# SITE INFORMATION

•

JRA-881 # 891 Report Type: Closure Report

General Site Info	rmation:			all and and a second second					
Site:		Berry A #33							
Company:		Alamo Pern	nian Resources						
Section, Townsh	ip and Range	Unit K	Sec. 24	T-17-S	R-27-E				
Lease Number:	···· · · · · ·	API 30-015							
County:		Eddy Coun							
GPS:	<u></u> .		32.81698° N			104.23447° W			
Surface Owner:		Federal							
Mineral Owner:		From NIM 92	and Live 260 trave	Junch 4 E m	las to Crons	Deed Turn right 0.1 miles to Couthor			
Directions:			ight 0.1 to location		niles to Crane Road. Turn right 0.1 miles to South				
		5	RA-881	- مىنە بە مىيانىرىمانلىكەنچىلىمى يەنى رىچە -		2RA-891			
Release Data:			Spill #1			Spill#2			
Date Released:			7/14/11			8/30/11			
Type Release:			Oil and Water			Water			
Source of Contar	nination:		pen Top ran ov	Photo: Contract of the second s		Open Top ran over			
Fluid Released:		18 bbls (	3 bbls oil, 15 bb	ls water)		25 bbls			
Fluids Recovered			0 bbls	Martin and and an addition		0 bbls			
Official Commun	ication:								
Name:	Hollie Lamb		•		Kim Dorey				
Company:	Alamo Permian F	Resources, LLC	;		Tetra Tech				
Address:	415 West Wall S	t., Suite 500			1910 N. Big	g Spring			
P.O. Box				• • • • • • • • • • • • • • • • • • •	1	<u>, , , , , , , , , , , , , , , , , , , </u>			
City:	Midland, Texas				Midland, Te	exas			
Phone number:	(432) 897-0673			••••	(432) 682-4				
Cell:	(432) 664-7659	#	·····	- *	(102) 002				
	hlamb@helmsc	vil oom			kim.dorey@tetratech.com				
Email:	<u>Indino enemisc</u>				Kim.uorey				
Ranking Criteria									
Depth to Groundw	ater:		Ranking Score			Site Data			
<50 ft			20						
50-99 ft			10	<u> </u>					
>100 ft	·		0			0			
WellHead Protectio	on:		Ranking Score	· / · · · ·		Site Data			
	00 ft., Private <200 f	t.	20						
Water Source >1,0	00 ft., Private >200 f	t.	0			0			
				- <b>T</b>					
Surface Body of W	ater:		Ranking Score			Site Data			
<200 ft.			20						
200 ft - 1,000 ft >1,000 ft.	-		10 0			0			
	al Ranking Score.			*	<u></u>				
			able Soil RRAL (	ma/ka)	1				
		Benzene	Total BTEX	TPH	5				
		10	50	5,000	1				
		·····		1.0,000					
	and the second					the contract of the contract o			



RECEI	VED
SEP <b>06</b>	2012
NMOCD A	RTESIA

May 16, 2012

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

### Re: Closure Report for the Alamo Permian Resources LLC., Berry A #33, Tank Battery, Unit K, Section 24, Township 17 South, Range 27 East, Eddy County, New Mexico.

### Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by Alamo Permian Resources LLC., (Alamo) to assess a spill from the Berry A #33 Tank Battery, Unit K, Section 24, Township 17 South, Range 27 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.81698°, W 104.23447°. The site location is shown on Figures 1 and 2. Alamo reported two separate reportable spills at the Berry A #33 location.

### Background

### Spill #1

According to the State of New Mexico C-141 Initial Report, the first spill was discovered on July 14, 2011, and released approximately three (3) barrels of oil and fifteen (15) barrel of produced water due to an electrical malfunction and allowing the open top tank to overflow.

### Spill #2

According to the State of New Mexico C-141 Initial Report, the second spill was discovered on August 30, 2011, and released approximately twentyfive (25) barrels of water due to an electrical malfunction and allowing the open top tank to overflow. To alleviate the problem, Alamo moved the water tank near the oil tanks and lined and diked the water tank.



### Groundwater

No water wells were listed within Section 24. According to the New Mexico office of State Engineer one well was listed in Section 23 with a reported total depth of 220' and groundwater depth of 40' bgs which may be artesian.

According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 150' below surface. One well in Section 16 of Township 17 South, Range 27 East has a recorded depth to water of 172' below surface. Another well was listed in Section 19 of Township 17 South, Range 28 East, has a recorded depth to water of 191' below surface. The groundwater well report data and New Mexico Office of the State Engineer's reports are shown 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 Analytical Results**

On January 23, 2012, Tetra Tech personnel supervised the installation of boreholes utilizing an air rotary drilling rig. A total of six (6) boreholes (BH-1 through BH-6) were installed and soil samples collected for laboratory analysis. 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. The spill footprint and borehole locations are shown on Figure 3.

Referring to Table 1, all submitted samples were below the RRAL for TPH and BTEX. Elevated chloride concentrations were detected in BH-1, BH-2, and BH-4. Borehole (BH-1) located inside the berm area had chloride



concentrations ranging from 1,010 mg/kg at 6-7' bgs to 14,200 mg/kg at 14-15' bgs. Chloride concentrations had a significant decrease to 1,480 mg/kg at 29-30' bgs and declined to <200 mg/kg at 39-40' bgs.

Boreholes (BH-2 and BH-4) were installed outside of the berm area on the east and west side, respectively. BH-2, west of berm area had chloride concentrations ranging from 2,800 mg/kg at 9-10' bgs to 15,100 mg/kg at 0-1' bgs. BH-2 was vertically defined with a chloride concentration of 291 mg/kg at 24-25' bgs. BH-4, east of the berm had chloride concentrations ranging from 771 mg/kg at 6-7' bgs to 12,200 mg/kg at 14-15' bgs. BH-4 was vertically defined with a chloride concentration of 256 mg/kg at 39-40' bgs.

At BH-3, a chloride concentration spike was detected at 6-7' bgs of 3,050 mg/kg. Samples above at 4-5' (482 mg/kg) and below at 9-10' (386 mg/kg) did not show a significant impact. The detected chloride spike does not appear to be an environmental concern.

### **Spill Remediation Activities**

March 2012, Tetra Tech personnel supervised the excavation as outlined in the previously submitted and approved work plan. The excavation depths proposed in the work plan were not achieved due to the dense formation encountered at approximately 6.0' below surface. Tetra Tech contacted the NMOCD and BLM to discuss the excavation difficulties at the site. Both agencies approved the excavation depth of 6.0' and capping the remaining impact with a 40 mil liner. Once completed, the liner was placed in the excavation bottom at 4.0' below surface and backfilled with clean material to grade. Approximately 1,300 yards<sup>3</sup> of material were removed and disposed of at Gandy Marley Inc. The excavated area and depth are shown on Figure 4.

#### **BLM Site Restoration Activities**

At the request of the BLM, additional areas at the facility were addressed as part of the site restoration and cleanup activities (historical spills) at the location. The areas of concern are shown on Figures 5. These areas include the reserve pit, well pad, areas north and south off the pad and the southwest corner off the pad.

As approved by the BLM, the areas were excavated 1.0' below surface and lined with a 20 mil liner and 2.0' to 3.0' of topsoil placed top of the liner, with the exception of the pad area and area southwest corner area off the pad. Due to old spills on the pad, the area around the well was scraped and a 20 mil liner was installed on the pad. Once completed, 1.0' of



caliche material was placed on top of the liner to complete the reclamation. The southwest corner area, near the DCP line, was worked with a backhoe to blend some hydrocarbon stained soil in the area. The excavated material from the site was transported to Gandy Marley Inc. for disposal.

On March 28, 2012, the BLM inspected the site and approved the restoration and cleanup activities at the site. The reserve pit, areas north and south of the pad, and southwest area of the pad were seeded with an approved BLM mix.

### Conclusions

Based on the remediation activities performed on the reportable releases at this location, Alamo Permian Resources, LLC request closure for spill. The C-141 (Final) is included in Appendix C. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted,

TETRA/TECH Ike Tavarez, PG

Senior Project Manager

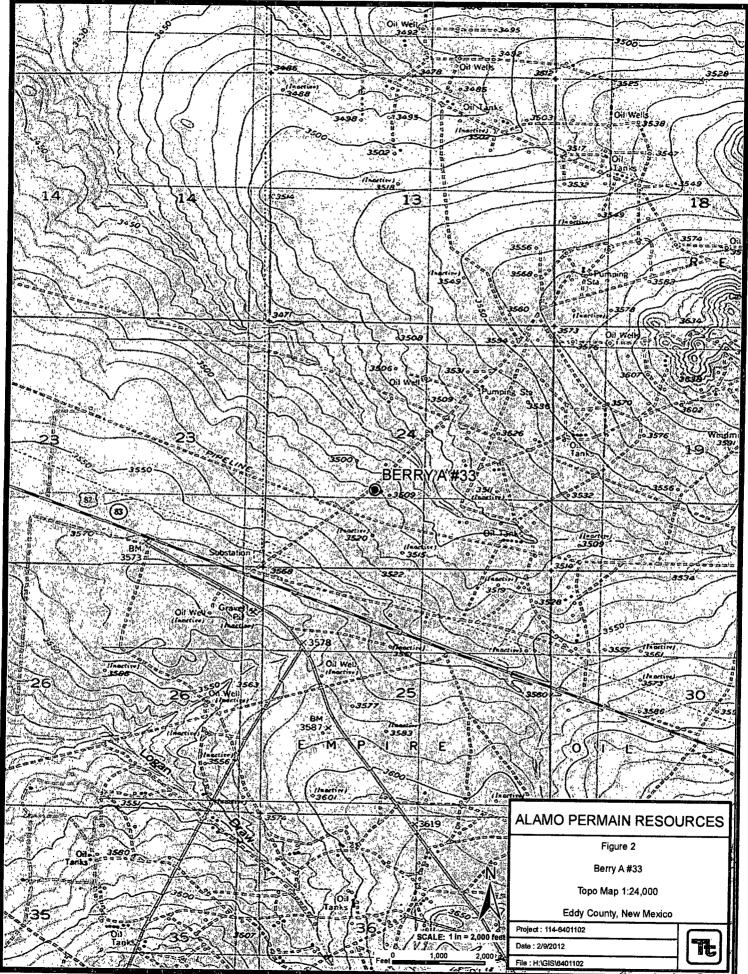
cc: Jennifer Van Curen – BLM Hollie Lamb – HeLM Oil and Gas

Figures

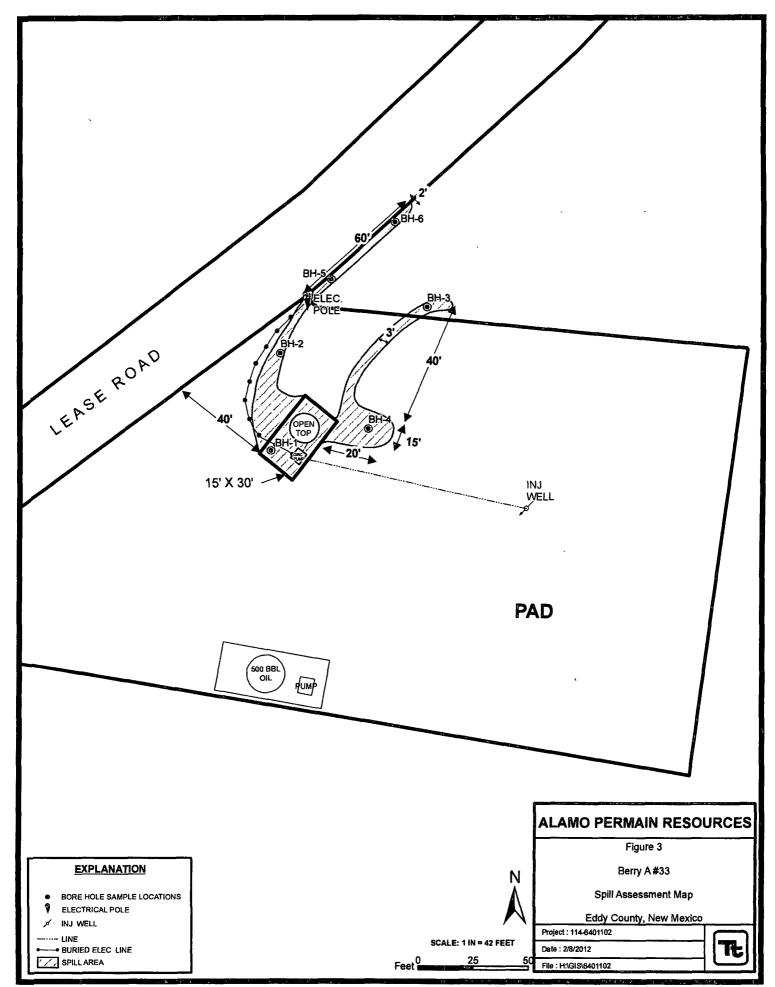
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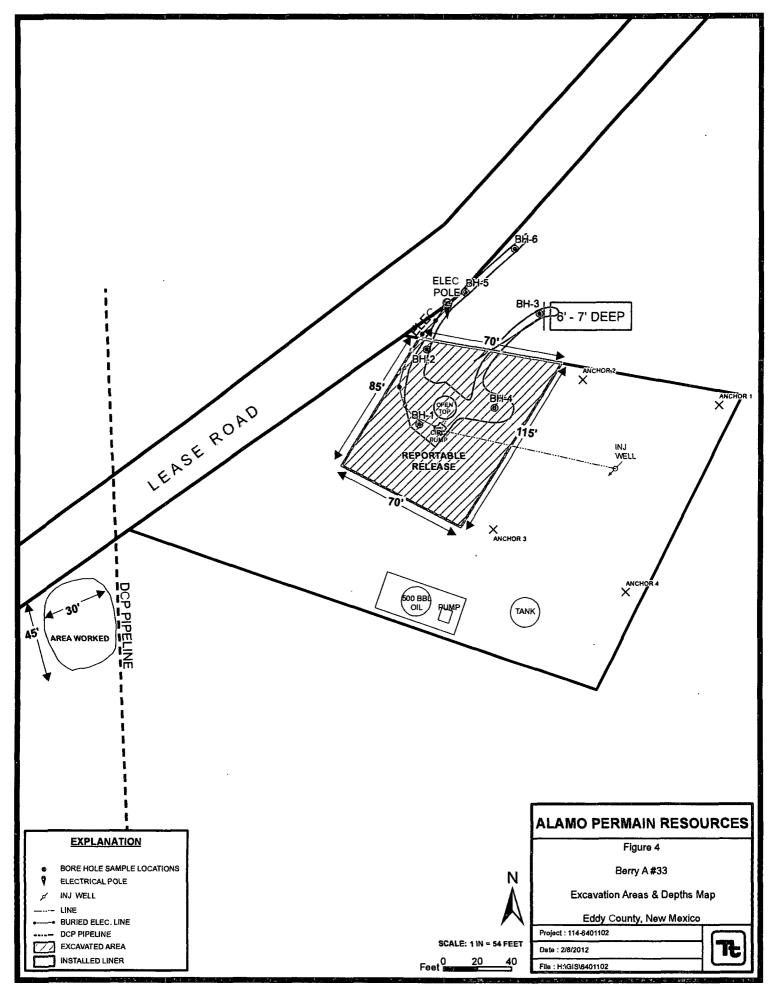
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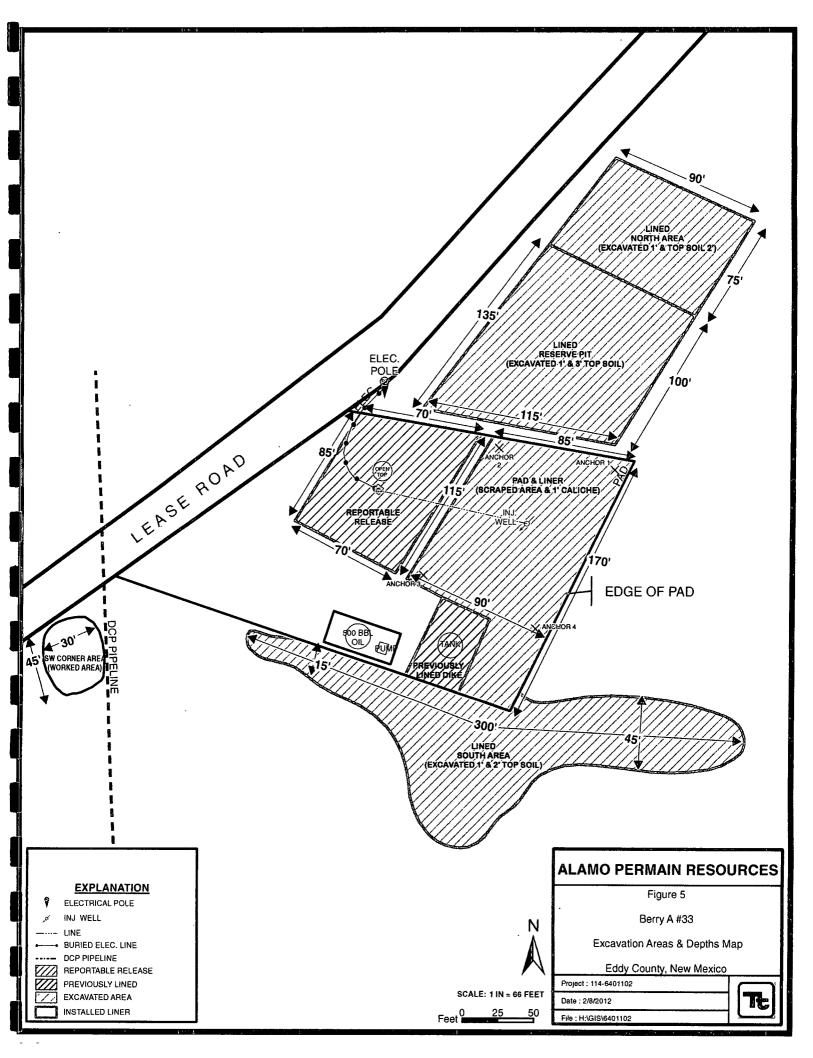
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Y S	(Ddifill) Hanah Hazah	2320 31 June / 2000 8 Ranch - 1	S Artas Isrey
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Fronter Post - Parter	$\frac{1}{1-\frac{1}{2}} = \frac{1}{2} \sum_{i=1}^{n-1} \frac{1}{1-\frac{1}{2}} \sum_{i=1}^{n-1} \frac{1}{2} \sum_{i=1}^$		
Lakewood	Winomilles Rench	1 Numerous smalf is Windmit	ALAMO PERMAIN RESOURCES
	1 J. 1 J. 10	WUMAS BOROW	Figure 1 Berry A #33
			Topo Map 1:200,000 Eddy County, New Mexico
Texn By (sabel Mamoigo		SCALE: 1 In = 16,667 fer 1:275 	Project : 114-8401102   Date : 2/9/2012   File : H:\GIS\\6401102



Orawn By Jeabel Marmolejd







# Tables

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### Table 1

### Alamo

# Berry A #33

## Eddy County, New Mexico

Sample	Ocean la Data	Sample	Soil	Status	1	FPH (mg/k	(g)	Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride
ID	Sample Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX (mg/kg)	(mg/kg)
BH-1	1/23/2012	<sup>`</sup> 0-1	۰.	X	3.01	<50.0	3.01	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	8,250
Inside berm	11	2-3	· · ·	X	, <b>-</b>	÷	<b>1</b>	<b>_</b> •		, <b>-</b>	-	,	10,900
	61	4-5		X	_	-	Ĩ		- ,	-	- }	ę. •••	9,010
	41	6-7		X	-	-	-	-	_		1	-	1,010
	11	9-10	X			-	-	-	-	-	-	-	8,460
	11	14-15	Х		-	-	-	-	-	_	-	-	14,200
	II	19-20	Х		-	-	-	-	-	-	-	-	11,300
		29-30	X		-	-	-	-	-	-	-	-	1,480
	It	39-40	Х		-	-	-	-	-	-	-	-	<200
BH-2	1/23/2012	° <sup>°</sup> 0-1		X	2.78	<50.0	2.78	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	.15,100
West of source	61	2-3	-	X.	-	-	-	°	· - ·	-	- 1	· •	15,000
	11	4-5	-	X	-	-	-			-	- ĵ	-	13,500
	11	6-7		X			-	- 4.	-			-	6,610
	11	9-10	X			-	-	-	-	-	_	-	2,800
	n	14-15	X		-	-	-	-	-	-	-	-	14,700
		19-20	Х		-	-	-	-	-	-	-	-	6,800
	11	24-25	Х			-	-	-	-	-	-	-	291
	11	29-30	X		-	-		-	-	-	-	-	858
	u	39-40	X		-	-	-	-	-	-	-	-	<200

### Table 1

### Alamo

# Berry A #33

# Eddy County, New Mexico

Sample	Sample Date	Sample	Soil	Status	1	PH (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Total BTEX	Chloride
D	Sample Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH-3	1/23/2012	0-1	X		2.54	<50.0	2.54	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	537
North of source	11	2-3	Х		-	-	-	-	-	-	-	-	790
	n	4-5	Х		-	-	_	-	-	-	-	-	482
	u	6-7	Х		-	-	-	-	-	-	-	-	3,050
	13	9-10	X		-	-	-	-	-		-	-	386
BH-4	1/23/2012	0-1		X	2.52	<50.0	2.52	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	4,700
East of source	u	2-3		X		-	-		, -	*		a - <b>-</b>	5,750
	u	4-5		X	-	-		- <u>-</u>	· "_	· ···		-	9,550
	11	6-7 <sup>-</sup>	× .	Х	-	-		-	-	-	-	· •	<sup>•</sup> 771
	11	9-10	Х		-	-	-	-	-	-	-	-	5,050
	13	14-15	Х		-	-		-	-	-	-	-	12,200
	11	19-20	Х		-	-	-		-	-	-	-	6,660
	ļi	24-25	Х		-	-	-	-	-	-	-	-	2,150
	u	29-30	Х			-	-	-	-	-	-	-	1,190
	11	39-40	Х		-	-	-	-	-	-	-	-	256

### Table 1

### Alamo

# Berry A #33

## Eddy County, New Mexico

Sample Sample Date		Sample	Soil S	Status	. 7	PH (mg/k	:g)	Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride
	Sample Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX (mg/kg)	(mg/kg)
BH-5	1/23/2012	0-1	Х		2.54	<50.0	2.54	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	560
Along Road	l)	2-3	Х		-	-	-	-	-	-	-	-	613
	11	4-5	Х		-	-	*	-	-	-	-	-	2,180
		6-7	Х		-	-		-	-	_	-	-	2,150
		9-10	Х		-	-	-	-	-	_	-	-	375
		14-15	Х		<u>-</u>	-	-	-	-	-	-	-	1,540
		19-20	Х		-	-	-	-	-	-	-	-	217
BH-6	1/23/2012	0-1	Х		2.22	<50.0	2.22	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	450
Along Road	¶ ii	2-3	Х		-	-		-	-	-	-		532
	u	4-5	Х		-	-	-	-	-	-	-	4	<200

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Not Analyzed

Excavation depths

(--)

Installed liner

Photos

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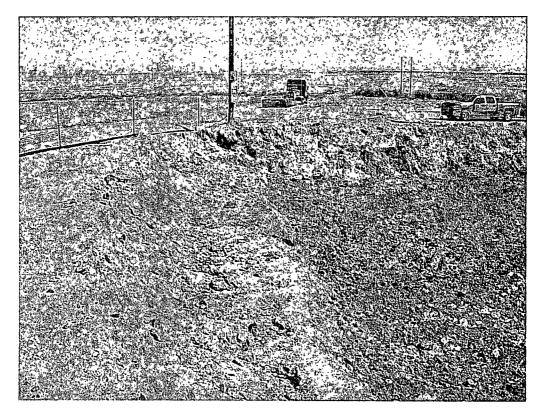
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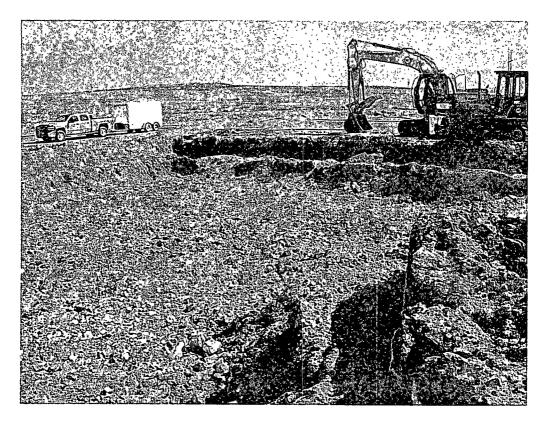
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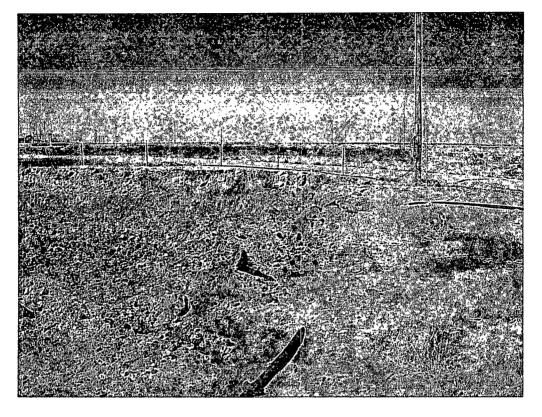
tetra tech



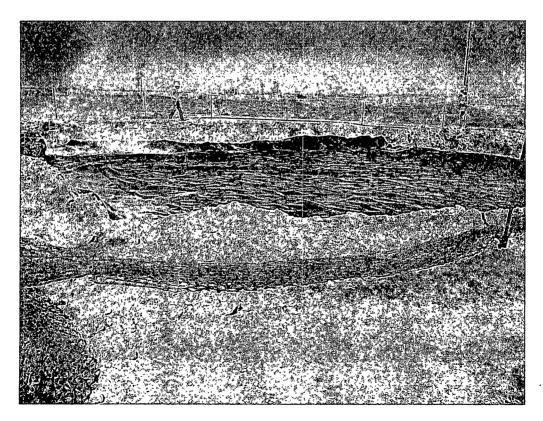
View - excavation of spill area at open top tank



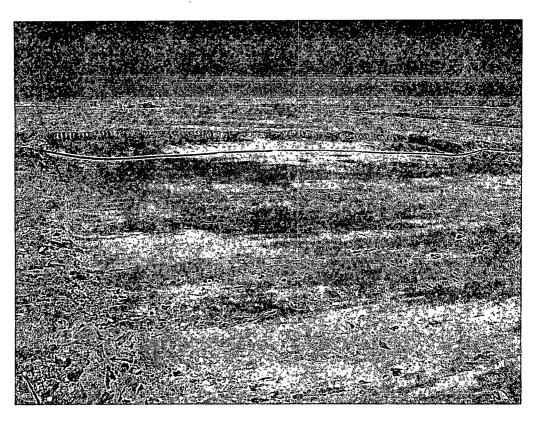
View north - final excavation at open top tank area



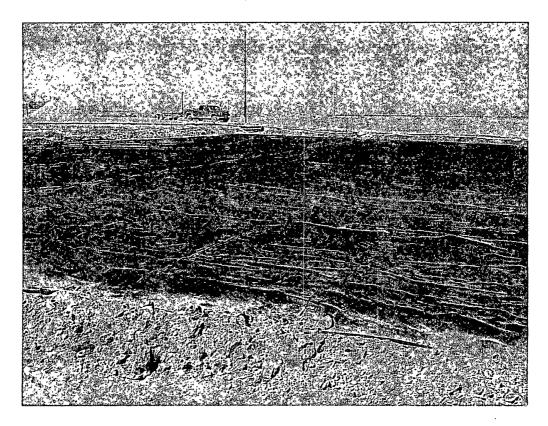
View west - final excavation at open top tank area



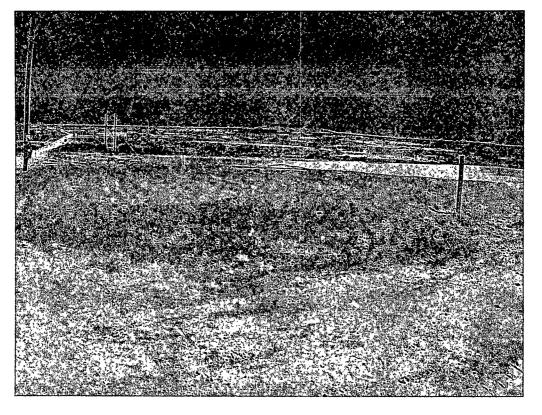
View west - open top tank area, liner and backfilling



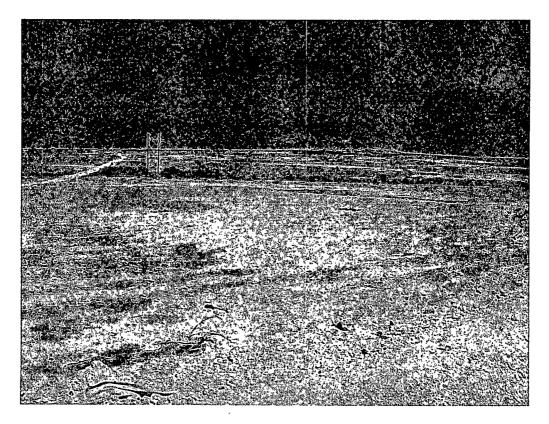
Reserve pit area excavation



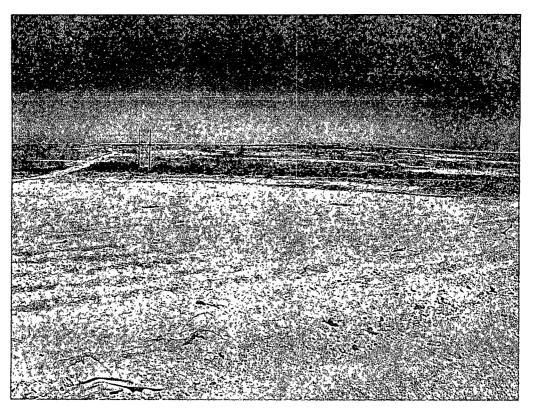
Reserve pit area liner installation



Reserve pit and north area - backfilled with 2.0' to 3.0' top soil

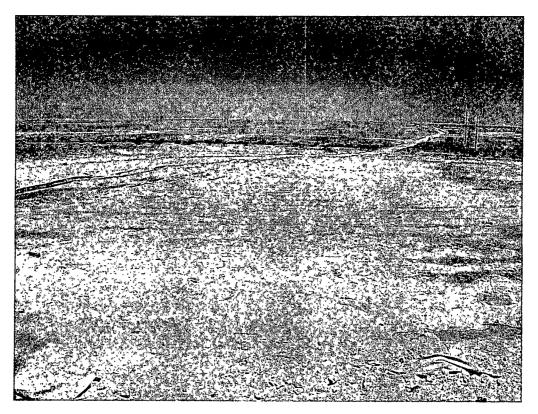


Reserve pit and north area - backfilled with 2.0 to 3.0' of clean topsoil



TETRA TECH

View of backfilled reserve pit and north area



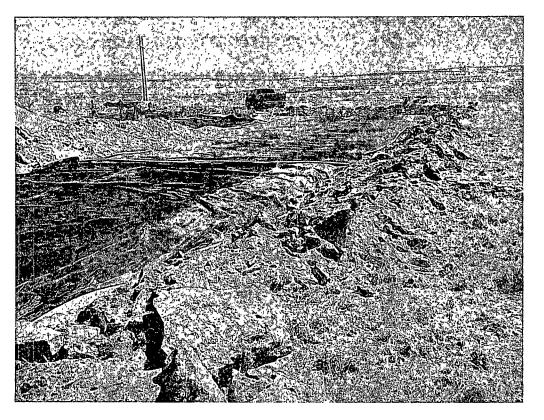
View of backfilled reserve pit and north area



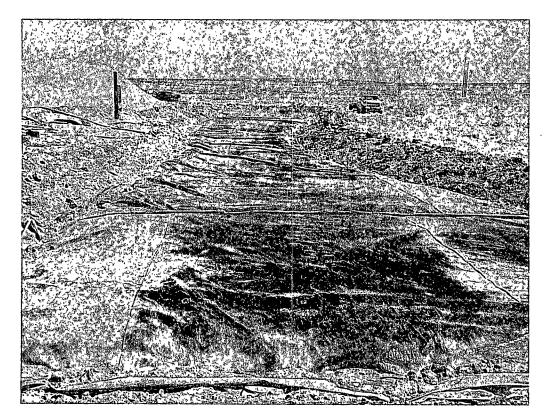
West view - excavation of area south of pad



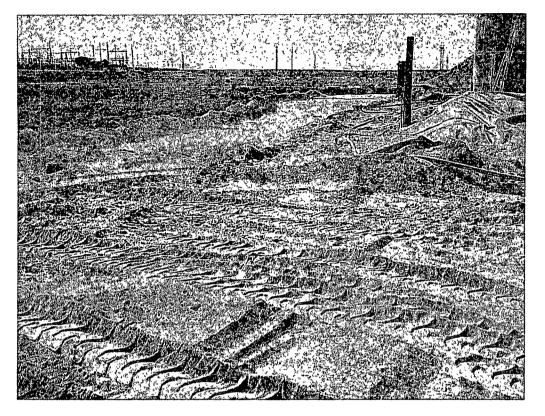
East view - excavation south of pad - 1.0' excavation



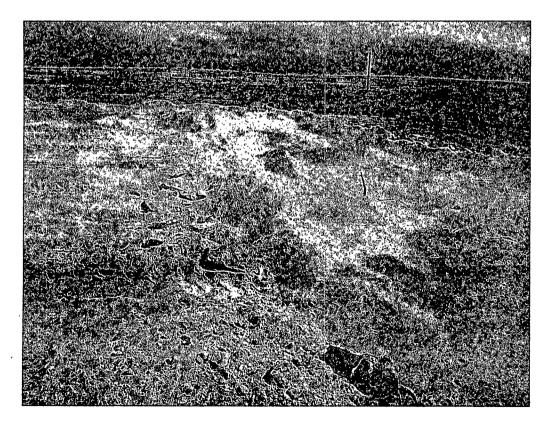
Area south of pad - liner installation



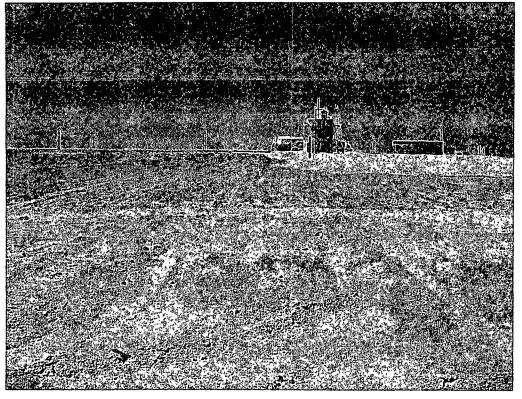
Area south of pad - liner and backfilling



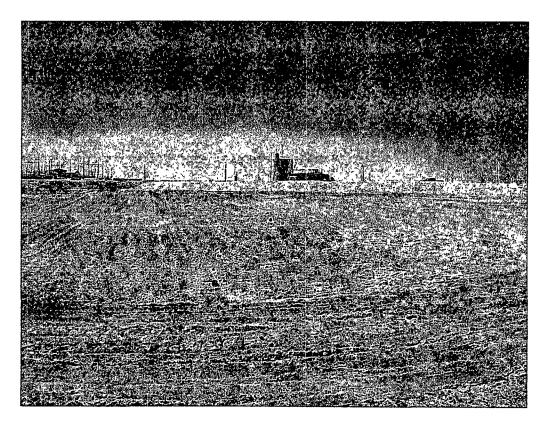
Backfilling area south of pad



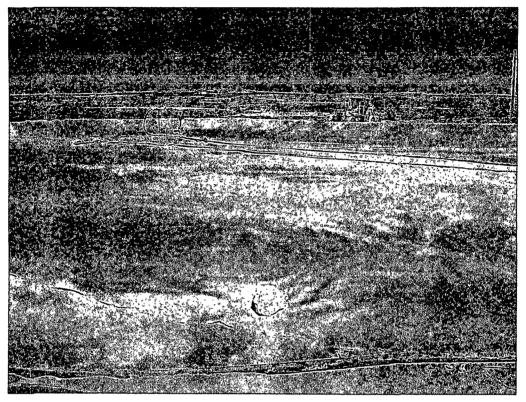
Backfilling area south of pad



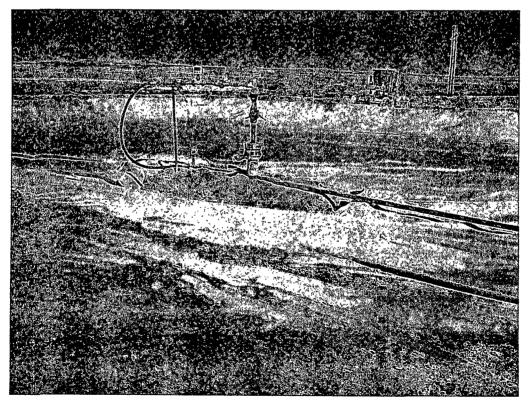
View of backfilled area south of pad



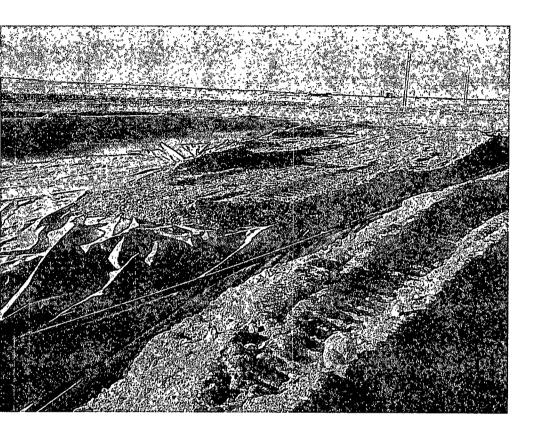
View of backfilled area south of pad



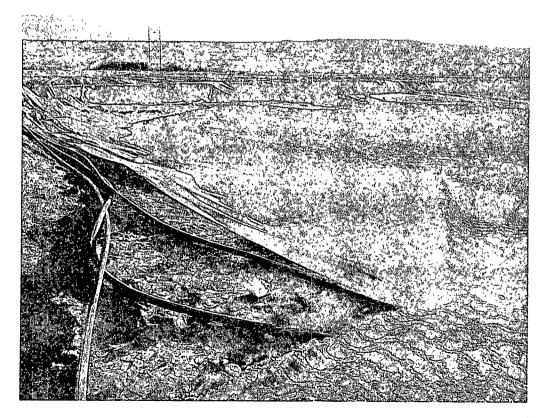
Pad area - liner installation



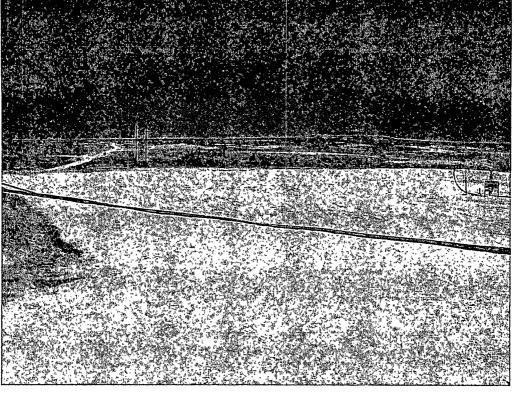
Pad area - liner installation



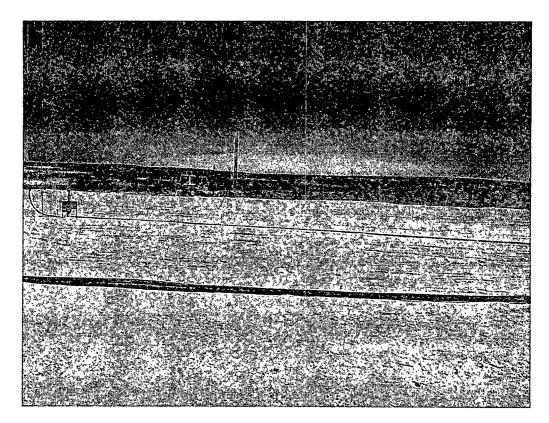
Pad area - 1.0' of caliche material top of liner



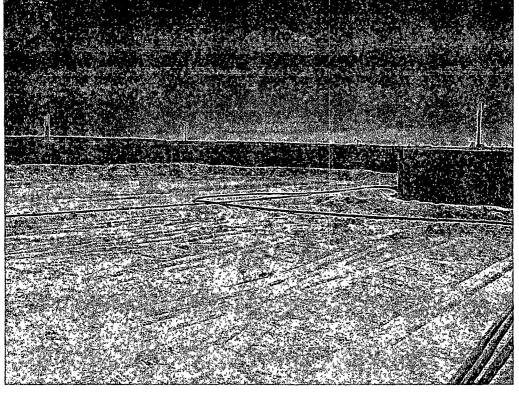
Pad area - 1.0' of caliche material top of liner



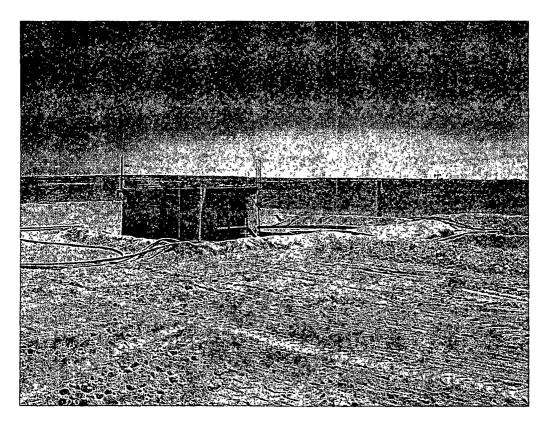
Pad area with 1.0' caliche material



Pad area with 1.0' of caliche material



Pad area with 1.0' caliche material



Pad area and new construction of lined area for open top tank

# Appendix A

State of New Mexico **Energy Minerals and Natural Resources** 

Form C-141 Revised October 10, 2003

Oil Conservation Division 1000 8uth Ct. De aia D

Submit 2 Copies to appropriate District Office in accordance

	a Fe, NM 875			wit	th Rule 116 on back side of form
Release Notificat			ction		· · · · · · · · · · · · · · · · · · ·
Kitast Itoliitai	OPERA			l Report	🛛 Final Repo
Name of Company Alamo Permian Resources, LLC	Contact Ste			акероп	
Address 415 W. Wall St. Suite 500		No. (432) 557-5	847		
Facility Name Berry A #33	Facility Typ				
Surface Owner Federal Mineral Own	ner Federal		Lease N	o. API No	. 30-015-25154
	ION OF RE	FASE ·	<b>4</b>		
	lorth/South Line South	Feet from the 2040	East/West Line West		County Eddy
Latitude N 32.816	84° Longitud	e W 104.2341	5°		<u> </u>
NATU	RE OF REL	EASE			
Type of Release: Oil and Water	Volume of	Release 3 bbls	oil Volume R	ecovered	
Source of Release	15 bbls wa	ter lour of Occurrenc	Data and I	Hour of Disc	
Overflow tank		July 14, 2011		ately: Aug	
Was Immediate Notice Given?	If YES, To		/ <b>1</b>		
🗌 Yes 🖾 No 🗌 Not Requi					
By Whom? Jennifer Van Curen w/BLM	Date and H		1 137		
Was a Watercourse Reached?	If YES, Vo N/A	lume Impacting (	the Watercourse.		
	10/1				
If a Watercourse was Impacted, Describe Fully.*					
N/A					
Describe Cause of Problem and Remedial Action Taken.*					
Electrical malfunction caused an injection pump to be down long eno	ugh that the overf	low tank ran over			
Describe Area Affected and Cleanup Action Taken.*					
Tetra Tech inspected site and collected samples to define spills extent Marley, Inc. Additional areas, at the request of the BLM, were excav material. Tetra Tech prepared closure report and submitted to NMOC	ated and lined. T				
I hereby certify that the information given above is true and complete regulations all operators are required to report and/or file certain relea public health or the environment. The acceptance of a C-141 report b should their operations have failed to adequately investigate and reme or the environment. In addition, NMOCD acceptance of a C-141 report federal, state, or local laws and/or regulations.	ase notifications and the NMOCD mediate contamination of the second second second second second second second s	nd perform correct arked as "Final R on that pose a thr	tive actions for rele eport" does not relic eat to ground water,	ases which a eve the opera , surface wat	may endanger ator of liability er, human health
Signature: MAN			SERVATION	DIVISIO	<u>N</u>
Printed Name: Ike Tavarez	Approved by	District Supervis	or:		
Title: Project Manager	Approval Dat	e:	Expiration I	Date:	
E-mail Address: ike.tavarez@tetratech.com	Conditions of	Approval:		Attached	
Date: <b>4</b> /16/14 Phone: (432) 682-4559	1				

\* Attach Additional Sheets If Necessary

2RA-881

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### State of New Mexico **Energy Minerals and Natural Resources**

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

Form C-141 Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

<b>Release Notification and Corrective Action</b>										
		OPERATOR	🛛 Initial Report	Final Report						
Name of Company ALAMO PERMIAN RESOU	JCES, LLC	Contact STEVEN MASTIN								
Address 415 W. WALL ST. SUITE 500		Telephone No. 432 557 5847								
Facility Name BERRY A 33		Facility Type								
Surface Owner FEDERAL	Mineral Owner	FEDERAL	API No. 30-015-	25154						

Surface Owner FEDERAL Mineral Owner FEDERAL

#### LOCATION OF RELEASE

Unit Lette	er Section	Township	Range	Feet from the	North/South Line	Feet from the 2040	East/West Line	County
K	24	17S	27E	1650	S		W	EDDY

Latitude 32.8168411354531

Longitude -104.234151895391

#### NATURE OF RELEASE

Type of Release: OIL & WATER	Volume of Release: EST 18 BBLS (3bbls oil & 15 bbls water)	Volume R	ecovered:
Source of Release: OVERFLOW TANK	Date and Hour of Occurrence:	Date and L	four of Discovery
Source of Release. OVERILEOW TANK	EST JULY 14, 2011		AUG 14, 2011
Was Immediate Notice Given?	If YES, To Whom?	ATTROA	A00 14, 2011
Yes X No Not Required			
By Whom? JENNIFER VAN CUREN w/ BLM	Date and Hour		
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	tercourse.	
If a Watercourse was Impacted, Describe Fully.*			
Describe Cause of Problem and Remedial Action Taken.*			
			:
Cause of problem: An electrical malfunction caused an injection pump to	be down long enough that the overflo	w tank ran ov	/er
Describe Area Affected and Cleanup Action Taken.*			
Describe Area Ariceled and Cleanup Action Taken.			
TBD			
I hereby certify that the information given above is true and complete to	the best of my knowledge and understa	and that pursu	ant to NMOCD rules and
regulations all operators are required to report and/or file certain release			
public health or the environment. The acceptance of a C-141 report by the			
should their operations have failed to adequately investigate and remedia			
or the environment. In addition, NMOCD acceptance of a C-141 report of federal, state, or local laws and/or regulations.	does not relieve the operator of respons	sibility for co	mpliance with any other
redular, state, or rotal laws and/or regulations.	OIL CONSERV	IA TION	
	OIL CONSERV	ATION	DIVISION
Signature NANO, toppon,			
	Approved by Environmental Specialis		
Printed Name: CARIE STOKER	Approved by Environmental Specialis	51.	i
Title: REGULATORY/ PRODUCTION TECH	Approval Date:	Expiration D	Pate:
E-mail Address: cstoker@alamoresources.com	Conditions of Approval:		Attached 🗍
Date: 08/29/2011 Phone: 432 664 7659			

\* Attach Additional Sheets If Necessary

State of New Mexico **Energy Minerals and Natural Resources** 

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

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 Alamo Permian Res	ources, LLC	Contact Steven Mastin		
Address 415 W. Wall St. Suite 500		Telephone No. (432) 557-5847		
Facility Name Berry A #33		Facility Type		
Surface Owner Federal	Mineral Ow	ner Federal	Lease No. API N	0. 30-015-25154

Surface Owner Federal

Lease No. API No. 30-015-25154

### LOCATION OF RELEASE

	Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	К	24	17-S	27-E	1650	South	2040	West	Eddy
1				}					

Latitude N 32.81684° Longitude W 104.23415°

#### NATURE OF RELEASE

Type of Release: Water	Volume of Release 25 bbls	Volume Recovered
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Overflow tank	Aug 30, 2011	Aug 30, 2011
Was Immediate Notice Given?	If YES, To Whom?	
🛛 Yes 🗌 No 🔲 Not Required	Steven Mastin	
By Whom? Ricky Rodriguez, pumper	Date and Hour Aug 30, 2011	
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	itercourse.
🗌 Yes 🖾 No	N/A	
If a Watercourse was Impacted, Describe Fully.*	······································	
N/A		
Describe Cause of Problem and Remedial Action Taken.*	·····	
Electrical malfunction caused an injection pump to be down long enough	that the overflow tank ran over	
Describe Area Affected and Cleanup Action Taken.*		
Describe Area Affected and Cleanup Action Taken.		
Tetra Tech inspected site and collected samples to define spills extent. So	il with elevated chloride concentration	ns was removed and hauled away to Gandy
Marley, Inc. Additional areas, at the request of the BLM, were excavated		
material. Tetra Tech prepared closure report and submitted to NMOCD for		, U
	······································	
I hereby certify that the information given above is true and complete to t	he best of my knowledge and understa	and that pursuant to NMOCD rules and
regulations all operators are required to report and/or file certain release n	otifications and perform corrective ac	tions for releases which may endanger
public health or the environment. The acceptance of a C-141 report by th	e NMOCD marked as "Final Report"	does not relieve the operator of liability
should their operations have failed to adequately investigate and remediat		
or the environment. In addition, NMOCD acceptance of a C-141 report d federal, state, or local laws and/or regulations.	oes not relieve the operator of respons	sibility for compliance with any other
Tederar, state, of focal factor and/of regulations.	OIL CONSERV	
$///_{\Lambda}$	<u>UIL CONSER</u>	VATION DIVISION
Signature:		
	Approved by District Supervision	
Printed Name: Ike Tavarez	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: ike.tavarez@tetratech.com	Conditions of Approval:	
	conditions of Approval.	Attached 🔲
Date: 5/16/12 Phone: (432) 682-4559		
Attach Additional Sheets If Necessary		200 001
		2RP-891

State of New Mexico Energy Minerals and Natural Resources



Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

API No. 30-015-25154

### **Release Notification and Corrective Action**

OPERATOR	Initial Report	Final Report
Contact STEVEN MASTIN		
Telephone No. 432 557 5847		
Facility Type		
	Contact STEVEN MASTIN Telephone No. 432 557 5847	Contact STEVEN MASTIN Telephone No. 432 557 5847

Surface Owner FEDERAL

#### LOCATION OF RELEASE

Mineral Owner FEDERAL

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County	
К	24	175	27E	1650	S	2040	w	EDDY	
			L	<u> </u>					

Latitude 32.8168411354531

Longitude -104.234151895391

#### NATURE OF RELEASE

Type of Release: WATER	Volume of Release: 25 BBLS	Volume Re	covered:		
Source of Release: OVERFLOW TANK	Date and Hour of Occurrence:	Date and H	our of Discovery		
	AUG 30, 2011	AUG 30, 2	011		
Was Immediate Notice Given?	If YES, To Whom?				
🛛 Yes 🔲 No 🗋 Not Required	STEVEN MASTIN				
By Whom? RICKY RODRIGUEZ, PUMPER	Date and Hour AUG 30, 2011				
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	tercourse.			
🗌 Yes 🖾 No					
If a Watercourse was Impacted, Describe Fully.*	· · · · · · · · · · · · · · · · · · ·				
Describe Cause of Problem and Remedial Action Taken.*					
Cause of problem: An electrical malfunction caused an injection pump to	be down long enough that the overflo	ow tank ran ov	er		
Describe Area Affected and Cleanup Action Taken.*			······································		
TBD					
I hereby certify that the information given above is true and complete to regulations all operators are required to report and/or file certain release r	the best of my knowledge and underst	and that pursu	ant to NMOCD rules and		
public health or the environment. The acceptance of a C-141 report by the	NACCD mericad on "Einel Banard"	ctions for relea	ises which may endanger		
should their operations have failed to adequately investigate and remedia	te contomination that nose a threat to	does not reliev	ourface water burger backth		
or the environment. In addition, NMOCD acceptance of a C-141 report of	the containination that pose a tireat to	ground water,	surface water, number heatth		
federal, state, or local laws and/or regulations.	toes not reneve the operator or respon	sidinty for cor	inpliance with any other		
	OIL CONSER		NUSION		
	<u>OIL CONSER</u>	VATIONI	<u>514151014</u>		
Signature: Caro Staffer					
	Approved by Environmental Speciali	ist:			
Printed Name: CARIE STOKER					
Title: REGULATORY/ PRODUCTION TECH	Approval Data				
	Approval Date:	Expiration Da	alt.		
E-mail Address: cstoker@alamoresources.com	Conditions of Approval:				
			Attached		
Date: 08/30/2011 Phone: 432 664 7659					

\* Attach Additional Sheets If Necessary

# Appendix B

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#### Water Well Data Average Depth to Groundwater (ft) Alamo - Berry A #33 Eddy County, New Mexico

	16 South 26 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	6 South 27 East			
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
ī9	20	21	22	23	24
30	29	28	27 70	26	25
31	32	33	34	35	36

	16	South	th 28 East		
ô	5	4	В	2	1
7	В	9	10	11	12
18	17	16	15	14	13
19	20	21 61	22	23	24
30	29	28	27	26	25
<u>3</u> 1	32	33	34	35	36

	17 South			17 South 26 East			
6	5	4	3	2	1		
7	<sup>8</sup> .	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			18 South 26 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		

	17 \$	South	uth 27 East		
6	5 30	4	3	2	1
7 14	8	9	10	11 <b>54</b>	12
18 <b>86</b>	17	16 172	15	14	13
19	20	21	22	23 40	24 SITE
30	29	28	27	26	25
31	32 120	33	34	35	36

	18 South 27 East			t	
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

	17 South			17 South 28 East		
6	5	4	3	2	1	
7	8	9	10	11	12	
18	17	16	15	14	13	
19 1 <b>91</b>	20	21	22 79	23	24	
30	29	28	27	26	25	
31	32	33	34 <b>53</b>	35	36	

	18	South	:	28 East	
6	5	4 108	3	2	1
7	в	Ð	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 66	36

New Mexico State Engineers Well Reports

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

NMOCD - Groundwater Data

Field water level

New Mexico Water and Infrastructure Data System

Site Location - Berry A #33

Appendix C

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# **Summary Report**

Ike Tavarez Tetra Tech 1910 N. Big Spring Street Midland, TX 79705 Report Date: January 31, 2012

Work Order: 12012602

Project Location:Eddy Co., NMProject Name:Alamo/Berry A #33Project Number:114-6401102

			Date	$\operatorname{Time}$	Date
Sample	Description	Matrix	Taken	Taken	Received
287421	BH-1 0-1'	soil	2012-01-23	00:00	2012-01-25
287422	BH-1 2-3'	soil	2012-01-23	00:00	2012 - 01 - 25
287423	BH-1 4-5'	soil	2012-01-23	00:00	2012-01-25
287424	BH-1 6-7'	soil	2012-01-23	00:00	2012-01-25
287425	BH-1 9-10'	soil	2012-01-23	00:00	2012-01-25
287426	BH-1 14-15'	soil	2012-01-23	00:00	2012-01-25
287427	BH-1 19-20'	soil	2012-01-23	00:00	2012-01-25
287428	BH-1 29-30'	soil	2012-01-23	00:00	2012-01-25
287429	BH-1 39-40'	soil	2012-01-23	00:00	2012 - 01 - 25
287432	BH-2 0-1'	soil	2012-01-23	00:00	2012-01-25
287433	BH-2 2-3'	soil	2012-01-23	00:00	2012-01-25
287434	BH-2 4-5'	soil	2012-01-23	00:00	2012-01-25
287435	BH-2 6-7'	soil	2012-01-23	00:00	2012-01-25
287436	BH-2 9-10'	soil	2012-01-23	00:00	2012-01-25
287437	BH-2 14-15'	soil	2012-01-23	00:00	2012-01-25
287438	BH-2 19-20'	soil	2012-01-23	00:00	2012-01-25
287439	BH-2 24-25'	soil	2012-01-23	00:00	2012-01-25
287440	BH-2 29-30'	soil	2012-01-23	00:00	2012-01-25
287441	BH-2 39-40'	soil	2012-01-23	00:00	2012-01-25
287442	BH-3 0-1'	soil	2012-01-23	00:00	2012-01-25
287443	BH-3 2-3'	soil	2012-01-23	00:00	2012-01-25
287444	BH-3 4-5'	soil	2012-01-23	00:00	2012 - 01 - 25
287445	BH-3 6-7'	soil	2012-01-23	00:00	2012-01-25
287446	BH-3 9-10'	soil	2012-01-23	00:00	2012-01-25
287451	BH-4 0-1'	soil	2012-01-24	00:00	2012-01-25
287452	BH-4 2-3'	soil	2012-01-24	00:00	2012-01-25
287453	BH-4 4-5'	soil	2012-01-24	00:00	2012-01-25
287454	BH-4 6-7'	soil	2012-01-24	00:00	2012-01-25
287455	BH-4 9-10'	soil	2012-01-24	00:00	2012-01-25
287456	BH-4 14-15'	soil.	2012-01-24	00:00	2012-01-25

Report Date: January 31, 2012		Work Order: 12012602		Pag	Page Number: 2 of 7	
			Date	Time	Date	
Sample	Description	Matrix	Taken	Taken	Received	
287457	BH-4 19-20'	soil	2012-01-24	00:00	2012-01-2	
287458	BH-4 24-25'	soil	2012-01-24	00:00	2012-01-2	
287459	BH-4 29-30'	soil	2012-01-24	00:00	2012-01-2	
287461	BH-5 0-1'	soil	2012-01-24	00:00	2012-01-2	
287462	BH-5 2-3'	soil	2012-01-24	00:00	2012-01-2	
287463	BH-5 4-5'	soil	2012-01-24	00:00	2012-01-2	
287400	BH-6 0-1'	soil	2012-01-24	00:00	2012-01-2	
287470	BH-6 2-3'	soil	2012-01-24 2012-01-24	00:00	2012-01-2	
287471	BH-6 4-5'	soil	2012-01-24	00:00	2012-01-2	
	<u></u>					
Sample: 287	7421 - BH-1 0-1'					
_						
Param	$\mathbf{Flag}$	F	lesult	Units	RJ	
Param Chloride Sample: 287	Flag '422 - BH-1 2-3'		tesult 8250	Units mg/Kg	R]	
Chloride Sample: 287 Param		F		mg/Kg Units		
Chloride Sample: 287 Param Chloride	' <b>422 - BH-1 2-3'</b> Flag	F	8250 tesult	mg/Kg	RJ	
Chloride Sample: 287 Param Chloride Sample: 287	'422 - BH-1 2-3' Flag '423 - BH-1 4-5'		8250 tesult 0900	mg/Kg Units mg/Kg	RJ	
Chloride Sample: 287 Param Chloride Sample: 287 Param	' <b>422 - BH-1 2-3'</b> Flag	F 1 R	8250 tesult 0900	mg/Kg Units mg/Kg Units	RJ	
Chloride Sample: 287 Param Chloride Sample: 287 Param Chloride	7422 - BH-1 2-3' Flag 7423 - BH-1 4-5' Flag	F 1 R	8250 tesult 0900	mg/Kg Units mg/Kg	RI	
Chloride Sample: 287 Param Chloride Sample: 287 Param Chloride Sample: 287	7422 - BH-1 2-3' Flag 7423 - BH-1 4-5' Flag 7424 - BH-1 6-7'	F 1 R	8250 Result 0900	Units mg/Kg Units Units mg/Kg	RJ RI	
Chloride Sample: 287 Param Chloride Sample: 287 Param Chloride Sample: 287 Param	7422 - BH-1 2-3' Flag 7423 - BH-1 4-5' Flag	F 1 R R	8250 Result 0900	Units Units mg/Kg Units mg/Kg Units	RJ RI RI	
Chloride Sample: 287 Param Chloride Sample: 287 Param Chloride Sample: 287 Param Chloride	7422 - BH-1 2-3' Flag 7423 - BH-1 4-5' Flag 7424 - BH-1 6-7' Flag	F 1 R R	8250 Result 0900	Units mg/Kg Units Units mg/Kg	RI RI RI	
Chloride Sample: 287 Param Chloride Sample: 287 Param Chloride Sample: 287 Param Chloride	7422 - BH-1 2-3' Flag 7423 - BH-1 4-5' Flag 7424 - BH-1 6-7' Flag 7425 - BH-1 9-10'	F 1 R R	8250 Result 0900	Units Units mg/Kg Units mg/Kg Units	RI	
Chloride Sample: 287 Param Chloride Sample: 287 Param Chloride Sample: 287 Param Chloride	7422 - BH-1 2-3' Flag 7423 - BH-1 4-5' Flag 7424 - BH-1 6-7' Flag	F       	8250 Result 0900	Units Units mg/Kg Units mg/Kg Units	RI RI RI	

### Sample: 287426 - BH-1 14-15'

Report Date: January 31, 2012		Work Order: 12012602	Page Number: 3 of 7			
sample 287426 continued						
Param	Flag	Result	Units	RL		
Param Chloride	Flag	Result 14200	Units mg/Kg	RL 4		
·				<u> </u>		
Sample: 287427	- BH-1 19-20'					
Param	$\mathbf{Flag}$	Result	Units	$\operatorname{RL}$		
Chloride		11300	mg/Kg	4		
Sample: 287428	- BH-1 29-30'					
Param	Flag	Result	Units	$\operatorname{RL}$		
Chloride		1480	m mg/Kg	4		
Sample: 287429	- BH-1 39-40'					
Param	Flag	Result	Units	$\mathbf{RL}$		
Chloride		<200	mg/Kg	4		
Sample: 287432	- BH-2 0-1'					
-		Result	Units	$\mathbf{RL}$		
Param	- BH-2 0-1' Flag	Result 15100	Units mg/Kg	RL 4		
Param Chloride	Flag					
Sample: 287432 Param Chloride Sample: 287433 Param	Flag - BH-2 2-3'					
Param Chloride Sample: 287433	Flag	15100	mg/Kg	4		
Param Chloride Sample: 287433 Param Chloride	Flag - BH-2 2-3' Flag	15100 Result	mg/Kg Units	4 RL		
Param Chloride Sample: 287433 Param	Flag - BH-2 2-3' Flag	15100 Result	mg/Kg Units	4 RL		

### Sample: 287435 - BH-2 6-7'

Report Date: January 31, 2012		Work Order: 12012602	Page	Page Number: 4 of 7	
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		6610	mg/Kg	4	
Sample: 287436 - H	3H-2 9-10'				
Param	$\mathbf{F}\mathbf{lag}$	Result	Units	$\operatorname{RL}$	
Chloride		2800	mg/Kg	4	
Sample: 287437 - H	3H-2 14-15'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		14700	mg/Kg	4	
Sample: 287438 - I	3H-2 19-20'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		6800	mg/Kg	4	
Sample: 287439 - I	3H-2 24-25'				
Param	Flag	Result	Units	$\mathbf{RL}$	
Chloride		291	mg/Kg	4	
Sample: 287440 - H	3H-2 29-30'				
Param	Flag	Result	Units	RL	
Chloride		858	mg/Kg	4	
Sample: 287441 - I	3H-2 39-40'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		<200	mg/Kg	4	
Sample: 287442 - I	3H-3 0-1'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride	<u> </u>	537	mg/Kg	4	

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Report Date: Janu	ary 31, 2012	Work Order: 12012602	Page 1	Number: 5 of 7
Sample: 287443	- BH-3 2-3'			
Param	Flag	Result	Units	$\operatorname{RL}$
Chloride		790	mg/Kg	4
Sample: 287444	- BH-3 4-5'			
Param	Flag	Result	Units	$\operatorname{RL}$
Chloride		482	mg/Kg	4
Sample: 287445	- BH-3 6-7'			
Param	Flag	Result	Units	$\operatorname{RL}$
Chloride		3050	mg/Kg	4
Sample: 287446	- BH-3 9-10'			
Param	Flag	Result	Units	$\operatorname{RL}$
Chloride		386	mg/Kg	4
Sample: 287451	- BH-4 0-1'			
Param	Flag	Result	Units	RL
Chloride		4700	mg/Kg	4
Sample: 287452 -	- BH-4 2-3'			
Param	Flag	Result	Units	$\operatorname{RL}$
Chloride	······································	5750	mg/Kg	4
Sample: 287453 -	- BH-4 4-5'			
Param	Flag	Result	Units	RL
Chloride	····	9550	mg/Kg	4
Sample: 287454 -	- BH-4 6-7'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		771	mg/Kg	4

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Report Date: January 31, 2012		Work Order: 12012602	Page	Page Number: 6 of 7	
Sample: 287455 - H	3H-4 9-10'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		5050	mg/Kg	4 ·	
Sample: 287456 - I	3H-4 14-15'		,		
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		12200	mg/Kg	4	
Sample: 287457 - I	3H-4 19-20'				
Param	Flag	Result	Units	RL	
Chloride	r iag	6660	ing/Kg	4	
Sample: 287458 - I	3H-4 24-25'				
Param	Flag	Result	Units	RL	
Chloride		2150	mg/Kg	4	
Sample: 287459 - I	3H-4 29-30'				
Param	Flag	Result	Units	RL	
Chloride		1190	mg/Kg	4	
Sample: 287461 - I	3H-5 0-1'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		560	mg/Kg	4	
Sample: 287462 - I	3H-5 2-3'				
Param	Flag	Result	Units	RL	
Chloride		613	mg/Kg	4	
Sample: 287463 - I	3H-5 4-5'				
Param	Flag	Result	Units	$\mathbf{RL}$	
Chloride		2180	mg/Kg	4	

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Report Date: January 31, 2012		Work Order: 12012602		Page Number: 7 of 7			
Sample: 287470 - BH-6 0-1'							
Param	Flag	Result	Units	$\operatorname{RL}$			
Chloride		450	mg/Kg	4			
Sample: 287471	- BH-6 2-3'			•			
Deren	Floor	Docult	Thite	סז			
Param Chloride	Flag	Result 532	Units mg/Kg	RL4			
Chloride							

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# **Summary Report**

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

Report Date: February 8, 2012

Work Order: 12012602

Project Location:Eddy Co., NMProject Name:Alamo/Berry A #33Project Number:114-6401102

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
287421	BH-1 0-1'	soil	2012-01-23	00:00	2012-01-25
287432	BH-2 0-1''	soil	2012-01-23	00:00	2012 - 01 - 25
287442	BH-3 0-1'	soil	2012-01-23	00:00	2012-01-25
287451	BH-4 0-1'	soil	2012-01-24	00:00	2012 - 01 - 25
287460	BH-4 39-40'	soil	2012-01-24	00:00	2012-01-25
287461	BH-5 0-1'	soil	2012-01-24	00:00	2012-01-25
287464	BH-5 6-7'	soil	2012-01-24	00:00	2012-01-25
287465	BH-5 9-10'	soil	2012-01-24	00:00	2012-01-25
287466	BH-5 14-15'	soil	2012-01-24	00:00	2012-01-25
287467	BH-5 19-20'	soil	2012-01-24	00:00	2012-01-25
287470	BH-6 0-1'	soil	2012-01-24	00:00	2012-01-25

	BTEX			TPH DRO - NEW	TPH GRO	
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(ing/Kg)	(mg/Kg)	(mg/Kg)	(ing/Kg)	(mg/Kg)
287421 - BH-1 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	3.01
287432 - BH-2 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	2.78
287442 - BH-3 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	2.54
287451 - BH-4 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	2.52
287461 - BH-5 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	2.54
287470 - BH-6 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	2.22

### Sample: 287460 - BH-4 39-40'

Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		256	mg/Kg	4

Report Date: February 8, 2012		ary 8, 2012 Work Order: 12012602		Page Number: 2 of 2			
Sample: 287464 - BH-5 6-7'							
Param	Flag	Result	Units	$\operatorname{RL}$			
Chloride		2150	mg/Kg	4			
Sample: 287465	- BH-5 9-10'						
Param	Flag	Result	Units	$\operatorname{RL}$			
Chloride		375	mg/Kg	4			
Sample: 287466	- BH-5 14-15'						
Param	Flag	Result	Units	$\operatorname{RL}$			
Chloride		1540	mg/Kg	4			
Sample: 287467	- BH-5 19-20'						
Param	Flag	Result	Units	$\operatorname{RL}$			
Chloride		217	mg/Kg	4			

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