

**AP - 049**

**CLOSURE REPORT**

**DATE:**

**12-12-2002**

# RICE Operating Company

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

AP-49  
Closure Report  
12-12-02

## CERTIFIED MAIL RETURN RECEIPT NO. 7000 1530 0005 9895 4633

December 12, 2002

Mr. Wayne Price  
NM Energy, Minerals, and Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

RE: REDWOOD TANK AND EMERGENCY PIT CLOSURE REPORT FOR  
JUSTIS SWD FACILITY H-2  
Letter H, Sec. 2, T26S, R37E  
Lea County, New Mexico  
NMOCD Case # 1R0333

Mr. Price: ~~then~~ 1R423-01  
now AP-49

Rice Operating Company (ROC) petitions the NMOCD for closure of the excavation portion of the below grade redwood tank and emergency overflow pit sites at the Justis Salt Water Disposal Facility SWD Well H-2, located in Unit Letter H, Sec 2, T26S, R37E, Lea County, NM.

ROC is the service provider (operator) for the Justis Salt Water Disposal System and has no ownership of any portion of the pipeline, well or facility. The Justis System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis. Closure projects require System Partner AFE approval and work begins as funds are received. The System Partners approved the Closure Project for the SWD H-2 Facility and work was started in November 2001.

The final excavation of the redwood tank and the emergency overflow pit sites resulted in TPH and BTEX levels at bottom and sides that are below the recommended guidelines for vadose zone impact when a Total Ranking Score is 0. Groundwater in this area is 120 feet bgs. The sampling results are attached. All closure samples were verified by a certified lab.

This facility is located on Fee Land owned by George Willis. The 2.5 acre site lease agreement has been in effect since 1998.

While performing vertical delineation at this site, the soil boring indicated ground water might be salt impacted. Three monitor wells were installed and found ground water to be impacted with salt under the site. The NMOCD was notified of the ground water impact in January, 2002. The notification letter is enclosed. ROC will determine the criteria needed to produce a Stage 2 Abatement Plan and submit the plan to the NMOCD for approval. There are presently three monitor wells at this location. Quarterly samples have been taken and analyzed by a certified lab. The results are included in this report. Samples are tested for major cations and anions as well as BTEX. ROC will submit an annual report on the sampling results to the NMOCD by the first of March of the subsequent year. Foreseeable future use of the groundwater in this area is limited to agriculture, including livestock watering.

ROC is applying for closure of the excavation at the H-2 Facility and is submitting the Excavation Closure Report and supplemental collected data. Thank you for your consideration of this closure request.

If you have any questions, please call.

RICE OPERATING COMPANY



Donnie Anderson  
Project Leader – Environmental

Enclosures      Excavation Closure Report H-2 SWD Facility

Cc: CDH,file,    Mr. Chris Williams  
                         NMOCD, District 1 Office  
                         1625 French Drive  
                         Hobbs, NM 88240

George Willis  
P. O. Box 307  
Jal, NM 88252

# RICE Operating Company

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

December 12, 2002

George Willis  
P. O. Box 307  
Jal, NM 88252

RE: JUSTIS SWD Facility H-2 Upgrade  
Unit Letter H, Section 2-T26S-R37E  
Lea County, NM

Dear Mr. Willis,

Rice Operating Company (ROC) has completed the upgrade on the Justis SWD H-2 facility. We appreciate the opportunity to work with you to complete this project. It is our goal to keep you informed of situations that arise during routine operations concerning the land that we lease for facilities.

Attached please find a copy of the Closure Report sent to the NMOCD for approval.

Again, ROC appreciates working with you on this project. If you have any questions, comments or concerns, please feel free to call.

Sincerely,



Donnie Anderson  
Project Leader-Environmental

Cc: CDH, files  
Enclosures: H-2 Closure Report

# *RICE Operating Company*

## **Executive Summary H-2 SWD Remediation Project**

### **Location**

The Justis H-2 SWD Facility is situated approximately 4 miles southeast of Jal, New Mexico. The legal description of the site is Unit Letter H, Section 2, T26S, R37E. Maps and driving instructions to the site are enclosed.

### **Site History**

The site is used as a flow-through collection and injection facility for salt-water disposal of the Justis Salt Water Disposal System. The facility used one 28' diameter below-grade redwood tank as a flow-through collection vessel. This tank was replaced with two above-ground 500 bbl tanks and a 140 bbl overflow tank. There was an emergency overflow pit at this site.

The SWD Well H-2 is located at this site. This facility is an active disposal facility. A map of the facility is included in this report.

### **Land Use**

The facility is located on Fee Land owned by George Willis. The 2.5 acre site lease agreement has been in effect since 1998. The primary use of this land is oil and gas production. The topography is unremarkable.

### **Distance to Surface and Ground Water**

There are no domestic water wells within 200' of the facility. There are no windmills, water pumps, or surface waters within 1000' of the facility. The vertical distance to groundwater at this site is 120' bgs.

### **Tank Area Site Investigation**

The tank area was initially delineated using soil borings. Soil samples were collected and analyzed in the field for the presence and concentrations of hydrocarbons and chlorides from surface to 120' bgs. The results of these tests prompted the installation of three monitor wells. The wells are located at the site of the redwood tank, northwest 147' and southeast 144'. A schematic of the wells' locations is included.

Samples from the wells found chloride levels above the WQCC standard at the source and in the northwest monitor well, but no BTEX was present. The southeast monitor well results were under WQCC standards. The NMOCD was informed of the groundwater impact in January, 2002.

### **Tank and Emergency Pit Area Remediation**

Excavation of the tank area began in November, 2001 after the construction of the new facility was completed. Impact under the tanks reached to groundwater at 120' bgs. Impacted soil was excavated to 12' bgs. A total of 110 cubic yards of highly impacted soil was hauled to Sundance Services for disposal and the remainder was land-farmed onsite. Bottom and wall composites were taken and sent to a certified lab for verification. Closure sample results of the bottom and wall composites are included in this report. A 20 mil poly liner, 115' by 70' was installed at 12' bgs. The land-farmed, remediated soil was used to backfill the excavation. A composite sample of the remediated soil was sent to a certified lab for analysis. The results are enclosed. The site was contoured to ensure rainfall drainage away from the area above the poly liner. Permanent signs will be installed above the poly liner, warning of its existence and location.

The monitor wells are sampled and analyzed quarterly. These results are included in this report. Research and data for a Stage 2 Abatement Plan is presently being compiled. The plan will be submitted to the NMOCD for approval.

District I

1625 N. French Drive, Hobbs, NM 88240

District II

811 South First, Artesia, NM 88210

District III

1000 Rio Brazos, Aztec, NM 87410

District IV

2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department  
**OIL CONSERVATION DIVISION**  
2040 South Pacheco  
Santa Fe, NM 87505

Submit 1 copy to  
Appropriate District  
Office and 1 copy to  
Santa Fe Office

PIT REMEDIATION AND CLOSURE REPORT

Operator: <u>RICE OPERATING COMPANY</u> Telephone: <u>505-393-9174</u>										
Address: <u>122 West Taylor, Hobbs, NM 88240</u>										
Facility or: <u>JUSTIS SWD WELL H-2 FACILITY</u> Well Name										
Location: Unit or Qtr/Qtr Sec <u>Unit Letter</u> H Sec <u>        </u> T <u>26S</u> R <u>37E</u> County <u>LEA</u>										
Pit type: Separator <u>        </u> Dehydrator <u>        </u> Other <u>Below Grade Redwood Tanks</u>										
Land Type: BLM <u>        </u> State <u>        </u> Fee <u>X</u> Other <u>        </u>										
Pit Location Pit Dimensions: length <u>        </u> width <u>28'</u> depth <u>8'</u> (Attach diagram)										
Reference: wellhead <u>        </u> other <u>        </u>										
Footage from reference: <u>see diagram in report</u>										
Direction from reference: <u>        </u> Degrees <u>        </u> East North <u>        </u> of <u>        </u> West South <u>        </u>										
<b>Depth to Ground Water</b> (Vertical distance from contaminants to seasonal high water elevation of ground water)	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Less than 50 feet</td> <td style="width: 20%;">(20 points)</td> <td style="width: 30%;"></td> </tr> <tr> <td>50 feet to 99 feet</td> <td>(10 points)</td> <td></td> </tr> <tr> <td>Greater than 100 feet</td> <td>( 0 points)</td> <td style="text-align: right;"><u>0</u></td> </tr> </table>	Less than 50 feet	(20 points)		50 feet to 99 feet	(10 points)		Greater than 100 feet	( 0 points)	<u>0</u>
Less than 50 feet	(20 points)									
50 feet to 99 feet	(10 points)									
Greater than 100 feet	( 0 points)	<u>0</u>								
<b>Wellhead Protection Area</b> (Less than 200 feet from a private domestic water source, or, less than 1000 feet from all other water sources)	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Yes</td> <td style="width: 20%;">(20 points)</td> <td style="width: 30%;"></td> </tr> <tr> <td>No</td> <td>( 0 points)</td> <td style="text-align: right;"><u>0</u></td> </tr> </table>	Yes	(20 points)		No	( 0 points)	<u>0</u>			
Yes	(20 points)									
No	( 0 points)	<u>0</u>								
<b>Distance to Surface Water:</b> (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Less than 200 feet</td> <td style="width: 20%;">(20 points)</td> <td style="width: 30%;"></td> </tr> <tr> <td>200 feet to 1000 feet</td> <td>(10 points)</td> <td></td> </tr> <tr> <td>Greater than 1000 feet</td> <td>( 0 points)</td> <td style="text-align: right;"><u>0</u></td> </tr> </table>	Less than 200 feet	(20 points)		200 feet to 1000 feet	(10 points)		Greater than 1000 feet	( 0 points)	<u>0</u>
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Greater than 1000 feet	( 0 points)	<u>0</u>								
<b>RANKING SCORE (TOTAL POINTS):</b> <u>0</u>										

Date Remediation Started: November 6, 2001 Date Completed: October 4, 2002

Remediation Method: Excavation yes Approx. cubic yards 3500 excavated

(Check all appropriate sections)

Landfarmed 3400 cu yds In-situ Bioremediation no

Other \_\_\_\_\_

Remediation Location: Onsite Yes Offsite \_\_\_\_\_

(ie.: landfarmed onsite, name and location of offsite facility)

General Description of Remedial Action: Excavated redwood tank area to 12' bgs. Hauled 110 cubic yards of highly impacted soil to licensed disposal system. Installed 20 mil poly liner and backfilled with remediated soil.

Contoured to surrounding terrain. There are three monitor wells at this location.

**\*Facility site completion date was October 4, 2002.**

Ground Water Encountered: No \_\_\_\_\_ Yes XX Depth 120' BGS

Final Pit Closure Sampling (if multiple samples, attach sample results and diagram of sample locations and depths)

Sample location Composite samples of sidewalls and bottom.

Analyticals, CoC, etc. are included in this closure package.

Sample depth Bottom: 12' feet BGS

Sample date September 27, 2002 Sample time \_\_\_\_\_

Sample Results

Benzene (ppm) See report analytical results

Total BTEX (ppm) See report analytical results

Field headspace (ppm) \_\_\_\_\_

TPH See report analytical results

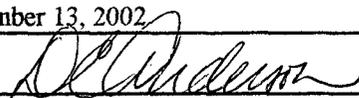
Ground Water Sample: Yes XX No \_\_\_\_\_ (If yes, attach sample results)

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

DATE November 13, 2002

PRINTED NAME Donnie Anderson

SIGNATURE



TITLE Project Leader-Environmental

District I

1625 N. French Drive, Hobbs, NM 88240

District II

811 South First, Artesia, NM 88210

District III

1000 Rio Brazos, Aztec, NM 87410

District IV

2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department  
**OIL CONSERVATION DIVISION**  
2040 South Pacheco  
Santa Fe, NM 87505

Submit 1 copy to  
Appropriate District  
Office and 1 copy to  
Santa Fe Office

PIT REMEDIATION AND CLOSURE REPORT

Operator: <u>RICE OPERATING COMPANY</u> Telephone: <u>505-393-9174</u>										
Address: <u>122 West Taylor, Hobbs, NM 88240</u>										
Facility or: <u>JUSTIS SWD WELL H-2 FACILITY</u> Well Name _____										
Location: Unit or Qtr/Qtr Sec <u>Unit Letter H Sec 2 T 26S R 37E</u> County <u>LEA</u>										
Pit type: Separator _____ Dehydrator _____ Other <u>Emergency Overflow Pit</u>										
Land Type: BLM _____ State _____ Fee <u>X</u> Other _____										
Pit Location Pit Dimensions: length <u>56'</u> width <u>38'</u> depth <u>3.5'</u> (Attach diagram)										
Reference: wellhead _____ other _____										
Footage from reference: <u>see diagram in report</u>										
Direction from reference: _____ Degrees _____ East North _____ of _____ West South _____										
<b>Depth to Ground Water</b> (Vertical distance from contaminants to seasonal high water elevation of ground water)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Less than 50 feet</td> <td style="width: 20%;">(20 points)</td> <td style="width: 30%;"></td> </tr> <tr> <td>50 feet to 99 feet</td> <td>(10 points)</td> <td></td> </tr> <tr> <td>Greater than 100 feet</td> <td>( 0 points)</td> <td style="text-align: right;"><u>0</u></td> </tr> </table>	Less than 50 feet	(20 points)		50 feet to 99 feet	(10 points)		Greater than 100 feet	( 0 points)	<u>0</u>
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(Check all appropriate sections)

Landfarmed 3400 cu yds

In-situ Bioremediation no

Other \_\_\_\_\_

Remediation Location: Onsite Yes Offsite \_\_\_\_\_

(ie.: landfarmed onsite, name and location of offsite facility)

General Description of Remedial Action: Excavated emergency pit area to 12' bgs. Hauled 110 cubic yards of highly impacted soil to licensed disposal system. Installed 20 mil poly liner and backfilled with remediated soil.

Contoured to surrounding terrain. There are three monitor wells at this location.

**\*Facility site completion date was October 4, 2002.**

Ground Water Encountered: No \_\_\_\_\_ Yes XX Depth 120' BGS

Final Pit Closure Sampling (if multiple samples, attach sample results and diagram of sample locations and depths)

Sample location Composite samples of sidewalls and bottom.

Analyticals, CoC, etc. are included in this closure package.

Sample depth Bottom: 12' feet BGS

Sample date September 27, 2002 Sample time \_\_\_\_\_

Sample Results

Benzene (ppm) See report analytical results

Total BTEX (ppm) See report analytical results

Field headspace (ppm) \_\_\_\_\_

TPH See report analytical results

Ground Water Sample: Yes XX No \_\_\_\_\_ (If yes, attach sample results)

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

DATE November 13, 2002

PRINTED NAME Donnie Anderson

SIGNATURE \_\_\_\_\_

TITLE Project Leader-Environmental

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
**District II**  
1301 W. Grand Ave., Artesia, NM 88210  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
**District IV**  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-025-12801
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other SWD Well <input type="checkbox"/>		5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>
2. Name of Operator RICE OPERATING COMPANY		6. State Oil & Gas Lease No.
3. Address of Operator 122 W. TAYLOR, HOBBS, NM 88240		7. Lease Name or Unit Agreement Name: Justis SWD System
4. Well Location Unit Letter <u>H</u> : 1980 feet from the <u>NORTH</u> line and <u>660</u> feet from the <u>EAST</u> line Section <u>2</u> Township <u>26S</u> Range <u>37E</u> NMPM LEA County		8. Well No. H-2
10. Elevation (Show whether DR, RKB, RT, GR, etc.) 3025' GL; 3033' KB		9. Pool name or Wildcat SAN ANDRES

11. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

- PERFORM REMEDIAL WORK  PLUG AND ABANDON   
 TEMPORARILY ABANDON  CHANGE PLANS   
 PULL OR ALTER CASING  MULTIPLE COMPLETION   
 OTHER:

SUBSEQUENT REPORT OF:

- REMEDIAL WORK  ALTERING CASING   
 COMMENCE DRILLING OPNS.  PLUG AND ABANDONMENT   
 CASING TEST AND CEMENT JOB   
 OTHER: Remediate Below-grade Redwood Tank and Emergency Pit

12. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompilation.

ROC began remediation activity on November 6, 2001; excavated approximately 3500 cubic yards of soil and land farmed on site. Impacted soil was removed to 12' bgs, ground water was found at 120' bgs. Installed a 20 mil poly liner. Backfilled with remediated soil and contoured to surrounding terrain. The work was completed on September 27, 2002.

Three monitor wells were installed in January, 2002. Hauled 110 yards of TPH impacted soil to Sundance Services.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE D. E. Anderson TITLE Project Leader-Environmental DATE 11/12/02

Type or print name D. E. Anderson Telephone No. 505-393-9174

(This space for State use)

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

Conditions of approval, if any:

# RICE Operating Company

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

**CERTIFIED MAIL**

**RETURN RECEIPT NO. 7099 3220 0001 9928 4584**

August 2, 2001

Mr. Wayne Price  
NM Energy, Minerals, and Natural Resources Dept.  
Oil Conservation Division, Environmental Bureau  
1220 S. St. Francis Drive  
Santa Fe, NM 87504

RE: REDWOOD TANK REPLACEMENT/CLOSURE PLAN FOR JUSTIS SWD SITE ~~H-2~~  
Unit Letter H, Sec. 2, T26S, R37E NMPM  
Lea County, NM

Dear Mr. Price:

Rice Operating Company (ROC) takes this opportunity to submit the replacement/closure plan for the below-grade redwood tanks at the Justis Salt Water Disposal Well H-2, located in Unit Letter H, Sec. 2, T26S, R37E, Lea County, NM. This facility is located on Fee Land owned by Mr. George Willis.

ROC is the service provider (operator) for the Justis Salt Water Disposal System and has no ownership of any portion of pipeline, well or facility. The Justis System is owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis. Replacement/closure projects of this magnitude require System Partner AFE approval and work begins as funds are received.

The Project AFE for the SWD H-2 Facility has been approved by the System Partners and work will commence in September 2001.

The Justis SWD Well H-2 facility is included in the ROC generic closure plan for emergency pits and below-grade redwood tanks and is the eleventh ROC-operated facility to apply under the generic plan. The Justis SWD System will replace the below-grade redwood tank with above-ground, fiberglass tanks (including two production tanks and an emergency overflow tank) set within secondary containment (poly-liner). ROC expects to close the tank and pit areas pursuant to NMOCD guidelines and the ROC generic work plan for below-grade redwood tanks and

emergency overflow pits. The enclosed C-103 form addresses this intention and defines the site-specific assessment for OCD guidelines. Supporting documentation is also enclosed.

A temporary tank system will be installed at this site. The below-grade redwood tank will be cleaned, dismantled and removed. The tank materials will be properly disposed at an approved oilfield waste facility and documentation will be included in the Final Closure Report.

ROC will schedule all major events with a 48-hour advance notice to the NMOCD. The Final Closure Report will follow at the end of the project.

Thank you for your consideration of this below grade redwood tank closure plan.

RICE OPERATING COMPANY



Carolyn Doran Haynes  
Operations Engineer

Enclosures  
cc: LBG, DA, file

Mr. Chris Williams  
NMOCD, District I Office  
1625 N. French Drive  
Hobbs, NM 88240

George Willis  
Joyce Willis  
P. O. Box 307  
Jal, NM 88252

Submit 3 Copies To Appropriate District Office  
 District I  
 1625 N. French Dr., Hobbs, NM 87240  
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 District IV  
 2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico  
 Energy, Minerals and Natural Resources

Form C-103  
 Revised March 25, 1999

OIL CONSERVATION DIVISION  
 2040 South Pacheco  
 Santa Fe, NM 87505

WELL API NO. 30-025-21325
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>
6. State Oil & Gas Lease No.

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b> (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.) 1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other SWD Well		7. Lease Name or Unit Agreement Name:  JUSTIS
2. Name of Operator RICE OPERATING COMPANY	8. Well No. H-2	
3. Address of Operator 122 W. TAYLOR, HOBBS, NM 88240	9. Pool name or Wildcat SAN ANDRES	
4. Well Location  Unit Letter <u>H</u> : <u>1980</u> feet from the <u>NORTH</u> line and <u>660</u> feet from the <u>EAST</u> line  Section <u>2</u> Township <u>26S</u> Range <u>37E</u> NMPM LEA County		
10. Elevation (Show whether DR, RKB, RT, GR, etc.) 3025' GL; 3033' KB		

11. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data <b>NOTICE OF INTENTION TO:</b> PERFORM REMEDIAL WORK <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> TEMPORARILY ABANDON <input type="checkbox"/> CHANGE PLANS <input type="checkbox"/> PULL OR ALTER CASING <input type="checkbox"/> MULTIPLE COMPLETION <input type="checkbox"/> OTHER: Close Redwoods and overflow pit <input checked="" type="checkbox"/>		<b>SUBSEQUENT REPORT OF:</b> REMEDIAL WORK <input type="checkbox"/> ALTERING CASING <input type="checkbox"/> COMMENCE DRILLING OPNS. <input type="checkbox"/> PLUG AND ABANDONMENT <input type="checkbox"/> CASING TEST / CEMENT JOB <input type="checkbox"/> OTHER: <input type="checkbox"/>
--	--	---

12. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompilation.

Proposed work according to NMOCD approved generic closure plan for below-grade redwood tanks: Delineate site for contamination, install temporary tank system, remove redwood tanks and clean-up location pursuant to NMOCD guidelines. Replace redwood tanks with fiberglass tanks within secondary containment. Work to begin in September, 2001. All major events including boring, sampling events, will be coordinated to allow 48 hrs notice to NMOCD.

Information from the NMSEO groundwater database estimated depth to ground water at <100' and indicate closest water well to be in Unit Letter "L" of Sec. 2, T26S, R37E which is more than 1000' from the facility at SWD Well H-2. Topographic maps show no indication of surface water bodies within 1000' of the H-2 facility. A site review indicated no water sources within 1000' of H-2.

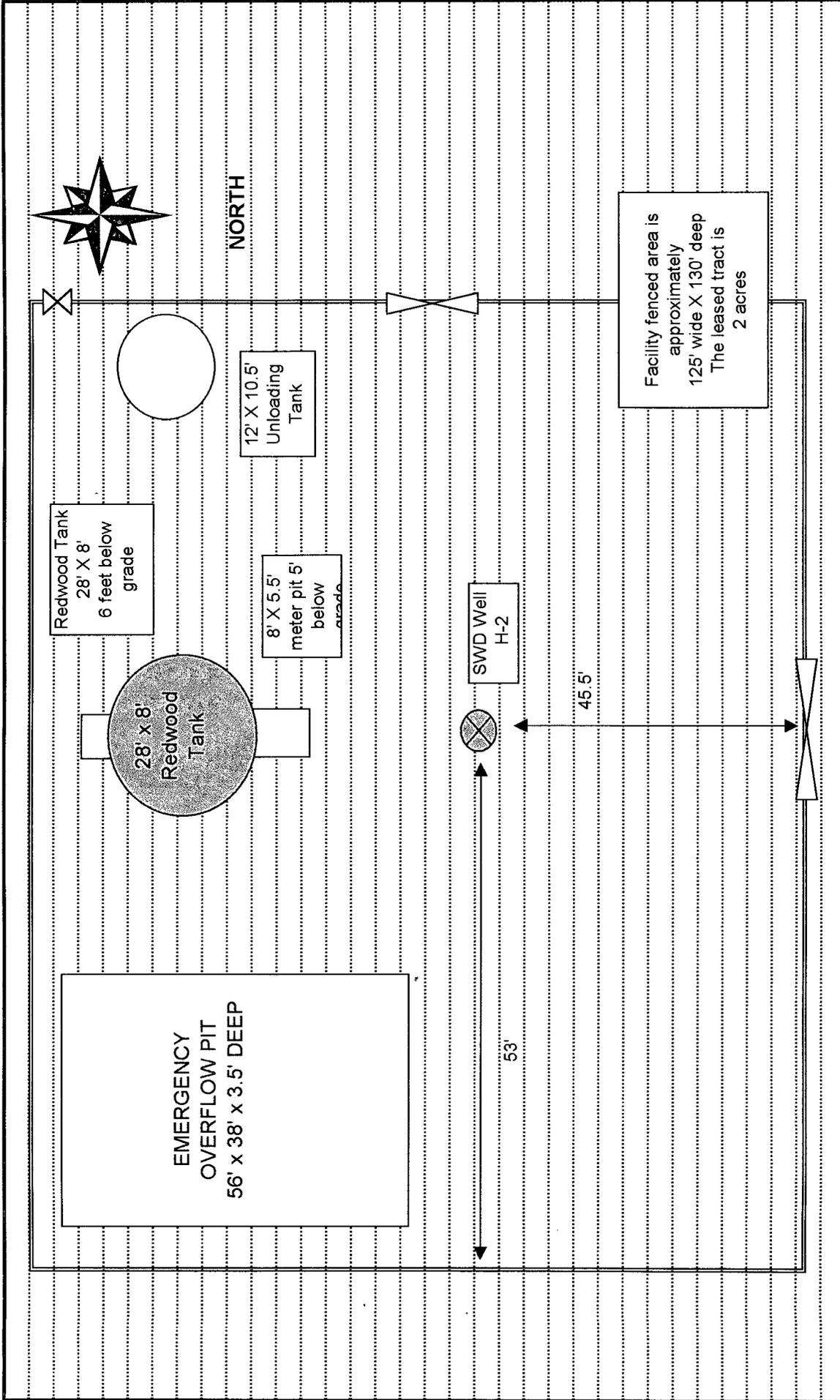
Depth to GroundWater: <100' = 0; Water source within 1000' = 0; No surface water body within 1000' = 0  
 Site Assessment = 0

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Carolyn Doran Haynes TITLE OPERATIONS ENGINEER DATE 8-2-01

Type or print name CAROLYN DORAN HAYNES Telephone No. 505-393-9174  
 (This space for State use)

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
 Conditions of approval, if any:



<p><b>Rice Operating Company</b>          122 West Taylor          Hobbs, NM 88240          (505) 393-9174</p>	<p><b>Original Layout</b></p>	<p><b>Disposal Facility and Unloading Tank</b>          Justis SWD Well H-2          Unit Letter H, Sec 2, T26S-R37E          Lea County, New Mexico</p>
--	-------------------------------	--

# **RICE Operating Company**

122 West Taylor · Hobbs, NM 88240

Phone: (505) 393-9174 · Fax: (505) 397-1471

## **SITE PROFILE**

### **Location**

Justis SWD Facility H-2 is situated approximately 4 miles east and 4 miles south of Jal, NM. Maps of the area are included in this report.

### **Site History**

The site is used as a flow-through collection and injection facility for salt-water disposal of the Justis Salt Water Disposal System. The facility used one 28' diameter below-grade redwood tank as a flow-through collection vessel. There is an emergency overflow pit at this site. The SWD Well H-2 is located at this site. A map of the facility is included in this report.

The below-grade redwood tank will be removed. The new fiberglass tank facility will be installed after the site vadose zone has been adequately remediated. A 30-mil polyethylene liner will provide secondary containment for the two 21.5' diameter flow-through fiberglass tanks. A 21.5' diameter fiberglass overflow tank will also be set to provide for extra containment. This upgrade is scheduled to start October 2001 and be completed by February 2002.

### **Land Use**

This facility is on Fee Land. The 2.5-acre disposal facility site lease agreement with landowner George Willis has been in effect since 1989. The primary use of this land is oil and gas production. The topography is unremarkable.

### **Distance to Surface and Ground Water**

There are no domestic water wells within 200' of the facility. There are no windmills, water pumps or surface waters within 1000' of the facility. The vertical distance to groundwater at this site is estimated to be <100' BGS.

## SALT WATER DISPOSAL LEASE

## JUSTIS SALT WATER DISPOSAL SYSTEM WELLS N-26 AND H-2

THIS AGREEMENT, made and entered into this 4th day of December,  
19 98, between George Willis, husband and Joyce Marie Willis, wife, hereinafter called  
Lessors, and Rice Operating Company, hereinafter called Lessee,

## WITNESSETH:

That Lessors do hereby demise, lease and let unto Lessee, its successors or assign, the  
following tracts of land located in Lea County, New Mexico:

Two and one half (2 1/2) acres in the form of a square around the Justis Salt Water  
Disposal Well N-26 located in the SE/4 SW/4 of Section 26, Township 25 South, Range 37  
East, N.M.P.M.,

and

Two and one half (2 1/2) acres in the form of a square around the existing Justis Salt Water  
Disposal Well H-2 located in the SE/4 NE/4 of Section 2, Township 26 South, Range 37  
East, N.M.P.M.,

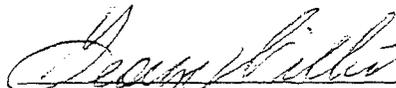
together with the right of ingress and egress to and from the leased premises, for the uses and  
terms hereinafter set forth:

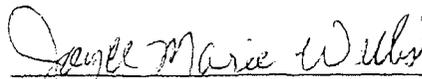
1. Lessee shall have the exclusive right to use each leased premise and a disposal well  
located thereon, in connection with the injection and disposal of oilfield brine and  
other waste water and their injection into the substrata of land; and for the digging of  
pits; for the laying of salt water gathering line; for the erection of tanks and  
receptacles necessary in receiving, treating and disposing of said brine and waste  
water, and for the erection of structures, appliances, engines and machinery necessary  
in connection with the operation of the well as a salt water disposal well on each  
lease.

2. This lease shall be for a period of ten (10) years from this date and shall terminate on the thirty-first day of July, 2008 or at such time as lessee exercises the option outlined in paragraph five (5). Lessee shall have the option to renew the lease subsequent to termination date. Lessee agrees to pay the sum of \$0.02375 per barrel (42 gallons) for water disposed upon the leases. Said payment to be made monthly and tendered by draft or check of Lessee, on or about the 20th day of the month following the month in which the water was disposed. Payments will be delivered by U. S. Mail. A check for two thirds (2/3) of said payment will be addressed to Lessors at Box 307, Jal, New Mexico 88252. A check for one third (1/3) of said payment will be addressed to Martin Nathaniel Willis at Drawer QQ, Jal, New Mexico 88252. Monthly payments are to be adjusted quarterly based proportionately upon the most recent posted price for New Mexico Sour Crude Oil as published by Phillips 66 Company, Bartlesville, Oklahoma, its successors or assigns, with the beginning index price of \$0.02375 per barrel of water at posted price for crude oil of \$20.00 per barrel, said adjustments shall be made in even 10% increments. However, the minimum water disposal fee shall be \$0.02375 per barrel or \$750.00 per well per month whichever is greater. Payments for water disposal will be made in accordance with Operator's Monthly Report Form C-115 which is submitted monthly to the Oil Conservation Division of Energy, Minerals and Natural Resources Department of the State of New Mexico or any subsequent Government forms as required.
  
3. Lessee shall have the right to use the leased premises and the disposal wells for the injection of oilfield brine and waste water into the substrata of said lands, whether produced on lands operated for oil and gas by Lessee or those so operated by others.

4. Lessee agrees to pay Lessors for damages to grasslands or growing crops or livestock arising out of or incident to the exercise of the use of this lease.
5. Lessee shall have the right, during the term of this lease or within six (6) months thereafter, to remove from the leased premises all materials, equipment and personal property placed there on by Lessee.
6. Lessee, in operating the disposal wells, shall not inject the brine or other waste water into fresh water bearing sands and shall conduct its operations in accordance with rules and regulations of the Oil Conservation Division, or other proper authority.
7. Counterparts of this lease or ratification's thereof may be executed by one or more parties, with the same force and effect as if all parties had joined in the execution of the same instrument.
8. The terms of this lease shall extend to and be binding on the parties hereto, their heirs, successors or assigns.

EXECUTED THIS 1 day of December, 19 98.

  
George Willis

  
Joyce Marie Willis

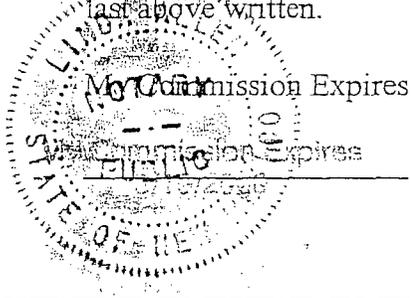
  
Loy B. Goodheart

Page 3 of 4

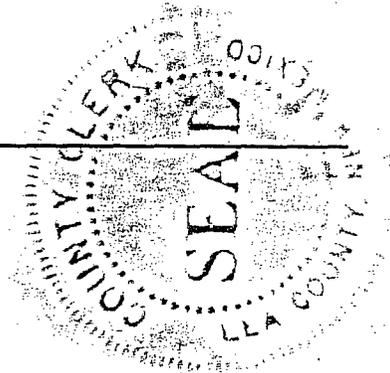
STATE OF NEW MEXICO )  
 )SS  
COUNTY OF: Lea )

BEFORE ME, Notary Public in and for said county and state, on this 1st day of DECEMBER, 1998, personally appeared George Willis and Joyce Marie Willis, to me known to be the identical persons who executed the within and foregoing instrument and acknowledged to me that they executed the same as their free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this day and year last above written.



[Signature]  
Notary Public



STATE OF TEXAS )  
 )SS  
COUNTY OF: Midland )

BEFORE ME, Notary Public in and for said county and state, on this 4th day of December, 1998, personally appeared Loy B. Goodheart, President of Rice Operating Company, a Delaware corporation, on behalf of the corporation, and acknowledged to me that he executed the foregoing instrument for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this day and year last above written.

My Commission Expires

November 15, 1999

[Signature]  
Notary Public



STATE OF NEW MEXICO  
COUNTY OF LEA  
FILED

Page 4 of 4

DEC 11 1998  
at 4:50 o'clock P. M  
and recorded in Book 923  
Page 197  
Pat Chappelle, Lea County Clerk  
By [Signature] Deputy

36594

District I - (505) 393-6161  
P.O. Box 1980  
Hobbs, NM 88241-1980  
District II - (505) 748-1283  
811 S. First  
Artesia, NM 88210  
District III - (505) 334-6178  
1000 Rio Boscon Road  
Aztec, NM 87410  
District IV - (505) 827-7131

New Mexico  
Energy Minerals and Natural Resources Department  
Oil Conservation Division  
2040 South Pacheco Street  
Santa Fe, New Mexico 87505  
(505) 827-7131

Originated 6/27/97

Submit Original  
Plus 1 Copy  
to Santa Fe

PIT INVENTORY FORM

Operator: RICE OPERATING COMPANY  
Address: 122 WEST TAYLOR  
HOBBS, NEW MEXICO 88240  
Phone Number: (505) 393-9174  
Previous Operator(s): None

Is the pit permitted: Yes  No   
Unit Letter: H Section: 2 Township: 26S Range: 37E

County: Lea

Location Name: Justis Salt Water Disposal Well H-2

Number of wells to the pit: 1  
Are the wells to the pit operated by one operator  or multiple operators   
Total daily volume (in barrels) to the pit: None

Pit Type: Emergency  
(Emergency, Production, Workover, Reserve/Drilling (greater than 6 months old), Flare, Blowdown, Separator, Dehydrator, Line Drip, BS&W/Tank Bottoms, Compressor, Piggings, Washdowns, or other)

What types of wastes are accepted in the pit (Exempt, Non-exempt, Both, None): Exempt (production water)  
Pit age (years): 30

Is the pit lined  or unlined   
Type of liner (None, Synthetic, Clay): None

Is leak detection present: Yes  No   
Is the pit netted: Yes  No

Pit dimensions (LxWxD): 57'X39'X5'

CERTIFICATION

I hereby certify that the information submitted is true and correct to the best of my knowledge and belief.

Name: Roger Hall Title: Operations Engineer

Signature: Roger Hall Date: 10/23/97

A pit is defined as any below grade or surface feature which receives any materials other than fresh water.

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88241-1980

### OIL CONSERVATION DIVISION

H-2

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88211-0719

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

Permit No. H-72

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

(For Division Use Only)

## APPLICATION FOR EXCEPTION TO DIVISION ORDER R-8952 FOR PROTECTION OF MIGRATORY BIRDS Rule 8(b), Rule 105(b), Rule 312(h), Rule 313, or Rule 711(T)

Operator Name: Rice Engineering Corporation

Operator Address: 122 W. Taylor, Hobbs, New Mexico 88240

Lease or Facility Name Justis SWD System Well H-2 Location H 2 26S 37E

Size of pit or tank: 57'x39'x5' deep, approx. 2000 bbls.

Operator requests exception from the requirement to screen, net or cover the pit or tank at the above-described facility.

x The pit or tank is not hazardous to migratory waterfowl. Describe completely the reason pit is non-hazardous.  
The pit is used only in emergencies such as major well remedial work.  
Normally kept empty.

1) If any oil or hydrocarbons should reach this facility give method and time required for removal:

Method: Vacuum truck

Time: Within 24 hours of discovery

2) If any oil or hydrocarbons reach the above-described facility the operator is required to notify the appropriate District Office of the OCD with 24 hours.

Operator proposes the following alternate protective measures: \_\_\_\_\_

CERTIFICATION BY OPERATOR: I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature S. A. Haktanir Title Division Manager Date 7-26-90

Printed Name S. A. Haktanir Telephone No. 393-9174

### FOR OIL CONSERVATION DIVISION USE

Date Facility Inspected 8/2/90

Inspected by R. A. L...

Approved by Eddie W...

Title \_\_\_\_\_

Date SEP 11 1990

# RICE Operating Company

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

CERTIFIED MAIL  
RETURN RECEIPT NO. Z 577 009 529

February 23, 2000

Mr. Wayne Price  
NM Energy, Minerals and Natural Resources Department  
Oil Conservation Division, Environmental Bureau  
2040 S. Pacheco  
Santa Fe, NM 87505

Re: Revision: Generic Closure Plan for Existing Pits and Below-Grade Redwood Tanks

Mr. Price:

As discussed in our telephone conversation February 22, Rice Operating Company (ROC) is submitting a further revision of the generic work plan for closing redwood tanks and emergency overflow pits that are presently inventoried in the ROC-operated SWD systems in Lea County. (ROC has no ownership of pipelines, wells, or facilities. Each system is owned by a consortium of oil producers, System Partners, who provide operating capital based on percent ownership or usage. Closure projects require AFE approval and work begins as funds are received.)

The revisions ROC proposes involve the on-site disposal of non-impacted concrete when practical and the use of a compacted clay layer rather than poly-liner for lining excavations. Also proposed is a revision to the closure procedure, adding an OCD verbal approval step in order for ROC to timely continue with installation of new surface facilities.

Closure reports for two locations, F-29 (two-year sampling of groundwater) and H-35 (closed), have been processed with the OCD. The P-25 location closure report has been submitted. Locations C-2 and L-21 are in remediation activity right now and Donna Williams has visited both sites. The C-2 site excavation will be managed with RE Environmental and the L-21 site will be managed with Whole Earth. ROC expects to be able to schedule final sampling for early March at both sites. The AFE has been approved for two additional sites in the Eunice-Monument-Eumont area with work start-up planned for early summer.

Thank you for your consideration of these revisions. If you have any questions, please call.



Carolyn Doran Haynes  
Operations Engineer

Cc KH; file; Ms. Donna Williams, OCD District I, Hobbs, NM

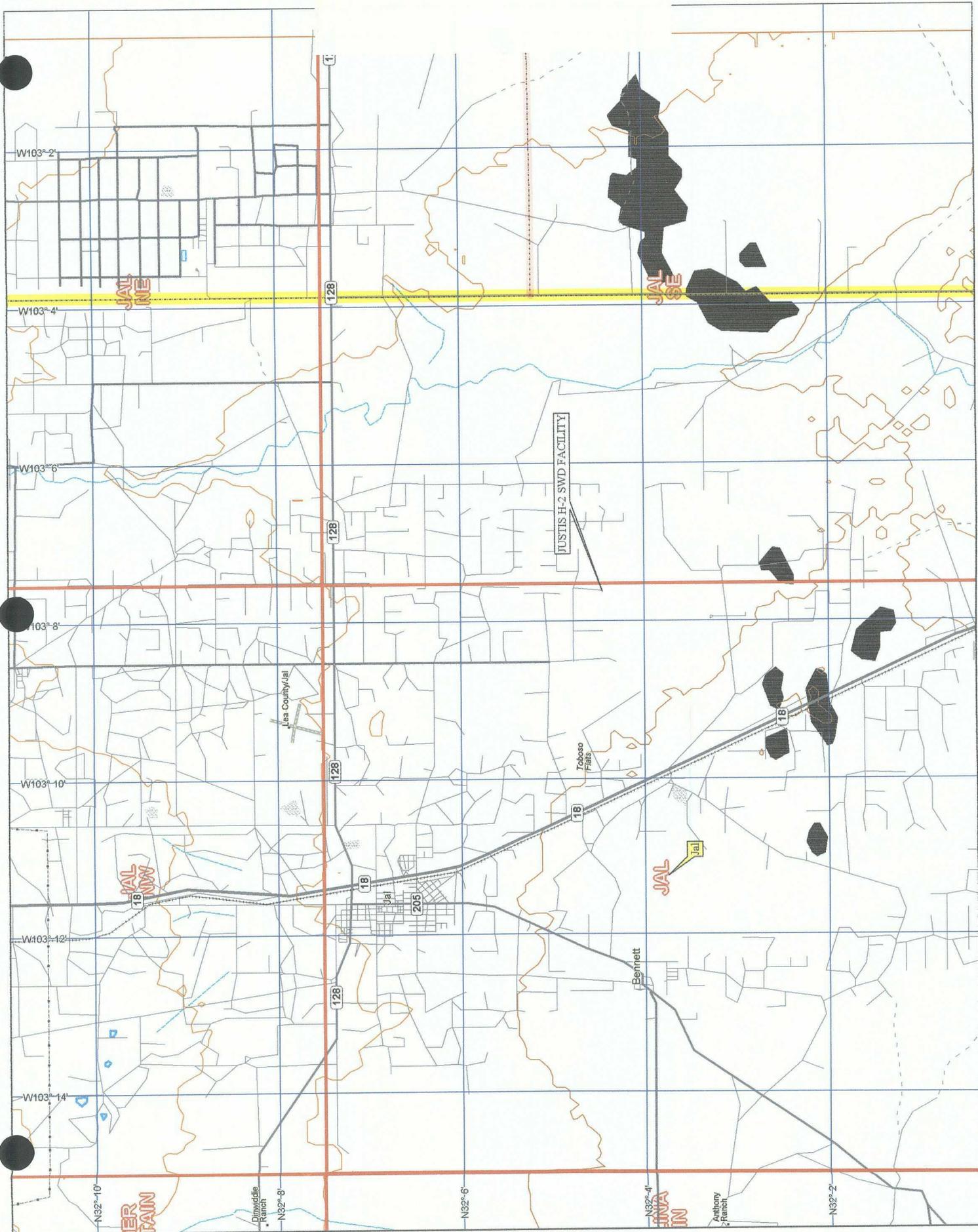
## Closure Plan for Below Grade Redwood Tank

1. Submit C-103 form to NMOCD along with the site-specific location, site assessment, work plan, time schedule, sampling and testing plan, etc., all pursuant to NMOCD guidelines.
2. Procure soil samples from 3' below bottom of tanks (9-11' below grade) at tank sides.
  - A. If soil samples are < 100ppm TPH and < 250ppm Chlorides, proceed to Step 4.
  - B. If soil samples are > 100ppm THP or > 250ppm Chlorides, proceed to Step 3.
3. Delineate any portion of tank site that is > 100ppm TPH or > 250ppm Chlorides with a backhoe or soil boring machine, obtaining samples for field and lab analysis at 5' intervals.
  - A. When field analysis of bored-sample determines < 100ppm TPH and < 250ppm Cl, boring will be suspended pending laboratory analysis confirmation. Proceed to Step 4.
  - B. If these parameter levels are not identified, then boring and sampling will continue to ground water. Upon reaching groundwater, the borehole will be cased and developed. Ground water samples will be procured and tested for major cations and anions, TDS and BETX levels. If ground water is found to exceed the WQCC standards, NMOCD will be notified immediately and the closure plan will move into Rule 19 procedures.
4. Write AFE to System Partners as directed by results of delineation of redwood tank site and of emergency pit (if both are at facility). Await approval and funding for site closing.
5. Move onto SWD facility site with temporary tank system. Re-route fluid flow from below grade redwood tanks into the temporary tank system. Plumb to SWD well.
6. Empty and clean redwood tanks, properly disposing of any BS & W. Excavate sides of redwood tanks to allow for working space to manipulate tank support banding. Remove redwood tanks reserving boards for proper disposal.
7. Excavate ramp into redwood tank hole. Remove and properly dispose of concrete base if impacted. If concrete is not impacted, use as fill (below plow depth) in excavation area.
8. Remove impacted soil (as practical) to eliminate hot spots; dispose per NMOCD guidelines.
9. Procure random 5-point composite bottom sample from 3' below tank bottom and random 4-point composite side sample for lab TPH, Benzene, and BTEX testing.
  - A. If <100ppm TPH; BTEX, Benzene <10ppm; <250ppm Chlorides; proceed to Step 11.
  - B. If >100ppm TPH; BTEX, Benzene >10ppm; >250ppm Chlorides; in the vadose zone but not reaching groundwater, proceed to Step 10.
10. Evaluate site for risk assessment: delineate to assess depth and horizontal extent of impact corresponding to NMOCD guidelines for site assessment value; excavate bottom and sides as practical to minimize risk; install compacted clay liner to meet or exceed 95% of a Proctor Test ASTM-D-698 with permeability (hydraulic conductivity) equal or less than  $1 \times 10^{-7}$  cm/sec for containment/isolation of impact.
11. Discuss results/risk assessment with NMOCD for verbal approval to proceed with backfill/installation of new tanks and plumbing within engineered secondary containment system.
12. Apply to NMOCD for closure of redwood tank site per NMOCD guidelines and site results.

## **Exhibit Index**

- Exhibit 1. Detailed view U.S.G.S. map showing local topography and access.
- Exhibit 2. Driving instructions to reach location.
- Exhibit 3. General plat map of the H-2 site.
- Exhibit 4. Plat map with view of excavation site and monitor wells.
- Exhibit 5. Plat map with view of poly liner and sampling layout.
- Exhibit 6. Plat map with profile view of poly liner and backfill.
- Exhibit 7. Photographs showing poly liner and final contour of the location at closure.
- Exhibit 8. Poly liner manufacturer's letter on lifetime of buried liner.
- Exhibit 9. Technical Specification Sheet for 20 mil poly liner.
- Exhibit 10. Supplemental Technical Specification Sheet for 20 mil poly liner.
- Exhibit 11. M.S.D.S. for 20 mil poly liner.

# Exhibit #1



## Exhibit #2

System: JUSTIS  
Well: H-2  
Legals: 2-26S-37E

From the junction of Hwy 18 and Hwy 128 in Jal go east on Hwy 128 for 2.8 miles. Turn right and go 3.0 miles south. Turn left and go 9/10 mile east. Turn right and go 4/10 south to location.

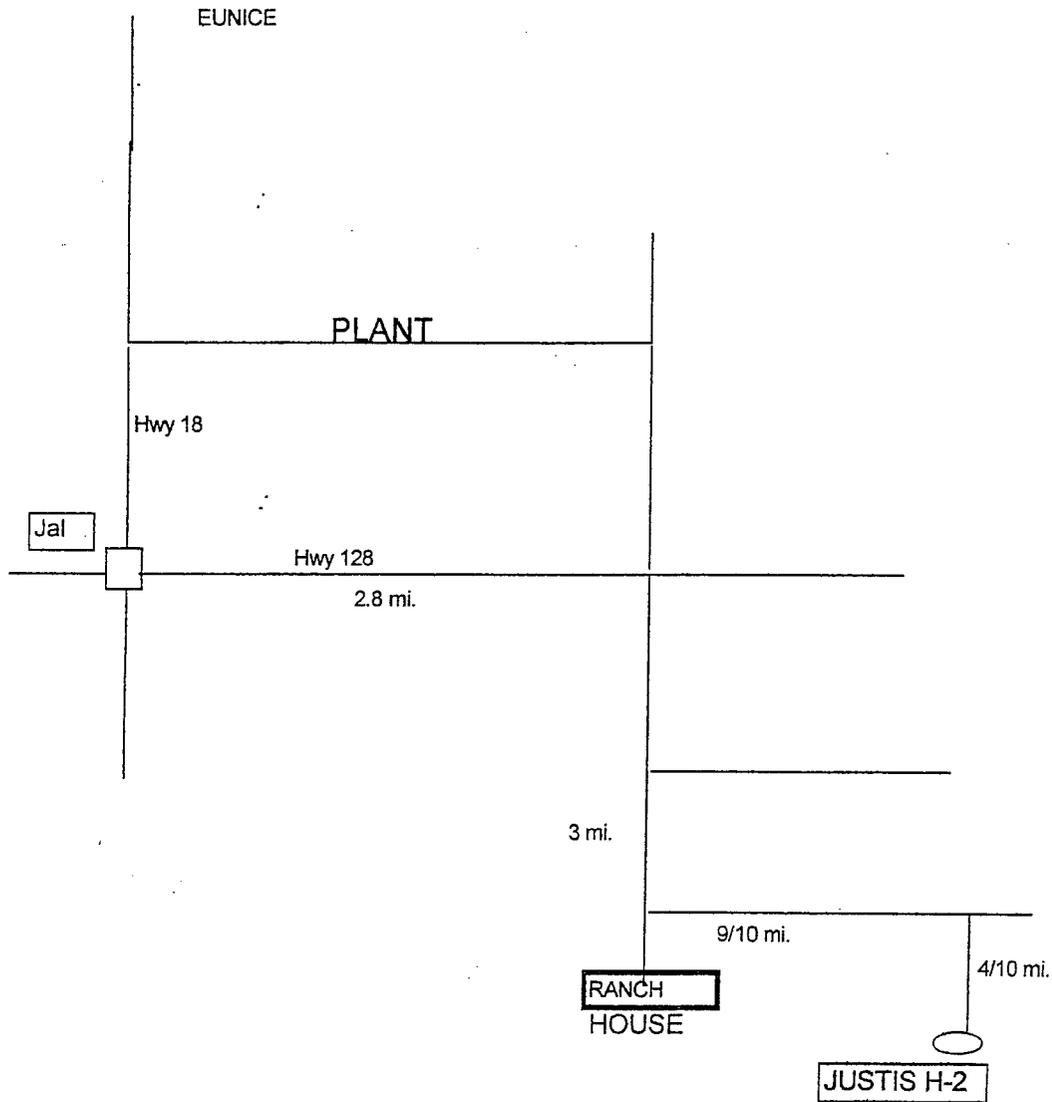
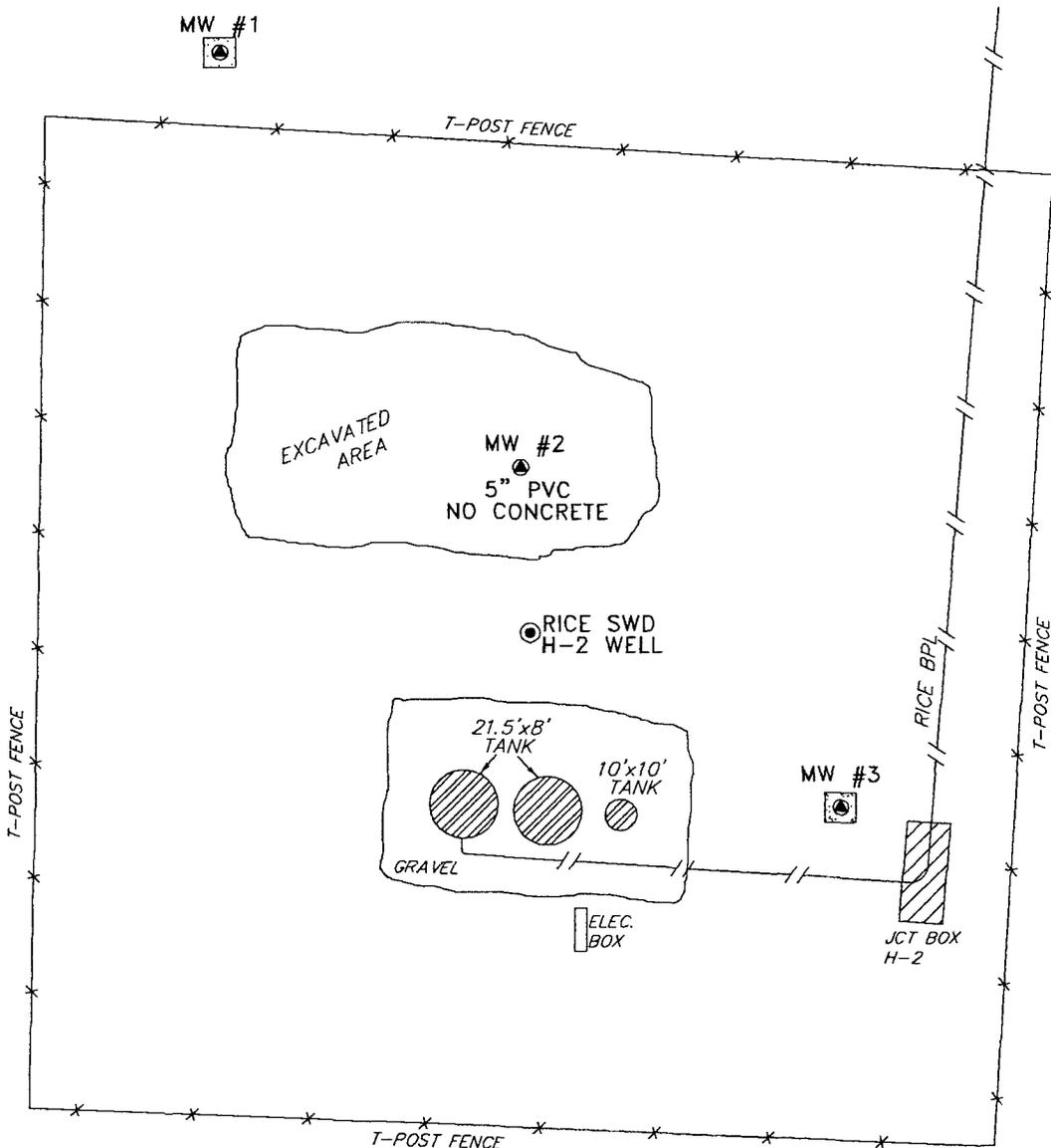


Exhibit #3

SECTION 2, TOWNSHIP 26 SOUTH, RANGE 37 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.



NEW MEXICO STATE PLANE COORDINATES (NAD 83)

WELL#	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION
MW #1	392976.943	914803.262	N32°04'28.7"	W103°07'39.4"	3023.03' (TOP STEEL LID)
MW #2	392848.756	914896.728	N32°04'27.4"	W103°07'38.4"	3017.36' (TOP PVC 4' ABOVE GRND)
MW #3	392742.839	914997.459	N32°04'26.4"	W103°07'37.2"	3020.13' (TOP BRASS CAP)

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



GARY L. JONES N.M. P.S.  
TEXAS P.L.S.

**BASIN SURVEYS** P.O. BOX 1786 - HOBBS, NEW MEXICO



**RICE OPERATING COMPANY**

REF: MONITOR WELLS

MONITOR WELLS LOCATED IN  
SECTION 2, TOWNSHIP 26 SOUTH, RANGE 37 EAST,  
N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 2199

Drawn By: K. GOAD

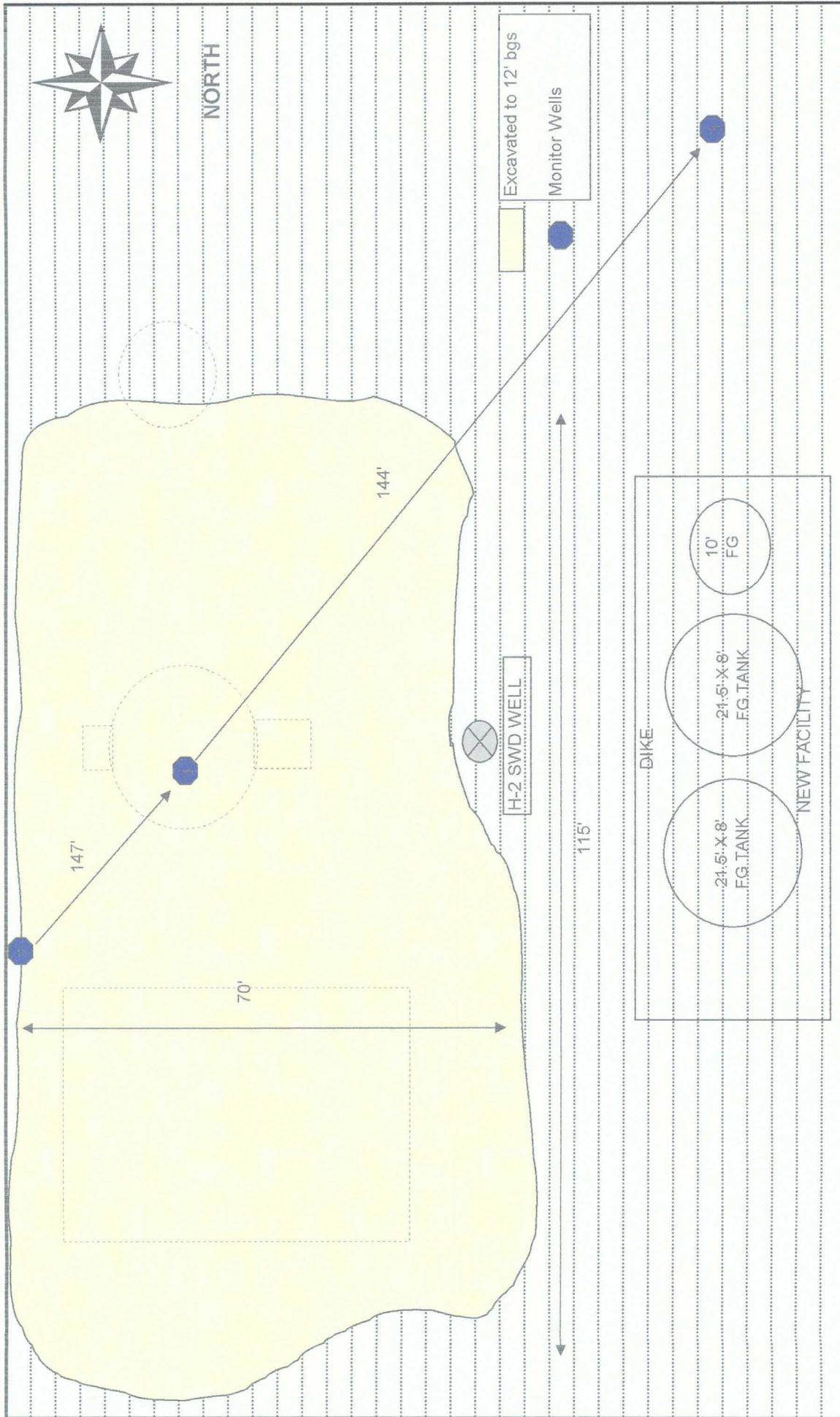
Date: 01-22-2002

Disk: KJG CD#4 - RC2199A.DWG

Survey Date: 01-15-2002

Sheet 1 of 1 Sheets

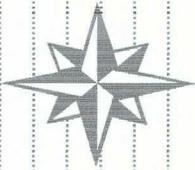
# Exhibit #4



Rice Operating Company  
 122 West Taylor  
 Hobbs, NM 88240  
 (505) 393-9174

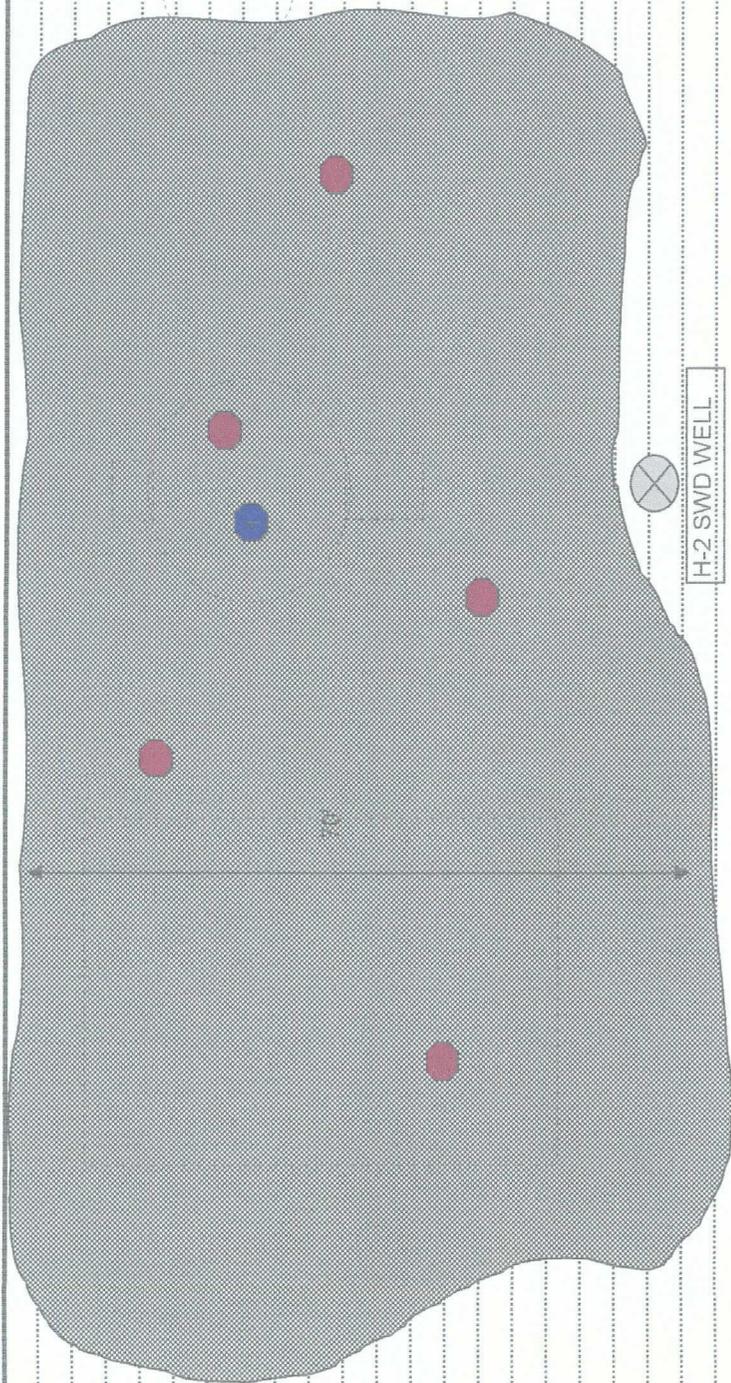
## Aerial View Excavation and Monitor Wells

Disposal Facility and Unloading Tank  
 Justis SWD Well H-2  
 Unit Letter H, Sec 2, T26S-R37E  
 Lea County, New Mexico



NORTH

5-Point Bottom Composite  
 Sample  
 Lab Results:  
 TPH 510 ppm  
 CI 1380 ppm

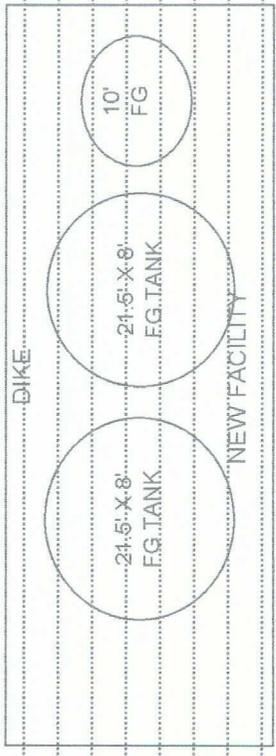


H-2 SWD WELL

20 mil Poly Liner

Monitor Wells

115'



Rice Operating Company  
 122 West Taylor  
 Hobbs, NM 88240  
 (505) 393-9174

**Aerial View of  
 Poly Liner And Backfill**

Disposal Facility and Unloading Tank  
 Justis SWD Well H-2  
 Unit Letter H, Sec 2, T26S-R37E  
 Lea County, New Mexico

# Excavaton Area with Poly Liner and BackFill



**Rice Operating Company**  
 122 West Taylor  
 Hobbs, NM 88240  
 (505) 393-9174

**Profile View With Poly Liner And Backfill**

**Redwood Tank and Emergency Pit Excavation**  
 Justis H-2 SWD Facility  
 Unit Letter H, Sec2-T26S-R37E  
 Lea County, New Mexico

Exhibit #7





February 20, 2002

ENGINEERED FILMS DIVISION

## LIFETIME OF POLYETHYLENE LINERS

Raven Industries has not performed long term aging studies on polyethylene geomembranes and does not have data to predict lifetime in a buried application. Most polyethylene products are not used in applications where the useful life of the product is more than 20 years. Comments on lifetimes in excess of 100 years are based on anecdotal field data and limited accelerated aging studies. Polyethylene was discovered as a substance in 1933 and the first wave of linear polyethylenes, similar to those used in geomembranes, became commercial in the late 1960's.

What we do know is that polyethylene is a chemically inert polymer, not containing any reaction prone functional groups. Because of this, polyethylene, in the absence of UV and strong oxidizers, lasts a long time without loss of properties. In a buried application, in between two layers of clayey soil, the main degradation mechanism is oxidation. This reaction takes place very slowly at ambient temperatures and is further hindered by the antioxidants that are part of the polyethylene formulation.

In order to predict lifetime limits due to oxidation, long term accelerated tests need to be performed. If the acceleration tool attempts to accelerate the degradation too much, the degradation mechanism is likely to be changed and the resulting prediction inaccurate. As a rule of thumb, an acceleration factor up to 10 is reasonable. A factor of 100 is not and those attempting to predict lifetimes based on such high acceleration factors are risking bad interpretations and a bad reputation.

All that aside, it is desirable to make some attempt at predicting lifetimes for geomembranes that are used in applications such as hazardous or low level radioactive waste disposal where design lifetimes are on the order of 1,000 years or more. Doctors Hsuan and Koerner of the Geosynthetic Research Institute are conducting such studies and pushing the envelope on the acceptable level of acceleration. In a paper published in the Journal of Geotechnical and Geoenvironmental Engineering in June of 1998, they published results showing that the depletion of the antioxidants in a buried HDPE geomembrane would take 200 years or more at 20°C. Depletion of the antioxidants takes place prior to the induction period that precedes the degradation period. The time for the degradation to reach a point where the polymer is compromised is in itself very long and it's length is not speculated on in the paper.

Raven's liners are made from a similar but lower density polyethylene than evaluated in the above referenced paper, and do contain antioxidants for protection against oxidative degradation and carbon black for protection against UV degradation. While Raven Industries is not willing to warrant, guarantee or predict a lifetime of 200 years in a buried application, there is data and evidence in the industry that indicate that such a prediction is not unreasonable.

A handwritten signature in black ink, appearing to read "Gary M. Kolbasuk".

Gary M. Kolbasuk  
Raven Industries

PO Box 5107 • Sioux Falls SD 57117-5107 • TELEPHONE 605-635-3456 • FAX 605-331-0333

TOTAL P.02

EXHIBIT 8

# **falcon** Environmental Lining Systems, Inc.

P.O. Box 4306 Odessa, Texas 79760  
5200 Johnson Rd. 79764

Phone: (915) 366-2611

1-800-842-0945  
FAX: (915) 366-2999

## TECHNICAL SPECIFICATION SHEET 20 MIL BLACK POLYETHYLENE

<u>PROPERTIES</u>	<u>TEST METHOD</u>	<u>VALUE</u>
Thickness mils	ASTM D 1583	20
Weight per 1000 Sq.ft.		100 lbs
Density lb/cm <sup>3</sup>	ASTM D792	57.7 lbs.
Tensile Strength at Yield	ASTM D638	40 lbs.
Tensile Strength at Break	ASTM D638	90 lbs.
Elongation at Break	ASTM D638	700 %
Hydrostatic Resistance	ASTM D751	122
Puncture Resistance	FTMS 101 C	38
Tear Resistance	ASTM D1004	13
Volatile Loss	ASTM 1203	<1%
Resistance to Soil Burial	ASTM G22	-4%
Low Temp, Failure	ASTM D748	<-94
Dimensional Stability %Change	ASTM D1204	<2
Environmental Stress Crack Resistance Hours to failure	ASTM D5397 Method A	>400
Carbon Black %	ASTM D1803	2.75
WVTR GH <sub>2</sub> O/100 in 2/24 hrs (g H <sub>2</sub> O/m <sup>2</sup> /24 hrs.	ASTM E96 Method A73 F, 50% RH	.020 (.022)

Note: To the best of our knowledge, these are typical property values and are intended as guides only. Not as specification limits.

## EXHIBIT 9

# RUFECO® 2000B, 3000B & 4000B

Properties	Test Method	RUFECO 2000B		RUFECO 3000B		RUFECO 4000B	
		Min. Roll Averages	Typical Roll Averages	Min. Roll Averages	Typical Roll Averages	Min. Roll Averages	Typical Roll Averages
Thickness mils (mm)	ASTM D 1593	18 (0.46)	20 (0.51)	28 (0.71)	30 (0.76)	37 (0.94)	40 (1.02)
Density lb/ft <sup>3</sup> (g/cm <sup>3</sup> )	ASTM D792 or ASTM D1505		57.7 (.925)		57.7 (.925)		57.7 (.925)
Minimum Tensile lb/in. width (N/cm width)	ASTM D638 1. Tensile Strength at Yield 2. % Elongation at Yield 3. Tensile Strength at Break 4. % Elongation at Break 5. Modulus @ 100% Elongation	35 (81) 13 84 (162) 650	40 (70) 13 88 (154) 700 32 (58)	55 (96) 13 120 (215) 650	60 (105) 13 125 (224) 700 48 (84)	80 (140) 13 170 (305) 650	84 (147) 13 175 (314) 700 68 (119)
Hydrostatic Resistance psi (kPa)	ASTM D751	118 (814)	122 (841)	160 (1241)	185 (1276)	230 (1686)	250 (1724)
Puncture Resistance lb/ (N)	FTMS 101 C Method 2065	33 (147)	36 (160)	48 (214)	52 (231)	61 (271)	65 (289)
Tear Resistance lb/ (N)	ASTM D1004	11 (49)	13 (58)	18 (80)	20 (89)	24 (107)	26 (116)
Volatile Loss Method A	ASTM 1203		<1%		<1%		<1%
Resistance to Soil Burial (% change maximum in original value)	ASTM G22 1. Tensile Strength at Yield 2. Tensile Strength at Break 3. Elongation at Yield 4. Elongation at Break 5. Modulus of Elasticity		-4%		-4%		-4%
Low Temp. Impact Failure Temp F (C)	ASTM D748		< -70 (< -94)		< -70 (< -94)		< -70 (< -94)
Dimensional Stability % Change	ASTM D1204		< 2		< 2		< 2
Environmental Stress Crack Resistance Hours to failure	ASTM D5397 Method A		> 400		> 400		> 400
Carbon Black %	ASTM D1603	2.5	2.75	2.5	2.75	2.5	2.75
WVTR g H <sub>2</sub> O/100 in <sup>2</sup> /24 hrs (g H <sub>2</sub> O/m <sup>2</sup> /24 hrs)	ASTM E96 Method A 73° F, 50% RH		.020 (.022)		.017 (.019)		.016 (.018)
Perme grains/ft <sup>2</sup> /hr/in. Hg (grams/yr/day/mm Hg)	ASTM E96 Method A 73° F, 50% RH		.027 (.032)		.023 (.028)		.021 (.025)
<b>FACTORY SEAM REQUIREMENTS</b>							
Bonded Seam Strength lb/in. width (N/cm width)	ASTM D4437	40 (70)	45 (79)	61 (107)	66 (119)	72 (125)	80 (140)
Seam Peel Adhesion lb/in. width (N/cm width)	ASTM D4437	32 (38)	36 (83)	48 (84)	53 (93)	56 (88)	62 (109)

Nominal Weight /Thousand Square Feet: RUFECO 2000B - 100 lbs., RUFECO 3000B - 150 lbs., RUFECO 4000B - 200 lbs.

## EXHIBIT 10

**MATERIAL SAFETY DATA SHEET** CHECK IDENTIFIER (in Print - Common Name):  
2010B

Manufacturer's Name: <b>RAVEN INDUSTRIES INC.</b> Address: P.O. Box 5107 Sioux Falls, SD 57117 Signature of Person Responsible for Preparation:	Emergency Telephone Number: 800-635-3456 Other Information: 1812 "E" Avenue Sioux Falls, SD 57104 Date Prepared: <b>October 27, 1997</b>
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**Section 1 - IDENTIFY**

Common Name (Used on Label): (Trade Name & Synonyms): <b>RUFCO 2010B</b> Chemical Name: <b>Copolymer of Ethylene and Octene-1</b> Formula: <b>(CH<sub>2</sub> - CH<sub>2</sub>)<sub>n</sub></b>	CAS Number(s): 26221-73-8 1333-86-4 Chemical Family: <b>Polyolefin</b>
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**Section 2 - HAZARDOUS INGREDIENTS**

Principal Hazardous Component(s) - Chemical and Common Name(s)	%	Threshold Limit Value (units)
None Known		

**Section 3 - PHYSICAL & CHEMICAL CHARACTERISTICS (Fire & Explosion Data)**

Boiling Point	Not Applicable (N/A)			Specific Gravity	0.93	Vapor Pressure, mmHg	N/A
Percent Volatile by Volume (%)	0	Vapor Density	N/A	Evaporation Rate	N/A		
Solubility in Water	Insoluble in Water			Reactivity in Water	Not Reactive in Water		
Appearance and Odor	Black, odorless plastic film.						
Flash Point	N/A	Flammability Limits in Air, by Volume (%)	Lower: N/A	Upper: N/A	Auto Ignition Temperature	> 650 F (estimated)	
Extinguisher	Use water spray, dry chemical, foam or carbon dioxide						
Special Fire Fighting Procedures	Fire fighters should wear a self-contained breathing apparatus when there is a possibility of						

exposure to smoke, fumes or hazardous decomposition products. If possible, water should be applied as a spray from a fogging nozzle since this material is a surface burning material.

Unusual Fire and Explosion Hazards

Page 2

Part Number: 2010B

**Section 4 - PHYSICAL HAZARDS**

Stability: Unstable \_\_\_\_\_ Stable  Conditions to Avoid: Temperatures over 570 F will release combustible gases.

Incompatibility: Strong oxidizing agents.

(Materials to Avoid):

Hazardous Decomposition Products: The following combustion products may be generated: Carbon dioxide, carbon monoxide, water vapor, and trace volatile organic compounds.

Hazardous Polymerization: May Occur \_\_\_\_\_ Will not Occur  Conditions to Avoid: N/A

**Section 5 - HEALTH HAZARDS**

Threshold Limit Value: N/A

Limit Value:

Signs and Symptoms of Exposure:

1. Acute Overexposure: Not Determined 2. Chronic Overexposure: Not Determined

Medical Conditions Generally Aggravated by Exposure: There are no known medical conditions aggravated by exposure to this product.

Chemical Listed as Carcinogen or Potential Carcinogen:	National Toxicology Program:	Not Listed	LC50 Monographs:	Not Listed	OSHA:	Not Listed
OSHA Permissible Exposure Limit:	ACGIH Threshold Limit Value:	None		Other Exposure Limit Used:	None	

Emergency and First Aid Procedures: Most problems will result from exposure to molten materials.

- 1. Inhalation: Immediately remove victim from area to fresh air. Seek medical attention.
- 2. Eyes: If contacted by molten material, immediately flush eyes with plenty of cool water for at least 15 minutes. Do not permit victim to rub eyes. Immediately seek medical attention.
- 3. Skin: If contact by molten material, cool immediately with cool water. Do not attempt to remove any solidified material. Immediately seek medical attention.
- 4. Ingestion: If material is ingested, contact a physician or Poison Control Center as appropriate whenever any foreign object is swallowed.

**Section 6 - SPECIAL PROTECTION INFORMATION**

Respiratory Protection (Specify Type): N/A

Ventilation:	Local Exhaust:	Mechanical (General):	Special:	Other:
N/A	N/A	N/A	N/A	N/A

Protective Gloves: Wear protective gloves during thermal processing. Eye Protection: Wear eye protection during thermal processing.

Other Protective Clothing or Equipment: Wear protective sleeves when processing material at elevated temperatures to minimize the possibility of thermal burns.

**Section 7 - SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES**

Precautions to be Taken in Handling and Storage: This product should be stored in a manner that they are not exposed to ultra-violet light, excessive moisture, heat and sources of ignition. A static charge may be present on finished products.

Other Precautions:

Steps to be Taken in Case Material is Released or Spilled: Spilled material should be swept up and discarded. Comply with applicable federal, state or local regulations.

Waste Disposal Methods: Dispose in accordance with local regulations

**IMPORTANT - Do not leave blank spaces. If information is unavailable, unknown or does not apply, so indicate**

# RICE Operating Company

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

## CERTIFIED MAIL

RETURN RECEIPT NO. 7000 1530 0005 9895 4466

January 18, 2002

Mr. Roger Anderson  
NM Energy, Minerals, and Natural Resources  
Oil Conservation Division, Environmental Bureau  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

RE: NOTIFICATION OF GROUNDWATER IMPACT  
EUNICE MONUMENT EUMONT (EME), VACUUM, JUSTIS SWD SYSTEMS  
Lea County, NM

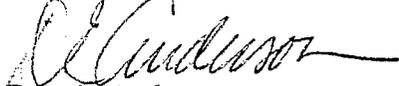
Mr. Anderson:

Rice Operating Company (ROC) takes this opportunity to notify the Director of the NMOCD, Environmental Bureau of groundwater impact in accordance with NM Rule 116. The attached document contains a list of the sites that qualify for this notification. The remediation of these sites may fall under NM Rule 19 procedures.

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

Please accept this notification for the attached sites.

RICE OPERATING COMPANY



Donnie Anderson  
Project Leader-Environmental

Attachment – Site Listings

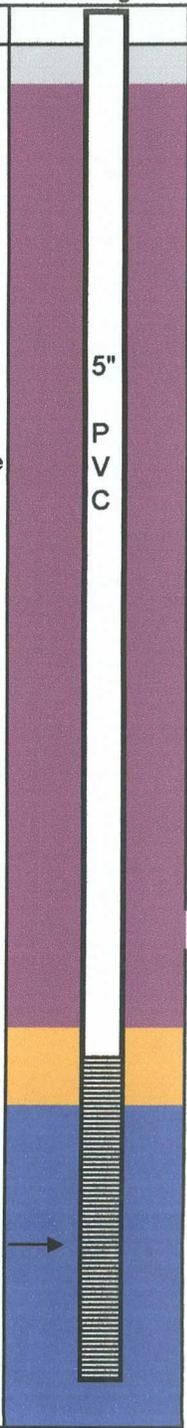
Cc: LBG, CDH, SC, file Mr. Chris Williams  
NMOCD, District 1 Office  
1625 N. French Drive  
Hobbs, NM 88240

**RICE OPERATING COMPANY  
GROUNDWATER IMPACT**

SYSTEM	SITE NAME	UNIT	SEC	T	R	TDS	BENZENE
EME	P-6	P	6	20S	37E	20248	<0.002
EME	Jct K-33-1	K	33	19S	37E	2635	<0.002
EME	Jct M-16-1	M	16	20S	37E	8016	<0.002
EME	Jct N-5	N	5	20S	37E	2652	<0.002
VACUUM	F-35 SWD	F	35	17S	35E	9425	0.05
VACUUM	G-35 SWD	G	35	17S	35E	1284	0.011
JUSTIS	H-2 MW1	H	2	26S	37E	1112	<0.002
JUSTIS	H-2 MW2	H	2	26S	37E	3908	<0.002
JUSTIS	H-2 MW3	H	2	26S	37E	577	<0.002

DRILLING LOG	Site Name/Location	BORING/WELL INFORMATION			Logged by: Eades
<b>RICE Operating Company</b> 122 West Taylor Hobbs, New Mexico 88240 (505) 393-9174	<b>H-2 SWD Facility</b> <b>2-T26S-R37E</b> <b>Justis SWD Sys</b> <b>Lea County, NM</b>	Well No. MW - 1	Date Drilled: 1/4/02	Driller: Eades	Completion: Sand and bentonite above screen.
		Well Depth: 134'	Boring Depth: 134'	Well Material: PVC	
		Casing Length: 137"	Boring Diameter: 6.25"	Casing Size: 5"	
		Screen Length: 20'	Drilling Method: Air Rotary	Slot Size: N/A	

DEPTH	SUBSURFACE LITHOLOGY	SAMPLE TYPE	Test Results (ppm)		REMARKS	Boring
			Cl <sup>-</sup>	TPH		
0	Ground surface		Titrate	EPA 418.1		
	Topsoil				grout	
10	Sand	Grab	6000			
20	Dry Clay	Grab	2500			
	Sand					
30		Grab	1400			
40	Sand and clay stringers	Grab	1700			
	Sand					
50	Sand and clay stringers	Grab	1500		bentonite	
60		Grab	4500			
70		Grab	4000			
80	Sand	Grab	9000			
90						
100		Grab	11700			
105						
110						
115						
120		Grab	6000		sand	
125	Sand and sandy brown clay					
130					screen	
134					water	

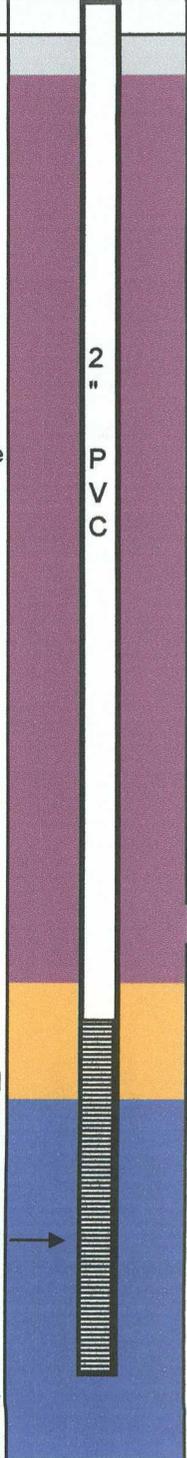


DRILLING LOG	Site Name/Location	BORING/WELL INFORMATION			Logged by: Eades
<b>RICE Operating Company</b> 122 West Taylor Hobbs, New Mexico 88240 (505) 393-9174	<b>H-2 SWD Facility</b> <b>2-T26S-R37E</b> <b>Justis SWD Sys</b> <b>Lea County, NM</b>	Well No. MW - 2	Date Drilled: 1/4/02	Driller: Eades	Completion: Sand and bentonite above screen.
		Well Depth: 139'	Boring Depth: 139'	Well Material: PVC	
		Casing Length: 142"	Boring Diameter: 6.25"	Casing Size: 2"	
		Screen Length: 20'	Drilling Method: Air Rotary	Slot Size: N/A	

DEPTH	SUBSURFACE LITHOLOGY	SAMPLE TYPE	Test Results (ppm)		REMARKS	Boring
			Cl <sup>-</sup>	TPH		
0	Ground surface		Titrate	EPA 418.1		
	Topsoil				grout	
10	Sand	Grab	1100			
20	Dry Clay	Grab	900			
	Sand					
30		Grab	300			
40	Sand and clay stringers	Grab	600			
	Sand					
50	Sand and clay stringers	Grab	300			
60		Grab	700		bentonite	
70		Grab	900			
80	Sand	Grab	900			
90		Grab	1000			
100		Grab	1000			
105						
110		Grab	900			
115						
120		Grab	900		sand	
125	Sand and sandy brown clay					
130					screen →	
135						
139					water	

DRILLING LOG	Site Name/Location	BORING/WELL INFORMATION			Logged by: Eades
<b>RICE Operating Company</b> 122 West Taylor Hobbs, New Mexico 88240 (505) 393-9174	<b>H-2 SWD Facility</b> <b>2-T26S-R37E</b> <b>Justis SWD Sys</b> <b>Lea County, NM</b>	Well No. MW - 3	Date Drilled: 1/4/02	Driller: Eades	Completion: Sand and bentonite above screen.
		Well Depth: 133'	Boring Depth: 133'	Well Material: PVC	
		Casing Length: 133"	Boring Diameter: 6.25"	Casing Size: 2"	
		Screen Length: 20'	Drilling Method: Air Rotary	Slot Size: N/A	

DEPTH	SUBSURFACE LITHOLOGY	SAMPLE TYPE	Test Results (ppm)		REMARKS	Boring
			Cl <sup>-</sup>	TPH		
0	Ground surface		Titrate	EPA 418.1		
	Topsoil				grout	
10	Sand	Grab	300			
20	Dry Clay	Grab	400			
	Sand					
30		Grab	400			
40	Sand and clay stringers	Grab	250			
	Sand					
50	Sand and clay stringers	Grab	200		bentonite	
60		Grab	300			
70		Grab	200			
80	Sand	Grab	300			
90		Grab	300			
100		Grab	100			
105						
110		Grab	100			
115						
120		Grab	150		sand	
125	Sand and sandy brown clay					
130					screen →	
133					water	

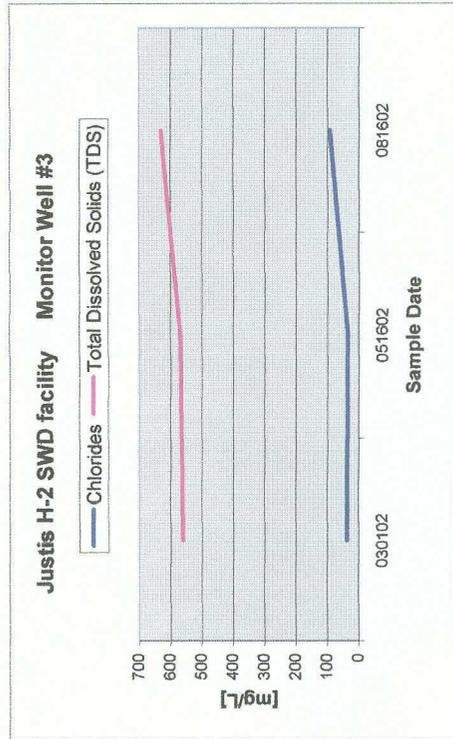
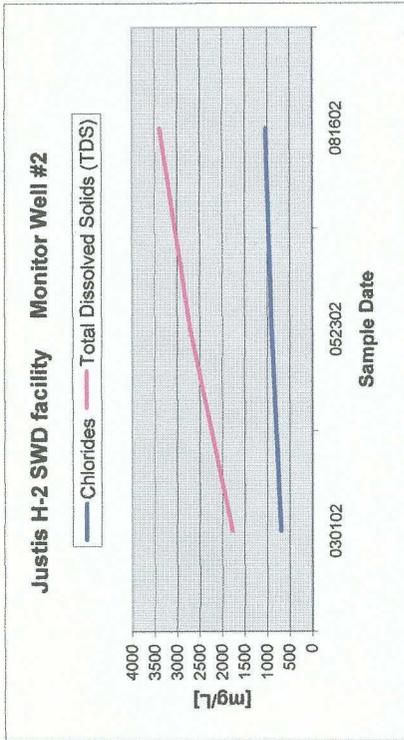
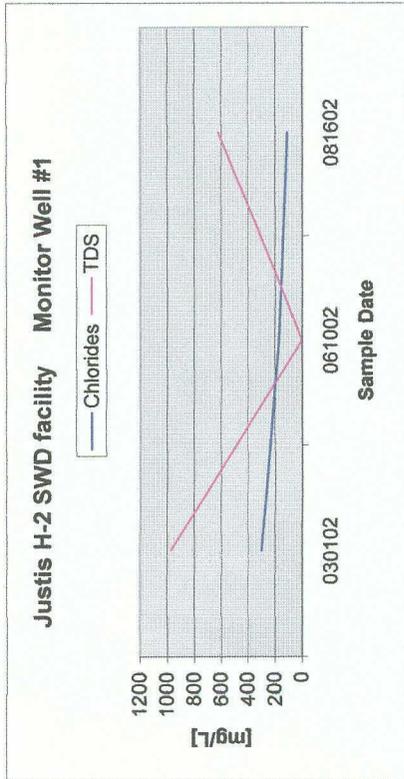


Justis H-2  
H, 2, 26S, 37E SWD facility

Rice Operating Co. Monitor Well Data Sheet

All parameter concentrations are in mg/L.

MW #	WATER LEVEL (ft)	TOTAL DEPTH (ft)	WELL VOLUME	VOLUME BAILED (gal)	SAMPLE DATE	TIME	CL-	TDS	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES
1 (5')	XXX	XXX	XXX	XXX	030102	1356	301	971	XXX	XXX	XXX	XXX
1	105.00	160.00	55.000	150.00	061002	XXX	173	XXX	0.001	0.008	0.01	0.066
1	116.2	137.20	21.000	66.00	081602	1230	111	619	<0.001	<0.001	<0.001	<0.001
1					111202							
2	XXX	XXX	XXX	XXX	030102	1330	700	1780	XXX	XXX	XXX	XXX
2	121.80	145.75	3.832	11.50	052302	1150	904	2710	<0.001	<0.001	<0.001	<0.001
2	121.85	142.10	3.240	25.00	081602	1420	1040	3390	<0.001	<0.001	<0.001	<0.001
2					111202							
3	XXX	XXX	XXX	XXX	030102	1342	37.2	561	XXX	XXX	XXX	XXX
3	118.68	135.95	2.760	8.50	051602	1130	35.4	570	<0.001	<0.001	<0.001	<0.001
3	118.68	133.30	2.340	20.00	081602	1340	93.1	631	<0.001	<0.001	<0.001	<0.001
3					111202							red & silty



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**Rice Operating Company**

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**Quality Procedure**

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**Procedure for Conducting Field TPH Analysis**

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**1.0 Purpose**

To define the procedure to be used in conducting total percentage hydrocarbon testing in accordance with EPA Method 418.1 (modified) using the "MEGA" TPH Analyzer.

**2.0 Scope**

This procedure is to be used for field testing and on site remediation information.

**3.0 Procedure**

- 3.1 The G.A.C. "MEGA" TPH analyzer is an instrument that measures concentrations of aliphatic hydrocarbons by means of infra-red spectrometry. It is manufactured to specifications and can accurately measure concentrations from two parts per million through 100,000 parts per million. The unit is factory calibrated however minor calibration adjustments may be made in the field. Quality Procedure 25 defines the field calibration methods to be employed.
- 3.2 Prior to taking the machine into the field, insert a 500 ppm and 5,000 ppm calibration standard into the sample port of the machine. Zero out the Range dial until the instrument records the exact standard reading.
- 3.3 Once in the field, insert a large and small cuvette filled with clean Freon 113 into the sample port of the machine. Use the range dial to zero in the reading. If the machine does not zero, do not attempt to adjust the span dial. Immediately implement Quality Procedure 25.
- 3.4 Place a 100 g weight standard on the field scale to insure accuracy. Zero out the scale as necessary.
- 3.5 Tare a clean 100 ml sample vial with the Teflon cap removed. Add 10 g (+/- .01g), of sample soil into the vial taking care to remove rocks or vegetable matter from the sample to be tested. If the sample is wet, add up to 5 g silica gel or anhydrous sodium sulfate to the sample after weighing.

- 
- 3.6 Dispense 10 ml Freon 113 into the sample vial.
- 3.7 Cap the vial and shake for five minutes.
- 3.8 Carefully decant the liquid contents of the vial into a filter/desiccant cartridge and affix the cartridge cap. Recap the sample vial and set aside.
- 3.9 Insert the metal tip of the pressure syringe into the cap opening and slowly pressurize. **WARNING: APPLY ONLY ENOUGH PRESSURE ON THE SYRINGE TO EFFECT FLOW THROUGH THE FILTERS. TOO MUCH PRESSURE MAY CAUSE THE CAP TO SEPARATE FROM THE BODY OF THE CARTRIDGE.** Once flow is established through the cartridge, direct the flow into the 5 cm cuvette until the cuvette is full. Reverse the pressure on the syringe and remove the syringe tip from the cartridge cap. Set the cartridge aside in vertical position.
- 3.10 The cuvette has two clear and two frosted sides. Hold the cuvette by the frosted sides and carefully insert into the sample port of the machine. Read the right hand digital read-out of the instrument. If the reading is less than 1,000 ppm, the results shall be recorded in the field Soil Analysis Report. If the result is higher than 1,000 ppm, continue with the dilution procedure.

#### 4.0 Dilution Procedure

- 4.1 When initial readings are greater than 1,000 ppm using the 5 cm cuvette, pour the contents of the 5 cm cuvette into a 1 cm cuvette. Insert the 1 cm cuvette into the metal holder and place into the test port of the instrument.
- 4.2 Read the left hand read-out of the machine. If the results are less than 10,000 ppm, record the results into the field Soil Analysis Reports. If greater than 10,000 ppm, continue the dilution process.  
**Concentrations >10,000 ppm are to be used for field screen purposes only.**

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4.3 Pour the contents of the small cuvette into a graduated glass pipette. Add 10 ml pure Freon 113 into the pipette. Shake the contents and pour into the 1cm. cuvette. Repeat step 4.2 adding two zeros to the end of the displayed number. If the reported result is greater than 100,000 ppm, the accuracy of further readings through additional dilutions is extremely questionable. **Do not use for reporting purposes.**

4.4 **Pour all sample Freon into the recycling container.**

### 5.0 Split Samples

5.1 Each tenth test sample shall be a split sample. Decant approximately one half of the extraction solvent through a filter cartridge and insert into the instrument to obtain a concentration reading. Clean and rinse the cuvette and decant the remainder of the fluid to obtain a second concentration reading from the same sample. If the second reading varies by more than 1% from the original, it will be necessary to completely recalibrate the instrument.

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**Rice Operating Company**

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**Quality Procedure**

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**Procedure for Obtaining  
Soil Samples for Transportation to a Laboratory**

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**1.0 Purpose**

This procedure outlines the methods to be employed when obtaining soil samples to be taken to a laboratory for analysis.

**2.0 Scope**

This procedure is to be used when collecting soil samples intended for ultimate transfer to a testing laboratory.

**3.0 Preliminary**

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the soil. The shipment should include a Certificate of Compliance from the manufacturer of the collection bottle or vial and a Serial Number for the lot of containers. Retain this Certificate for future documentation purposes.

3.2 If collecting TPH, BTEX, RCRA 8 metals, cation /anions or O&G, the sample jar may be a clear 4 oz. container with Teflon lid. If collecting PAH's, use an amber 4 oz. container.

**4.0 Chain of Custody**

4.1 Prepare a Sample Plan. The plan will list the number, location and designation of each planned sample and the individual tests to be performed on the sample. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.

4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label.) Affix the labels to the jars.

---

### **5.0 Sampling Procedure**

- 5.1. Do not touch the soil with your bare hands. Use new latex gloves with each sample to help minimize any cross-contamination.
- 5.2. Go to the sampling point with the sample container. If not analyzing for ions or metals, use a trowel to obtain the soil.
- 5.3. Pack the soil tightly into the container leaving the top slightly domed. Screw the lid down tightly. Enter the time of collection onto the sample collection jar label.
- 5.4. Place the sample directly on ice for transport to the laboratory if required.
- 5.5. Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

### **6.0 Documentation**

- 6.1 The testing laboratory shall provide the following minimum information:
  - a. Project and sample name.
  - b. Signed copy of the original Chain of Custody Form including the time the sample was received by the lab.
  - c. Results of the requested analyses
  - d. Test Methods employed
  - e. Quality Control methods and results

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Rice Operating Company

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QUALITY PROCEDURE

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Sampling and Testing Protocol  
Chloride Titration Using .282 Normal  
Silver Nitrate Solution

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**1.0 Purpose**

This procedure is to be used to determine the concentration of chloride in soil.

**2.0 Scope**

This procedure is to be used as the standard field measurement for soil chloride concentrations.

**3.0 Sample Collection and Preparation**

- 3.1 Collect at least 80 grams of soil from the sample collection point. Take care to insure that the sample is representative of the general background to include visible concentrations of hydrocarbons and soil types. If necessary, prepare a composite sample for soils obtained at several points in the sample area. Take care to insure that no loose vegetation, rocks or liquids are included in the sample(s).
- 3.2 The soil sample(s) shall be immediately inserted into a one-quart or larger polyethylene freezer bag. Care should be taken to insure that no cross-contamination occurs between the soil sample and the collection tools or sample processing equipment.
- 3.3 The sealed sample bag should be massaged to break up any clods.

**4.0 Sample Preparation**

- 4.1 Tare a clean glass vial having a minimum 40 ml capacity. Add at least 10 grams of the soil sample and record the weight.
- 4.2 Add at least 10 grams of reverse osmosis water to the soil sample and shake for 20 seconds.
- 4.3 Allow the sample to set for a period of 5 minutes or until the separation of soil and water.
- 4.4 Carefully pour the free liquid extract from the sample through a paper filter into a clean plastic cup if necessary.

### 5.0 Titration Procedure

- 5.1 Using a graduated pipette, remove 10 ml extract and dispense into a clean plastic cup.
- 5.2 Add 2-3 drops potassium chromate ( $K_2CrO_4$ ) to mixture.
- 5.3 If the sample contains any sulfides (hydrogen or iron sulfides are common to oilfield soil samples) add 2-3 drops of hydrogen peroxide ( $H_2O_2$ ) to mixture.
- 5.4 Using a 1 ml pipette, carefully add .282 normal silver nitrate (one drop at a time) to the sample while constantly agitating it. Stop adding silver nitrate when the solution begins to change from yellow to red. Be consistent with endpoint recognition.
- 5.5 Record the ml of silver nitrate used.

### 6.0 Calculation

To obtain the chloride concentration, insert measured data into the following formula:

$$\frac{.282 \times 35,450 \times \text{ml AgNO}_3}{\text{ml water extract}} \times \frac{\text{grams of water in mixture}}{\text{grams of soil in mixture}}$$

Using Step 5.0, determine the chloride concentration of the RO water used to mix with the soil sample. Record this concentration and subtract it from the formula results to find the net chloride in the soil sample.

Record all results on the delineation form.

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**Rice Operating Company**

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**Quality Procedure**

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**Procedure for Developing Cased Water Monitoring Wells**

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**1.0 Purpose**

This procedure outlines the methods to be employed to develop cased monitoring wells.

**2.0 Scope**

This procedure shall be used for developed, cased water monitoring wells. It is not to be used for standing water samples such as ponds or streams.

**3.0 Sample Collection and Preparation**

- 3.1 Prior to development, the static water level and height of the water column within the well casing will be measured with the use of an electric D.C. probe or a steel engineer's tape and water sensitive paste.
- 3.2 All measurements will be recorded within a field log notebook.
- 3.3 All equipment used to measure the static water level will be decontaminated after each use by means of Liquinox, a phosphate free laboratory detergent, and water to reduce the possibility of cross-contamination. The volume of water in each well casing will be calculated.

**4.0 Purging**

- 4.1 Wells will be purged by using a 2" decontaminated submersible pump or dedicated one liter Teflon bailer. Wells should be purged until the pH and conductivity are stabilized and the turbidity has been reduced to the greatest extent possible.
- 4.2 If a submersible is used the pump will be decontaminated prior to use by scrubbing the outside surface of tubing and wiring with a Liquinox water mixture, pumping a Liquinox-water mixture through the pump, and a final flush with fresh water.

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## **5.0 Water Disposal**

5.1 All purge and decontamination water will be temporarily stored within a portable tank to be later disposed of in an appropriate manner.

## **6.0 Records**

6.1 Rice Operating Company will record the amount of water removed from the well during development procedures. The purge volume will be reported to the appropriate regulatory authority when filing the closure report.

## Rice Operating Company

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### Quality Procedure

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#### Procedure for Obtaining Water Samples (Cased Wells) Using One Liter Bailer

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#### 1.0 Purpose

This procedure outlines the methods to be employed in obtaining water samples from cased monitoring wells.

#### 2.0 Scope

This procedure shall be used for developed, cased water monitoring wells. It is not to be used for standing water samples such as ponds or streams.

#### 3.0 Preliminary

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the water. The shipment should include a Certificate of Compliance from the manufacturer of the collection bottle or vial and a Serial Number for the lot of containers. Retain this Certificate for future documentation purposes.

3.2 The following table shall be used to select the appropriate sampling container, preservative method and holding times for the various elements and compounds to be analyzed.

Compound to be Analyzed	Sample Container Size	Sample Container Description	Cap Requirements	Preservative	Maximum Hold Time
BTEX	40 ml	VOA Container	Teflon Lined	HCl	7 days
TPH	1 liter	clear glass	Teflon Lined	HCl	28 days
PAH	1 liter	amber glass	Teflon Lined	Ice	7 days
Cation/Anion	1 liter	clear glass	Teflon Lined	None	48 Hrs
Metals	1 liter	HD polyethylene	Any Plastic	Ice/HNO <sub>3</sub>	28 Days
TDS	300 ml	clear glass	Any Plastic	Ice	7 Days

---

#### **4.0 Chain of Custody**

- 4.1 Prepare a Sample Plan. The plan will list the well identification and the individual tests to be performed at that location. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.
- 4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.
- 4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label). Affix the labels to the jars.

#### **5.0 Bailing Procedure**

- 5.1 Identify the well from the sites schematics. Place pre-labeled jar(s) next to the well. Remove the plastic cap from the well bore by first lifting the metal lever and then unscrewing the entire assembly.
- 5.2 Using a dedicated one liter Teflon bailer, purge a minimum of three well volumes. Place the water in storage container for transport to a ROC disposal facility.
- 5.3 Take care to insure that the bailing device and string do not become cross-contaminated. A clean pair of rubber gloves should be used when handling either the retrieval string or bailer. The retrieval string should not be allowed to come into contact with the ground.

#### **6.0 Sampling Procedure**

- 6.1 Once the well has been bailed in accordance with 5.2 of this procedure, a sample may be decanted into the appropriate sample collection jar directly from the bailer. The collection jar should be filled to the brim. Once the jar is sealed, turn the jar over to detect any bubbles that may be present. Add additional water to remove all bubbles from the sample container.
- 6.2 Note the time of collection on the sample jar with a fine Sharpie.

6.3 Place the sample directly on ice for transport to the laboratory. The preceding table shows the maximum hold times between collection and testing for the various analyses.

6.4 Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

### 7.0 Documentation

7.1 The testing laboratory shall provide the following minimum information:

- A. Project and sample name.
- B. Signed copy of the original Chain of Custody Form including the time the sample was received by the lab.
- C. Results of the requested analyses
- D. Test Methods employed
- E. Quality Control methods and results

### Calculation for Determining the Minimum Bailing Volume for Monitor Wells

$$\text{Formula } V = (\pi r^2 h)$$

$$2'' \text{ well } [V/2.31 = \text{gal}] \times 3 = \text{Purge Volume}$$

V=Volume

$\pi$ =pi

r=inside radius of the well bore

h=maximum height of well bore in water table

Example:

$\pi$	$r^2$	h(in)	V(cu.in)	V(gal)	X 3 Volumes	Actual
3.1416	1	180	565.488	2.448	7.34 gal	>10 gal

H-2  
SWD

## ANALYTICAL REPORT

Prepared for:

LOGAN ANDERSON  
RE ENVIRONMENTAL  
P.O. BOX 13418  
ODESSA, TX 79768

Project: RICE  
PO#:  
Order#: G0204681  
Report Date: 10/04/2002

Certificates

US EPA Laboratory Code TX00158

# ENVIRONMENTAL LAB OF TEXAS

## SAMPLE WORK LIST



RE ENVIRONMENTAL  
P.O. BOX 13418  
ODESSA, TX 79768  
366-0804

Order#: G0204681  
Project:  
Project Name: RICE  
Location: H-2

The samples listed below were submitted to Environmental Lab of Texas and were received under chain of custody. Environmental Lab of Texas makes no representation or certification as to the method of sample collection, sample identification, or transportation/handling procedures used prior to the receipt of samples by Environmental Lab of Texas, unless otherwise noted.

<u>Lab ID:</u>	<u>Sample :</u>	<u>Matrix:</u>	<u>Date / Time</u> <u>Collected</u>	<u>Date / Time</u> <u>Received</u>	<u>Container</u>	<u>Preservative</u>
0204681-01	5 PT. BOTTOM COMP. @12 FT.	SOIL	9/27/02 13:00	10/1/02 9:40	4 oz Glass	ICE
	<u>Lab Testing:</u>	Rejected: No		Temp: 18.5 C		
	8015M 8021B/5030 BTEX Chloride					
0204681-02	4 PT. WALL COMP. @ 11 FT.	SOIL	9/27/02 13:00	10/1/02 9:40	4 oz Glass	ICE
	<u>Lab Testing:</u>	Rejected: No		Temp: 18.5 C		
	8015M 8021B/5030 BTEX Chloride					
4681-03	REMEDIAED COMPOSITE PILE	SOIL	9/27/02 13:00	10/1/02 9:40	4 oz Glass	ICE
	<u>Lab Testing:</u>	Rejected: No		Temp: 18.5 C		
	8015M 8021B/5030 BTEX Chloride					



# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

LOGAN ANDERSON  
 RE ENVIRONMENTAL  
 P.O. BOX 13418  
 ODESSA, TX 79768

Order#: G0204681  
 Project:  
 Project Name: RICE  
 Location: H-2

Lab ID: 0204681-01  
 Sample ID: 5 PT. BOTTOM COMP. @12 FT.

### 8015M

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor	RKT	8015M
		10/2/02	1	5		

Parameter	Result mg/kg	RL
GRO, C6-C12	< 50.0	50.0
DRO, >C12-C35	510	50.0
TOTAL, C6-C35	510	50.0

### 8021B/5030 BTEX

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor	CK	8021B
0003280-02		10/2/02 9:34	1	25		

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	99%	80	120
Bromofluorobenzene	97%	80	120

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

LOGAN ANDERSON  
 RE ENVIRONMENTAL  
 P.O. BOX 13418  
 ODESSA, TX 79768

Order#: G0204681  
 Project:  
 Project Name: RICE  
 Location: H-2

Lab ID: 0204681-02  
 Sample ID: 4 PT. WALL COMP. @ 11 FT.

### 8015M

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor		
		10/2/02	1	1	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	<10.0	10.0
DRO, >C12-C35	<10.0	10.0
TOTAL, C6-C35	<10.0	10.0

### 8021B/5030 BTEX

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor		
0003280-02		10/2/02 9:56	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	<0.025	0.025
Toluene	<0.025	0.025
p/m-Xylene	<0.025	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	94%	80	120
Bromofluorobenzene	94%	80	120

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

LOGAN ANDERSON  
 RE ENVIRONMENTAL  
 P.O. BOX 13418  
 ODESSA, TX 79768

Order#: G0204681  
 Project:  
 Project Name: RICE  
 Location: H-2

Lab ID: 0204681-03  
 Sample ID: REMEDIATED COMPOSITE PILE

### 8015M

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor		
		10/2/02	1	2	RKT	8015M

Parameter	Result mg/kg	RL
GRO, C6-C12	33.6	20.0
DRO, >C12-C35	354	20.0
TOTAL, C6-C35	388	20.0

### 8021B/5030 BTEX

<u>Method</u>	<u>Date</u>	<u>Date</u>	<u>Sample</u>	<u>Dilution</u>	<u>Analyst</u>	<u>Method</u>
Blank	Prepared	Analyzed	Amount	Factor		
0003280-02		10/2/02 10:18	1	25	CK	8021B

Parameter	Result mg/kg	RL
Benzene	<0.025	0.025
Ethylbenzene	0.032	0.025
Toluene	<0.025	0.025
p/m-Xylene	0.094	0.025
o-Xylene	<0.025	0.025

Surrogates	% Recovered	QC Limits (%)	
aaa-Toluene	93%	80	120
Bromofluorobenzene	100%	80	120

Approval: Jeanne McMurrey 10-07-02  
 Raland K. Tuttle, Lab Director, QA Officer      Date  
 Celey D. Keene, Org. Tech. Director  
 Jeanne McMurrey, Inorg. Tech. Director  
 Sandra Biezugbe, Lab Tech.  
 Sara Molina, Lab Tech.

# ENVIRONMENTAL LAB OF TEXAS

## ANALYTICAL REPORT

LOGAN ANDERSON  
RE ENVIRONMENTAL  
P.O. BOX 13418  
ODESSA, TX 79768

Order#: G0204681  
Project:  
Project Name: RICE  
Location: H-2

Lab ID: 0204681-01  
Sample ID: 5 PT. BOTTOM COMP. @12 FT.

### Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	1380	mg/kg	1	20	9253	10/4/02	SB

Lab ID: 0204681-02  
Sample ID: 4 PT. WALL COMP. @ 11 FT.

### Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	91.5	mg/kg	1	20	9253	10/4/02	SB

Lab ID: 0204681-03  
Sample ID: REMEDIATED COMPOSITE PILE

### Test Parameters

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Chloride	30.4	mg/kg	1	20	9253	10/4/02	SB

Approval: Jeanne McMurrey 10-07-02  
Raland K. Tuttle, Lab Director, QA Officer Date  
Celey D. Keene, Org. Tech. Director  
Jeanne McMurrey, Inorg. Tech. Director  
Sandra Biezugbe, Lab Tech.  
Sara Molina, Lab Tech.

# ENVIRONMENTAL LAB OF TEXAS

## QUALITY CONTROL REPORT

8015M

Order#: G0204681

<i>BLANK</i>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0003275-02			<10.0		
<i>MS</i>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0204680-02	0	952	1063	111.7%	
<i>MSD</i>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0204680-02	0	952	1135	119.2%	6.6%
<i>SRM</i>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
TOTAL, C6-C35-mg/kg		0003275-05		1000	880	88.0%	

# ENVIRONMENTAL LAB OF TEXAS

## QUALITY CONTROL REPORT

**8021B/5030 BTEX**

Order#: G0204681

<b>BLANK</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0003280-02			<0.025		
Ethylbenzene-mg/kg		0003280-02			<0.025		
Toluene-mg/kg		0003280-02			<0.025		
p/m-Xylene-mg/kg		0003280-02			<0.025		
o-Xylene-mg/kg		0003280-02			<0.025		
<b>MS</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0204636-01	0	0.1	0.096	96.0%	
Ethylbenzene-mg/kg		0204636-01	0	0.1	0.100	100.0%	
Toluene-mg/kg		0204636-01	0	0.1	0.100	100.0%	
p/m-Xylene-mg/kg		0204636-01	0	0.2	0.212	106.0%	
o-Xylene-mg/kg		0204636-01	0	0.1	0.099	99.0%	
<b>MSD</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0204636-01	0	0.1	0.094	94.0%	2.1%
Ethylbenzene-mg/kg		0204636-01	0	0.1	0.102	102.0%	2.0%
Toluene-mg/kg		0204636-01	0	0.1	0.098	98.0%	2.0%
p/m-Xylene-mg/kg		0204636-01	0	0.2	0.219	109.5%	3.2%
o-Xylene-mg/kg		0204636-01	0	0.1	0.101	101.0%	2.0%
<b>RM</b>	SOIL	LAB-ID #	Sample Concentr.	Spike Concentr.	QC Test Result	Pct (%) Recovery	RPD
Benzene-mg/kg		0003280-05		0.1	0.090	90.0%	
Ethylbenzene-mg/kg		0003280-05		0.1	0.094	94.0%	
Toluene-mg/kg		0003280-05		0.1	0.094	94.0%	
p/m-Xylene-mg/kg		0003280-05		0.2	0.201	100.5%	
o-Xylene-mg/kg		0003280-05		0.1	0.094	94.0%	

# ENVIRONMENTAL LAB OF TEXAS

## QUALITY CONTROL REPORT

### Test Parameters

Order#: G0204681

<b>BLANK</b>		<b>LAB-ID #</b>	<b>Sample Concentr.</b>	<b>Spike Concentr.</b>	<b>QC Test Result</b>	<b>Pct (%) Recovery</b>	<b>RPD</b>
Chloride-mg/kg	SOIL	0003347-01			<20.0		
<b>MS</b>		<b>LAB-ID #</b>	<b>Sample Concentr.</b>	<b>Spike Concentr.</b>	<b>QC Test Result</b>	<b>Pct (%) Recovery</b>	<b>RPD</b>
Chloride-mg/kg	SOIL	0204661-01	354	1000	1350	99.6%	
<b>MSD</b>		<b>LAB-ID #</b>	<b>Sample Concentr.</b>	<b>Spike Concentr.</b>	<b>QC Test Result</b>	<b>Pct (%) Recovery</b>	<b>RPD</b>
Chloride-mg/kg	SOIL	0204661-01	354	1000	1330	97.6%	1.5%
<b>SRM</b>		<b>LAB-ID #</b>	<b>Sample Concentr.</b>	<b>Spike Concentr.</b>	<b>QC Test Result</b>	<b>Pct (%) Recovery</b>	<b>RPD</b>
Chloride-mg/kg	SOIL	0003347-04		5000	4960	99.2%	



**Sundance Services, Inc.**  
P.O. Box 1737 \* Eunice, NM 88231  
(505) 394-2511

**NO 46961**

---

LEASE OPERATOR/SHIPPER/COMPANY: *Rice SWD H-2*

LEASE NAME: *Justice SWD H-2* TIME: AM/PM

TRANSPORTER COMPANY: *R.F. Trucking*

DATE: *11-6-01* VEHICLE NO.: *#1002* DRIVER NO.:

CHARGE TO: *Rice*

---

**TYPE OF MATERIAL**

Production Water  
 Tank Bottoms  
 Other Material: *oil/dirt*

Drilling Fluids  
 Contaminated soil  
 BS&W Content:

Description: *oil/dirt*

---

**VOLUME OF MATERIAL [ ] BBLs. [ ] YARD 10 yds. [ ]**

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001, et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

**THIS WILL CERTIFY** that the above Transporter loaded the material represented by this Transporter Statement at the above described location, and that it was tendered by the above described shipper. This will certify that no additional materials were added to this load, and that the material was delivered without incident.

DRIVER: *Nancy C. Aguirre* (SIGNATURE)

FACILITY REPRESENTATIVE: *John F. Faldut* (SIGNATURE)

White-Sundance Canary-Sundance Acct#1 Pink-Sundance Acct#2 Gold-Transporter  
Revised 12/27/95

**Sundance Services, Inc.**  
P.O. Box 1737 \* Eunice, NM 88231  
(505) 394-2511

**NO 46995**

---

LEASE OPERATOR/SHIPPER/COMPANY: *Rice*

LEASE NAME: *Justice H-2 SWD*

TRANSPORTER COMPANY: *RE R.F. Trucking* TIME: AM/PM

DATE: *11-7-01* VEHICLE NO.: *1000* DRIVER NO.:

CHARGE TO: *Rice*

---

**TYPE OF MATERIAL**

Production Water  
 Tank Bottoms  
 Other Material: *oil/dirt*

Drilling Fluids  
 Contaminated soil  
 BS&W Content:

Description: *oil/dirt*

---

**VOLUME OF MATERIAL [ ] BBLs. [ ] YARD 10 yds. [ ]**

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001, et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

**THIS WILL CERTIFY** that the above Transporter loaded the material represented by this Transporter Statement at the above described location, and that it was tendered by the above described shipper. This will certify that no additional materials were added to this load, and that the material was delivered without incident.

DRIVER: *John F. Faldut* (SIGNATURE)

FACILITY REPRESENTATIVE: *John F. Faldut* (SIGNATURE)

White-Sundance Canary-Sundance Acct#1 Pink-Sundance Acct#2 Gold-Transporter  
Revised 12/27/95

Sundance Services, Inc. N2 46996  
 P.O. Box 1737 \* Eunice, NM 88231  
 (505) 394-2511

LEASE OPERATOR/SHIPPER/COMPANY: RICE

LEASE NAME: Justice H2 S&D

TRANSPORTER COMPANY: Rice Transportation TIME: \_\_\_\_\_ AM/PM

DATE: 11-03-01 VEHICLE NO.: #101 DRIVER NO.:

CHARGE TO: RICE

TYPE OF MATERIAL

- Production Water
- Tank Bottoms
- Other Material:
- Drilling Fluids
- Contaminated soil
- BSAW Content: \_\_\_\_\_
- Completion Fluids
- C-117 No.:

Description: oil dirt

VOLUME OF MATERIAL  BBLs :  YARD 1422 :

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001, et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

THIS WILL CERTIFY that the above Transporter loaded the material represented by this Transporter Statement at the above described location, and that it was tendered by the above described shipper. This will certify that no additional materials were added to this load, and that the material was delivered without incident.

DRIVER: LUIS GALGORDO  
 (SIGNATURE)

FACILITY REPRESENTATIVE: [Signature]  
 (SIGNATURE)

White Sundance, Canary Sundance Acct# Pink Sundance Acct# Gold Transporter  
 Revised 12/27/95

Sundance Services, Inc. N2 46998  
 P.O. Box 1737 \* Eunice, NM 88231  
 (505) 394-2511

LEASE OPERATOR/SHIPPER/COMPANY: Rice

LEASE NAME: Justice S&D H-2

TRANSPORTER COMPANY: Rice Trucking TIME: \_\_\_\_\_ AM/PM

DATE: 11-03-01 VEHICLE NO.: #102 DRIVER NO.:

CHARGE TO: RICE

TYPE OF MATERIAL

- Production Water
- Tank Bottoms
- Other Material:
- Drilling Fluids
- Contaminated soil
- BSAW Content: \_\_\_\_\_
- Completion Fluids
- C-117 No.:

Description: oil dirt

VOLUME OF MATERIAL  BBLs :  YARD 10 :

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001, et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

THIS WILL CERTIFY that the above Transporter loaded the material represented by this Transporter Statement at the above described location, and that it was tendered by the above described shipper. This will certify that no additional materials were added to this load, and that the material was delivered without incident.

DRIVER: [Signature]  
 (SIGNATURE)

FACILITY REPRESENTATIVE: [Signature]  
 (SIGNATURE)

White Sundance, Canary Sundance Acct# Pink Sundance Acct# Gold Transporter  
 Revised 12/27/95

<b>Sundance Services, Inc.</b> P.O. Box 1737 • Eunice, NM 88231 (505) 394-2511		NO 46962
LEASE OPERATOR/SHIPPER/COMPANY: <i>Rice</i>		
LEASE NAME: <i>Justice SWD H-2</i>		
TRANSPORTER COMPANY: <i>R. E. Trucking</i>		
DATE: <i>11-6-01</i>	VEHICLE NO.: <i>1000</i>	DRIVER NO.:
CHARGE TO: <i>Rice</i>		
<b>TYPE OF MATERIAL</b>		
<input type="checkbox"/> Production Water <input type="checkbox"/> Tank Bottoms <input type="checkbox"/> Other Material:	<input type="checkbox"/> Drilling Fluids <input checked="" type="checkbox"/> Contaminated soil <input type="checkbox"/> BS&W Content:	<input type="checkbox"/> Completion Fluids <input type="checkbox"/> C-117 No.:
Description: <i>oil dirt</i>		
<b>VOLUME OF MATERIAL</b> <input type="checkbox"/> BBLs : <i>1</i> YARD <i>10</i> : <input type="checkbox"/>		
AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NH HEALTH AND SAF. CODE § 361.001, et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.		
ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.		
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DRIVER: <i>[Signature]</i> (SIGNATURE)	FACILITY REPRESENTATIVE: <i>[Signature]</i> (SIGNATURE)	
White-Sundance Canary-Sundance Act#1 Pink-Sundance Act#2 Gold-Transporter Revised 12/27/95		

<b>Sundance Services, Inc.</b> P.O. Box 1737 • Eunice, NM 88231 (505) 394-2511		NO 46966
LEASE OPERATOR/SHIPPER/COMPANY: <i>RICE</i>		
LEASE NAME: <i>Justice H-2 SWD</i>		
TRANSPORTER COMPANY: <i>RE Trucking</i>		
DATE: <i>11-26-01</i>	VEHICLE NO.: <i>1002</i>	DRIVER NO.:
CHARGE TO: <i>RICE</i>		
<b>TYPE OF MATERIAL</b>		
<input type="checkbox"/> Production Water <input type="checkbox"/> Tank Bottoms <input type="checkbox"/> Other Material:	<input type="checkbox"/> Drilling Fluids <input checked="" type="checkbox"/> Contaminated soil <input type="checkbox"/> BS&W Content:	<input type="checkbox"/> Completion Fluids <input type="checkbox"/> C-117 No.:
Description: <i>oil dirt</i>		
<b>VOLUME OF MATERIAL</b> <input type="checkbox"/> BBLs : <input type="checkbox"/> YARD <i>246</i> : <input type="checkbox"/>		
AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NH HEALTH AND SAF. CODE § 361.001, et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.		
ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.		
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DRIVER: <i>[Signature]</i> (SIGNATURE)	FACILITY REPRESENTATIVE: <i>[Signature]</i> (SIGNATURE)	
White-Sundance Canary-Sundance Act#1 Pink-Sundance Act#2 Gold-Transporter Revised 12/27/95		

**Sundance Services, Inc.**  
 P.O. Box 1737 \* Eunice, NM 88231  
 (505) 394-2511

NE 46970

LEASE OPERATOR/SHIPPER/COMPANY: RICE  
 LEASE NAME: Justice H-2 SWP  
 TRANSPORTER COMPANY: RE Trucking TIME: \_\_\_\_\_ AM/PM  
 DATE: 11-06-01 VEHICLE NO.: #1000 DRIVER NO.: \_\_\_\_\_  
 CHARGE TO: RICE

**TYPE OF MATERIAL**

- Production Water
- Tank Bottoms
- Other Material:
- Drilling Fluids
- Contaminated soil
- BS&W Content:

Description: Oil dirt

VOLUME OF MATERIAL [ ] BBLs : [ ] YARD 10 yds [ ]

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001, et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER: \_\_\_\_\_ (SIGNATURE)  
 FACILITY REPRESENTATIVE: \_\_\_\_\_ (SIGNATURE)

**Sundance Services, Inc.**  
 P.O. Box 1737 \* Eunice, NM 88231  
 (505) 394-2511

NE 46974

LEASE OPERATOR/SHIPPER/COMPANY: RICE  
 LEASE NAME: Justice H-2  
 TRANSPORTER COMPANY: RE Trucking TIME: \_\_\_\_\_ AM/PM  
 DATE: 11-06-01 VEHICLE NO.: #1002 DRIVER NO.: \_\_\_\_\_  
 CHARGE TO: RICE

**TYPE OF MATERIAL**

- Production Water
- Tank Bottoms
- Other Material:
- Drilling Fluids
- Contaminated soil
- BS&W Content:

Description: Oil

VOLUME OF MATERIAL [ ] BBLs : [ ] YARD 10 [ ]

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001, et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER: \_\_\_\_\_ (SIGNATURE)  
 FACILITY REPRESENTATIVE: \_\_\_\_\_ (SIGNATURE)

**Sundance Services, Inc.**  
 P.O. Box 1737 \* Eunice, NM 88231  
 (505) 394-2511

NO 46976

LEASE OPERATOR/SHIPPER/COMPANY: RICE  
 LEASE NAME: Justice H-2 sud TIME: AM/PM  
 TRANSPORTER COMPANY: RICE Trucking  
 DATE: 11-06-01 VEHICLE NO.: 1003 DRIVER NO.:  
 CHARGE TO: RICE

**TYPE OF MATERIAL**

- Production Water
- Tank Bottoms
- Other Material:
- Drilling Fluids
- Contaminated soil
- BS&W Content:

Description: only dirt

VOLUME OF MATERIAL [ ] BBLs. : [ ] YARD 10 yds. : [ ]

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001, et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER: \_\_\_\_\_ (SIGNATURE)  
 FACILITY REPRESENTATIVE: \_\_\_\_\_ (SIGNATURE)

White-Sundance Canary-Sundance Act#1 Pink-Sundance Act#2 Gold-Transporter  
 Revised 12/27/95

**Sundance Services, Inc.**  
 P.O. Box 1737 \* Eunice, NM 88231  
 (505) 394-2511

NO 46981

LEASE OPERATOR/SHIPPER/COMPANY: RICE  
 LEASE NAME: Justice H-2 sud TIME: AM/PM  
 TRANSPORTER COMPANY: RICE Trucking  
 DATE: 11-06-01 VEHICLE NO.: 1003 DRIVER NO.:  
 CHARGE TO: RICE

**TYPE OF MATERIAL**

- Production Water
- Tank Bottoms
- Other Material:
- Drilling Fluids
- Contaminated soil
- BS&W Content:

Description: only dirt

VOLUME OF MATERIAL [ ] BBLs. : [ ] YARD 10 yds. : [ ]

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001, et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER: \_\_\_\_\_ (SIGNATURE)  
 FACILITY REPRESENTATIVE: \_\_\_\_\_ (SIGNATURE)

White-Sundance Canary-Sundance Act#1 Pink-Sundance Act#2 Gold-Transporter  
 Revised 12/27/95

# Sundance Services, Inc.

P.O. Box 1737 ★ Eunice, NM 88231  
(505) 394-2511

№ 46982

LEASE OPERATOR/SHIPPER/COMPANY: RICE

LEASE NAME: Justice H-2 SWD

TRANSPORTER COMPANY: R.E. Trucking

TIME: \_\_\_\_\_ AM/PM

DATE: 11-06-01 VEHICLE NO.: #1000

DRIVER NO.:

CHARGE TO: RICE

## TYPE OF MATERIAL

- Production Water
- Tank Bottoms
- Other Material:

- Drilling Fluids
- Contaminated soil
- BS&W Content: \_\_\_\_\_

- Completion Fluids
- C-117 No.:

Description: oily dirt

VOLUME OF MATERIAL  BBLs. \_\_\_\_\_ :  YARD 10 yds :

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001, et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

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DRIVER: Chris Stubb  
(SIGNATURE)

FACILITY REPRESENTATIVE: Chris Stubb  
(SIGNATURE)