## HOBBS OCD

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 IY
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources APR 1 0 2014

Form C-141 Revised August 8, 2011

Submit RECOUNTIES TO PROPERTY OF THE CONTINUE WITH 19.15.29 NMAC.

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

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		ConocoPhilli				Contact					-	
				dland, TX 7970:	5	Telephone I			C 1'			
Facility Nai	ne SEMU	Permian Sk	aggs Poo	ol Water Line		Pacifity Typ	e Produced wa	ater tra	nsfer line			
Surface Ow	ner New	Mexico		Mineral C	Owner	BLM			API No	o. 30-025-0	06248	
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Source of Re							Iour of Occurrence	e	Date and		covery 5/27/1	3
Was Immedia	Was Immediate Notice Given?						8:30 am Whom?		9 am			
Was Hilliedi	ne Nonce (		Yes [	No Not R	equired							
By Whom?	Jesus A So	sa					lour May 28, 201					2 539
Was a Water	course Read		V. D	7 10		If YES, Vo	olume Impacting t	he Wat	ercourse.			
	W	pacted, Descr	Yes 🛚									
2013 from ano 17°, 2012. On Gasoline Rang the previous er bgs. RECS pe excavation was standards. Bas approved the Aexavation was wall to a depth chloride laborataken to a coministalled and p ground surface On February I	ther environt e soil bore we e Organics (i vironmental resonnel field a expanded to ed on the ele addendum to a then expand of 3 ft bgs w tory results I mercial labo roperly seate and to conto 8th, 2014, the fy that the	mental company as installed to a GRO), Diesel R company create tested the walls o 87 ft x 79 ft. 2 evated wall sampled to dimension were taken from below regulator rattory for analysid into the base open the area to the site was seeded information gi	r. Prior to la depth of 7 ange Organed a Work la of the exception of 10 of the exception of 92 ft and of the 92 ft and of the 92 ft and of the 92 ft are surround 1 with BLM (ven above	e is true and comp	e site, the y sampli EX readi 'hen REC hat the fi spled for Addend mil reinfo ad that so Represent o the wes laborator 'The ren mple of the	previous environg showed chlorings were either CS acquired the eld chloride read chlorides and all ium to the Work orced poly liner oil was used to bative samples wet and east of the ry chloride resultanining sand durate imported soil the best of my	onmental company of ide levels that drop non-detect or below since, the area had all dings were above re though the results w Plan on July 19th, 2 was installed and prackfill the excavation were alt to a communication were alt to a communication with the excavation were alt to one of the sand 1,428 yards was taken to a combined that the sand 1,428 yards was taken to a combined that the sand 1,428 yards was taken to a combined that the sand 1,428 yards was taken to a combined that the sand 1,428 yards was taken to a combined that the sand 1,428 yards and 1,428	ped to 57 regulateready beregulatory were low 2013 to N roperly soon to 5 ft creal lab so sample to 5 ft bgs of important and creal lab and	d a soil bore 76 mg/kg at ory standard en excavated en excavated for the were (MOCD). Or eated into the bgs. Wall so oratory for a led and a 5 p, a nother 20 ented soil were laboratory and that pur	installation at 60 ft bgs and 2 s. Based on the fit of	the site on Octob 224 mg/kg at 70 f ne soil bore analy fit to a depth of 10 fit of a depth of 10 vall field data, the be above regulate 2013, NMOCD 0 fit excavation, he west, south an vall samples retur e of each dune wa f poly liner was fill the excavation esult of non-dete OCD rules and	the best of the be
public health should their or or the enviro	or the envi	ronment. The	acceptandequately OCD accep	nd/or file certain in ce of a C-141 rep y investigate and in prance of a C-141	ort by the	he NMOCD mate contamination does not relieve	arked as "Final R on that pose a thr	eport" of eat to grespons	does not rel round wate ibility for o	lieve the open er, surface was compliance w	rator of liability ster, human hea vith any other	у .
Title: L	ea cl	HSE	-	/		Approval Da	ichall	4	Expiration	_	- 1	-
E-mail Addre	ess:					Conditions of	f Approval:			Attached		
	20-10	ets If Necess		:391-316	5				-		5-12-2	817

District I
1625 N. Prench Dr., Hobbs, NM 88240
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\* Attach Additional Sheets If Necessary

## State of New Mexico Energy Minerals and Natural Resources

Form C-141
Revised August 8, 2011
bmit 1 Copy to appropriate District Office in

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.

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						OPERA'	ГOR		Initi	al Report	$\boxtimes$	Final Rep	
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				iland, TX 7970	5	Telephone l	No.						
				ol Water Line		Facility Type Produced water transfer line							
Surface Ow	ner New	Mexico		Mineral (	Owner	BLM			API No	. 30-025-0	06248		
				LOCA	ATIO	N OF RE	EASE						
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produced water	ise of Probler to be releas	em and Reme	dial Action	n Taken.* Leak onte supervisor and c	on a 4" fi	berglass line (3) a vacuum truck	0+ years) that had a . Total recovered f	Victauli luid was	ic clamp bolt 340 BPW.	corroded and	broken	causing	
Describe Are	a Affected	and Cleanup	Action Tak	en.* The release	affected	approximately:	2,700 square feet of	pasture	land. RECS				
2013 from ano	ther environ	mental company	Prior to F	RECS acquiring the fi bgs. Laboratory	site, the	previous enviro	nmental company o	conducte	d a soil bore	installation at	the site	on October	
				ics (DRO) and BTI									
the previous er	vironmental	company creat	ed a Work I	Plan for the site. W	hen REC	S acquired the	site, the area had ali	ready bea	en excavated	to 80 ft x 60	ft to a de	epth of 10 ft	
				vation and found th									
standards. Bas	ed on the ele	evated wall sam	pling data, l	ere again field sam RECS submitted an	Addend	um to the Work	Plan on July 19 <sup>th</sup> , 2	013 to N	MOCD. On	August 19th,	2013, N	MOCD	
approved the A	ddendum to	the Work Plan.	On Octobe	er 31st, 2013, a 20-n	nil reinfo	orced poly liner	was installed and pr	operly s	eated into the	base of the	0 ft exc	avation. The	
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				The sand dunes to									
taken to a com	mercial labor	ratory for analy	sis. Both sa	nd dunes returned l	aborator	y chloride resul	s of non-detect. At	5 ft bgs	, another 20-	mil reinforce	I poly li	ner was	
ground surface	and to conto	our the area to the	ne surroundi	x 89 ft excavation, ing location. A san	The rem	aining sand dun	es and 1,428 yards was taken to a com	of Impor	ted soil were	d returned a	till the e	non-detect	
On February 1	8th, 2014, the	site was seeded	with BLM	mix #2.									
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				investigate and r									
or the environ	ment. In a	ddition, NMC	CD accep	tance of a C-141	report o	loes not reliev	e the operator of	respons	ibility for co	ompliance v	vith any	y other	
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Date: 3 -	20-14	1	Phone:	391-316	5		Section 1		- Table	IMP-	5-17	7-581	





APR 1 0 2014

RECEIVED

## **CONOCOPHILLIPS**

P.O. Box 2197 Houston, TX 77252-2197 Phone 281.293.1000

## SEMU Permian Skaggs Pool Water Line

(1RP-5-12-2817)

## **Termination Request**

API 30-025-06248

Release Date: May 27th, 2012

Unit Letter K, Section 24, Township 20S, Range 37E

## Rice Environmental Consulting & Safety

P.O. Box 2948, Hobbs, NM 88241 Phone 575.393.2967

March 28th, 2014

## **Geoffrey Leking**

New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau – District 1 1625 N. French Dr. Hobbs, NM 88240-9273

> RE: Termination Request ConocoPhillips SEMU Permian Skaggs Pool Water Line (1RP-5-12-2817) UL/K sec. 24 T20S R37E API No. 30-025-06248

Mr. Leking:

ConocoPhillips (CoP) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site.

## **Background and Previous Work**

The site is located approximately 8.5 miles north of Eunice, New Mexico at UL/K sec. 24 T20S R37E. NM OSE records indicate that groundwater will likely be encountered at a depth of approximately 90 - 100 +/- feet.

On May 27<sup>th</sup>, 2012, CoP discovered a release of produced water from a 4 inch fiberglass transfer line. A clamp on the line corroded and broke releasing a total of 370 barrels of produced water over approximately 2,700 square feet of pasture land. A vacuum truck was called to the site and recovered 340 barrels of produced water. NMOCD was notified of the release on May 28<sup>th</sup>, 2012 and an initial C-141 was approved by NMOCD on May 30<sup>th</sup>, 2012 (Appendix A).

RECS took over the site on June 19<sup>th</sup>, 2013 from another environmental company. Prior to RECS acquiring the site, the previous environmental company conducted a soil bore installation at the site on October 17<sup>th</sup>, 2012. One soil bore was installed to a depth of 70 ft bgs. As the bore was advanced, samples were taken by split spoon and sent to a commercial laboratory for analysis (Figure 1). Laboratory sampling showed chloride levels that dropped to 576 mg/kg at 60 ft bgs and 224 mg/kg at 70 ft bgs. Gasoline Range Organics (GRO), Diesel Range Organics (DRO) and BTEX readings were either non-detect or below regulatory standards (Appendix B).

Based on the soil bore analysis, the previous environmental company created a Work Plan for the site. In the Work Plan, the site was to be excavated to 10 ft bgs across entire spill area, generating approximately 1,444 cubic yards of impacted material. The excavated material was to be disposed of at an NMOCD approved facility. Once the

excavation was completed, clay would be imported to the site and 2 feet of clay would be installed into the base of the excavation. The site would be backfilled with clean, imported top soil, re-contoured to the surrounding area and seeded.

When RECS acquired the site, the area had already been excavated to 80 ft x 60 ft to a depth of 10 ft bgs. RECS personnel field tested the walls of the excavation and found that the field chloride readings were above regulatory standards. Based on the wall field data, the excavation was expanded to 87 ft x 79 ft. The walls were again field sampled for chlorides and although the results were lower, they were still found to be above regulatory standards.

Based on the elevated wall sampling data, RECS submitted an Addendum to the Work Plan on July 19<sup>th</sup>, 2013 to NMOCD. In the Addendum, CoP proposed to install and properly seat a 20-mil reinforced poly liner at the base of the 10 ft excavation. The excavation would then be shelved at 5 ft bgs to dimensions of 92 ft x 89 ft. The site would be shelved 5 ft south, east and west and would not extend to the north to avoid the 4 inch fiberglass line. The excavated soil from the shelves and the surrounding sand dunes would be used to backfill the excavation to 5 ft bgs. At 5 ft bgs, another 20-mil reinforced poly liner would be installed and properly seated into this excavation. Clean soil would be imported to the site to backfill the excavation to surface level and contour it to the surrounding location (Figure 2). The site would be seeded with a blend of native vegetation. Vegetation above the liner would also provide a natural infiltration barrier for the site since plants capture water through their roots thereby reducing the volume of water moving through the vadose zone to groundwater.

On August 19<sup>th</sup>, 2013, NMOCD approved the Addendum to the Work Plan. On October 31<sup>st</sup>, 2013, a 20-mil reinforced poly liner was installed and properly seated into the base of the 10 ft excavation. The excavation was then expanded to dimensions of 92 ft x 89 ft at 5 ft bgs and that soil was used to backfill the excavation to 5 ft bgs. Wall samples from the west, south and east wall to a depth of 3 ft bgs were taken from the 92 ft x 89 ft excavation (Figure 3). Representative samples were sent to a commercial laboratory for analysis (Appendix C). All wall samples returned chloride laboratory results below regulatory standards. The sand dunes to the west and east of the excavation were also sampled and a 5 point composite of each dune was taken to a commercial laboratory for analysis. Both sand dunes returned laboratory chloride results of non-detect.

At 5 ft bgs, another 20-mil reinforced poly liner was installed and properly seated into the base of the 92 ft x 89 ft excavation. The remaining sand dunes and 1,428 yards of imported soil were used to backfill the excavation to ground surface and to contour the area to the surrounding location. A sample of the imported soil was taken to a commercial laboratory and returned a result of non-detect. On February 18<sup>th</sup>, 2014, the site was seeded with BLM mix #2.

Photo documentation of all activities can be found in Appendix D.

Given that CoP completed the activities as stated in the NMOCD approved Work Plan, CoP respectfully requests 'remediation termination' and site closure. A final C-141 will be found in Appendix E.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-2967 or me if you have any questions or wish to discuss the site.

Sincerely,

Lara Weinheimer

JC.Wi

**Project Scientist** 

**RECS** 

(575) 441-0431

## Attachments:

Figure 1 – Soil Bore Installation

Figure 2 – Proposed Excavation and Liner Installation

Figure 3 – Final Sampling Data

Appendix A – Initial C-141

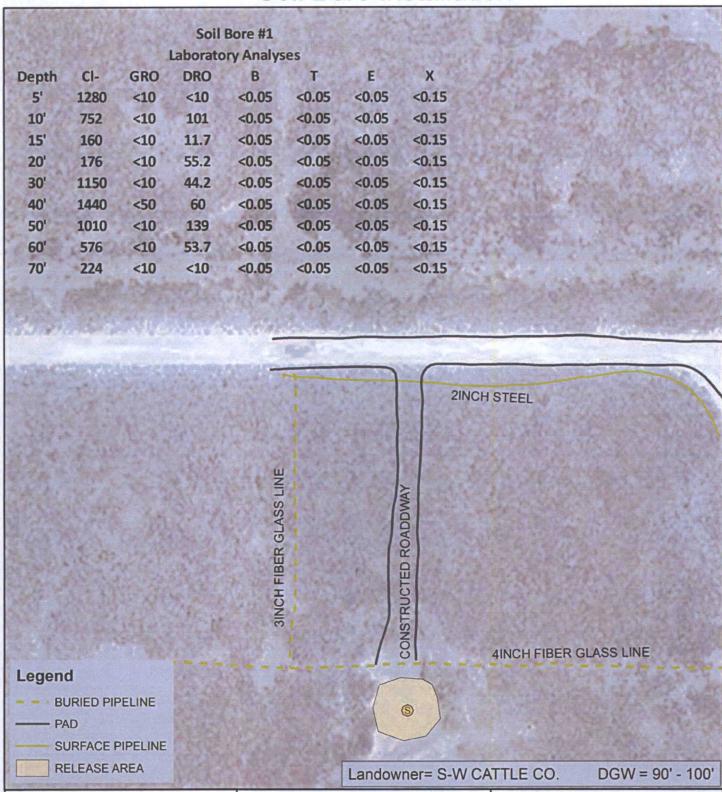
Appendix B - Soil Bore Installation Lab

Appendix C – Addendum to Work Plan Labs

Appendix D - Photo Documentation

Appendix E - Final C-141

## Soil Bore Installation





## CONOCOPHILLIPS SEMU PERMIAN SKAGGS POOL WATER LINE

(1RP-5-12-2817)

LEGALS: UL/F Sec. 24 T20S - R37E LEA COUNTY, NM

## Figure 1



50 100 HHH Feet

GPS date: 6/19/2013 KN, 6/24/2013 KN Drawing date: 7/16/13 Drafted by: L. Weinheimer

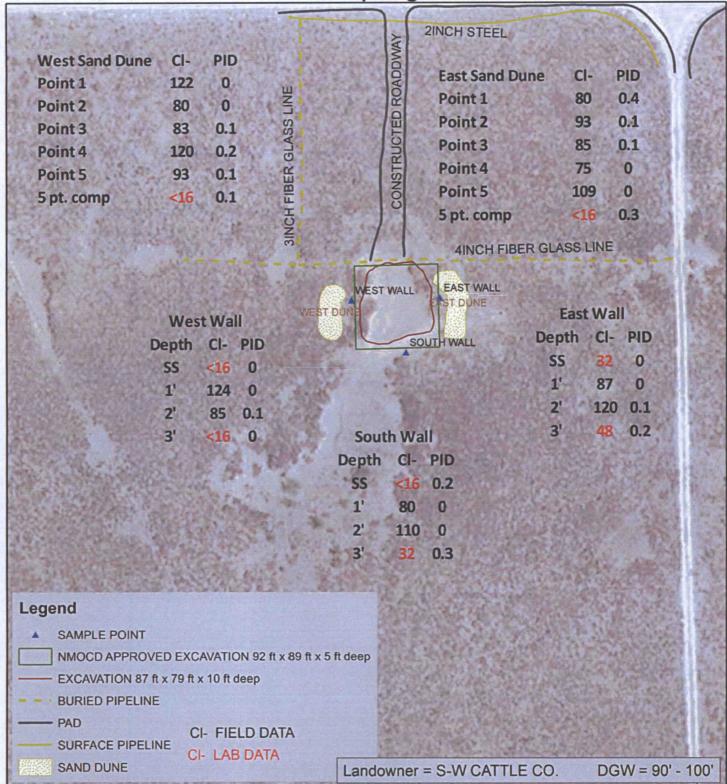
Proposed Excavation and Liner Installation **3INCH FIBER GLASS I** CONSTRUCTED ROADDWAY **4INCH FIBER GLASS LINE** Excavation 87' x 79' x 10' deep 6,699 sq ft 92 ft 89 ft Imported Soil 5 FT Soll From Shelf 89 FT 20-mil reinforced poly liner Not to scale Legend **EXCAVATION 6/24/13 BURIED PIPELINE** PAD SURFACE PIPELINE SCRAPE PROPOSED EXCAVATION APPROXIMATE INITIAL RELEASE 2013 (3,000 sq ft) Landowner= S-W CATTLE CO. DGW = 90' - 100' Figure 2 CONOCOPHILLIPS SEMU PERMIAN SKAGGS POOL WATER LINE



(1RP-5-12-2817)

LEGALS: UL/F Sec. 24 T20S - R37E LEA COUNTY, NM 0 50 100 HHH Feet

GPS date: 6/19/2013 KN, 6/24/2013 KN Drawing date: 7/16/13 Drafted by: L. Weinheimer Final Sampling Data





## PERMIAN SKAGGS POOL WATER LINE

(1RP-5-12-2817)

LEGALS: UL/F Sec. 24 T20S - R37E LEA COUNTY, NM

## Figure 3



0 50 100 HHH Feet

GPS date: 10/7/13 KN Drawing date: 10/8/13 Drafted by: L. Weinheimer District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Ariesia, NM 88210
District III
1000 Rio Brazos Road, Azrec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

Date: 5/29/2012

\* Attach Additional Sheets If Necessary

HORES OCD

State of New Mexico
Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

MAY 29 2012

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

RECEIVED

Phone: (505)391-3126

Santa Fe, NM 87505

				ease Notific	catio	on and Co	orrective A	ction	n			
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Name of C	ompany Co	onocoPhillip	s Compa	ny	- 1	Contact Jess	se A. Sosa	Tanchire -			10	
				dland, TX 7970	05-5	-	No. (505)391-3		-			WEIGHT -
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Surface Ov	wner New	Mexico		Mineral (	Owner	BLM			API No	. 30-025-0	6248	
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Describe Ar	rea Affected	and Cleanup	Action Ta	ken.*		Name of the last o						
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regulations public healt should their or the enviro	all operators h or the env operations onment. In	are required ironment. The have failed to	to report a e acceptan adequately OCD accep	e is true and comp nd/or file certain is ce of a C-141 repo y investigate and is otance of a C-141	release ort by t remedia	notifications at the NMOCD mate contaminati	nd perform correct arked as "Final R on that pose a thr	ctive act teport" i	tions for rel does not rel round water	eases which ieve the ope r, surface w	may er rator of ater, hu	danger liability man health
Signature:	Ven	W				(	OIL CON	7		DIVISIO	N	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Printed Nam	e:Jesse A.	Sosa			Approved by Environmental Specialist:				NE.			
Title: HSI	ER Lead		Market mired			Approval Dat	e 5  30  12	2	Expiration	Date: 71	30/12	<u> </u>
E-mail Addı	ress: Jesse./	A.Sosa@con	ocophillip	os.com	- 41	Conditions of	Approval: 508	TIME	FWAL	Artached		



October 23, 2012

JUSTIN ROBERTS

DIAMONDBACK DISPOSAL SERVICE INC.

P. O. BOX 2491

HOBBS, NM 88241

RE: SEMU PERMIAN WATERFLOOD

Enclosed are the results of analyses for samples received by the laboratory on 10/17/12 13:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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 <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accredited 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. 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



DIAMONDBACK DISPOSAL SERVICE INC. JUSTIN ROBERTS P. O. BOX 2491 HOBBS NM, 88241

(575) 392-9376 Fax To:

Received:

10/17/2012

Sampling Date:

10/17/2012

Reported:

10/23/2012

Sampling Type:

7.74

129

Soil

6.00

Project Name:

SEMU PERMIAN WATERFLOOD

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

5.13

Project Location:

EUNICE, NEW MEXICO

Sample ID: SB 1 - 5' BGS (H202537-01)

BTEX 8021B	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	10/20/2012	ND	2.50	125	2.00	5.02	
Toluene*	<0.050	0.050	10/20/2012	ND	2.54	127	2.00	4.23	
Ethylbenzene*	<0.050	0.050	10/20/2012	ND	2.57	129	2.00	5.55	

ND

10/20/2012

Surrogate: 4-Bromofluorobenzene (PIL

Total Xylenes\*

102 %

< 0.150

89.4-126

0.150

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM	parties and				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1280	16.0	10/19/2012	ND	416	104	400	0.00	
TPH 8015M	mg/kg		Analyzed By: MS		1, 1				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/19/2012	ND	182	91.2	200	12.8	
DRO >C10-C28	<10.0	10.0	10/19/2012	ND	178	88.9	200	13.5	

Surrogate: 1-Chlorooctane

79.7%

65.2-140

Surrogate: 1-Chlorooctadecane

85.2 %

63.6-154

\*=Accredited Analyte Cardinal Laboratories

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 whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be lincluding, 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 hereun claim 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. In no event shall Cardinal be liable for incidental or consecutive

Celey D. Keine



DIAMONDBACK DISPOSAL SERVICE INC. JUSTIN ROBERTS P. O. BOX 2491 HOBBS NM, 88241

Fax To: (575) 392-9376

Received:

10/17/2012

Sampling Date:

10/17/2012

Reported:

Sampling Type:

Soil

10/23/2012

Project Name:

SEMU PERMIAN WATERFLOOD

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

EUNICE, NEW MEXICO

Sample ID: SB 1 - 10' BGS (H202537-02)

BTEX 8021B	mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/20/2012	ND	2.50	125	2.00	5.02	
Toluene*	<0.050	0.050	10/20/2012	ND	2.54	127	2.00	4.23	
Ethylbenzene*	<0.050	0.050	10/20/2012	ND	2.57	129	2.00	5.55	
Total Xylenes*	<0.150	0.150	10/20/2012	ND	7.74	129	6.00	5.13	

Surrogate: 4-Bromofluorobenzene (PIL

99.2 %

89.4-126

Chloride, SM4500CI-B		mg	/kg	Analyze	d By: HM	35 - 3				
Analyte		Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride		752	16.0	10/19/2012	ND	416	104	400	0.00	
TPH 8015M	mg/kg		Analyzed By: MS		4					
Analyte		Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10		<10.0	10.0	10/19/2012	ND	182	91.2	200	12.8	
DRO >C10-C28		101	10.0	10/19/2012	ND	178	88.9	200	13.5	

Surrogate: 1-Chlorooctane 79.6 % 63.6-154 87.9 % Surrogate: 1-Chlorooctadecane

\*=Accredited Analyte Cardinal Laboratories

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Celeg D. Keene



DIAMONDBACK DISPOSAL SERVICE INC. JUSTIN ROBERTS P. O. BOX 2491 HOBBS NM, 88241

Fax To:

(575) 392-9376

Received:

10/17/2012

Sampling Date:

10/17/2012

Reported:

10/23/2012

Sampling Type:

Soil

Project Name:

SEMU PERMIAN WATERFLOOD

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

EUNICE, NEW MEXICO

Sample ID: SB 1 - 15' BGS (H202537-03)

BTEX 8021B	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Benzene*	<0.050	0.050	10/20/2012	ND	2.50	125	2.00	5.02	
Toluene*	<0.050	0.050	10/20/2012	ND	2.54	127	2.00	4.23	
Ethylbenzene*	<0.050	0.050	10/20/2012	ND	2.57	129	2.00	5.55	
Total Xylenes*	<0.150	0.150	10/20/2012	ND	7.74	129	6.00	5.13	
Surrogate: 4-Bromofluorobenzene (PIL	97.6	% 89.4-12	6		7				
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: HM					19 10
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Chloride	160	16.0	10/19/2012	ND	416	104	400	0.00	
Chloride TPH 8015M	160 mg/			ND d By: MS	416	104	400	0.00	
					416 BS	104 % Recovery	400 True Value QC	0.00	Qualifie
TPH 8015M	mg/	/kg	Analyze	d By: MS					Qualifie

Surrogate: 1-Chlorooctane 78.2 % 65.2-140
Surrogate: 1-Chlorooctadecane 84.8 % 63.6-154

Cardinal Laboratories

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Celey D. Keine



DIAMONDBACK DISPOSAL SERVICE INC. JUSTIN ROBERTS P. O. BOX 2491 HOBBS NM, 88241

Fax To: (575) 392-9376

Received:

10/17/2012

Sampling Date:

10/17/2012

Reported:

10/23/2012

Sampling Type:

Soil

Project Name:

SEMU PERMIAN WATERFLOOD

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

EUNICE, NEW MEXICO

Sample ID: SB 1 - 20' BGS (H202537-04)

BTEX 8021B	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	10/20/2012	ND	2.50	125	2.00	5.02	
Toluene*	<0.050	0.050	10/20/2012	ND	2.54	127	2.00	4.23	
Ethylbenzene*	<0.050	0.050	10/20/2012	ND	2.57	129	2.00	5.55	
Total Xylenes*	<0.150	0.150	10/20/2012	ND	7.74	129	6.00	5.13	
Surrogate: 4-Bromofluorobenzene (PIL	99.6	% 89.4-12	6						
Chloride, SM4500CI-B	mg	/kg	Analyze	Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	10/19/2012	ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	ed By: MS			100		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/19/2012	ND	182	91.2	200	12.8	
DRO >C10-C28	55.2	10.0	10/19/2012	ND	178	88.9	200	13.5	
Surrogate: 1-Chlorooctane	72.9	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	77.8	% 63.6-15	4						

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\*=Accredited Analyte

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Celeg D. Keine



DIAMONDBACK DISPOSAL SERVICE INC. JUSTIN ROBERTS

P. O. BOX 2491 HOBBS NM, 88241

Fax To: (575) 392-9376

Received:

10/17/2012

Sampling Date:

10/17/2012

Reported:

Sampling Type:

Soil

Project Name:

10/23/2012

Sampling Condition:

Cool & Intact

NONE GIVEN

Project Number:

Sample Received By:

Jodi Henson

Project Location:

EUNICE, NEW MEXICO

SEMU PERMIAN WATERFLOOD

Sample ID: SB 1 - 30' BGS (H202537-05)

BTEX	8021B
1917	

## Analyzed By: ms

DIEX COLLD	mg/	ng .	raidiyae	u 27. 1113					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/20/2012	ND	2.50	125	2.00	5.02	
Toluene*	<0.050	0.050	10/20/2012	ND	2.54	127	2.00	4.23	
Ethylbenzene*	<0.050	0.050	10/20/2012	ND	2.57	129	2.00	5.55	
Total Xylenes*	<0.150	0.150	10/20/2012	ND	7.74	129	6.00	5.13	

Surrogate: 4-Bromofluorobenzene (PIL

97.9%

89.4-126

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1150	16.0	10/19/2012	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS	17				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/19/2012	ND	182	91.2	200	12.8	
DRO >C10-C28	44.2	10.0	10/19/2012	ND	178	88.9	200	13.5	

Surrogate: 1-Chlorooctane 76.9 % 65.2-140 Surrogate: 1-Chlorooctadecane 82.0 % 63.6-154

Cardinal Laboratories \*=Accredited Analyte

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Celey D. Keine



DIAMONDBACK DISPOSAL SERVICE INC.

JUSTIN ROBERTS P. O. BOX 2491 HOBBS NM, 88241

(575) 392-9376 Fax To:

Received:

10/17/2012

Sampling Date:

10/17/2012

Reported:

10/23/2012

Sampling Type:

Soil

Project Name:

SEMU PERMIAN WATERFLOOD

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

EUNICE, NEW MEXICO

## Sample ID: SB 1 - 40' BGS (H202537-06)

BTEX 8021B	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	10/20/2012	ND	2.50	125	2.00	5.02	
Toluene*	< 0.050	0.050	10/20/2012	ND	2.54	127	2.00	4.23	
Ethylbenzene*	<0.050	0.050	10/20/2012	ND	2.57	129	2.00	5.55	
Total Xylenes*	<0.150	0.150	10/20/2012	ND	7.74	129	6.00	5.13	
Surrogate: 4-Bromofluorobenzene (PIL	99.2	% 89.4-12	6	E. C.					
Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM	9				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1440	16.0	10/19/2012	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	<50.0	50.0	10/19/2012	ND	182	91.2	200	12.8	
			10/19/2012	ND	178	88.9	200	13.5	

Surrogate: 1-Chlorooctadecane 82.8 % 63.6-154

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DIAMONDBACK DISPOSAL SERVICE INC. JUSTIN ROBERTS P. O. BOX 2491 HOBBS NM, 88241

Fax To: (575) 392-9376

Received:

10/17/2012

Sampling Date:

10/17/2012

Reported:

10/23/2012

Sampling Type:

Soil

Project Name:

SEMU PERMIAN WATERFLOOD

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Project Location:

EUNICE, NEW MEXICO

Sample Received By:

Jodi Henson

## Sample ID: SB 1 - 50' BGS (H202537-07)

BTEX 8021B	mg/	kg	Analyze	d By: ms			16.15		7
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/20/2012	ND	2.50	125	2.00	5.02	
Toluene*	<0.050	0.050	10/20/2012	ND	2.54	127	2.00	4.23	
Ethylbenzene*	<0.050	0.050	10/20/2012	ND	2.57	129	2.00	5.55	
Total Xylenes*	<0.150	0.150	10/20/2012	ND	7.74	129	6.00	5.13	
Surrogate: 4-Bromofluorobenzene (PIL	97.5	% 89.4-12	6					184	5
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM		A			2-5-2
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1010	16.0	10/19/2012	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS	Sec.	Page 1		te had	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/19/2012	ND	182	91.2	200	12.8	
DRO >C10-C28	139	10.0	10/19/2012	ND	178	88.9	200	13.5	
Surrogate: 1-Chlorooctane	78.1	% 65.2-14	0		W I		- 14-17		
Surrogate: 1-Chlorooctadecane	88.1	% 63.6-15	4						

\*=Accredited Analyte Cardinal Laboratories

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DIAMONDBACK DISPOSAL SERVICE INC. JUSTIN ROBERTS

P. O. BOX 2491 HOBBS NM, 88241

(575) 392-9376 Fax To:

Received:

10/17/2012

Sampling Date:

10/17/2012

Reported:

10/23/2012

Sampling Type:

Soil

Project Name:

SEMU PERMIAN WATERFLOOD

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Project Location:

Jodi Henson

EUNICE, NEW MEXICO

Sample ID: SB 1 - 60' BGS (H202537-08)

BTEX 8021B	mg,	kg	Analyze	d By: ms				K D	A. Carrier
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/20/2012	ND	2.50	125	2.00	5.02	
Toluene*	<0.050	0.050	10/20/2012	ND	2.54	127	2.00	4.23	
Ethylbenzene*	<0.050	0.050	10/20/2012	ND	2.57	129	2.00	5.55	
Total Xylenes*	<0.150	0.150	10/20/2012	ND	7.74	129	6.00	5.13	

Surrogate: 4-Bromofluorobenzene (PIL

98.4 %

89.4-126

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					1.5
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	576	16.0	10/19/2012	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: MS			1		188
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/19/2012	ND	182	91.2	200	12.8	
DRO >C10-C28	53.7	10.0	10/19/2012	ND	178	88.9	200	13.5	

Surrogate: 1-Chlorooctane Surrogate: 1-Chlorooctadecane 80.6% 63.6-154

\*=Accredited Analyte Cardinal Laboratories

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Celey D. Keine



DIAMONDBACK DISPOSAL SERVICE INC. JUSTIN ROBERTS P. O. BOX 2491 HOBBS NM, 88241

Fax To: (575) 392-9376

Received:

10/17/2012

Sampling Date:

10/17/2012

Reported:

10/23/2012

Sampling Type:

Soil

Project Name:

SEMU PERMIAN WATERFLOOD

Sampling Condition:

Cool & Intact

Project Number:

NONE GIVEN

Sample Received By:

Jodi Henson

Project Location:

EUNICE, NEW MEXICO

Sample ID: SB 1 - 70' BGS (H202537-09)

BTEX 8021B	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	10/22/2012	ND	1.98	99.0	2.00	2.23	
Toluene*	<0.050	0.050	10/22/2012	ND	2.15	108	2.00	2.85	
Ethylbenzene*	<0.050	0.050	10/22/2012	ND	2.16	108	2.00	2.30	
Total Xylenes*	<0.150	0.150	10/22/2012	ND	6.54	109	6.00	2.75	
Surrogate: 4-Bromofluorobenzene (PIL	102	% 89.4-12	6	STEEL STEEL					
Chloride, SM4500CI-B	mg	kg	Analyze	d By: HM	74				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	10/19/2012	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	10/19/2012	ND	182	91.2	200	12.8	
DRO >C10-C28	<10.0	10.0	10/19/2012	ND	178	88.9	200	13.5	
Surrogate: 1-Chlorooctane	77.5	% 65.2-14	0		1				
Surrogate: 1-Chlorooctadecane	79.0	% 63.6-15	4						

\*=Accredited Analyte Cardinal Laboratories

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Celey D. Keene



## **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. Keine

## Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Mariand, Hobbs, NM 88243 (575) 393-2326 FAX (575) 393-2476

Company Name:	DIAMOND BAT & DIDUCAL SON. INC	BILL TO	ANALYSIS REQUEST	-
Project Manager: Just Address: PO Box Sty: Jobbs City: Jobbs Phone #: \$52-1991 Project Name: SEMU Project Location: SEMU Samplor Name: Just	Justin Reberto Sex 2451 State: 11 zip: 863 State: 11 zip: 863 Project Owner: COPC FONITE WATER FLOO Justin Referres	P.O. #: Company: Attn: Address: City: State: Phone #: Fax#:		
Lab I.D. HQDZ537	(G)RABI GR (C)OMP # CONTAINERS GRQUNDWATER WASTEWATER	NESSERV SAMPLING OTHER: ACIUDES OTHE	17 X318 H&L	
100-10 NICUM-		****	****************	

Phone Result: Fax Result: REMARKS: Sample Condition Delivered By: (Circle One) Sampler-UPS + Bus - Other:

T Cardinal cannot accept verbal changes. Please fax writton changes to 505-393/2476





October 08, 2013

HACK CONDER

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: SEMU PERMIAN WATERFLOOD

Enclosed are the results of analyses for samples received by the laboratory on 10/07/13 14:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accredited 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. Keene

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



RICE ENVIRONMENTAL CONSULTING & SAFETY

HACK CONDER 419 W. CAIN HOBBS NM, 88240

(575) 397-1471 Fax To:

Received:

10/07/2013

Sampling Date:

10/07/2013

Reported:

10/08/2013

Sampling Type:

Soil

Project Name:

SEMU PERMIAN WATERFLOOD

Sampling Condition:

\*\* (See Notes)

Project Number:

COP

Sample Received By:

Project Location:

NOT GIVEN

Jodi Henson

Sample ID: E WALL @ SURFACE (H302424-01)

Chloride, SM4500CI-B

mg/kg

Analyzed By: AP

Analyte

Result Reporting Limit

Analyzed

Analyzed

Analyzed

10/08/2013

Method Blank

BS

True Value QC 400

RPD

3.92

Chloride 32.0 16.0 10/08/2013 ND 400 100

Reporting Limit

Reporting Limit

16.0

Reporting Limit

16.0

Sample ID: E WALL @ 3' (H302424-02)

Chloride, SM4500Cl-B

Analyte

Analyte

Analyte

Analyzed By: AP

100

% Recovery

% Recovery

Qualifier

Chloride

Chloride

Chloride

Result 48.0

16.0 10/08/2013 Method Blank ND

Method Blank

ND

ND

BS

True Value QC % Recovery

RPD

Qualifier

Sample ID: W WALL @ SURFACE (H302424-03)

Chloride, SM4500CI-B

Result

<16.0

Result

<16.0

Analyzed By: AP

BS

400

BS

400

400

400

3.92

100

400

True Value QC

RPD 3.92 Qualifier

Sample ID: W WALL @ 3' (H302424-04)

Chloride, SM4500Cl-B

mg/kg

Analyzed By: AP

Analyzed 10/08/2013 Method Blank

% Recovery 100

True Value QC 400

**RPD** 

3.92

Qualifier

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keine





RICE ENVIRONMENTAL CONSULTING & SAFETY

HACK CONDER 419 W. CAIN HOBBS NM, 88240

(575) 397-1471 Fax To:

Received:

10/07/2013

Sampling Date:

10/07/2013

Reported:

10/08/2013

Sampling Type:

Soil

Project Name:

SEMU PERMIAN WATERFLOOD

Sampling Condition:

\*\* (See Notes)

Project Number:

COP

Sample Received By:

Project Location:

NOT GIVEN

Jodi Henson

## Sample ID: S WALL @ SURFACE (H302424-05)

Chloride,	SM4500CI-B
-----------	------------

## mg/kg

## Analyzed By: AP

Analyte

Result

Reporting Limit Analyzed 16.0 10/08/2013 Method Blank

BS

% Recovery

True Value QC

Qualifier

**RPD** 

3.92

Chloride

<16.0

Analyzed

ND

Method Blank

400

100

400

## Sample ID: S WALL @ 3' (H302424-06)

Chlor	ide,	SM45	OOC	I-B
	_			_

Analyte

## Analyzed By: AP

BS

416

% Recovery

104

104

Chloride

Result 32.0

16.0 10/08/2013

Reporting Limit

Reporting Limit

ND

True Value QC 400

**RPD** Qualifier 0.00

## Sample ID: EAST SAND DUNE (H302424-07)

Chloride.	SM4500CI-B	

## Analyzed By: AP

Analyte Result Analyzed

Method Blank

BS

% Recovery

True Value QC RPD

Qualifier

Chloride

<16.0

10/08/2013 16.0

ND

416

400

0.00

## Sample ID: WEST SAND DUNE (H302424-08)

## Chloride, SM4500CI-B

## mg/kg

## Analyzed By: AP

	100000000000000000000000000000000000000
	Analyte
Chloride	

Result <16.0

Reporting Limit 16.0

Analyzed 10/08/2013 Method Blank ND

BS 416 % Recovery 104

True Value QC 400

RPD 0.00

Qualifier

## Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 3 of 5



## **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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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

# ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603

(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

Company Name:	RECS				V			51.7			718	LTO	I BILL TO	100-6-				AN	ANALYSIS		REQUEST	EST				
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Sampler Name: Kyle Norman	e Norman							1	Fax #:	4.				JIL		-		-		1						
FOR LAB USE ONLY		-	-	H		MA	MATRIX		Ь	PRESERV	RV.	SAMPLING	ING	Ü		_			9		_		14.		-	
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PLEASE NOTE: Labiny and Damages. Gardinal's fisbility and efent's exclusive remedy for any claim arising whether besed in contract or fort, shall be limited to the amount paid by the client for the nnalyses. All claims including those for negligence and any other caute viervice. In no event shall Cardinal be liable for incidental or consequenta

Relinquished

Relinquis

hconder@rice-ecs.com; Lweinheimer@rice-ecs.com Knorman@rice-ecs.com; Ipena@riceswd.com email results: zconder@rice-ecs.com ☑ No Add'l Phone #: ☑ No Add'l Fax #: Kjones@riceswd.com; Sample Condition
Cool Intact
Ves Tres Time: Sampler - UPS - Bus - Other: Delivered By: (Circle One)

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393(2476



November 06, 2013

HACK CONDER

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

419 W. CAIN

HOBBS, NM 88240

RE: SEMU PERMIAN WATERFLOOD

Enclosed are the results of analyses for samples received by the laboratory on 11/05/13 14:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accredited 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. 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



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

## Analytical Results For:

RICE ENVIRONMENTAL CONSULTING & SAFETY

HACK CONDER 419 W. CAIN HOBBS NM, 88240

(575) 397-1471 Fax To:

Received:

11/05/2013

Sampling Date:

11/05/2013

Reported:

11/06/2013

Sampling Type:

Soil

Project Name:

SEMU PERMIAN WATERFLOOD

Sampling Condition:

\*\* (See Notes)

Project Number:

COP

Project Location:

NOT GIVEN

Sample Received By:

Jodi Henson

## Sample ID: IMPORTED BACKFILL (H302696-01)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AP					477
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/05/2013	ND	416	104	400	0.00	

\*=Accredited Analyte Cardinal Laboratories

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Celey D. Keine



## **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. Keine

## RUSI

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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city: Hobbs	State: NM	Zip: 8824	: 88	324	9		3	Attn:										101					_		
Phone #:	Fax#:							Ad	Address	::								II+			-			<u> </u>	
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Project Locatin	5	bod						Ph	Phone #:	#			oric	30	E)	LS		_	SC						
Sampler Name	Sampler Name: Kyle Norman							Fa	Fax #:				olr		_				11						
FOR LAB USE ONLY		-		Ш		MATRIX	XIX		PRE	PRESERV	/ SAMPLING	NG	C		_	_		Ð.	-						
Lab I.D. #30266	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	ВЭТАМОИООЯЭ	MASTEWATER	ROIL	SENDGE OIL	: A3HTO	ACID/BASE:	ICE / COOL	DATE	TIME			110	_		Complet							
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red unless made in writing and received by Cardinal within 30 days after completion of the applicable Bation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries es. All claims including those for negligence and any other cause whats a. In no event shall Cardinal be liable for incidental or consequental dam

hconder@rice-ecs.com; Lweinheimer@rice-ecs.com Knorman@rice-ecs.com; Ipena@riceswd.com Kjones@riceswd.com; Bbaker@rice-ecs.com; email results: zconder@rice-ecs.com Z No Add'I Phone # Phone Result: Fax Result: REMARKS: Sample Condition
Cool Intact
See New Year Time: Sampler - UPS - Bus - Other: Delivered By: (Circle One)

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-24 6

#25#

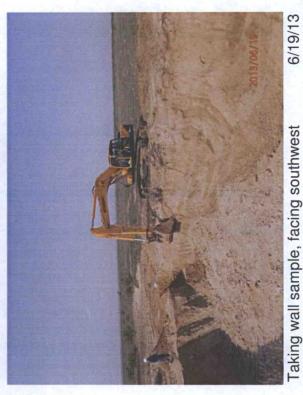
# ConocoPhillips SEMU Permian Skaggs Pool Water Line Unit Letter F, Section 24, T20S, R37E



Initial excavation, facing east



Initial excavation, facing south-southwest



Taking wall sample, facing southwest



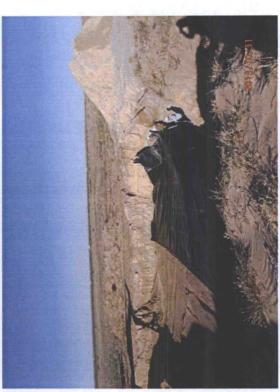




Excavation, facing south-southeast

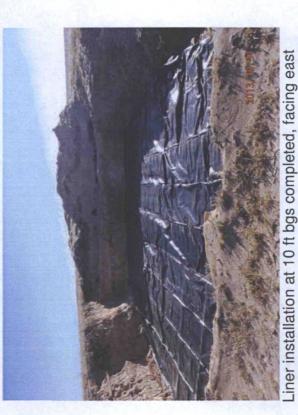


Sampling excavation, facing north



Installing 20-mil poly liner at 10 ft bgs, facing west 10/31/13

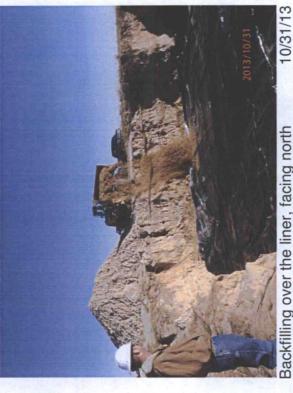
Padding the base of the excavation for liner installation, facing south



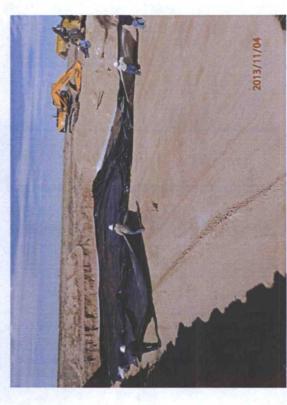
Liner installation at 10 ft bgs completed, facing east 10/31/13



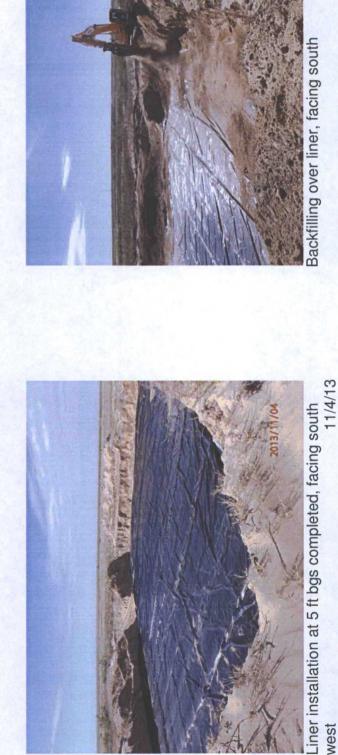
11/1/13 Backfilling over liner completed and benched for 5 ft bgs liner, facing east



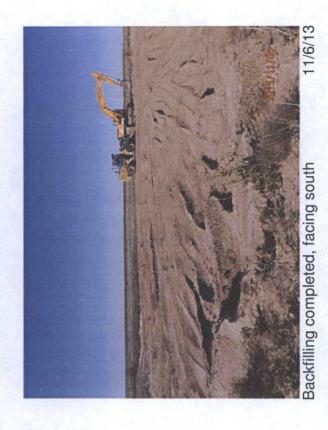
Backfilling over the liner, facing north



11/4/13 Installing 20-mil poly liner at 5 ft bgs, facing west



west





Importing soil, facing east

