1R - 427-87

GENERAL CORRESPONDENCE

YEAR(S):
2007

RICE Operating Company
122 West Taylor • Hobbs, NM 88240
Phone: (505) 393-9174 • Fax: (505) 397-1471

2007 MAY -7 PM 12 03

electronic mail to wayne.price@state.nm.us

CERTIFIED MAIL
RETURN RECEIPT NO. 7005 1820 0001 6802 2415

April 30, 2007

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

RE: H-20 SWD Site (Redwood Tanks)
Eunice-Monument-Eumont (EME) SWD System
Unit 'H', Sec. 20, T20S, R37E

Mr. Price:

Beginning on April 9, Rice Operating Company (ROC) and Ocotillo Environmental of Hobbs began delineation and excavation of the redwood tanks area of the EME H-20 SWD site with notice given to the Oil Conservation Division (OCD). Constituents of concern at this site were chloride and hydrocarbon, however, hydrocarbon was the focus of the delineation efforts as elevated concentrations extended deeper than those of chloride. Under the direction of Ocotillo, the excavation was expanded to the final dimensions of 98 x 73 x 27-feet-deep.

Because hydrocarbon soil impacts were identified to groundwater level, a 4-inch monitoring well was installed at the site on April 20. After appropriate development, the well was sampled by a third party on April 23. Laboratory analysis reveals chloride and total dissolved solids (TDS) exceed New Mexico Water Quality Control Commission standards with concentrations of 1939 and 4343 mg/L, respectively. Chloride and TDS concentrations are known to be elevated on a regional scale in this area near Monument. Because of the low chloride concentrations in the soil below the tanks and the lack of hydrocarbon detections (0.06 mg/L Benzene, 0.002 Ethyl Benzene, and non-detect Toluene and Xylenes) in the groundwater sample, it is unlikely that this site contributed to the groundwater conditions observed at this site.

The redwood tank excavation is still open to 22 ft of depth and is cause for a safety concern. ROC would like to begin backfilling as soon as possible with the materials currently staged on site. A request for OCD approval to backfill the excavation was submitted on April 23; OCD approval is pending. ROC will continue to monitor the groundwater below this site by collecting samples on a quarterly basis for laboratory analysis.

ROC is the service provider (agent) for the EME Salt Water Disposal System and has no ownership of any portion of the pipelines, wells, or facilities. The EME System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis. Environmental remediation projects of this magnitude require System Partner AFE approval and work begins as funds are received.

Should you have any questions or concerns regarding this site, please do not hesitate to contact me.

RICE OPERATING COMPANY

Kristin Farris Pope

Kristin Farris Pope
Project Scientist

enclosures: water analysis, well log, driving directions

cc: SC, CDH, file, Mr. Edward Hansen
Oil Conservation Division
edwardj.hansen@state.nm.us

Mr. Chris Williams
Oil Conservation Division, District I Office
chris.williams@state.nm.us

Client: Rice Operating Company

MW-1

Project: E.M.E. SWD System Well No. H-20

Project Number: 7-0301

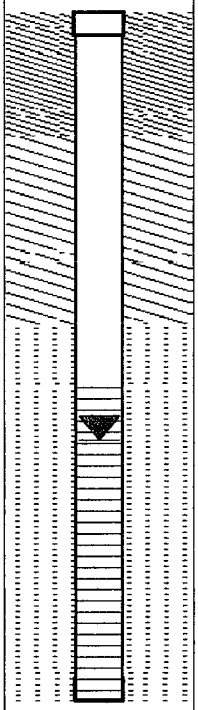
Date: 04/23/07

Location: Monument, NM

Project Manager: Cindy Crain

SUBSURFACE PROFILE

SAMPLE

Depth	Symbol	Description	Depth/Elev.	Number	Type	Recovery	P.I.D (250 500 750)	Well Construction	Well Completion Details
0		Ground Surface	0.0						Top of Casing 2' 3.5" above ground surface.
0-2		*Silty Sand* Light tan, fine grained, well sorted, loose, dry.	0.0						0-6 feet bgs: Cement-Bentonite Grout
2-24									0-18 feet bgs: Schedule 20 PVC threaded casing
									6-12 feet bgs: Bentonite Pellets
									15-33 feet bgs: Sand
									Depth to Water (4/23/07) 20.55' bgs
24			-25.0						
24-26		*Silty Sand* Light gray, fine grained, well sorted, loose, damp	25.0 -27.0						18-33 feet bgs: Schedule 20 PVC 0.02 inch slotted, threaded PVC screen
26-32		*Silty Sand* Dark gray, fine grained, well sorted, wet, hydrocarbon odor.	27.0 -33.0						
32-34		*TD: 33'*	33.0						
34-54									

Drill Method: Air Rotary

Drill Date: 04/20/07

Hole Size: 4"

Ocotillo Environmental, LLC.
2125 French Drive
Hobbs, NM 88240
(505) 393-6371

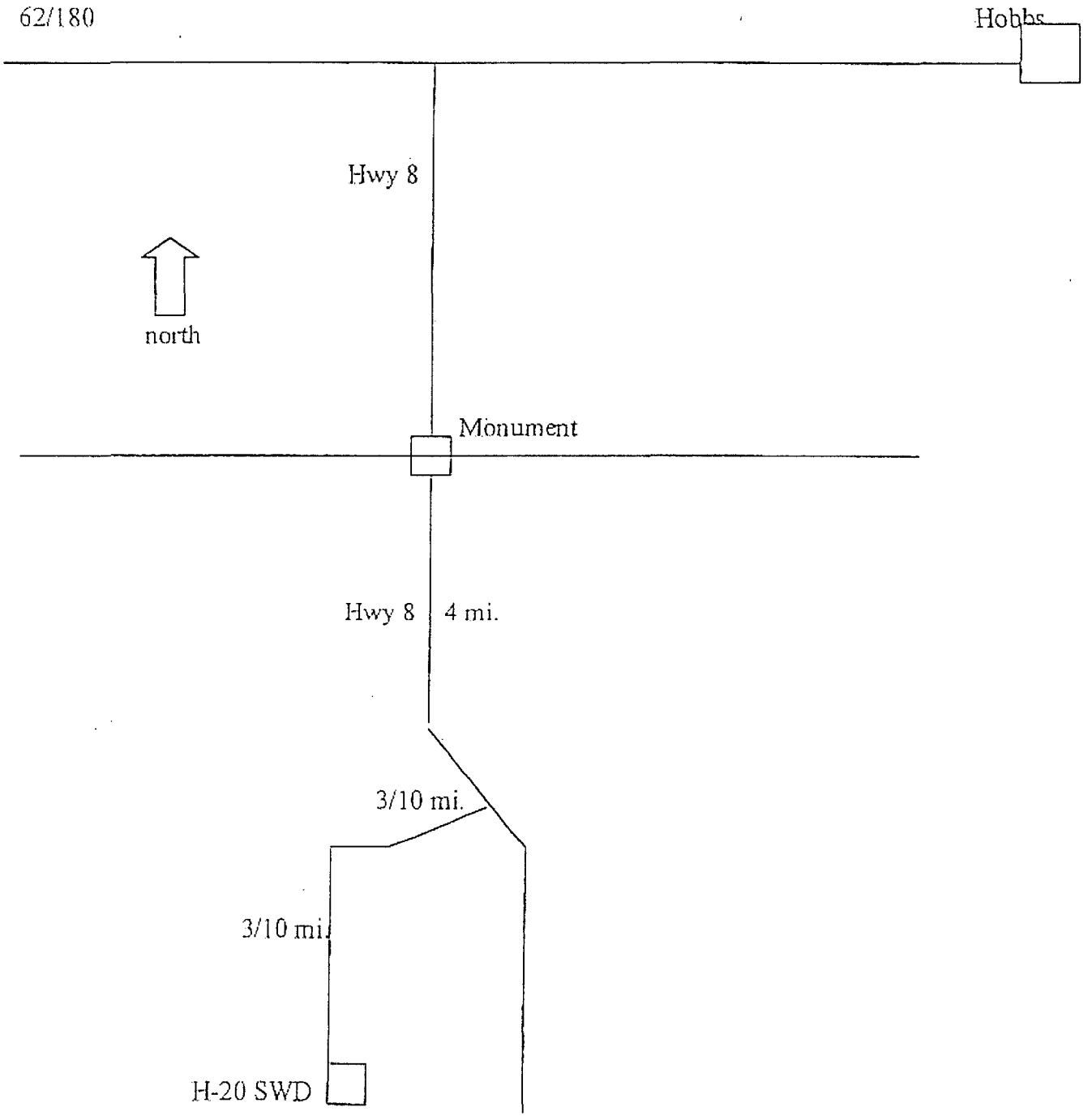
Elevation: N/A

Checked By: C. Crain

Drilled By: Harrison & Cooper

SYSTEM: E.M.E.
WELL: H-20
LEGALS: SEC. 20 – T20S – R37E

From junction of hwy 322 and hwy 8 in monument go south on hwy 8 for 4.0 miles. Turn right at cattle guard and go 3/10 miles west. Turn left and go to location.



Kristin Pope

2007 APR 30 AM 11 29

From: "Kristin Pope" <kpope@riceswd.com>
To: "Hansen, Edward J., EMNRD" <edwardj.hansen@state.nm.us>
Cc: <chris.williams@state.nm.us>; "Carolyn Haynes" <chaynes@riceswd.com>; "Scott Curtis" <scurtis@riceswd.com>; "Haskell Conder" <hconder@riceswd.com>
Sent: Monday, April 23, 2007 5:32 PM
Attach: 4.23.07 request to backfill package.pdf
Subject: Request for approval to backfill redwood tank excavation

Mr. Hansen,

Attached is a request to backfill an open excavation made by the delineation of a former redwood tank site. A hard copy follows via US Mail. Please contact me with any questions. Thank you.

Kristin Farris Pope
Project Scientist
RICE Operating Company
Hobbs, New Mexico
(505) 393-9174

RICE Operating Company
122 West Taylor • Hobbs, NM 88240
Phone: (505) 393-9174 • Fax: (505) 397-1471

April 23, 2007 *electronic mail to edwardj.hansen@state.nm.us*

CERTIFIED MAIL RETURN RECEIPT NO. 7005 1820 0001 6802 2453

Mr. Edward Hansen
New Mexico Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

RE: **REQUEST FOR APPROVAL TO BACKFILL EXCAVATION**
H-20 SWD site
Eunice-Monument-Eumont (EME) SWD System
Unit 'H', Sec. 20, T20S, R37E
1R427-87

Mr. Hansen:

On March 7, Rice Operating Company (ROC) submitted a C-103 form to notify the Oil Conservation Division (OCD), Environmental Bureau Chief of upcoming environmental delineation and remediation activities at the above-referenced site. These activities began on April 9, 2007 with notice given to OCD.

The redwood tanks and pit locations have been addressed by following the OCD-approved generic plans, "Closure Plan for Below-Grade Redwood Tanks" and "Closure Plan for Permitted Emergency Pits." Initial delineation revealed that the pit could be closed according to the Generic Plan. The redwood tank area, however, exhibited deeper impact. Delineation and excavation was directed by Ocotillo Environmental (Ocotillo) of Hobbs and concentrated around the former redwood tanks site. Chloride and hydrocarbon are constituents of concern and analyses of soil samples from the 98 x 73 x 27-foot-deep excavation are as follows:

Sample Date	Sample Name	Sample Location	Sample Depth (ft)	PID (field)	Total TPH (lab)	Chloride (lab)	BTEX (lab)
4/13/07	SS-1	Bottom	27	90	1,771.0	976	1.033
4/13/07	SS-2	Bottom	27	339	709	336	12.77
4/13/07	SS-3	Bottom	27	100	892	624	1.259
4/13/07	North	Wall comp.	12-25	127	922	96	0.281
4/13/07	East	Wall comp.	12-25	102	720	224	1.03
4/13/07	South	Wall comp.	12-25	228	950	96	0.828
4/13/07	West	Wall comp.	12-25	178	955	96	0.514
4/16/07	Comp SS-4	Excavated Soil	---	21	394.7	192	---
4/16/07	Comp SS-5	Excavated Soil	---	28	435.8	224	---
4/16/07	Comp SS-6	Excavated Soil	---	22	406.5	208	---
4/19/07	2:1 Blended	Blended Backfill	---	26	270	160	---

Per the generic work plans, ROC requests permission from OCD to backfill the redwood tank excavation according to the enclosed cross-section schematic. 7 feet of clean sand that was imported from an off-site source has already been placed at the bottom of the excavation to limit exposure of groundwater. Blended backfill with photoionization detection (PID) readings of 26 ppm, 270 mg/kg total petroleum hydrocarbon (TPH), and 160 mg/kg chloride concentrations will be placed on top of the clean sand from 20 to 6 ft below ground surface (BGS). 1.5 feet of clay will be placed at 6 feet BGS and on top of the blended backfill. The Generic Plan calls for a 95% density compaction of clay but recent research shows that compaction to approximately 85% that reflect native, undisturbed soils is more beneficial. **What level of compaction would OCD prefer for this site?** The remaining excavation on top of the clay will be filled with clean, imported topsoil that will sustain native vegetation restoration. A complete excavation report will be submitted to OCD by Ocotillo after the backfill is complete.

Because soil impacts were identified to groundwater level, a 4-inch monitoring well was installed at the site on Friday, April 20. The well was properly developed and was sampled today, April 23. Elevated chloride and total dissolved solids are known to be elevated on a regional scale in this area. OCD will be promptly notified when laboratory results are received.

ROC is the service provider (agent) for the EME Salt Water Disposal System and has no ownership of any portion of the pipelines, wells, or facilities. The EME System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis. Environmental remediation projects of this magnitude require System Partner AFE approval and work begins as funds are received.

The proposed backfill materials are currently staged on the surface of this site. As this excavation is currently open, a timely response to this request to backfill would be greatly appreciated. Should you have any questions or concerns regarding this request, please do not hesitate to contact me. A copy of this submission via U.S. Mail will follow.

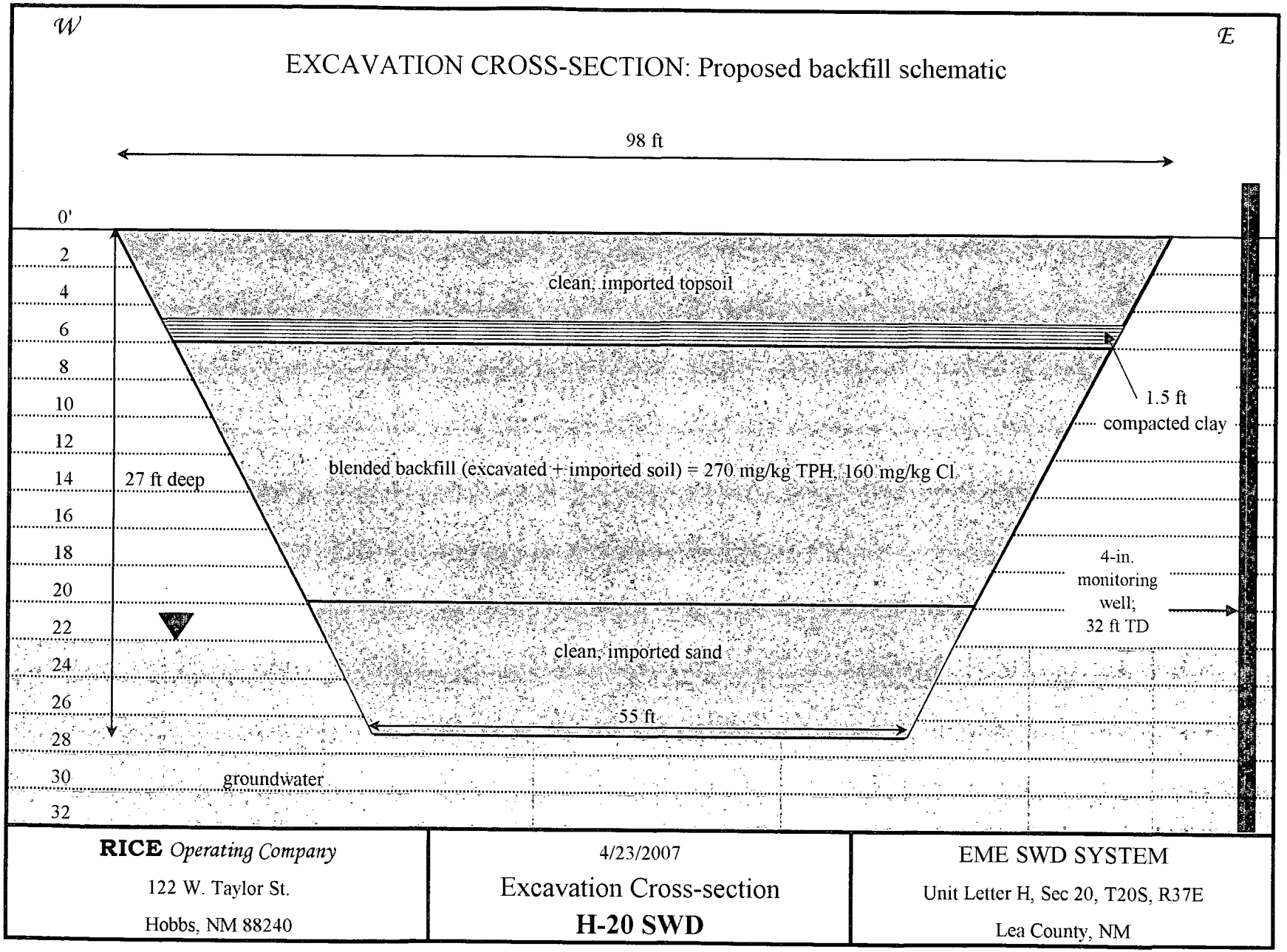
RICE OPERATING COMPANY

Kristin Farris Pope

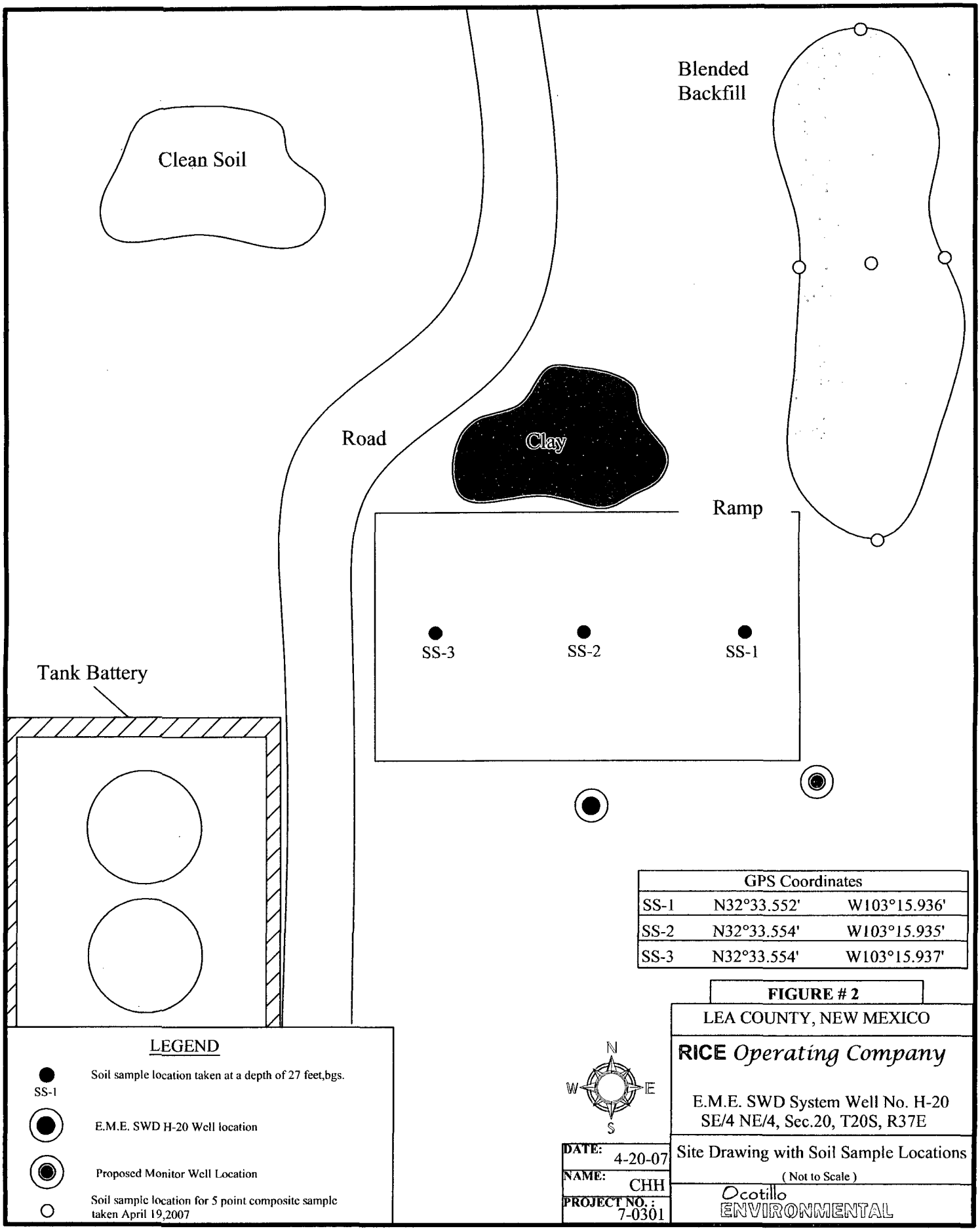
Kristin Farris Pope
Project Scientist

enclosures: plan-view, proposed backfill schematic, bottom & wall sample location diagram

cc: SC, CDH, Ocotillo, file, Mr. Chris Williams
Oil Conservation Division, District I Office
chris.williams@state.nm.us



RICE *Operating Company* 122 W. Taylor St. Hobbs, NM 88240	4/23/2007 Excavation Cross-section **H-20 SWD**	EME SWD SYSTEM Unit Letter H, Sec 20, T20S, R37E Lea County, NM



GPS Coordinates		
SS-1	N32°33.552'	W103°15.936'
SS-2	N32°33.554'	W103°15.935'
SS-3	N32°33.554'	W103°15.937'

FIGURE # 2

LEA COUNTY, NEW MEXICO

RICE *Operating Company*

E.M.E. SWD System Well No. H-20
SE/4 NE/4, Sec.20, T20S, R37E

Site Drawing with Soil Sample Locations

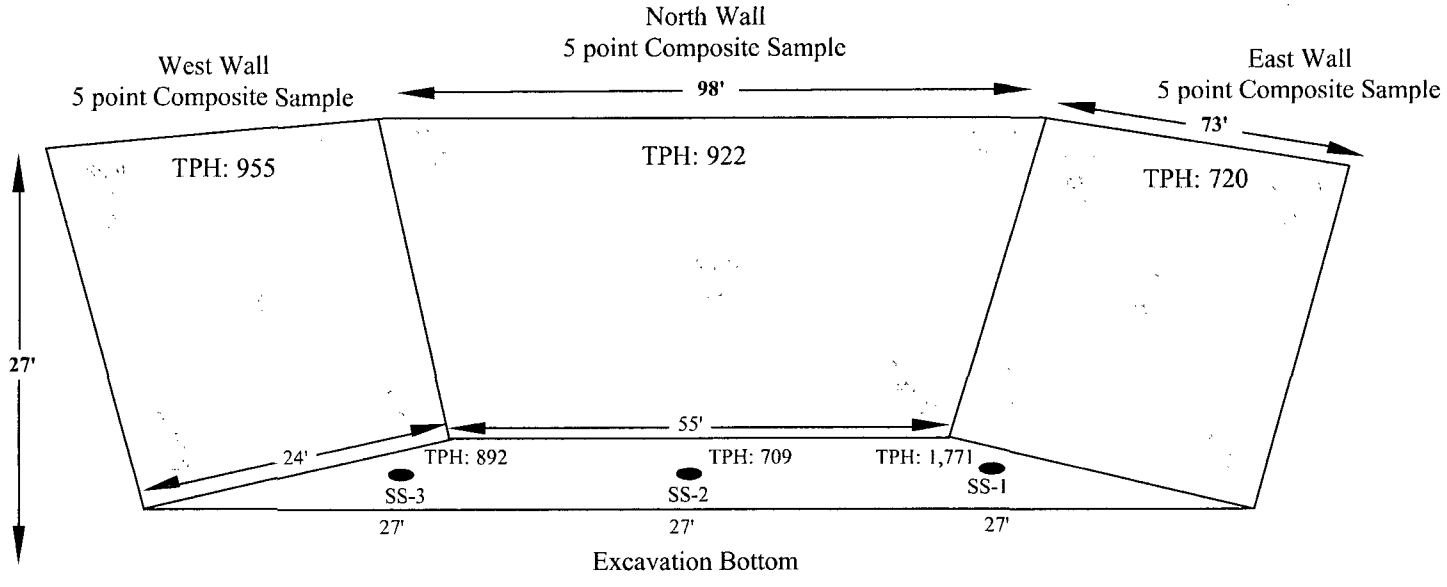
(Not to Scale)

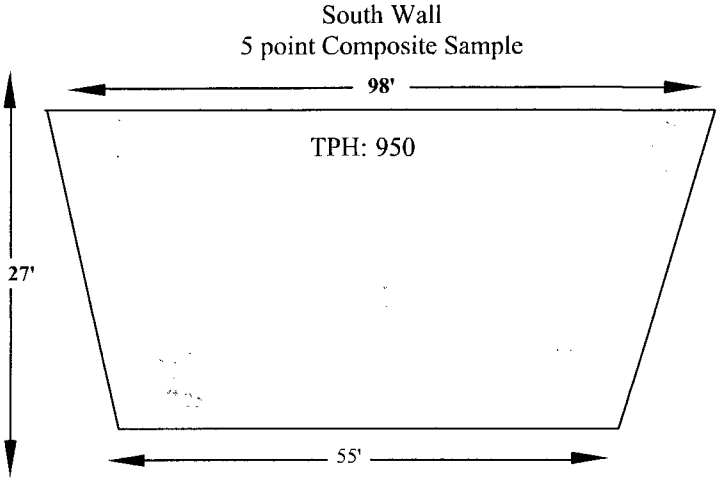
Ocotillo ENVIRONMENTAL

DATE: 4-20-07
NAME: CHH
PROJECT NO.: 7-0301

LEGEND

- SS-1 — Soil sample location taken at a depth of 27 feet,bgs.
- E.M.E. SWD H-20 Well location
- Proposed Monitor Well Location
- Soil sample location for 5 point composite sample taken April 19,2007





GPS Coordinates		
SS-1	N32°33.552'	W103°15.936'
SS-2	N32°33.554'	W103°15.935'
SS-3	N32°33.554	W103°15.937'

LEGEND

Soil sample location for sidewall composite sample with sample number and depth, feet.

TPH: 1,771 SS-1 27' Soil sample location with TPH concentration (mg/kg), at depth, (feet).

DATE: 4-17-07
NAME: CHH
PROJECT NO.: 7-0301

FIGURE # 1

LEA COUNTY, NEW MEXICO

RICE *Operating Company*

E.M.E. SWD System Well No. H-20
SE/4 NE/4, Sec.20, T20S, R37E

Cross Section View of Sidewall and Bottom Soil Sample Locations
(Not to Scale)

Ocotillo ENVIRONMENTAL

Hansen, Edward J., EMNRD

From: Hansen, Edward J., EMNRD
Sent: Wednesday, October 03, 2007 4:19 PM
To: 'Kristin Pope'; lpg@texerra.com
Cc: Pete Galusky; Price, Wayne, EMNRD
Subject: RE: H-20 Survey with proposed well sites - 1R427-87

Kristin,
Thank you for faxing the revised site map for the above-referenced site. The proposed locations for the new monitoring wells (the upgradient and the additional downgradient) as indicated on the revised site map are acceptable to the OCD. However, please keep in mind that additional groundwater monitoring wells may be required to delineate the extent of the release.

If you have any questions regarding this matter, please contact me at 505-476-3489.

Edward J. Hansen
Hydrologist
Environmental Bureau

From: Kristin Pope [mailto:kpope@riceswd.com]
Sent: Wednesday, October 03, 2007 1:38 PM
To: lpg@texerra.com; Hansen, Edward J., EMNRD
Cc: Pete Galusky
Subject: Re: H-20 Survey with proposed well sites - 1R427-87

Ed,

I faxed you the map showing the new location of MW-3 drawn 30 ft North of the original proposal.

KP

> ----- Original Message -----
> **From:** L. Peter Galusky, Jr. P.E.
> **To:** lpg@texerra.com ; Kristin Pope ; Hansen, Edward J., EMNRD
> **Cc:** Pete Galusky
> **Sent:** Tuesday, October 02, 2007 5:09 PM
> **Subject:** Re: H-20 Survey with proposed well sites - 1R427-87
>
> Kristin,
>
> As we discussed today, please only move the proposed location of the downgradient well north by 30 ft. The proposed location of the upgradient well should remain the same.
>
> Thanks.
>
> Pete G.
>
> *"L. Peter Galusky, Jr. P.E." <lpg@texerra.com>* wrote:
>
> > Kristin, Edward,
> >
> > We could rotate the axis of the line between these wells so that it points more toward the southeast than to the south/southeast, as the locations are presently flagged. Thus, I would move the proposed downgradient well north about 30 ft and the proposed upgradient well south

enough (it will be more than 30 ft) so that there is a nice straight line between the three wells.. Also, the upgradient well can probably be brought closer to MW-1, but I do like keeping it out of the way of truck access.

Please call to cuss or discuss.

Thanks.

Pete G.
Cell: 432-634-9257

Kristin Pope <kpope@riceswd.com> wrote:

Thanks, Edward. We will be able to place this well about 30 ft North of the proposed site.

Kristin

----- Original Message -----
From: Hansen, Edward J., EMNRD
To: Kristin Pope
Cc: Price, Wayne, EMNRD ; L. Peter Galusky, Jr. P.E.
Sent: Monday, October 01, 2007 2:05 PM
Subject: RE: H-20 Survey with proposed well sites - 1R427-87

Dear Ms. Pope:

The NMOCD has reviewed the submitted Investigation Characterization Plans (ICP), dated August 29, 2007, and the revised site map of September 28, 2007, for the above referenced site. The NMOCD hereby conditionally approves the following ICP for the Rice Operating Company site:

1. EME SWD H-20 submitted by Texerra on 9/6/2007 - #1R427-87

In addition to the analyses listed in the ICP, please include the analysis for "general chemistry", including TDS and sulfate for groundwater sampling.
Also, the groundwater monitoring well, MW-3, should be located to obtain representative samples downgradient of the excavation. Please submit a revised map to reflect the new location of MW-3 prior to installation.

Also, please be advised that NMOCD approval of these plans does not relieve the owner/operator of responsibility should operations pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve the owner/operator of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

If you have questions regarding this matter, please contact me at 505-476-3489.

Edward J. Hansen
Hydrologist
Environmental Bureau

P.S.: Please use the referenced OCD case # on future correspondence regarding the site listed above.

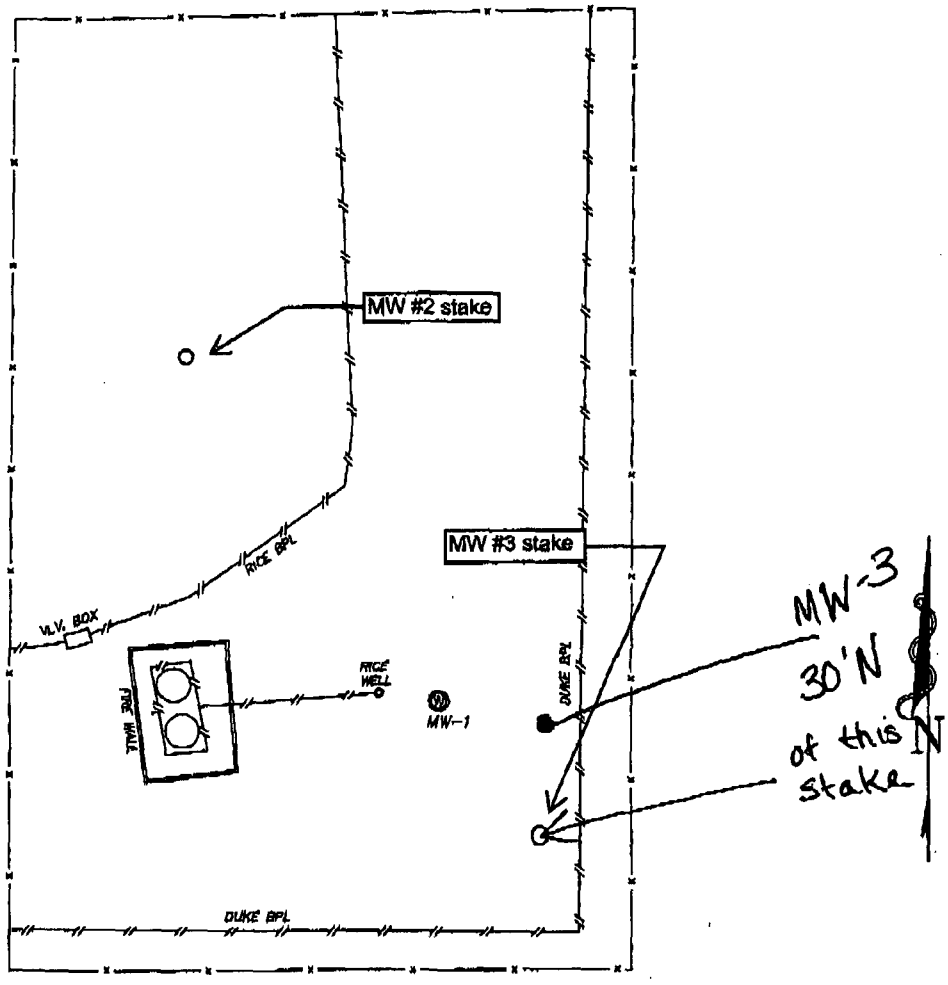
From: Kristin Pope [mailto:kpope@riceswd.com]
Sent: Friday, September 28, 2007 8:07 AM
To: Hansen, Edward J., EMNRD
Cc: Pete Galusky
Subject: H-20 Survey with proposed well sites

Ed,

Here are the proposed MW locations we discussed yesterday per the ICP submitted by Pete Galusky. What do you think? We hope for approval of the ICP before drilling on Wednesday. Thanks.

Kristin Farris Pope
Project Scientist
RICE Operating Company
Hobbs, New Mexico
(505) 393-9174

SECTION 20, TOWNSHIP 20 SOUTH, RANGE 37 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.



NOTE:
ELEVATIONS ARE ON BLACK MARK ON NORTH SIDE OF PVC CASING.

NEW MEXICO STATE PLANE COORDINATES (NAD83)

WELL	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEV. PVC	ELEV. GRND	ELEV. CONC.
MW-1	568769.64	870358.86	N 32°33'32.8"	W 103°15'55.5"	3518.88'	3516.53'	3516.81'

100 0 100 200 FEET
SCALE: 1" = 100'

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES, N.M. P.S. No. 7977
No. 5074

BASIN SURVEYS P.O. BOX 1786 – HOBBS, NEW MEXICO

RICE OPERATING COMPANY

REF: EME SWD WELL H-20

MONITOR WELL LOCATED IN
SECTION 20, TOWNSHIP 20 SOUTH, RANGE 37 EAST,
N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 18080	Drawn By: J. M. SMALL		
Date: 05-08-2007	Disk: JMS 18080MW	Survey Date: 05-07-2007	Sheet 2 of 2 Sheets

RICE *Operating Company*

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

TO: Ed Hanson

FROM: K. Pope

FAX NUMBER: (505) 476-3462

DATE: 10-3-07

COMPANY: OCD

TOTAL NO. OF PAGE INCLUDING COVER: 2

RE: EME H-20 ICP

NOTES/COMMENTS:

Here is the new MW-3 location we agreed upon via email + phone.

IF YOU DO NOT RECEIVE ALL PAGES INCLUDED, PLEASE CALL THE OFFICE PHONE NUMBER LISTED AT THE TOP OF THIS PAGE-THANK YOU

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

August 29th, 2007

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

RE: **Investigation and Characterization Plan**
Rice Operating Company – EME SWD System
H-20 SWD Facilities (UL H Sec 20 T 20S R 37E)

Sent via E-mail and U.S. Certified Mail: Return Receipt No. 7006 0100 0001 2438 3876

Dear Mr. Hansen:

RICE Operating Company (RICE) has retained Texerra to address potential environmental concerns at the above-referenced site. ROC is the service provider (agent) for the 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. Environmental projects of this magnitude require System Partner AFE approval, and work begins as funds are received. In general, project funding is not forthcoming until NMOCD approves the work plan. Therefore, your timely review of this submission would be greatly appreciated.

For all such 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 generally have three submissions, as described below:

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) if this is warranted.

3. Finally, after implementing the remedy, a Closure Report with final documentation will be submitted.

Background and Previous Work

The site is located approximately four miles south of Monument in Lea County (Figure 1). The topography is gently sloping toward the southeast (Figure 2). Soils on the site are mapped in the Lea County Soil Survey as belonging to Pyote-Maljamar-Kermit soil association. These are characterized as gently undulating and rolling, sandy soils of six feet or more depth overlying caliche. Groundwater occurs at a depth of approximately 24 +/- feet, in unconsolidated Tertiary alluvium of the Ogallala Formation. The direction of groundwater flow is believed to generally parallel surface topography and flow toward the southeast (Figure 2).

As part of their on-going SWD facility upgrades, Rice removed two below-grade redwood tanks and closed an emergency overflow pit in April and May, 2007. Soils were excavated to approximately three feet below the present water table depth (Figure 3). Petroleum contaminated soils were removed from the site and disposed at the South Monument Surface Waste Facility. The removal of contaminated soil was determined to be complete per sampling of the sidewalls (Figure 4). The excavation then backfilled with clean material per NMOCD approval (Figure 5), and a compacted clay barrier was installed on May 15th at a depth of approximately 5.5 to 7 ft below ground surface (Figure 6). A photo-chronology of this work is included in Appendix 1.

Groundwater samples taken from a monitor well (MW-1) installed near the excavation indicated total BTEX levels of 0.0620 mg/l (ppm) on April 23rd and 0.0684 mg/l on July 12th. Measured chloride concentrations on these dates were 1,939 mg/l and 1,230 mg/l, respectively. A data summary table and laboratory results are given in Appendix 2.

The soil impacts having thus been addressed, Rice proposes additional investigative work to determine if groundwater has been substantially impacted and if groundwater remediation activities are thus warranted. This work will be conducted in light of the fact that baseline groundwater quality is known to be impaired in many locations in the Monument area due to historical practices and recent releases by other operators. Of particular note is a large soil remediation project just south of the H-20 location which has been underway this summer.

Proposed Work Elements

1. Summarize relevant information and data collected by ROC to date.
2. Summarize additional, publicly available regional and local hydrological information.
3. Install monitor wells to determine up-gradient and down-gradient groundwater chloride and hydrocarbon (BTEX) concentrations[1]. These will be sampled and analyzed using the appropriate EPA laboratory methods.
4. Evaluate the risk of groundwater impact in light of the information obtained, and report the results to NMOCD.

[1] All monitoring wells will be constructed (with the annular space sealed with a cement/bentonite mix) per NM Dept. Environment standards.

If the results of this effort so warrant, a risk-based Corrective Action Plan will be prepared and submitted to NMOCD.

I appreciate the opportunity to work with you and your staff on this project. Please call either myself, at the number below, or Kristin Farris Pope (ROC) at 505-393-9174, if you have any questions or wish to discuss these matters.

Thank you for your consideration.

Sincerely,

L. Peter (**Pete**) Galusky, Jr. Ph.D., P.G.
Principal

Texerra
505 N. Big Spring, Suite 404
Midland, Texas 70701
Tel: 432-634-9257
E-mail: lpg@texerra.com
Web site: www.texerra.com

cc: CDH, KFP, file

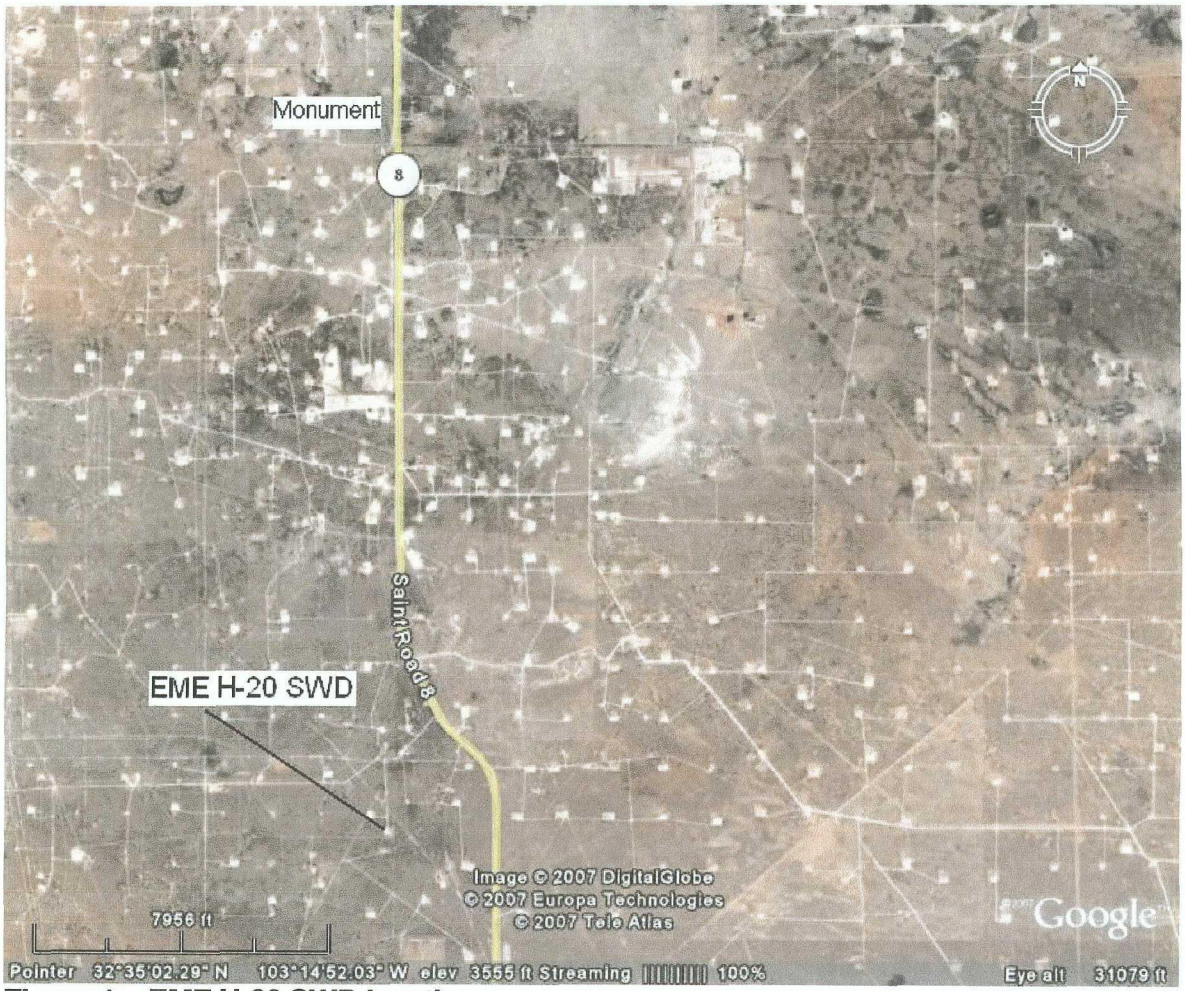


Figure 1 – EME H-20 SWD location.

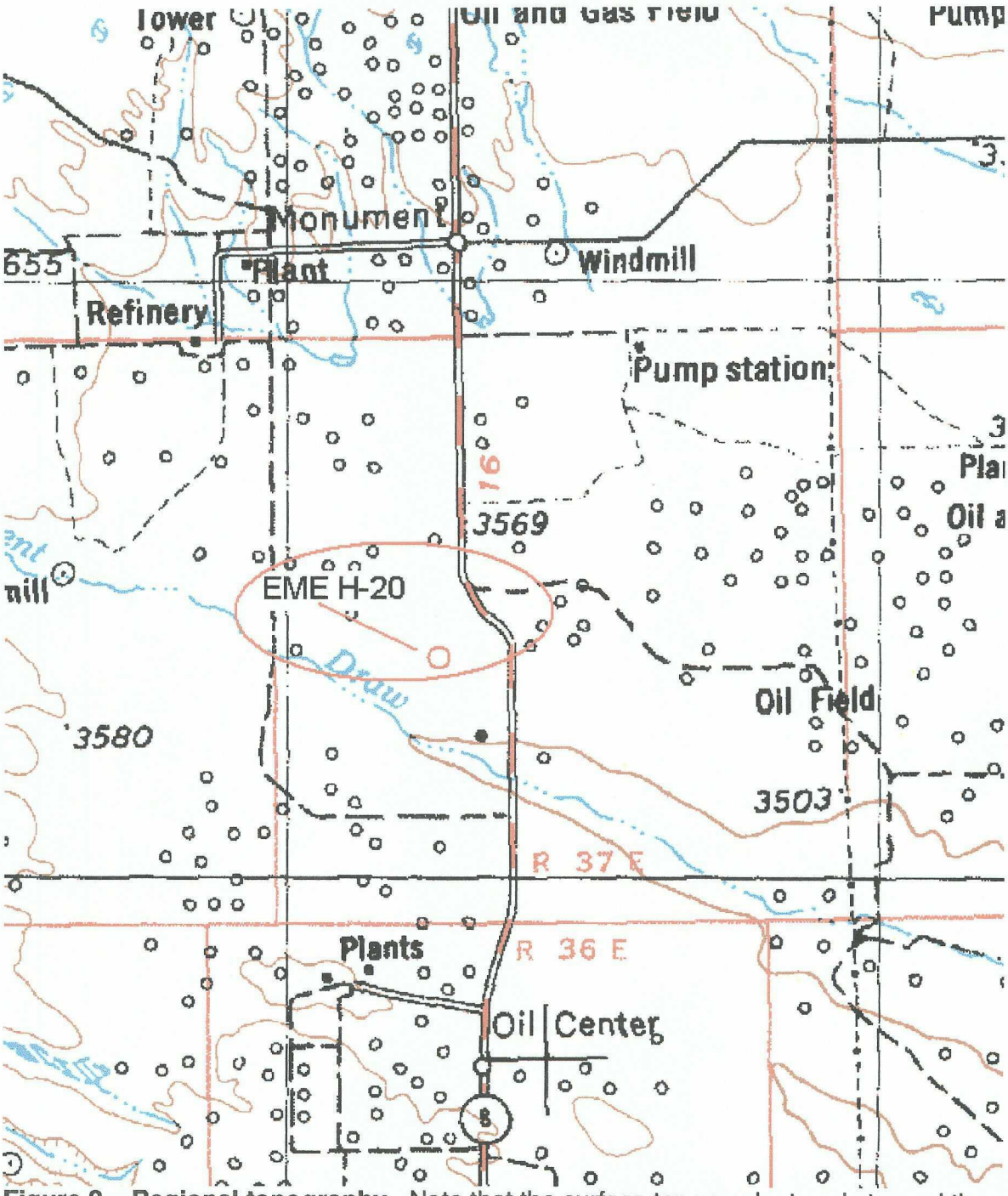


Figure 2 – Regional topography. Note that the surface topography trends toward the southeast. The water table gradient is presumed to generally do the same. (Scale: 1 inch equals approximately 2 miles).

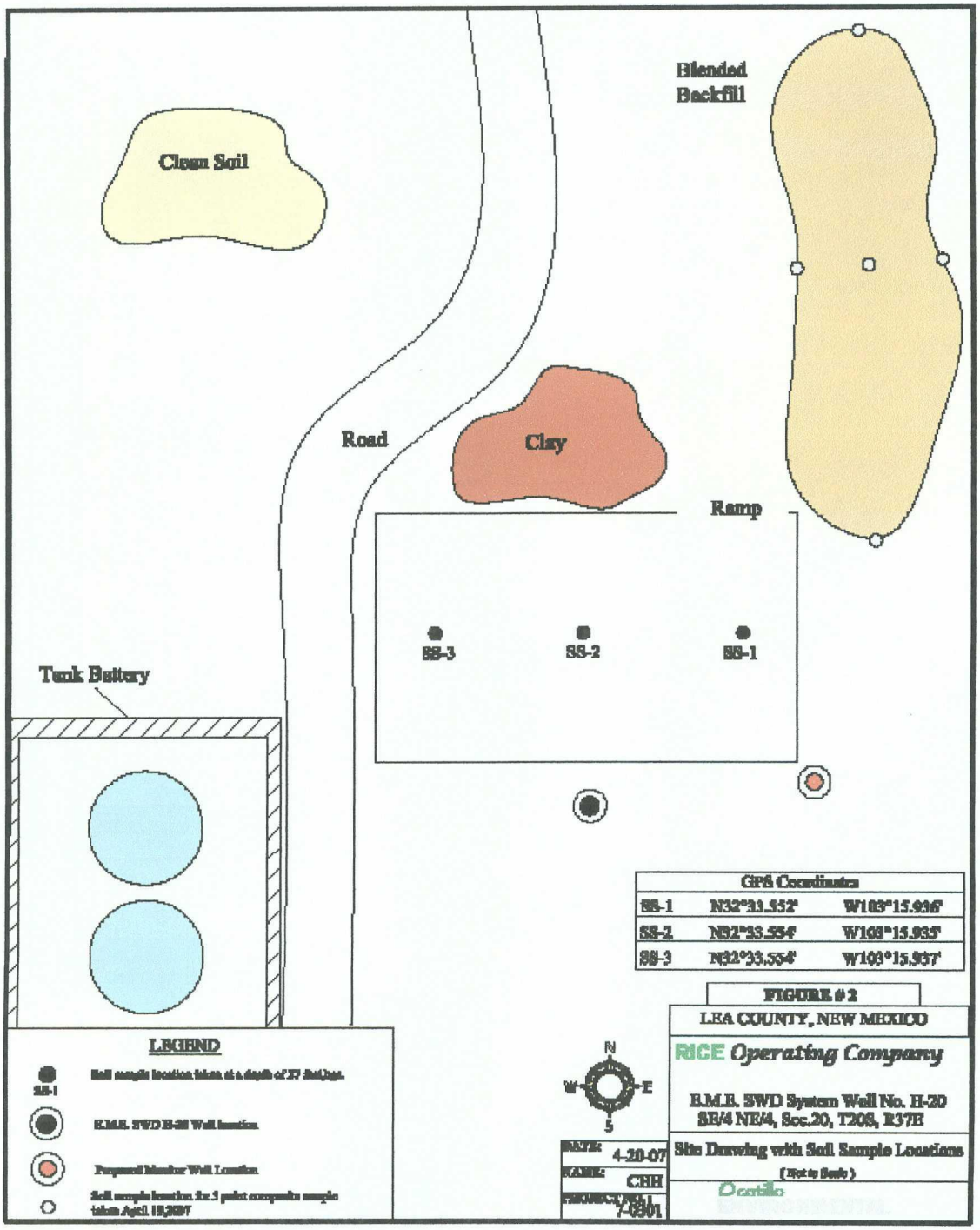


Figure 3 – Site layout, showing soil sampling and monitor well locations, excavation and soil staging areas[2].

[2] Provided by and used with permission of Rice Operating Company.

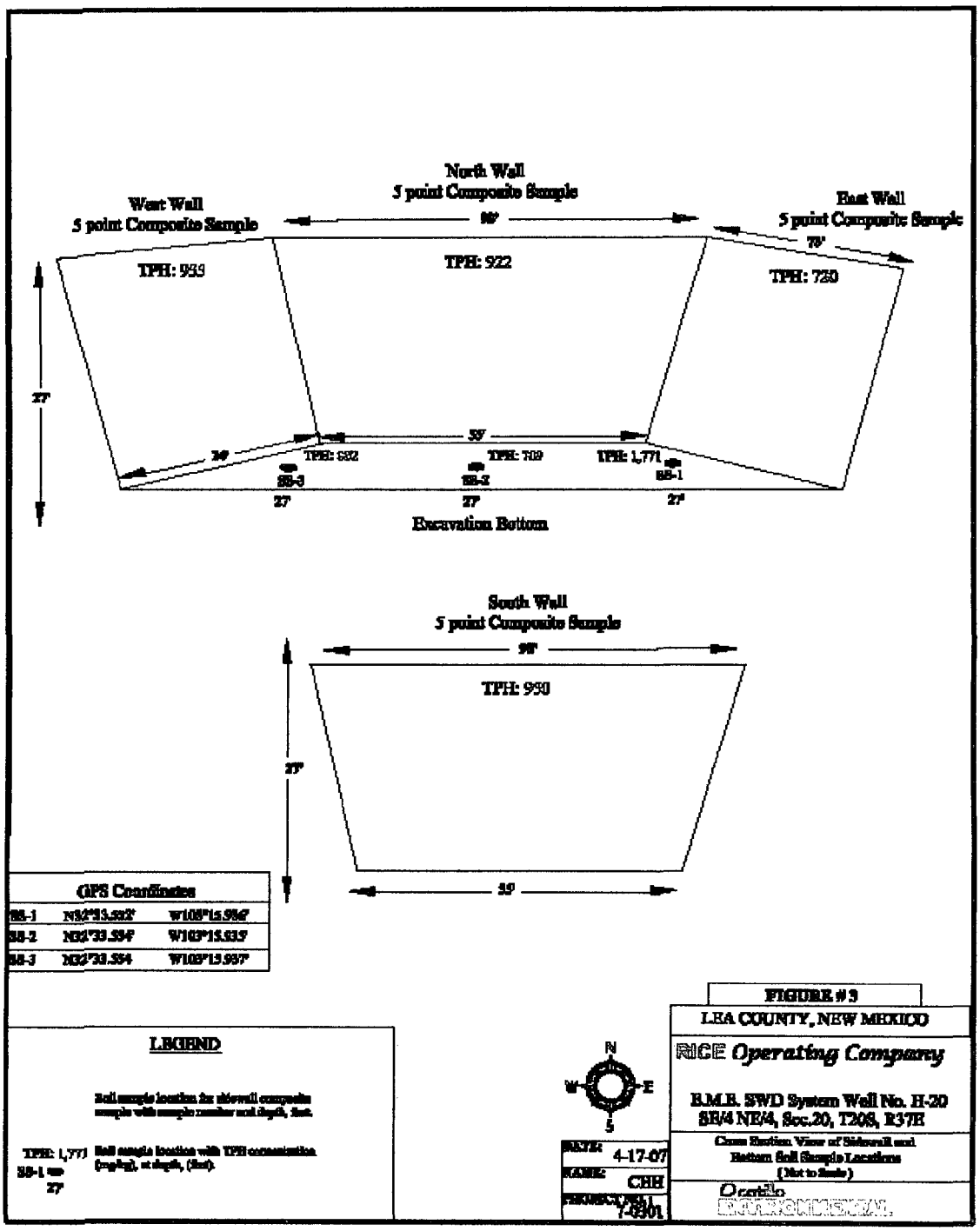


Figure 4 – Excavation wall soil test locations and results[3].

[3] Provided by and used with permission of Rice Operating Company.

FW: EME H-20 excavation Backfill approval Inbox

Haskell Conder to me 4:13 pm (5 hours ago)

From: Hansen, Edward J., EMNRD [mailto:edwardj.hansen@state.nm.us]
Sent: Monday, May 07, 2007 7:07 PM
To: Kristin Pope
Cc: Carolyn Haynes; Scott Curtis; Haskell Conder; Price, Wayne, EMNRD
Subject: RE: EME H-20 excavation Backfill approval

Dear Ms. Pope:

The New Mexico Oil Conservation Division (NMOCD) has reviewed your request for approval to backfill excavation (dated April 23, 2007 and subsequent information dated April 30, 2007) for the above referenced site. The NMOCD hereby approves the backfill request with the conditions:

1) The proposed backfilling shall be initiated by June 1, 2007, at the site.

2) The 1 foot clay layer shall be compacted to at least 95% standard Proctor density. The top 5 feet of soil shall be compacted from 80% to 90% standard Proctor density.

3) Rice Operating Company must submit a monthly summary report(s) for the site, including a backfilling completion report, a proposal for additional groundwater monitoring wells, analytical results from any samples taken at the site, etc. Upon review of the report(s), the NMOCD will determine if the submittal of an Abatement Plan will be required for the site.

Please be advised that NMOCD approval of this plan does not relieve the owner/operator of responsibility should operations pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve the owner/operator of responsibility for compliance with any NMOCD, federal, state, or local laws and/or regulations.

If you have any questions regarding this matter, please contact me at 505-476-3489.

Edward J. Hansen

Hydrologist

Figure 5- NMOCD approval of excavation backfill.

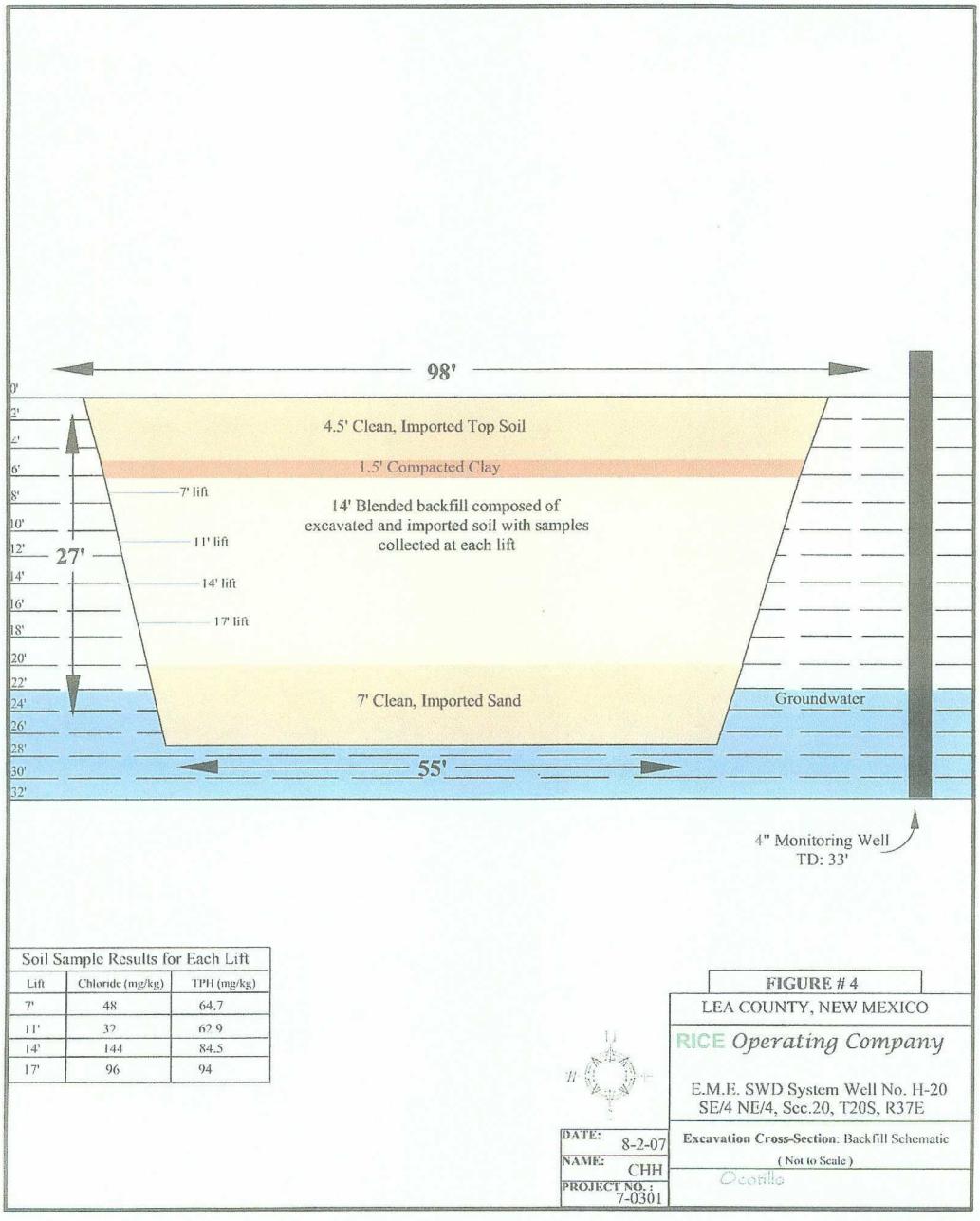


Figure 6- Schematic of excavation backfill, including compacted clay barrier[4].

[4] Provided by and used with permission of Rice Operating Company.

Appendix 1 – Photo Chronology

Photo 1- Excavation of pit at former tank locations (4/9/07).

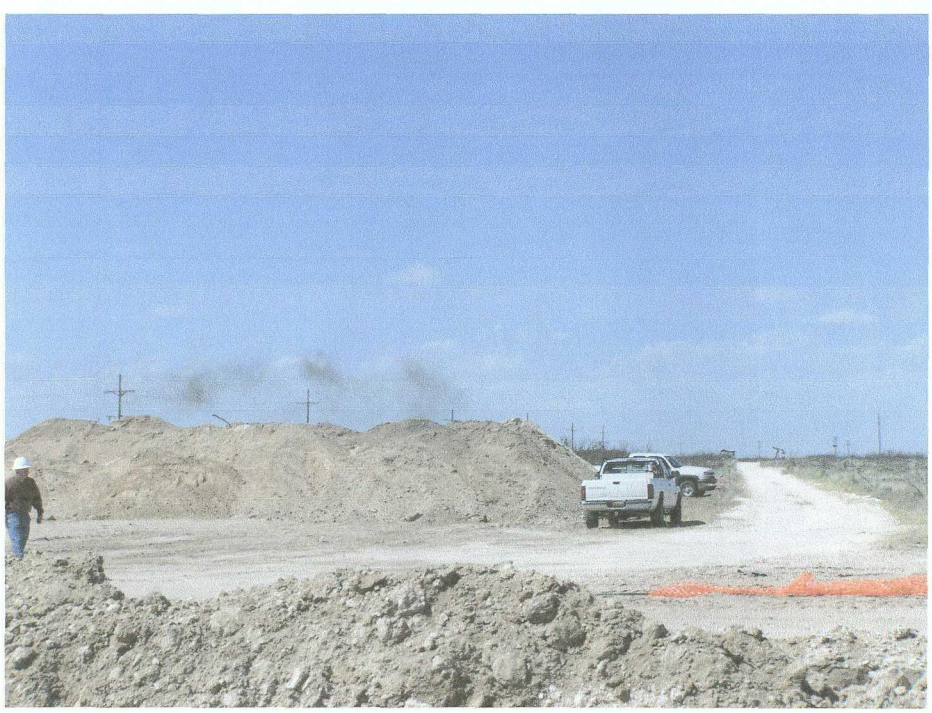


Photo 2- View of clean stockpiled soil (4/10/07).

Photo 3- Clean soil being backfilled into excavation (4/12/07).

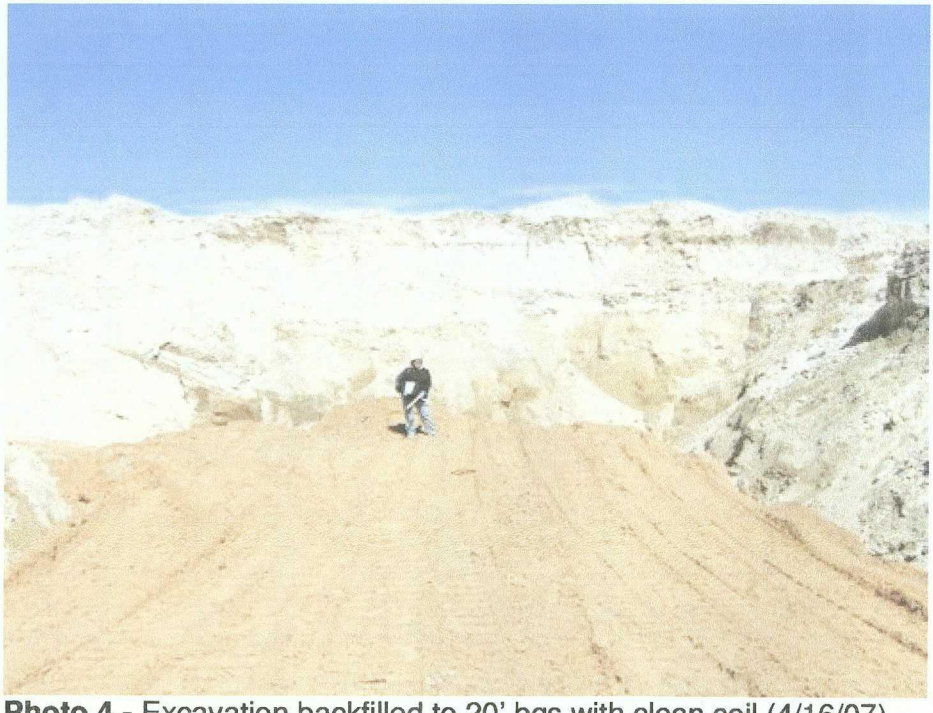


Photo 4 - Excavation backfilled to 20' bgs with clean soil (4/16/07).

Photo 5 - Excavation being backfilled with clay barrier from to 5.5 to 7 ft. bgs (5/14/07).

Photo 6 - Top of clay barrier just prior to compaction test (5/15/07).

Photo 7- Clean topsoil backfilled over clay barrier (5/17/07).

Appendix 2 – Groundwater Sampling Results

EME H-20 SWD
MW-1 Groundwater Sample Results

	organic constituents (mg/l)					inorganic constituents (mg/l)	
date	benzene	toluene	ethylbenzene	xylene	total BTEX	total dissolved solids	chloride
4/23/2007	0.0600	nd	0.0020	nd	0.0620	4,343	1,939
7/12/2007	0.0684	nd	0.0157	nd	0.0841	3,660	1,230

Table 1- Summary of groundwater analysis from on-site monitor well.

Table 2 – Laboratory report from 04/23/07 sampling event.

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-POPE
122 W. TAYLOR STREET
HOBBS, NM 88240
FAX TO: (505) 397-1471

Receiving Date: 04/23/07
Reporting Date: 04/24/07
Project Number: NOT GIVEN
Project Name: EME H-20 SWD
Project Location: T20S-R37E-SEC.20H, LEA COUNTY - NEW MEXICO

Sampling Date: 04/23/07
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		04/23/07	04/23/07	04/23/07	04/23/07
H12499-1	MONITOR WELL #1	0.060	<0.002	0.002	<0.006
Quality Control		0.104	0.104	0.105	0.293
True Value QC		0.100	0.100	0.100	0.300
% Recovery		104	104	105	97.6
Relative Percent Difference		5.1	6.2	2.6	3.1

METHOD: EPA SW-846 8260

Chemist

4/24/07
Date

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 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.

H12499 RICE

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 COMPANY
ATTN: KRISTIN FARRIS-POPE
122 W. TAYLOR STREET
HOBBS, NM 88240
FAX TO: (505) 397-1471

Receiving Date: 04/23/07
Reporting Date: 04/24/07
Project Number: NOT GIVEN
Project Name: EME H-20 SWD
Project Location: T20S-R37E-SEC. 20H, LEA COUNTY, NM

Sampling Date: 04/23/07
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: NF
Analyzed By: HM

LAB NUMBER SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (uS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:	04/23/07	04/23/07	04/23/07	04/23/07	04/23/07	04/23/07
H12499-1 MONITOR WELL #1	1387	106	137	50.3	6990	610
Quality Control	NR	51.9	49.2	1.94	1374	NR
True Value QC	NR	50.0	50.0	2.00	1413	NR
% Recovery	NR	104	98.4	97	97.2	NR
Relative Percent Difference	NR	13.8	9.5	0.5	1.1	NR
METHODS:		SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:	04/23/07	04/23/07	04/23/07	04/23/07	04/23/07	04/23/07
H12499-1 MONITOR WELL #1	1939	544	0	744	7.42	4343
Quality Control	490	23.1	NR	952	6.96	NR
True Value QC	500	25.0	NR	1000	7.00	NR
% Recovery	98	92.5	NR	95.2	99.4	NR
Relative Percent Difference	2.1	3.4	NR	1.3	0.4	NR
METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

04-24-07
Date

H12499

Table 3 – Laboratory report from 07/12/07 sampling event.

Certificate of Analysis Summary 285888

Rice Operating Co., Hobbs, NM

Project Name: EME H-20 SWD

Project Id:
Contact: Kristin Pope
Project Location: T20S R37E S26H

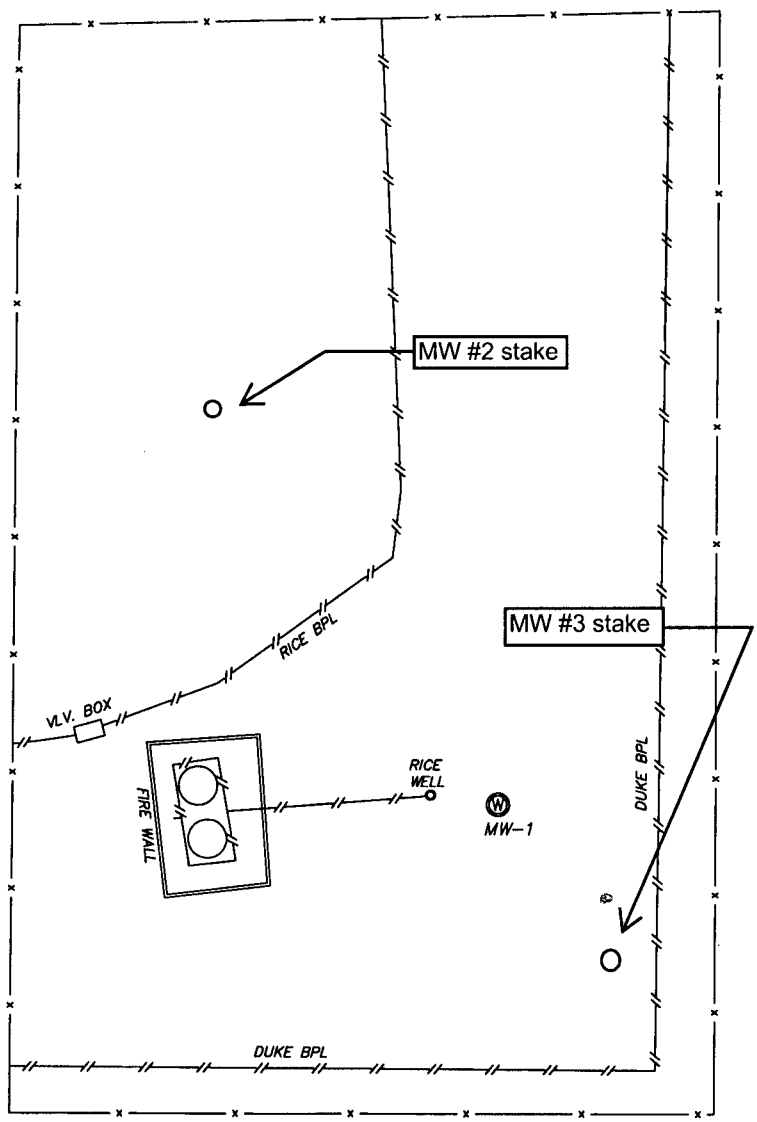
Date Received in Lab: Jul-12-07 03:25 pm
Report Date: 30-JUL-07
Project Manager: Brent Barron, II

Analysis Requested						
	Lab Id:	285888-001				
	Field Id:	Monitor Well # 1				
	Depth:					
	Matrix:	WATER				
	Sampled:	Jul-12-07 09:20				
Alkalinity by EPA 310.1	*Extracted:*					
	Analyzed:	Jul-20-07 09:30				
	Units/RL:	mg/L	RL			
Alkalinity, Total (as CaCO3)		850	4.00			
BTEX by EPA 8021B	*Extracted:*	Jul-24-07 10:00				
	Analyzed:	Jul-25-07 19:09				
	Units/RL:	mg/L	RL			
Benzene		0.0684	0.0050			
Toluene		ND	0.0050			
Ethylbenzene		0.0157	0.0050			
m,p-Xylene		ND	0.0100			
o-Xylene		ND	0.0050			
Total Xylenes		ND				
Total BTEX		0.0841				
Inorganic Anions by EPA 300	*Extracted:*					
	Analyzed:	Jul-18-07 21:48				
	Units/RL:	mg/L	RL			
Chloride		1230	25.0			
Sulfate		644	25.0			
Metals per ICP by SW846 6010B	*Extracted:*					
	Analyzed:	Jul-13-07 13:13				
	Units/RL:	mg/L	RL			
Calcium		104	0.100			
Magnesium		145	0.010			
Potassium		53.7	0.500			
Sodium		955	0.500			
Residue, Filterable (TDS) by EPA 160.1	*Extracted:*					
	Analyzed:	Jul-16-07 16:30				
	Units/RL:	mg/L	RL			
Total dissolve solids		3660	5.00			

Since 1990 Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America

Brent Barron
Odessa Laboratory Director

SECTION 20, TOWNSHIP 20 SOUTH, RANGE 37 EAST, N.M.P.M.,
LEA COUNTY, **NEW MEXICO.**



NOTE:
ELEVATIONS ARE ON BLACK MARK
ON NORTH SIDE OF PVC CASING.

NEW MEXICO STATE PLANE COORDINATES (NAD83)

WELL	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEV. PVC	ELEV. GRND	ELEV. CONC.
MW-1	568769.64	870358.86	N 32°33'32.6"	W 103°15'55.5"	3518.88'	3516.53'	3516.81'

100 0 100 200 FEET

SCALE: 1" = 100'

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES N.M. P.S. No. 7977
TEXAS R.P.L.S. No. 5074

BASIN SURVEYS P.O. BOX 1786 – HOBBS, NEW MEXICO

RICE OPERATING COMPANY

REF: EME SWD WELL H-20

MONITOR WELL LOCATED IN
SECTION 20, TOWNSHIP 20 SOUTH, RANGE 37 EAST,
N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 18080	Drawn By: J. M. SMALL		
Date: 05-08-2007	Disk: JMS 18080MW	Survey Date: 05-07-2007	Sheet 2 of 2 Sheets