Basin Environmental Service Technologies, LLC

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REMEDIATION SUMMARY AND RISK-BASED SITE CLOSURE REQUEST

BOPCO, LP
JAMES RANCH UNIT #55 WELL PAD
Eddy County, New Mexico
Unit Letter "F" (SE/NW), Section 17, Township 23 South, Range 31 East
Latitude 32.306285° North, Longitude 103.801920° West
NMOCD References #2RP-548 & 1177

Prepared For:

BOPCO, LP 522 W. Mermod, Suite 704 Carlsbad, New Mexico 88220

Prepared By:
Basin Environmental Service Technologies, LLC
3100 Plains Highway
Lovington, New Mexico 88260

June 2014

NM OIL CONSERVATION

ARTESIA DISTRICT

JUL 0 1 2014

RECEIVED

Joel W. Lowry

Project Manager

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1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin), on behalf of BOPCO, LP (BOPCO), has prepared this *Remediation Summary and Risk-Based Site Closure Request* for the release site known as James Ranch Unit #55 Well Pad (JRU #55). The legal description of the release site is Unit Letter "F" (SE/NW), Section 17, Township 23 South, Range 31 East, in Eddy County, New Mexico. The geographic coordinates of the release site are 32.306285° North latitude and 103.801920° West longitude. The property affected by the release is owned by the United States Department of the Interior - Bureau of Land Management (BLM). A "Site Location Map" is provided as Figure 1.

There have been two reportable releases on the JRU #55 Well Pad. The first reportable release occurred on March 9, 2010. The release was attributed to the failure of a temporary hose being used while circulating the well. The "Release Notification and Corrective Action" (Form C-141) indicated a release of approximately ten barrels (10 bbls) of produced water and ten barrels (10 bbls) of crude oil affected approximately two thousand, five hundred square feet (2,500 ft²) of caliche well pad, one thousand, six hundred and twenty square feet (1,620 ft²) of caliche road and five hundred and twenty-five square feet (525 ft²) of adjacent pasture land. During initial response activities approximately five barrels (5 bbls) of produced water and three barrels (3 bbls) of crude oil were recovered using a vacuum truck. Heavily saturated soil was excavated from the well pad and pasture and transported to an NMOCD-approved disposal facility. Between March 25 and 31, 2010, remediation activities were conducted by an alternative environmental contractor. Final closure was never sought as a non-reportable release occurred atop the previously remediated area. The Form C-141 for the March 9, 2010, release is provided as Appendix A.

The second reportable release occurred on May 18, 2012. The release was attributed to the failure of the packing in the stuffing box. The initial Form C-141 indicated a release of approximately five barrels (5 bbls) of produced water and three barrels (3 bbls) of crude oil affected approximately four hundred and ten square feet (410 ft²) of the caliche well pad. During initial response activities, approximately three barrels (3 bbls) of free-standing fluid were recovered using a vacuum truck. The Form C-141 for the May 18, 2012, release is provided as Appendix B. General photographs of the release site are provided as Appendix C.

As per the NMOCD, the releases were remediated simultaneously.

2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Water Rights Reporting System (NMWRRS) database maintained by the New Mexico Office of the State Engineer (NMOSE) indicated information was unavailable for Section 17, Township 23 South, Range 31 East. A depth to groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately ninety feet (90') below ground surface (bgs). Based on the NMOCD ranking system, ten (10) points will be assigned to the site as a result of this criterion.

A search of the NMWRRS database indicated there are no water wells within one thousand feet (1,000') of the release. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

There are no surface water bodies within one thousand feet (1,000') of the release. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

NMOCD guidelines indicate the JRU #55 Well Pad release site has an initial ranking score of ten (10) points. The soil remediation levels for a site with a ranking score of ten (10) points are as follows:

- Benzene 10 ppm
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) –ppm
- Total Petroleum Hydrocarbons (TPH) 1,000 ppm

The New Mexico Administrative Code (NMAC) does not currently specify a remediation level for chloride concentrations in soil. Chloride remediation levels are set by the NMOCD on a site-specific basis.

3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES

On May 19, 2014, Basin began excavating impacted soil at the release site. The excavation floor and sidewalls were advanced until field tests suggested concentrations of BTEX, TPH and chloride were below NMOCD regulatory standards. Excavated soil was stockpiled on-site, pending final disposition.

On May 20, 2014, six (6) soil samples (NSW, SSW, ESW #1, WSW #1, WSW #2 and Floor #1 @ 2') were collected from the excavated area and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from less than the laboratory method detection limit (MDL) for soil sample WSW #1 to 256 ppm for soil sample NSW. Soil sample Floor #1 @ 2' was also analyzed for concentrations of TPH, which were determined to be less than the appropriate laboratory MDL. A summary of "Concentrations of Benzene, BTEX, TPH & Chloride in Soil" is provided in Table 1. A "Site and Sample Location Map" is provided as Figure 2. Laboratory analytical reports are provided as Appendix D.

On May 21, 2014, a delineation trench (DT 1) was advanced south of the well head in area exhibiting elevated chloride concentrations at four feet (4') bgs. During the advancement of the delineation trench, four (4) soil samples (DT 1 @ 6', DT 1 @ 9', DT 1 @ 17' and DT 1 @ 18.5') were collected and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 2,600 ppm for soil sampled 1 @ 9' to 352 ppm for soil sample DT 1 @ 18.5'.

In addition, two (2) soil samples (ESW #2 and ESW #3) were collected from the excavated area and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated the concentration of chloride was 304 ppm for both samples.

On May 22, 2014, three (3) soil samples (NSW #2, NSW #3, and SSW #2) were collected from the excavated area and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 144 ppm for soil sample NSW #2 to 320 ppm for soil sample NSW #3.

On May 27, 2014, one (1) soil sample (NESW) was collected from the northeast edge of the environmental excavation and submitted to the laboratory for analysis of chloride, BTEX and TPH concentrations. Laboratory analytical results indicate soil sample NESW exhibited a chloride concentration of 32.0 ppm. BTEX and TPH concentrations were less than the appropriate laboratory MDL.

In addition, two (2) soil samples (Road #1, Road #2) were collected from the caliche road adjacent to the well pad affected by the May 9, 2010, release in an effort to determine if previous remediation activities were sufficient. Laboratory analytical results indicated soil sample Road #1 exhibited a chloride concentration of 288 ppm, soil sample Road #2 exhibited a chloride concentration of 272 ppm. Soil sample Road #2 was also analyzed for concentrations of BTEX and TPH, which were determined to be less than the appropriate laboratory MDL. Laboratory analytical results suggest previous remediation activities on the affected caliche road met the requirements of the NMOCD.

An initial investigation was conducted in an area of pasture adjacent to the PLU #55 Well Pad that was inferred to have been affected by the March 9, 2010, release. During the initial investigation, four (4) hand-augered soil bores (SP #1 through SP #4) were advanced in the disturbed area north of the well pad. Soil samples were collected from SP #1 at the surface, two feet (2') and four feet (4') bgs and field screened for concentrations of chloride. During the advancement of SP #1, a twenty-millimeter (20-mil) polyurethane liner was encountered at approximately four feet (4') bgs. Chloride field test results ranged from less than 120 ppm for the soil sample collected at the surface to 1,280 ppm for the soil sample collected at four feet (4') bgs. The remaining hand-augered soil bores (SP #2 though SP #4) were only advanced to two feet (2') bgs in an effort to maintain the integrity of the polyurethane liner. Soil samples collected from the surface and two feet (2') bgs from SP #2 through SP #4 were field screened for concentrations of chloride. Chloride field test results indicated chloride concentrations were less than 120 ppm in each of the field samples. Based on field test results it was determined that the soil column above the 20-mil polyurethane liner was not impacted above NMOCD regulatory standards. The liner was left undisturbed as per the NMOCD.

On May 28, 2014, upon receiving NMOCD approval, a 20-mil polyurethane liner was installed in the floor of the excavation atop areas exhibiting chloride concentrations above NMOCD regulatory standards. This engineering control was designed to inhibit the vertical migration of contaminants left in-situ and help mitigate any future releases on the well pad. Upon installing the approved liner, the remaining portion of the excavation was backfilled with non-impacted caliche.

Between May 22 and 28, 2014, approximately seven hundred and forty cubic yards (740 yd³) of impacted material was transported to Lea Land, LLC (NMOCD Permit #WM-01-035), for disposal. Prior to backfilling, the final dimensions of the excavation were approximately twelve (12) to thirty feet (30') in width, one hundred and thirty feet (130') in length and two (2) to four feet (4') in depth.

4.0 QA/QC PROCEDURES

4.1 Soil Sampling

Soil samples were delivered to Cardinal Laboratories, Inc., in Hobbs, New Mexico, for BTEX, TPH and/or chloride analyses using the methods described below:

- BTEX concentrations in accordance with EPA Method SW-846 8021b
- TPH concentrations in accordance with EPA Method SW-846 8015M
- Chloride concentrations in accordance with EPA Method 4500 Cl-B

4.2 Decontamination of Equipment

Cleaning of the sampling equipment was the responsibility of the environmental technician. Prior to use, and between each sample, the sampling equipment was cleaned with Liqui-Nox® detergent and rinsed with distilled water.

4.3 Laboratory Protocol

The laboratory was responsible for proper QA/QC procedures after signing the chain-of-custody form(s). These procedures were either transmitted with the laboratory reports or are on file at the laboratory.

5.0 SITE CLOSURE REQUEST

Remediation activities at the JRU #55 Well Pad were conducted in accordance with an NMOCD-approved work plan. Confirmation soil samples collected from the excavation sidewalls were submitted to an NMOCD approved laboratory, which determined concentrations of BTEX, TPH and chloride were below NMOCD regulatory standards. A 20-mil polyurethane liner was installed in the floor of the excavation at approximately four feet (4') bgs. Based on laboratory analytical results and the installation of an approved engineering control, Basin recommends BOPCO provide the NMOCD-Artesia District Office and the BLM a copy of this *Remediation Summary and Risk-Based Site Closure Request* and request the NMOCD grant site closure to the JRU #55 Well Pad release site.

6.0 LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary and Risk-Based Site Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin has not conducted an independent examination of the facts contained in referenced materials and statements. Basin has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of BOPCO, LP. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or BOPCO, LP.

7.0 **DISTRIBUTION:**

Copy 1: Mike Bratcher

New Mexico Energy, Minerals and Natural Resources Department

Oil Conservation Division (District 2)

1301 E. Grand Avenue Artesia, NM 88210

Copy 2: James Amos

Bureau of Land Management

602 E. Greene Street

Carlsbad, New Mexico 88220

Copy 3: Tony Savoie

BOPCO, LP

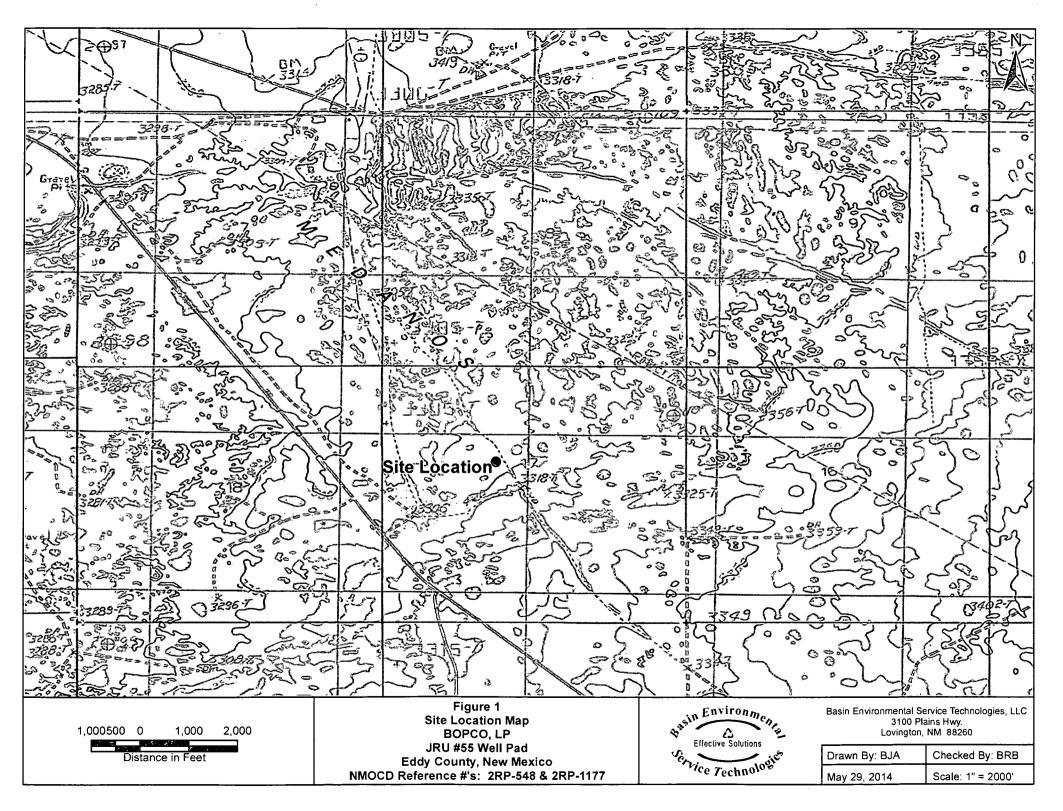
522 W. Mermod, Suite 704 Carlsbad, NM 88220

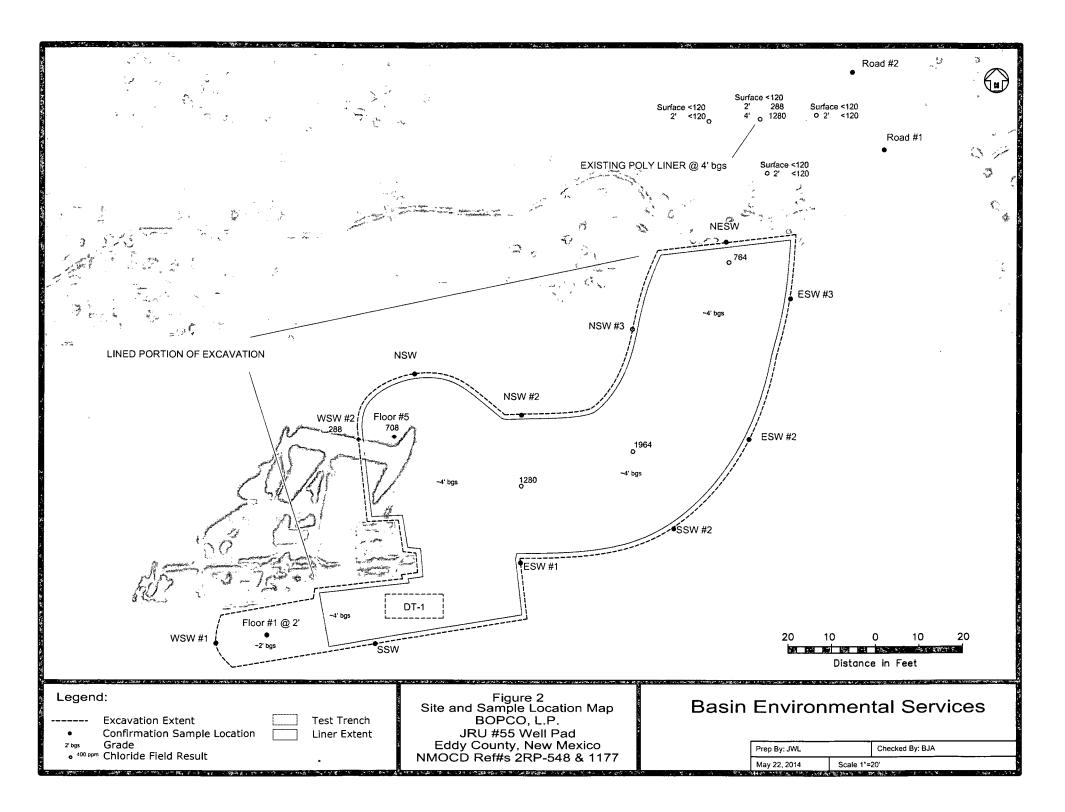
Copy 4: Basin Environmental Service Technologies, LLC

P.O. Box 301

Lovington, NM 88260

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	FIGURES		
	TIGURES		
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TABLES

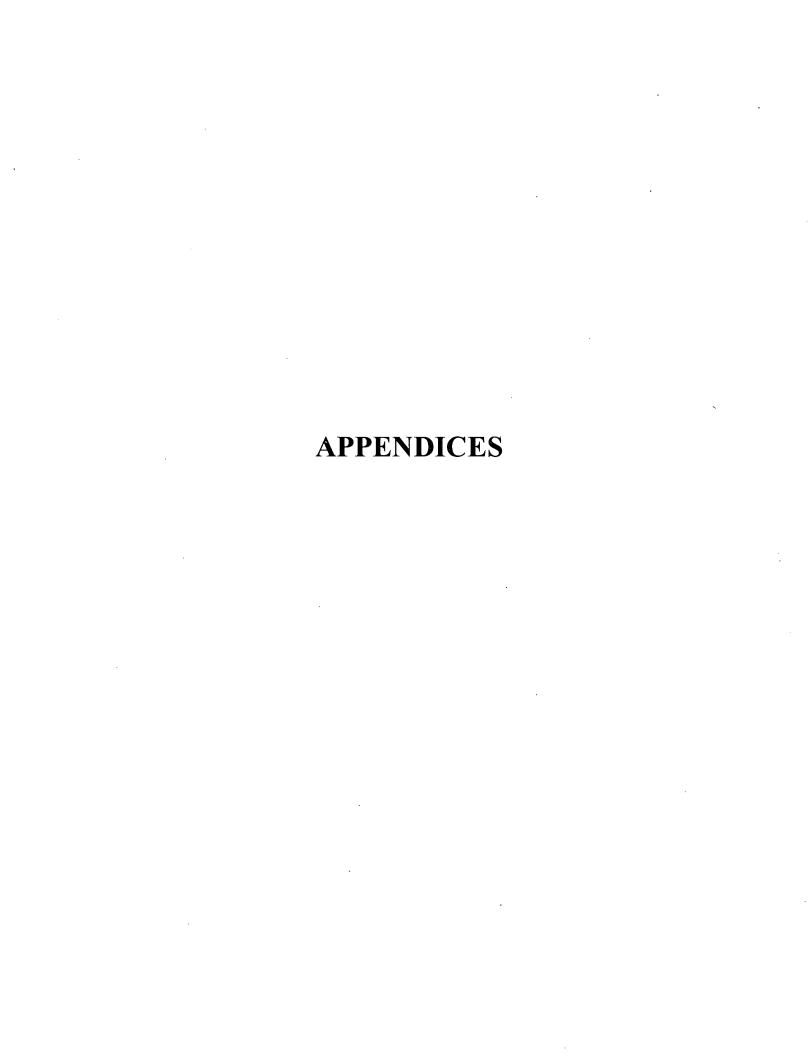
TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDES IN SOIL

BOPCO, LP JAMES RANCH UNIT #55 WELL PAD EDDY COUNTY, NEW MEXICO

					METHOD: E	PA SW 846	-8021B, 503	0	MET	HOD: 80	15M	TOTAL	4500 CI-B
SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C ₆ -C ₁₂ (mg/Kg)	DRO C ₁₂ -C ₂₈ (mg/Kg)	ORO C ₂₈ -C ₃₅ (mg/Kg)	TPH C ₆ -C ₃₅	CHLORIDE (mg/Kg)
NSW	2'	5/20/2014	In-Situ	-	-	-	-	-	-	-	-	-	256
SSW	2'	5/20/2014	In-Situ	-	-	-	-	-	-	-	-	-	96.0
ESW #1	2'	5/20/2014	In-Situ	-	-	-	-	-	-	-	-	-	64.0
WSW #1	1.5'	5/20/2014	In-Situ	-	-	-	-	-	-	-	-	-	<16.0
WSW #2	2'	5/20/2014	In-Situ	-	-	-	-	-	_	-	-	-	176
Floor #1 @ 2'	2'	5/20/2014	In-Situ	-	-	-	-	-	<10.0	<10.0	<10.0	<10.0	112
DT 1 @ 6'	6'	5/21/2014	In-Situ	-	-	-	-	<u> </u>	-	-	-	-	1,100
DT 1 @ 9'	9'	5/21/2014	In-Situ	-	-	-	-	-	-	-	-	-	2,600
DT 1 @ 17'	17'	5/21/2014	In-Situ	-	-	-	-	-	-	-	-	-	480
DT 1 @ 18.5'	18.5'	5/21/2014	In-Situ	-	-	-	-	-	-	-	-	-	352
ESW #2	2'	5/21/2014	In-Situ	-	-	-	-	-	-	-	•	-	304
ESW #3	2'	5/21/2014	In-Situ	-	-	•	•	•	-	-	-	•	304
NSW #2	2'	5/22/2014	In-Situ	-	-	-	-		-	_	_	-	144
NSW #3	2'	5/22/2014	In-Situ	-	-		-	-	-	-	-	-	320
SSW #2	2'	5/22/2014	In-Situ	-	-	-	-	-	-	-		-	160
Road #1	3,	5/27/2014	In-Situ	-	-	-	-	-	-	-	-	•	288
Road #2	3'	5/27/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	272
NESW	2'	5/27/2014	In-Situ	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	32.0
NMOCD Criteria				10				50				1,000	500

^{- =} Not analyzed.



Appendix A

Release Notification and Corrective Action (Form C-141) - March 9, 2010

<u>District I</u> 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 <u>District IV</u> 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. Form C-141 Revised October 10, 2003

NMOCD ARTESIA

RECEIVED

MAR 3 1 2010 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

QRP. 548

1220 S. St. Fran	cis Dr., Santa	Fe, NM 87505		Sa	nta Fe	e, NM 875	05	-	AIIILO	NA	S	ide of form
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mw //	11125	3579				OPERA			⊠ Initia	al Report	Пв	inal Repor
Name of Co						Contact Tor			<u> </u>			
Address 522	2 W. Mem	od, Suite 70	4 Carlsb	ad, N.M. 88220			lo. 432-556-873	30				
Facility Nar	me James F	Ranch Unit #	55			Facility Typ	e E&P					
Surface Ow	nor Federa	1		Mineral C)wnor I	inderel			Lease N			
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Source of Re	dease: Fault	y circulating l	hose on th	e wellhead		Date and I	lour of Occurrence		Date and	Hour of Di	covery	
						_ 3/9/10 App	proximately 2:00		3/24/10 8			
Was Immed	iate Notice (Yes [] No ⊠ Not R	equired	If YES, To	Whom?					
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Signature:	1 000	- Sau			Approved by	District Supervi	soral,	y Bes	MULDE	£		
Printed Nam	ne: Tony Sa	voie										
Title: Waste	Mgmt.& R	emediation S	pecialist			Approval Da	ne: <i>3/3/11</i>		Expiration	Date:		
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Date: 3/29/1				Phone:432-556	-8730		s. SUBMIT RE			~		
Attach Add	litional She	ets If Neces	sary				AL NOT LATER			ORP	548	?

PROPOSAL NOT LATER THAN:

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV

State of New Mexico Energy Minerals and Natural Resources

Revised August 8, 2011

Form C-141

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.

1220 S. St. Fran	cis Dr., Santa	a Fe, NM 87505	5	Sa	nta F	e, NM 875	05					
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			04 Carlsh	oad, N.M. 88220	,		No. 575-887-732	29				
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		y circulating l	hose on the	e wellhead		Date and F 3/9/10 app	lour of Occurrenc roximately 2:00 p			covery	:	
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By Whom?	Tony Savoi	e				Date and Hour ARTESIA DISTRICT						
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If a Waterco	urse was Im	pacted, Descr	ribe Fully.	<u> </u>								
								RECEIVE	D			
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land were aft and pasture,	fected by th then transpo	e release. All	of the free Soil sample	product was remotes were collected	oved w	ith a vacuum t	ruck and the heav	20 sq. ft. of caliche rily saturated soil wand for the presence o	is excavate	d from	the well pad	
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regulations a public health should their or or the enviro	Il operators or the envioperations had not be nment. In a	are required tronment. The nave failed to	to report and acceptance acceptan	nd/or file certain rece of a C-141 report investigate and r	elease ort by the emedia	notifications a he NMOCD m ite contaminat	nd perform correct arked as "Final R ion that pose a thr	inderstand that pursuitive actions for release eport" does not relice to ground water, responsibility for co	ases which eve the open surface wa	may en rator of ater, hu	ndanger f liability ıman health	
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Printed Nam		→				Approved by Environmental Specialist:						
Title: Waste	Manageme	nt and Remed	iation Spe	cialist		Approval Da	te:	Expiration Date:				
E-mail Address: tasavoie@basspet.com						Conditions of Approval:						

Phone: 432-556-8730

Date: 4/9/14 7/1/14

^{*} Attach Additional Sheets If Necessary

Appendix B

Release Notification and Corrective Action (Form C-141) – May 18, 2012

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

State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised October 10, 2003

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

Release Notification and Corrective Action													
1 WMLD	217242	2281				OPERA	FOR		Initia	al Report	Final Report		
Name of Co	mpany BC	PCO, L.P.		260137		Contact Ton							
				ad, N.M. 88220		Telephone No. 432-556-8730							
Facility Nar	ne James I	Ranch Unit #	55			Facility Typ	e E&P						
Surface Ow	ner Federa	1	٠.	Mineral C		Federal			Lease	lo.			
				LOCA	TIO	ON OF RELEASE API 30-015-27589							
Unit Letter	Section	Township	Range	Feet from the		/South Line	Feet from the	East/We	est Line	County			
F	17	23S	31Ē										
	L							<u> </u>					
			Ĺ	atitude_N 32.3	06285	Longitu	de W 103.8019	20					
				NAT	URE	OF RELI	EASE						
Type of Rele	ase: Produc	ed water and	crude oil			1	Release: 5 Bbls o		Volume F	Recovered: 3	Bbls total fluid		
						Produced v	vater and 3 Bbls o	of					
Source of Re	lease: Stuffi	ng box on the	wellhead	· · · · · · · · · · · · · · · · · · ·		1	lour of Occurrenc		Date and 5/18/12 8	Hour of Disc	covery		
Was Immedia	ate Notice C	iven?			,	If YES, To			3/10/12 0	.00 a.m.			
			Yes [No 🛛 Not Re	quired								
By Whom?						Date and Hour							
Was a Watero	course Reac	hed? □	Yes 🛛	No		If YES, Volume Impacting the Watercourse.							
If a Wataraau	unco succe Imp	anatad Dagari											
If a Watercou	irse was mij	pacieu, Descri	ibe runy.										
										-			
Describe Cau	se of Proble	m and Remed	dial Action	Taken.* The pac	king in	the stuffing b	ox failed. The page	cking was	s replaced				
Describe Area	a Affected a	ind Cleanup A	ction Tak	en.* Approximate	ly 410	sq.ft. of calich	ne well pad. All o	of the free	product	was removed			
truck, the stai	ned soil wa	s left in place	pending r	emediation activit	ies that	will follow th	e NMOCD and B	3LM guid	lelines for	leaks and sp	oills.		
regulations al	iy mai me n i operators a	are required to	ven above o report an	is true and compl d/or file certain re	ete to u elease n	ne best of my otifications ar	knowleage and ui id perform correct	naerstana tive actio	i that purs ns for rele	uant to NMC	may endanger		
public health	or the envir	onment. The	acceptanc	e of a C-141 repo	rt by the	e NMOCD ma	arked as "Final Re	eport" doe	es not reli	eve the opera	ator of liability		
should their o	perations ha	ave failed to a	dequately	investigate and re tance of a C-141 r	mediat	e contamination	on that pose a three	eat to grou	und water	, surface wat	er, human health		
federal, state,	or local law	s and/or regu	lations.	iance of a C-141 f	epon u	oes not reneve	e the operator of r	esponsion	inty for co	omphance w	ith any other		
						· · · · · ·	OIL CONS	SERVA	TION	DIVISIO	N		
Signature.	1 au	Same	<i>9</i>										
	0	* Muna	<i>a</i>	· 		Approved by	District Superviso	. #./					
Printed Name	: Tony Savo	oie					Signed By	11/4	Bear	WA_			
Title: Waste N	/Igmt.& Rei	mediation Spe	cialist			ال Approval Dat	JN 20 2012	Ex	epiration I	Date:			
E-mail Addres	ss: TASavo	ie@BassPet.c	om			Conditions of Approval:							
	:					Attached							
Date: 6/2/12	Land Object	4. ICN		hone:432-556-87	30	<u>-</u>	······································						

* Attach Additional Sheets It Necessary

2RP 1177

RECEIVED

JUN 12 2012

NMOCD ARTESIA

Remediation per OCD Rules & Guidelines. SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

Type of Release: Produced water and crude oil

Source of Release: Stuffing box on wellhead

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.

Volume Recovered: 3 bbls total fluid

Date and Hour of Discovery:

5/18/12 8:00 a.m.

Release Notification and Corrective Action												
		OPERATOR	☐ Initial Report									
Name of Company: BOPCO, L.P.		Contact: Tony Savoie										
Address: 522 W. Mermod, Suite 704 Carlsbad,	N.M. 88220	Telephone No. 575-887-7329										
Facility Name: James Ranch Unit #55	(2RP-1177)	Facility Type: E & P										
Surface Owner: Federal	Mineral Owne	r: Federal	API No. 30-015-2	7589								

Volume of Release: 5 bbls of

produced water and 3 bbls of

Date and Hour of Occurrence:

5/18/12 Time unknown

LOCATION OF RELEASE

Unit Letter F	Section 17	Township 23S	Range 31E	Feet from the	North/South Line	Feet from the	East/West Line	County: Eddy

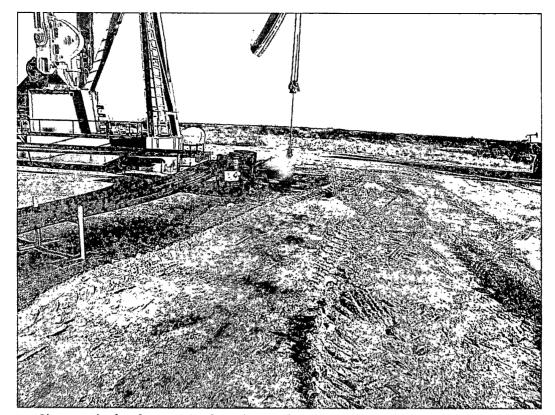
Latitude N 32.306285 **Longitude** W 103.801920

NATURE OF RELEASE

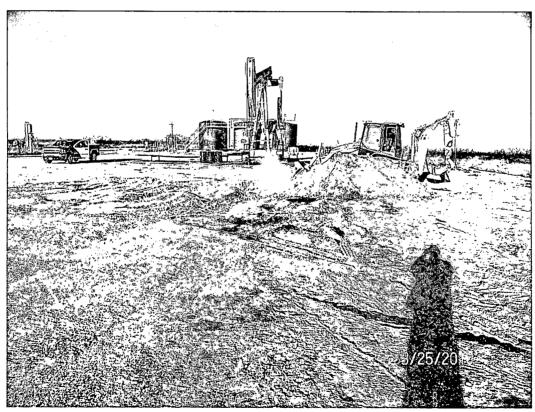
crude oil

Was Immediate Notice Given?	If YES, To Whom?						
☐ Yes ☐ No ☒ Not Required							
By Whom? Tony Savoie	Date and Hour	NM OIL CONSERVATION					
Was a Watercourse Reached?	If YES, Volume Impacting the W	atercours@ARTESIA DISTRICT					
☐ Yes ☒ No							
If a Watercourse was Impacted, Describe Fully.*		JUL 0 1 2014					
if a watercourse was impacted, Describe runy."							
		RECEIVED					
Describe Cause of Problem and Remedial Action Taken.* The packing in	the stuffing box failed. The packing	was replaced.					
Describe Area Affected and Cleanup Action Taken.* Approximately 410	so, ft. of caliche well pad. All of the	free product was removed with a vacuum					
truck, the stained soil was left in place pending remediation activities that							
	•	,					
Approximately 740 cu. yds of impacted soil was excavated from an area r							
Impacted soil was hauled to an NMOCD-approved disposal facility. Pleas	se reference the attached Remedia	tion Summary and Risk-Based Site					
Closure Request for detail of Remediation Activities.							
I have be self at a the information in the self-time and associated to	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	to data to support to NIMOCD and a support					
I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release n							
public health or the environment. The acceptance of a C-141 report by the							
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.		·					
_	OIL CONSER	VATION DIVISION					
Q \circ							
Signature: / One Sauce							
Division T Occasion	Approved by Environmental Special	list:					
Printed Name: Tony Savoie							
Title: Waste Management and Remediation Specialist	Approval Date:	Expiration Date:					
Title. Waste Management and Remediation Specialist	Approvat Date.	Expiration Date.					
E-mail Address: tasavoie@basspet.com	Conditions of Approval:						
		Attached 📙					
Date: 4/9/14 Phone: 432-556-8730							
Attach Additional Sheets If Necessary							

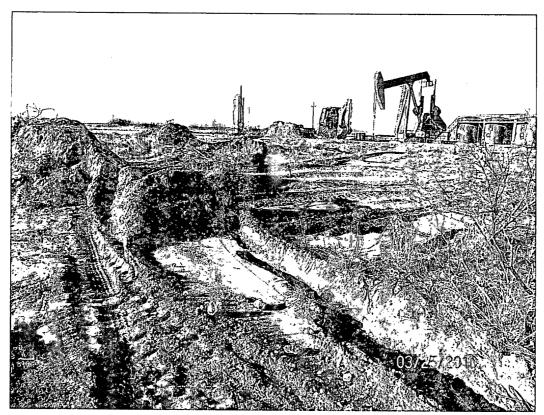
Appendix C
Photographs



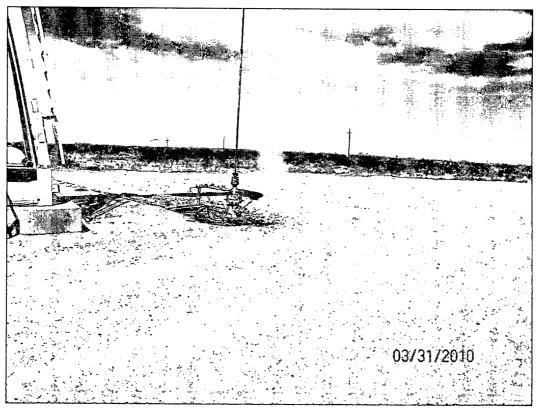
Photograph of surface staining from the March 9, 2013, release at the JRU #55 Well Pad.



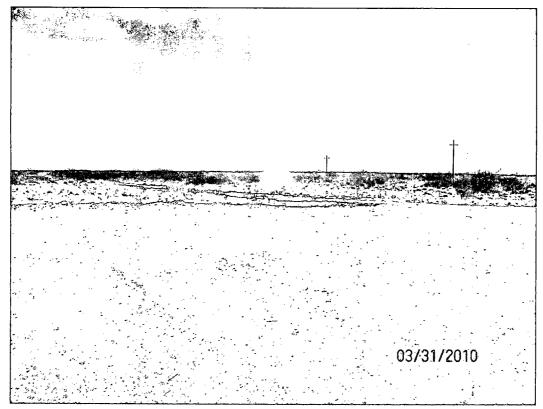
Photograph of remediation activities associated with the March 9, 2013, release at the JRU #55 Well Pad.



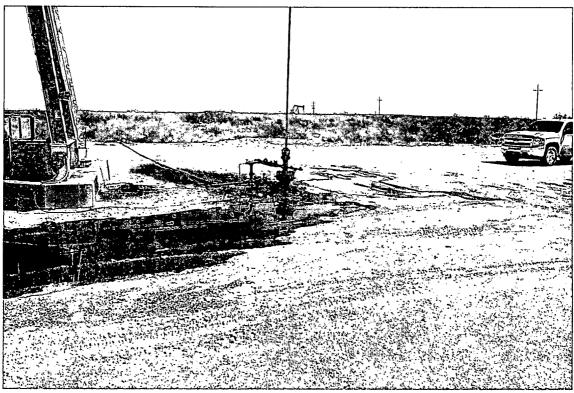
Photograph of remediation activities associated with the March 9, 2013, release at the JRU #55 Well Pad.



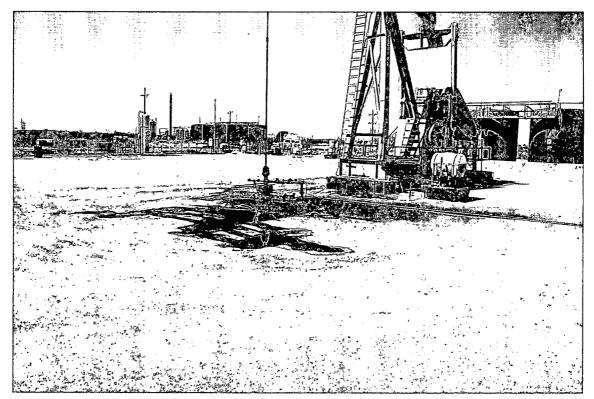
Photograph of JRU #55 Well Pad after remediation activities associated with the March 9, 2010, release.



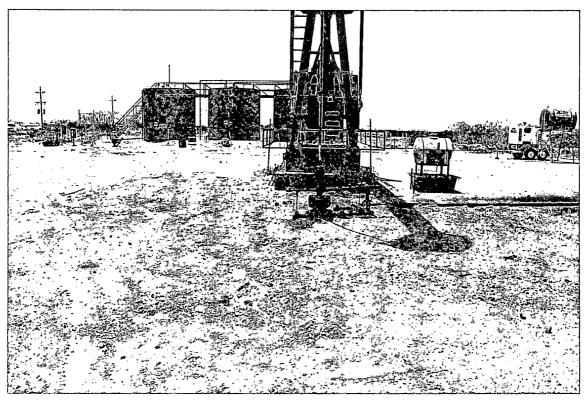
Photograph of JRU #55 Well Pad after remediation activities associated with the March 9, 2010, release.



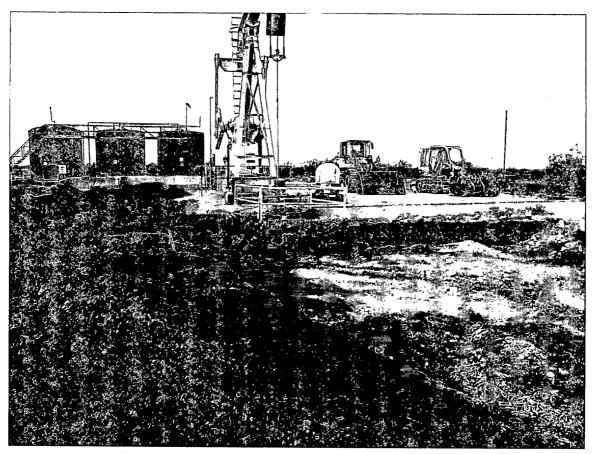
Photograph of the May 18, 2012, release at the JRU #55 Well Pad.



Photograph of the May 18, 2012, release at the JRU #55 Well Pad.



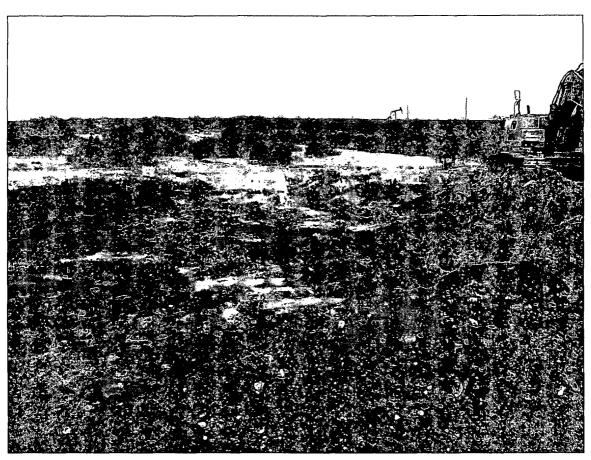
Photograph of surface staining after removing free-standing fluid at the JRU #55 Well Pad release site.



Photograph of recent excavation activities at the JRU #55 Well Pad.



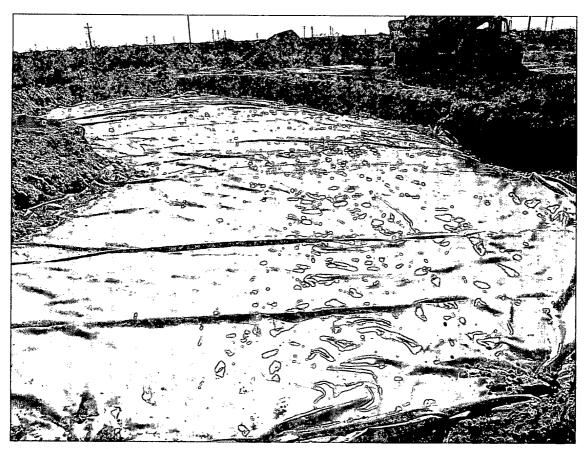
Photograph of the delineation trench at the JRU #55 Well Pad environmental remediation site.



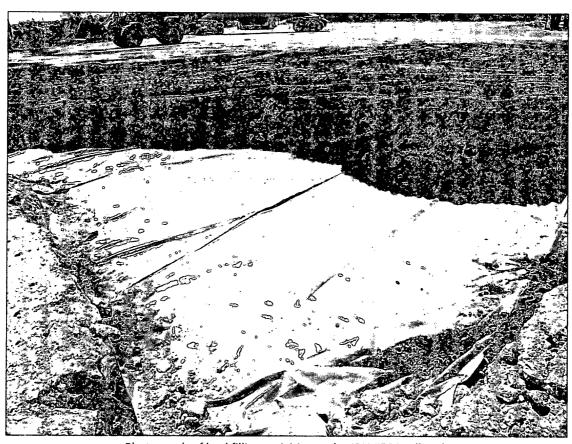
Photograph of recent excavation activities at the JRU #55 Well Pad.



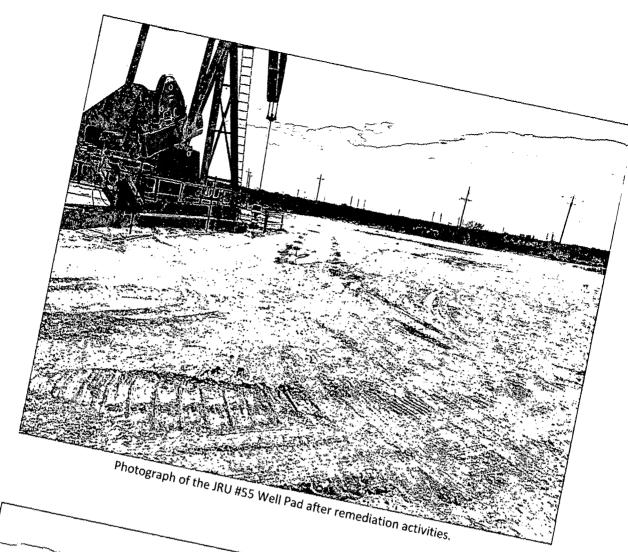
Photograph of the excavated area at the JRU #55 Well Pad.

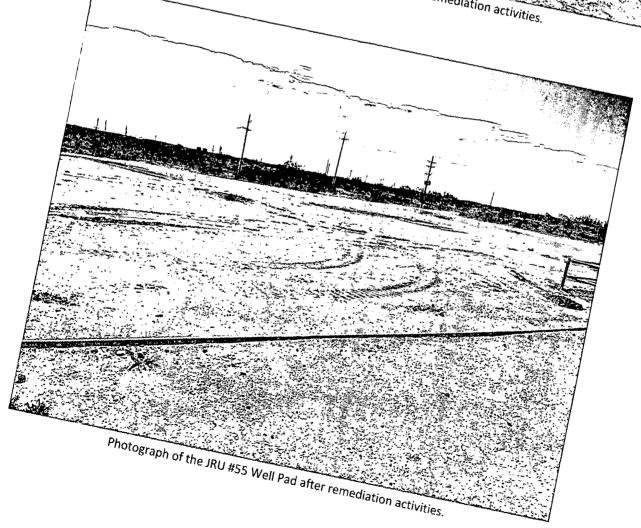


Photograph of the installation of the poly liner at the JRU #55 Well Pad.



Photograph of backfilling activities at the JRU #55 Well Pad.





Appendix D Laboratory Analytical Reports



May 28, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: JRU #55 WELL PAD

Enclosed are the results of analyses for samples received by the laboratory on 05/22/14 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2 Haloacetic Acids (HAA-5)
Method EPA 524.2 Total Trihalomethanes (TTHM)
Method EPA 524.4 Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celeg & Keine

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Basin Environmental Service JOEL LOWRY P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received: Reported: 05/22/2014

05/28/2014

Project Name:

JRU #55 WELL PAD

Project Number: Project Location:

NONE GIVEN

EDDY COUNTY, NM

Sampling Date: Sampling Type: 05/21/2014

Soil

Sampling Condition: Sample Received By: Cool & Intact

Jodi Henson

Sample ID: DT 1 @ 6' (H401571-01)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AP		·			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1100	16.0	05/28/2014	ND	416	104	400	0.00	
Sample ID: DT 1 @ 9' (H4	l01571-02)								
Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
A	2500	46.0		ND	416	104	400	0.00	
Chloride Sample ID: DT 1 @ 17' (F	=	16.0	05/28/2014	ND	410	20.	100		
				d By: AP					
Sample ID: DT 1 @ 17' (H	1401571-03)				BS	% Recovery	True Value QC	RPD	Qualifier
Sample ID: DT 1 @ 17' (F Chloride, SM4500CI-B Analyte	1401571-03) mg	/kg	Analyze	d By: AP				RPD 0.00	Qualifier
Sample ID: DT 1 @ 17' (H Chloride, SM4500CI-B	1401571-03) mg Result 480	/ kg Reporting Limit 16.0	Analyze Analyzed	d By: AP Method Blank	BS	% Recovery	True Value QC		Qualifier
Sample ID: DT 1 @ 17' (HOLOGIGE, SM4500CI-B Analyte Chloride Sample ID: DT 1 @ 18.5'	1401571-03) mg Result 480	/ kg Reporting Limit 16.0	Analyzed 05/28/2014	d By: AP Method Blank	BS	% Recovery	True Value QC		Qualifier
Sample ID: DT 1 @ 17' (F Chloride, SM4500CI-B Analyte Chloride	Result 480 (H401571-04)	/ kg Reporting Limit 16.0	Analyzed 05/28/2014	d By: AP Method Blank ND	BS	% Recovery	True Value QC		Qualifier

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene



Basin Environmental Service JOEL LOWRY P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received:

05/22/2014

Sampling Date:

05/21/2014

Reported:

05/28/2014

Sampling Type:

Soil

Project Name:

JRU #55 WELL PAD

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

EDDY COUNTY, NM

Sample ID: ESW #2 (H401571-05)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	05/28/2014	ND	416	104	400	0.00	

Sample ID: ESW #3 (H401571-06)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	05/28/2014	ND	416	104	400	0.00	

Sample ID: NSW (H401571-07)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	ŔPD	Qualifier
Chloride	256	16.0	05/28/2014	ND	416	104	400	0.00	

Sample ID: SSW (H401571-08)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	05/28/2014	ND	416	104	400	0.00	

Sample ID: ESW #1 (H401571-09)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	05/28/2014	ND	416	104	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

any other cause whatsoever shall be deemed waved unless made in witting and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incident by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such daim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keine



Basin Environmental Service JOEL LOWRY P.O. Box 301 Lovington NM, 88260 Fax To: (575) 396-1429

Received:

05/22/2014

Reported:

05/28/2014

Project Name:

JRU #55 WELL PAD

Project Number:

NONE GIVEN

Project Location:

EDDY COUNTY, NM

Sampling Date:

05/20/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

.

Sample ID: WSW #1 (H401571-10)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	05/28/2014	ND	416	104	400	0.00	

Sample ID: WSW #2 (H401571-11)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	05/28/2014	ND	416	104	400	0.00	

Sample ID: FLOOR #1 @ 2' (H401571-12)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	05/28/2014	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS				_	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	05/27/2014	ND	199	99.5	200	1.11	
DRO >C10-C28	<10.0	10.0	05/27/2014	ND	213	107	200	0.0136	
EXT DRO >C28-C35	<10.0	10.0	05/27/2014	ND					
Surrogate: 1-Chlorooctane	119	% 65.2-14	0			47			
Surrogate: 1-Chlorooctadecane	119	% 63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

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Celeg D. Keena

ARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name:										E	3/	LL TO						ANA	LYSIS	S RE	QUE	ST		
Project Manager:	Joel Lowry							P.C). #:															
Address: P.O.	Box 301							Co	mpa	ny:		ворс	CO, LP	ĺ			ĺ			1				
City: Lovingtor	State: NM	Zip	: 8	826	0			Att	n:			Tony Save	oie											
Phone #: (575)	396-2378 Fax #: (575)3	96-1	429					Add	dres	s:		522 W. M	arland											
Project #:	Project Owne	r:						Cit	y:			Carlsba	d				Ŧ							
Project Name:	JRU #55 Well Pad							Sta	te:	NN	1	Zip:	88220	_B	2M	218	х трн				1			
Project Location:						Pho	one	#:		(432)556	-8730	Chloride	801	88	FOR									
Sampler Name:						_	(#:					됩	TPH (8015M)	BTEX (8021B)	2									
FOR LAB USE ONLY MATR						ATRI	X	_	PRE	SER	<u>v</u>	SAMPLI	NG		Ĭ.	18	НОГБ				1			
Lab 1.D. H40157	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME											
1	DT 1 @ 6'	6	1		\bot	4				1		5/21/14	1115	x										
2	DT 1 @ 9'	0	T		1	1				1	_	5/21/14	1130	х										
3	DT 1 @ 17'	6	1			山		_	_	1	_	5/21/14	1145	x										
<u> </u>	DT 1 @ 18.5'	<u>u</u>	<u> </u>		\perp	<u> </u>	1	_	_	(_	5/21/14	1200	х							L			
<u> </u>	ESW #2	6	上		1	4	11	_	\perp	4	_	5/21/14	1205	х										
lb-l	ESW #3	16	1]		L			\rightarrow	X	_	5/21/14	1210	×										
			_		_	_	1-1	_	4		_										ļ			
		-1-1-1-1-1-1-						-	-	+	-													
·									\dashv	-	-}												\longrightarrow	 $\vdash \dashv$
		.	I	اا	L			[Щ.	_L			لـــــا						<u></u>			1	

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, as subsidiaries,

affiliates or successors arising out of or related to the performance of	services hereunder by Cardinal, regardless of whether such claim is based upon any of the ab	love stated reasons or otherwise.
Relinquished By:	Date: Received By:	Phone Result:
	5/22/14	Fax Result: ☐ Yes ☐ No Add'I Fax #:
God Journ	Time: 7:30 Blackens	REMARKS:
Relinquished By:	Date: Received By:	HOLD FOR TPH
Spland	Time/1:30 GOai Henson	Please email results to pm@basinenv.com, TASavoie@BassPet.com & SJWalters@BassPet.com
Delivered By: (Circle One)	Sample Condition CHECKE	<i>1 /</i> 3
Sampler - UPS - Bus - Other:	- 4.6 Cool Intact Dres Pres W	
CODM 000	/	_

FORM-006 Revision 1.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name:										B	3/L	LL TO						ANAI	LYSIS	RE	QUE	ST		
Project Manager:	Joel Lowry						[P.O.	. #:															
Address: P.O.	Box 301							Con	npai	ny:		ворс	Ю, LP											
City: Lovington	State: NM	Zip	8	8260	0		_/	Attn	:			Tony Save	oie]										
Phone #: (575)	396-2378 Fax #: (575)39	6-14	129		*****		_/	Add	res	s:		522 W. M	arland											
Project #:	Project Owner	:						City	:			Carlsbac	1	İ		<u> </u>	¥							
Project Name:	JRU 55 Well Pad							Stat	e:	NM	1 2	Zip:	88220	æ	2M	218	TPH							
Project Location:							E	ho	ne #	# :		(432)556	-8730	Chloride	тРН (8015М)	BTEX (8021B)	FOR							
Sampler Name:	mpler Name: SOEK LOWAY RIJBUSE ONLY MATRI					F	ax						ਨ	H.	Ë	НОГР								
FOR LAB USE ONLY	OR LAB USE ONLY MATE								RES	SER	Y.	SAMPLI	NG		F	8	오							i
Lab I.D. H401571	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE/COOL	OTHER:	DATE	TIME							•				
	NSW	C	1		1				1			5/20/14	1215	×										
8	SSW	L	1		1	11		_ _	4	4	_	5/20/14	1220	×										
9	ESW #1	6	1		1	11	_	_ -	4	4	_	5/20/14	1225	х							<u> </u>			
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PLEASE NOTE: Liabitity and Damages. Cardinal's liabitity and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, as subsidiaries,

annuales or successors areand out of defended to the benormance of	r services herecover by Caldardi, regardless or whether such cash is based upon an	/ Of the above states reasons of belief the.
Relinguished By:	Date: Received By:	Phone Result: Yes No Add'l Phone #:
^ t	5/31/14	Fax Result: Yes No Add'l Fax #:
Jul Journ	Time:	REMARKS:
	7:30 SA Mukeun	
Relinquished by:	Date: Received By:	HOLD FOR TPH
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BKSlapen	11.000	TASavoie@BassPet.com & SJWalters@BassPet.com
Delivered By: (Circle One)		HECKED BY:
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Sampler - UPS - Bus - Other:	-4 6 Cool Intact	/ +// /
	No No	47K
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FORM-006 Revision 1.0 † Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

#54



May 29, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: JRU #55 WELL PAD

Enclosed are the results of analyses for samples received by the laboratory on 05/23/14 12:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celes D. Keine

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Basin Environmental Service JOEL LOWRY P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received:

05/23/2014

Reported:

05/29/2014

Project Name:

JRU #55 WELL PAD

Project Number: Project Location: NONE GIVEN EDDY COUNTY, NM Sampling Date:

05/22/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: NSW #2 (H401586-01)

Chloride, SM4500CI-B

Chloride

Chloride

Chloride

mg/kg

Analyzed By: AP

Analyte

Result 144

16.0

Reporting Limit

Reporting Limit

16.0

05/29/2014

Analyzed

Analyzed

05/29/2014

Method Blank ND

432

BS

432

% Recovery 108

True Value QC 400

RPD Qualifier

3.77

3.77

Sample ID: NSW #3 (H401586-02)

Chloride, SM4500CI-B

Analyte

mg/kg

Analyzed By: AP

Method Blank

ND

ND

True Value QC

400

RPD Qualifier

Chloride, SM4500CI-B

Sample ID: SSW #2 (H401586-03)

Result

320

Analyzed By: AP

Analyte	Result	Reporting Limit	Analyzed
	160	16.0	05/29/2014

Method Blank

BS 432 % Recovery 108

% Recovery

108

True Value QC 400

RPD

3.77

Qualifier

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such daim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whistoever shall be deemed waved unless made in withing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims is based upon any of the above stated reasons or otherwise. Results related only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Labovariones.

Celey D. Keene

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name:										E	3/	LL TO						ANA	LYSIS	RE	QUE	ST			
Project Manager:	Joel Lowry							P.C). #:																
Address: P.O.	Box 301							Co	mpa	ny:		ВОРО	O, LP												
City: Lovingtor	State: NM	Zip	: 8	8260)			Attı	n:			Tony Save	oie												
Phone #: (575)	396-2378 Fax #: (575)3	96-1	429					Add	dres	s:		522 W. M	arland												
Project #:	Project Owne	r:						City	y:			Carlsba	j		_	_	I								
Project Name:	JRU #55 Well Pad							Sta	te:	NN	Л	Zip:	88220	<u>e</u>	5M)	21B	трн							1	
Project Location:	Eddy Co., NM							Pho	one	#:		(432)556	-8730	Chloride	801	(80)	FOR								
Sampler Name:	oler Name:					Fax	#:					동	TPH (8015M)	BTEX (8021B)	9						ł	- 1	ı		
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Lab I.D. 1140 <i>586</i>	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER SOIL OIL SLUDGE				ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME												
	NSW #2	9	1)	1						5/22/14	1005	х											
2	NSW #3	g	1			4_			_		_	5/22/14	1010	×											
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PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries,

affiliates or successors arising out of or related to the performance of s	services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons	ons or otherwise.
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	5/23/14 / Od · N. 11 / M.	Fax Result: 🛘 Yes 🔻 No Add'l Fax #:
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- 100 W 0- 3	Time: 55 Cai Henson	
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	Time:	Please email results to pm@basinenv.com,
]		TASavoie@BassPet.com & SJWalters@BassPet.com
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Sampler - UPS - Bus - Other:		
Campion C. C. Bus Cancer.	J. V. No No 5777	
	——————————————————————————————————————	

FORM-006 Revision 1.0 † Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

454



June 10, 2014

JOEL LOWRY

Basin Environmental Service

P.O. Box 301

Lovington, NM 88260

RE: JRU #55 WELL PAD

Enclosed are the results of analyses for samples received by the laboratory on 05/29/14 11:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celeg D Keens

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



Basin Environmental Service JOEL LOWRY P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received:

05/29/2014

Reported:

06/10/2014

Project Name:

JRU #55 WELL PAD

Project Number:

NONE GIVEN

Project Location:

EDDY COUNTY, NM

Sampling Date:

05/27/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

RPD

3,92

Sample Received By: Jodi Henson

Sample ID: ROAD #1 (H401646-01)

Chloride, SM4500CI-B

mg/kg

288

Reporting Limit

16.0

Analyzed By: AP

Analyte Result

Analyzed 06/04/2014

Method Blank

400

% Recovery

100

True Value QC

400

Qualifier

Chloride

Sample ID: ROAD #2 (H401646-02)

BTEX 8260B	mg,	/kg	Analyze	d By: ms			·		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/10/2014	ND	0.461	115	0.400	5.25	
Toluene*	<0.050	0.050	06/10/2014	ND	0.392	97.9	0.400	3.62	
Ethylbenzene*	<0.050	0.050	06/10/2014	ND	0.418	104	0.400	3.26	
Total Xylenes*	<0.150	0.150	06/10/2014	ND	1.22	101	1.20	2.16	
Total BTEX	<0.300	0.300	06/10/2014	ND					
Surrogate: Dibromofluoromethane	97.2	% 61.3-14	2						
Surrogate: Toluene-d8	106	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	96.9	% 65.7-14	I						
Chloride, SM4500CI-B	mg/kg		Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	06/04/2014	ND	400	100	400	3 03	

	<u></u> .		<u>-</u>						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	06/04/2014	ND	400	100	400	3.92	
TPH 8015M	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/03/2014	ND	214	107	200	5.51	
DRO >C10-C28	<10.0	10.0	06/03/2014	ND	226	113	200	7.38	
EXT DRO >C28-C35	<10.0	10.0	06/03/2014	ND					

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keine



Basin Environmental Service

JOEL LOWRY P.O. Box 301

Lovington NM, 88260

Fax To:

(575) 396-1429

Received:

05/29/2014

Sampling Date:

05/27/2014

Reported:

06/10/2014

Sampling Type:

Soil

Project Name:

JRU #55 WELL PAD

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

EDDY COUNTY, NM

Sample ID: ROAD #2 (H401646-02)

TPH 8015M	mg	/kg	Analyz	ed By: MS				_	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Surrogate: 1-Chlorooctane	103	% 65.2-140							
Surrogate: 1-Chlorooctadecane	110	% 63.6-154							

Cardinal Laboratories

*=Accredited Analyte

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Celeg D. Keine



Basin Environmental Service JOEL LOWRY P.O. Box 301 Lovington NM, 88260

Fax To:

(575) 396-1429

Received:

05/29/2014

Reported:

06/10/2014

Project Name:

JRU #55 WELL PAD

Project Number:

NONE GIVEN

Project Location:

EDDY COUNTY, NM

Sampling Date:

05/27/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: NESW (H401646-03)

BTEX 8260B	mg,	/kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/10/2014	ND	0.461	115	0.400	5.25	
Toluene*	<0.050	0.050	06/10/2014	ND	0.392	97.9	0.400	3.62	
Ethylbenzene*	<0.050	0.050	06/10/2014	NĐ	0.418	104	0.400	3.26	
Total Xylenes*	<0.150	0.150	06/10/2014	ND	1.22	101	1.20	2.16	
Total BTEX	<0.300	0.300	06/10/2014	ND					
Surrogate: Dibromofluoromethane	99.3	% 61.3-14	2						
Surrogate: Toluene-d8	106	% 71.3-12	9						
Surrogate: 4-Bromofluorobenzene	98.5	% 65.7-14	1						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AP				· · · · · · · · · · · · · · · · · · ·	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/04/2014	ND	400	100	400	3.92	
ТРН 8015М	mg,	/kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/10/2014	ND	204	102	200	5.28	
DRO >C10-C28	<10.0	10.0	06/10/2014	ND	215	107	200	7.85	
EXT DRO >C28-C35	<10.0	10.0	06/10/2014	ND					
Surrogate: 1-Chlorooctane	94.1	% 65.2-14	0			<u> </u>			
Surrogate: 1-Chlorooctadecane	105	% 63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Kure



Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

** Samples not received at proper temperature of 6°C or below.

*** Insufficient time to reach temperature.

- Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

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Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Basin Environmental Service Techn	ologi	es,	LLC							BI	LL TO						ANAL	YSIS	S RE	QUE	ST		
Project Manager:	Joel Lowry			····				P.C	O. #	:					1									
Address: P.O.	Box 301							Co	mp	any	γ:	ВОР	CO, LP		3		1							
City: Lovington	State: NM	Zip:	8	8260)			Att	n:			Tony Sav	oie	l	3	1								
Phone #: (575):	396-2378 Fax #: (575)39	6-14	29					Ad	dre	ss:		522 W. N	larland		1									
Project #:	Project Owner	:						Cit	y:			Carlsba	d		उ		I							
Project Name:	JRU #55 Well Pad							Sta	ate:	_ N	M	Zip:	88220	<u>.</u>	5M)	21B	TP							
Project Location:	Eddy Co., NM		-					Ph	one	#:		(432)556	-8730	Chloride	801	803	FOR TPH							
Sampler Name:	JOEC LOWRY							Fa	x #:					등	TPH (8015M)	BTEX (8021B)								
FOR LAB USE ONLY				-,	M	ATRI	X		PR	ESE	RV.	SAMPL	NG]	=	18	ногр							
Lab I.D. H식 O 1646	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER	OIL OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME											
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2	Road #2	g	1		_ _	<u> </u>	ļ			x		5/27/14	910	х	×	X,								
3	NESW	9	1			<u> </u>		_		×	_	5/27/14	920	х	X	X								
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PLEASE NOTE: Lability and Damages. Cardinat's liability and client's exclusive remoty for any claim arising whether based in contract or tort, shall be finited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, as adecidances.

	attaintes or successors arising out of or related to the performance of t	services hereunder by Cardina	al, regardless of whether such claim is based upon any of the above stated rea	isons or otherwise.
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ı	DK Draikwon	11.63 1	Willes Strong	TASavoie@BassPet.com & SJWalters@BassPet.com
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1	Sampler - UPS - Bus - Other:	-4	Cool Intact (Injitials) No No	1
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FORM-006 Revision 1.0 † Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476