SITE INFORMATION

Report Type: Closure Report

General Site Information: 2RP-474						
Site:	**Mesilla State #1 Tank Battery**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit H**	**Sec 16**	**T17S**	**R30E**		
Lease Number:	**API # 30-015-31367**					
County:	**Eddy County**					
GPS:	**32 50.102° N**			**103 58.148° W**		
Surface Owner:	State					
Mineral Owner:						
Directions:	From the intersection of Hwy 82 and Goat Roper Road in Loco Hills, NM, travel south on Goat Ropers Road for 1.2 miles and turn right. Travel 0.3 miles to four way and turn right, travel 500 feet turn left, travel 400 feet to site.					

Release Data:	
Date Released:	8/31/2010
Type Release:	Produced water
Source of Contamination:	Release from produced water line at heater treater.
Fluid Released:	40 bbls
Fluids Recovered:	40 bbls

Official Communication:			
Name:	Josh Russo		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	550 W. Texas, Suite 100		1910 N. Big Spring
P.O. Box			
City:	Midland, Tx 79701		Midland, Texas
Phone number:	(432) 212-2399		(432) 682-4559
Fax:	(432) 687-8008		(432) 682-3946
Email:	jrusso@conchoresources.com		ike.tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	0	**0**
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	***0***	*0*
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	**0**	0
Total Ranking Score:	**0**	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	5,000

TETRA TECH

February 1, 2011

Mr. Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
1301 West Grand Avenue
Artesia, NM 88210

Re: Closure Report for the COG Operating LLC., Mesilla State #1 Tank Battery, Unit H, Section 16, Township 17 South, Range 30 East, Eddy County, New Mexico. (2RP-474)

Mr. Bratcher:

Tetra Tech Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Mesilla State #1 Tank Battery site located in Unit H, Section 16 Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32 50.102°, W 103 58.148°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on August 31, 2010, when approximately 40 barrels of produced water was released from a ruptured PVC line, which was connected to a heater treater. The line was removed and subsequently replaced with a steel line. A vacuum truck was utilized to recover approximately 40 barrels of standing fluids, which were contained within the facility berm. The initial and final C-141s are enclosed in Appendix A.

Groundwater

No water wells were listed within Township 17 South and Range 30 East, which contains the site. According to *the Geology and Groundwater Resources of Eddy County, New Mexico (Report 3)*, one well is located approximately 4 miles northeast of the site in Section 31, Township 16 South and Range 31 East with a depth to groundwater of approximately 290' below ground surface (bgs). According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 300' bgs. *The Geology and Groundwater Resources of Eddy County, New Mexico (Report 3)* well report data is included in Appendix B.

Regulatory

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,

Tetra Tech
1910 North Big Spring, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

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 upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Results

On September 10, 2010, Tetra Tech personnel inspected and sampled the spill area which measured approximately 70' x 15'. Two (2) auger holes (AH-1 and AH-2) were installed using a stainless steel hand auger to assess the impacted soils. See site map Figure 3 for auger hole locations. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1.

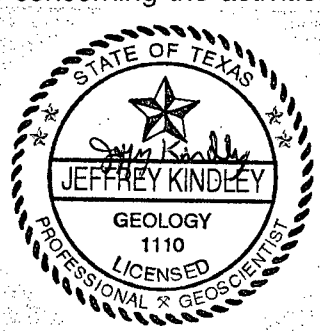
Referring to Table 1, none of the samples exceeded the RRAL for TPH and BTEX. Elevated chloride concentrations were detected in the two auger holes to maximum depths of 2.5' and 1' bgs in AH-1 and AH-2, respectively. Samples beyond these depths were below 200 mg/kg.

Corrective Action

On November 16, 2010, Tetra Tech personnel were onsite to oversee the excavation of chloride impacted soils at the site. The soils were excavated along the footprint of the spill to a depth of 2.5' in the area of AH-1 and 1' in the vicinity of AH-2. Approximately 40 cubic yards of chloride impacted soils were removed and transported offsite for disposal at Controlled Recovery Inc. (CRI) of Carlsbad, NM. Upon completion of the excavation, the site was backfilled with clean caliche and brought up to surface grade. See Figure 4 for excavation locations.

Closure Request

Based upon the remediation performed at this site, COG Operating LLC respectfully requests closure of this site. A form C-141 final is included in Appendix A. If you have any question or comments concerning the activities performed at the Site, please call me at (432) 682-4559.

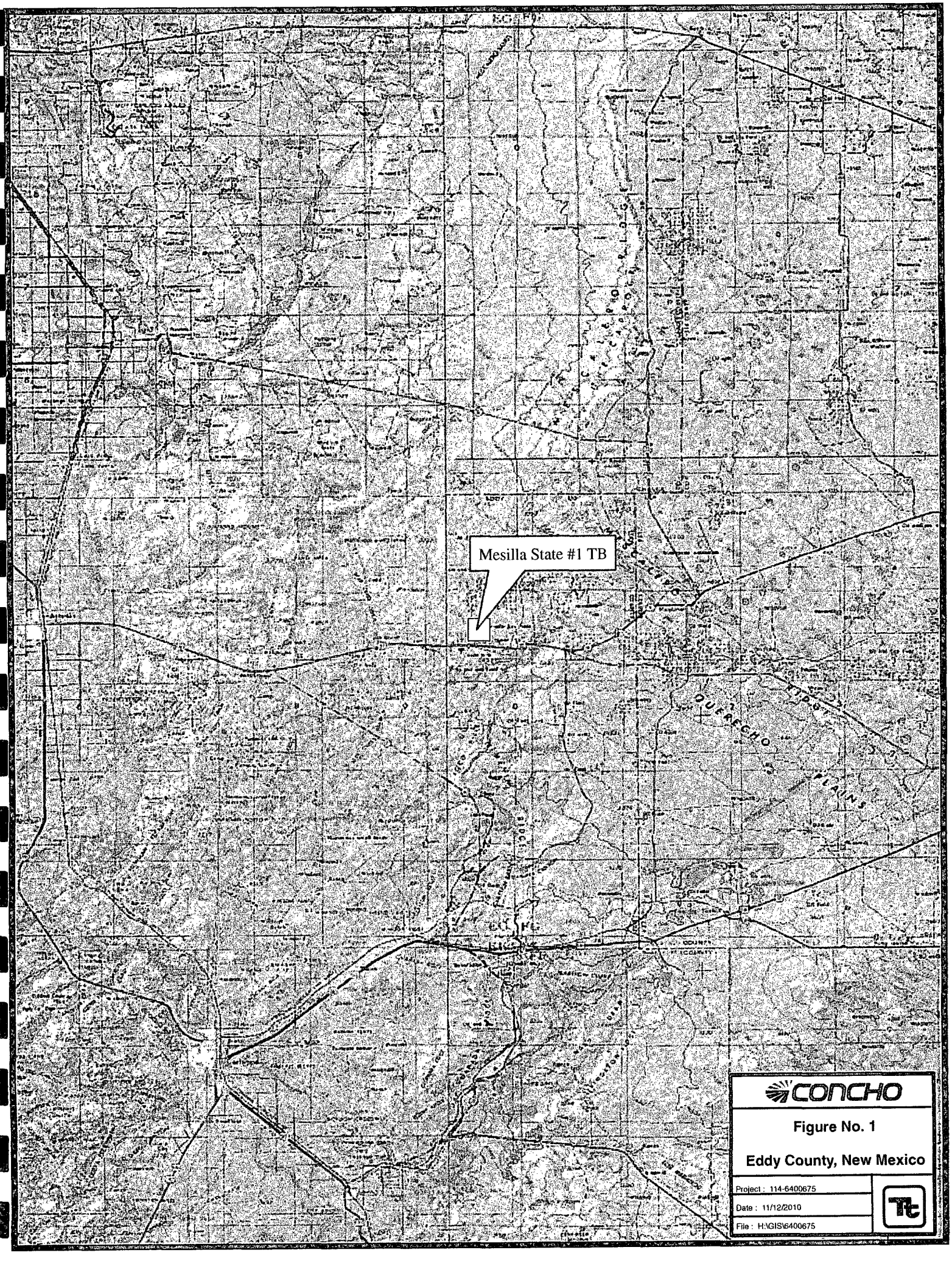


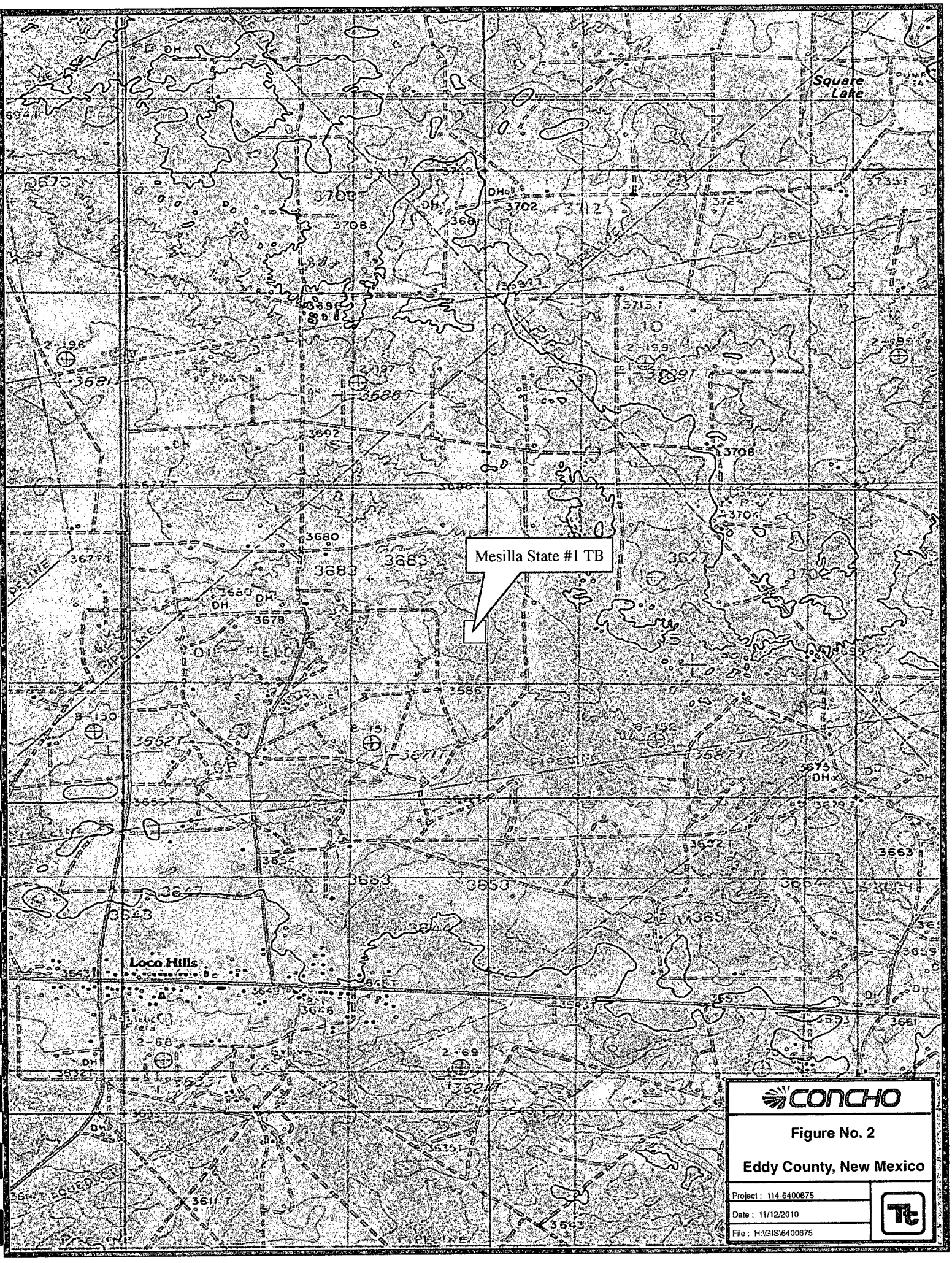
Respectfully submitted,
Tetra Tech Inc.

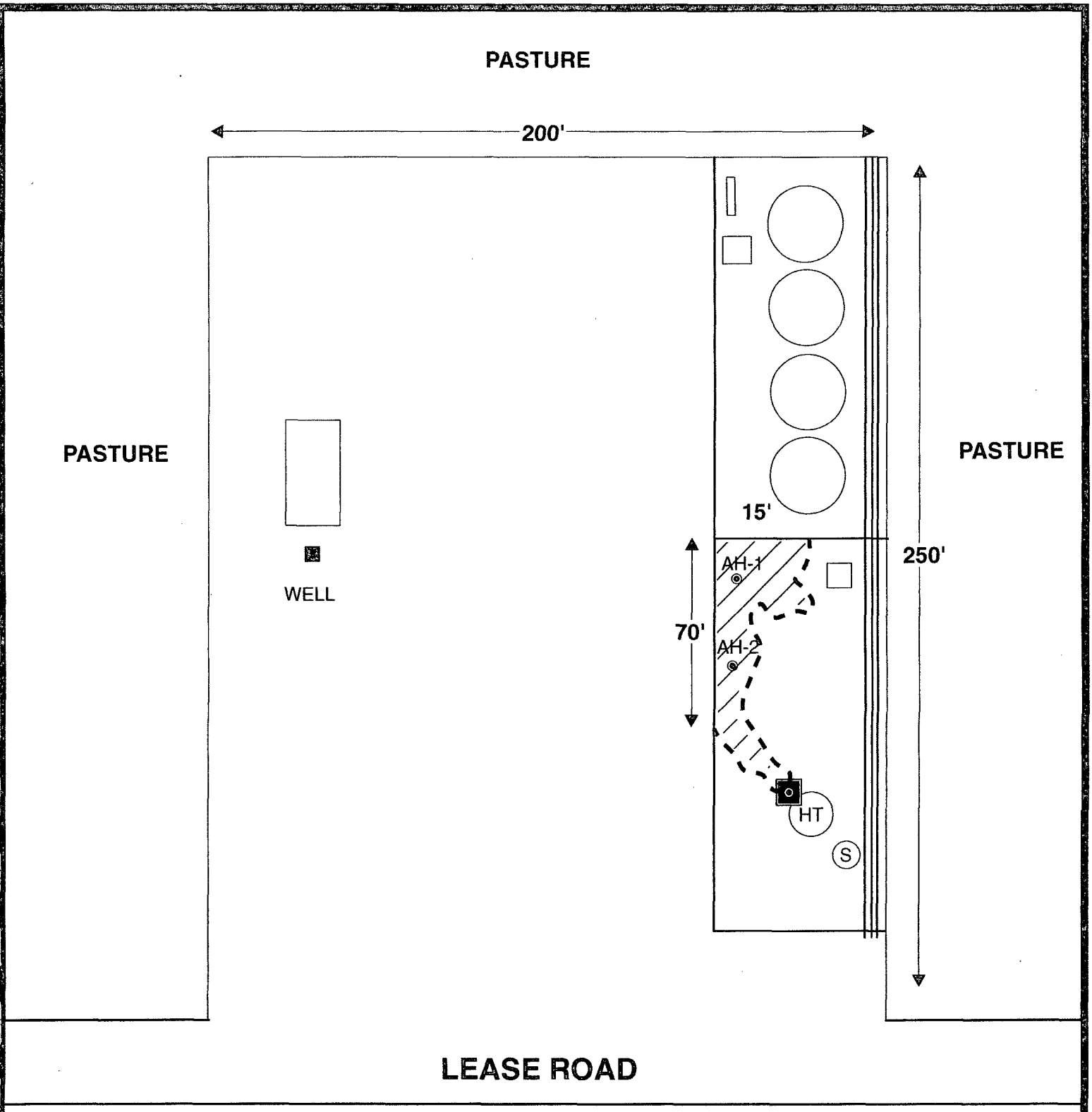
Jeff Kindley, P.G.
Senior Project Manager

cc: Pat Ellis – COG

FIGURES


Mesilla State #1 TB
QUERECHO PLAINS
CONCHO
Figure No. 1
Eddy County, New Mexico
Project : 114-6400675
Date : 11/12/2010
File : H:\GIS\6400675


Square Lake
Mesilla State #1 TB
OIL FIELD
Loco Hills
CONCHO
Figure No. 2
Eddy County, New Mexico
Project : 114-6400675
Date : 11/12/2010
File : H:\GIS\6400675



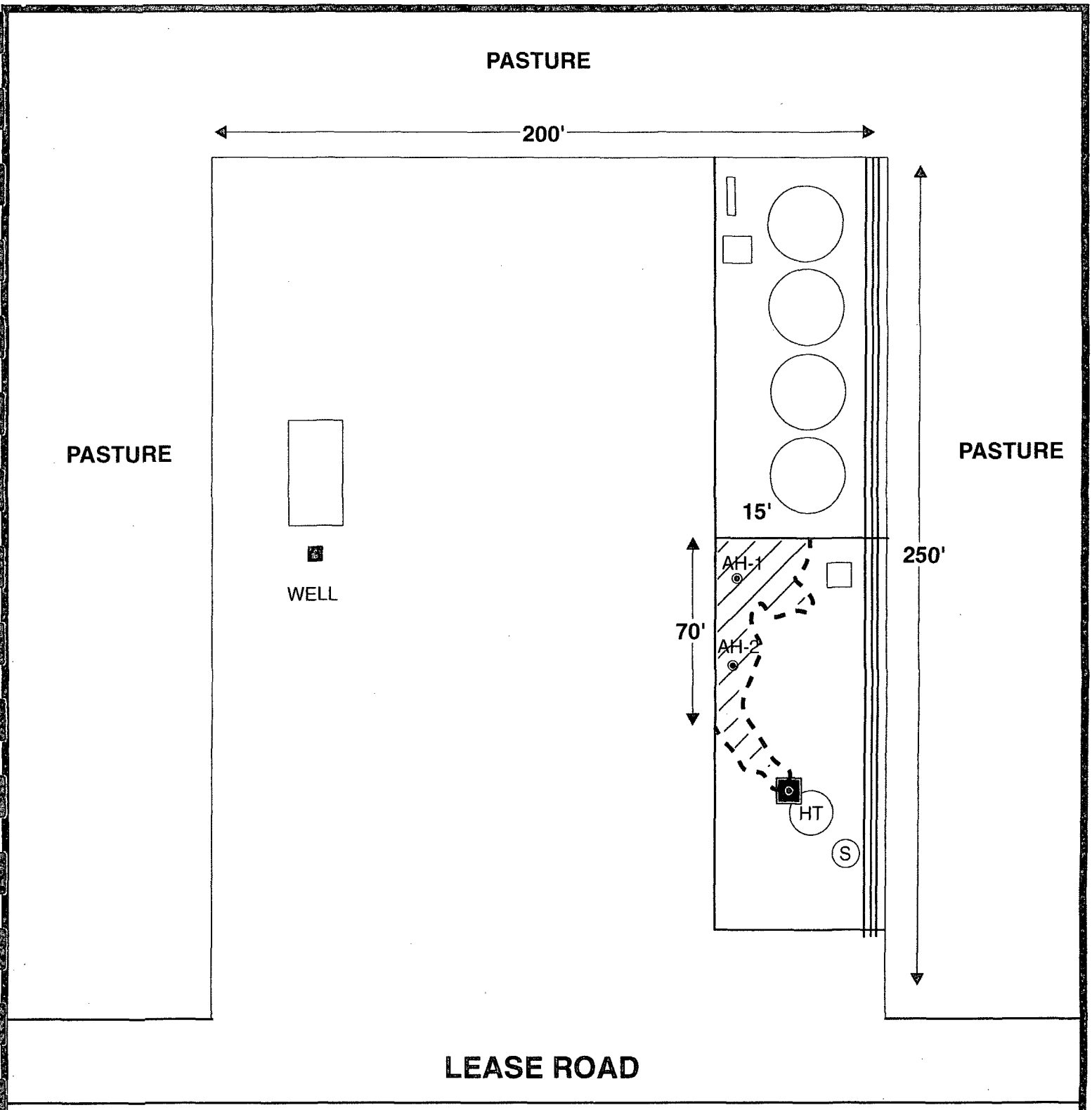
Explanation

- Spill Area
- Auger Hole Sample
- Leak Site

CONCHO

Mesilla State #1 TB
Figure No. 3 Site Map
Eddy County, New Mexico

Project : 114-6400675	
Date : 11/12/2010	
File : H:\GIS\6400675	



Explanation

- Spill Area / Excavation Area
- Auger Hole Sample
- Leak Area

CONCHO

Mesilla State #1 TB
Figure No. 4 Site Map
Eddy County, New Mexico

Project : 114-6400675	
Date : 11/12/2010	
File : H:\GIS\6400675	

TABLES

Table 1
COG Operating LLC.
MESILLA STATE #1 TANK BATTERY
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
AH-1	9/10/2010	0-1'			X	23.0	<50.0	23.0	<0.0200	<0.0200	0.0904	0.175	16,600
	"	1-1.5'			X	-	-	-	-	-	-	-	7,380
	"	2-2.5'			X	-	-	-	-	-	-	-	1,010
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200
	"	5-5.5'		X		-	-	-	-	-	-	-	<200
AH-2	9/10/2010	0-1'			X	233	814	1,047	<0.100	0.128	0.371	1.25	7,060
	"	1-1.5'		X		-	-	-	-	-	-	-	<200
	"	2-2.5'		X		-	-	-	-	-	-	-	<200
	"	3-3.5'		X		-	-	-	-	-	-	-	<200
	"	4-4.5'		X		-	-	-	-	-	-	-	<200
	"	5-5.5'		X		-	-	-	-	-	-	-	<200

BEB Below Excavation Bottom

(--) Not Analyzed

Excavated Depths

APPENDIX A
INITIAL/FINAL C-141

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

RECEIVED
SEP 07 2010
NMOCD ARTESIA

Form C-141
Revised October 10, 2003

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

30-015-31367

nMLB1031445980

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC 229137	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Mesilla State #1 Tank Battery	Facility Type	Tank Battery

Surface Owner State	Mineral Owner	Lease No. B-2103

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	16	17S	30E					Eddy

Latitude 32 50.102 **Longitude** 103 58.148

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 40bbls	Volume Recovered 40bbls
Source of Release Produced water line at heater treater	Date and Hour of Occurrence 08/31/2010	Date and Hour of Discovery 08/31/2010 12:30 p.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher—OCD	
By Whom? Josh Russo	Date and Hour 09/01/2010 8:44 a.m.	
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.*

The produced water line at the heater treater came apart due to old glue that would no longer hold it together. The PVC at the heater treater has been replaced with a steel line.

Describe Area Affected and Cleanup Action Taken.*

Initially 40bbls of produced water was released from the line at the heater treater. All fluid released was contained inside the facility firewall, and we were able to recover all standing fluid. The dimensions of the spill area inside the facility measured 20' x 40'. (The closest well location to the release is the Mesilla State #1, API#30-015-31367, Unit H, 2310' FNL 330' FEL, Sec.16-T17S-R30E). Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation work.

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:

Printed Name: Josh Russo

Title: HSE Coordinator

E-mail Address: jrusso@conchoresources.com

Date: 09/07/2010 Phone: 432-212-2399

OIL CONSERVATION DIVISION

Approved by District Supervisor: Signed By Mike Bratcher

Approval Date: NOV 10 2010 Expiration Date:

Conditions of Approval:

REMEDIATION per OCD Rules and Guidelines. SUBMIT REMEDIATION PROPOSAL BY: 12/10/2010

Attached ☐

* Attach Additional Sheets If Necessary

2RP-414

(I)

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

RECEIVED
FEB 14 2011
NMOCD ARTESIA

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 **Pat Ellis**
Address **550 W. Texas, Suite 100, Midland, Tx 79701**	Telephone No. **(432) 230-0077**
Facility Name **Mesilla State #1 Tank Battery**	Facility Type **Tank Battery**

Surface Owner: **State**	Mineral Owner	Lease No. B-2103

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	16	17S	30E					Eddy

Latitude N 32 50.102° **Longitude** W 103 58.148°

NATURE OF RELEASE

Type of Release: **Produced Water**	Volume of Release **40 bbls**	Volume Recovered **40 bbls**
Source of Release Produced water line at heater treater	Date and Hour of Occurrence **08/31/2010**	Date and Hour of Discovery **08/31/2010 12:30 P.M.**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Mike Bratcher – OCD**	
By Whom? Josh Russo	Date and Hour 09/01/10 8:44 P.M.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*
The produced water line at the heater treater separated. The PVC at the heater treater was replaced with steel line.

Describe Area Affected and Cleanup Action Taken.* Initially, 40 bbls of produced water were released and remained with the tank berm. All free standing fluids were recovered. Tetra Tech sampled the site and excavated and removed approximately 40 cubic yards of chloride impacted soils from the site on November 16, 2010. The soils were transported offsite for disposal at CRI in Carlsbad, NM.

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: Jeffrey Kindley as agent for COG	OIL CONSERVATION DIVISION
Printed Name: Jeff Kindley (as agent for COG)	Approved by District Supervisor:
Title: Senior Project Manager	Approval Date: / Expiration Date:
E-mail Address: jeff.kindley@tetratech.com	Conditions of Approval: / Attached ☐
Date: 02/01/11 Phone: (432) 682-4559	

* Attach Additional Sheets If Necessary

APPENDIX B
WATER WELL REPORT

Water Well Data
Average Depth to Groundwater (ft)
COG - Mesilla State #1 Eddy County, New Mexico

16 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19 **110**	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 **288**
18	17	16	15	14	13 **113**
19	20	21	22	23	24
30	29	28	27	26	25
31 **290**	32	33	34	35	36

17 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 **80**	23	24
30	29 **210** **208'**	28	27	26	25
31	32	33	34	35 153	36

17 South 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16 **SITE**	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

17 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34 **271**	35	36 **SITE**

18 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 **400**
18	17	16	15	14 **317**	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 **261**	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

121 Temporary Well Drill by Tetra Tech

APPENDIX C
LABORATORY ANALYSIS

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

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: September 27, 2010

Work Order: 10091330

Project Location: Eddy County, NM
Project Name: COG/Mesilla State #1 TB
Project Number: 114-6400675

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
244429	AH-1 0-1'	soil	2010-09-10	00:00	2010-09-10
244430	AH-1 1-1.5'	soil	2010-09-10	00:00	2010-09-10
244431	AH-1 2-2.5'	soil	2010-09-10	00:00	2010-09-10
244432	AH-1 3-3.5'	soil	2010-09-10	00:00	2010-09-10
244433	AH-1 4-4.5'	soil	2010-09-10	00:00	2010-09-10
244434	AH-1 5-5.5'	soil	2010-09-10	00:00	2010-09-10
244435	AH-2 0-1'	soil	2010-09-10	00:00	2010-09-10
244436	AH-2 1-1.5'	soil	2010-09-10	00:00	2010-09-10
244437	AH-2 2-2.5'	soil	2010-09-10	00:00	2010-09-10
244438	AH-2 3-3.5'	soil	2010-09-10	00:00	2010-09-10

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
244439	AH-2 4-4.5'	soil	2010-09-10	00:00	2010-09-10
244440	AH-2 5-5.5'	soil	2010-09-10	00:00	2010-09-10

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.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Standard Flags

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

Case Narrative

Samples for project COG/Mesilla State #1 TB were received by TraceAnalysis, Inc. on 2010-09-10 and assigned to work order 10091330. Samples for work order 10091330 were received intact at a temperature of 3.7 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	63055	2010-09-15 at 08:15	73591	2010-09-15 at 09:19
Chloride (Titration)	SM 4500-Cl B	63189	2010-09-20 at 12:41	73695	2010-09-21 at 15:04
Chloride (Titration)	SM 4500-Cl B	63190	2010-09-20 at 12:42	73696	2010-09-21 at 15:05
TPH DRO - NEW	S 8015 D	63015	2010-09-13 at 14:45	73458	2010-09-13 at 14:45
TPH GRO	S 8015 D	63055	2010-09-15 at 08:15	73583	2010-09-15 at 09:46

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 10091330 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: 244429 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	73591	Date Analyzed:	2010-09-15	Analyzed By:	AG
Prep Batch:	63055	Sample Preparation:	2010-09-15	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.0200	mg/Kg	1	0.0200
Toluene		<0.0200	mg/Kg	1	0.0200
Ethylbenzene		**0.0904**	mg/Kg	1	0.0200
Xylene		**0.175**	mg/Kg	1	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.33	mg/Kg	1	2.00	116	52.8 - 137
4-Bromofluorobenzene (4-BFB)		2.90	mg/Kg	1	2.00	145	38.4 - 157

Sample: 244429 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73695	Date Analyzed:	2010-09-21	Analyzed By:	AR
Prep Batch:	63189	Sample Preparation:	2010-09-20	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**16600**	mg/Kg	100	4.00

Sample: 244429 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	73458	Date Analyzed:	2010-09-13	Analyzed By:	kg
Prep Batch:	63015	Sample Preparation:	2010-09-13	Prepared By:	kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		91.6	mg/Kg	1	100	92	70 - 130

Sample: 244429 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	73583	Date Analyzed:	2010-09-15	Analyzed By:	AG
Prep Batch:	63055	Sample Preparation:	2010-09-15	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**23.0**	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.29	mg/Kg	1	2.00	114	48.5 - 152
4-Bromofluorobenzene (4-BFB)		3.02	mg/Kg	1	2.00	151	42 - 159

Sample: 244430 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73695	Date Analyzed:	2010-09-21	Analyzed By:	AR
Prep Batch:	63189	Sample Preparation:	2010-09-20	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**7380**	mg/Kg	100	4.00

Sample: 244431 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73695	Date Analyzed:	2010-09-21	Analyzed By:	AR
Prep Batch:	63189	Sample Preparation:	2010-09-20	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1010**	mg/Kg	100	4.00

Sample: 244432 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73696	Date Analyzed:	2010-09-21	Analyzed By:	AR
Prep Batch:	63190	Sample Preparation:	2010-09-20	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 244433 - AH-1 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73696	Date Analyzed:	2010-09-21	Analyzed By:	AR
Prep Batch:	63190	Sample Preparation:	2010-09-20	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 244434 - AH-1 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73696	Date Analyzed:	2010-09-21	Analyzed By:	AR
Prep Batch:	63190	Sample Preparation:	2010-09-20	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 244435 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	73591	Date Analyzed:	2010-09-15	Analyzed By:	AG
Prep Batch:	63055	Sample Preparation:	2010-09-15	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<0.100	mg/Kg	5	0.0200
Toluene		**0.128**	mg/Kg	5	0.0200

continued ...

sample 244435 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Ethylbenzene		**0.371**	mg/Kg	5	0.0200
Xylene		**1.25**	mg/Kg	5	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		5.39	mg/Kg	5	5.00	108	52.8 - 137
4-Bromofluorobenzene (4-BFB)		7.86	mg/Kg	5	5.00	157	38.4 - 157

Sample: 244435 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73696	Date Analyzed:	2010-09-21	Analyzed By:	AR
Prep Batch:	63190	Sample Preparation:	2010-09-20	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**7060**	mg/Kg	100	4.00

Sample: 244435 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	73458	Date Analyzed:	2010-09-13	Analyzed By:	kg
Prep Batch:	63015	Sample Preparation:	2010-09-13	Prepared By:	kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		**814**	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		123	mg/Kg	1	100	123	70 - 130

Sample: 244435 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	73583	Date Analyzed:	2010-09-15	Analyzed By:	AG
Prep Batch:	63055	Sample Preparation:	2010-09-15	Prepared By:	AG

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		**233**		mg/Kg	5	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		5.29	mg/Kg	5	5.00	106	48.5 - 152
4-Bromofluorobenzene (4-BFB)		7.40	mg/Kg	5	5.00	148	42 - 159

Sample: 244436 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73696	Date Analyzed:	2010-09-21	Analyzed By:	AR
Prep Batch:	63190	Sample Preparation:	2010-09-20	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		<200		mg/Kg	50	4.00

Sample: 244437 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73696	Date Analyzed:	2010-09-21	Analyzed By:	AR
Prep Batch:	63190	Sample Preparation:	2010-09-20	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		<200		mg/Kg	50	4.00

Sample: 244438 - AH-2 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73696	Date Analyzed:	2010-09-21	Analyzed By:	AR
Prep Batch:	63190	Sample Preparation:	2010-09-20	Prepared By:	AR

Parameter	Flag	Result	RL	Units	Dilution	RL
Chloride		<200		mg/Kg	50	4.00

Sample: 244439 - AH-2 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73696	Date Analyzed:	2010-09-21	Analyzed By:	AR
Prep Batch:	63190	Sample Preparation:	2010-09-20	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 244440 - AH-2 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	73696	Date Analyzed:	2010-09-21	Analyzed By:	AR
Prep Batch:	63190	Sample Preparation:	2010-09-20	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Method Blank (1) QC Batch: 73458

QC Batch:	73458	Date Analyzed:	2010-09-13	Analyzed By:	kg
Prep Batch:	63015	QC Preparation:	2010-09-13	Prepared By:	kg

Parameter	Flag	MDL Result	Units	RL
DRO		<14.5	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		99.6	mg/Kg	1	100	100	70 - 130

Method Blank (1) QC Batch: 73583

QC Batch:	73583	Date Analyzed:	2010-09-15	Analyzed By:	AG
Prep Batch:	63055	QC Preparation:	2010-09-15	Prepared By:	AG

Parameter	Flag	MDL Result	Units	RL
GRO		<1.65	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.42	mg/Kg	1	2.00	121	67.6 - 150
4-Bromofluorobenzene (4-BFB)		2.19	mg/Kg	1	2.00	110	52.4 - 130

Method Blank (1) QC Batch: 73591

QC Batch: 73591 | Date Analyzed: 2010-09-15 | Analyzed By: AG
Prep Batch: 63055 | QC Preparation: 2010-09-15 | Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.0150	mg/Kg	0.02
Toluene		<0.00950	mg/Kg	0.02
Ethylbenzene		<0.0106	mg/Kg	0.02
Xylene		<0.00930	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.31	mg/Kg	1	2.00	116	66.6 - 122
4-Bromofluorobenzene (4-BFB)		2.63	mg/Kg	1	2.00	132	55.4 - 132

Method Blank (1) QC Batch: 73695

QC Batch: 73695 | Date Analyzed: 2010-09-21 | Analyzed By: AR
Prep Batch: 63189 | QC Preparation: 2010-09-20 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1) QC Batch: 73696

QC Batch: 73696 | Date Analyzed: 2010-09-21 | Analyzed By: AR
Prep Batch: 63190 | QC Preparation: 2010-09-20 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch: 73458 | Date Analyzed: 2010-09-13 | Analyzed By: kg
Prep Batch: 63015 | QC Preparation: 2010-09-13 | Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	232	mg/Kg	1	250	<14.5	93	57.4 - 133.4

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
DRO	247	mg/Kg	1	250	<14.5	99	57.4 - 133.4	6	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
n-Tricosane	92.9	92.8	mg/Kg	1	100	93	93	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 73583 | Date Analyzed: 2010-09-15 | Analyzed By: AG
Prep Batch: 63055 | QC Preparation: 2010-09-15 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	14.4	mg/Kg	1	20.0	<1.65	72	69.9 - 95.4

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
GRO	16.4	mg/Kg	1	20.0	<1.65	82	69.9 - 95.4	13	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)	2.00	2.11	mg/Kg	1	2.00	100	106	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.42	1.34	mg/Kg	1	2.00	71	67	65.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 73591 | Date Analyzed: 2010-09-15 | Analyzed By: AG
Prep Batch: 63055 | QC Preparation: 2010-09-15 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.00	mg/Kg	1	2.00	<0.0150	100	81.9 - 108
Toluene	1.94	mg/Kg	1	2.00	<0.00950	97	81.9 - 107
Ethylbenzene	1.85	mg/Kg	1	2.00	<0.0106	92	78.4 - 107
Xylene	5.35	mg/Kg	1	6.00	<0.00930	89	79.1 - 107

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	2.12	mg/Kg	1	2.00	<0.0150	106	81.9 - 108	6	20
Toluene	2.05	mg/Kg	1	2.00	<0.00950	102	81.9 - 107	6	20
Ethylbenzene	1.98	mg/Kg	1	2.00	<0.0106	99	78.4 - 107	7	20
Xylene	5.74	mg/Kg	1	6.00	<0.00930	96	79.1 - 107	7	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)	2.04	2.13	mg/Kg	1	2.00	102	106	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1.50	1.61	mg/Kg	1	2.00	75	80	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 73695 | Date Analyzed: 2010-09-21 | Analyzed By: AR
Prep Batch: 63189 | QC Preparation: 2010-09-20 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.3	mg/Kg	1	100	<2.18	97	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	103	mg/Kg	1	100	<2.18	103	85 - 115	6	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: 73696 | Date Analyzed: 2010-09-21 | Analyzed By: AR
Prep Batch: 63190 | QC Preparation: 2010-09-20 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.1	mg/Kg	1	100	<2.18	97	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	102	mg/Kg	1	100	<2.18	102	85 - 115	5	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: 244435

QC Batch: 73458 | Date Analyzed: 2010-09-13 | Analyzed By: kg
Prep Batch: 63015 | QC Preparation: 2010-09-13 | Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO [1]	726	mg/Kg	1	250	726	0	35.2 - 167.1

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
DRO [2]	1120	mg/Kg	1	250	726	122	35.2 - 167.1	43	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
n-Tricosane [3]	109	141	mg/Kg	1	100	109	141	70 - 130

Matrix Spike (MS-1) Spiked Sample: 244319

QC Batch: 73583 | Date Analyzed: 2010-09-15 | Analyzed By: AG
Prep Batch: 63055 | QC Preparation: 2010-09-15 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	16.3	mg/Kg	1	20.0	<1.65	82	61.8 - 114

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
GRO [4]	20.1	mg/Kg	1	20.0	<1.65	100	61.8 - 114	21	20

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

[1] Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.
[2] MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.
[3] High surrogate recovery due to peak interference.
[4] MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.96	2.31	mg/Kg	1	2	98	116	50 - 162
4-Bromofluorobenzene (4-BFB)	1.73	2.09	mg/Kg	1	2	86	104	50 - 162

Matrix Spike (MS-1) Spiked Sample: 244456

QC Batch: 73591 | Date Analyzed: 2010-09-15 | Analyzed By: AG
Prep Batch: 63055 | QC Preparation: 2010-09-15 | Prepared By: AG

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2.16	mg/Kg	1	2.00	<0.0150	108	80.5 - 112
Toluene		2.21	mg/Kg	1	2.00	<0.00950	110	82.4 - 113
Ethylbenzene	[5]	2.34	mg/Kg	1	2.00	<0.0106	117	83.9 - 114
Xylene	[6]	6.92	mg/Kg	1	6.00	<0.00930	115	84 - 114

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	[7]	2.42	mg/Kg	1	2.00	<0.0150	121	80.5 - 112	11	20
Toluene	[8]	2.46	mg/Kg	1	2.00	<0.00950	123	82.4 - 113	11	20
Ethylbenzene	[9]	2.61	mg/Kg	1	2.00	<0.0106	130	83.9 - 114	11	20
Xylene	[10]	7.88	mg/Kg	1	6.00	<0.00930	131	84 - 114	13	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)	[11]	2.34	2.54	mg/Kg	1	2	117	127	41.3 - 117
4-Bromofluorobenzene (4-BFB)	[12] [13]	2.72	2.93	mg/Kg	1	2	136	146	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 244431

QC Batch: 73695 | Date Analyzed: 2010-09-21 | Analyzed By: AR
Prep Batch: 63189 | QC Preparation: 2010-09-20 | Prepared By: AR

[5] Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.
[6] Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.
[7] MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.
[8] MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.
[9] MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.
[10] MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.
[11] High surrogate recovery due to peak interference.
[12] High surrogate recovery due to peak interference.
[13] High surrogate recovery due to peak interference.

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	11000	mg/Kg	100	10000	1010	100	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	11400	mg/Kg	100	10000	1010	104	85 - 115	4	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: 244441

QC Batch: 73696 | Date Analyzed: 2010-09-21 | Analyzed By: AR
Prep Batch: 63190 | QC Preparation: 2010-09-20 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10600	mg/Kg	100	10000	<218	104	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	10900	mg/Kg	100	10000	<218	108	85 - 115	3	20

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

Standard (CCV-2)

QC Batch: 73458 | Date Analyzed: 2010-09-13 | Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	269	108	80 - 120	2010-09-13

Standard (CCV-3)

QC Batch: 73458 | Date Analyzed: 2010-09-13 | Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	290	116	80 - 120	2010-09-13

Standard (CCV-2)

QC Batch: 73583 Date Analyzed: 2010-09-15 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.19	119	80 - 120	2010-09-15

Standard (CCV-3)

QC Batch: 73583 Date Analyzed: 2010-09-15 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.16	116	80 - 120	2010-09-15

Standard (CCV-2)

QC Batch: 73591 Date Analyzed: 2010-09-15 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.113	113	80 - 120	2010-09-15
Toluene		mg/Kg	0.100	0.112	112	80 - 120	2010-09-15
Ethylbenzene		mg/Kg	0.100	0.112	112	80 - 120	2010-09-15
Xylene		mg/Kg	0.300	0.339	113	80 - 120	2010-09-15

Standard (CCV-3)

QC Batch: 73591 Date Analyzed: 2010-09-15 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.110	110	80 - 120	2010-09-15
Toluene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-15
Ethylbenzene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-15
Xylene		mg/Kg	0.300	0.331	110	80 - 120	2010-09-15

Standard (ICV-1)

QC Batch: 73695 Date Analyzed: 2010-09-21 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-09-21

Standard (CCV-1)

QC Batch: 73695 Date Analyzed: 2010-09-21 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.7	99	85 - 115	2010-09-21

Standard (ICV-1)

QC Batch: 73696 Date Analyzed: 2010-09-21 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.6	99	85 - 115	2010-09-21

Standard (CCV-1)

QC Batch: 73696 Date Analyzed: 2010-09-21 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-09-21

WO #: 10091330

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: 1 OF: 2

ANALYSIS REQUEST (Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6410675

PROJECT NAME: COG / Mesilla State #1 TB Eddy Co. NM

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr 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	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
24429	9/10		S		X	AH-1 0-1'	1				X		X	X											X				
430						AH-1 1'-1.5'																							
431						AH-1 2'-2.5'																							
432						AH-1 3'-3.5'																							
433						AH-1 4'-4.5'																							
434						AH-1 5'-5.5'																							
435						AH-2 0-1'								X	X														
436						AH-2 1'-1.5'																							
437						AH-2 2'-2.5'																							
438						AH-2 3'-3.5'																							

RELINQUISHED BY: (Signature) Kelly Kindle — Date: 09/10/10 Time: 1530

RECEIVED BY: (Signature) — Date: 9/10/10 Time: 15:30

SAMPLED BY: (Print & Initial) JT / TF — Date: 9/10/10 Time:

RELINQUISHED BY: (Signature) — Date: Time:

RECEIVED BY: (Signature) — Date: Time:

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

RELINQUISHED BY: (Signature) — Date: Time:

RECEIVED BY: (Signature) — Date: Time:

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: Trace

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: Iced / intact

REMARKS: If total TPH exceeds 5,000 mg/kg run deeper samples / If total BTEX exceeds 50 mg/kg or Benzene exceeds 10 mg/kg Run deeper samples

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

*All tests Midland

WO#: 10091330

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 2

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:	SITE MANAGER:
COG	Ike Tavarez

PROJECT NO.:	PROJECT NAME:
114-C400675	COG / Mesilla State #1 TB Eddy Co., NM

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD (Ext. to C35) TX1005	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr 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. 8081/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
244439	9/10		S		X	AH-2 4'-4.5'	1				X													X				
440	↓		↓		↓	AH-2 5'-5.5'	↓				↓													↓				

RELINQUISHED BY: (Signature)	Date: 9/10/10 Time: 1530	RECEIVED BY: (Signature)	Date: 9/10/10 Time: 1530
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) JT/TF Date: 9/10/10 Time:

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

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE: DATE: TIME:
RECEIVED BY: (Signature)

SAMPLE CONDITION WHEN RECEIVED: 3.7°C intact

REMARKS: If total TPH exceeds 5,000 mg/kg run deeper samples / If BTEX exceeds 50mg/kg or Benzene exceeds 10mg/kg Run deeper samples

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.