1R - 427-177

GENERAL CORRESPONDENCE

YEAR(S):

2006

Highlander Environmental Corp.

Midland, Texas

October 31, 2006

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

RE: **INVESTIGATION & CHARACTERIZATION WORK PLAN**
A-2-1 JUNCTION BOX, EME SWD SYSTEM
UNIT "A", SEC. 2, T20S, R36E

Mr. Price:

In going through my files, I noticed that I apparently did not send you a hard copy of the ICP for the above-referenced site. The email copy was submitted on October 4, 2006 and approved by you on the same day. I apologize for the delay in sending this hard copy to you for your files. If you need any further information, please call.

Very truly yours,

Tim Reed

Timothy M. Reed, P.G.
Vice President

1910 N. Big Spring • Midland, Texas 79705 • (432) 682-4559 • Fax (432) 682-3946

Highlander Environmental Corp.

Midland, Texas

CERTIFIED MAIL
RETURN RECIEPT NO. 7005 1160 0005 3780 7099

September 29, 2006

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

RE: **INVESTIGATION & CHARACTERIZATION WORK PLAN**
A-2-1 JUNCTION BOX, EME SWD SYSTEM
UNIT "A", SEC. 2, T20S, R36E

Mr. Price:

RICE Operating Company (ROC) has retained Highlander Environmental Corp. (Highlander) to address potential environmental concerns at the above-referenced site. ROC is the service provider (agent) for the Eunice Monument Eumont (EME) 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 Partners, who provide all operating capital on a percentage ownership/usage basis. In general, project funding is not forthcoming until NMOCD approves the work plan. Therefore, your timely review of this submission is requested.

For all environmental projects, ROC will choose a path forward that:

- protects public health,
- provides the greatest net environmental benefit,
- complies with NMOCD Rules, and
- is supported by good science.

Each site shall have three submissions or a combination of:

1. This Investigation and Characterization Plan (ICP) is a proposal for data gathering and site characterization and assessment.

2. Upon evaluating the data and results from the ICP, a recommended remedy will be submitted in a Corrective Action Plan (CAP).

3. Finally, after implementing the remedy, a closure report with final documentation will be submitted.

BACKGROUND & PREVIOUS WORK

As part of the ROC Junction Box Upgrade Workplan, starting on February 26, 2004, the junction box was moved 85' to the west. The former junction box site was investigated vertically and horizontally with a backhoe. The Site was excavated to the approximate dimensions of 20' x 20' x 12'. TPH impact was noted to a depth of at least 12' below ground surface (bgs). The bottom hole chloride concentration was 659 mg/kg at 12' below the ground surface, and a 4-wall composite sample had a concentration of 915 mg/kg. Test trenches placed 10' in each direction from the source showed chloride concentrations declining with depth to below 250 mg/kg at 14' bgs, with the exception of west, where concentrations decline to 454 mg/kg at 14' bgs. Regional groundwater information indicates that the depth to groundwater is approximately 50' bgs.

The excavated soil was blended onsite and replaced into the excavation to a depth of 6' below ground surface (bgs). At 6' bgs, a compacted clay barrier was installed to inhibit further chloride migration. The remaining soils were backfilled on top of the clay barrier and contoured to the surrounding surface. On June 2, 2004, a hollow-stem auger unit was utilized to conduct one soil boring at the former junction box site. The soil boring was advanced to a total depth of 30' bgs. A bottom hole sample (shown as 35' BGS) was collected from the borehole and exhibited a TPH concentration of 242.5 mg/kg and a chloride concentration of 688 mg/kg. The site was disclosed to the NMOCD as a potential groundwater impact site on June 29, 2005. Additionally, ROC submitted a Junction Box Disclosure Report to the NMOCD dated July 1, 2005. A copy of the Junction Box Disclosure Report is included in Appendix A. A copy of the soil boring log and laboratory analysis are included in Appendix B.

INVESTIGATION & CHARACTERIZATION PLAN

As discussed above, existing site data suggest a potential for impairment of groundwater quality. Therefore the work elements described below are designed to assist ROC in selecting an appropriate vadose zone remedy and, if necessary, a groundwater remedy.

Task 1 Collect Regional Hydrogeologic Data

A water well inventory will be performed to encompass a ½ mile radius around the release site. The inventory will include a review of water well records on the New Mexico Office of the State Engineer W.A.T.E.R.S. database and United States Geologic Survey (USGS) website. Any water wells denoted on the USGS 7.5 minute topographic quadrangle map within the search radius will be inspected. If viable wells are located, they will be evaluated for the possible incorporation of water level measurements and groundwater monitoring.

Task 2 Evaluate Concentrations of Constituents of Concern in Soil (and Ground Water)

Highlander proposes to conduct soil borings at the former junction box site for further evaluation. The soil borings will be placed appropriately to evaluate subsurface TPH and chloride impacts, and for vertical and horizontal delineation. The soil boring samples will be field screened for chloride concentrations and TPH. If chloride and/or TPH concentrations do

not decline sufficiently with depth or exceed 250 mg/kg chloride or 100 mg/kg TPH within 10'of the suspected groundwater depth, one soil boring, in the area with the highest potential to impact groundwater, will be converted to a monitoring well.

If a monitoring well is installed, it will be constructed according to EPA and industry standards and developed either by bailing with a rig or hand bailer, or pumping with an electric submersible pump to remove fine grained sediment disturbed during drilling and to ensure collection of representative groundwater samples. Water removed from any monitor well will be disposed of in the EME SWD System.

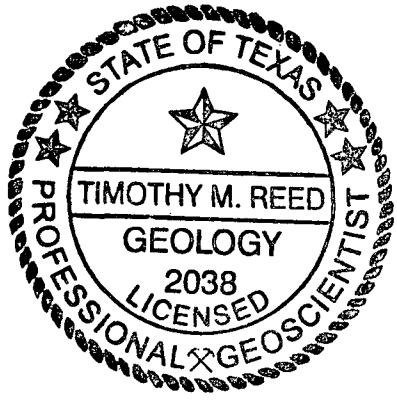
If a monitoring well is completed, it will be inspected for the presence of phase-separated hydrocarbons (PSH) and, if present, a sample will be collected and analyzed by gas chromatography (GC) to determine composition and origin. The well will be properly purged and sampled with a clean, dedicated, polyethylene bailer and disposable line. Groundwater samples will be submitted to a laboratory for analysis of Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) by method EPA 8021B, and chloride by method 300.0.

Task 3 Evaluate Flux from the Vadose Zone to Ground Water

As part of the ICP, the residual impact to vadose zone soils will be evaluated to determine what, if any remediation/isolation techniques will be required at the Site.

The information gathered from tasks 1-3 will be evaluated and utilized to design a groundwater remedy if needed. The groundwater remedy that offers the greatest environmental benefit while causing the least environmental impairment will be selected. If the evaluation demonstrates that residual constituents pose no threat to groundwater quality, only a vadose zone remedy will be proposed. Such recommendations and findings will be presented to NMOCD in a subsequent Corrective Action Plan (CAP). When evaluating any proposed remedy or investigative work, ROC will confirm that there is a reasonable relationship between the benefits created by the proposed remedy or assessment and the economic and social costs.

Should you have any questions, please contact me at (432) 682-4559. Your prompt review of this submission is appreciated. Thank you for your attention to this matter.



Highlander Environmental Corp.

Timothy M. Reed, P.G.
Vice President

cc: ROC
Daniel Sanchez - NMOCD

enclosures: figures, photos, disclosure report, soil boring log, laboratory analysis

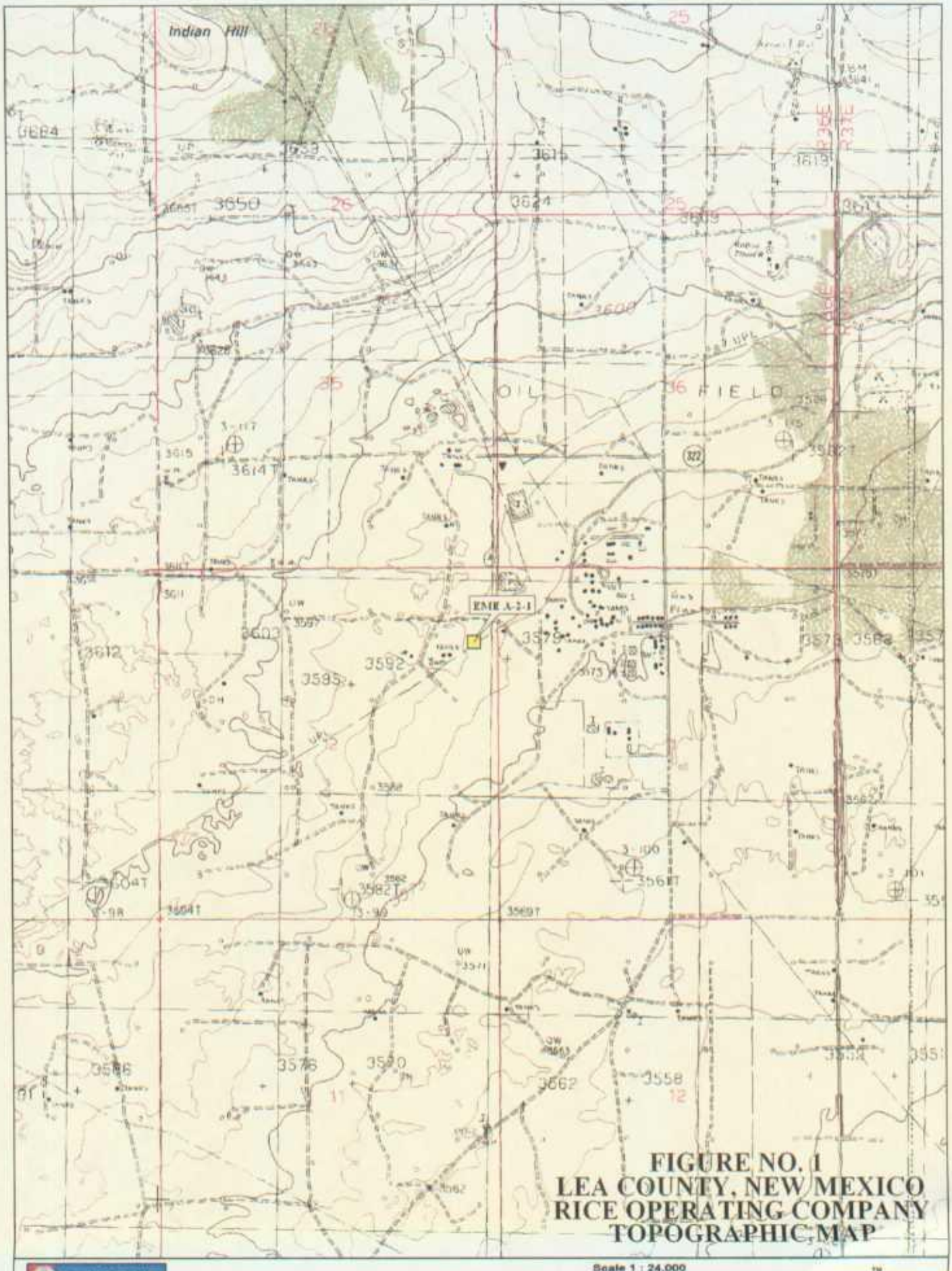
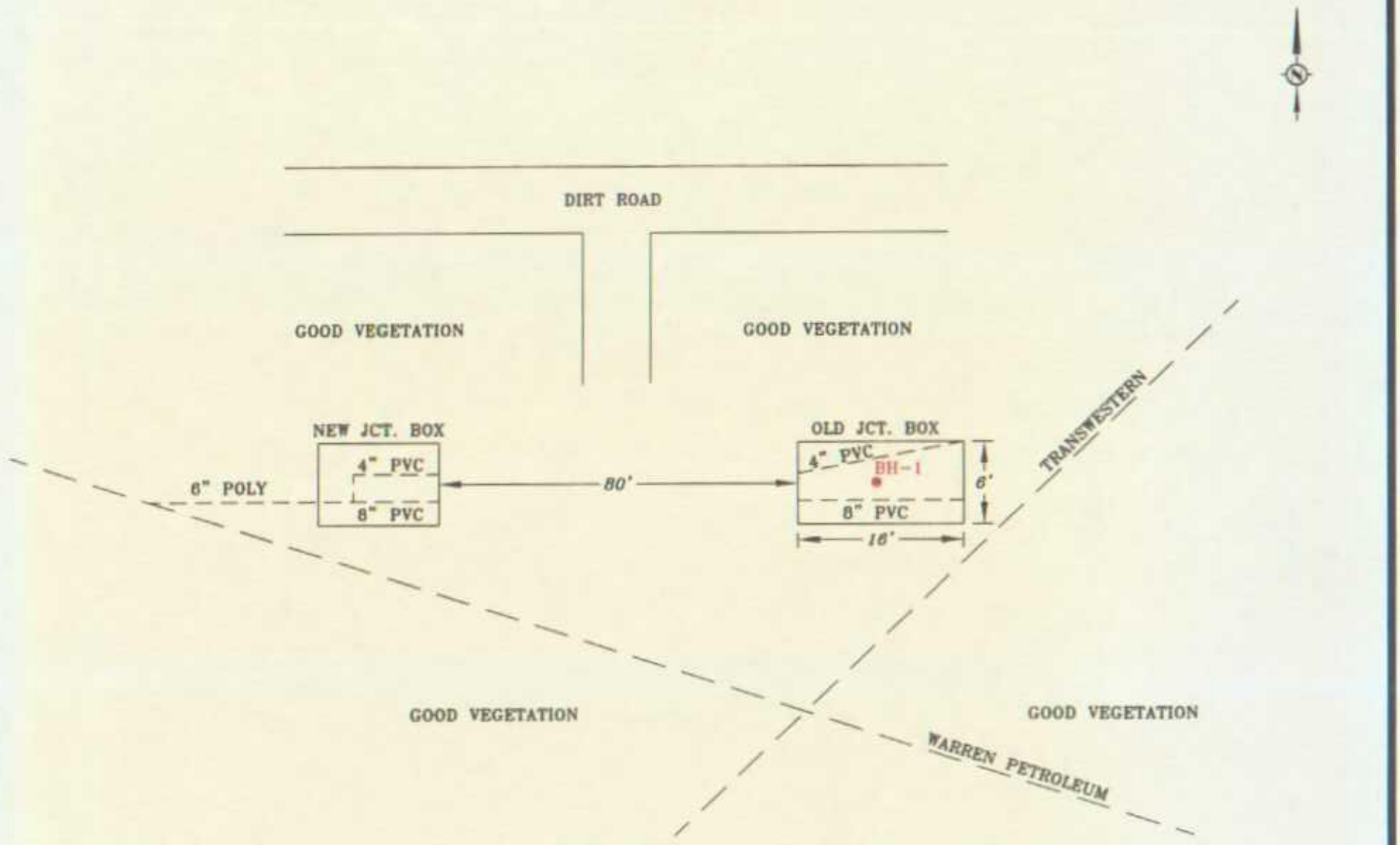


FIGURE NO. 1
LEA COUNTY, NEW MEXICO
RICE OPERATING COMPANY
TOPOGRAPHIC MAP



NOT TO SCALE

FIGURE NO. 2

LEA COUNTY, NEW MEXICO

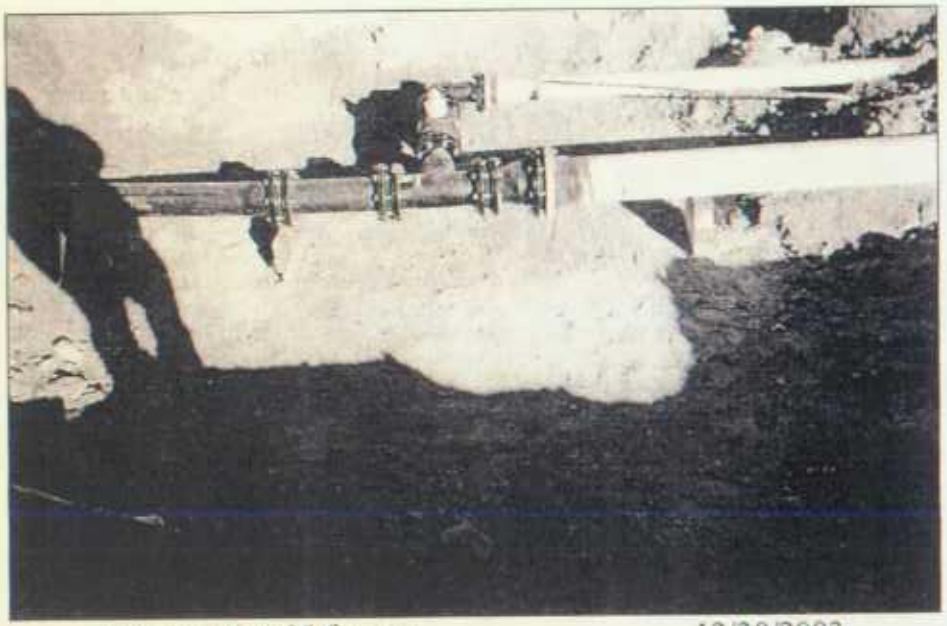
RICE OPERATING COMPANY
EME A-2-1
SITE MAP

DATE: 8/29/06
DWN. BY: JJ
FILE:

HIGHLANDER ENVIRONMENTAL CORP.
MIDLAND, TEXAS

EME jct. A-2-1

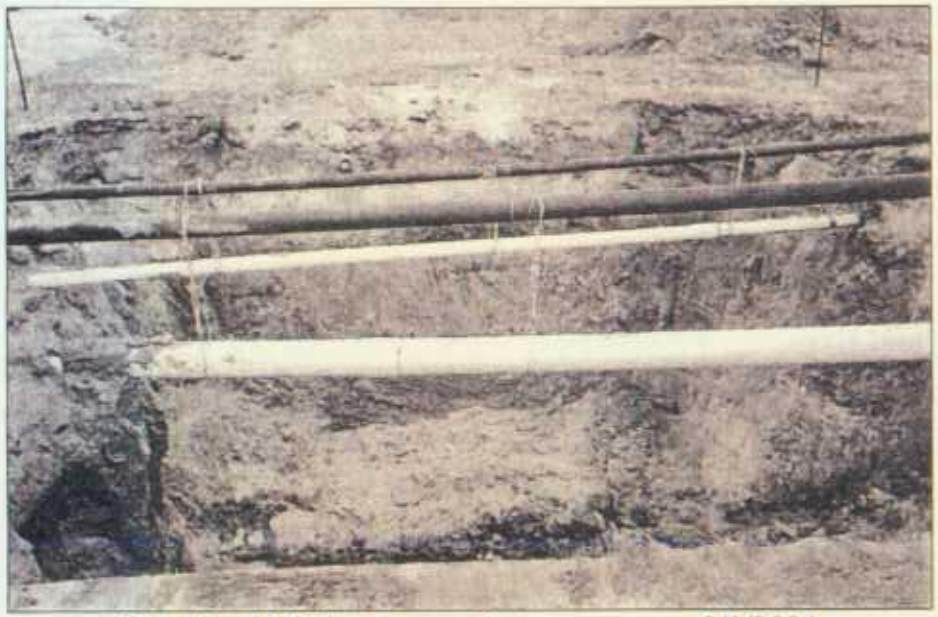
undisturbed junction box 12/17/2003



new junction 85 ft west 12/30/2003

new junction box 85 ft west of former 1/9/2004

delineation & excavation at former box site 2/27/2004

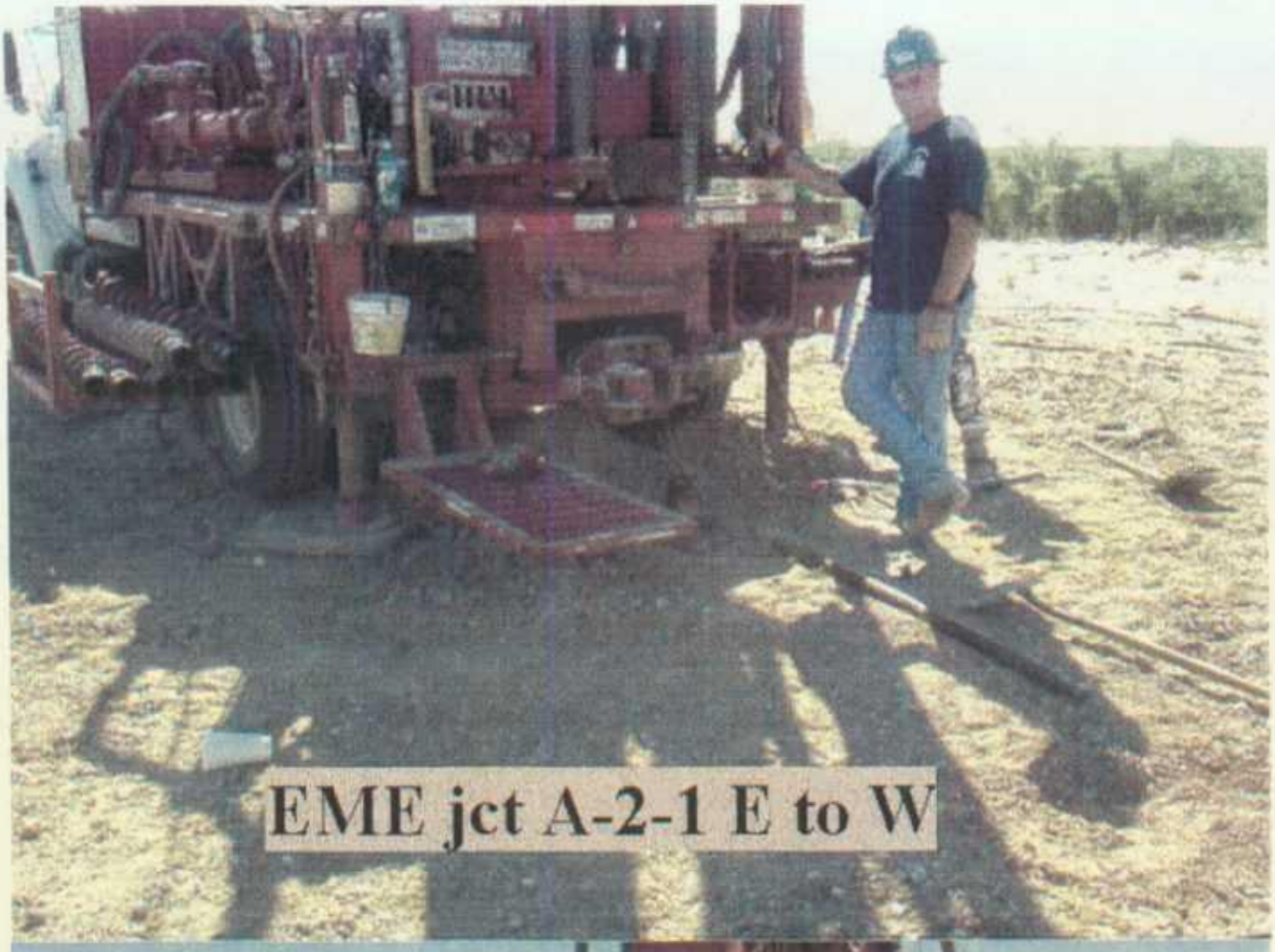


20 x 10 x 12 ft deep excavation 3/1/2004

installing clay barrier at 6 ft BGS

compacting backfill on top of clay

identification plate at backfilled site 6/2/2004



EME jct A-2-1 E to W

EME jct. A-2-1 S to N

RICE OPERATING COMPANY
JUNCTION BOX **DISCLOSURE*** REPORT

BOX LOCATION

SWD SYSTEM	JUNCTION	UNIT	SECTION	TOWNSHIP	RANGE	COUNTY	BOX DIMENSIONS - FEET		
							Length	Width	Depth
EME	A-2-1	A	2	20S	36E	Lea	moved 85 ft west		

LAND TYPE: BLM _____ STATE X FEE LANDOWNER _____ OTHER _____

Depth to Groundwater 50 feet NMOCD SITE ASSESSMENT RANKING SCORE: 20

Date Started 2/26/2004 Date Completed 4/27/2004 NMOCD Witness no

Soil Excavated 178 cubic yards Excavation Length 20 Width 20 Depth 12 feet

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

FINAL ANALYTICAL RESULTS: **Sample Date** 3/2/2004 **Sample Depth** 12 ft

5-point composite sample of bottom and 4-point composite sample of excavation 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	Chloride mg/kg
4-WALL COMP.	0.122	0.486	4.050	5.958	677	2540	915
BOTTOM COMP.	0.425	1.200	11.900	22.140	1550	4030	659
REMED. BACKFILL	0.216	0.591	2.820	5.338	639	3250	436

General Description of Remedial Action: This junction was moved 85 ft west during the pipeline replacement as part of the Junction Box Upgrade program. The former box site was delineated using a backhoe while chloride field tests and PID screenings were performed on soil samples at regular intervals, producing a 20 x 20 x 12-ft-deep excavation. Chloride concentrations did not significantly decline with depth and NMOCD TPH guidelines were not met. The excavated soil was blended on site and then backfilled into the hole up to 6 ft BGS. At 6 ft, a 1-ft-thick compacted clay barrier was installed to inhibit further chloride migration. The remaining spoils were backfilled on top of the clay and contoured to the surrounding surface. A new watertight junction box was built 85 ft west of this site. A identification plate has been placed on the surface to mark the presence of clay below and to identify the location of the former junction box for future environmental considerations. NMOCD has been notified of potential groundwater impact at this site.

ADDITIONAL EVALUATION IS *HIGH* PRIORITY

enclosures: chloride graph, photos, lab results, clay test, BTEX table

CHLORIDE FIELD TESTS

LOCATION	DEPTH (ft)	ppm
vertical at junction box	5	1135
	6	1176
	7	1428
	8	1306
	9	1400
	10	1289
	11	1459
	12	956
	13	1056
	14	852
4-wall comp.	n/a	853
bottom comp.	12	538
backfill comp.	n/a	553

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

SITE SUPERVISOR Gary Stark SIGNATURE not available COMPANY ETGI--Hobbs, NM

REPORT ASSEMBLED BY Kristin Farris Pope SIGNATURE Kristin Farris Pope

DATE 7/1/2005 TITLE Project Scientist

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

Atkins Engineering Associates, Inc.
2904 W. 2nd St., Roswell, NM 88202-3156

LOG OF BORING Test Hole #1

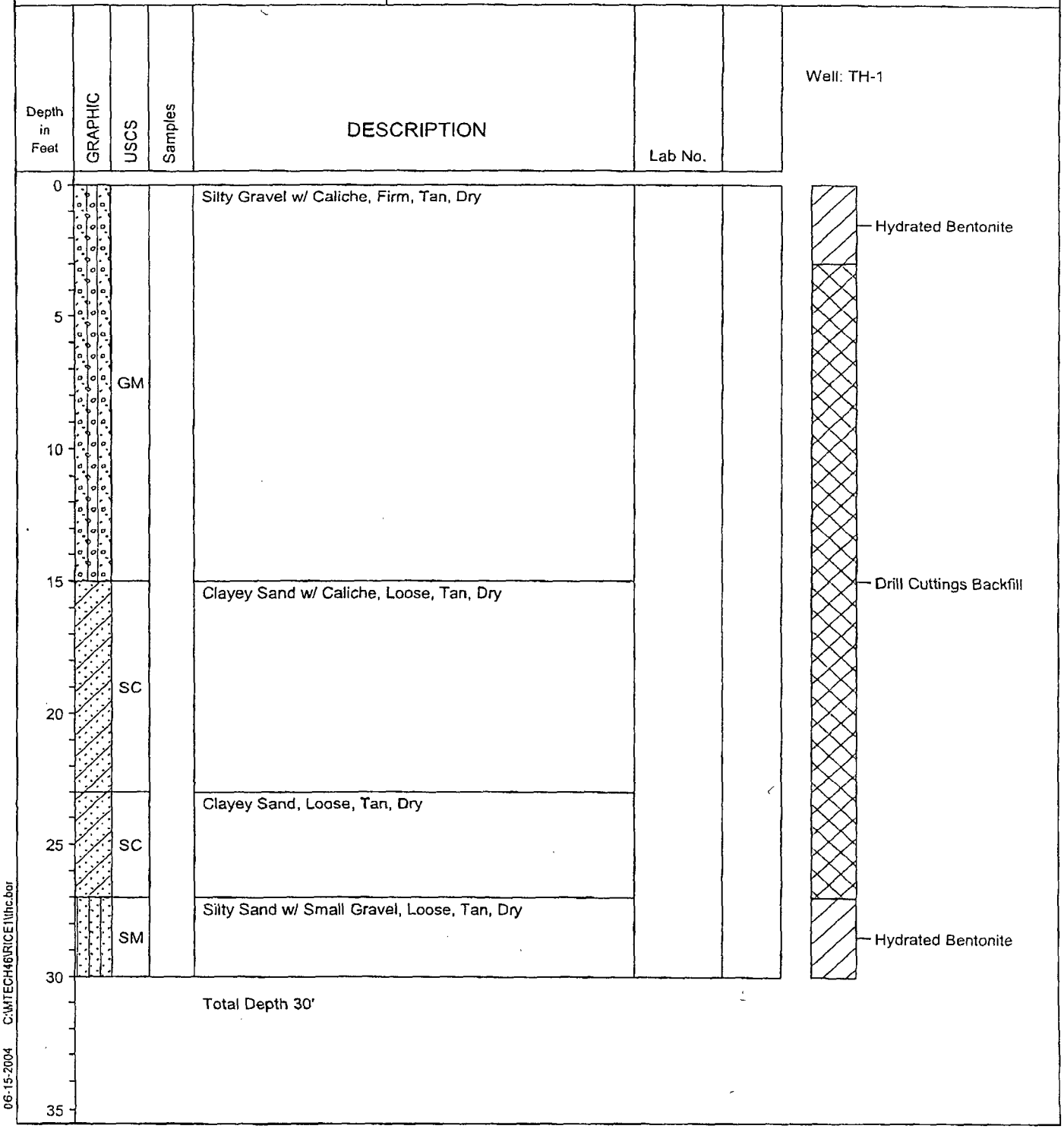
(Page 1 of 1)

Rice Operating Co.
122 W. Taylor
Hobbs, NM 88240

Contact:

Job: RICEOPR.DRL.04

Date	: 06-02-04	Site Location	: EME A-2-1
Drill Start	: 0800	Auger Type	: Hollow Stem
Drill End	: 0930	Logged By	: Mort Bates
Boring Location:	:		



06-15-2004 C:\MTECH46\RICE1\lhc.bor

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: 06/04/04
Project Number: NOT GIVEN
Project Name: A-2-1 SOIL BORE
Project Location: EME A-2-1 JCT. BOX

Sampling Date: 06/02/04
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
H8777-1	A-2-1 35' BGS	14.5	228	688
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.

Chemist

6/5/04
Date

H8777A.XLS

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: 06/05/04
Project Number: NOT GIVEN
Project Name: A-2-1 SOIL BORE
Project Location: EME A-2-1 JCT. BOX

Sampling Date: 06/02/04
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE	06/04/04	06/04/04	06/04/04	06/04/04
H8777-1 A-2-1 35' BGS	<0.005	<0.005	0.026	0.057
Quality Control	0.096	0.098	0.092	0.274
True Value QC	0.100	0.100	0.100	0.300
% Recovery	95.5	97.7	92.3	91.2
Relative Percent Difference	2.7	3.7	3.7	3.9

METHOD: EPA SW-846 8260

Chemist

6/5/04
Date

H8777B.XLS

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page ____ of ____

Company Name:	RICE Operating	BILL TO P.O. #:	
Project Manager:	Krisina Farris	Company:	
Address:	122 W. Taylor	Attn:	
City:	Hobbs State: NM Zip: 88240	Address:	
Phone #:	505-393-9174 Fax #: 505-392-1471	City:	
Project #:	Project Owner:	State: Zip:	
Project Name:	A-2-2 Soil Bore	Phone #:	
Project Location:	LEA A-2-1 JCT. Box	Fax #:	
Sampler Name:			

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	BTEX	Chlorides	TPH
H4777-1	A-2-2 35'-36.5'	G	1			X					X		6/2/04	9:00	X	X	X

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.

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 collections, including attorney's fees.

Sampler Relinquished:	Date:	Received By:	
	Time:		
Relinquished By:	Date: 6/3/04	Received By: (Lab Staff)	
	Time: 9:00AM		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Sample Condition: Temp. °C: Cool; Intact? ☒ Yes ☐ No	Checked By: (Initials)	

Phone Result: ☐ Yes ☐ No
Fax Result: ☐ Yes ☐ No
REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to (915) 673-7020.