Highlander Environmental Corp.

Midland, Texas

OCT 31 2007
OCD-ARTESIA

October 18, 2007

Mr. Mike Bratcher
Environmental Bureau
Oil Conservation Division- District 2
1301 W. Grand Avenue
Artesia, New Mexico 88210

RE: Assessment and Work Plan for the COG Operating Company LLC, White Star Federal #5, Unit Letter G, Section 29, Township 17 South, Range 29 East, Eddy County, New Mexico.

Dear Mr. Bratcher:

Highlander Environmental Corp. (Highlander) was contacted by COG Operating Company LLC (COG) to assess and to remediate the soil impact from a flow line spill that occurred at the White Star Federal #5 well, located in Unit Letter G, Section 29, Township 17 South, Range 29 East, Eddy County, New Mexico. The site coordinates are N 32° 48.296', W 104° 05.624'. The State of New Mexico C-141 (Initial) is included in Appendix C. The Site is shown on Figure 1.

Background

On August 9, 2006, the spill was discovered from a leaking flow line. Approximately 3 barrels of oil and 7 barrels of water were spilled and no fluids were recovered. The spill occurred on the access road right of way, measuring approximately 10' x 90'. The spill location is shown on Figure 2.

Groundwater and Regulatory

The spill area is located in Section 29, Township 17 South, Range 29 East. Neither the State of New Mexico nor USGS databases show any water wells in Township 17S, Range 29E. Published data, from the Geology and Groundwater Resources of Eddy

County, New Mexico, showed one well in Section 29, Township 17 South, Range 29 East with a reported depth to water of 210'.

A risk-based evaluation was performed for the Site in accordance with the 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 remedial 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 RRAL for TPH is 5,000 mg/kg.

Assessment/Soil Sampling

On September 19, 2007, Highlander personnel sampled the spill area. A total of five (5) auger holes were installed. The spill and sample locations are shown on Figure 2. Soil samples were analyzed for Total Petroleum Hydrocarbon (TPH) by method modified 8015 DRO/GRO and chloride by EPA method 300.0. Selected samples were analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) by EPA method 8021B. All samples were collected and preserved in laboratory prepared sample containers, shipped under proper chain-of-custody control, and analyzed within the standard holding times. The sample results are presented in Table 1. The laboratory reports are included in Appendix B.

Soil Sampling Results

Referring to Table 1, only the 0-1' sample from auger AH-1 exceeded the RRAL for TPH and BTEX. However, elevated chloride concentrations were noted in all of the auger holes. The concentrations declined with depth to below 500 mg/kg in AH-3, AH-4 and AH-5. While declining, the chloride impact was not defined in AH-1 or AH-2.

On October 9, 2007, a backhoe was utilized to collect deeper samples from trenches T-1 and T-2 at AH-1 and AH-2 respectively. Also, additional BTEX samples were collected at AH-1 (AH-1A) to confirm that BTEX was only above the RRAL in the 0-1' horizon. The deeper sampled from T-1 and T-2 showed chloride concentrations declining to below 100 mg/kg at approximately 7' below ground surface.

Conclusion and Work Plan

Based on the results, the only area exceeding the TPH and BTEX RRAL is in the vicinity of AH-1. Elevated chloride concentrations were exhibited in the shallow soils in the vicinity of AH-2, AH-3, AH-4 and AH-5. Chloride concentrations in AH-1 declined significantly below 2.5'. Based upon the depth to groundwater it is proposed to scrape the soils in the vicinity of AH-1 to approximately 3.0' tapering to approximately 1.0' in the vicinity of AH-2, AH-3, AH-4 and AH-5. This soil will be removed and taken to disposal, and would limit the residual chloride impact in the subsurface.

Once the remedial activities are completed, a form C-141(Final) will be prepared and submitted to the NMOCD. If you require any additional information or have any questions or comments, please call.

Highlander Environmental Corp.

Jim Reed

Timothy M. Reed, P.G.
Vice President

cc: COG – Erick Nelson

Table 1

COG Operating

White Star Federal #5 Flowline Leak

Eddy County, New Mexico

Sample ID	Soils Status		Date Sampled	Sample Depth (ft)	TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
	Insitu	Removed			DRO	GRO	Total					
AH-1	X		9/17/2007	0-1'	4,210	1,070	**5,280**	**0.0534**	**42.6**	**36.9**	**51.3**	5,770
AH-1	X		9/17/2007	1'-1.5'	1,710	1,160	2,870	-	-	-	-	9,550
AH-1	X		9/17/2007	2'-2.5'	-	-	-	-	-	-	-	10,600
AH-1	X		9/17/2007	4'-4.5'	-	-	-	-	-	-	-	2,950
AH-1A	X		10/9/2007	1'-1.5'	-	-	-	0.924	21.8	19.3	**22.6**	-
AH-1A	X		10/9/2007	2'-2.5'	-	-	-	<0.0100	0.0224	0.0641	0.111	-
T-1 (AH-1)	X		10/9/2007	6.0'	-	-	-	-	-	-	-	822
T-1 (AH-1)	X		10/9/2007	8.0'	-	-	-	-	-	-	-	<100
AH-2	X		9/17/2007	0-1'	504	50.3	554.3	-	-	-	-	2,090
AH-2	X		9/17/2007	1'-1.5'	<50.0	3.32	3.32	-	-	-	-	736
AH-2	X		9/17/2007	2'-2.5'	-	-	-	-	-	-	-	2,840
AH-2	X		9/17/2007	4'-4.5'	-	-	-	-	-	-	-	1,480
AH-2	X		9/17/2007	5.5'-6'	-	-	-	-	-	-	-	633
T-2 (AH-2)	X		10/9/2007	7.0'	-	-	-	-	-	-	-	<100
T-2 (AH-2)	X		10/9/2007	9.0'	-	-	-	-	-	-	-	<100
AH-3	X		9/17/2007	0-1'	3,310	363	3,673	<0.0200	1.62	4.61	8.70	2,030
AH-3	X		9/17/2007	1'-1.5'	159	50.6	209.6	-	-	-	-	1,760
AH-3	X		9/17/2007	2'-2.5'	-	-	-	-	-	-	-	2,750
AH-3	X		9/17/2007	4'-4.5'	-	-	-	-	-	-	-	<100
AH-4	X		9/17/2007	0-1'	<50.0	5.50	5.50	-	-	-	-	5,710
AH-4	X		9/17/2007	1'-1.5'	<50.0	2.43	2.43	-	-	-	-	1,070
AH-4	X		9/17/2007	2'-2.5'	-	-	-	-	-	-	-	1,380
AH-4	X		9/17/2007	3'-3.5'	-	-	-	-	-	-	-	<100
AH-4	X		9/17/2007	4'-4.5'	-	-	-	-	-	-	-	118
AH-5	X		9/17/2007	0-1'	441	342	783	<0.0200	0.616	3.02	5.91	3,520
AH-5	X		9/17/2007	1'-1.5'	<50.0	9.51	9.51	-	-	-	-	360
AH-5	X		9/17/2007	2'-2.5'	-	-	-	-	-	-	-	1,710
AH-5	X		9/17/2007	4'-4.5'	-	-	-	-	-	-	-	483

(-) Not Analyzed

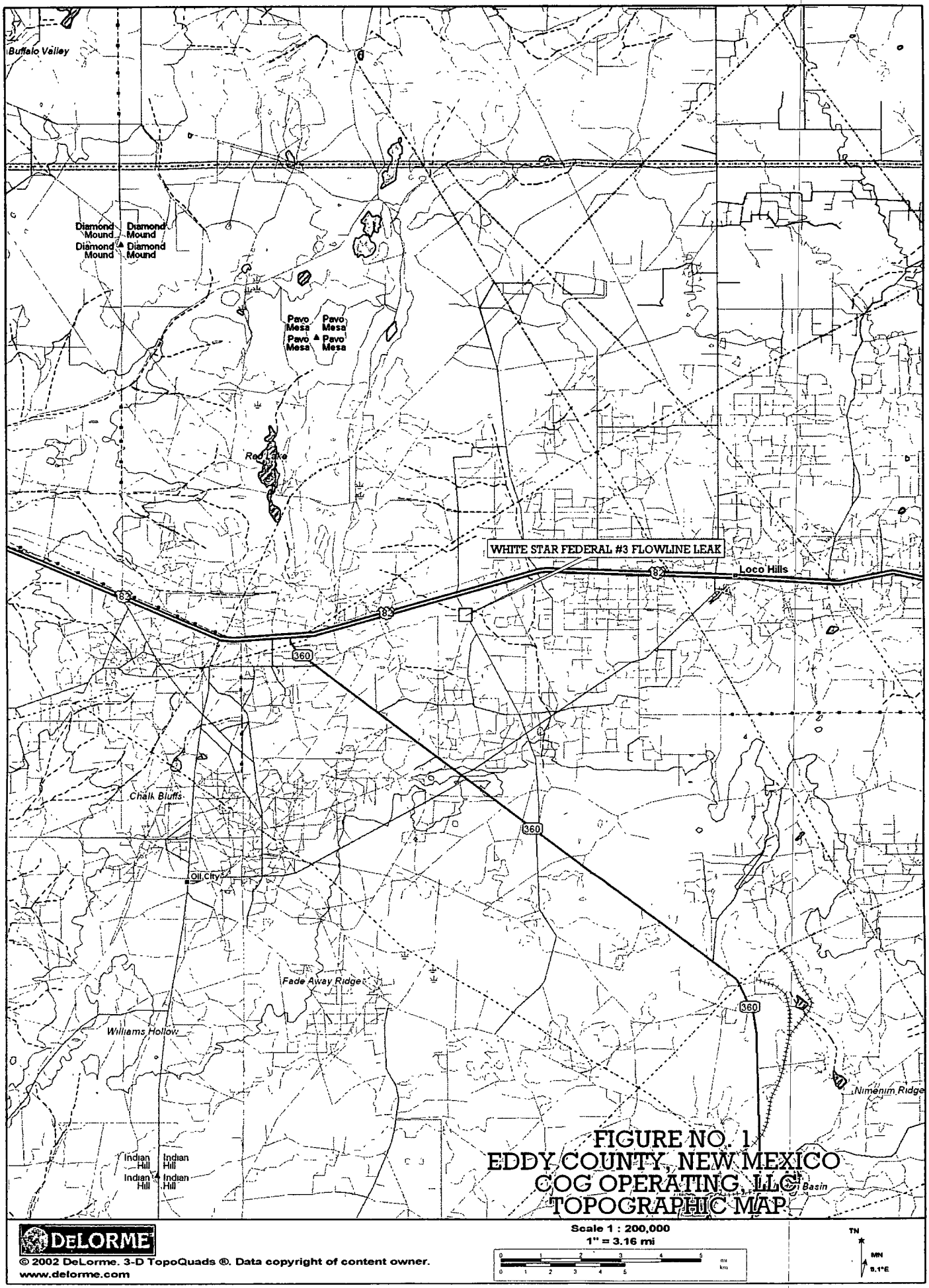

FIGURE NO. 1
EDDY COUNTY, NEW MEXICO
COG OPERATING, LLC
TOPOGRAPHIC MAP

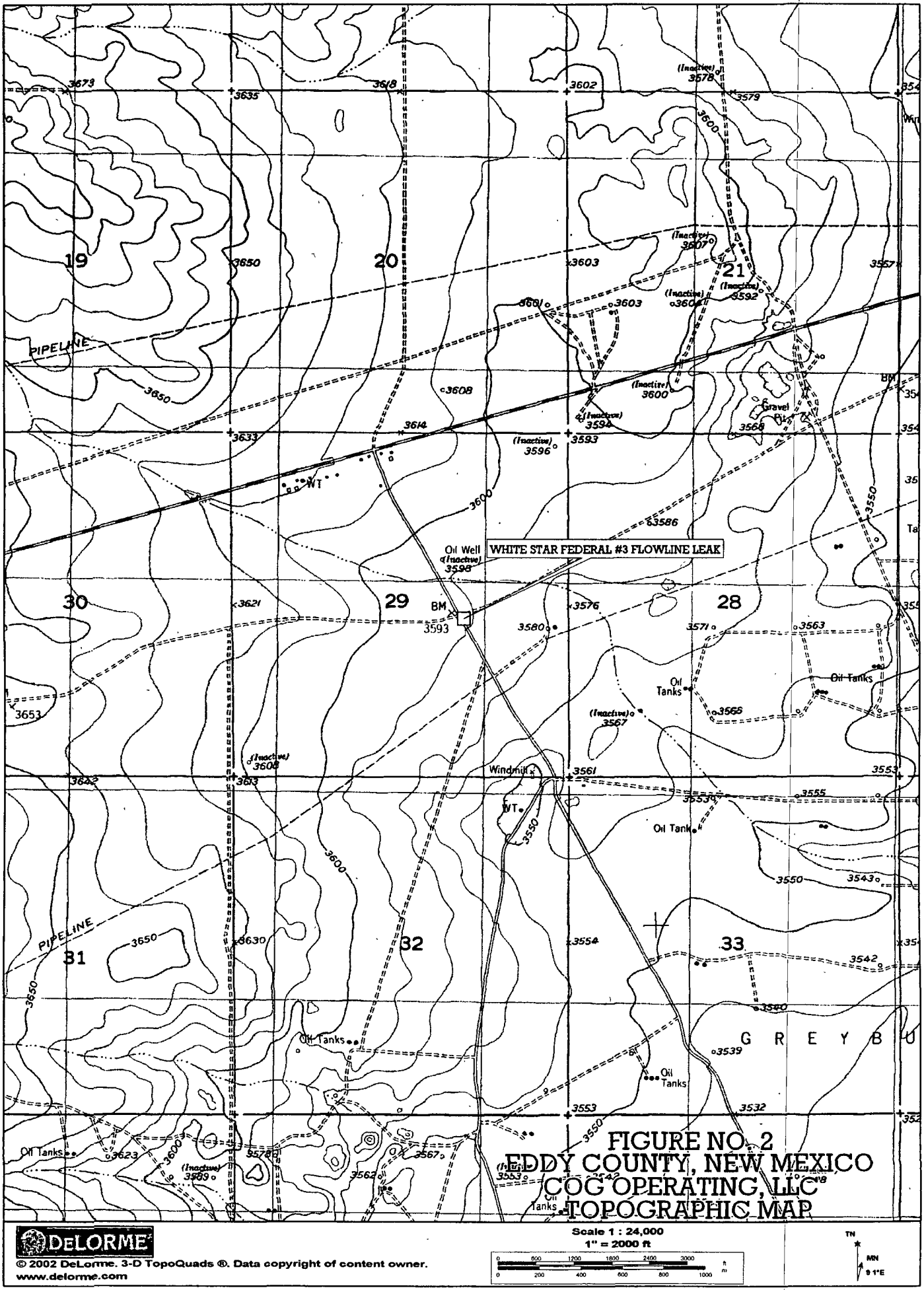

FIGURE NO. 2
EDDY COUNTY, NEW MEXICO
COG OPERATING, LLC
TOPOGRAPHIC MAP

Scale 1 : 24,000
1" = 2000 ft

TN
MN
9 1°E

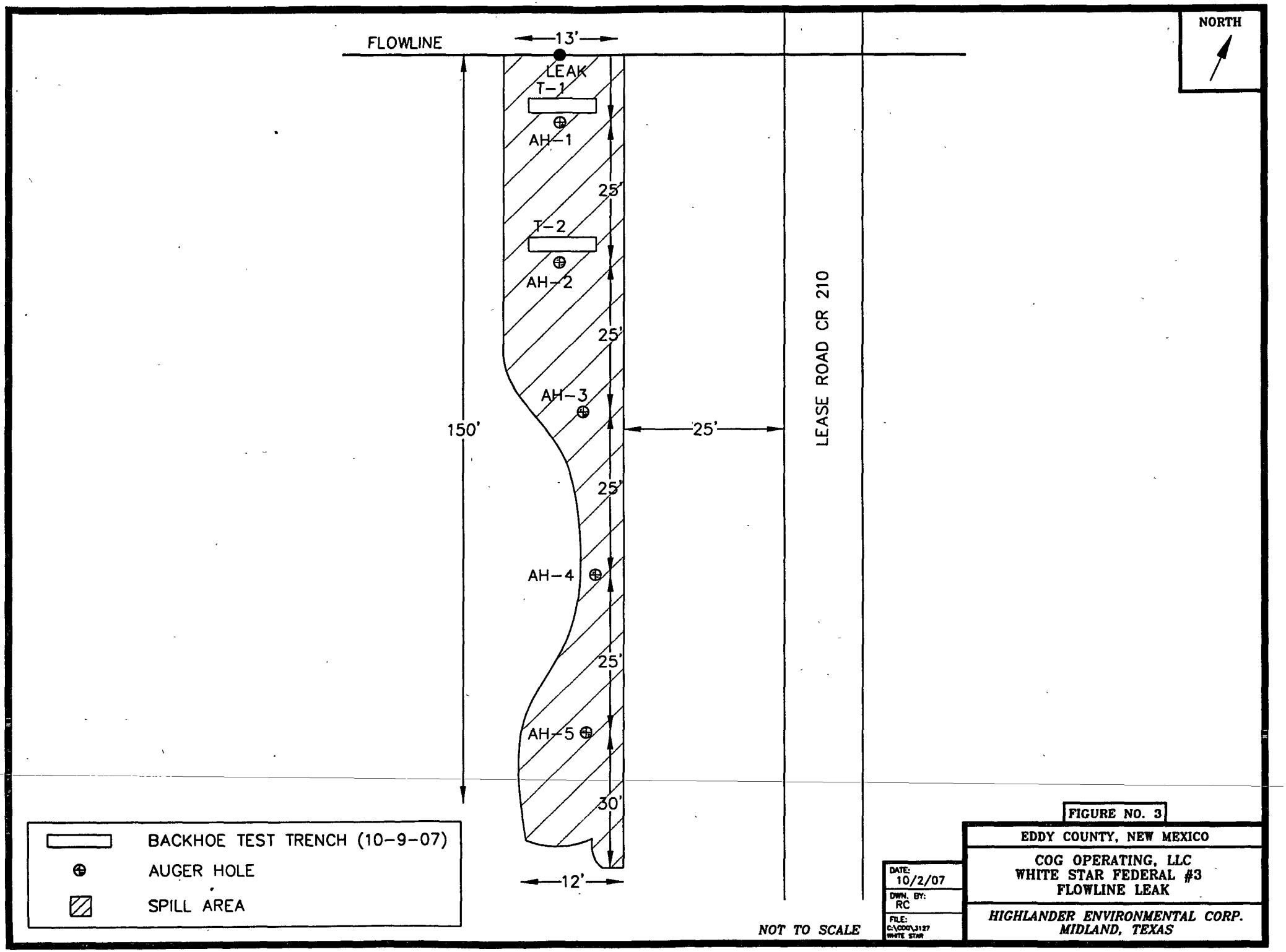

FIGURE NO. 3

EDDY COUNTY, NEW MEXICO

COG OPERATING, LLC
WHITE STAR FEDERAL #3
FLOWLINE LEAK

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

APPENDIX A

TABLE 1. RECORDS OF WELLS IN EDDY COUNTY, NEW MEXICO. (Continued)

LOCATION NUMBER	OWNER OR NAME	DATE COMPLETED	TOPOGRAPHIC SITUATION	ALTITUDE ABOVE SEA LEVEL (feet)	DEPTH OF WELL (feet)	DIAMETER OF WELL (inches)	PRINCIPAL WATER-BEARING BED	
							CHARACTER OF MATERIAL	GEOLOGIC UNIT
17.28.2.240	Hal Bogle	–	Flat between mesas	–	–	6 (?)	Redbeds (?)	Dockum (?)
14.220	do.	–	Rolling	–	–	7	do.	do.
19.200	do.	–	do.	–	–	8	Redbeds, gypsum (?)	Chalk Bluff or Rustler
22.230	–	–	Flat between mesas	–	–	6	Redbeds (?)	Rustler or Dockum (?)
17.29.22.110	–	–	Bear Grass draw	3,550	–	6	do.	Dockum (?)
29.400	Bishop (?)	–	Flat	–	–	7	do.	do.
17.31.34.000	–	–	Rolling	–	–	6 (?)	Redbeds	Dockum
18.21.13.310	Andy Teel	1915	–	4,100	520	8	Limestone	San Andres
27.440	do.	1947	Broad valley	4,200	667	10	do.	do.
32.430	George Teel	1946	Rolling	4,300	815	6	do.	do.
18.23.6.140	Couhape Bros.	1941	S. of Rio Penasco	4,060	500	10	do.	do.
18.25.23.111	G. M. Phelps	–	Blackdom Terrace	–	–	–	Alluvium (?)	Quaternary (?)

See explanation at beginning of table.

LOCATION NUMBER	WATER LEVEL: BELOW LAND SURFACE (feet)	WATER LEVEL: DATE OF MEASUREMENT	YIELD (g.p.m.)	METHOD OF LIFT	USE OF WATER	REMARKS
17.28.2.240	27.6	Dec. 1, 1948	3	W	S	Depth to water measured while pumping.
14.220	80	–	61	W	S & D	Driller: Cy Hinshaw. See analysis, Table 3.
19.200	224.3	Dec. 2, 1948	1.2	W	S	Depth to water measured while pumping.
22.230	45.5	Dec. 1, 1948	–	N	N	Abandoned stock well.
17.29.22.110	79.7	Nov. 29, 1948	3 E.	W	S	Depth to water measured while pumping.
29.400	210	Dec. 3, 1948	1.1	W	S	do.
17.31.34.000	271+	Dec. 6, 1948	3.5	W	S	do. See analysis, Table 3.
18.21.13.310	505	–	10 R.	W	S & D	Formerly C.C.C. well. Cased to 30 ft.
27.440	530	–	–	W	S	Cased to 120 ft.
32.430	800 (?)	–	12 R.	W	S & D	Lowered cylinder 5 ft. in 1948 because water level declined. Cased to 380 ft.
18.23.6.140	440	Jan. 12, 1950	–	W	S & D	
18.25.23.111	117.8	Jan. 1950	–	W	S	

e explanation at beginning of table.
Measured Dec. 3, 1948.

APPENDIX B

Summary Report

Tim Reed
Highlander Environmental Services
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: October 17, 2007

Work Order: 7101027

Project Location: Eddy County, NM
Project Name: COG/White Star Federal #3
Project Number: 3127

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
138976	AH-1A (1.0'-1.5')	soil	2007-10-09	00:00	2007-10-10
138977	AH-1A (2.0'-2.5')	soil	2007-10-09	00:00	2007-10-10
138978	T-1 6.0'	soil	2007-10-09	00:00	2007-10-10
138979	T-1 8.0'	soil	2007-10-09	00:00	2007-10-10
138980	T-2 7.0'	soil	2007-10-09	00:00	2007-10-10
138981	T-2 9.0'	soil	2007-10-09	00:00	2007-10-10

	BTEX			
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)
138976 - AH-1A (1.0'-1.5')	**0.924**	**21.8**	**19.3**	**22.6**
138977 - AH-1A (2.0'-2.5')	<0.0100	**0.0224**	**0.0641**	**0.111**

Sample: 138978 - T-1 6.0'

Param	Flag	Result	Units	RL
Chloride		**822**	mg/Kg	2.00

Sample: 138979 - T-1 8.0'

Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00

Sample: 138980 - T-2 7.0'

Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00

Sample: 138981 - T-2 9.0'

Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Tim Reed
Highlander Environmental Services
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: October 17, 2007

Work Order: 7101027

Project Location: Eddy County, NM
Project Name: COG/White Star Federal #3
Project Number: 3127

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
138976	AH-1A (1.0'-1.5')	soil	2007-10-09	00:00	2007-10-10
138977	AH-1A (2.0'-2.5')	soil	2007-10-09	00:00	2007-10-10
138978	T-1 6.0'	soil	2007-10-09	00:00	2007-10-10
138979	T-1 8.0'	soil	2007-10-09	00:00	2007-10-10
138980	T-2 7.0'	soil	2007-10-09	00:00	2007-10-10
138981	T-2 9.0'	soil	2007-10-09	00:00	2007-10-10

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.

Blair Leftwich

Dr. Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project COG/White Star Federal #3 were received by TraceAnalysis, Inc. on 2007-10-10 and assigned to work order 7101027. Samples for work order 7101027 were received intact at a temperature of 3.1 deg C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
BTEX	S 8021B
Chloride (Titration)	SM 4500-Cl B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 7101027 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 138976 - AH-1A (1.0'-1.5')

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	41991	Date Analyzed:	2007-10-11	Analyzed By:	DC
Prep Batch:	36269	Sample Preparation:	2007-10-11	Prepared By:	DC

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		**0.924**	mg/Kg	5	0.0100
Toluene	[1]	**21.8**	mg/Kg	5	0.0100
Ethylbenzene		**19.3**	mg/Kg	5	0.0100
Xylene		**22.6**	mg/Kg	5	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		3.46	mg/Kg	5	5.00	69	39.6 - 116
4-Bromofluorobenzene (4-BFB)	[2]	7.76	mg/Kg	5	5.00	155	47.3 - 144.2

Sample: 138977 - AH-1A (2.0'-2.5')

Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	41991	Date Analyzed:	2007-10-11	Analyzed By:	DC
Prep Batch:	36269	Sample Preparation:	2007-10-11	Prepared By:	DC

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0100	mg/Kg	1	0.0100
Toluene		**0.0224**	mg/Kg	1	0.0100
Ethylbenzene		**0.0641**	mg/Kg	1	0.0100
Xylene		**0.111**	mg/Kg	1	0.0100

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.742	mg/Kg	1	1.00	74	39.6 - 116
4-Bromofluorobenzene (4-BFB)		0.812	mg/Kg	1	1.00	81	47.3 - 144.2

Sample: 138978 - T-1 6.0'

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	42024	Date Analyzed:	2007-10-12	Analyzed By:	AR
Prep Batch:	36305	Sample Preparation:		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**822**	mg/Kg	50	2.00

[1] Estimated concentration value greater than standard range.
[2] High surrogate recovery due to peak interference.

Sample: 138979 - T-1 8.0'

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	42024	Date Analyzed:	2007-10-12	Analyzed By:	AR
Prep Batch:	36305	Sample Preparation:		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<100	mg/Kg	50	2.00

Sample: 138980 - T-2 7.0'

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	42072	Date Analyzed:	2007-10-16	Analyzed By:	AR
Prep Batch:	36354	Sample Preparation:		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<100	mg/Kg	50	2.00

Sample: 138981 - T-2 9.0'

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	42072	Date Analyzed:	2007-10-16	Analyzed By:	AR
Prep Batch:	36354	Sample Preparation:		Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<100	mg/Kg	50	2.00

Method Blank (1) QC Batch: 41991

QC Batch:	41991	Date Analyzed:	2007-10-11	Analyzed By:	DC
Prep Batch:	36269	QC Preparation:	2007-10-11	Prepared By:	DC

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00110	mg/Kg	0.01
Toluene		<0.00150	mg/Kg	0.01
Ethylbenzene		<0.00160	mg/Kg	0.01
Xylene		<0.00410	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.773	mg/Kg	1	1.00	77	58.2 - 121.3
4-Bromofluorobenzene (4-BFB)		0.593	mg/Kg	1	1.00	59	53.1 - 111.6

Method Blank (1) QC Batch: 42024

QC Batch: 42024 | Date Analyzed: 2007-10-12 | Analyzed By: AR
Prep Batch: 36305 | QC Preparation: 2007-10-12 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.500	mg/Kg	2

Method Blank (1) QC Batch: 42072

QC Batch: 42072 | Date Analyzed: 2007-10-16 | Analyzed By: AR
Prep Batch: 36354 | QC Preparation: 2007-10-16 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<0.500	mg/Kg	2

Laboratory Control Spike (LCS-1)

QC Batch: 41991 | Date Analyzed: 2007-10-11 | Analyzed By: DC
Prep Batch: 36269 | QC Preparation: 2007-10-11 | Prepared By: DC

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.858	mg/Kg	1	1.00	<0.00110	86	71.2 - 119
Toluene	0.884	mg/Kg	1	1.00	<0.00150	88	76.3 - 116.5
Ethylbenzene	0.892	mg/Kg	1	1.00	<0.00160	89	77.6 - 114
Xylene	2.70	mg/Kg	1	3.00	<0.00410	90	78.8 - 113.9

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	0.857	mg/Kg	1	1.00	<0.00110	86	71.2 - 119	0	20
Toluene	0.888	mg/Kg	1	1.00	<0.00150	89	76.3 - 116.5	0	20
Ethylbenzene	0.904	mg/Kg	1	1.00	<0.00160	90	77.6 - 114	1	20
Xylene	2.75	mg/Kg	1	3.00	<0.00410	92	78.8 - 113.9	2	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	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.716	0.726	mg/Kg	1	1.00	72	73	56.1 - 107.8
4-Bromofluorobenzene (4-BFB)	0.694	0.698	mg/Kg	1	1.00	69	70	56.2 - 118.8

Laboratory Control Spike (LCS-1)

QC Batch: 42024 | Date Analyzed: 2007-10-12 | Analyzed By: AR
Prep Batch: 36305 | QC Preparation: 2007-10-12 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	95.8	mg/Kg	1	100	<0.500	96	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	97.0	mg/Kg	1	100	<0.500	97	85 - 115	1	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 42072 | Date Analyzed: 2007-10-16 | Analyzed By: AR
Prep Batch. 36354 | QC Preparation: 2007-10-16 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	105	mg/Kg	1	100	<0.500	105	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	106	mg/Kg	1	100	<0.500	106	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 138977

QC Batch: 41991 | Date Analyzed: 2007-10-11 | Analyzed By: DC
Prep Batch: 36269 | QC Preparation: 2007-10-11 | Prepared By: DC

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	0.930	mg/Kg	1	1.00	<0.00110	93	65.7 - 119.1
Toluene	0.980	mg/Kg	1	1.00	0.0224	96	47.7 - 153.8
Ethylbenzene	1.04	mg/Kg	1	1.00	0.0641	98	73.5 - 126.3
Xylene	3.16	mg/Kg	1	3.00	0.1107	102	73.6 - 125.9

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	0.913	mg/Kg	1	1.00	<0.00110	91	65.7 - 119.1	2	20
Toluene	0.973	mg/Kg	1	1.00	0.0224	95	47.7 - 153.8	1	20
Ethylbenzene	1.04	mg/Kg	1	1.00	0.0641	98	73.5 - 126.3	0	20
Xylene	3.14	mg/Kg	1	3.00	0.1107	101	73.6 - 125.9	1	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	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.699	0.710	mg/Kg	1	1	70	71	51 - 109.6
4-Bromofluorobenzene (4-BFB)	0.783	0.783	mg/Kg	1	1	78	78	60.3 - 124.3

Matrix Spike (MS-1) Spiked Sample: 138979

QC Batch: 42024 | Date Analyzed: 2007-10-12 | Analyzed By: AR
Prep Batch: 36305 | QC Preparation: 2007-10-12 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	4940	mg/Kg	50	5000	<25.0	98	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	5000	mg/Kg	50	5000	<25.0	100	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 139334

QC Batch: 42072 | Date Analyzed: 2007-10-16 | Analyzed By: AR
Prep Batch: 36354 | QC Preparation: 2007-10-16 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	9200	mg/Kg	50	5000	4934.69	85	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	9260	mg/Kg	50	5000	4934.69	86	85 - 115	1	20

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

Standard (ICV-1)

QC Batch: 41991 | Date Analyzed: 2007-10-11 | Analyzed By: DC

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0860	86	85 - 115	2007-10-11
Toluene		mg/Kg	0.100	0.0871	87	85 - 115	2007-10-11
Ethylbenzene		mg/Kg	0.100	0.0882	88	85 - 115	2007-10-11
Xylene		mg/Kg	0.300	0.270	90	85 - 115	2007-10-11

Standard (CCV-1)

QC Batch: 41991 | Date Analyzed: 2007-10-11 | Analyzed By: DC

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0851	85	85 - 115	2007-10-11

continued ...

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Toluene		mg/Kg	0.100	0.0868	87	85 - 115	2007-10-11
Ethylbenzene		mg/Kg	0.100	0.0877	88	85 - 115	2007-10-11
Xylene		mg/Kg	0.300	0.266	89	85 - 115	2007-10-11

Standard (ICV-1)

QC Batch: 42024 Date Analyzed: 2007-10-12 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2007-10-12

Standard (CCV-1)

QC Batch: 42024 Date Analyzed: 2007-10-12 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.1	98	85 - 115	2007-10-12

Standard (ICV-1)

QC Batch: 42072 Date Analyzed: 2007-10-16 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	92.6	92	85 - 115	2007-10-16

Standard (CCV-1)

QC Batch: 42072 Date Analyzed: 2007-10-16 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	107	107	85 - 115	2007-10-16

Work order: 7101027

Analysis Request and Chain of Custody Record

HIGHLANDER ENVIRONMENTAL CORP.

1910 N. Big Spring St.
Midland, Texas 79705

(432) 682-4559 Fax (432) 682-3946

PAGE: 1 OF: 1

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 3127

PROJECT NAME: COG/White Star Federal #3 Eddy Co., NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	ANALYSIS REQUEST (Circle or Specify Method No.): 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, Chlorides	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)
138976	10/02/07		S		X	AH-1A (1.0'-1.5')	1				X		X																
977			S		X	AH-1A (2.0'-2.5')	1				X		X																
978			S		X	T-1 6.0'	1				X															X			
979			S		X	T-1 8.0'	1				X															X			
980			S		X	T-2 7.0'	1				X															X			
981			S		X	T-2 9.0'	1				X															X			

RELINQUISHED BY: (Signature) Date: 10/10/07 Time: 9:30

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Sign) Ray Taylor / Kelly Harrison Date: 10/09/07 Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

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

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: Texas ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature)
DATE: 10/10/07 TIME: 11:30

HIGHLANDER CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.1°C intact

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

REMARKS: All tests - Midland

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

APPENDIX C

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company COG OPERATING LLC	Contact Diane Kuykendall
Address 550 W. Texas, Suite 1300 Midland, TX 79701	Telephone No. 432-683-7443
Facility Name White Star Federal #5	Facility Type Gas Well – Tank Battery

Surface Owner	Mineral Owner	Lease No. NMLC-069033

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	29	17S	29E	1650	North	2220	East	Eddy

Latitude_____ Longitude_____

NATURE OF RELEASE

Type of Release **Oil and Water**	Volume of Release **3bbs Oil/ 7bbls water**	Volume Recovered **None**
Source of Release **Flow line**	Date and Hour of Occurrence **Not Known**	Date and Hour of Discovery **08/09/07 At 8:00 am NM time**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **NM OCD**	
By Whom? **Keith Conner**	Date and Hour **08/09/07 At 10:00**	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

External Corrosion. Replaced with 3" poly line.

Describe Area Affected and Cleanup Action Taken.*

Area covered 10' X 90'. Ran down the road right of way. Called Roustabout, waiting for Highlander Environmental to test and sample. Highlander will send second and final report on clean up.

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:	OIL CONSERVATION DIVISION
Printed Name: Kanicia Carrillo	Approved by District Supervisor:
Title: Regulatory Analyst	Approval Date: / Expiration Date:
E-mail Address: kcarrillo@conchoresources.com	Conditions of Approval: / Attached ☐
Date: 08/09/07 Phone: 432-685-4332	

* Attach Additional Sheets If Necessary