1R - 426-294

REPORTS

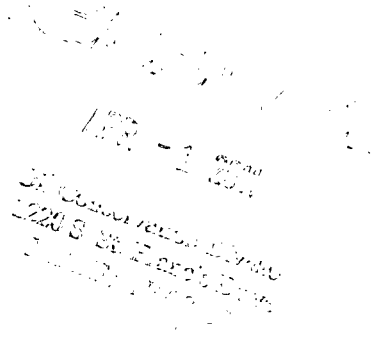
DATE:

3-15-11

IR426-294

BD Jct. D-12

2010



DISCLOSURE

RICE OPERATING COMPANY
JUNCTION BOX DISCLOSURE* REPORT

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
							Length 13 ft.	Width 5 ft.	Depth 4 ft.
Blinebry-Drinkard (BD)	Jct. D-12	D	12	22S	37E	Lea	eliminated		

LAND TYPE: BLM ___ STATE ___ FEE LANDOWNER Walco Ranch, LLC OTHER ___

Depth to Groundwater 59 feet NMOCD SITE ASSESSMENT RANKING SCORE: 20

Date Started 10/27/2010 Date Completed 12/1/2010 OCD Witness no

Soil Excavated 266.7 cubic yards Excavation Length 30 Width 20 Depth 12 feet

Soil Disposed 150 cubic yards Offsite Facility Sundance Location Eunice, NM

FINAL ANALYTICAL RESULTS: **Sample Date** 11/02/2010, 11/11/2010 **Sample Depth** 12 ft

Procure 5-point composite sample of bottom and 4-point composite sample of sidewalls. TPH, BTEX and Chloride laboratory test results completed by using an approved lab and testing procedures pursuant to NMOCD guidelines.

Sample Location	Benzene mg/kg	Toluene mg/kg	Ethyl Benzene mg/kg	Total Xylenes mg/kg	GRO mg/kg	DRO mg/kg	Chlorides mg/kg
4-WALL COMP.	<0.050	0.232	1.15	1.27	81.5	354	160
BOTTOM COMP.	<0.050	0.999	6.3	7.08	337	2,500	944
BACKFILL	<0.050	0.273	0.274	1.14	<50.0	1110	240
BLENDED BACKFILL	PID = 29.4				<10.0	726	N/A

General Description of Remedial Action: This junction was eliminated during the pipeline replacement/upgrade program. After the junction box was removed, an investigation was conducted using a backhoe to collect soil samples at regular intervals creating a 30X20X12-ft. deep excavation. Chloride field tests were performed on each sample yielded relatively low concentrations. Organic vapors were measured using a PID, which yielded elevated concentrations. The excavated soil was blended on site and representative samples were collected from the blended backfill, the bottom of the excavation, and excavation walls. The representative samples were sent to a commercial laboratory for analysis of chloride, TPH, and BTEX. Then continued blending the backfill on site and collected a representative sample from the blended backfill and sent to a commercial laboratory for analysis of TPH. The excavation was backfilled to 5.5 ft. below ground surface (BGS). At 5.5 ft. , a 1 ft-thick clay barrier was installed with compaction test performed on 11/29/2010. The remaining blended backfill was hauled to a NMOCD approved facility. The remaining excavation was backfilled with clean imported soil to ground surface and contoured to the surrounding area. An identification marker was placed on the surface at the former junction box to mark the presence of clay below. On 12/01/2010 the site was seeded with a blend of native vegetation and is expected to return to a productive capacity at a normal rate. NMOCD was notified of potential groundwater impact on 3/02/2011.

CHLORIDE FIELD TESTS

LOCATION	DEPTH	mg/kg
4-wall comp.	n/a	152
bottom comp.	12	554
backfill comp.	n/a	204
background	6"	151
vertical delineation 10 ft. west of junction (source)	4'	145
	6'	151
	8'	201
	10'	277
	12'	404

ADDITIONAL EVALUATION IS HIGH PRIORITY

enclosures: photos, lab results, PID screenings, cross-section, compaction results, hydraulic conductivity, proctor, BTEX comparison study, chloride curve

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

SITE SUPERVISOR John Harrison SIGNATURE Not Available COMPANY RICE OPERATING COMPANY

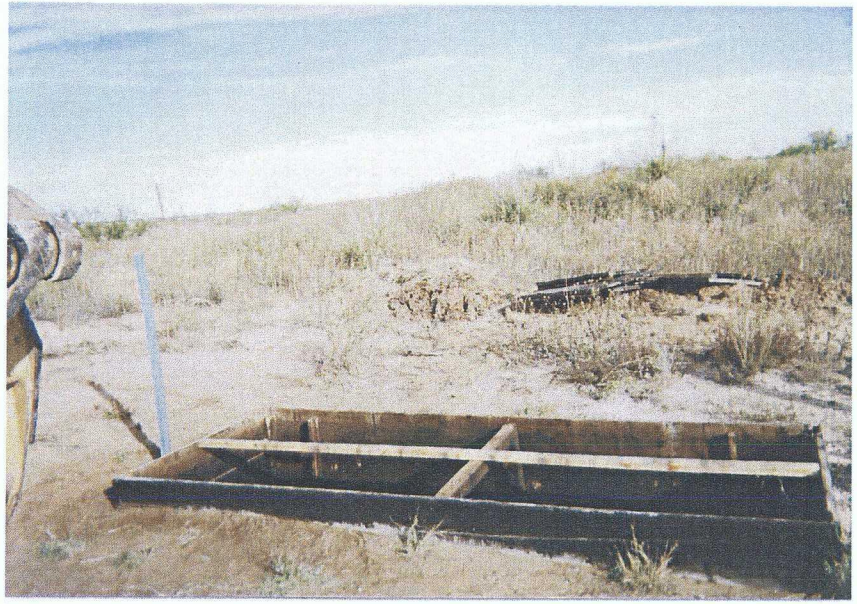
REPORT ASSEMBLED BY Larry Bruce Baker Jr. INITIAL LBB

PROJECT LEADER Larry Bruce Baker Jr. SIGNATURE Larry Bruce Baker Jr. DATE 3-15-11

*This site is a "DISCLOSURE." It will be placed on a prioritized list of similar sites for further consideration.

BD JCT. D-12

Unit D, Section12, T22S, R37E



Site prior to delineation 10/27/2010

Collecting sample 11/2/2010

Installing clay liner 11/29/2010

Seeding site 12/1/2010

CARDINAL Laboratories

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

Analytical Results For:

Rice Operating Company
Bruce Baker
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	11/02/2010	Sampling Date:	11/02/2010
Reported:	11/09/2010	Sampling Type:	Soil
Project Name:	BD D-12 JCT (22/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: 5 PT. BOTTOM COMP (H021214-03)

BTEX 8021B mg/kg Analyzed By: cms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2010	ND	2.27	114	2.00		
Toluene*	**0.999**	0.050	11/05/2010	ND	2.09	104	2.00		
Ethylbenzene*	**6.30**	0.050	11/05/2010	ND	2.04	102	2.00		
Total Xylenes*	**7.08**	0.150	11/05/2010	ND	6.09	101	6.00		

Surrogate: 4-Bromofluorobenzene (PIL *153 %* *80-120*

Chloride, SM4500Cl-B mg/kg Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**944**	16.0	11/03/2010	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: AB

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**337**	50.0	11/04/2010	ND	195	97.7	200	16.6	
DRO >C10-C28	**2500**	50.0	11/04/2010	ND	152	75.9	200	3.36	

Surrogate: 1-Chlorooctane *119 %* *70-130*

Surrogate: 1-Chlorooctadecane *109 %* *70-130*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Rice Operating Company
Bruce Baker
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Sampling Date: 11/02/2010
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

Received: 11/02/2010
Reported: 11/09/2010
Project Name: BD D-12 JCT (22/37)
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sample ID: 4 WALL COMP (H021214-04)

BTEX 8021B — mg/kg — Analyzed By: cms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2010	ND	2.27	114	2.00		
Toluene*	**0.232**	0.050	11/05/2010	ND	2.09	104	2.00		
Ethylbenzene*	**1.15**	0.050	11/05/2010	ND	2.04	102	2.00		
Total Xylenes*	**1.27**	0.150	11/05/2010	ND	6.09	101	6.00		
Surrogate: 4-Bromofluorobenzene (PIL	108 %	80-120							

Chloride, SM4500Cl-B — mg/kg — Analyzed By: HM

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	11/03/2010	ND	432	108	400	3.77	

TPH 8015M — mg/kg — Analyzed By: AB

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**81.5**	50.0	11/05/2010	ND	195	97.7	200	16.6	
DRO >C10-C28	**354**	50.0	11/05/2010	ND	152	75.9	200	3.36	
Surrogate: 1-Chlorooctane	110 %	70-130							
Surrogate: 1-Chlorooctadecane	107 %	70-130							

*=Accredited

Cardinal Laboratories

CARDINAL Laboratories

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

Analytical Results For:

Rice Operating Company
Bruce Baker
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	11/02/2010	Sampling Date:	11/02/2010
Reported:	11/09/2010	Sampling Type:	Soil
Project Name:	BD D-12 JCT (22/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: BLENDED BACKFILL (H021214-05)

BTEX 8021B mg/kg **Analyzed By: cms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2010	ND	2.27	114	2.00		
Toluene*	**0.273**	0.050	11/05/2010	ND	2.09	104	2.00		
Ethylbenzene*	**0.274**	0.050	11/05/2010	ND	2.04	102	2.00		
Total Xylenes*	**1.14**	0.150	11/05/2010	ND	6.09	101	6.00		

Surrogate: 4-Bromofluorobenzene (PIL *113 %* *80-120*

Chloride, SM4500Cl-B mg/kg **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**240**	16.0	11/03/2010	ND	432	108	400	3.77	

TPH 8015M mg/kg **Analyzed By: AB**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	11/05/2010	ND	195	97.7	200	16.6	
DRO >C10-C28	**1110**	50.0	11/05/2010	ND	152	75.9	200	3.36	

Surrogate: 1-Chlorooctane *110 %* *70-130*

Surrogate: 1-Chlorooctadecane *105 %* *70-130*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL 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: Rice Operating Company	**BILL TO**
Project Manager: ~~Hack Conder~~ BRUCE BAKER	P.O. #:
Address: 122 West Taylor	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: 575-393-9174 Fax #: 575-397-1471	Address:
Project #: Project Owner:	City:
Project Name:	State: Zip:
Project Location:	Phone #:
Sampler Name: Robert Harrison	Fax #:

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions						
H21743	5PT BOTTOM COMP	C	1			✓					✓		11/2/10	2:05	✓	✓	✓								
4	4 WALL COMP	C	1			✓					✓		11/2/10	2:45	✓	✓	✓								
5	BLENDED BACKFILL	C	1			✓					✓		11/2/10	2:50	✓	✓	✓								

COPY

Relinquished By: Robert Harrison	Date: 11/2/10 Time:	Received By:	Phone Result: ☐ Yes ☑ No Add'l Phone #:
Relinquished By:	Date: 11/2/10 Time: 4:35	Received By: Jodi Henson	Fax Result: ☐ Yes ☑ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☑ Yes ☐ No Intact: ☐ Yes ☐ No	CHECKED BY: (Initials)	REMARKS: email results Bbaker@riceswd.com; Kjones@riceswd.com; Regans@riceswd.com Rharrison@riceswd.com

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

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CARDINAL Laboratories

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

Analytical Results For:

Rice Operating Company
Bruce Baker
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	11/02/2010	Sampling Date:	11/02/2010
Reported:	11/09/2010	Sampling Type:	Soil
Project Name:	BD D-12 JCT (22/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: PT 1-5 PT BOTTOM COMP (H021214-01)

BTEX 8021B mg/kg **Analyzed By: cms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2010	ND	2.26	113	2.00		
Toluene*	**0.357**	0.050	11/05/2010	ND	2.11	106	2.00		
Ethylbenzene*	<0.050	0.050	11/05/2010	ND	2.06	103	2.00		
Total Xylenes*	**0.153**	0.150	11/05/2010	ND	6.23	104	6.00		

Surrogate: 4-Bromofluorobenzene (PIL *97.1 %* *80-120*

Sample ID: N, S, E, W, WALL COMP (H021214-02)

BTEX 8021B mg/kg **Analyzed By: cms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.119**	0.050	11/05/2010	ND	2.26	113	2.00		
Toluene*	**1.85**	0.050	11/05/2010	ND	2.11	106	2.00		
Ethylbenzene*	**1.38**	0.050	11/05/2010	ND	2.06	103	2.00		
Total Xylenes*	**5.38**	0.150	11/05/2010	ND	6.23	104	6.00		

Surrogate: 4-Bromofluorobenzene (PIL *116 %* *80-120*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL 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: Rice Operating Company	**BILL TO**
Project Manager: ~~Hack Conder~~ BRUCE BAKER	P.O. #:
Address: 122 West Taylor	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: 575-393-9174 Fax #: 575-397-1471	Address:
Project #: Project Owner:	City:
Project Name: BOO-12 JCT 22.37	State: Zip:
Project Location:	Phone #:
Sampler Name: Robert Harrison	Fax #:

FOR LAB USE ONLY				MATRIX							PRESERV.			SAMPLING		ANALYSIS REQUEST											
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions	COPY							
H21214-1	NW 1 OF 5 PT BOT COMP	G	1			✓					✓		11/2/10	1:40													
1B	NW 2 OF 5 PT BOT COMP	G	1			✓					✓		11/2/10	1:45													
1C	NW 3 OF 5 PT BOT COMP	G	1			✓					✓		11/2/10	1:50													
1D	NW 4 OF 5 PT BOT COMP	G	1			✓					✓		11/2/10	1:55													
1E	NW 5 OF 5 PT BOT COMP	G	1			✓					✓		11/2/10	2:00													
2A	N WALL COMP	C	1			✓					✓		11/2/10	2:10													
2B	S WALL COMP	C	1			✓					✓		11/2/10	2:20													
2C	E WALL COMP	C	1			✓					✓		11/2/10	2:30													
2D	W WALL COMP	C	1			✓					✓		11/2/10	2:40													

COMPOSITE TO LAB
BTEX ONLY
COMPOSITE TO LAB
BTEX ONLY

Relinquished By: Robert Harrison	Date: 11/2/10 Time:	Received By:	Phone Result: ☐ Yes ☑ No Add'l Phone #:
Relinquished By:	Date: 11/2/10 Time: 4:35	Received By: Jodi Henson	Fax Result: ☐ Yes ☑ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☐ Yes ☐ No Intact: ☐ Yes ☐ No	CHECKED BY: (Initials)	REMARKS: email results Bbaker@riceswd.com; Kjones@riceswd.com; ~~Regans@riceswd.com~~ Rharrison@riceswd.com

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

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CARDINAL Laboratories

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

Analytical Results For:

Rice Operating Company
Bruce Baker
112 W. Taylor
Hobbs NM, 88240
Fax To: (575) 397-1471

Received:	11/11/2010	Sampling Date:	11/11/2010
Reported:	11/17/2010	Sampling Type:	Soil
Project Name:	BD D-12 JCT (22/37)	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: BLENDED BACKFILL (H021279-01)

TPH 8015M **mg/kg** **Analyzed By: AB**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/15/2010	ND	153	76.7	200	14.7	
DRO >C10-C28	**726**	10.0	11/15/2010	ND	156	78.1	200	14.2	

Surrogate: 1-Chlorooctane	*115 %*	*70-130*
Surrogate: 1-Chlorooctadecane	*117 %*	*70-130*

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*=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL LABORATORIES

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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: Rice Operating Company	**BILL TO**
Project Manager: ~~Haek Conder~~ BRUCE BAKER	P.O. #:
Address: 122 West Taylor	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: 575-393-9174 Fax #: 575-397-1471	Address:
Project #: Project Owner:	City:
Project Name: 130 D-12 JCF 22.37	State: Zip:
Project Location:	Phone #:
Sampler Name: Robert Harrison	Fax #:

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Chlorides	TPH 8015 M	BTEX	Texas TPH	Complete Cations/Anions
H21279-1	BLENDED BACKGR	C	1			✓					✓		11/1/10	2:50		✓			

ANALYSIS REQUEST

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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 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 services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: Robert Harrison	Date: 11/1/10 Time: 4:00	Received By: Jodi Henson	Phone Result: ☐ Yes ☑ No Add'l Phone #:
Relinquished By:	Date: Time:	Received By:	Fax Result: ☐ Yes ☑ No Add'l Fax #:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition Cool: ☑ Yes ☐ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) CA	REMARKS: email results Bbaker@riceswd.com; Kjones@riceswd.com; ~~Regans@riceswd.com~~ Rharrison@riceswd.com

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

NEED SAMPLES BACK, PLEASE

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RICE OPERATING COMPANY

122 West Taylor Hobbs, NM 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471

PID METER CALIBRATION & FIELD REPORT FORM

CK. MODEL NO.			
	✓	MODEL: PGM 7300	SERIAL NO: 590-000508
		MODEL: PGM 7300	SERIAL NO: 590-000504
		MODEL: PGM 7320	SERIAL NO: 592-903318
		MODEL: PGM 7300	SERIAL NO: 590-000183

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO : 930737	EXPIRATION DATE: 6-16-13
METER READING ACCURACY: 100.0	

ACCURACY : +/- 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
BD	D-12	D	12	22	37

SAMPLE ID	PID	SAMPLE ID	PID
Bottom 5pt Composite	2656		
4pt. Wall composite	130.5		
Blende Backfill	189.6		
		COPY	

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

SIGNATURE: Jason Craycraft DATE: 11-2-10

RICE OPERATING COMPANY

122 West Tayor Hobbs, NM 88240
PHONE: (575) 393-9174 FAX: (575) 397-1471
PID METER CALIBRATION & FIELD REPORT FORM

Check Model Number:

	Model: PGM 7300	Serial No: 590-000183			Model: PGM 7600	Serial No: 110-023920
✓	Model: PGM 7300	Serial No: 590-000508			Model: PGM 7600	Serial No: 110-013744
	Model: PGM 7300	Serial No: 590-000504			Model: PGM 7600	Serial No: 110-013676

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

LOT NO : 930737	EXPIRATION DATE: 6/16/13
METER READING ACCURACY:	100.0

ACCURACY : +/- 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWN SHIP	RANGE
BD	D-12	D	12	22S	37E

SAMPLE ID	PID	SAMPLE ID	PID
BLENDED BACKFILL	29.4		

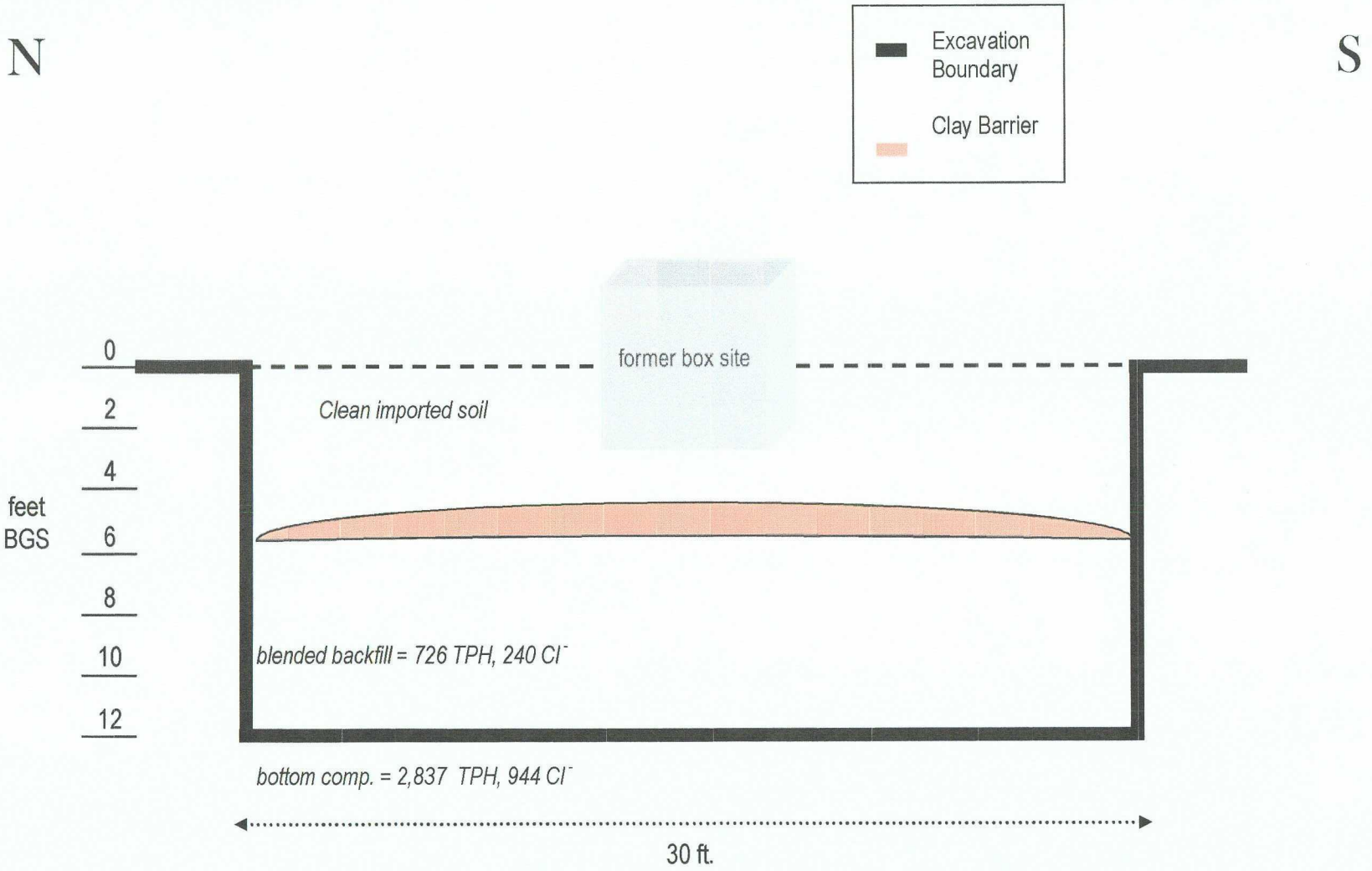
I verify that I have calibrated the above instrument in accordance to the manufacture operation manual.

SIGNATUE: [signature]

DATE: 11/11/10

BD Jct. D-12
Unit 'D', Sec. 12, T22S, R37E

Excavation Cross-Section



LABORATORY TEST REPORT

PETTIGREW & ASSOCIATES, P.A.
1110 N. GRIMES
HOBBS, NM 88240
(575) 393-9827

AASHTO R18
DEBRA P. HICKS, P.E./L.S.I.
WILLIAM M. HICKS. III, P.E./P.S.

To: Rice Operating Company
122 W. Taylor
Hobbs, NM 88240

Material: Wallach Red Clay

Test Method: ASTM: D 2922

Project: BD Junction D-12 (22/37)
Project No. 2010.1353

Date of Test: November 29, 2010

Depth: See Below

Depth of Probe: 6"

Test No.	Location	Dry Density % Max	% Moisture	Depth
SG 1	8' N. & 5' E. of SW Corner	94.2	11.9	FSG

Control Density: 101.1
ASTM: D 698

Optimum Moisture: 19.0%

Required Compaction: 90-95%

Densometer ID: 5071

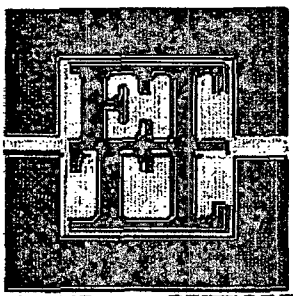
Lab No.: 10 11584-11585

Copies To: Rice Operating

PETTIGREW & ASSOCIATES

BY: _____

BY: _____ **P.E.**



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Acct ID: PETTIGREW File ID: C4535-101 Date Sampled: 08/19/2010
Report Date: 08/27/2010 Sampled By: Client
Project: Pettigrew Associates - Project #2010.1026, Hobbs, NM By Order Of: Erica Hart
Location: Material Origin: Wallach Pit, Sample Location: N/G Order Number:
Client: Pettigrew & Associates, Hobbs, NM
Contractor: Not Given

REPORT: **FLEXIBLE WALL PERMEAMETER** LAB NO: 9881
Test Method: See Below

TEST RESULTS Report No: 1-1201-000005
Page 1 of 2

HYDRAULIC CONDUCTIVITY DETERMINATION
FLEXIBLE WALL PERMEAMETER - CONSTANT VOLUME
(Mercury Permometer Test)

Project : Rice Operating Project 2010.1026 for Pettigrew & Associates, P.A., Hobbs, NM
Date: 8/25/2010 Panel Number : P 2 ; ASTM D 5084
Project No. : C 4535-101 Permometer Data

Boring No.:		ap =	0.031416 cm2	Set Mercury to Pipet Rp at		Equilibrium	1.6	cm3
Sample:	9881	aa =	0.767120 cm2			Pipet Rp	6.7	cm3
Depth (ft):		M1 =	0.030180	C =	0.000448509	Annulus Ra	1.5	cm3
Other Location:	Wallach Pit	M2 =	1.040853	T =	0.203785086			

Material Description : Red Clay (Clients Sample No 10 5904-5908) Lab Molded @ ~95% ASTM D 698

SAMPLE DATA

					Before Test		After Test	
Wet Wt. sample + ring or tare :			507.52	g				
Tare or ring Wt. :			0.0	g	Tare No.:	T 9	Tare No.:	T 2
Wet Wt: of Sample :			507.52	g	Wet Wt.+tare:	850.96	Wet Wt.+tare	726.58
Diameter :	2.72	in	6.90	cm2	Dry Wt.+tare:	716.43	Dry Wt.+tare	621.60
Length :	2.75	in	6.99	cm	Tare Wt:	220.51	Tare Wt:	216.59
Area:	5.79	in^2	37.35	cm2	Dry Wt.:	495.92	Dry Wt.:	405.01
Volume :	15.94	in^3	261.23	cm3	Water Wt.:	134.53	Water Wt.:	106.98
Unit Wt.(wet):	121.23	pcf	1.94	g/cm^3	% moist.:	27.1	% moist.:	26.4
Unit Wt.(dry):	95.36	pcf	1.53	g/cm^3				

Assumed Specific Gravity:	2.65	Max Dry Density(pcf) =	101.1	OMC =	19
		% of max =	94.3	+/- OMC =	8.13
Calculated % saturation:	95.26	Void ratio (e) =	0.73	Porosity (n)=	0.42

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Orig: Pettigrew & Associates, Hobbs, NM Attn: Erica Hart
1-ec Pettigrew & Associates, Hobbs, NM Attn: Erica Hart
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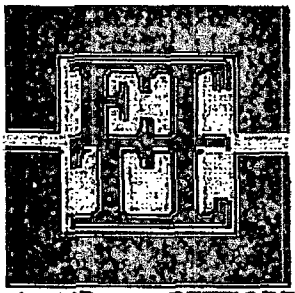

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Client: Pettigrew & Associates, Hobbs, NM
Contractor: Not Given

REPORT: **FLEXIBLE WALL PERMEAMETER** LAB NO: 9881
Test Method: See Below

TEST RESULTS Report No: 1-1201-000005
Page 2 of 2

TEST READINGS

Z1(Mercury Height Difference @ t1): 5.1 cm Hydraulic Gradient = 9.20

Date	elapsed t (seconds)	Z (pipet @ t)	□□□ (cm)	temp (deg C)	□ (temp corr)	k (cm/sec)	k (ft./day)	Reset = *
8/23/2010	960	6.1	0.5571305	25	0.889	5.01E-08	1.42E-04	
8/23/2010	1200	6	0.6571305	25	0.889	4.78E-08	1.35E-04	
8/23/2010	1500	5.9	0.7571305	25	0.889	4.46E-08	1.26E-04	
8/23/2010	1800	5.8	0.8571305	25	0.889	4.25E-08	1.21E-04	

SUMMARY

ka = 4.62E-08 cm/sec Acceptance criteria = 25 %

ki		Vm		
k1 =	5.01E-08 cm/sec	8.3	%	Vm = $\frac{\lvert ka-ki \rvert}{ka} \times 100$
k2 =	4.78E-08 cm/sec	3.3	%	
k3 =	4.46E-08 cm/sec	3.6	%	
k4 =	4.25E-08 cm/sec	8.0	%	

Hydraulic conductivity	k =	4.62E-08	cm/sec	1.31E-04	ft/day
Void Ratio	e =	0.73			
Porosity	n =	0.42			
Bulk Density	□□□	1.94	g/cm3	121.2	pcf
Water Content	W =	0.42	cm3/cm3	(at 20 deg C)	
Intrinsic Permeability	kint =	4.74E-13	cm2	(at 20 deg C)	

Remarks: **These tests were performed solely at the request of the Client for his own use. No warranties are expressed or implied regarding the suitability of the site for construction or whether or not the reported data represents all conditions of the site.**

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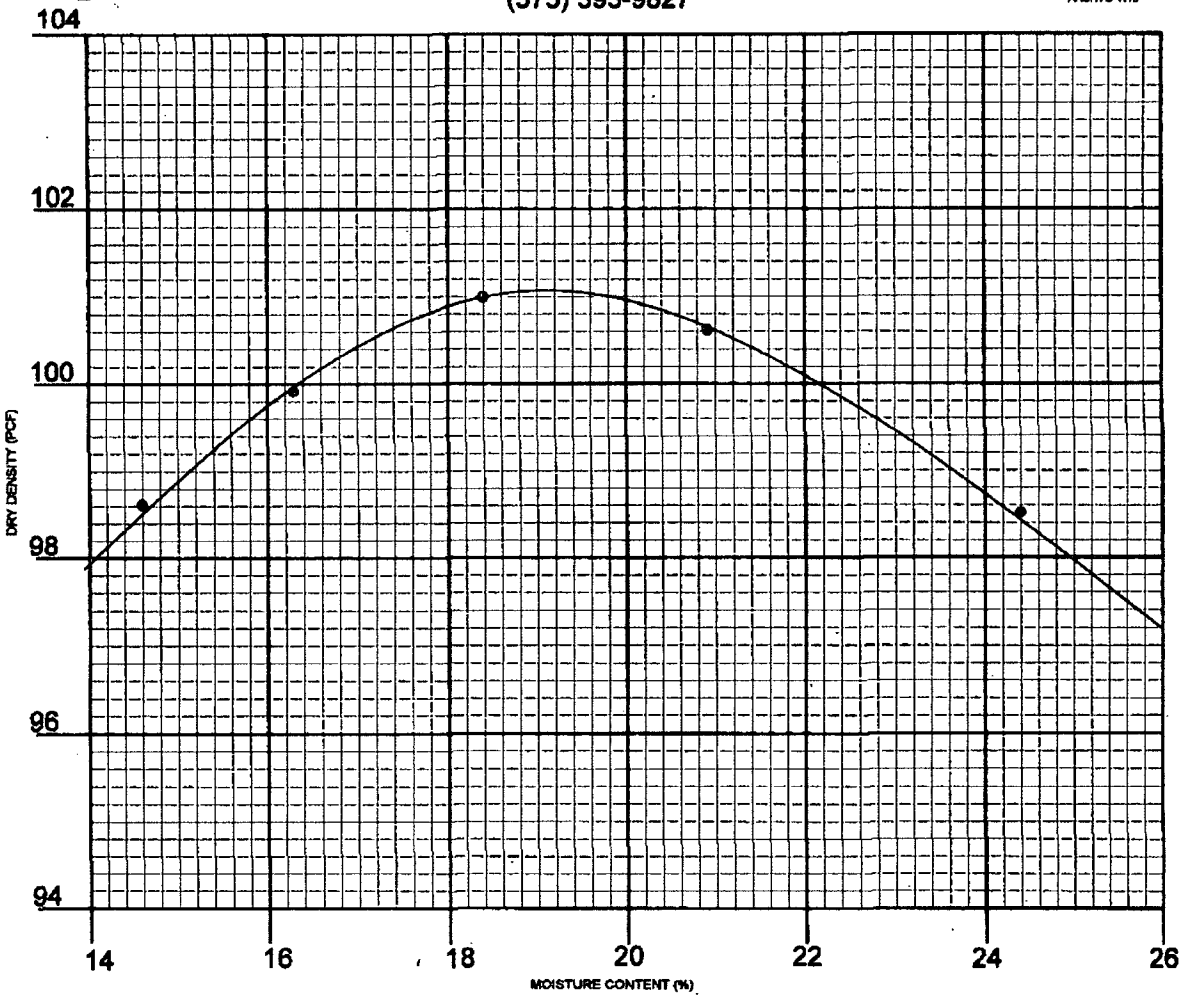
AASHTO R18



General Information

CLIENT: Rice Operating PROJECT: Project No. 2010.1026

SAMPLE LOCATION: Wallach Pit

SOIL DESCRIPTION: Wallach Red Clay

SOIL CLASSIFICATION: _____ TEST METHOD: ASTM: D 698

ATTERBERG: LL ____ PI ____ Sampled & Delivered 8/13/10

DATE: 8/13/10 LAB NO. 10 5904-5906

DRY WEIGHT LB/CU. FT. 101.1 MOISTURE CONTENT % 19.0

SIEVE ANALYSIS - % PASSING									

PETTIGREW & ASSOCIATES

COPY

BY: Erica Hart

COPIES: Rice Operating

BY: _____ P.E

2010 BTEX Study

Revised Junction Box Upgrade Plan (2003)

System: BD
Site: Jct. D-12

Date: 11/2/2010
Sampler: John Harrison

Laboratory: Cardinal Laboratories

Location	Component	PID reading (ppm)	FIELD COMPOSITE (mg/kg)			
			Benzene	Toluene	Ethyl Benzene	Total Xylenes
bottom composite at 12 ft BGS	1	265.6	<0.050	0.999	6.30	7.08
	2					
	3					
	4					
	5					
			LAB COMPOSITE (mg/kg)			
			<0.050	0.357	<0.050	0.153

Field PID tests <100 ppm are considered final for BTEX. If PID is >100 ppm, the components of the BTEX composite sample will be collected individually and will be composited under laboratory conditions to prevent excessive volatilization. A 15-box, 30-sample study will be made to compare field-compositing with lab-compositing BTEX samples. Composite components are collected in a skewed 'W' pattern.

Revised Junction Box Upgrade Work Plan (July 16, 2003)

2010 BTEX Study

Revised Junction Box Upgrade Plan (2003)

System: BD
Site: Jct. D-12

Date: 11/2/2010
Sampler: John Harrison

Laboratory: Cardinal Laboratories

Location	Component	PID reading (ppm)	FIELD COMPOSITE (mg/kg)			
			Benzene	Toluene	Ethyl Benzene	Total Xylenes
4-Wall Composite	1	130.5	<0.050	0.232	1.15	1.27
	2					
	3					
	4					
			LAB COMPOSITE (mg/kg)			
			0.119	1.85	1.38	5.38

Field PID tests <100 ppm are considered final for BTEX. If PID is >100 ppm, the components of the BTEX composite sample will be collected individually and will be composited under laboratory conditions to prevent excessive volatilization. A 15-box, 30-sample study will be made to compare field-compositing with lab-compositing BTEX samples. Composite components are collected in a skewed 'W' pattern.

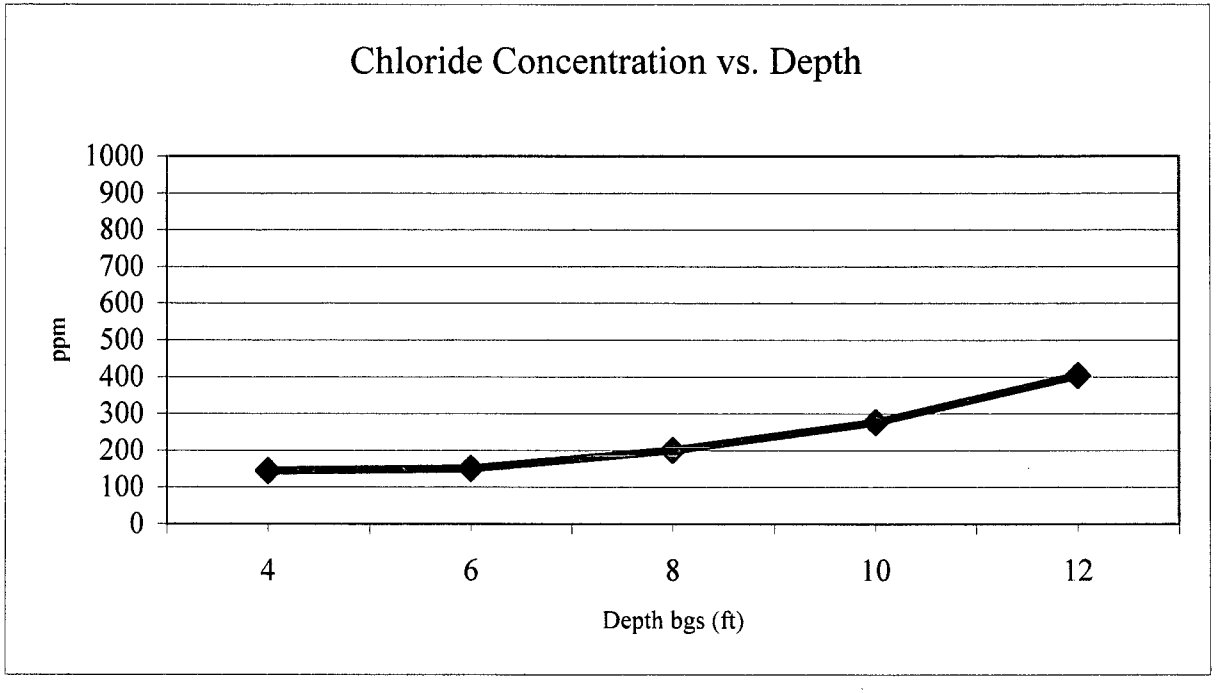
Revised Junction Box Upgrade Work Plan (July 16, 2003)

BD Jct. D-12

unit 'D', Sec. 12, T22S, R37E

Backhoe samples at 10 ft. west of junction (source)

Depth bgs (ft)	[Cl⁻] ppm
4	145
6	151
8	201
10	277
12	404



Groundwater = 59 ft.