mexico State Engineers Office Well Reports indicated water wells in Section 16 and 10, Township 24 South, Range 32 East showing water levels greater than 100 feet below surface.

3. The New Mexico Oil Conservation Division (NMOCD) Remediation of Leaks, Spills and Releases guidelines require a risk-based evaluation of the site to determine recommended remediation action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene and xylene). Based on the regional groundwater data, the proposed recommended remedial action level (RRAL) for TPH is 5,000 mg/kg.

4. Based on the laboratory results, the hydrocarbon impact at the Site appears to be shallow and confined to the immediate area of the release. One auger hole location (AH-1) exceeded the RRAL for TPH of 5,000 mg/kg. The soil sample at 0-1' showed a TPH of 10,500 mg/kg, which decreased to 3,120 mg/kg at 3.0' below surface. The remaining auger holes (AH-2, AH-3, AH-4 and AH-5) did not show impact above the RRAL for TPH. In addition, the benzene and the total BTEX levels in the auger holes did not exceed the RRAL of 10 mg/kg and 50 mg/kg, respectively. No samples were collected from the overspray area located north of the release, however, this area appears to have surficial impact only. The chloride levels detected at the leak area appear to be slightly elevated, however, due to the depth of the groundwater and volume of the release, the chloride impact doe not appear to be an environmental concern.

Recommendation/Work Plan

1. Based on the results of the investigation, Duke proposes to remediate the shallow impact onsite. The 75' x 25' area at the release will be deep plowed, tilled and fertilized to promote natural degradation of the impact. The area will be monitored (sampled) for TPH evaluation. Once the RRAL TPH level is achieved, all associated documentation will be submitted for your review. The overspray area located north of the release will also be evaluated, and if a needed, this area will be included in the remediation of the impacted soil.

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

Very truly yours,

Ike Tavarez
Project Manager/Geologist

FIGURES

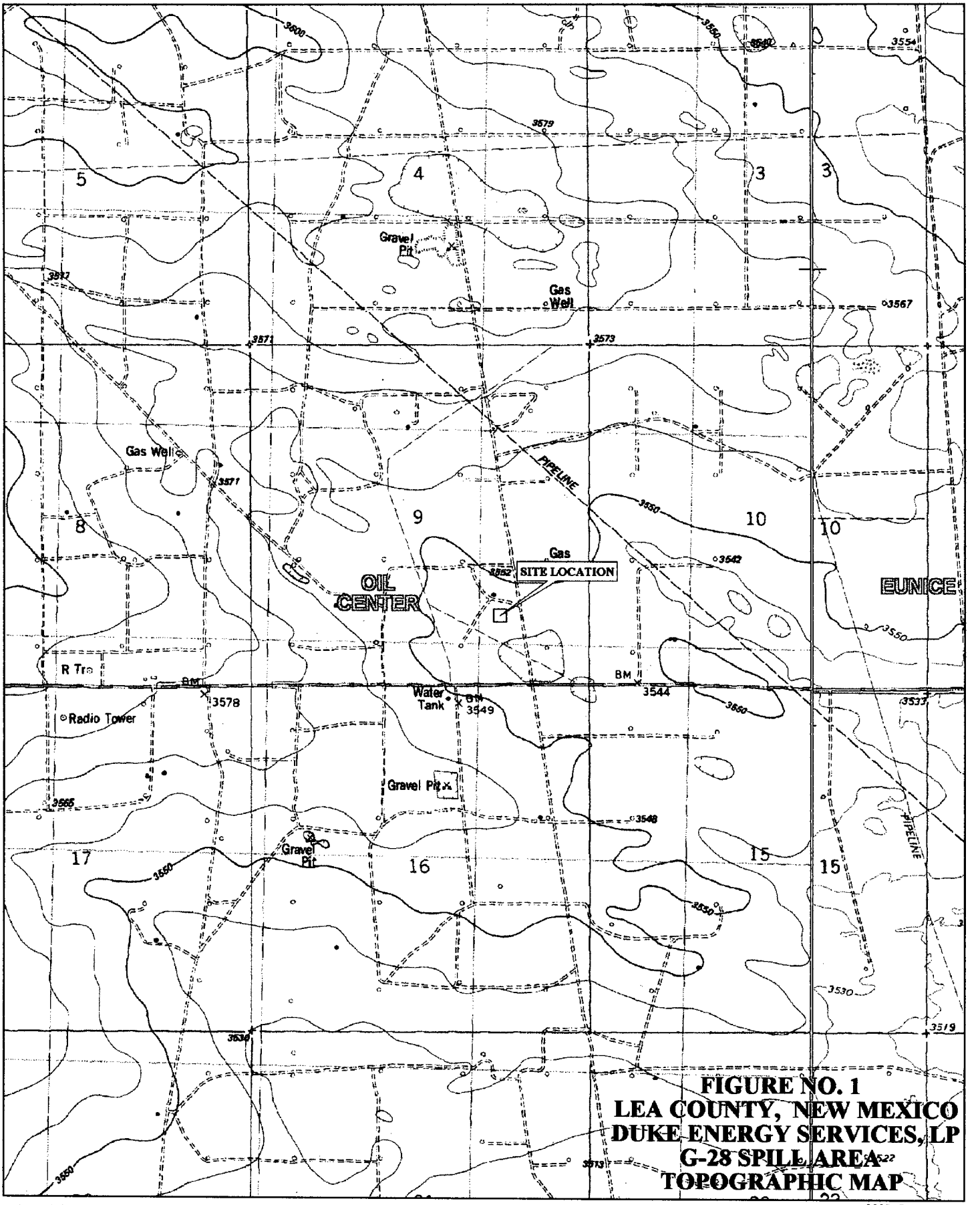
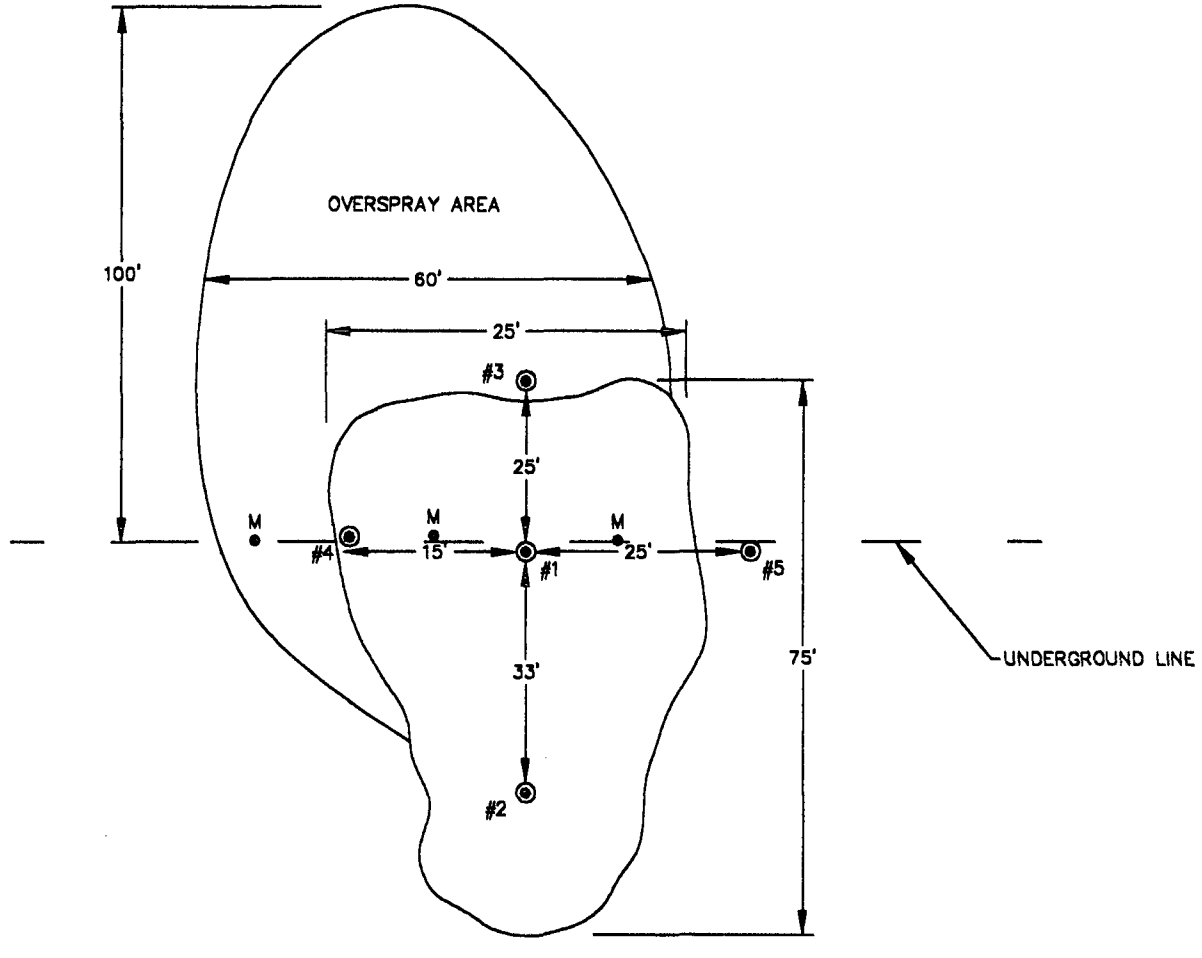


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
DUKE ENERGY SERVICES, LP
G-28 SPILL AREA
TOPOGRAPHIC MAP



LEGEND

AUGERHOLE LOCATION

M PIPELINE MARKER

NOT TO SCALE

FIGURE NO. 2

LEA COUNTY, NEW MEXICO

DUKE ENERGY FIELD SERICES, LP

G-28 SPILL

DATE: 9/10/01

DWG. BY: JDA

FILE: C:\DUKE\1713\FIG-2

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

APPENDIX A

FAXED 10/5/01 lw

FORM C-141

Release Notification and Corrective Action

OPERATOR

X Initial Report ☐ Final Report

Name Duke Energy Field Services	Contact Vicki Gunter
Address PO Box 50020 Midland, Tx 79710-0020	Telephone No. 915-620-4142
Facility Name NMR Regional Unit N/A	Facility Type

Surface Owner	Mineral Owner	Lease No

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from N/S Line	Feet from E/W Line	County
	9	22S	36E			Lea

NATURE OF RELEASE:

Release Type pipeline liquids	Volume Released 210 Gallons 0 Pounds	Volume Recovered 42 Gallons 0 Pounds
Release Source gas gathering line	Date/Hour of Occurrence 08/24/2001 10:00 AM	Date/Hour of Discovery 08/24/2001 10:01 AM

Immediate Notice Given? ● Yes ○ No ○ Not Required	To Whom? NMOCD, Buddy Hill
By Whom? Jackie Flowers	When? 08/24/2001
Watercourse Reached? ○ Yes ● No	Impact Volume 0

If Watercourse was Impacted, Describe Fully

Cause of Problem and Remedial Action Taken
A leak in the G-28 gathering line. The leak was clamped

Area Affected and Cleanup Action Taken
The free liquid around the leak was picked up with a vacuum truck. Further soil remediation will be done after the line is replaced.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state or local laws and/or regulations.

Signature: Lynn Ward for Becky Moore	OIL CONSERVATION DIVISION
Printed Name: R. A. Moore	Approved by District Supervisor:
Title: Env. Tech	Approval Date: / Expiration Date:
Date: 10/4/01 Phone: 915-620-4126	Conditions of Approval: / Attached:

New Mexico Office of the State Engineer
Well Reports and Downloads

Township: 22S Range: 36E Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic
Domestic All

Well / Surface Data Report | Avg Depth to Water Report | Water Column Report | Clear Form | WATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 08/31/2001

							(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
CP	22S	36E	01				1	137	137	137
CP	22S	36E	05				1	212	212	212
CP	22S	36E	06				1	195	195	195
CP	22S	36E	16				1	170	170	170
CP	22S	36E	22				1	22	22	22
CP	22S	36E	27				1	160	160	160

Record Count: 6

New Mexico Office of the State Engineer

Well Reports and Downloads

Township: 22S Range: 36E Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) Non-Domestic

Domestic All

Well / Surface Data Report | Avg Depth to Water Report | Water Column Report | Clear Form | WATERS Menu | Help

WATER COLUMN REPORT 08/31/2001

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are biggest to smallest)

Well Number	Tws	Rng	Sec	q	q	q	Zone	X	Y	Depth Well	Depth Water	Wat Colu
CP 00763 EXP	22S	36E	01	3	2	2				265	137	1
CP 00727	22S	36E	05	2	3	1				228		
CP 00727 CLW	22S	36E	05	2	3	1				267	212	
CP 00469	22S	36E	06	3	2	1				220	195	
CP 00070 2	22S	36E	16	1	2	2				220	170	
CP 00609	22S	36E	22	4	3	1				199	22	1
CP 00575	22S	36E	27	4	3					198	160	
L 11013	22S	36E	10	3						250		

Record Count: 8

New Mexico Office of the State Engineer

Point of Diversion Summary

Back

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are biggest to smallest)

POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y
CP 00070 2	22S	36E	16	1	2	2			

Driller Licence: 99 O.R. MUSSELWHITE WATER WELL SE
Driller Name: **Source:** Shallow
Drill Start Date: 09/30/1972 **Drill Finish Date:** 10/05/1972
Log File Date: 10/30/1972 **PCW Received Date:**
Pump Type: **Pipe Discharge Size:**
Casing Size: **Estimated Yield:**
Depth Well: 220 **Depth Water:** 170

APPENDIX B

Summary Report

Ike Tavarez
Highlander Environmental Services
1910 N. Big Spring St.
Midland, TX 79705

Report Date: September 25, 2001

Order ID Number: A01091003

Project Number: 1713
Project Name: Duke G-28 Spill Area
Project Location: N/A

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
178856	AH-1 (0-1')	Soil	9/5/01	:	9/8/01
178857	AH-1 (3-3.5')	Soil	9/5/01	:	9/8/01
178858	AH-1 (5-5.5')	Soil	9/5/01	:	9/8/01
178859	AH-2 (0-1')	Soil	9/5/01	:	9/8/01
178861	AH-2 (4-4.5)	Soil	9/5/01	:	9/8/01
178862	AH-3 (0-1')	Soil	9/5/01	:	9/8/01
178864	AH-3 (4-4.5')	Soil	9/5/01	:	9/8/01
178865	AH-4 (0-1')	Soil	9/5/01	:	9/8/01
178867	AH-4 (4-4.5')	Soil	9/5/01	:	9/8/01
178868	AH-5 (2-2.5')	Soil	9/5/01	:	9/8/01
178869	AH-5 (4-4.5')	Soil	9/5/01	:	9/8/01

This report consists of a total of 2 page(s) and is intended only as a summary of results for the sample(s) listed above.

	BTEX					TPH
Sample - Field Code	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	M,P,O-Xylene (ppm)	Total BTEX (ppm)	TRPHC (ppm)
178856 - AH-1 (0-1')	<0.050	0.262	0.731	0.905	1.9	10500
178857 - AH-1 (3-3.5')	<0.050	2.72	10.3	14.8	27.8	3120
178858 - AH-1 (5-5.5')	<0.050	3.78	10.3	10.7	24.8	3140
178859 - AH-2 (0-1')	<0.010	<0.010	0.145	0.399	0.544	1180
178861 - AH-2 (4-4.5)	-	-	-	-	-	<10.0
178862 - AH-3 (0-1')	-	-	-	-	-	<10.0
178864 - AH-3 (4-4.5')	-	-	-	-	-	<10.0
178865 - AH-4 (0-1')	<0.010	<0.010	<0.010	<0.010	<0.010	126
178867 - AH-4 (4-4.5')	-	-	-	-	-	<10.0
178868 - AH-5 (2-2.5')	-	-	-	-	-	<10.0
178869 - AH-5 (4-4.5')	-	-	-	-	-	<10.0

Sample: 178856 - AH-1 (0-1')

Param	Flag	Result	Units
CL		602.83	mg/Kg

Sample: 178857 - AH-1 (3-3.5')

Param	Flag	Result	Units
CL		951.84	mg/Kg

Sample: 178858 - AH-1 (5-5.5')

Param	Flag	Result	Units
CL		945.77	mg/Kg

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Ike Tavarez
Highlander Environmental Services
1910 N. Big Spring St.
Midland, TX 79705

Report Date: September 25, 2001

Order ID Number: A01091003

Project Number: 1713
Project Name: Duke G-28 Spill Area
Project Location: N/A

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
178856	AH-1 (0-1')	Soil	9/5/01	:	9/8/01
178857	AH-1 (3-3.5')	Soil	9/5/01	:	9/8/01
178858	AH-1 (5-5.5')	Soil	9/5/01	:	9/8/01
178859	AH-2 (0-1')	Soil	9/5/01	:	9/8/01
178861	AH-2 (4-4.5)	Soil	9/5/01	:	9/8/01
178862	AH-3 (0-1')	Soil	9/5/01	:	9/8/01
178864	AH-3 (4-4.5')	Soil	9/5/01	:	9/8/01
178865	AH-4 (0-1')	Soil	9/5/01	:	9/8/01
178867	AH-4 (4-4.5')	Soil	9/5/01	:	9/8/01
178868	AH-5 (2-2.5')	Soil	9/5/01	:	9/8/01
178869	AH-5 (4-4.5')	Soil	9/5/01	:	9/8/01

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 178856 - AH-1 (0-1')

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC13904	Date Analyzed:	9/10/01
Analyst:	CG	Preparation Method:	E 5035	Prep Batch:	PB11864	Date Prepared:	9/10/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.050	mg/Kg	50	0.001
Toluene		0.262	mg/Kg	50	0.001
Ethylbenzene		0.731	mg/Kg	50	0.001
M,P,O-Xylene		0.905	mg/Kg	50	0.001
Total BTEX		1.9	mg/Kg	50	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT	[1]	1.04	mg/Kg	50	0.10	20	72 - 128
4-BFB		3.8	mg/Kg	50	0.10	76	72 - 128

Sample: 178856 - AH-1 (0-1')

Analysis:	Ion Chromatography (IC)	Analytical Method:	E 300.0	QC Batch:	QC14087	Date Analyzed:	9/16/01
Analyst:	JSW	Preparation Method:	N/A	Prep Batch:	PB12011	Date Prepared:	9/13/01

Param	Flag	Result	Units	Dilution	RDL
CL		602.83	mg/Kg	50	0.50

Sample: 178856 - AH-1 (0-1')

Analysis:	TPH	Analytical Method:	E 418.1	QC Batch:	QC14002	Date Analyzed:	9/17/01
Analyst:	JJ	Preparation Method:	E 3550B	Prep Batch:	PB11952	Date Prepared:	9/14/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		10500	mg/Kg	1	10

Sample: 178857 - AH-1 (3-3.5')

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC13904	Date Analyzed:	9/10/01
Analyst:	CG	Preparation Method:	E 5035	Prep Batch:	PB11864	Date Prepared:	9/10/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.050	mg/Kg	50	0.001
Toluene		2.72	mg/Kg	50	0.001
Ethylbenzene		10.3	mg/Kg	50	0.001
M,P,O-Xylene		14.8	mg/Kg	50	0.001
Total BTEX		27.8	mg/Kg	50	0.001

[1] Low surrogate recovery due to matrix difficulties.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT	[2]	1.39	mg/Kg	50	0.10	27	72 - 128
4-BFB	[3]	7.2	mg/Kg	50	0.10	144	72 - 128

Sample: 178857 - AH-1 (3-3.5')

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC14087 Date Analyzed: 9/16/01
Analyst: JSW Preparation Method: N/A Prep Batch: PB12011 Date Prepared: 9/13/01

Param	Flag	Result	Units	Dilution	RDL
CL		951.84	mg/Kg	50	0.50

Sample: 178857 - AH-1 (3-3.5')

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC14002 Date Analyzed: 9/17/01
Analyst: JJ Preparation Method: E 3550B Prep Batch: PB11952 Date Prepared: 9/14/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		3120	mg/Kg	1	10

Sample: 178858 - AH-1 (5-5.5')

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC13918 Date Analyzed: 9/10/01
Analyst: CG Preparation Method: E 5035 Prep Batch: PB11876 Date Prepared: 9/10/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.050	mg/Kg	50	0.001
Toluene		3.78	mg/Kg	50	0.001
Ethylbenzene		10.3	mg/Kg	50	0.001
M,P,O-Xylene		10.7	mg/Kg	50	0.001
Total BTEX		24.8	mg/Kg	50	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT	[4]	0.89	mg/Kg	50	0.10	17	72 - 128
4-BFB	[5]	8.66	mg/Kg	50	0.10	173	72 - 128

Sample: 178858 - AH-1 (5-5.5')

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC14088 Date Analyzed: 9/16/01
Analyst: JSW Preparation Method: N/A Prep Batch: PB12011 Date Prepared: 9/13/01

Param	Flag	Result	Units	Dilution	RDL
CL		945.77	mg/Kg	50	0.50

[2]Low surrogate recovery due to matrix difficulties.
[3]High surrogate recovery due to peak interference.
[4]Low surrogate recovery due to matrix difficulties.
[5]High surrogate recovery due to peak interference.

Sample: 178858 - AH-1 (5-5.5')

Analysis:	TPH	Analytical Method:	E 418.1	QC Batch:	QC14002	Date Analyzed:	9/17/01
Analyst:	JJ	Preparation Method:	E 3550B	Prep Batch:	PB11952	Date Prepared:	9/14/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		3140	mg/Kg	1	10

Sample: 178859 - AH-2 (0-1')

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC14175	Date Analyzed:	9/22/01
Analyst:	CG	Preparation Method:	E 5035	Prep Batch:	PB12090	Date Prepared:	9/22/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		0.145	mg/Kg	10	0.001
M,P,O-Xylene		0.399	mg/Kg	10	0.001
Total BTEX		0.544	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.932	mg/Kg	10	0.10	93	72 - 128
4-BFB		0.914	mg/Kg	10	0.10	91	72 - 128

Sample: 178859 - AH-2 (0-1')

Analysis:	TPH	Analytical Method:	E 418.1	QC Batch:	QC14002	Date Analyzed:	9/17/01
Analyst:	JJ	Preparation Method:	E 3550B	Prep Batch:	PB11952	Date Prepared:	9/14/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		1180	mg/Kg	1	10

Sample: 178861 - AH-2 (4-4.5)

Analysis:	TPH	Analytical Method:	E 418.1	QC Batch:	QC14002	Date Analyzed:	9/17/01
Analyst:	JJ	Preparation Method:	E 3550B	Prep Batch:	PB11952	Date Prepared:	9/14/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 178862 - AH-3 (0-1')

Analysis:	TPH	Analytical Method:	E 418.1	QC Batch:	QC14003	Date Analyzed:	9/17/01
Analyst:	JJ	Preparation Method:	E 3550B	Prep Batch:	PB11951	Date Prepared:	9/14/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 178864 - AH-3 (4-4.5')

Analysis:	TPH	Analytical Method:	E 418.1	QC Batch:	QC14003	Date Analyzed:	9/17/01
Analyst:	JJ	Preparation Method:	E 3550B	Prep Batch:	PB11951	Date Prepared:	9/14/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 178865 - AH-4 (0-1')

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC14175	Date Analyzed:	9/22/01
Analyst:	CG	Preparation Method:	E 5035	Prep Batch:	PB12090	Date Prepared:	9/22/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		<0.010	mg/Kg	10	0.001
M,P,O-Xylene		<0.010	mg/Kg	10	0.001
Total BTEX		<0.010	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.726	mg/Kg	10	0.10	73	72 - 128
4-BFB		0.798	mg/Kg	10	0.10	80	72 - 128

Sample: 178865 - AH-4 (0-1')

Analysis:	TPH	Analytical Method:	E 418.1	QC Batch:	QC14003	Date Analyzed:	9/17/01
Analyst:	JJ	Preparation Method:	E 3550B	Prep Batch:	PB11951	Date Prepared:	9/14/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		126	mg/Kg	1	10

Sample: 178867 - AH-4 (4-4.5')

Analysis:	TPH	Analytical Method:	E 418.1	QC Batch:	QC14003	Date Analyzed:	9/17/01
Analyst:	JJ	Preparation Method:	E 3550B	Prep Batch:	PB11951	Date Prepared:	9/14/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 178868 - AH-5 (2-2.5')

Analysis:	TPH	Analytical Method:	E 418.1	QC Batch:	QC14003	Date Analyzed:	9/17/01
Analyst:	JJ	Preparation Method:	E 3550B	Prep Batch:	PB11951	Date Prepared:	9/14/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 178869 - AH-5 (4-4.5')

Analysis:	TPH	Analytical Method:	E 418.1	QC Batch:	QC14003	Date Analyzed:	9/17/01
Analyst:	JJ	Preparation Method:	E 3550B	Prep Batch:	PB11951	Date Prepared:	9/14/01

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Quality Control Report
Method Blank

Method Blank

QCBatch: QC13904

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.010	mg/Kg	0.001
Toluene		<0.010	mg/Kg	0.001
Ethylbenzene		<0.010	mg/Kg	0.001
M,P,O-Xylene		<0.010	mg/Kg	0.001
Total BTEX		<0.010	mg/Kg	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.2	mg/Kg	10	0.10	116	72 - 128
4-BFB		0.990	mg/Kg	10	0.10	99	72 - 128

Method Blank

QCBatch: QC13918

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.010	mg/Kg	0.001
Toluene		<0.010	mg/Kg	0.001
Ethylbenzene		<0.010	mg/Kg	0.001
M,P,O-Xylene		<0.010	mg/Kg	0.001
Total BTEX		<0.010	mg/Kg	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.855	mg/Kg	10	0.10	112	72 - 128
4-BFB		0.880	mg/Kg	10	0.10	99	72 - 128

Method Blank

QCBatch: QC14002

Param	Flag	Results	Units	Reporting Limit
TRPHC		<10.0	mg/Kg	10

Method Blank

QCBatch: QC14003

Param	Flag	Results	Units	Reporting Limit
TRPHC		<10.0	mg/Kg	10

Method Blank

QCBatch: QC14087

Param	Flag	Results	Units	Reporting Limit
CL		21.91	mg/Kg	0.50

Method Blank

QCBatch: QC14088

Param	Flag	Results	Units	Reporting Limit
CL		21.92	mg/Kg	0.50

Method Blank

QCBatch: QC14175

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.010	mg/Kg	0.001
Toluene		<0.010	mg/Kg	0.001
Ethylbenzene		<0.010	mg/Kg	0.001
M,P,O-Xylene		<0.010	mg/Kg	0.001
Total BTEX		<0.010	mg/Kg	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.07	mg/Kg	10	0.10	107	72 - 128
4-BFB		0.790	mg/Kg	10	0.10	79	72 - 128

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC13904

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	0.993	1.02	mg/Kg	10	0.10	<0.010	99	2	80 - 120	20
Benzene	1.01	1.05	mg/Kg	10	0.10	<0.010	101	3	80 - 120	20
Toluene	1.02	1.06	mg/Kg	10	0.10	<0.010	102	3	80 - 120	20
Ethylbenzene	1.02	1.06	mg/Kg	10	0.10	<0.010	102	3	80 - 120	20
M,P,O-Xylene	3.1	3.19	mg/Kg	10	0.30	<0.010	106	2	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	1.14	1.16	mg/Kg	10	0.10	114	116	72 - 128
4-BFB	1.05	1.06	mg/Kg	10	0.10	105	106	72 - 128

Laboratory Control Spikes

QCBatch: QC13918

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	0.973	0.978	mg/Kg	10	0.10	<0.010	97	0	80 - 120	20
Benzene	0.92	0.984	mg/Kg	10	0.10	<0.010	92	6	80 - 120	20
Toluene	0.923	0.987	mg/Kg	10	0.10	<0.010	92	6	80 - 120	20
Ethylbenzene	0.916	0.985	mg/Kg	10	0.10	<0.010	91	7	80 - 120	20
M,P,O-Xylene	2.77	2.97	mg/Kg	10	0.30	<0.010	92	6	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	[6] 0.145	[7] 0.127	mg/Kg	10	0.10	14	12	72 - 128
4-BFB	[8] 0.145	[9] 0.135	mg/Kg	10	0.10	14	13	72 - 128

Laboratory Control Spikes

QCBatch: QC14002

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	210	225	mg/Kg	1	250	<10.0	84	6	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC14003

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	226	227	mg/Kg	1	250	<10.0	90	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC14087

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
CL	[10] 33.15	33.31	mg/Kg	1	12.50	21.91	265	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC14088

[6] Low surrogate recovery on LCS/LCSD due to prep error.
[7] Low surrogate recovery on LCS/LCSD due to prep error.
[8] Low surrogate recovery on LCS/LCSD due to prep error.
[9] Low surrogate recovery on LCS/LCSD due to prep error.
[10] When soil blank is subtracted, LCS %EA is 90

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
CL	[11] 33.20	34.36	mg/Kg	1	12.50	21.92	265	3	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC14175

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	0.944	0.942	mg/Kg	10	0.10	<0.010	94	0	80 - 120	20
Benzene	0.959	0.978	mg/Kg	10	0.10	<0.010	96	2	80 - 120	20
Toluene	0.846	0.880	mg/Kg	10	0.10	<0.010	85	4	80 - 120	20
Ethylbenzene	0.844	0.881	mg/Kg	10	0.10	<0.010	84	4	80 - 120	20
M,P,O-Xylene	2.58	2.68	mg/Kg	10	0.30	<0.010	86	4	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.974	0.987	mg/Kg	10	0.10	97	99	72 - 128
4-BFB	0.911	0.928	mg/Kg	10	0.10	91	93	72 - 128

Quality Control Report
Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC13904

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Benzene	[12] <0.010	[13] <0.010	mg/Kg	10	0.10	<0.010	0	0	80 - 120	20
Toluene	[14] <0.010	[15] <0.010	mg/Kg	10	0.10	<0.010	0	0	80 - 120	20
Ethylbenzene	[16] <0.010	[17] <0.010	mg/Kg	10	0.10	<0.010	0	0	80 - 120	20
M,P,O-Xylene	[18] <0.010	[19] <0.010	mg/Kg	10	0.30	<0.010	0	0	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
TFT	1.08	1.04	mg/Kg	10	0.10	108	104	72 - 128
4-BFB	0.976	0.941	mg/Kg	10	0.10	97	94	72 - 128

[11] When soil blank is subtracted, the LCS %EA is 90
[12] No purgeable in MS/MSD. LCS/LCSD show the method to be in control.
[13] No purgeable in MS/MSD. LCS/LCSD show the method to be in control.
[14] No purgeable in MS/MSD. LCS/LCSD show the method to be in control.
[15] No purgeable in MS/MSD. LCS/LCSD show the method to be in control.
[16] No purgeable in MS/MSD. LCS/LCSD show the method to be in control.
[17] No purgeable in MS/MSD. LCS/LCSD show the method to be in control.
[18] No purgeable in MS/MSD. LCS/LCSD show the method to be in control.
[19] No purgeable in MS/MSD. LCS/LCSD show the method to be in control.

Matrix Spikes

QCBatch: QC13918

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Benzene	[20] 0.472	[21] 0.691	mg/Kg	10	0.10	<0.010	47	37	80 - 120	20
Toluene	[22] 0.537	[23] 0.73	mg/Kg	10	0.10	0.039	49	32	80 - 120	20
Ethylbenzene	[24] 0.467	[25] 0.697	mg/Kg	10	0.10	<0.010	46	39	80 - 120	20
M,P,O-Xylene	[26] 1.41	[27] 2.09	mg/Kg	10	0.30	<0.010	47	38	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
TFT	1.04	1.02	mg/Kg	10	0.10	104	102	72 - 128
4-BFB	0.968	0.97	mg/Kg	10	0.10	96	97	72 - 128

Matrix Spikes

QCBatch: QC14002

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	229	236	mg/Kg	1	250	<10.0	91	3	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC14003

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	209	215	mg/Kg	1	250	<10.0	83	2	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC14087

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
CL	[28] 227.2	231.41	mg/Kg	1	625	175.66	8	-278	69 - 121	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

[20]Low recovery on MS/MSD due to matrix difficulties. LCS/LCSD show the method to be in control.
[21]Low recovery on MS/MSD due to matrix difficulties. LCS/LCSD show the method to be in control.
[22]Low recovery on MS/MSD due to matrix difficulties. LCS/LCSD show the method to be in control.
[23]Low recovery on MS/MSD due to matrix difficulties. LCS/LCSD show the method to be in control.
[24]Low recovery on MS/MSD due to matrix difficulties. LCS/LCSD show the method to be in control.
[25]Low recovery on MS/MSD due to matrix difficulties. LCS/LCSD show the method to be in control.
[26]Low recovery on MS/MSD due to matrix difficulties. LCS/LCSD show the method to be in control.
[27]Low recovery on MS/MSD due to matrix difficulties. LCS/LCSD show the method to be in control.
[28]Matrix %EA is 82

Matrix Spikes

QCBatch: QC14088

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
CL	[29] 141.77	144.97	mg/Kg	1	625	86.50	8	5	69 - 121	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC14175

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Benzene	0.956	0.981	mg/Kg	10	0.10	<0.010	96	2	80 - 120	20
Toluene	1.02	1.05	mg/Kg	10	0.10	<0.010	102	3	80 - 120	20
Ethylbenzene	0.963	0.975	mg/Kg	10	0.10	<0.010	96	1	80 - 120	20
M,P,O-Xylene	2.83	2.87	mg/Kg	10	0.30	<0.010	94	1	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
TFT	0.930	0.995	mg/Kg	10	0.10	93	100	72 - 128
4-BFB	1.11	1.11	mg/Kg	10	0.10	111	111	72 - 128

Quality Control Report
Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC13904

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.10	0.092	92	85 - 115	9/10/01
Benzene		mg/Kg	0.10	0.098	98	85 - 115	9/10/01
Toluene		mg/Kg	0.10	0.099	99	85 - 115	9/10/01
Ethylbenzene		mg/Kg	0.10	0.098	98	85 - 115	9/10/01
M,P,O-Xylene		mg/Kg	0.30	0.295	98	85 - 115	9/10/01

CCV (2)

QCBatch: QC13904

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.10	0.091	91	85 - 115	9/10/01
Benzene		mg/Kg	0.10	0.091	91	85 - 115	9/10/01
Toluene		mg/Kg	0.10	0.092	92	85 - 115	9/10/01

Continued ...

[29] matrix %EA is 88

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Ethylbenzene		mg/Kg	0.10	0.091	91	85 - 115	9/10/01
M,P,O-Xylene		mg/Kg	0.30	0.276	92	85 - 115	9/10/01

ICV (1)

QCBatch: QC13904

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.10	0.100	100	85 - 115	9/10/01
Benzene		mg/Kg	0.10	0.097	97	85 - 115	9/10/01
Toluene		mg/Kg	0.10	0.097	97	85 - 115	9/10/01
Ethylbenzene		mg/Kg	0.10	0.097	97	85 - 115	9/10/01
M,P,O-Xylene		mg/Kg	0.30	0.292	97	85 - 115	9/10/01

CCV (1)

QCBatch: QC13918

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.10	0.096	96	85 - 115	9/10/01
Benzene		mg/Kg	0.10	0.099	99	85 - 115	9/10/01
Toluene		mg/Kg	0.10	0.105	105	85 - 115	9/10/01
Ethylbenzene		mg/Kg	0.10	0.1	100	85 - 115	9/10/01
M,P,O-Xylene		mg/Kg	0.30	0.302	100	85 - 115	9/10/01

CCV (2)

QCBatch: QC13918

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.10	0.092	92	85 - 115	9/10/01
Benzene		mg/Kg	0.10	0.101	101	85 - 115	9/10/01
Toluene		mg/Kg	0.10	0.101	101	85 - 115	9/10/01
Ethylbenzene		mg/Kg	0.10	0.099	99	85 - 115	9/10/01
M,P,O-Xylene		mg/Kg	0.30	0.268	89	85 - 115	9/10/01

ICV (1)

QCBatch: QC13918

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.10	0.093	93	85 - 115	9/10/01
Benzene		mg/Kg	0.10	0.096	96	85 - 115	9/10/01
Toluene		mg/Kg	0.10	0.097	97	85 - 115	9/10/01

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Ethylbenzene		mg/Kg	0.10	0.096	96	85 - 115	9/10/01
M,P,O-Xylene		mg/Kg	0.30	0.29	96	85 - 115	9/10/01

CCV (1)

QCBatch: QC14002

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	106	106	75 - 125	9/17/01

CCV (2)

QCBatch: QC14002

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	102	102	75 - 125	9/17/01

ICV (1)

QCBatch: QC14002

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	105	105	75 - 125	9/17/01

CCV (1)

QCBatch: QC14003

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	100	100	75 - 125	9/17/01

CCV (2)

QCBatch: QC14003

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	95.8	95	75 - 125	9/17/01

ICV (1)

QCBatch: QC14003

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	108	108	75 - 125	9/17/01

CCV (1) QCBatch: QC14087

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromide		mg/L	2.50	2.48	99	90 - 110	9/16/01
CL		mg/L	12.50	11.81	94	90 - 110	9/16/01
Fluoride		mg/L	2.50	2.33	93	90 - 110	9/16/01
Nitrate-N		mg/L	2.50	2.35	94	90 - 110	9/16/01
Sulfate		mg/L	12.50	11.60	92	90 - 110	9/16/01

ICV (1) QCBatch: QC14087

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromide		mg/L	2.50	2.50	100	90 - 110	9/16/01
CL		mg/L	12.50	11.53	92	90 - 110	9/16/01
Fluoride		mg/L	2.50	2.37	94	90 - 110	9/16/01
Nitrate-N		mg/L	2.50	2.31	92	90 - 110	9/16/01
Sulfate		mg/L	12.50	11.78	94	90 - 110	9/16/01

CCV (1) QCBatch: QC14088

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromide		mg/L	2.50	2.46	98	90 - 110	9/16/01
CL		mg/L	12.50	11.81	94	90 - 110	9/16/01
Fluoride		mg/L	2.50	2.37	94	90 - 110	9/16/01
Nitrate-N		mg/L	2.50	2.35	94	90 - 110	9/16/01
Sulfate		mg/L	12.50	11.61	92	90 - 110	9/16/01

ICV (1) QCBatch: QC14088

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromide		mg/L	2.50	2.48	99	90 - 110	9/16/01
CL		mg/L	12.50	11.53	92	90 - 110	9/16/01
Fluoride		mg/L	2.50	2.33	93	90 - 110	9/16/01
Nitrate-N		mg/L	2.50	2.35	94	90 - 110	9/16/01
Sulfate		mg/L	12.50	11.60	92	90 - 110	9/16/01

CCV (1)

QCBatch: QC14175

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.10	0.1	100	85 - 115	9/22/01
Benzene		mg/Kg	0.10	0.094	94	85 - 115	9/22/01
Toluene		mg/Kg	0.10	0.093	93	85 - 115	9/22/01
Ethylbenzene		mg/Kg	0.10	0.091	91	85 - 115	9/22/01
M,P,O-Xylene		mg/Kg	0.30	0.273	91	85 - 115	9/22/01

CCV (2)

QCBatch: QC14175

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.10	0.106	106	85 - 115	9/22/01
Benzene		mg/Kg	0.10	0.097	97	85 - 115	9/22/01
Toluene		mg/Kg	0.10	0.094	94	85 - 115	9/22/01
Ethylbenzene		mg/Kg	0.10	0.087	87	85 - 115	9/22/01
M,P,O-Xylene		mg/Kg	0.30	0.265	88	85 - 115	9/22/01

ICV (1)

QCBatch: QC14175

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.10	0.101	101	85 - 115	9/22/01
Benzene		mg/Kg	0.10	0.098	98	85 - 115	9/22/01
Toluene		mg/Kg	0.10	0.089	89	85 - 115	9/22/01
Ethylbenzene		mg/Kg	0.10	0.088	88	85 - 115	9/22/01
M,P,O-Xylene		mg/Kg	0.30	0.268	89	85 - 115	9/22/01

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

PAGE: 1 OF: 2

CLIENT NAME: Duke SITE MANAGER: IKE Tavarez

PROJECT NO.: 1713 PROJECT NAME: Duke / G-28, Spill Area Cea Coty nm.

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8020/602	MTBE 8020/602	TPH 418.1 / 8015 MOD. TX1005	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	BCI	GC/MS Vol. 8240/8260/624	GC/MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/606	BOD, TSS, pH, TDS, Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Chloride
178854	9/5/01		S		✓	AH-1 (0-1')	1				✓		X		X															X
57			S		✓	AH-1 (3-3.5')	1				✓		X		X															X
58			S		✓	AH-1 (5-5.5')	1				✓		X		X															X
59			S		✓	AH-2 (0-1')	1				✓		X		X															
60			S		✓	AH-2 (3-3.5')	1				✓																			
61			S		✓	AH-2 (4-4.5')	1				✓				X															
62			S		✓	AH-3 (0-1')	1				✓				X															
63			S		✓	AH-3 (3-3.5')	1				✓																			
64			S		✓	AH-3 (4-4.5')	1				✓				X															

RELINQUISHED BY: (Signature) Date: 9/7/01 Time: 1700 — RECEIVED BY: (Signature) Helen Ateton Date: 9/7/01 Time: 1700

RELINQUISHED BY: (Signature) Helen Ateton Date: 9/07/01 Time: 1845 — RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time: — RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Trace Lab
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature) Barry Chastain
DATE: 9/8/01 TIME: 11:00 4°C

SAMPLED BY: (Print & Sign) IKE Tavarez / Raylogh Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS UPS HAND DELIVERED AIRBILL #: OTHER:

HIGHLANDER CONTACT PERSON: IKE Tavarez

Results by: 9/17/01 - MCN

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

MATRIX: W-Water S-Soil A-Air SL-Sludge SD-Solid O-Other

REMARKS: RUN (2) BTEX on the highest (2) TPH (AH-2, AH-3, AH-4 AH-5) 178854 / 178865

Please Fill out all copies - Laboratory retains yellow copy - Return original copy to Highlander Environmental Corp. - Project Manager retains pink copy - Accounting receives Gold copy.

H0109100S

Analysis Request and Chain of Custody Record

PAGE: 2 OF: 2

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705
(915) 682-4559 Fax (915) 682-3946

CLIENT NAME: Duke.
SITE MANAGER: IKE Tavarez
PROJECT NO.: 1713
PROJECT NAME: Duke / G-28 Spill area. Lea County NM

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	(BTEX) 8020/602	MTBE 8020/602	(TPH) (418.1) 8015 MOD. TX1005	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. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	BOD, TSS, pH, TDS, Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
178865 (178859 struck)	9/5/01		S		✓	AH-4 (0-1')	1				✓		X		X														
66	↓		S		✓	AH-4 (3-3.5')	1				✓																		
67	↓		S		✓	AH-4 (4-4.5')	1				✓				X														
68	↓		S		✓	AH-5 (2-2.5')	1				✓				X														
69	↓		S		✓	AH 5 (4-4.5')	1				✓				X														

RELINQUISHED BY: (Signature) [signature] Date: 9/7/01 Time: 1700
RECEIVED BY: (Signature) Helen Shelton Date: 9/7/01 Time: 1700

RELINQUISHED BY: (Signature) Helen Shelton Date: 9/07/01 Time: 1245
RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Trace Lab.
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) Barry chaplin
DATE: 9/8/01 TIME: 11:00 4°C

SAMPLED BY: (Print & Sign) IKE Tavarez / Ray Taylor Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX (BUS) AIRBILL #
HAND DELIVERED UPS OTHER:
HIGHLANDER CONTACT PERSON: IKE Tavarez
Results by: 9/17/01 - MON
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:
MATRIX: W-Water (S-Soil) A-Air SL-Sludge SD-Solid O-Other
REMARKS:

Please Fill out all copies - Laboratory retains yellow copy - Return original copy to Highlander Environmental Corp. - Project Manager retains pink copy - Accounting receives Gold copy.