BD Jct. M 2013

DISCLOS

RICE OPERATING COMPANY JUNCTION BOX DISCLOSURE* REPORT

BOX LOCATION

	SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUN		MENSIONS - FEE	T
	Blinebry-Drinkard (BD)	Jct. M-29	М	29	228	38E	Lea	Length	Width moved	Height
		<u> </u>			L	_				
	LAND TYPE:	BLW	STATE	FEE LAI	NDOWNER	D.1	K. Boyd	OTHER		
	Depth to Grou	ndwater	124	feet	NMOC	SITE ASS	ESSME	ENT RANKING S	CORE:	0
	Date Started	9/19/	/2013	Date Co	mpleted	11/1/2013	0	CD Witness	no	
	Soil Excavated	200.0	cubic ya	rds Exc	cavation Le	ngth30	v	vidth 15	Depth 12	feet
	Soil Disposed	216	cubic ya	rds Of	fsite Facility	Sundance	e Servic	es Location	Eunice, N	<u>IM</u>
FIE	ELD SOURCE	RESUL	TS:	Sample	Date 1	0/9/2013, 10	0/14/201	Sample De	oth1	2'
	Р	rocure 5-po	int composi	te sample of	bottom and	4-point con	nposite	sample of sidewa	alls. TPH	
								lab and testing p		
			•		ant to NMO			0.		
	Sample	PID (fie	ماط) [RO	DRO	Chlorides		CHLOB	IDE FIELD TES	ete
ł	Location	ppm		g/kg	mg/kg	mg/kg	'	LOCATION	DEPTH	mg/kg
	4-WALL COMP.	0.9		10	66.2	4,800	\dashv	4 wall comp.	n/a	3,594
	BOTTOM COMP.			10	<10	5,520		bottom comp.	11'	2,837
-	T. COMP BACKF					704	\dashv	backfill	n/a	626
	PORTED TOPSO					<16		Dackilli	2'	630
.,,,,	I GIVIED TOT GO	<u> </u>	1	<u> </u>		1 10	l	vertical	4'	1389
Gen	eral Description	of Remedi	al Action:	This junction	hox was elir	minated durin	na	delineation	-	1727
	pipeline replacemen							trench 5' E of	8'	2112
	vestigation was co						<u>, </u>	the junction	10'	2029
	vals producing a 30							(source)	12'	4064
	sample resulted in								12	7007
	measured using a		· · · · · · · · · · · · · · · · · · ·				the evca	vation walls, and t	he blended back	efill
	sent to a commeri									
	OCD approved disp		·			<u> </u>			<u>.</u>	
	.5 ft below ground				•					
	rted soil to ground			· · · · · · · · · · · · · · · · · · ·						
	s expected to retur									
	o expected to retain	ii to a produ	ctive capacit	y at a nonnar	Tate. HIVIOOI	J Was Hotille	d or pote	intial groundwater	impact on 2/10/	רד.
		Enciosu	res: site location	on map, area ma	p. photos, lab re	sults. PID (field	screening	s), excavation diagram	n, chloride graph, rev	vegetation form
					l evaluation			-,,	,	
THE	REBY CERTIFY	THAT THE	INFORMA	TION ABOV	E IS TRUE	AND COMP	LETE T	O THE BEST OF	MY KNOWI F	DGE AND
					BECÆF					.5 02 7 11 15
						1	7.			
А	SSEMBLED BY	Laura Flore	es SIC	MATURE_	All	ra T	Cor	COMPANY	Rice Environmenta Safet	•
SITE	SUPERVISOR	Dyllan Yarbro	ough SIG	SNATURE	N	ot available		COMPANY	Rice Environmenta Safet	_
PRO	JECT LEADER	Kyle Norma	an SIG	NATURE	hyle 1	Va_		DATE	3-3-	-14
	¥	*This site is a '	"DISCLOSUR	E." It will be pl	aced on a prio	ritized list of s	imilar site	s for further conside	ration.	

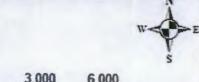
Site Map

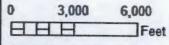
Mam Savent	EUNICE	26 37E 35	25 	30 + 1 1 1 1 1 1 1 1 1 1	29 21\$ 38E 32	28
4	3	2	1	6	5	4
9	10	11/	12	7	8	9
16 NM 207	15 22 \$	Drinkard Road	13	. 18	17 22\$ 38E	16
21	22 00	Drinka	24 Viviar	19	20	21
28		26	25	30	29, BD Jct. M-29	28
33	34	35	36 Source: Esn. C Getmapping. A	31 IgitalGipte, Geneye, erogris, IGI., IGF, sy	32 1c.teo, USDA, USGS, AE 55 Opc, and the GIS Light	33 Sommunity



BD Jct. M-29

UL/M Section 29 T-22-S R-38-E



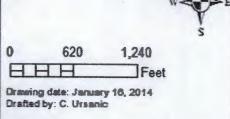


Drawing date: January 16, 2014 Drafted by: C. Ursanic

Area Map BD Jct M-29 228 38E Source, Est, Digitalologe, Ososys, Louter, USDA, USOS, As). Seimepping, Astroyal, ISN, ISP, swisslope, and Se SIS Usos Comm BD Jct. M-29



UL/M Section 29 T-22-S R-38-E



BD Jct. M-29

Unit M, Section 29, T22S, R38E



Site prior to excavation, facing west

9.12.13



Digging vertical, facing southwest

9.19.13



Collecting sample, facing west

9.19.13



Exporting Soil, facing west

10.9.13



Importing soil, facing northwest

10.10.13



Installing 6" pad, facing south

10.11.13



Installed 30'x15' 20-mil liner at 11'ft bgs, facing northeast 10.11.13



Installing 6" pad above liner, facing southwest 10.11.13



Backfilling excavation, facing southwest 10.22.13



Back dragging excavation, facing west 10.22.13



Seeding site, facing north

11.1.13



Final photo, facing west

11.12.13



October 15, 2013

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD M-29 JCT

Enclosed are the results of analyses for samples received by the laboratory on 10/14/13 9:05.

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://doi.org/10.1007/journal.org/10.1007/jour

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 & 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



Analytical Results For:

Rice Operating Company Hack Conder 112 W. Taylor Hobbs NM, 88240

Fax To:

(575) 397-1471

Received: Reported: 10/14/2013

10/15/2013

Project Name:

BD M-29 JCT NONE GIVEN

Project Number: Project Location:

NOT GIVEN

Sampling Date:

10/09/2013

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Jodi Henson

Sample ID: 4-WALL COMP. (H302478-01)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4800	16.0	10/15/2013	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: M5					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	10/14/2013	ND	201	101	200	2.67	
DRO >C10-C28	66.2	10.0	10/14/2013	ND	191	95.7	200	3.23	

Surrogate: I-Chlorooctane

96.4%

65.2-140

Surrogate: 1-Chlorooctadecane

104%

63.6-154

Sample ID: 5 PT BOTTOM COMP (H302478-02)

Chloride, SM4500Cl-B	mg	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5520	16.0	10/15/2013	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	10/14/2013	ND	201	101	200	2.67	
DRO >C10-C28	<10.0	10.0	10/14/2013	ND	191	95.7	200	3.23	
Surrogate: 1-Chlorooctane	106	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	108	% 63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

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Celey & Keene

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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Celey & Kune

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (325) 673-7001 FAX (325)673-7020 (505) 393-2326 FAX (505) 393-2476

Company Name:	" KOC						1972 t									ANALYSIS	LYSI	- 1	REQUEST	ST		
Project Manager:	9r:						4	P.O. #:	ارر										L			
Address:							3	Company:	any:							S				:	 	
city: Hobbs		State: NM Z	Zip: 88240	3240			_ ₹	Attn:								uo						
Phone #:		Fax #:	* 10.4 *				_ ₹	Address:	.88:							ļu∖						
Project #:		Project Owner:					3	City:					M		Н	∤ /S					 	
Project Name:							S	State:		Zip:		168	91		ld.	uc						
Project Location:	on: 60 M-29 5CH	さ					Δ.	Phone #:	#			oiric	08	Έ)	L s	ije	SC					
Sampler Name:	Zach Li		-				<u></u>	Fax#:				olr	3 F		KS	30						
FOR LAB USE ONLY			H	L	W	MATRIX		R	PRESERV	EV SAMPLING	JNG	CI	łc		()	Э					 	
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Affiliates or successors enternances

O Yes

email results Phone Result: Fax Result: REMARKS: Time: Sampler - UPS - Bus - Other: Delivered By: (Circle One) Relinquished By:

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

RICE ENVIRONMENTAL CONSULTING & SAFETY

SERIAL NO: 590-000508

122 West Taylor Hobbs, NM 88240 PHONE: (505) 393-9174 FAX: (505) 397-1471 PID METER CALIBRATION & FIELD REPORT FORM

MODEL: PGM 7300

CK.

MODEL	MODEL: PGM 7300	SERIAL	NO: 590-000504		
NO. X	MODEL: PGM 7320		NO: 592-903318		
	MODEL: PGM 7300	SERIAL	NO: 590-000183		
	GAS COMPOSITION	ON: ISOBUTY	LENE 100PPM / AIR:	BALANCE	
LOT NO: HAL-248-	100-1		EXPIRATION DATE	: 7/1/2015	
	МЕТ	ER READING	ACCURACY: 100		
		ACCURAC	CY: +/- 2%		
		СО	MPANY		
		RICE	OPERATING		
SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
BD	Jct. M-29	М	29	22S	38E

SA	MPLE ID	PID	SA	MPLE ID	PID
4-WALI	L COMPOSITE	0.9			
BOTTON	M COMPOSITE	0.8			
		-			
:					

I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATURE:	Not Available	DATE:	10/10/2013



October 15, 2013

KYLE NORMAN

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

RE: BD JCT M-29

Enclosed are the results of analyses for samples received by the laboratory on 10/14/13 16:30.

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 www.tceq.texas.gov/field/qa/lab_accred_cert.fi.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





Analytical Results For:

Rice Operating Company KYLE NORMAN 112 W. Taylor Hobbs NM, 88240

Fax To:

Sampling Date:

10/14/2013

Reported:

10/14/2013 10/15/2013

Sampling Type:

Soil

Project Name:

Received:

Chloride

BD JCT M-29

Sampling Condition:

BS

416

Project Number:

NONE GIVEN

Sample Received By:

** (See Notes)

Project Location:

NOT GIVEN

704

Jodi Henson

Sample ID: 8 PT. COMPOSITE (H302483-01)

Chlorido	SM4500CLB	ma/ka
•		•

114300CI-D		פאופוי

Analyzed By: AP

16,0

Analyte Result Reporting Limit Analyzed

10/15/2013

(575) 397-1471

Method Blank ND

% Recovery 104

True Value QC 400

RPD

0.00

Qualifier

Sample ID: IMPORTED TOPSOIL (H302483-02)

Chloride, SM4500CI-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	10/15/2013	ND	416	104	400	0.00	

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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

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Celey & Keene

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

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Company Name:	e: RICE Operating			BILLING	aner-		Ā	ANALYSIS		REQUEST			
Project Manage	Project Manager: Kyle Norman		P.O.#:										
Address: 112 W. Taylor	W. Taylor		Company:					SI					
city: Hobbs	State: NM	Zip: 88240	Attn:					10					
Phone #:	Fax#:		Address:					ш\					
Project #:	Project Owner:		Clty:			M	Н	/ /S					
Project Name:			State:	Zip:					_				
Project Location:	n: 80 Jct 17-29		Phone #:		oric	.E)	្រន	oite SC	-				
Sampler Name:	Sampler Name: Dyllan Yarbrough		Fax #:										
FOR LAB USE ONLY		MATRIX	PRESERV.	SAMPLING				O					
		ЯЭТ				11	L	iəldi					
Lab I.D.	Sample I.D.	AWQV STAW	OOF VZE:					uo:					*****
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† Cardinal cannot accept verbal changes. Please fax written changes ta

Sampler - UPS - Bus - Other: Delivered By: (Circle One)

Time:

Lweinheimer@rice-ecs.com; kjones@riceswd.com; knorman@rice-ecs.com;hconder@rice-ecs.com;

Lpena@riceswd.com;dyarbrough@rice-ecs.com

RICE ENVIRONMENTAL CONSULTING & SAFETY

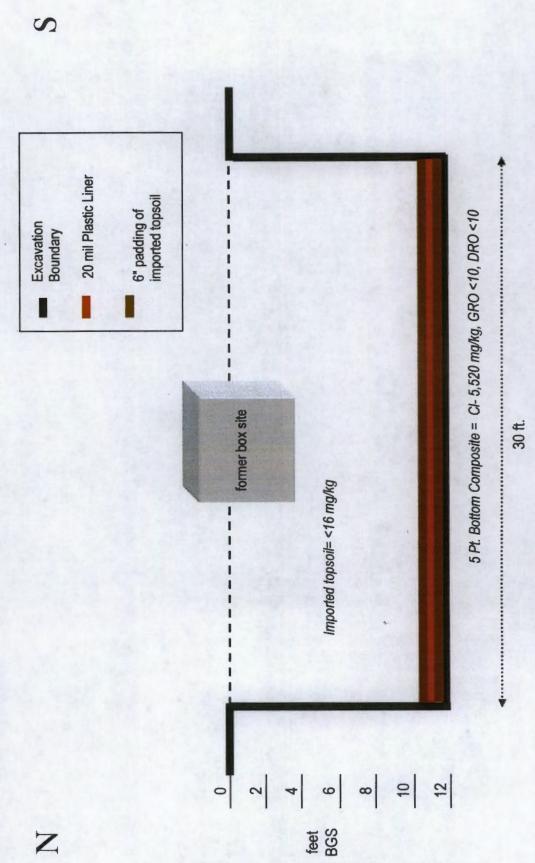
122 West Taylor Hobbs, NM 88240 PHONE: (505) 393-9174 FAX: (505) 397-1471 PID METER CALIBRATION & FIELD REPORT FORM

CK. MODEL NO. X	MODEL: PGM 7300 MODEL: PGM 7300 MODEL: PGM 7320 MODEL: PGM 7300	SERIAL SERIAL	NO: 590-000508 NO: 590-000504 NO: 592-903318 NO: 590-000183		
	GAS COMPOSITIO	ON: ISOBUTY	LENE 100PPM / AIR:	BALANCE	
LOT NO: HAL-248-	100-1		EXPIRATION DATE	: 7/1/2015	<u></u>
	MET	ER READING	ACCURACY: 100		
		ACCURAC	CY: +/- 2%		
		CO	MPANY		
		RICE	OPERATING		
SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
BD	Jct. M-29	М	29	22S	38E
SA	MPLE ID	PID	SA	MPLE ID	PID
BLENDE	ED BACKFILL	0			
					T
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I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATURE:	Not Available	DATE:	10/10/2013

Excavation Cross-Section

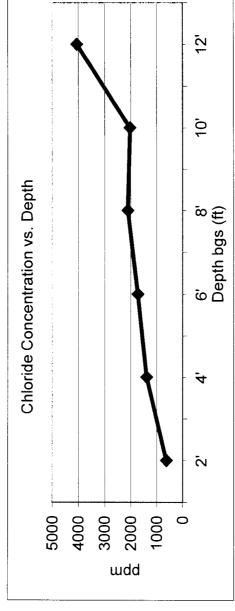


BD Jct. M-29 UL/M Sec. 29, T22S, R38E

Backhoe samples at 5' east of the junction source

[CI] ppm	089	1389	1727	2112	2029	4064
Depth bgs (ft)	2'	4'	.9	.8	10,	12'

124 ft
Groundwater =





PO Box 5630 Hobbs, NM 88241 Phone: (575) 393-4411

Fax: (575) 393-0293

Site name: BD Jet. M-29 BD Jet. M-29 Boly B					'	VEGE1	TATION	FORM				
U/L Section Township Range County Latitude Longitude M 29 22S 38E Lea 32.35925 N 103.08683 V Contact Name: Zach Conder Email: Zconder@rice-ecs.com Stite size: square feet 2. Soils *Do not rip caliche subsoils: caliche rocks brought to the surface by ripping shall be removed. Salvaged from site Bioremediated X Imported X Blended Depth (in) Depth (in) Texture: Describe soil & subsoil: Light Brown Fine Sand Soil prep methods: Rip Depth (in) Disc Depth (in) Rollerpack Date completed: 10/22/2013 3. Bioremediation Fertilizer Hay Other Type: Describe: 15 bags of RestorNhance Lbs/acre: 15 bags of Custom Mix 4. Seeding *Attach seed bag tags to this form. Seed bag tags shall comain the site name and S-T-R. Custom Seed Mix X Prescribed Mix Seed Mix Name: 101bs of Blue Gramma & 101bs of Lea County Date: 11/1/2013 Bolloconditions during seed: Dry X Damp Wet Observations: 5. Certification Ihereby certify that the information in this form and attachments is true and complete to the best of my knowledge and belief. Name: Jose Flores Title: Environmental Tech Date: 11/1/2013			-29									
M 29 22S 38E Lea 32.35925 N 103.08683 V Contact Name: Zach Conder Email:				T	Township	, T	Range	1	County	Latitude	! !	Longitude
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RICE Operating Company

122 West Taylor • Hobbs, New Mexico 88240 Phone: (575) 393-9174 • Fax: (575) 397-1471

April 1, 2014

Mr. Leonard Lowe New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau 1220 S. St. Francis Drive Santa Fe, New Mexico 87505

RE: JUNCTION BOX UPGRADE REPORT for 2013

BD SWD SYSTEM Lea County, New Mexico

Mr. Lowe:

Rice Operating Company (ROC) takes this opportunity to submit the Junction Box Upgrade results for the year 2013. Enclosed is a list of the completed junction boxes and their respective closure/disclosure dates. These boxes are located in the Blinebry-Drinkard (BD) Salt Water Disposal (SWD) System located in the vicinity of Eunice, New Mexico.

ROC completed 12 junction boxes in 2013. Junction box upgrades in 2014 will be conducted in conjunction with scheduled pipeline replacements.

Enclosed are the 2008 results (17 sites evaluated with 22 sampling locations) from the PID/BTEX study described in the NMOCD-approved Revised Junction Box Upgrade Work Plan (July 16, 2003). A third-party analysis, conducted by Peter Galusky, Jr. Ph.D. of Texerra, concluded from the data collected thus far that field-composited values tend to produce slightly higher BTEX numbers above the point at which BTEX concentrations become significant. This is likely due to the fact that BTEX is volatile and quickly biodegradable. This analysis was submitted to NMOCD on March 12, 2009. An appropriate number of sample sites could not be obtained to conduct a 2013 BTEX comparison analysis. Peter Galusky, Jr. Ph.D. of Texerra also compared ROC's 2013 chloride field tests to chloride laboratory analyses; the analysis is also enclosed. The study of this data continues to validate the accuracy of the chloride field tests employed by ROC.

ROC is the service provider (agent) for the BD SWD System and has no ownership of any portion of the pipeline, well, or facility. The System is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Replacement/closure projects of this magnitude require System Party AFE approval and work begins as funds are received.

Thank you for your consideration of this Junction Box Upgrade Report for 2013.

RICE OPERATING COMPANY

Hack Conder

Environmental Manager

enclosures as stated

cc: SC, file, Mr. Geoffrey Leking

NMOCD, District I Office 1625 N. French Drive Hobbs, NM 88240

Rice Operating Company BD SWD System Junction Box Upgrade Project 2013 Completed Boxes

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2	Jct. G-31	G	31	22S	38E	1/7/2014	20	Disclosure	
3	JCT. M-29	М	29	225	38E	11/1/2013	0	Disclosure	
4	JCT. N-29	N	29	225	38E	9/11/2013	0	Disclosure	
5	JCT. N-30	N	30	22S	38E	8/19/2013	10	Disclosure	
6	O-29-1 VENT	0	29	22S	38E	7/26/2013	0	Disclosure	
7	O-30 VENT	0	30	225	38E	11/6/2013	10	Disclosure	
8	Jct. P-14	Р	14	225	37E	8/21/2012	10	Disclosure	
9	J-29 Vent	J	29	225	38E	n/a	0	Closure	
10	J-30 EOL	J	30	225	38E	10/22/2013	10	Closure	
11	JCT. J-29	J	29	225	38E	n/a	0	Closure	
12	M-28 EOL	М	28	225	38E	11/5/2013	0	Closure	

L. Peter Galusky, Jr. Ph.D., P.G.

Texerra

505 N Big Spring, Suite 404 Midland, Texas 79701 Tel: 432-634-9257 E-mail: lpg@texerra.com

March 10th, 2009

Mr. Brad Jones New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau 1220 S. St. Francis Drive Santa Fe, New Mexico 87504

Re: Comparison of Field versus Lab Compositing of BTEX soil samples

Rice Operating Company, Junction Box Upgrade Work Plan

Sent via Certified Mail w/ Return Receipt No. 7006 0100 0001 2438 3944

Dear Mr. Jones:

On behalf of Rice Operating Company (ROC) I am submitting the attached comparison and analysis of field versus laboratory soil compositing for soil BTEX samples. This is to address the question of whether it is better to mix multiple samples in the field or to do so in the laboratory in order to produce a composite, representative sample for analysis. This work was undertaken in support of ROC's Junction Box Upgrade Work Plan to ensure the quality of their field analysis program.

In brief, this work indicates that field compositing of soil samples generally gives rise to *slightly* higher BTEX values than does laboratory compositing of multiple samples. This is presumably due to the likelihood that field compositing and packaging of soil samples better preserves sample integrity. It would therefore appear that field compositing would represent the better method of procuring soil samples for subsequent analysis of BTEX.

Please call me if you have any questions or wish to discuss any of the details of this study.

ROC is the service provider (agent) for various Salt Water Disposal Systems (SWDs) and has no ownership of any portion of pipeline, well or facility. The SWD Systems that ROC operates are owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis.

Sincerely,

L. Peter Galusky, Jr. Ph.D.

Principal

Copy: Rice Operating Company,

Edward Hansen (NMOCD) sent certified mail w/ return receipt

No. 7006 0100 0001 2438 3937

Attachment: As noted, above.

Rice Operating Company Comparison of Field Compositing versus Laboratory Compositing of Soil BTEX Samples¹

The careful mixing of multiple soil samples is critical in order to produce a representative, composite sample from a respective study area (such as a excavation face or bottom). Field technicians typically take four or five "grab" samples from excavation walls and/or bottom and send each of these to a laboratory for analysis of the composite, or mixed, sample. It would be far simpler, however, to composite such samples in the field. This study was undertaken to determine if field compositing produced results substantially different than laboratory compositing for the analysis of BTEX. Data were provided by Rice Operating Company encompassing 22 sampling locations over the period of 2004 through 2008.

A comparison of lab-composited soil samples versus field-composited soil samples revealed a close correspondence for total BTEX between the two methods (Figure 1).

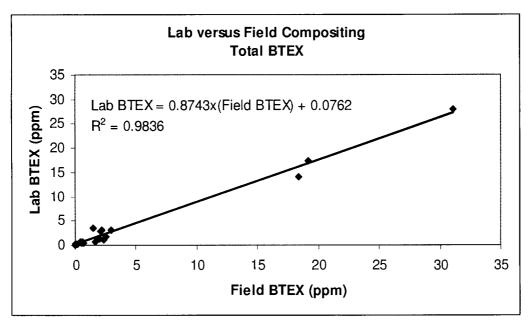


Figure 1 - Laboratory versus field-composited soil samples analyzed for BTEX.

The high R² value (0.9836) of the best-fit statistical regression line indicates a high degree of reliability in using the field-compositing method over the range of values observed. Below a "field-composited BTEX" value of 0.61 ppm the "lab-composited BTEX" values are slightly lower. However, above a field-composited BTEX value of 0.61 the lab-composited values run slightly lower. In other words, the field-composited values tended to produce slightly higher BTEX numbers above the point at which BTEX concentrations become significant.

There is a reason for this. BTEX is volatile and quickly biodegradable. The compositing and "packaging" of soil samples in the field minimize the handling and aeration that occur in the laboratory. Thus, field-composited soil samples lose less BTEX to evaporation and/or biodegradation prior to laboratory analysis. In other words, the field compositing and packaging of soil samples better preserves sample integrity, and for this reasons would appear to represent the better method of procuring soil samples for subsequent analysis of BTEX.

-

¹ Prepared 03-12-09 by L. Peter Galusky, Jr. of Texerra.

L. Peter Galusky, Jr. Ph.D., P.G.

Texerra LLC

20055 Laredo Lane Monument, CO 80132 Tel: 719-339-6791 E-mail: lpg@texerra.com

March 25th, 2014

Mr. Leonard Lowe New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau 1220 S. St. Francis Drive Santa Fe, New Mexico 87505

Re: Comparison of 2013 Laboratory versus Field Measured Soil Chloride Values Rice Operating Company, Junction Box Upgrade Work Plan

Mr. Lowe:

The attached comparison and analysis of 2013 laboratory versus field measured soil chloride values is submitted in support of Rice Operating Company's (ROC's) Junction Box Upgrade Work Plan to ensure the quality of their field analysis program.

In brief, this work indicates that Rice's 2013 field chloride measurement efforts provided a reasonable qualitative approximation of the laboratory-measured (and presumed true) values.

ROC is the service provider (agent) for various Salt Water Disposal Systems (SWDs) and has no ownership of any portion of pipeline, well or facility. The SWD Systems that ROC operates are owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Please call me if you have any questions or wish to discuss this study.

Sincerely,

L. Peter Galusky, Jr. Ph.D.

Principal

Copy: Glenn VonGonten, NMOCD; Rice Operating Company

Attachment: As noted, above.

Rice Operating Company Comparison of Laboratory to Field Measured Soil Chloride Concentrations Based upon 2013 Field Data

A representative sample of 29 pairs of laboratory versus field measured soil chloride values was compared to determine how well field measurements matched laboratory measurements. It is assumed that laboratory measurements better represent the "true" values due to the controlled environment that a laboratory provides. A simple plot of the laboratory versus field measured soil chloride values is given below (Figure 1).

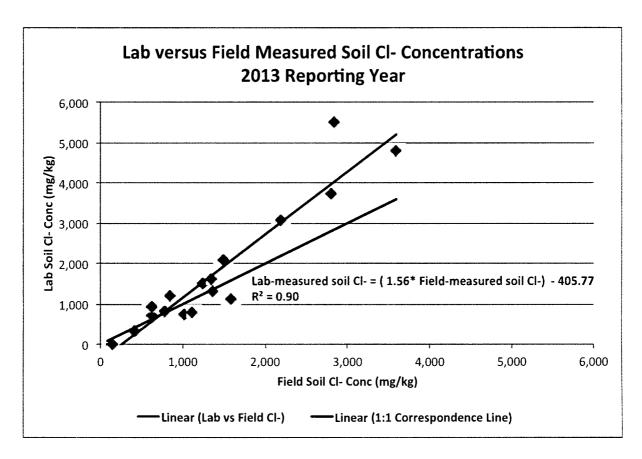


Figure 1 – Laboratory versus field measured soil chloride measurements (n = 29 paired sets).

A straight line fit to the data confirms a general linear trend over a wide range of soil chloride concentrations, and the R² value (0.90) indicates that field measurements provide a reliable approximation of laboratory-measured values. Based on the best-fit line of lab vs field measured values, field measured values overestimate lab measure values below a field measured value of 723 mg/kg and above this underestimate the lab-measured values. This is indicated in the graph where the (blue) best-fit line of lab vs field measured chlorides crosses the (black) line which would indicate a 1:1 correspondence.

Texerra LLC 2