

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

PSXK1601148584
4102
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 1300 Midland, Texas 79701	Telephone No. (432) 230-0077
Facility Name Pronghorn SWD System	Facility Type SWD 8" Line

Surface Owner: Federal	Mineral Owner	Lease No. API 30-025-32735
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LOCATION OF RELEASE

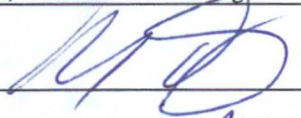
Unit Letter F	Section 11	Township 18S	Range 32E	Feet from the	North/South Line	Feet from the	East/West Line	County Lea
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Latitude N 32 45.894° Longitude W 103 44.516°

NATURE OF RELEASE

Type of Release: Produced water	Volume of Release 600 bbls	Volume Recovered 520 bbls
Source of Release: Main 8" water line to Pronghorn SWD	Date and Hour of Occurrence 7/11/10	Date and Hour of Discovery 7/11/10 9:30 a.m.
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? Larry Johnson - OCD Geoffrey Leking - OCD Paul Evan - BLM	
By Whom? Josh Russo	Date and Hour 7/12/10 8:27 a.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	
If a Watercourse was Impacted, Describe Fully.* N/A		
Describe Cause of Problem and Remedial Action Taken.* A 2' PVC section of the 8" line failed between dresser sleeves. The line has been repaired and put back into service.		
Describe Area Affected and Cleanup Action Taken.* Tetra Tech inspected site and collected samples to define spills extent. Soil with elevated chloride concentrations was removed and hauled away for proper disposal. Site was then lined with a 40 mil liner and brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review.		
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.		

OIL CONSERVATION DIVISION

Signature: 	Approved by District Supervisor:		
Printed Name: Ike Tavarez <i>Agent In Charge</i>			
Title: Project Manager	Approval Date:	Expiration Date:	
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:		Attached ☐
Date: 3-19-12 Phone: (432) 682-4559			

* Attach Additional Sheets If Necessary

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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	Pronghorn SWD System	Facility Type	SWD 8" Line
Surface Owner	Federal	Mineral Owner	
		Lease No.	API# 30-025-32735

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	11	18S	32E					Lea

Latitude 32 45.894 Longitude 103 44.516

NATURE OF RELEASE

Type of Release	Produced water	Volume of Release	600bbls	Volume Recovered	520bbls
Source of Release	Main 8" water line to Pronghorn SWD	Date and Hour of Occurrence	07/11/2010	Date and Hour of Discovery	07/11/2010 9:30 a.m.
Was Immediate Notice Given?	☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	Larry Johnson-OCD Geoffrey Leking-OCD Paul Evans-BLM		
By Whom?	Josh Russo	Date and Hour	07/12/2010	8:27 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.*

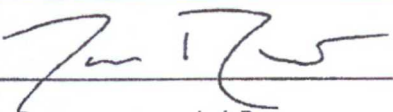
A 2" PVC section of the 8" line failed between two dresser sleeves. The line has been repaired and put back into service.

Describe Area Affected and Cleanup Action Taken.*

Initially 600bbls of produced water was released from the leak. The water flowed .5 miles south down the COG ROW and 10 yards x 75 yards west down fence line in the pasture. We were able to recover 520bbls with a vacuum truck and all free standing fluid was picked up. The chloride concentration of the water in this area is 135,500 mg/l. (The closest well location to the release site is the Nadel & Gussman Heyco, LLC. Young Deep 3 Federal #2, 600' FSL, 660' FEL, Sec. 3 T-18S-R32E, Lea County, New Mexico, NMNM-036852, this well is .5 miles north of the release point). Tetra Tech will sample the spill site area to delineate any possible contamination and we will present a remediation work plan to the BLM / 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.

OIL CONSERVATION DIVISION

Signature:			
Printed Name:	Josh Russo	Approved by District Supervisor:	
Title:	IIE Coordinator	Approval Date:	Expiration Date:
E-mail Address:	jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date:	07/16/2010	Phone:	432-212-2399

Attach Additional Sheets If Necessary

SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	Pronghorn SWD System Line Leak (Section 11)	
Company:	COG Operating LLC	
Section, Township and Range	Unit F - Sec 11- T-18S - R-32-E	
Lease Number:	30-025-32735	
County:	Lea County	
GPS:	32 45.894° N	103 44.516° W
Surface Owner:	Federal	
Mineral Owner:		
Directions:		

Release Data:

Date Released:	7/11/2010
Type Release:	Produced Water
Source of Contamination:	8" SWD Main line
Fluid Released:	600 bbls
Fluids Recovered:	520 bbls

Official Communication:

Name:	Pat Ellis	Ike Tavaréz
Company:	COG Operating, LLC	Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300	1910 N. Big Spring
P.O. Box		
City:	Midland Texas, 79701	Midland, Texas
Phone number:	(432) 686-3023	432-682-4559
Fax:	(432) 684-7137	
Email:	pellis@conchoresources.com	ike.tavaréz@tetrattech.com

Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	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

1/2 MILE LEAK



TETRA TECH

March 19, 2012

Mr. Geoffrey Leking
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

**Re: Closure Report for the COG Operating LLC., Pronghorn SWD System
Line Leak, Unit F, Section 11, Township 18 South, Range 32 East,
Lea County, New Mexico.**

Mr. Leking,

Tetra Tech Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Pronghorn SWD System line leak located in Unit F, Section 11, Township 18 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32° 45.894', W 103° 44.516'. 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 July 11, 2010. The leak occurred on the SWD line when a 2 foot section of the 8" water line failed between two dresser sleeves. Approximately 600 barrels of produced water was released and approximately 520 were recovered barrels. The fluids from the release flowed south along the pipeline right-of-way approximately 2,600', with a width of approximately 5' to 10' and north of the release point in an area measuring approximately 75' to 100'. In addition, the spill migrated west into the pasture and split into two fingers, which measured approximately 140' x 50' and 325' x 50'. The initial C-141 is included in Appendix A.

Groundwater

The United States Geological Survey (USGS) database did showed wells in Section 7 and 16, Township 18 South, Range 32 East, with a reported depth to water of approximately 82' and 84', respectively. The New Mexico State

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559

Fax 432.682.3946

www.tetratech.com



Engineer Well Reports showed wells with reported depths of 65' (Section 4) and 460' (Section 7). The NMOCD groundwater map shows a shallow groundwater zone in the area. Based on the sparse groundwater data, Tetra Tech supervised the installation of a temporary well at the site to establish depth to groundwater. On March 16, 2011, the temporary well was installed to a total depth of 130' below surface. The well was gauged on March 23, 2011 and found no measurable groundwater in the well. Based on the temporary well, it appears groundwater is greater than 130' below surface. The groundwater data and well logs are enclosed 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, 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 August 5, 2010, Tetra Tech personnel supervised the installation of thirty-one (31) soil borings (SB-1 through SB-31) utilizing an air rotary rig to define vertical extents of the chloride impact. A total 16 soil boring were installed along the pipeline right-of-way and 15 soil borings in the west area in the pasture. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. The soil boring locations are shown on Figure 3. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1.

Referring to Table 1, none of the samples selected for TPH and BTEX exceeded the RRAL. Elevated chloride concentrations were detected in the majority of the soil borings and the chloride impact was vertically defined. The soil borings were extended to depths ranging from 10 to 60 feet bgs, with samples collected at 2 to 3 foot intervals for the first 10 feet and 5 foot intervals to 30' and 10' intervals thereafter. The samples were submitted to the laboratory for analysis of chlorides. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The soil boring locations are shown on Figure 3.



West Area

A total 15 soil borings were installed in the west pasture area. This area did show a deeper impact to the soils. The analytical results indicate the maximum extent of chloride impact greater than 1,000 mg/kg extended to approximately 5' to 10' (SB-1, SB-5, SB-6, SB-7 and SB-14). The deepest impact, greater than 1,000 mg/kg, was encountered in SB-2 and SB-4 (14'), and SB-3 (29'). The perimeter soil borings (SB-8, SB-9, SB-12, SB-13, SB-15 and SB-16) did not show a chloride impact to the soils.

Based on the soil boring data, Cross-Sections A-A' and B-B') were developed to evaluate distribution of the chloride impact in the subsurface soils. The Cross-Sections are shown in figures 6 and 7.

Pipeline right-a-way

A total of 16 soil borings were installed along the pipeline right-of-way. The majority of the soil borings showed a shallow chloride impact. The analytical results indicated the maximum extent of chloride greater than 5,000 mg/kg extended to approximately 3' (SB-11, SB-17, SB-18, SB-19, SB-22, SB-24, SB-25 and SB-31), 5' to 7' (SB-20 and SB-23) and 10' to 20' (SB-29 and SB-30). Soil borings (SB-21, SB-26, SB-27 and SB-28) did not show chloride impact above 5,000 mg/kg in the soils

All of the soil borings were vertically defined, except for SB-30. Soil boring SB-30 was installed to a total depth of 80' below surface. Due to the sandy formation in the deeper soils, it appears the samples at 60' (1,350 mg/kg) and 80' (1,100 mg/kg) were cross-contaminated from the upper soils of the boring.

Based on the soil boring data, Figures 8 (Cross-Section C-C') was developed to evaluate distribution of the chloride impact in the subsurface soils.

Remedial Work and Closure Request

On April 5, 2011, Tetra Tech and COG met with Geoffrey Leking with NMOCD to discuss and review the results of the investigation. Based on groundwater depth and results, Mr. Leking approved the removal of 5.0' of the impacted soil and capping the excavation with a 40 mil liner.



TETRA TECH

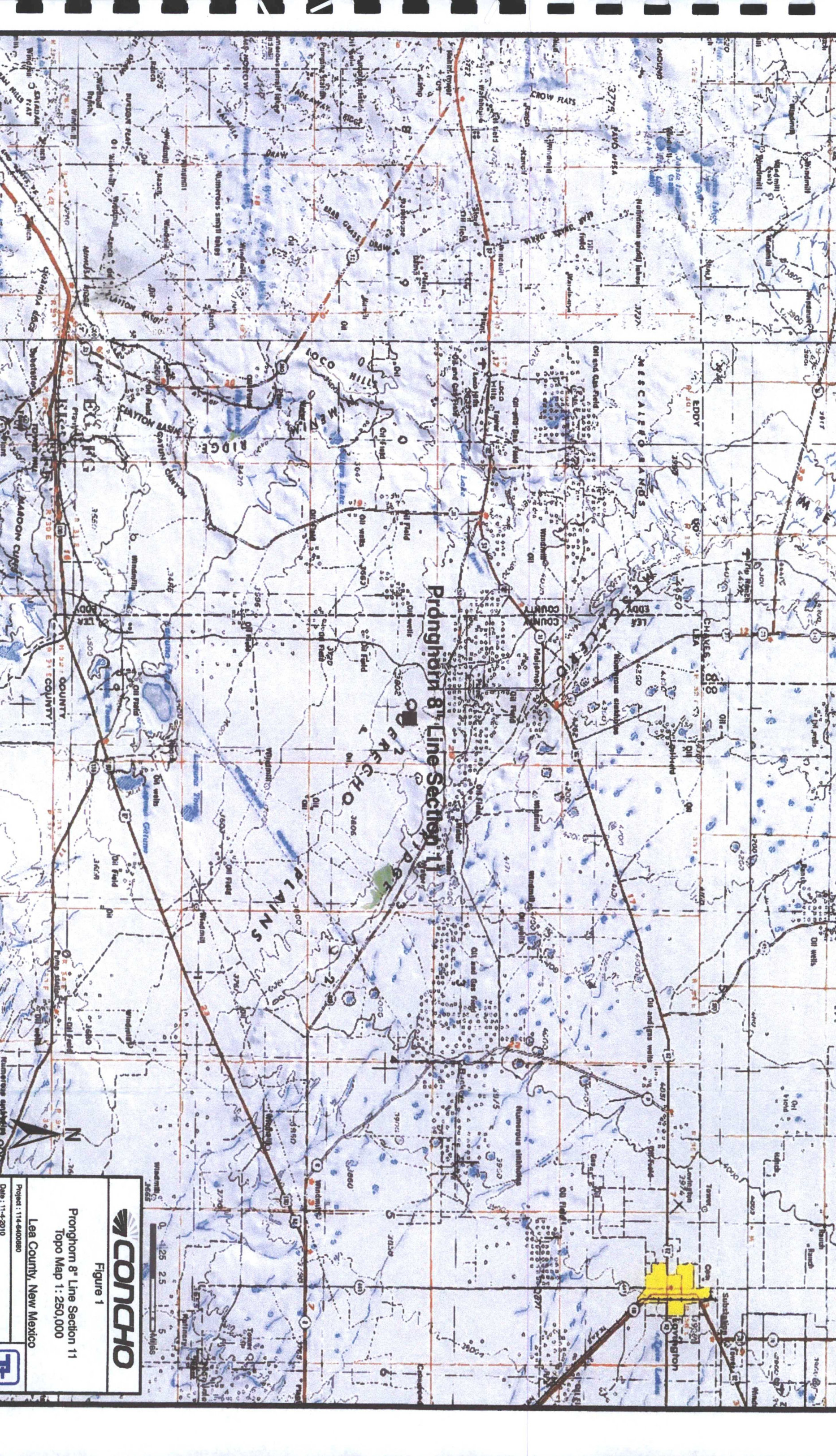
From June 22, 2011 through July 20, 2011, Tetra Tech personnel oversaw the excavation of the site as outlined in the approved work plan. The excavation depth and liner installation are shown on Figures 6, 7 and 8 (Cross-Sections A-A', B-B' and C-C') and Table 1. During the excavation, Tetra Tech field screened the soil (chlorides) to capture the spill foot print (horizontal extents). Once completed, a 40 mil liner was installed at a depth of 5' below surface and the excavation backfilled with clean soil to grade. Approximately 12,300 yards³ of impacted material was hauled to CRI for proper disposal. Photos of the site are included.

Based on the remedial activities performed at this site, COG requests closure of this site. A copy of the C-141 (Final) is included in Appendix A. If you require any additional information or have any questions or comments concerning this report, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Project Manager

cc: Pat Ellis - COG
cc: Paul Evans - BLM
James Amos - BLM



Pronghorn 8" Line Section 11

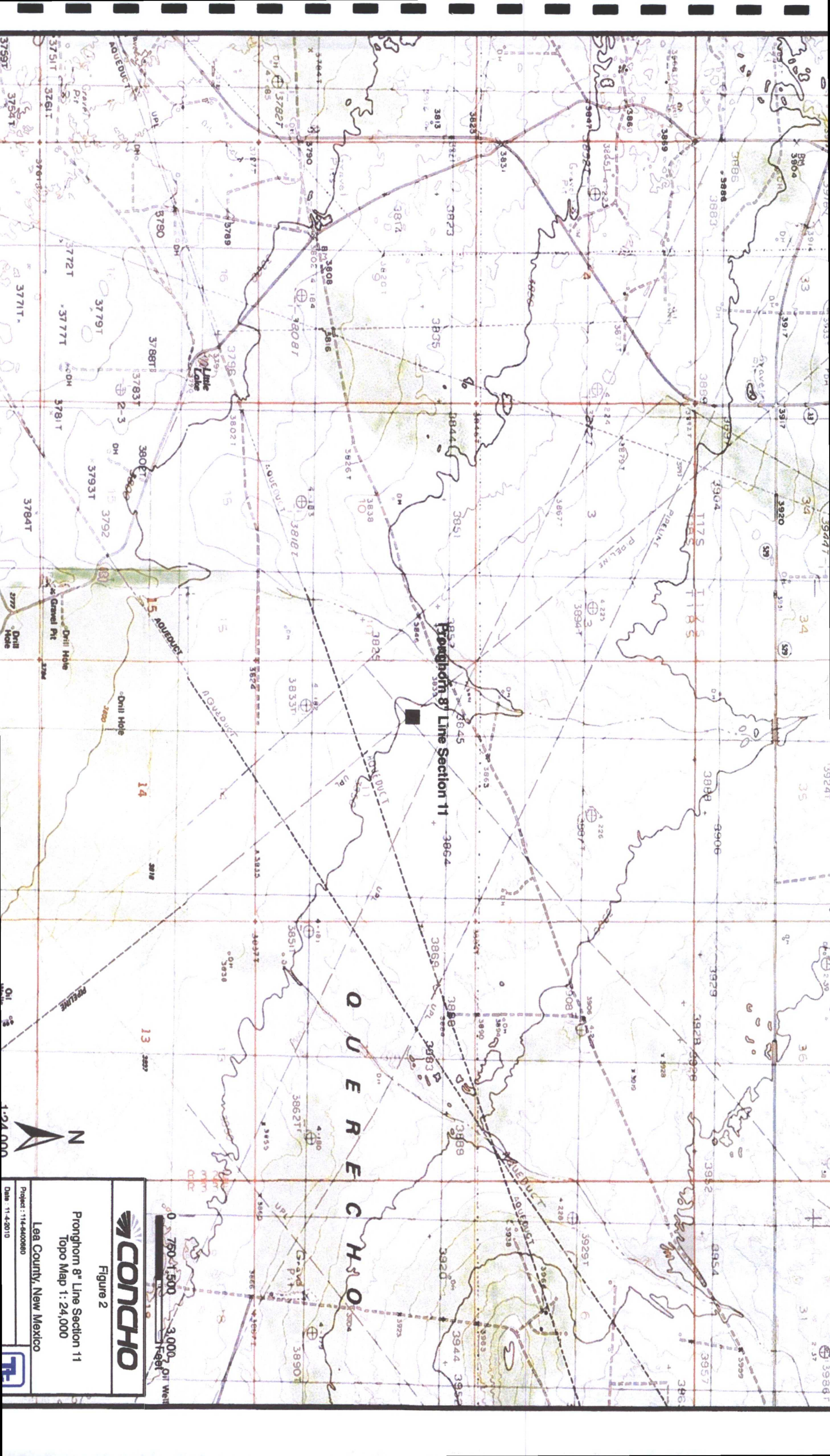
CONCHO

Figure 1

Pronghorn 8" Line Section 11
Topo Map 1: 250,000

Lea County, New Mexico

Project: 114-6400880
Date: 11-4-2010



CONCHO

Figure 2

Pronghorn 8" Line Section 11
Topo Map 1: 24,000

Lea County, New Mexico

Project: 114-6400660

Date: 11-4-2010

EXPLANATION

A - A' Length = 325'

B - B' Length = 140'

C - C' Length = 2300'

New COG SWD Line

40' X 40' Excavation
& Liner

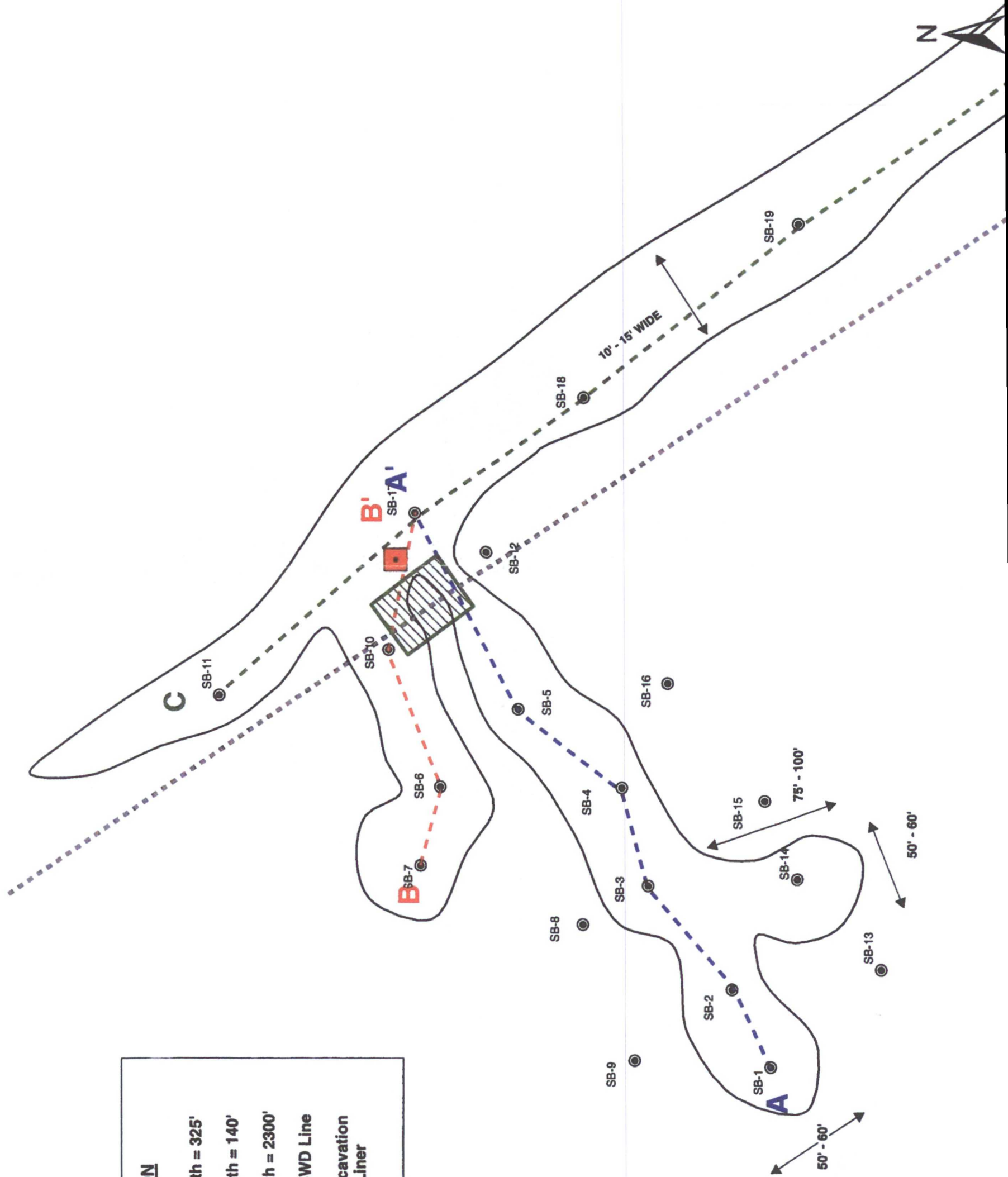


Figure 4

Pronghorn 8" Line Section 11
Cross Section Reference Map

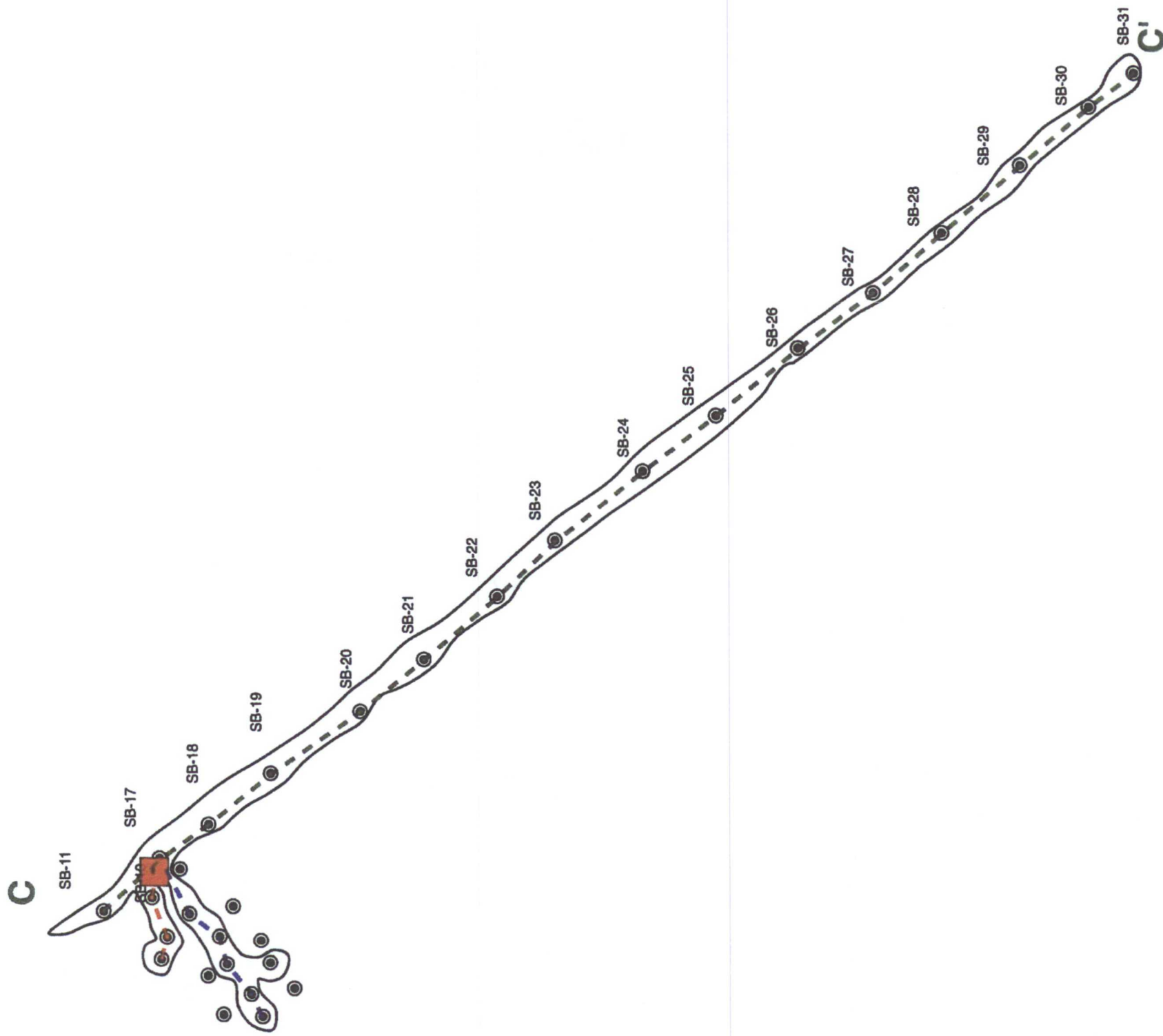
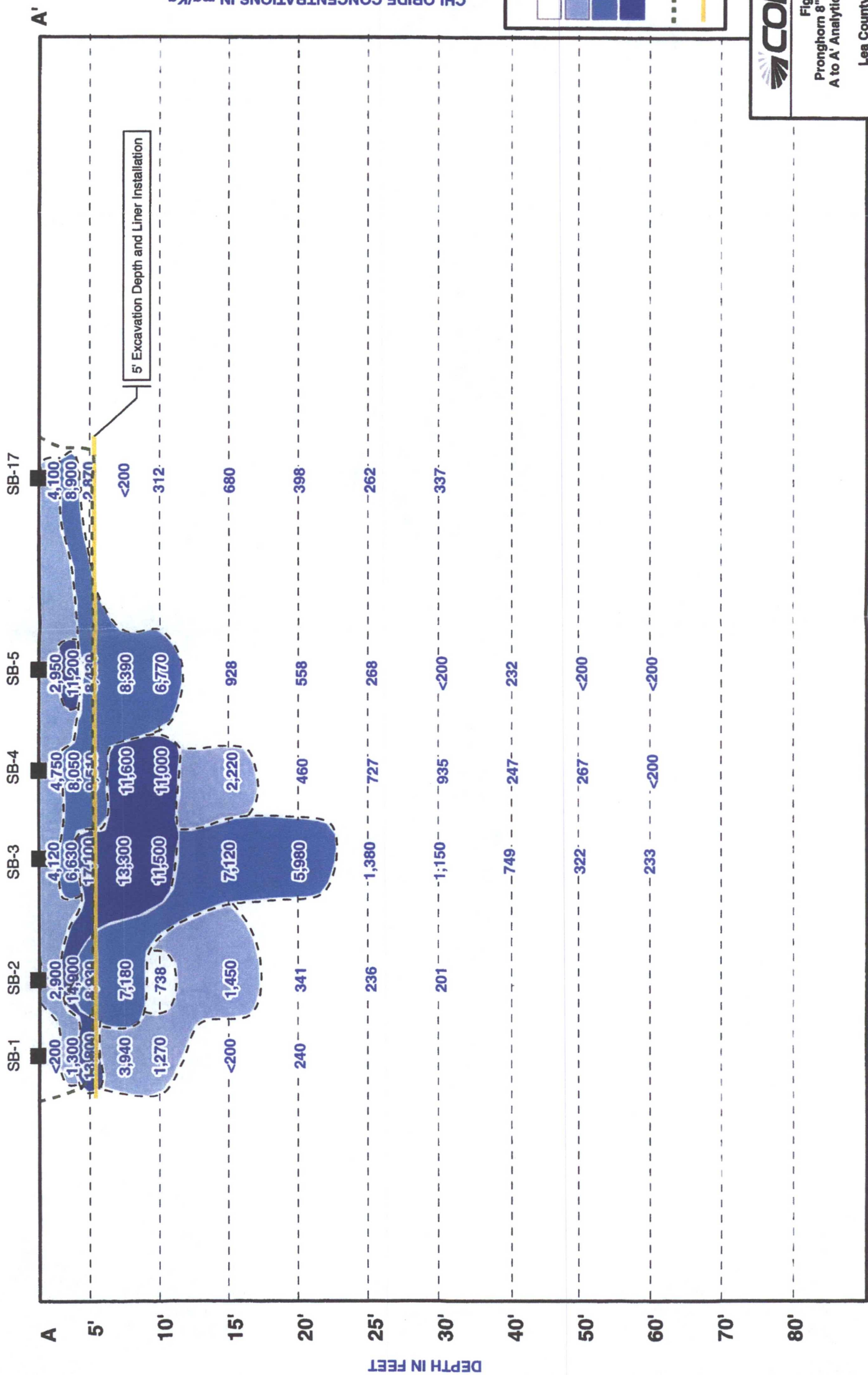
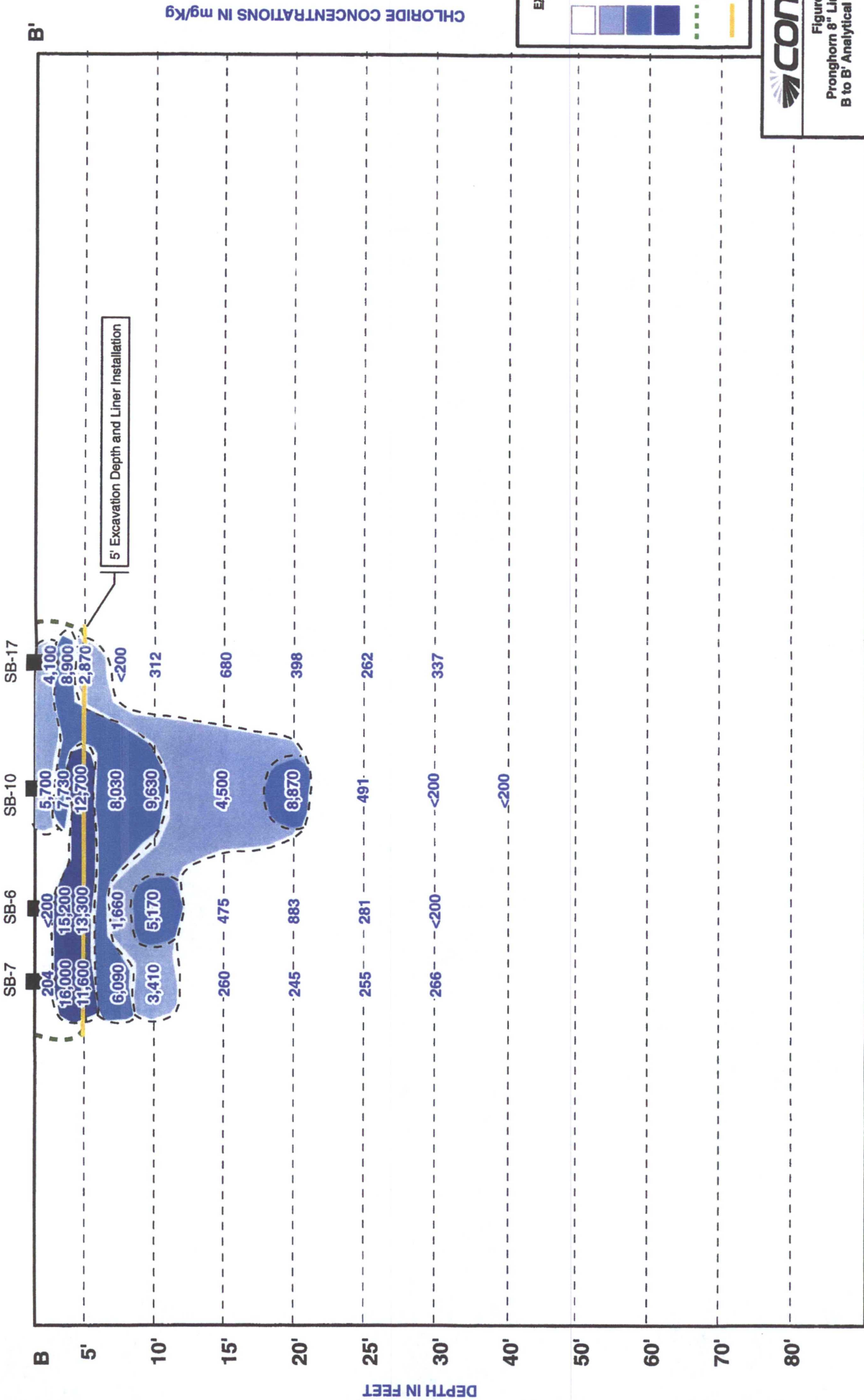


Figure 5

Pronghorn 8 Line Section 11
Cross Section Reference Map
Lea County, New Mexico



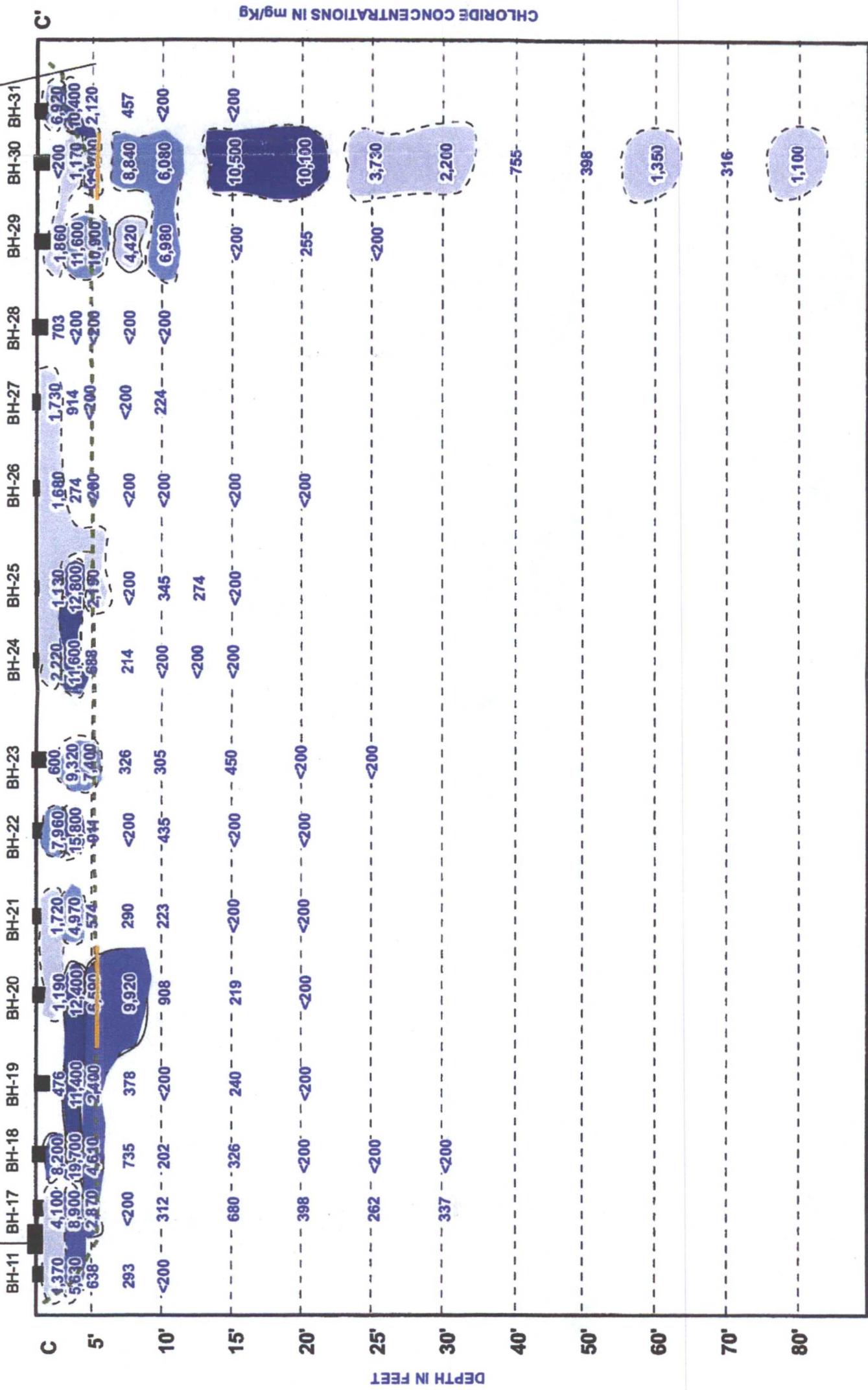


EXPLANATION

- Chlorides < 1,000
- Chlorides 1,000-5,000
- Chlorides 5,000-10,000
- Chlorides 10,000+
- Excavation Depth
- Liner Installation Depth

Leak Source

5' Excavation Depth



EXPLANATION

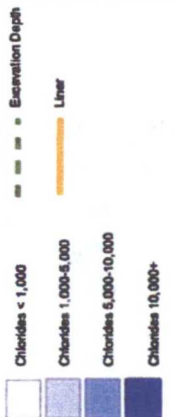


Figure 8
Pronghorn 8" Line Section 11
C to C' Analytical Cross Section
Lee County, New Mexico

Table 1

**COG Operating LLC.
PRONGHORN SEC. 11
Lea County, New Mexico**

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
SB-1	9/1/2010	0-1'			X	<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<200
	"	2.5-3'			X	-	-	-	-	-	-	-	1,300
	"	4.5-5'			X	-	-	-	-	-	-	-	13,800
	"	6.5-7'		X		-	-	-	-	-	-	-	3,940
	"	9.5-10'		X		-	-	-	-	-	-	-	1,270
	"	14-15'		X		-	-	-	-	-	-	-	<200
	"	19-20'		X		-	-	-	-	-	-	-	240
SB-2	9/2/2010	1'			X	<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	2,900
	"	3'			X	-	-	-	-	-	-	-	14,900
	"	5'			X	-	-	-	-	-	-	-	8,930
	"	7'		X		-	-	-	-	-	-	-	7,180
	"	10'		X		-	-	-	-	-	-	-	738
	"	15'		X		-	-	-	-	-	-	-	1,450
	"	20'		X		-	-	-	-	-	-	-	341
	"	25'		X		-	-	-	-	-	-	-	236
	"	30'		X		-	-	-	-	-	-	-	201

Table 1

[illegible]

COG Operating LLC.

PRONGHORN SEC. 11

Lea County, New Mexico

[illegible]

Lea County, New Mexico

[illegible]

Table 1

COG Operating LLC.

PRONGHORN SEC. 11

Lea County, New Mexico

[illegible]

Table 1
COG Operating LLC.
PRONGHORN SEC. 11
Lea 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						
SB-19	9/8/2010	1'			X	<2.00	<50.0	<50.0	<50.0	-	-	-	-	476
	"	3'			X	-	-	-	-	-	-	-	-	11,400
	"	5'			X	-	-	-	-	-	-	-	-	2,400
	"	7'		X		-	-	-	-	-	-	-	-	378
	"	10'		X		-	-	-	-	-	-	-	-	<200
	"	15'		X		-	-	-	-	-	-	-	-	240
	"	20'		X		-	-	-	-	-	-	-	-	<200
SB-20	9/8/2010	1'			X	<2.00	<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	1,190
	"	3'			X	-	-	-	-	-	-	-	-	12,400
	"	5'			X	-	-	-	-	-	-	-	-	6,590
	"	7'		X		-	-	-	-	-	-	-	-	9,920
	"	10'		X		-	-	-	-	-	-	-	-	908
	"	15'		X		-	-	-	-	-	-	-	-	219
	"	20'		X		-	-	-	-	-	-	-	-	<200
SB-21	9/8/2010	1'			X	<2.00	<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	1,720
	"	3'			X	-	-	-	-	-	-	-	-	4,970
	"	5'			X	-	-	-	-	-	-	-	-	574
	"	7'		X		-	-	-	-	-	-	-	-	290
	"	10'		X		-	-	-	-	-	-	-	-	223
		15'		X		-	-	-	-	-	-	-	-	<200
	"	20'		X		-	-	-	-	-	-	-	-	<200

COG Operating LLC.

PRONGHORN SEC. 11

Lea County, New Mexico

[illegible]

Table 1

COG Operating LLC.
PRONGHORN SEC. 11
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total					
SB-25	9/9/2010	1'			X	<2.00	<50.0	<50.0	-	-	-	-	1,130
	"	3'			X	-	-	-	-	-	-	-	12,800
	"	5'			X	-	-	-	-	-	-	-	2,190
	"	7'		X		-	-	-	-	-	-	-	<200
	"	10'		X		-	-	-	-	-	-	-	345
	"	15'		X		-	-	-	-	-	-	-	274
	"	20'		X		-	-	-	-	-	-	-	<200
SB-26	9/9/2010	1'			X	<2.00	<50.0	<50.0	-	-	-	-	1,680
	"	3'			X	-	-	-	-	-	-	-	274
	"	5'			X	-	-	-	-	-	-	-	<200
	"	7'		X		-	-	-	-	-	-	-	<200
	"	10'		X		-	-	-	-	-	-	-	<200
	"	15'		X		-	-	-	-	-	-	-	<200
	"	20'		X		-	-	-	-	-	-	-	<200
SB-27	9/10/2010	1'			X	<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	1,730
	"	3'			X	-	-	-	-	-	-	-	914
	"	5'			X	-	-	-	-	-	-	-	<200
	"	7'		X		-	-	-	-	-	-	-	<200
	"	10'		X		-	-	-	-	-	-	-	224

Lea County, New Mexico

[illegible]

Table 1
COG Operating LLC.
PRONGHORN SEC. 11
Lea 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						
SB-30	9/10/2010	1'			X	<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<200	
	"	3'			X	-	-	-	-	-	-	-	1,170	
	"	5'			X	-	-	-	-	-	-	-	13,700	
	"	7'		X		-	-	-	-	-	-	-	8,840	
		10'		X		-	-	-	-	-	-	-	6,080	
	"	15'		X		-	-	-	-	-	-	-	10,500	
	"	20'		X		-	-	-	-	-	-	-	10,100	
	"	25'		X		-	-	-	-	-	-	-	3,730	
	"	30'		X		-	-	-	-	-	-	-	2,200	
	"	40'		X		-	-	-	-	-	-	-	755	
	"	50'		X		-	-	-	-	-	-	-	398	
	"	60'		X		-	-	-	-	-	-	-	1,350	
	"	70'		X		-	-	-	-	-	-	-	316	
	"	80'		X		-	-	-	-	-	-	-	1,100	
SB-31	9/10/2010	1'			X	<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	6,920	
	"	3'			X	-	-	-	-	-	-	-	10,400	
	"	5'			X	-	-	-	-	-	-	-	2,120	
	"	7'		X		-	-	-	-	-	-	-	457	
	"	10'		X		-	-	-	-	-	-	-	<200	
	"	15'		X		-	-	-	-	-	-	-	<200	

BEB Below Excavation Bottom

(--) Not Analyzed

Excavation Depths

Liner Depth

COG Operating LLC
Pronghorn SWD System Line Sec. 11
Lea County, New Mexico
Site Excavation: 6/22/11 – 7/20/11



TETRA TECH



Site excavation



Site excavation

COG Operating LLC
Pronghorn SWD System Line Sec. 11
Lea County, New Mexico
Site Excavation: 6/22/11 – 7/20/11



TETRA TECH



Excavation and liner installation



Excavation and liner installation

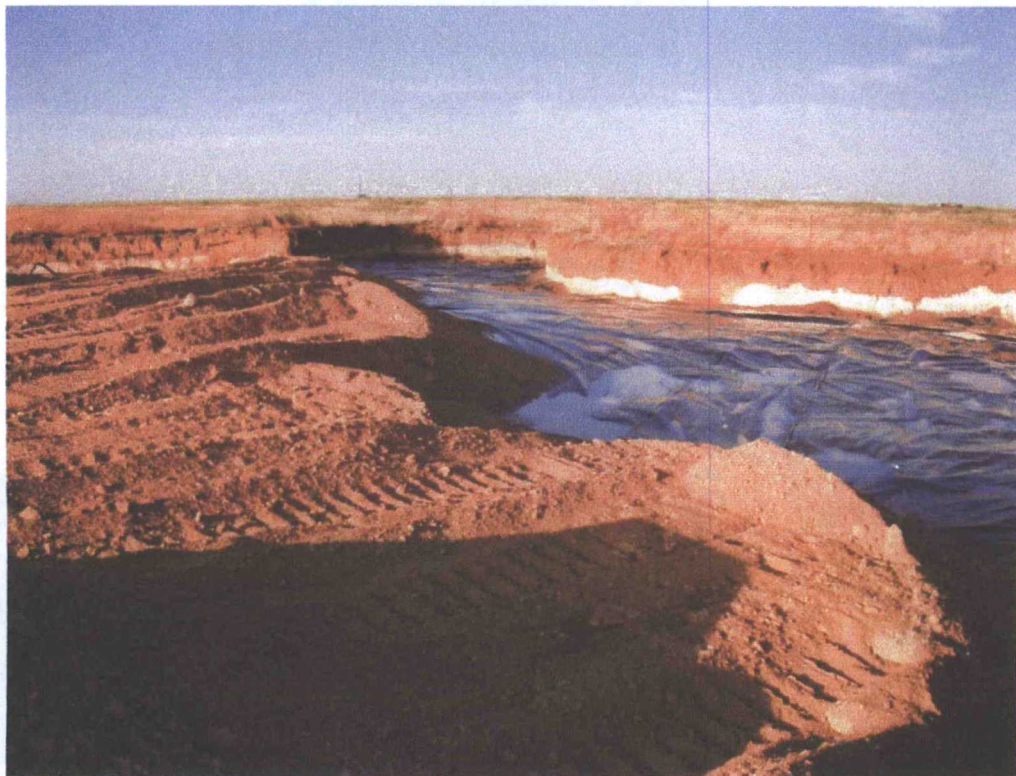
COG Operating LLC
Pronghorn SWD System Line Sec. 11
Lea County, New Mexico
Site Excavation: 6/22/11 – 7/20/11



TETRA TECH



Site excavation and liner installation



Site excavation and liner installation

COG Operating LLC
Pronghorn SWD System Line Sec. 11
Lea County, New Mexico
Site Excavation: 6/22/11 – 7/20/11



TETRA TECH



Pasture area - excavation and liner installation



Pasture area - excavation and liner installation

COG Operating LLC
Pronghorn SWD System Line Sec. 11
Lea County, New Mexico
Site Excavation: 6/22/11 – 7/20/11



TETRA TECH



Pasture area - excavation and liner installation

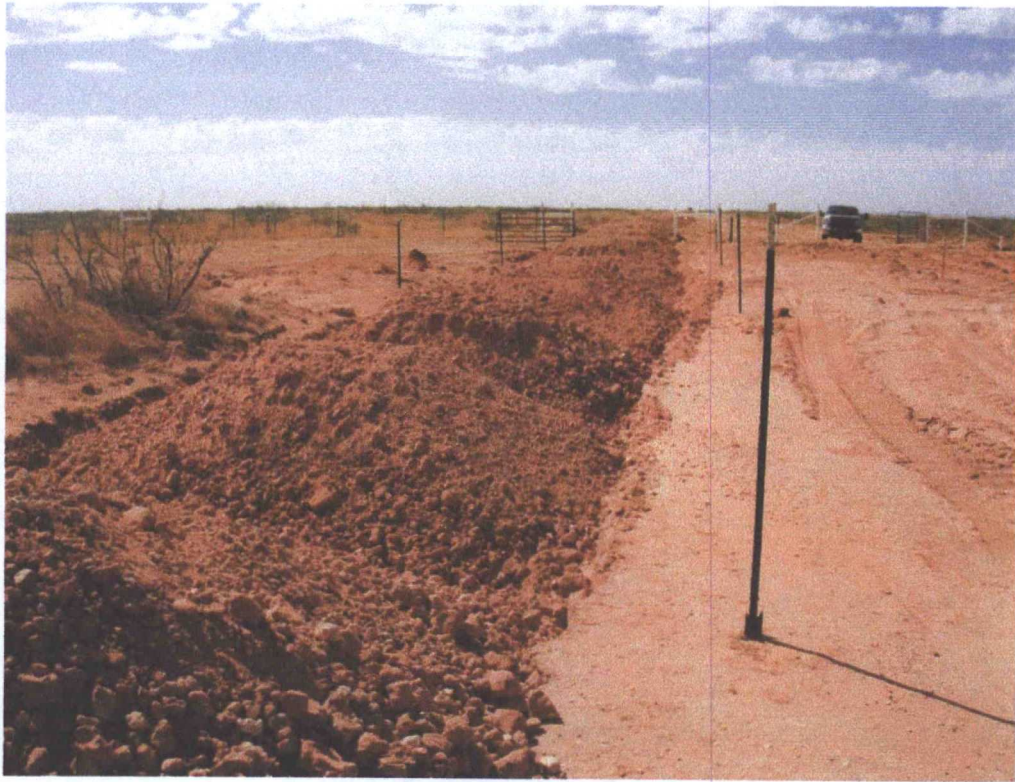


Pasture area lined and backfilled with clean material

COG Operating LLC
Pronghorn SWD System Line Sec. 11
Lea County, New Mexico
Site Excavation: 6/22/11 – 7/20/11



TETRA TECH



Clean backfill material



Excavated area backfilled

Water Well Data
Average Depth to Groundwater (ft)
Pronghorn Section 11
Lea County, New Mexico

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	35	36
			271		SITE

18 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	35	36
					261

19 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	35	36
		180			
		101			130

17 South			32 East		
6	5	4	82	3	2
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	180	29	28	27	26
31	dry	32	33	34	35
					225

18 South			32 East		
6	5	4	65	3	2
7	460	8	9	10	11
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
					117

19 South			32 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
					250

17 South			33 East		
6	90	5	4	3	2
7	167	8	9	10	11
18	17	16	15	14	13
19	20	21	22	23	24
30	69	29	28	27	26
31	32	33	34	35	36
					155

18 South			33 East		
6	5	4	3	2	1
7	8	100	9	10	11
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
					177

19 South			33 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
					185

- 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
- 123 Tetra Tech installed temporary wells and field water level
- 143 NMOCD Groundwater map well location

SAMPLE LOG

Boring/Well: TMW-1
Project Number:
Client: COG
Site Location: Pronghorn 1/2 Mile Leak
Location: Lea Co., NM
Legals: T-18S R-32E Sec 11
Total Depth: 130
Date Installed: 03/16/11
Gauged: 3/23/11 - 133' Dry Well

DEPTH (Ft)	OVM	SAMPLE DESCRIPTION
5	--	Soft white caliche powder
10	--	Stiff sandy clay
15	--	Stiff sandy clay
20	--	Tan loose silty sand
25	--	Medium stiff silty clay with some sand
30	--	Tan loose coarse sand with gravel 10-20mm
35	--	Lighter loose sand and gravel - dry
40	--	Well sorted loose sand - very fine silty - dry
45	--	Well sorted loose sand - very fine silty - dry
50	--	Loose reddish/brown well sorted sand - dry
55	--	Loose coarse sand small gravel 0.5mm
60	--	Silty reddish sandy clay with some gravel 1mm
65	--	Silty reddish sandy clay with some gravel 1mm
70	--	Silty reddish sandy clay with some gravel 1mm
75	--	Soft red silty clay - dry
80	--	Soft red silty clay - dry
85	--	Soft red silty clay - dry
90	--	Soft red silty clay - dry
95	--	Soft brown silty clay - dry
100	--	Soft brown silty clay - dry
105	--	Soft brown silty clay - dry
110	--	Soft brown silty clay - dry
115	--	Soft brown silty clay - dry
120	--	Loose brown sand - well sorted silty - dry
125	--	Loose brown sand - well sorted silty - dry
130	--	Loose silty clay - gray color - shale

Total Depth 130' **Groundwater was not encountered**

Summary Report

Kim Dorey
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: September 17, 2010

Work Order: 10090710



Project Location: Lea Co., NM
Project Name: COG/Pronghorn Sec. 11
Project Number: 114-6400680

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
243706	SB-1 0-1'	soil	2010-09-01	00:00	2010-09-03
243707	SB-1 2.5-3'	soil	2010-09-01	00:00	2010-09-03
243708	SB-1 4.5-5'	soil	2010-09-01	00:00	2010-09-03
243709	SB-1 6.5-7'	soil	2010-09-01	00:00	2010-09-03
243710	SB-1 9.5-10'	soil	2010-09-01	00:00	2010-09-03
243711	SB-1 14-15'	soil	2010-09-01	00:00	2010-09-03
243712	SB-1 19-20'	soil	2010-09-01	00:00	2010-09-03
243713	SB-2 0-1'	soil	2010-09-01	00:00	2010-09-03
243714	SB-2 2.5-3'	soil	2010-09-01	00:00	2010-09-03
243715	SB-2 4.5-5'	soil	2010-09-01	00:00	2010-09-03
243716	SB-2 6.5-7'	soil	2010-09-01	00:00	2010-09-03
243717	SB-2 9.5-10'	soil	2010-09-01	00:00	2010-09-03
243718	SB-2 14-15'	soil	2010-09-01	00:00	2010-09-03
243719	SB-2 19-20'	soil	2010-09-01	00:00	2010-09-03
243720	SB-2 24-25'	soil	2010-09-01	00:00	2010-09-03
243721	SB-2 29-30'	soil	2010-09-01	00:00	2010-09-03
243722	SB-3 0-1'	soil	2010-09-01	00:00	2010-09-03
243723	SB-3 2.5-3'	soil	2010-09-01	00:00	2010-09-03
243724	SB-3 4.5-5'	soil	2010-09-01	00:00	2010-09-03
243725	SB-3 6.5-7"	soil	2010-09-01	00:00	2010-09-03
243726	SB-3 9-10'	soil	2010-09-01	00:00	2010-09-03
243727	SB-3 14-15'	soil	2010-09-01	00:00	2010-09-03
243728	SB-3 19-20'	soil	2010-09-01	00:00	2010-09-03
243729	SB-3 24-25'	soil	2010-09-01	00:00	2010-09-03
243730	SB-3 29-30'	soil	2010-09-01	00:00	2010-09-03
243731	SB-3 39-40'	soil	2010-09-01	00:00	2010-09-03
243732	SB-3 49-50'	soil	2010-09-01	00:00	2010-09-03
243733	SB-3 59-60'	soil	2010-09-01	00:00	2010-09-03
243734	SB-4 0-1'	soil	2010-09-01	00:00	2010-09-03
243735	SB-4 2.5-3'	soil	2010-09-01	00:00	2010-09-03

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
243736	SB-4 4.5-5'	soil	2010-09-01	00:00	2010-09-03
243737	SB-4 6.5-7'	soil	2010-09-01	00:00	2010-09-03
243738	SB-4 9-10'	soil	2010-09-01	00:00	2010-09-03
243739	SB-4 14-15'	soil	2010-09-01	00:00	2010-09-03
243740	SB-4 19-20'	soil	2010-09-01	00:00	2010-09-03
243741	SB-4 24-25'	soil	2010-09-01	00:00	2010-09-03
243742	SB-4 29-30'	soil	2010-09-01	00:00	2010-09-03
243743	SB-4 39-40'	soil	2010-09-01	00:00	2010-09-03
243744	SB-4 49-50'	soil	2010-09-01	00:00	2010-09-03
243745	SB-4 59-60'	soil	2010-09-01	00:00	2010-09-03
243746	SB-5 0-1'	soil	2010-09-01	00:00	2010-09-03
243747	SB-5 2.5-3'	soil	2010-09-01	00:00	2010-09-03
243748	SB-5 4.5-5'	soil	2010-09-01	00:00	2010-09-03
243749	SB-5 6.5-7'	soil	2010-09-01	00:00	2010-09-03
243750	SB-5 9-10'	soil	2010-09-01	00:00	2010-09-03
243751	SB-5 14-15'	soil	2010-09-01	00:00	2010-09-03
243752	SB-5 19-20'	soil	2010-09-01	00:00	2010-09-03
243753	SB-5 24-25'	soil	2010-09-01	00:00	2010-09-03
243754	SB-5 29-30'	soil	2010-09-01	00:00	2010-09-03
243755	SB-5 39-40'	soil	2010-09-01	00:00	2010-09-03
243756	SB-5 49-50'	soil	2010-09-01	00:00	2010-09-03
243757	SB-5 59-60'	soil	2010-09-01	00:00	2010-09-03
243758	SB-6 0-1'	soil	2010-09-02	00:00	2010-09-03
243759	SB-6 2.5-3'	soil	2010-09-02	00:00	2010-09-03
243760	SB-6 4.5-5'	soil	2010-09-02	00:00	2010-09-03
243761	SB-6 6.5-7'	soil	2010-09-02	00:00	2010-09-03
243762	SB-6 9-10'	soil	2010-09-02	00:00	2010-09-03
243763	SB-6 14-15'	soil	2010-09-02	00:00	2010-09-03
243764	SB-6 19-20'	soil	2010-09-02	00:00	2010-09-03
243765	SB-6 24-25'	soil	2010-09-02	00:00	2010-09-03
243766	SB-6 29-30'	soil	2010-09-02	00:00	2010-09-03
243767	SB-7 0-1'	soil	2010-09-02	00:00	2010-09-03
243768	SB-7 2.5-3'	soil	2010-09-02	00:00	2010-09-03
243769	SB-7 4.5-5'	soil	2010-09-02	00:00	2010-09-03
243770	SB-7 6.5-7'	soil	2010-09-02	00:00	2010-09-03
243771	SB-7 9-10'	soil	2010-09-02	00:00	2010-09-03
243772	SB-7 14-15'	soil	2010-09-02	00:00	2010-09-03
243773	SB-7 19-20'	soil	2010-09-02	00:00	2010-09-03
243774	SB-7 24-25'	soil	2010-09-02	00:00	2010-09-03
243775	SB-7 29-30'	soil	2010-09-02	00:00	2010-09-03
243776	SB-8 0-1'	soil	2010-09-02	00:00	2010-09-03
243777	SB-8 2.5-3'	soil	2010-09-02	00:00	2010-09-03
243778	SB-8 4.5-5'	soil	2010-09-02	00:00	2010-09-03
243779	SB-8 6.5-7'	soil	2010-09-02	00:00	2010-09-03
243780	SB-8 9-10'	soil	2010-09-02	00:00	2010-09-03
243781	SB-8 14-15'	soil	2010-09-02	00:00	2010-09-03
243782	SB-8 19-20'	soil	2010-09-02	00:00	2010-09-03
243783	SB-9 0-1'	soil	2010-09-02	00:00	2010-09-03
243784	SB-9 2.5-3'	soil	2010-09-02	00:00	2010-09-03

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
243785	SB-9 4.5-5'	soil	2010-09-02	00:00	2010-09-03
243786	SB-9 6.5-7'	soil	2010-09-02	00:00	2010-09-03
243787	SB-9 9-10'	soil	2010-09-02	00:00	2010-09-03
243788	SB-9 14-15'	soil	2010-09-02	00:00	2010-09-03
243789	SB-9 19-20'	soil	2010-09-02	00:00	2010-09-03

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
243706 - SB-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
243713 - SB-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
243722 - SB-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
243734 - SB-4 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
243746 - SB-5 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
243758 - SB-6 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
243767 - SB-7 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
243776 - SB-8 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
243783 - SB-9 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

Sample: 243706 - SB-1 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243707 - SB-1 2.5-3'

Param	Flag	Result	Units	RL
Chloride		1300	mg/Kg	4.00

Sample: 243708 - SB-1 4.5-5'

Param	Flag	Result	Units	RL
Chloride		13800	mg/Kg	4.00

Sample: 243709 - SB-1 6.5-7'

Param	Flag	Result	Units	RL
Chloride		3940	mg/Kg	4.00

Sample: 243710 - SB-1 9.5-10'

Param	Flag	Result	Units	RL
Chloride		1270	mg/Kg	4.00

Sample: 243711 - SB-1 14-15'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243712 - SB-1 19-20'

Param	Flag	Result	Units	RL
Chloride		240	mg/Kg	4.00

Sample: 243713 - SB-2 0-1'

Param	Flag	Result	Units	RL
Chloride		2900	mg/Kg	4.00

Sample: 243714 - SB-2 2.5-3'

Param	Flag	Result	Units	RL
Chloride		14900	mg/Kg	4.00

Sample: 243715 - SB-2 4.5-5'

Param	Flag	Result	Units	RL
Chloride		8930	mg/Kg	4.00

Sample: 243716 - SB-2 6.5-7'

Param	Flag	Result	Units	RL
Chloride		7180	mg/Kg	4.00

Sample: 243717 - SB-2 9.5-10'

Param	Flag	Result	Units	RL
Chloride		738	mg/Kg	4.00

Sample: 243718 - SB-2 14-15'

Param	Flag	Result	Units	RL
Chloride		1450	mg/Kg	4.00

Sample: 243719 - SB-2 19-20'

Param	Flag	Result	Units	RL
Chloride		341	mg/Kg	4.00

Sample: 243720 - SB-2 24-25'

Param	Flag	Result	Units	RL
Chloride		236	mg/Kg	4.00

Sample: 243721 - SB-2 29-30'

Param	Flag	Result	Units	RL
Chloride		201	mg/Kg	4.00

Sample: 243722 - SB-3 0-1'

Param	Flag	Result	Units	RL
Chloride		4120	mg/Kg	4.00

Sample: 243723 - SB-3 2.5-3'

Param	Flag	Result	Units	RL
Chloride		6630	mg/Kg	4.00

Sample: 243724 - SB-3 4.5-5'

Param	Flag	Result	Units	RL
Chloride		17100	mg/Kg	4.00

Sample: 243725 - SB-3 6.5-7"

Param	Flag	Result	Units	RL
Chloride		13300	mg/Kg	4.00

Sample: 243726 - SB-3 9-10'

Param	Flag	Result	Units	RL
Chloride		11500	mg/Kg	4.00

Sample: 243727 - SB-3 14-15'

Param	Flag	Result	Units	RL
Chloride		7120	mg/Kg	4.00

Sample: 243728 - SB-3 19-20'

Param	Flag	Result	Units	RL
Chloride		5980	mg/Kg	4.00

Sample: 243729 - SB-3 24-25'

Param	Flag	Result	Units	RL
Chloride		1380	mg/Kg	4.00

Sample: 243730 - SB-3 29-30'

Param	Flag	Result	Units	RL
Chloride		1150	mg/Kg	4.00

Sample: 243731 - SB-3 39-40'

Param	Flag	Result	Units	RL
Chloride		749	mg/Kg	4.00

Sample: 243732 - SB-3 49-50'

Param	Flag	Result	Units	RL
Chloride		322	mg/Kg	4.00

Sample: 243733 - SB-3 59-60'

Param	Flag	Result	Units	RL
Chloride		233	mg/Kg	4.00

Sample: 243734 - SB-4 0-1'

Param	Flag	Result	Units	RL
Chloride		4750	mg/Kg	4.00

Sample: 243735 - SB-4 2.5-3'

Param	Flag	Result	Units	RL
Chloride		8050	mg/Kg	4.00

Sample: 243736 - SB-4 4.5-5'

Param	Flag	Result	Units	RL
Chloride		9510	mg/Kg	4.00

Sample: 243737 - SB-4 6.5-7'

Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	4.00

Sample: 243738 - SB-4 9-10'

Param	Flag	Result	Units	RL
Chloride		11000	mg/Kg	4.00

Sample: 243739 - SB-4 14-15'

Param	Flag	Result	Units	RL
Chloride		2220	mg/Kg	4.00

Sample: 243740 - SB-4 19-20'

Param	Flag	Result	Units	RL
Chloride		460	mg/Kg	4.00

Sample: 243741 - SB-4 24-25'

Param	Flag	Result	Units	RL
Chloride		727	mg/Kg	4.00

Sample: 243742 - SB-4 29-30'

Param	Flag	Result	Units	RL
Chloride		935	mg/Kg	4.00

Sample: 243743 - SB-4 39-40'

Param	Flag	Result	Units	RL
Chloride		247	mg/Kg	4.00

Sample: 243744 - SB-4 49-50'

Param	Flag	Result	Units	RL
Chloride		267	mg/Kg	4.00

Sample: 243745 - SB-4 59-60'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243746 - SB-5 0-1'

Param	Flag	Result	Units	RL
Chloride		2950	mg/Kg	4.00

Sample: 243747 - SB-5 2.5-3'

Param	Flag	Result	Units	RL
Chloride		11200	mg/Kg	4.00

Sample: 243748 - SB-5 4.5-5'

Param	Flag	Result	Units	RL
Chloride		8430	mg/Kg	4.00

Sample: 243749 - SB-5 6.5-7'

Param	Flag	Result	Units	RL
Chloride		8390	mg/Kg	4.00

Sample: 243750 - SB-5 9-10'

Param	Flag	Result	Units	RL
Chloride		6770	mg/Kg	4.00

Sample: 243751 - SB-5 14-15'

Param	Flag	Result	Units	RL
Chloride		928	mg/Kg	4.00

Sample: 243752 - SB-5 19-20'

Param	Flag	Result	Units	RL
Chloride		558	mg/Kg	4.00

Sample: 243753 - SB-5 24-25'

Param	Flag	Result	Units	RL
Chloride		281	mg/Kg	4.00

Sample: 243754 - SB-5 29-30'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243755 - SB-5 39-40'

Param	Flag	Result	Units	RL
Chloride		232	mg/Kg	4.00

Sample: 243756 - SB-5 49-50'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243757 - SB-5 59-60'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243758 - SB-6 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243759 - SB-6 2.5-3'

Param	Flag	Result	Units	RL
Chloride		15200	mg/Kg	4.00

Sample: 243760 - SB-6 4.5-5'

Param	Flag	Result	Units	RL
Chloride		13300	mg/Kg	4.00

Sample: 243761 - SB-6 6.5-7'

Param	Flag	Result	Units	RL
Chloride		1660	mg/Kg	4.00

Sample: 243762 - SB-6 9-10'

Param	Flag	Result	Units	RL
Chloride		5170	mg/Kg	4.00

Sample: 243763 - SB-6 14-15'

Param	Flag	Result	Units	RL
Chloride		476	mg/Kg	4.00

Sample: 243764 - SB-6 19-20'

Param	Flag	Result	Units	RL
Chloride		883	mg/Kg	4.00

Sample: 243765 - SB-6 24-25'

Param	Flag	Result	Units	RL
Chloride		281	mg/Kg	4.00

Sample: 243766 - SB-6 29-30'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243767 - SB-7 0-1'

Param	Flag	Result	Units	RL
Chloride		204	mg/Kg	4.00

Sample: 243768 - SB-7 2.5-3'

Param	Flag	Result	Units	RL
Chloride		16000	mg/Kg	4.00

Sample: 243769 - SB-7 4.5-5'

Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	4.00

Sample: 243770 - SB-7 6.5-7'

Param	Flag	Result	Units	RL
Chloride		6090	mg/Kg	4.00

Sample: 243771 - SB-7 9-10'

Param	Flag	Result	Units	RL
Chloride		3410	mg/Kg	4.00

Sample: 243772 - SB-7 14-15'

Param	Flag	Result	Units	RL
Chloride		260	mg/Kg	4.00

Sample: 243773 - SB-7 19-20'

Param	Flag	Result	Units	RL
Chloride		245	mg/Kg	4.00

Sample: 243774 - SB-7 24-25'

Param	Flag	Result	Units	RL
Chloride		255	mg/Kg	4.00

Sample: 243775 - SB-7 29-30'

Param	Flag	Result	Units	RL
Chloride		266	mg/Kg	4.00

Sample: 243776 - SB-8 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243777 - SB-8 2.5-3'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243778 - SB-8 4.5-5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243779 - SB-8 6.5-7'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243780 - SB-8 9-10'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243781 - SB-8 14-15'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243782 - SB-8 19-20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243783 - SB-9 0-1'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243784 - SB-9 2.5-3'

Param	Flag	Result	Units	RL
Chloride		289	mg/Kg	4.00

Sample: 243785 - SB-9 4.5-5'

Param	Flag	Result	Units	RL
Chloride		299	mg/Kg	4.00

Sample: 243786 - SB-9 6.5-7'

Param	Flag	Result	Units	RL
Chloride		350	mg/Kg	4.00

Sample: 243787 - SB-9 9-10'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243788 - SB-9 14-15'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 243789 - SB-9 19-20'

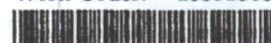
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Summary Report

Kim Dorey
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: September 17, 2010

Work Order: 10091308



Project Location: Lea Co., NM
Project Name: COG/Pronghorn Sec. 11
Project Number: 114-6400680

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
244136	SB-17 1'	soil	2010-09-08	00:00	2010-09-10
244137	SB-17 3'	soil	2010-09-08	00:00	2010-09-10
244138	SB-17 5'	soil	2010-09-08	00:00	2010-09-10
244139	SB-17 7'	soil	2010-09-08	00:00	2010-09-10
244140	SB-17 10'	soil	2010-09-08	00:00	2010-09-10
244141	SB-17 15'	soil	2010-09-08	00:00	2010-09-10
244142	SB-17 20'	soil	2010-09-08	00:00	2010-09-10
244143	SB-17 25'	soil	2010-09-08	00:00	2010-09-10
244144	SB-17 30'	soil	2010-09-08	00:00	2010-09-10
244145	SB-18 1'	soil	2010-09-08	00:00	2010-09-10
244146	SB-18 3'	soil	2010-09-08	00:00	2010-09-10
244147	SB-18 5'	soil	2010-09-08	00:00	2010-09-10
244148	SB-18 7'	soil	2010-09-08	00:00	2010-09-10
244149	SB-18 10'	soil	2010-09-08	00:00	2010-09-10
244150	SB-18 15'	soil	2010-09-08	00:00	2010-09-10
244151	SB-18 20'	soil	2010-09-08	00:00	2010-09-10
244152	SB-18 25'	soil	2010-09-08	00:00	2010-09-10
244153	SB-18 30'	soil	2010-09-08	00:00	2010-09-10
244154	SB-19 1'	soil	2010-09-08	00:00	2010-09-10
244155	SB-19 3'	soil	2010-09-08	00:00	2010-09-10
244156	SB-19 5'	soil	2010-09-08	00:00	2010-09-10
244157	SB-19 7'	soil	2010-09-08	00:00	2010-09-10
244158	SB-19 10'	soil	2010-09-08	00:00	2010-09-10
244159	SB-19 15'	soil	2010-09-08	00:00	2010-09-10
244160	SB-19 20'	soil	2010-09-08	00:00	2010-09-10
244161	SB-20 1'	soil	2010-09-08	00:00	2010-09-10
244162	SB-20 3'	soil	2010-09-08	00:00	2010-09-10
244163	SB-20 5'	soil	2010-09-08	00:00	2010-09-10
244164	SB-20 7'	soil	2010-09-08	00:00	2010-09-10
244165	SB-20 10'	soil	2010-09-08	00:00	2010-09-10

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
244166	SB-20 15'	soil	2010-09-08	00:00	2010-09-10
244167	SB-20 20'	soil	2010-09-08	00:00	2010-09-10
244168	SB-21 1'	soil	2010-09-08	00:00	2010-09-10
244169	SB-21 3'	soil	2010-09-08	00:00	2010-09-10
244170	SB-21 5'	soil	2010-09-08	00:00	2010-09-10
244171	SB-21 7'	soil	2010-09-08	00:00	2010-09-10
244172	SB-21 10'	soil	2010-09-08	00:00	2010-09-10
244173	SB-21 15'	soil	2010-09-08	00:00	2010-09-10
244174	SB-21 20'	soil	2010-09-08	00:00	2010-09-10
244175	SB-22 1'	soil	2010-09-08	00:00	2010-09-10
244176	SB-22 3'	soil	2010-09-08	00:00	2010-09-10
244177	SB-22 5'	soil	2010-09-08	00:00	2010-09-10
244178	SB-22 7'	soil	2010-09-08	00:00	2010-09-10
244179	SB-22 10'	soil	2010-09-08	00:00	2010-09-10
244180	SB-22 15'	soil	2010-09-08	00:00	2010-09-10
244181	SB-22 20'	soil	2010-09-08	00:00	2010-09-10
244182	SB-23 1'	soil	2010-09-09	00:00	2010-09-10
244183	SB-23 3'	soil	2010-09-09	00:00	2010-09-10
244184	SB-23 5'	soil	2010-09-09	00:00	2010-09-10
244185	SB-23 7'	soil	2010-09-09	00:00	2010-09-10
244186	SB-23 10'	soil	2010-09-09	00:00	2010-09-10
244187	SB-23 15'	soil	2010-09-09	00:00	2010-09-10
244188	SB-23 20'	soil	2010-09-09	00:00	2010-09-10
244189	SB-23 25'	soil	2010-09-09	00:00	2010-09-10
244190	SB-24 1'	soil	2010-09-09	00:00	2010-09-10
244191	SB-24 3'	soil	2010-09-09	00:00	2010-09-10
244192	SB-24 5'	soil	2010-09-09	00:00	2010-09-10
244193	SB-24 7'	soil	2010-09-09	00:00	2010-09-10
244194	SB-24 10'	soil	2010-09-09	00:00	2010-09-10
244195	SB-24 15'	soil	2010-09-09	00:00	2010-09-10
244196	SB-24 20'	soil	2010-09-09	00:00	2010-09-10
244197	SB-25 1'	soil	2010-09-09	00:00	2010-09-10
244198	SB-25 3'	soil	2010-09-09	00:00	2010-09-10
244199	SB-25 5'	soil	2010-09-09	00:00	2010-09-10
244200	SB-25 7'	soil	2010-09-09	00:00	2010-09-10
244201	SB-25 10'	soil	2010-09-09	00:00	2010-09-10
244202	SB-25 15'	soil	2010-09-09	00:00	2010-09-10
244203	SB-25 20'	soil	2010-09-09	00:00	2010-09-10
244204	SB-26 1'	soil	2010-09-09	00:00	2010-09-10
244205	SB-26 3'	soil	2010-09-09	00:00	2010-09-10
244206	SB-26 5'	soil	2010-09-09	00:00	2010-09-10
244207	SB-26 7'	soil	2010-09-09	00:00	2010-09-10
244208	SB-26 10'	soil	2010-09-09	00:00	2010-09-10
244209	SB-26 15'	soil	2010-09-09	00:00	2010-09-10
244210	SB-26 20'	soil	2010-09-09	00:00	2010-09-10

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
244136 - SB-17 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
244145 - SB-18 1'					<50.0	<2.00
244154 - SB-19 1'					<50.0	<2.00
244161 - SB-20 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
244168 - SB-21 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
244175 - SB-22 1'	<0.0200	<0.0200	<0.0200	<0.0200	354	<2.00
244182 - SB-23 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
244190 - SB-24 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00
244197 - SB-25 1'					<50.0	<2.00
244204 - SB-26 1'					<50.0	<2.00

Sample: 244136 - SB-17 1'

Param	Flag	Result	Units	RL
Chloride		4100	mg/Kg	4.00

Sample: 244137 - SB-17 3'

Param	Flag	Result	Units	RL
Chloride		8900	mg/Kg	4.00

Sample: 244138 - SB-17 5'

Param	Flag	Result	Units	RL
Chloride		2870	mg/Kg	4.00

Sample: 244139 - SB-17 7'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244140 - SB-17 10'

Param	Flag	Result	Units	RL
Chloride		312	mg/Kg	4.00

Sample: 244141 - SB-17 15'

continued ...

sample 244141 continued ...

Param	Flag	Result	Units	RL
Param	Flag	Result	Units	RL
Chloride		680	mg/Kg	4.00

Sample: 244142 - SB-17 20'

Param	Flag	Result	Units	RL
Chloride		398	mg/Kg	4.00

Sample: 244143 - SB-17 25'

Param	Flag	Result	Units	RL
Chloride		262	mg/Kg	4.00

Sample: 244144 - SB-17 30'

Param	Flag	Result	Units	RL
Chloride		337	mg/Kg	4.00

Sample: 244145 - SB-18 1'

Param	Flag	Result	Units	RL
Chloride		8200	mg/Kg	4.00

Sample: 244146 - SB-18 3'

Param	Flag	Result	Units	RL
Chloride		19700	mg/Kg	4.00

Sample: 244147 - SB-18 5'

Param	Flag	Result	Units	RL
Chloride		4610	mg/Kg	4.00

Sample: 244148 - SB-18 7'

Param	Flag	Result	Units	RL
Chloride		735	mg/Kg	4.00

Sample: 244149 - SB-18 10'

Param	Flag	Result	Units	RL
Chloride		202	mg/Kg	4.00

Sample: 244150 - SB-18 15'

Param	Flag	Result	Units	RL
Chloride		326	mg/Kg	4.00

Sample: 244151 - SB-18 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244152 - SB-18 25'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244153 - SB-18 30'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244154 - SB-19 1'

Param	Flag	Result	Units	RL
Chloride		476	mg/Kg	4.00

Sample: 244155 - SB-19 3'

Param	Flag	Result	Units	RL
Chloride		11400	mg/Kg	4.00

Sample: 244156 - SB-19 5'

Param	Flag	Result	Units	RL
Chloride		2400	mg/Kg	4.00

Sample: 244157 - SB-19 7'

Param	Flag	Result	Units	RL
Chloride		378	mg/Kg	4.00

Sample: 244158 - SB-19 10'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244159 - SB-19 15'

Param	Flag	Result	Units	RL
Chloride		240	mg/Kg	4.00

Sample: 244160 - SB-19 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244161 - SB-20 1'

Param	Flag	Result	Units	RL
Chloride		1190	mg/Kg	4.00

Sample: 244162 - SB-20 3'

Param	Flag	Result	Units	RL
Chloride		12400	mg/Kg	4.00

Sample: 244163 - SB-20 5'

Param	Flag	Result	Units	RL
Chloride		6590	mg/Kg	4.00

Sample: 244164 - SB-20 7'

Param	Flag	Result	Units	RL
Chloride		9920	mg/Kg	4.00

Sample: 244165 - SB-20 10'

Param	Flag	Result	Units	RL
Chloride		908	mg/Kg	4.00

Sample: 244166 - SB-20 15'

Param	Flag	Result	Units	RL
Chloride		219	mg/Kg	4.00

Sample: 244167 - SB-20 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244168 - SB-21 1'

Param	Flag	Result	Units	RL
Chloride		1720	mg/Kg	4.00

Sample: 244169 - SB-21 3'

Param	Flag	Result	Units	RL
Chloride		4970	mg/Kg	4.00

Sample: 244170 - SB-21 5'

Param	Flag	Result	Units	RL
Chloride		574	mg/Kg	4.00

Sample: 244171 - SB-21 7'

Param	Flag	Result	Units	RL
Chloride		290	mg/Kg	4.00

Sample: 244172 - SB-21 10'

Param	Flag	Result	Units	RL
Chloride		223	mg/Kg	4.00

Sample: 244173 - SB-21 15'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244174 - SB-21 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244175 - SB-22 1'

Param	Flag	Result	Units	RL
Chloride		7960	mg/Kg	4.00

Sample: 244176 - SB-22 3'

Param	Flag	Result	Units	RL
Chloride		15800	mg/Kg	4.00

Sample: 244177 - SB-22 5'

Param	Flag	Result	Units	RL
Chloride		911	mg/Kg	4.00

Sample: 244178 - SB-22 7'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244179 - SB-22 10'

Param	Flag	Result	Units	RL
Chloride		435	mg/Kg	4.00

Sample: 244180 - SB-22 15'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244181 - SB-22 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244182 - SB-23 1'

Param	Flag	Result	Units	RL
Chloride		600	mg/Kg	4.00

Sample: 244183 - SB-23 3'

Param	Flag	Result	Units	RL
Chloride		9320	mg/Kg	4.00

Sample: 244184 - SB-23 5'

Param	Flag	Result	Units	RL
Chloride		7400	mg/Kg	4.00

Sample: 244185 - SB-23 7'

Param	Flag	Result	Units	RL
Chloride		326	mg/Kg	4.00

Sample: 244186 - SB-23 10'

Param	Flag	Result	Units	RL
Chloride		305	mg/Kg	4.00

Sample: 244187 - SB-23 15'

Param	Flag	Result	Units	RL
Chloride		450	mg/Kg	4.00

Sample: 244188 - SB-23 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244189 - SB-23 25'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244190 - SB-24 1'

Param	Flag	Result	Units	RL
Chloride		2220	mg/Kg	4.00

Sample: 244191 - SB-24 3'

Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	4.00

Sample: 244192 - SB-24 5'

Param	Flag	Result	Units	RL
Chloride		688	mg/Kg	4.00

Sample: 244193 - SB-24 7'

Param	Flag	Result	Units	RL
Chloride		214	mg/Kg	4.00

Sample: 244194 - SB-24 10'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244195 - SB-24 15'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244196 - SB-24 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244197 - SB-25 1'

Param	Flag	Result	Units	RL
Chloride		1130	mg/Kg	4.00

Sample: 244198 - SB-25 3'

Param	Flag	Result	Units	RL
Chloride		12800	mg/Kg	4.00

Sample: 244199 - SB-25 5'

Param	Flag	Result	Units	RL
Chloride		2190	mg/Kg	4.00

Sample: 244200 - SB-25 7'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244201 - SB-25 10'

Param	Flag	Result	Units	RL
Chloride		345	mg/Kg	4.00

Sample: 244202 - SB-25 15'

Param	Flag	Result	Units	RL
Chloride		274	mg/Kg	4.00

Sample: 244203 - SB-25 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244204 - SB-26 1'

Param	Flag	Result	Units	RL
Chloride		1680	mg/Kg	4.00

Sample: 244205 - SB-26 3'

Param	Flag	Result	Units	RL
Chloride		274	mg/Kg	4.00

Sample: 244206 - SB-26 5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244207 - SB-26 7'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244208 - SB-26 10'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244209 - SB-26 15'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 244210 - SB-26 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00