1R – 427 - 143

REPORTS

DATE:

11-10-04

EME Phillips St A ECL

IR0427-143

FINAL

REPORT

RICE OPERATING COMPANY
JUNCTION BOX FINAL REPORT

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
							Length	Width	Depth
EME	Phillips St. 'A' EOL	N	31	19S	37E	Lea	6	5	5

LAND TYPE: BLM _____ STATE _____ FEE LANDOWNER Charlcie Bird OTHER _____

Depth to Groundwater NONE feet NMOCD SITE ASSESSMENT RANKING SCORE: 0

Date Started 3/10/2004 Date Completed 6/1/2004 OCD Witness No

Soil Excavated 400 cubic yards Excavation Length 30 Width 30 Depth 12 feet

Soil Disposed 0 cubic yards Offsite Facility n/a Location n/a

FINAL ANALYTICAL RESULTS: Sample Date 3/16/2004, 6/1/2004 Sample Depth 12, 30 ft

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

Sample Location	PID ppm	GRO mg/kg	DRO mg/kg	Chloride mg/kg
4-WALL COMP.	0.0	<10.0	<10.0	208
BOTTOM COMP.	0.0	<10.0	<10.0	784
REMED. BACKFILL	0.0	<10.0	<10.0	224
SOIL BORE @ 30 ft	0.7	<10.0	<10.0	304

CHLORIDE FIELD TESTS

LOCATION	DEPTH (ft)	ppm
vertical at junction box	5	105
	6	164
	7	141
	8	260
	9	258
	10	587
	11	1280
	12	1558
	13	1322
	14	1962
soil bore approx. 15 ft southeast of junction	15	541
	20	248
	21	317
	22	438
	23	363
	24	315
	29	264
	30	216
4-wall comp.	2-10	236
bottom comp.	12	715
remed. backfill	n/a	216

General Description of Remedial Action: This end-of-line (EOL) box is located just west of the fence line of an active production facility. The junction box was removed and the pipeline was replaced. The site was delineated using a backhoe while PID field screenings and chloride field tests were conducted at regular intervals, producing a 30 x 30 x 12-ft-deep excavation. Although chloride concentrations exhibited a horizontal decline, chloride increased with depth to 12 ft BGS. The excavated soil was backfilled into the excavation up to 6 ft BGS where a 1-ft-thick compacted clay barrier was installed to impede further downward chloride migration. The remainder of the spoils were backfilled on top of the clay and contoured to the surrounding surface. A new watertight junction box was built at this location. To further investigate chloride concerns, a soil bore was initiated on 6/1/2004. The bore was advanced to a depth of 30 ft BGS where a conclusive trend of decline was established (see graph). Although soil moisture was observed at 16 ft, saturation was never encountered and red clay was met at 29 ft. The borehole was plugged at the top and bottom with bentonite. The disturbed surface will be seeded with a blend of native vegetation and is expected to return to productive capacity at a normal rate. An identification plate has been placed on the surface to mark the clay liner below at 6 ft BGS.

enclosures: chloride graph, photos, lab results, PID field screenings, clay test, bore log, diagram

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

SITE SUPERVISOR Joe Gats SIGNATURE Joe Gatt COMPANY RICE Operating Company

REPORT ASSEMBLED BY Kristin Farris Pope SIGNATURE Kristin Farris Pope

DATE 11/10/2004 TITLE Project Scientist

EME Phillips St. 'A' EOL

unit 'N', sec. 31, T19S, R37E

undisturbed junction box 11/10/2003

delineation & excavation 3/11/2004

testing clay barrier at 6 ft BGS 5/14/2004

soil bore delineation drilling at backfilled site 6/1/2004

EME Phillips St. 'A' EOL

December 2004

clay identification plate on surface: RICE Clay Liner 6'

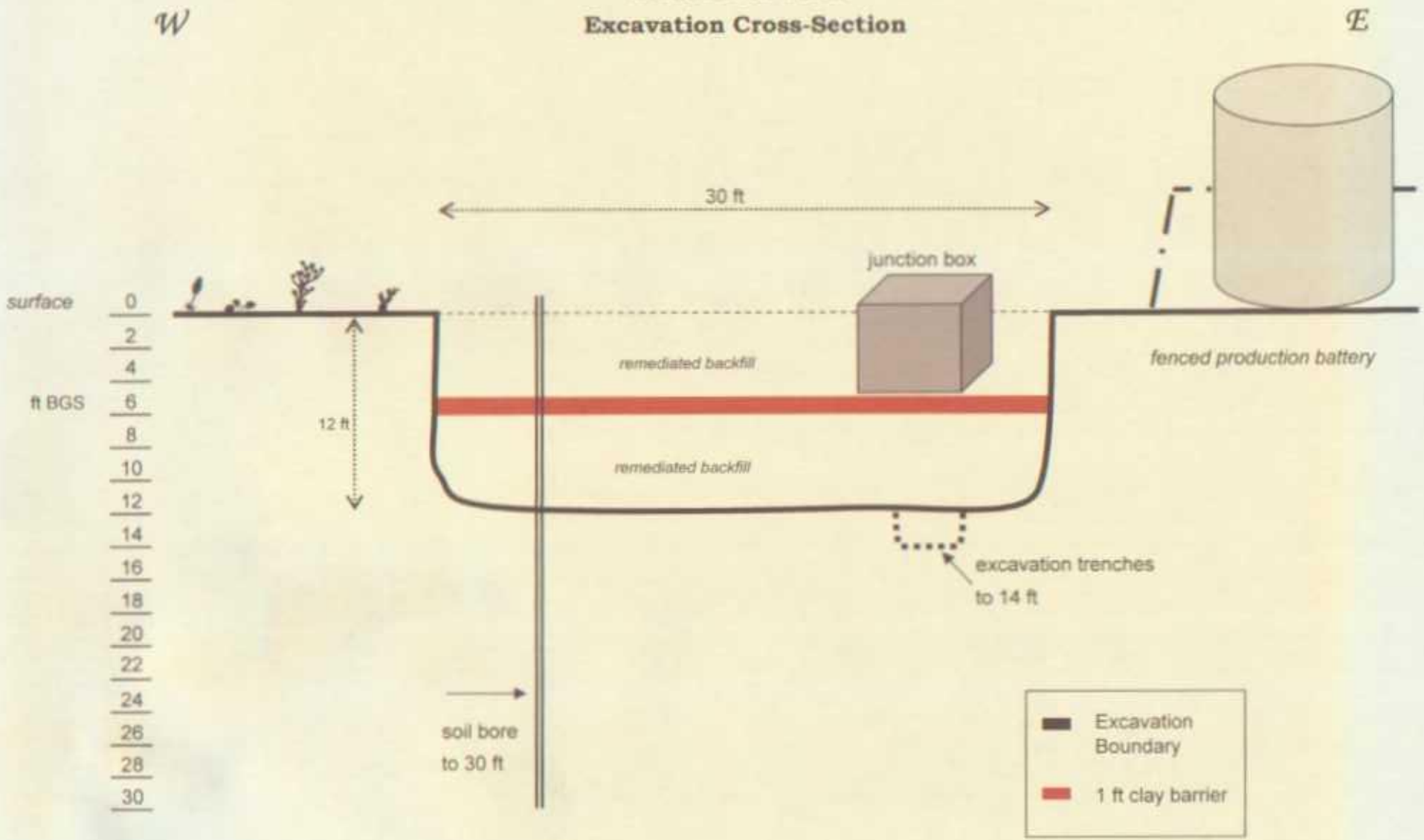
new completed junction box

looking south at box and site; ID plate marks soil bore location

EME Phillips St. 'A' EOL

30 x 30 x 12 ft

Excavation Cross-Section

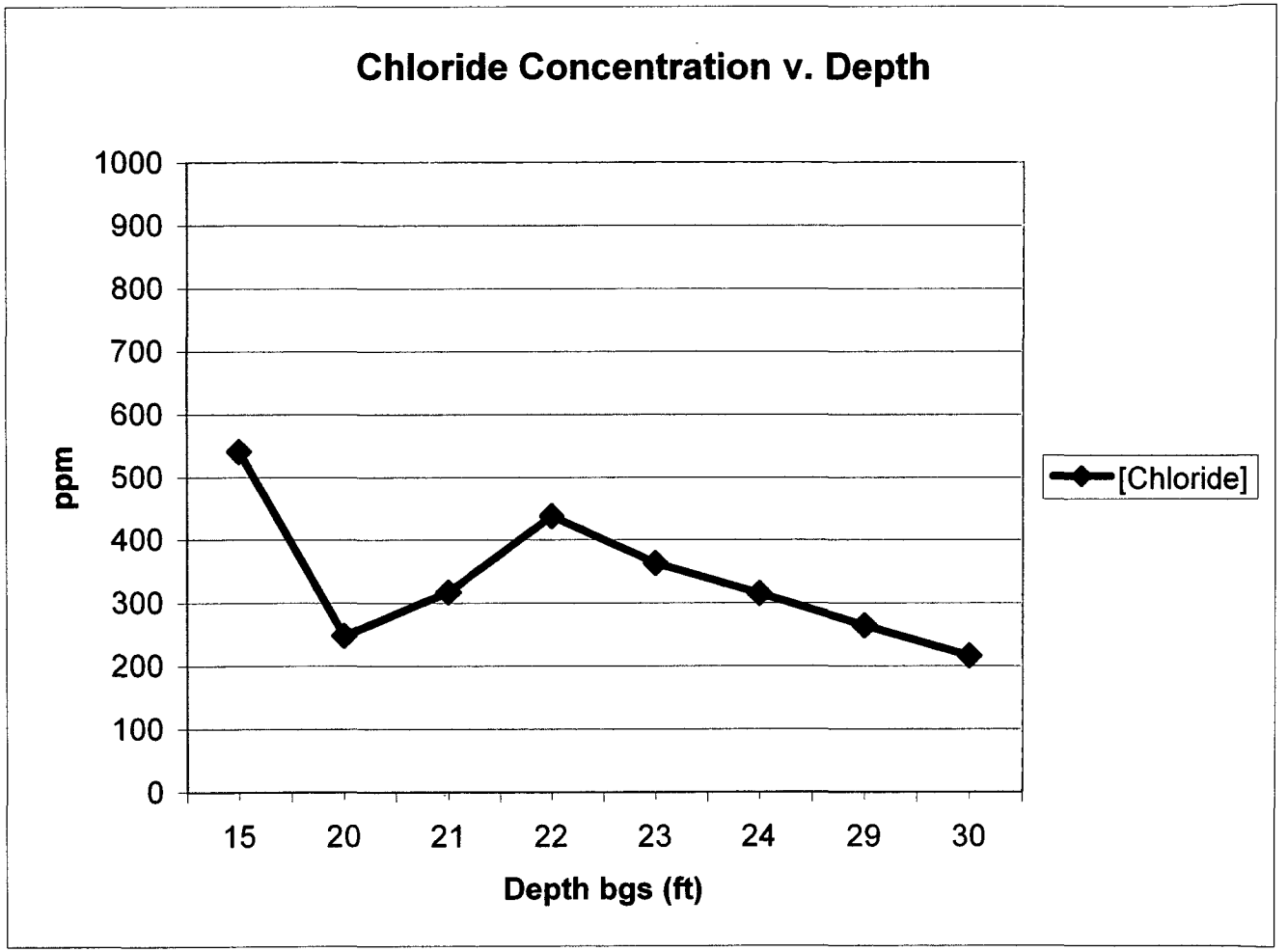


EME Phillips St. 'A' EOL

unit 'N', Sec. 31, T19S, R37E

SOIL BORE delineation
15 ft southeast of junction

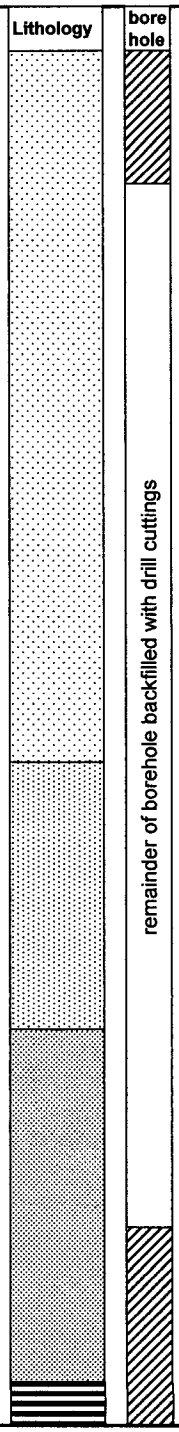
Depth bgs (ft)	[Cl⁻] ppm
15	541
20	248
21	317
22	438
23	363
24	315
29	264
30	216



LOG OF BORING
K. Farris Pope
RICE Operating Company

Logger:	Drew Parker; Mort Bates	**Client:**	**Well ID:**
Driller:	Atkins Engineering Associates, Inc.	RICE Operating Company	SB-1
Drilling Method:	Hollow Stem Auger	**Project Name:**	
Start Date:	6/1/2004	Phillips St. 'A' EOL	
End Date:	6/1/2004	**Location:**	
Notes:	Approx. 15 ft southeast of junction box TD = 30 ft	EME SWD System	
	groundwater was expected to be at 23 ft,	unit 'N', sec. 31, T19S, R37E	
	moisture at 16 ft but no saturation	Lea County, NM	

Depth (feet)	Split Spoon chloride	Split Spoon PID	Description
0.0			0 - 15 ft CLAYEY SAND with CALICHE loose, pink & tan, dry
1.0			
2.0			
3.0			
4.0			
5.0			
6.0			
7.0			
8.0			
9.0			
10.0			
11.0			
12.0			
13.0			
14.0			
15.0	541	1.8	
16.0			15 - 21 ft CLAYEY SAND with CALICHE loose, pink & tan, damp
17.0			
18.0			
19.0			
20.0	248	1.6	
21.0	317	1.5	
22.0	438	1.7	21 - 29 ft CLAYEY SAND with CALICHE loose, pink & tan, moist
23.0	363	2.3	
24.0	315	2.0	
25.0			
26.0			
27.0			
28.0			
29.0	264	3.4	
30.0	216	0.7	29 - 30 ft CLAY stiff, red, moist



Additional Notes
bentonite seal ←
bentonite seal ←
lab = 304 ppm Cl^-

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: KRISTIN FARRIS
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471

Receiving Date: 06/03/04
Reporting Date: 06/03/04
Project Number: NOT GIVEN
Project Name: EME BP ARCO PHILLIPS "A" @ 30'
Project Location: NOT GIVEN

Sampling Date: 06/01/04
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/AH

LAB NO. SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)	Cl* (mg/Kg)
ANALYSIS DATE	06/03/04	06/03/04	06/03/04
H8781-1 EME BP ARCO PHILLIPS "A" @ 30'	<10.0	<10.0	304
Quality Control	790	785	950
True Value QC	800	800	1000
% Recovery	98.8	98.2	95.0
Relative Percent Difference	0.9	7.2	6.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-Cl B
*Analysis performed on a 1:4 w:v aqueous extract.

Burgess J. R. Cooke
Chemist

6/3/04
Date

H8781.XLS

CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page ____ of ____

Company Name: RICE Operating	BILL TO
Project Manager: Kristin Farris	P.O. #:
Address: 122 W. Taylor	Company:
City: Hobbs State: NM Zip: 88240	Attn:
Phone #: (505) 393-9174 Fax #: (505) 397-1471	Address:
Project #: Project Owner:	City:
Project Name: EME BP Arco Phillips "A" #36	State: Zip:
Project Location:	Phone #:
Sampler Name: K. Farris	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	CRUDE OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	TPH 8015m	Cl									
H8781-1	EME BP Arco Phillips "A" #36	G	1			✓					✓		6-1-04	7:45	✓	✓									

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 18% per annum from the original date of invoice, and all costs of collection, including attorney's fees.

Sampler Relinquished: Kristin Farris	Date:	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time:		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By: Jerad Ivory	Date: 6/3/04	Received By: (Lab Staff)	REMARKS:
	Time: 9:50		
Delivered By: (Circle One)	Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:			

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

SOIL BORE

RICE OPERATING COMPANY

122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471

VOC FIELD TEST REPORT FORM

MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S
CALIBRATION GAS
GAS COMPOSITION: ISOBUTYLENE
AIR
LOT NO: 02-2230
EXP. DATE: 11-20-04
METER READING
ACCURACY: 99.8

SERIAL NO: 104412
100 PPM
BALANCE
FILL DATE: 5-20-03
ACCURACY: ± 2%

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
EME	BP ArcoPhillips "A" EOI	N	31	19	37

SAMPLE	PID RESULT	SAMPLE	PID RESULT
15'	1.8		
20'	1.6		
21'	1.5		
22'	1.7		
23'	2.3		
24'	2.0		
29'	3.4		
30'	0.7		

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

Israel Suarez
Signature

6-1-04
Date

CARDINAL LABORATORIES

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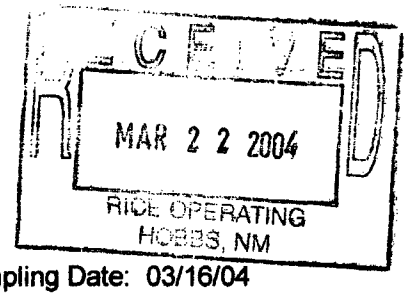
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240



ANALYTICAL RESULTS FOR
RICE OPERATING CO.
ATTN: KRISTIN FARRIS
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (505) 397-1471

Receiving Date: 03/16/04
Reporting Date: 03/18/04
Project Number: NOT GIVEN
Project Name: BP ARCO PHILLIPS ST. A EOL
Project Location: EME

Sampling Date: 03/16/04
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)	Cl* (mg/Kg)
ANALYSIS DATE		03/16/04	03/16/04	03/17/04
H8531-1	REMD. BACKFILL	<10.0	<10.0	224
H8531-2	BOTT. COMP.	<10.0	<10.0	784
H8531-3	4 WALL COMP.	<10.0	<10.0	208
Quality Control		817	762	1000
True Value QC		800	800	1000
% Recovery		102	95.2	100
Relative Percent Difference		1.9	3.4	0.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl^-: Std. Methods 4500-Cl^-B
*Analyses performed on 1:4 w:v aqueous extracts.

Burgess J. Cooke
Chemist

3/18/04
Date

H8531.XLS

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL LABORATORIES, INC.
2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page ____ of ____

Company Name:	RICE Operating
Project Manager:	Kristin Farris
Address:	122 W. Taylor
City:	Hobbs State: NM Zip: 88240
Phone #:	(505) 393-9174 Fax #: (505) 397-1471
Project #:	Project Owner:
Project Name:	BP ARCO Phillips St A. Eol
Project Location:	EME
Sampler Name:	K. Farris

BILL TO	
P.O. #:	
Company:	
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
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	CRUDE OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	Cl.	TPH 8015									
H8531-1	Remd. Backfill	C	1			X					X		3/16/04	1000	X	X									
-2	Batt. Comp	C	1			X					X		3/16/04	1030	X	X									
-3	4 WALL comp.	C	1			X					X		3/16/04	1045	X	X									

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collection, including attorney's fees.

Sampler Relinquished:	Date:	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Kristin Farris	Time:		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date: 3/16/04	Received By: (Lab Staff)	REMARKS:
J. Matt	Time: 4:30		
Delivered By: (Circle One)	Sample Condition: Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:			

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

RICE OPERATING COMPANY

122 WEST TAYLOR
HOBBS, NEW MEXICO 88240
PHONE: (505) 393-9174 FAX: (505) 397-1471

VOC FIELD TEST REPORT FORM

MINI RAE PLUS CLASSIC PHOTOIONIZATION GAS DETECTOR

MODEL NO: PGM 761S
SERIAL NO: 104412
CALIBRATION GAS
GAS COMPOSITION: ISOBUTYLENE 100 PPM
AIR BALANCE
LOT NO: 02-22-30
FILL DATE: 5/20/03
EXP. DATE: 11/20/04
ACCURACY: ± or - 2%
METER READING
ACCURACY: 99.8

SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE
EME	BP ARCO St. A Phillips EOI	N	31	19	37

SAMPLE	PID RESULT	SAMPLE	PID RESULT
Rmvd. Backfill	0		
WALL Comp	0		
Bott. Comp	0		

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

Joe Scott
Signature

3/16/04
Date

*Corrected Copy 1/12/05

LABORATORY TEST REPORT

PETTIGREW & ASSOCIATES, P.A.
1110 N. GRIMES
HOBBS, NM 88240
(505) 393-9827

AASHTO R18

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

To: Rice Operating
Attn: Carolyn Haynes
122 W. Taylor
Hobbs, NM 88240

Material: Red Clay

Test Method: ASTM: D 2922

Project: Arco Phillips

Date of Test: *April 30, 2004

Depth: Finished Subgrade

Test No.	Location	Dry Density % Maximum	% Moisture	Depth
SG-1	Pit - 10' w. & 5' S. of the NE Corner	99.3	17.6	

Control Density: 101.0
ASTM: D 698

Optimum Moisture: 23.0%

Required Compaction: 95%

Lab No.: 04 5903-5904

Copies To: Rice

PETTIGREW & ASSOCIATES

BY: _____ S.E.T.