1R - 428-62

# WORKPLANS

Date:
2-8-10

R. T. HICKS CONSULTANTS, LTD.
901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266.0745



February 8, 2010

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



RE: **Hobbs SWD System F-24-1 Junction Site: T-18-S, R-37-E, Section 24, Unit F, Initial Characterization Report and Corrective Action Plan**
**NMOCD CASE #: 1R428-62**

Mr. Hansen:

On behalf of Rice Operating Company (ROC), R.T. Hicks Consultants, Ltd. is submitting this Initial Characterization Report (ICR) and Corrective Action Plan (CAP) for the Hobbs Junction F-24-1 site regulatory file. The investigation conducted to date demonstrates that neither chloride nor hydrocarbons are present in the vadose zone in quantities that represent a threat to ground water quality.

**Background**
The Hobbs Junction F-24-1 site is located northwest of the city of Hobbs at T-18-S, R-37-E, Section 24, in Unit F. The pipeline and original equipment were abandoned prior to 2002. The Investigation Characterization Plan (ICP), dated February 19, 2009 and approved by the NMOCD on April 22, 2009, is provided as Attachment A to this letter. The ICP includes background information and a site vicinity map for this and five other nearby ROC sites.

**Field Program**
Hicks Consultants supervised a deep soil sampling program to characterize possible hydrocarbon and chloride impact due to past activities. On September 23, 2009, soil boring No. 1 (SB-1) was drilled adjacent to the north side of the original junction box removal excavation to evaluate the deep soil directly below the former ROC equipment.

Soil samples were collected and field screened by ROC for hydrocarbons and chloride concentrations. Figure 1 is a site map depicting the location of SB-1, the surrounding area, and all the soil sample field screening and laboratory verification results. None of the soil samples measured with a photo-ionic detector (PID) contained detectable hydrocarbons. The field titration chloride concentrations encountered in the 25-foot deep soil boring ranged from 151 to 153 mg/kg, which corresponds to a laboratory concentration of <16 mg/kg. These field test results indicate that regulated hydrocarbons and chlorides are not present in the soil at concentrations that represent a threat to fresh water, human health, or the environment. Attachment B provides a soil lithology log including the field hydrocarbon and chloride screening data. Attachment C provides the laboratory report and chain of custody for verification of the September 23, 2009 field data.

**Recommendations**
We recommend surface restoration at the site, with work including:

- Removal of plumbing, excavated caliche, and large rocks,
- Backfilling the site with clean topsoil,
- Seeding the area with native seed mixes.

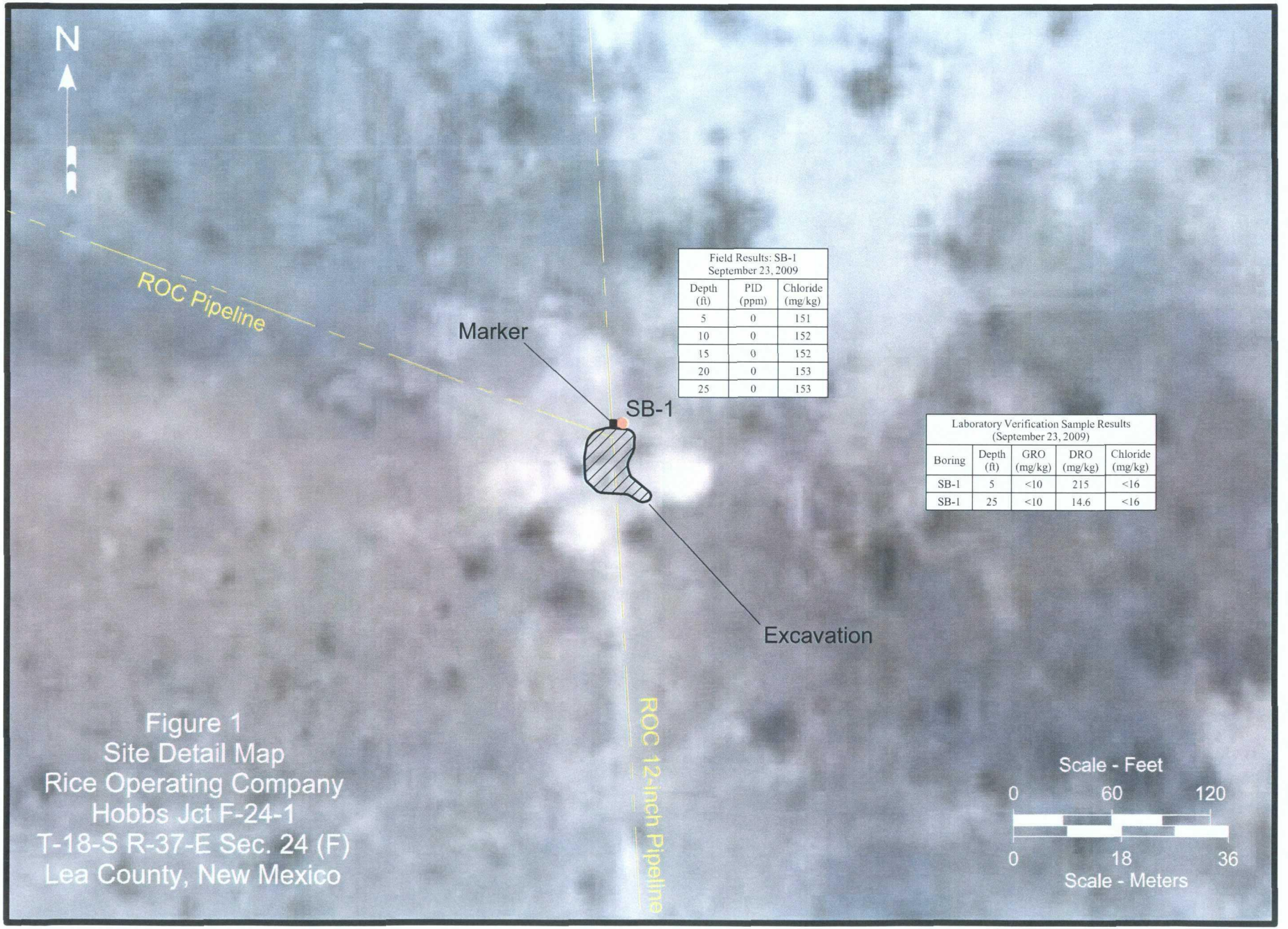
Once these activities are completed and documented, a termination of the regulatory file will be requested.

Please contact Hack Conder of ROC at 575-393-9174 if you have any questions concerning this submission. Thank you for your time and consideration.

Sincerely,
R.T Hicks Consultants, Ltd.

Dale T Littlejohn
Geologist

Copy: Hack Conder, ROC




| Field Results: SB-1 September 23, 2009 | | |
|---|---|---|
| Depth (ft) | PID (ppm) | Chloride (mg/kg) |
| 5 | 0 | 151 |
| 10 | 0 | 152 |
| 15 | 0 | 152 |
| 20 | 0 | 153 |
| 25 | 0 | 153 |

| Laboratory Verification Sample Results (September 23, 2009) | | | | |
|---|---|---|---|---|
| Boring | Depth (ft) | GRO (mg/kg) | DRO (mg/kg) | Chloride (mg/kg) |
| SB-1 | 5 | <10 | 215 | <16 |
| SB-1 | 25 | <10 | 14.6 | <16 |

Figure 1
Site Detail Map
Rice Operating Company
Hobbs Jct F-24-1
T-18-S R-37-E Sec. 24 (F)
Lea County, New Mexico

# ATTACHMENT A

**Investigation Characterization Plan**
**Submitted on February 19, 2009**

# R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745


February 19, 2009

Mr. Brad Jones
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Investigation & Characterization Plan
Hobbs Salt Water Disposal System:
Jct. A-6, F-24-3 Vent, F-25 EOL, G-9 Vent, Jct. A-25, Jct. F-24-1
T18S, R37E, Sections 24 & 25, and T19S, R38E Sections 6 & 9

Dear Mr. Jones:

On behalf of Rice Operating Company (ROC), R.T. Hicks Consultants, Ltd. is pleased to submit this Investigation & Characterization Plan (ICP) for the six (6) junction box and vent sites within the Hobbs Salt Water Disposal System referenced above. Plate 1 is a map showing the sites relative to major roads in the area. Plate 2 shows the sites, nearby USGS monitoring wells, and a regional potentiometric surface map.

The work elements proposed below will allow us to characterize these sites and develop an appropriate corrective action plan.

1. ROC will identify and document the location of all current and historic equipment and pipelines associated with each site.
2. ROC will use a backhoe with a 12-foot vertical reach to install a series of sampling trenches in order to recover soil samples and delineate the lateral extent (and potentially the vertical extent) of impacted soil.
3. If characterization by the backhoe is insufficient to define the extent and magnitude of past releases, ROC and Hicks Consultants will use a drilling rig to install one soil boring at the center of the source area to delineate the vertical extent of chloride in the soil.
4. Soil samples obtained by the backhoe or drilling rig will be obtained from regular intervals below ground surface.
5. Representative soil samples will be sent to a laboratory to allow for verification of the field chloride and PID results.
6. General soil texture descriptions will be provided for each sample trench or boring.
7. The criteria to delineate the extent of impact during trenching as well as in a soil boring is 5 point chloride decline vs. depth, or:
   a. After three consecutive samples demonstrate <250 ppm chloride using field analyses and <100 ppm total hydrocarbon vapors using the headspace method (see attached ROC Quality Procedure in Appendix A), or
   b. After five consecutive samples show a decreasing trend of chloride and hydrocarbons and the last sample shows chloride < 250 ppm and total hydrocarbon vapors <100 ppm (Appendix A).
   c. Soil boring to capillary fringe should neither (a) or (b) apply

8. If the boring penetrates the capillary fringe, a monitoring well will be completed with a 2 or 4" diameter casing 25 feet down gradient from confirmed impact for use during possible corrective actions. Plate 2 presents a potentiometric surface map for the site area.
9. If field analysis of hydrocarbon vapors and observations of staining show that hydrocarbon impact is unlikely at the site or below 20-feet, collection of samples from cuttings may be substituted for split spoon sampling (chloride only).

The ROC trench characterization will be employed to identify the lateral extent of chloride at each site, if possible. If trenching does not fully characterize the lateral extent of chloride at each site, boreholes will be advanced 20 feet beyond the furthest trenches where the soil data has an average chloride concentration greater than 1,000 mg/kg. The total depth of borings installed to characterize lateral extent shall be 20 feet below ground surface with soil samples for delineation taken at 5 foot intervals.

Rice Operating Company (ROC) is the service provider (agent) for the Hobbs Saltwater Disposal System and has no ownership of any portion of pipeline, well, or facility. A consortium of oil producers who own the Hobbs System (System Partners) provide all operating capital on a percentage ownership/usage basis. Major projects require System Partner authorization for expenditures (AFE) approval and work begins as funds are received. We will implement the work outlined herein after NMOCD approval and subsequent authorization from the System Partners. The Hobbs SWD system is in abandonment.

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

1. Protects public health.
2. Provides the greatest net environmental benefit.
3. Complies with NMOCD Rules.
4. Is supported by good science.

Following the site characterization described above, a Corrective Action Plan with the data and analysis supportive of a procedure for site file termination, or a termination request will be submitted, depending on characterization findings. Quality Procedures for characterization work are provided in Appendix A.

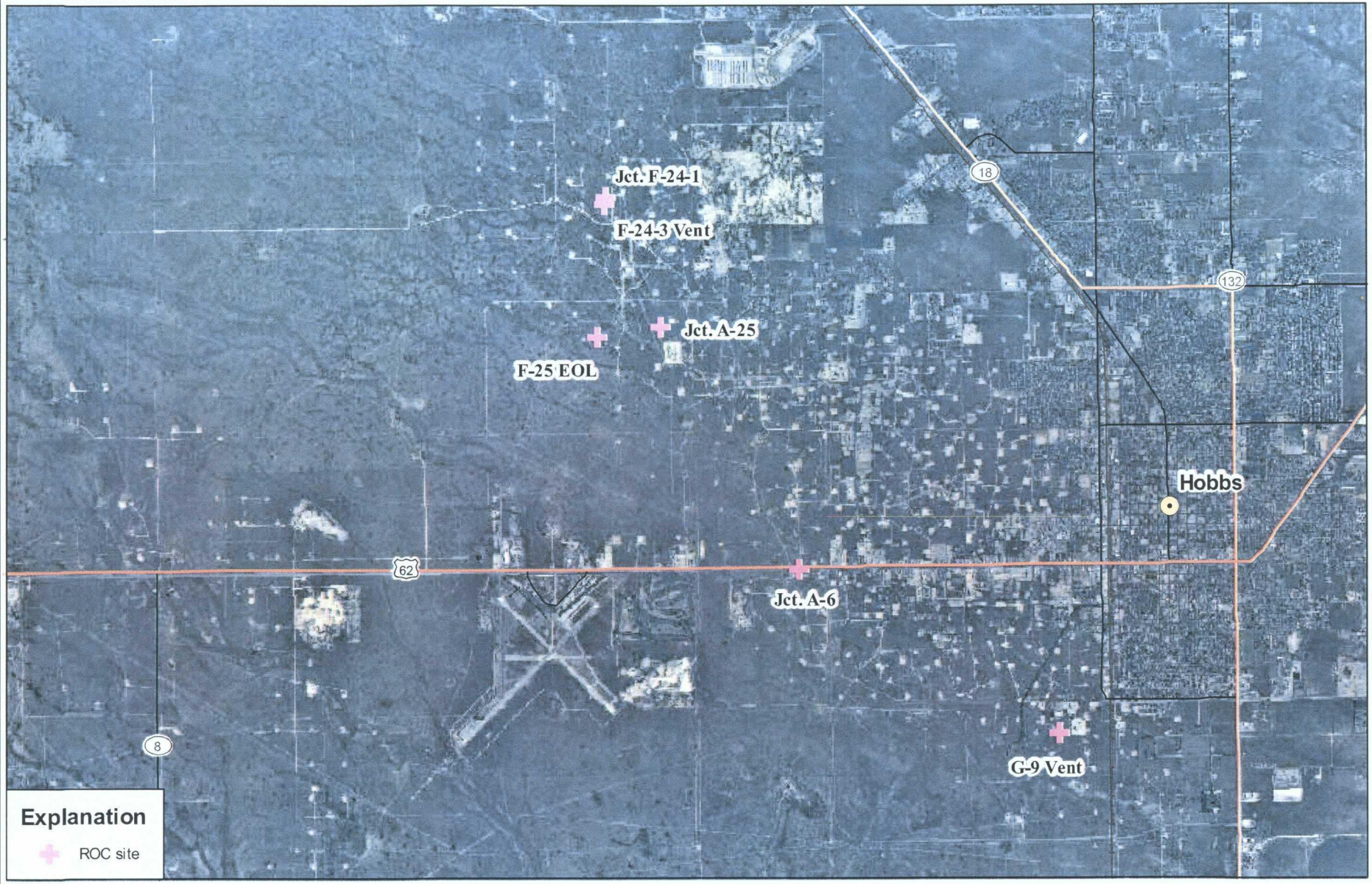
If you have any questions or comments regarding this ICP, please contact me at our Albuquerque office or Hack Conder of Rice Operating Company.

Sincerely,
R.T. Hicks Consultants, Ltd.

Katie Lee

Katie Lee
Project Scientist

Copy: Rice Operating Company
Edward J. Hansen, NMOCD

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R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Site Map - 2005 Aerial Photo (RGIS)
Jct. A-6, Jct. A-25, Jct. F-24-1, Jct. F-24-3 Vent, G-9 Vent

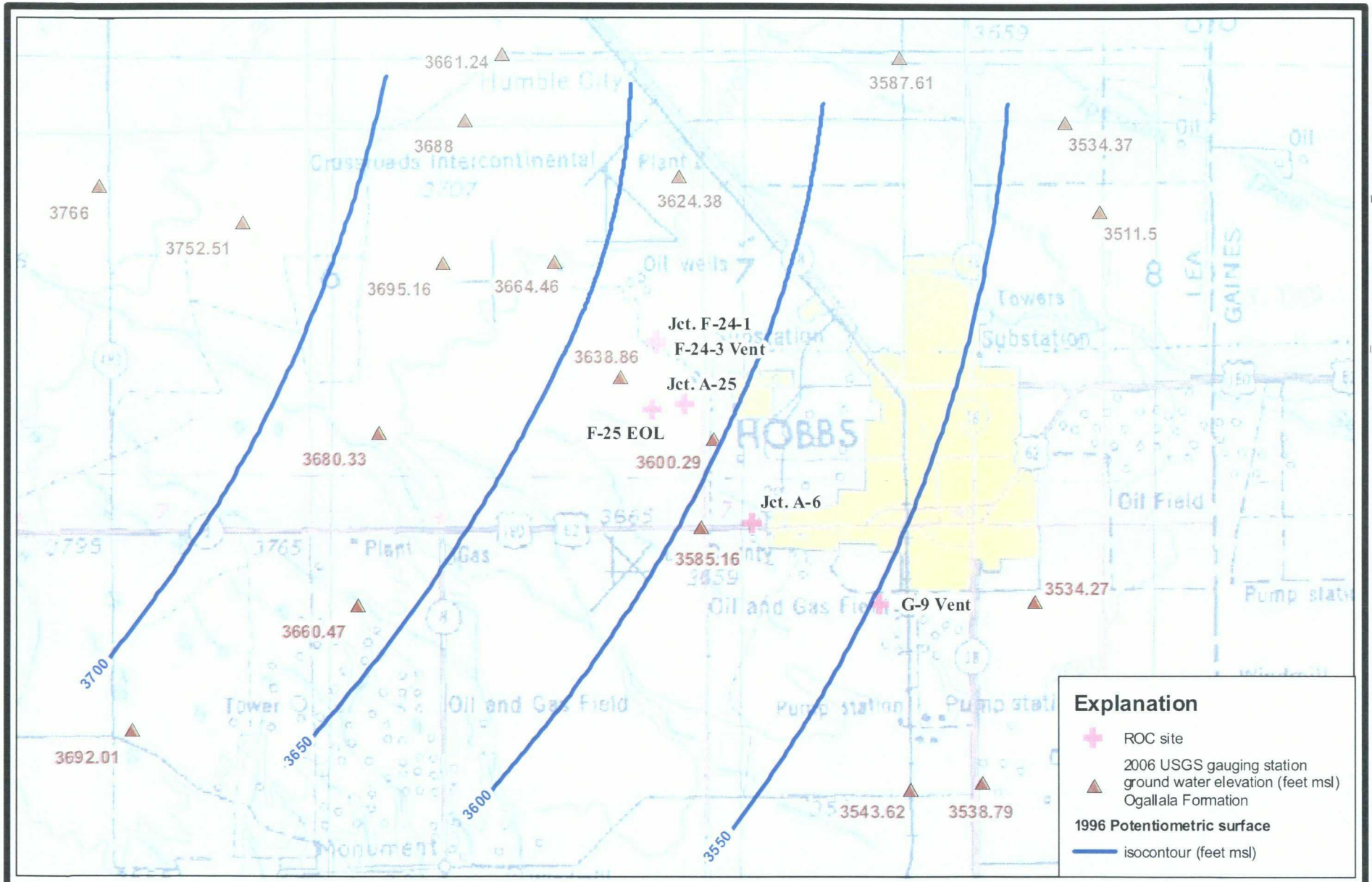
Plate 1

Rice Operating Company
2009 Hobbs Investigation and Characterization Plan

January 2009

S:/PROJECTS/ROC/SIX SITES_2009/PLATES/GWELEV_USGS.MXD

1/28/2009

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Albuquerque, NM 87104
Ph: 505.266.5004

2006 Potentiometric Surface Map
Jct. A-6, Jct. A-25, Jct. F-24-1, Jct. F-24-3 Vent, G-9 Vent

Plate 2

Rice Operating Company
2009 Hobbs Investigation and Characterization Plan

January 2009

1/28/2009

S:/PROJECTS/ROC/SIXSITES_2009/PLATES/GWELEV_USGS.MXD

# ATTACHMENT B

**Lithology Log from Soil Boring (Vertical Delineation)**
**Conducted by ROC and RTH in September 2009**

| | |
|---|---|
| **Logger:** | Dale Littlejohn |
| **Driller:** | Harrison & Cooper, Inc. Drilling |
| **Consultant:** | R.T. Hicks, Consultants |
| **Drilling Method:** | Air rotary |
| **Start Date:** | 9/23/2009 |
| **End Date:** | 9/23/2009 |

**Comments:** All samples from cuttings; too hard to split spoon
Located at source of former junction box site.

**Drafted by: Lara Weinheimer**

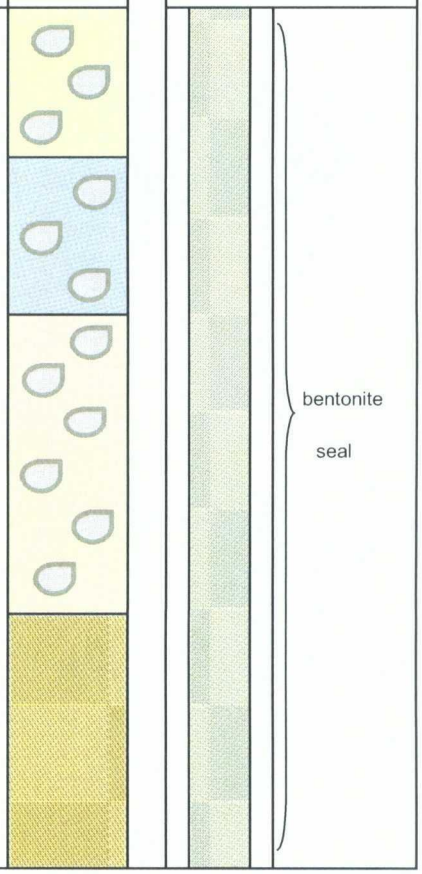
TD = 25 ft GW = 48 ft

RICE OPERATING COMPANY ROC SINCE 1955

**Project Name:** Hobbs jct. F-24-1 **Well ID:** SB #1

**Location:** UL/F sec. 24 T18S R37E
**Lat:** N32°44'9.826" **County:** Lea
**Long:** W103°12'25.869" **State:** NM

| Depth (feet) | chloride field tests | LAB | PID | Description |
|---|---|---|---|---|
| | | | | 0 - 5 ft |
| | | | | SILT AND CALICHE |
| 5 | 151 | | 0 | light grayish brown, no odor |
| | | | | 5 - 10 ft |
| | | | | SILT AND CALICHE |
| 10 | 152 | | 0 | gray, no odor |
| | | | | 10 - 20 ft |
| | | | | SILT AND CALICHE |
| 15 | 152 | | 0 | yellowish gray, no odor |
| 20 | 153 | | 0 | |
| | | | | 20 - 25 ft |
| | | | | SILTY SAND |
| 25 | 153 | | 0 | light brown, poorly sorted, angular, no odor |



# ATTACHMENT C

## Laboratory Reports and Chain-of-Custody Documentation

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
RICE OPERATING COMPANY
ATTN: HACK CONDER
122 W. TAYLOR
HOBBS, NM 88240
FAX TO: (575) 397-1471

Receiving Date: 09/24/09
Reporting Date: 09/25/09
Project Owner: NOT GIVEN
Project Name: HOBBS JCT. F-24-1
Project Location: NOT GIVEN

Sampling Date: 09/23/09
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AB
Analyzed By: AB/HM

| LAB NUMBER | SAMPLE ID | GRO ($C_6$-$C_{10}$) (mg/kg) | DRO (>$C_{10}$-$C_{28}$) (mg/kg) | Cl* (mg/kg) |
|---|---|---|---|---|
| ANALYSIS DATE | | 09/25/09 | 09/25/09 | 09/24/09 |
| H18314-1 | SB 1 5' | <10.0 | 215 | <16 |
| H18314-2 | SB 1 25' | <10.0 | 14.6 | <16 |
| | | | | |
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| | | | | |
| | | | | |
| Quality Control | | 438 | 443 | 490 |
| True Value QC | | 500 | 500 | 500 |
| % Recovery | | 87.6 | 88.6 | 98.0 |
| Relative Percent Difference | | 0.6 | 1.6 | 2.0 |

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

Chemist

09/25/09
Date

H18314 TCL RICE

# 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 | **BILL TO** | |
| Project Manager: | HACK CONDER | P.O. #: | |
| Address: | 122 W. TAYLOR | Company: | |
| City: | HOBBS State: NM Zip: 88240 | Attn: | |
| Phone #: | 575 393 9174 Fax #: 397 1471 | Address: | |
| Project #: | Project Owner: | City: | |
| Project Name: | HOBBS JCT F-24-1 | State: Zip: | |
| Project Location: | | Phone #: | |
| Sampler Name: | Tony Cruzo | 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 | CHLORIDE | TPH 8015M | | | | | | | | | | | | |
| H18314-1 | SB 1 5' | G | 1 | | | ✓ | | | | | ✓ | | 9/23/09 | 1:13 | ✓ | ✓ | | | | | | | | | | | | |
| -2 | SB 1 25' | C | 1 | | | ✓ | | | | | ✓ | | 9/23/09 | 1:26 | ✓ | ✓ | | | | | | | | | | | | |

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: | Date: 9/24/09 | Received By: | Phone Result: | ☐ Yes | ☐ No |
| | Time: 7:30a | | Fax Result: | ☐ Yes | ☐ No |
| Relinquished By: | Date: | Received By: | REMARKS: email results: jpurvis@ricenm.com, lweinheimer@ricenm.com, hconder@ricenm.com | | |
| | Time: | | | | |
| Delivered By: (Circle One) Sampler - UPS - Bus - Other: | | Sample Condition Cool: ☒ Yes ☐ No Intact: ☒ Yes ☐ No | CHECKED BY: (Initials) | | |

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

Rush!!