

IR-421-411

EME Jct. I-9

2013

CLOSURE

# **RICE** *Operating Company*

122 West Taylor • Hobbs, New Mexico 88240

Phone: (575) 393-9174 • Fax: (575) 397-1471

April 1, 2014

**Mr. Leonard Lowe**

New Mexico Energy, Minerals, & Natural Resources

Oil Conservation Division, Environmental Bureau

1220 S. St. Francis Drive

Santa Fe, New Mexico 87505

RE: Termination Request

EME Jct. I-9: UL/I, Sec. 9, T20S, R36E

RICE Operating Company – Eunice Monument Eumont SWD System

Mr. Lowe:

Rice Operating Company (ROC) is the service provider (agent) for the EME Saltwater Disposal (SWD) System and has no ownership of any portion of the pipeline, well, or facility. The System is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

**Background**

In 2013, ROC initiated work on the former I-9 junction box. The site is located in UL/I, Sec. 9, T20S, R36E. NM OSE records indicate that groundwater would likely be encountered at a depth of approximately 32 +/- feet. The site was delineated using a backhoe to collect soil samples at regular intervals, creating a 7x3x7-ft deep excavation. A total of 12 yards was properly disposed of at a NMOCD approved facility. Each sample was field titrated for chlorides and field screened using a PID for hydrocarbons, resulting in low concentrations. The 7-ft sample was sent to a commercial laboratory for analysis of chloride and TPH, resulting in a chloride concentration of 96 mg/kg, a gasoline range organics (GRO) concentration and a diesel range organics (DRO) concentration below detectable limits. The excavation was backfilled with imported blow sand to ground surface and contoured to the surrounding area. The blow sand sample was sent a commercial laboratory for analysis of chloride and TPH, resulting in a chloride, GRO, and DRO concentration all below detectable limits. On 6/7/2013, the site was seeded with a blend of native vegetation and is expected to return to a productive capacity at a normal rate. The junction box site map, area map, final report, photo documentation, laboratory analysis, PID sheet, chloride graph, and revegetation form are attached.

**Recommendations**

Site investigation demonstrates that residual chloride and hydrocarbons in the vadose zone will not with reasonable probability contaminate groundwater in excess of NMOCD standards. This site meets the requirements of the NMOCD-approved Revised Junction Box Upgrade Work Plan (July 16, 2003). As such, ROC request termination of the regulatory file, or similar closure status.

Please contact me at (575)393-2967 if you have any questions or wish to discuss this site. Thank you for your time and consideration.

Sincerely,  
RICE Operating Company

A handwritten signature in black ink, appearing to read "H. Conder", with a long horizontal flourish extending to the right.

Hack Conder  
Environmental Manager

enclosures

# RICE OPERATING COMPANY JUNCTION BOX FINAL REPORT

## BOX LOCATION

| SWD SYSTEM                      | JUNCTION | UNIT | SECTION | TOWNSHIP | RANGE | COUNTY | BOX DIMENSIONS - FEET |       |       |
|---------------------------------|----------|------|---------|----------|-------|--------|-----------------------|-------|-------|
| Eunice Monument<br>Eumont (EME) | Jct. I-9 | I    | 9       | 20S      | 36E   | Lea    | Length                | Width | Depth |
|                                 |          |      |         |          |       |        | Eliminated            |       |       |

LAND TYPE: BLM \_\_\_\_\_ STATE \_\_\_\_\_ FEE LANDOWNER Faye Klein Family Trust OTHER \_\_\_\_\_

Depth to Groundwater 32 feet NMOCD SITE ASSESSMENT RANKING SCORE: 20

Date Started 10/26/2012 Date Completed 6/7/2013 OCD Witness No

Soil Excavated 5.4 cubic yards Excavation Length 7 Width 3 Depth 7 feet

Soil Disposed 12 cubic yards Offsite Facility Sundance Location Eunice, NM

FINAL ANALYTICAL RESULTS: Sample Date 10/26/2012, 6/5/2013 Sample Depth 7'

TPH and Chloride laboratory test results completed by using an approved lab and testing  
procedures pursuant to NMOCD guidelines.


| Sample<br>Location | PID (field)<br>ppm | GRO<br>mg/kg | DRO<br>mg/kg | Chloride<br>mg/kg |
|--------------------|--------------------|--------------|--------------|-------------------|
| SOURCE 7' GRAB     | 0.0                | <10          | <10          | 96                |
| Blowsand           | 2.1                | <10          | <10          | <16               |

| CHLORIDE FIELD TESTS   |       |       |
|--|-------|-------|
| LOCATION   | DEPTH | mg/kg |
| vertical<br>delineation<br>trench at the<br>junction<br>(source) | 2'    | 155   |
|  | 3'    | 392   |
|  | 4'    | 281   |
|  | 5'    | 337   |
|  | 6'    | 150   |
|  | 7'    | 111   |

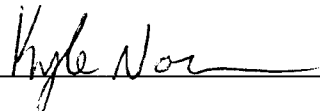
**General Description of Remedial Action:** This junction and line were eliminated during the pipeline replacement/upgrade program. After the former junction box was removed, an investigation was conducted using a backhoe to collect soil samples at regular intervals, creating a 7x3x7 ft. deep excavation. Chloride field tests performed on each sample yielded concentrations that decreased with depth. Organic vapors were measured using a PID, which yielded low concentrations. The deepest sample, 7 ft. below ground surface (BGS) was sent to a commercial laboratory for analysis of chloride and TPH, which confirmed low concentrations of each. The excavation was backfilled with imported blow sand to ground surface and contoured to the surrounding area. The blow sand was sent to a commercial laboratory for analysis of chloride and TPH, which confirmed low concentrations of each. On 6/7/2013, the site was seeded with a blend of native vegetation and is expected to return to a productive capacity at a normal rate.

enclosures: site map, area map, photos, lab results, PID (field) screenings, chloride graph, revegetation form

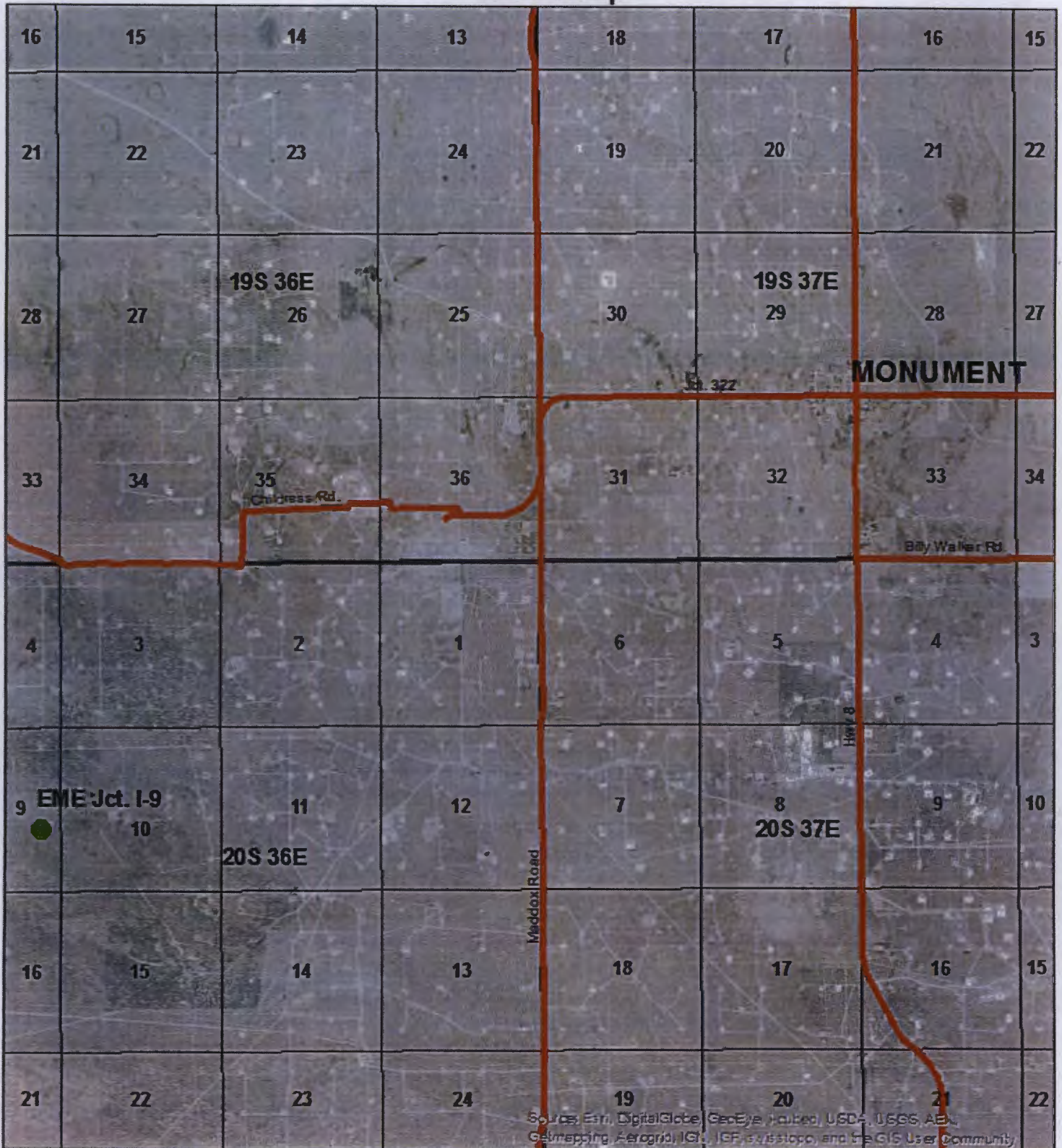
I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE  
AND BELIEF.

REPORT  
ASSEMBLED BY Laura Flores SIGNATURE  COMPANY Rice Environmental Consulting & Safety

SITE SUPERVISOR Dyllan Yarbrough SIGNATURE Not available COMPANY Rice Environmental Consulting & Safety

PROJECT LEADER Kyle Norman SIGNATURE  DATE 2-24-14

# Site Map



## EME Jct. I-9

Unit Letter I, Section 9,  
T20S, R36E  
Lea County, NM

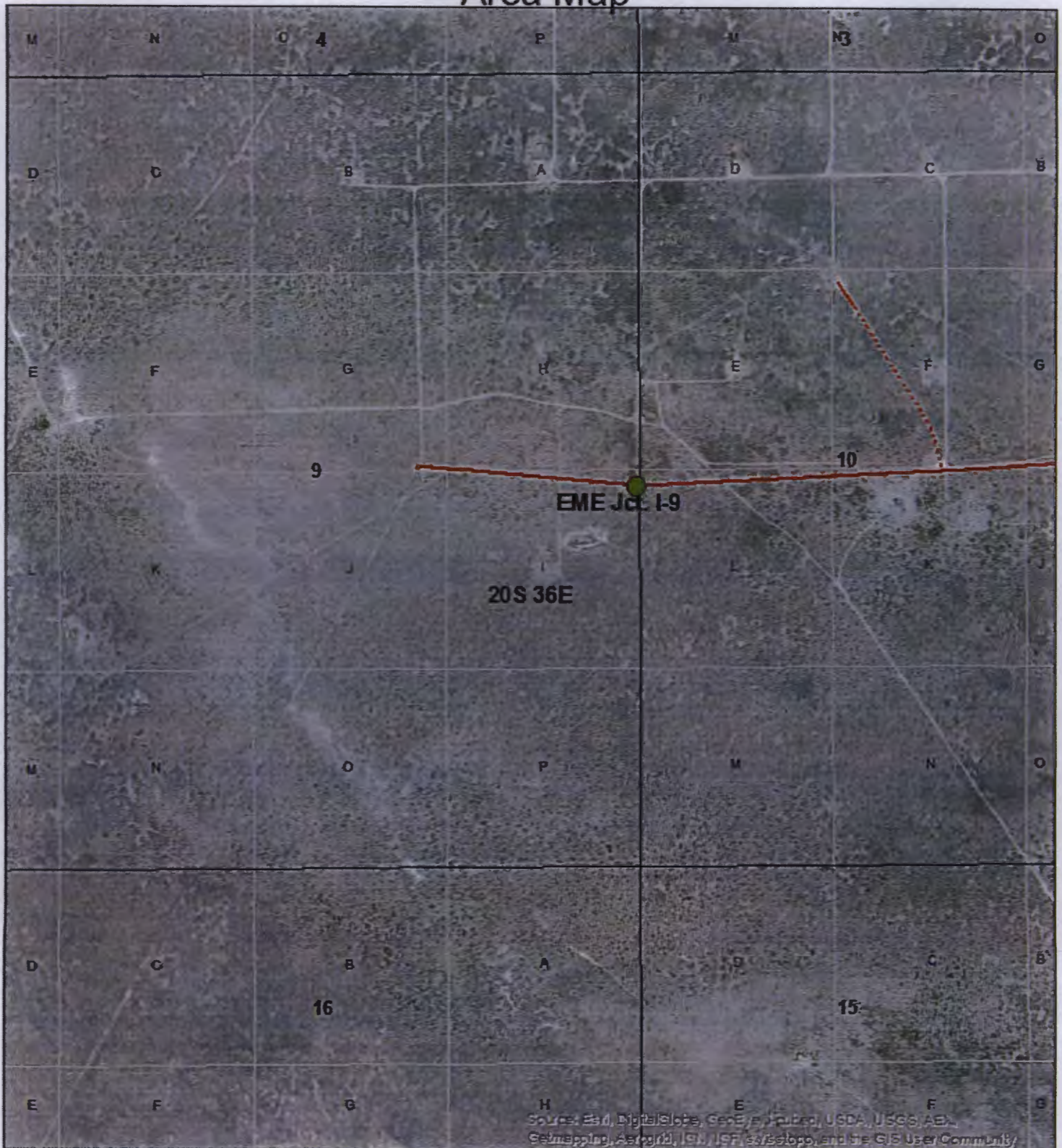


0 3,000 6,000  
Feet

Drawing date: 2/19/14 LF



## Area Map




**EME Jct. I-9**

**Unit Letter I, Section 9,  
T20S, R36E  
Lea County, NM**



0                      620                      1,240

 Feet

Drawing date: 2/19/14 LF



# EME Jct. I-9

UL/I Sec.9 (T20S-R36E)



Site prior, facing east

10/26/2012



Excavating site, facing south

10/26/2012



Backfilling excavation

10/26/2012



Seeding site, facing south

6/7/2013



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

---

October 29, 2012

ZACH CONDER

RICE ENVIRONMENTAL CONSULTING & SAFETY LLC

112 W. TAYLOR

HOBBS, NM 88240

RE: EME I-9 JCT

Enclosed are the results of analyses for samples received by the laboratory on 10/26/12 10:57.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/feld/qalab/accred\\_certif.html](http://www.tceq.texas.gov/feld/qalab/accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

|                  |                              |
|------------------|------------------------------|
| Method EPA 552.2 | Haloacetic Acids (HAA-5)     |
| Method EPA 524.2 | Total Trihalomethanes (TTHM) |
| Method EPA 524.4 | Regulated VOCs (V1, V2, V3)  |

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**

RICE ENVIRONMENTAL CONSULTING & SAFETY  
ZACH CONDER  
112 W. TAYLOR  
HOBBS NM, 88240  
Fax To: (575) 397-1471

|                   |             |                     |               |
|-------------------|-------------|---------------------|---------------|
| Received:         | 10/26/2012  | Sampling Date:      | 10/26/2012    |
| Reported:         | 10/29/2012  | Sampling Type:      | Soil          |
| Project Name:     | EME I-9 JCT | Sampling Condition: | Cool & Intact |
| Project Number:   | NONE GIVEN  | Sample Received By: | Jodi Henson   |
| Project Location: | NOT GIVEN   |                     |               |

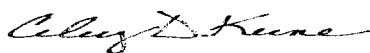
**Sample ID: 7' VERTICAL INITIAL (H202617-01)**

| Chloride, SM4500Cl-B          |             | mg/kg           |            | Analyzed By: AP |     |            |               |        |           |
|-------------------------------|-------------|-----------------|------------|-----------------|-----|------------|---------------|--------|-----------|
| Analyte                       | Result      | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD    | Qualifier |
| <b>Chloride</b>               | <b>96.0</b> | 16.0            | 10/29/2012 | ND              | 400 | 100        | 400           | 0.00   |           |
| TPH 8015M                     |             | mg/kg           |            | Analyzed By: M5 |     |            |               |        |           |
| Analyte                       | Result      | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD    | Qualifier |
| GRO C6-C10                    | <10.0       | 10.0            | 10/26/2012 | ND              | 199 | 99.6       | 200           | 0.0954 |           |
| DRO >C10-C28                  | <10.0       | 10.0            | 10/26/2012 | ND              | 218 | 109        | 200           | 2.13   |           |
| Surrogate: 1-Chlorooctane     | 74.7 %      | 65.2-140        |            |                 |     |            |               |        |           |
| Surrogate: 1-Chlorooctadecane | 78.7 %      | 63.6-154        |            |                 |     |            |               |        |           |

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

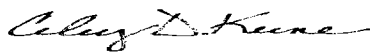
|     |  |
|-----|--|
| ND  | Analyte NOT DETECTED at or above the reporting limit   |
| RPD | Relative Percent Difference  |
| **  | Samples not received at proper temperature of 6°C or below.  |
| *** | Insufficient time to reach temperature.  |
| -   | Chloride by SM4500Cl-B does not require samples be received at or below 6°C<br>Samples reported on an as received basis (wet) unless otherwise noted on report |

---

Cardinal Laboratories

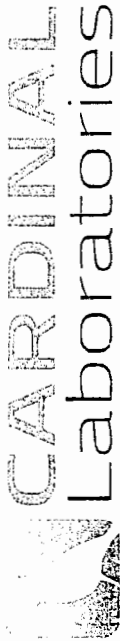
\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



---

Celey D. Keene, Lab Director/Quality Manager



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

|  |  |                           |  |                    |  |                         |  |                    |  |                    |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|--|---------------------------|--|--------------------|--|-------------------------|--|--------------------|--|--------------------|--|---------------|--|------------------|--|-------------------------|--|---------------|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>Company Name:</b> <u>BGS</u>            |  | <b>P.O. #:</b>            |  | <b>BILL TO</b>     |  |                         |  |                    |  |                    |  |               |  |                  |  | <b>ANALYSIS REQUEST</b> |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Project Manager:</b> <u>Zach Corder</u> |  | <b>Company:</b>           |  |                    |  |                         |  |                    |  |                    |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Address:</b>                            |  | <b>Attn:</b>              |  |                    |  |                         |  |                    |  |                    |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>City:</b>                               |  | <b>State:</b>             |  |                    |  |                         |  |                    |  |                    |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Phone #:</b>                            |  | <b>Fax #:</b>             |  |                    |  |                         |  |                    |  |                    |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Project #:</b>                          |  | <b>Project Owner:</b>     |  |                    |  |                         |  |                    |  |                    |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Project Name:</b> <u>Env. T-9 Oct</u>   |  | <b>State:</b>             |  |                    |  |                         |  |                    |  |                    |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Project Location:</b>                   |  | <b>Zip:</b>               |  |                    |  |                         |  |                    |  |                    |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Sampler Name:</b>                       |  | <b>Phone #:</b>           |  |                    |  |                         |  |                    |  |                    |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Fax #:</b>                              |  | <b>Fax #:</b>             |  |                    |  |                         |  |                    |  |                    |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>FOR LAB USE ONLY</b>                    |  | <b>MATRIX</b>             |  | <b>PRESERV</b>     |  | <b>SAMPLING</b>         |  | <b>DATE</b>        |  | <b>TIME</b>        |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Lab I.D.</b>                            |  | <b>(G) RAB OR (C) OMP</b> |  | <b>GROUNDWATER</b> |  | <b>WASTEWATER</b>       |  | <b>SOIL</b>        |  | <b>SLUDGE</b>      |  | <b>OTHER:</b> |  | <b>ACID/BASE</b> |  | <b>ICE/COOL</b>         |  | <b>OTHER:</b> |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Sample I.D.</b>                         |  | <b># CONTAINERS</b>       |  | <b>1</b>           |  | <b>1</b>                |  | <b>1</b>           |  | <b>10/2/12</b>     |  | <b>10:25</b>  |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Relinquished By:</b>                    |  | <b>Date:</b>              |  | <b>Time:</b>       |  | <b>Relinquished By:</b> |  | <b>Date:</b>       |  | <b>Time:</b>       |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Relinquished By:</b>                    |  | <b>Date:</b>              |  | <b>Time:</b>       |  | <b>Relinquished By:</b> |  | <b>Date:</b>       |  | <b>Time:</b>       |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Delivered By: (Circle One)</b>          |  | <b>Sample Condition</b>   |  | <b>Cool/Intact</b> |  | <b>Checked By:</b>      |  | <b>Checked By:</b> |  | <b>Checked By:</b> |  |               |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Sampler - UPS - Bus - Other:</b>        |  | <b>Yes</b>                |  | <b>No</b>          |  | <b>Yes</b>              |  | <b>No</b>          |  | <b>Yes</b>         |  | <b>No</b>     |  |                  |  |                         |  |               |  |  |  |  |  |  |  |  |  |  |  |  |  |

PLEASE NOTE: Liability and Damages: Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

|                                     |                         |                    |                         |                    |                    |                         |                    |                    |                         |                    |                    |
|-------------------------------------|-------------------------|--------------------|-------------------------|--------------------|--------------------|-------------------------|--------------------|--------------------|-------------------------|--------------------|--------------------|
| <b>Relinquished By:</b>             | <b>Date:</b>            | <b>Time:</b>       | <b>Relinquished By:</b> | <b>Date:</b>       | <b>Time:</b>       | <b>Relinquished By:</b> | <b>Date:</b>       | <b>Time:</b>       | <b>Relinquished By:</b> | <b>Date:</b>       | <b>Time:</b>       |
| <b>Delivered By: (Circle One)</b>   | <b>Sample Condition</b> | <b>Cool/Intact</b> | <b>Checked By:</b>      | <b>Checked By:</b> | <b>Checked By:</b> | <b>Checked By:</b>      | <b>Checked By:</b> | <b>Checked By:</b> | <b>Checked By:</b>      | <b>Checked By:</b> | <b>Checked By:</b> |
| <b>Sampler - UPS - Bus - Other:</b> | <b>Yes</b>              | <b>No</b>          | <b>Yes</b>              | <b>No</b>          | <b>Yes</b>         | <b>No</b>               | <b>Yes</b>         | <b>No</b>          | <b>Yes</b>              | <b>No</b>          | <b>Yes</b>         |

**REMARKS:** Hack Corder Laura W  
Zach Corder Laura Pomer  
Bruce Baker Amy Ruth



# RICE ENVIRONMENTAL CONSULTING & SAFETY

122 West Taylor Hobbs, NM 88240  
PHONE: (505) 393-9174 FAX: (505) 397-1471  
PID METER CALIBRATION & FIELD REPORT FORM

|       |   |                 |                       |
|-------|---|-----------------|-----------------------|
| CK.   |   | MODEL: PGM 7300 | SERIAL NO: 590-000508 |
| MODEL |   | MODEL: PGM 7300 | SERIAL NO: 590-000504 |
| NO.   | X | MODEL: PGM 7320 | SERIAL NO: 592-903318 |
|       |   | MODEL: PGM 7300 | SERIAL NO: 590-000183 |

Copy

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

|                             |                           |
|-----------------------------|---------------------------|
| LOT NO: HAL-248-100-1       | EXPIRATION DATE: 7/1/2015 |
| METER READING ACCURACY: 100 |                           |

ACCURACY : +/- 2%

|                |
|----------------|
| COMPANY        |
| RICE OPERATING |

| SYSTEM | JUNCTION | UNIT | SECTION | TOWN SHIP | RANGE |
|--------|----------|------|---------|-----------|-------|
| EME    | Jct. I-9 | I    | 9       | 20S       | 36E   |

| SAMPLE ID   | PID | SAMPLE ID | PID |
|-------------|-----|-----------|-----|
| Source @ 7' | 1.3 |           |     |
|             |     |           |     |
|             |     |           |     |
|             |     |           |     |
|             |     |           |     |
|             |     |           |     |
|             |     |           |     |
|             |     |           |     |
|             |     |           |     |
|             |     |           |     |
|             |     |           |     |
|             |     |           |     |
|             |     |           |     |
|             |     |           |     |

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

SIGNATURE: \_\_\_\_\_ Not available \_\_\_\_\_ DATE: 10/26/2012



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

---

June 11, 2013

Hack Conder

Rice Operating Company

112 W. Taylor

Hobbs, NM 88240

COPY

RE: EME I-9 JCT

Enclosed are the results of analyses for samples received by the laboratory on 06/05/13 16:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

|                  |                              |
|------------------|------------------------------|
| Method EPA 552.2 | Haloacetic Acids (HAA-5)     |
| Method EPA 524.2 | Total Trihalomethanes (TTHM) |
| Method EPA 524.4 | Regulated VOCs (V1, V2, V3)  |

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 Rice Operating Company  
 Hack Conder  
 112 W. Taylor  
 Hobbs NM, 88240  
 Fax To: (575) 397-1471

 Received: 06/05/2013  
 Reported: 06/11/2013  
 Project Name: EME I-9 JCT  
 Project Number: NONE GIVEN  
 Project Location: NOT GIVEN

 Sampling Date: 06/05/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson


**Sample ID: BLOWSAND (H301314-01)**

| Chloride, SM4500Cl-B          |        | mg/kg           |            | Analyzed By: AP |     |            |               |      |           |
|-------------------------------|--------|-----------------|------------|-----------------|-----|------------|---------------|------|-----------|
| Analyte                       | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| Chloride                      | <16.0  | 16.0            | 06/11/2013 | ND              | 432 | 108        | 400           | 0.00 |           |
| TPH 8015M                     |        | mg/kg           |            | Analyzed By: MS |     |            |               |      |           |
| Analyte                       | Result | Reporting Limit | Analyzed   | Method Blank    | BS  | % Recovery | True Value QC | RPD  | Qualifier |
| GRO C6-C10                    | <10.0  | 10.0            | 06/07/2013 | ND              | 199 | 99.6       | 200           | 2.79 |           |
| DRO >C10-C28                  | <10.0  | 10.0            | 06/07/2013 | ND              | 209 | 104        | 200           | 5.01 |           |
| <hr/>                         |        |                 |            |                 |     |            |               |      |           |
| Surrogate: 1-Chlorooctane     | 103 %  | 65.2-140        |            |                 |     |            |               |      |           |
| Surrogate: 1-Chlorooctadecane | 111 %  | 63.6-154        |            |                 |     |            |               |      |           |

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager



**Notes and Definitions**

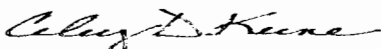
|     |  |
|-----|--|
| ND  | Analyte NOT DETECTED at or above the reporting limit   |
| RPD | Relative Percent Difference  |
| **  | Samples not received at proper temperature of 6°C or below.  |
| *** | Insufficient time to reach temperature.  |
| -   | Chloride by SM4500Cl-B does not require samples be received at or below 6°C<br>Samples reported on an as received basis (wet) unless otherwise noted on report |

---

Cardinal Laboratories

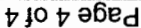
\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



---

Celey D. Keene, Lab Director/Quality Manager



**101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476**

**PLEASE NOTE:** Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the services actually performed by Cardinal. In no event shall Cardinal be liable for consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates, agents, employees, independent contractors, or other third parties. In no event shall Cardinal be liable for damages caused by negligence or gross negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. No other damages shall be recoverable from Cardinal, regardless of whether such claim is based upon any of the above referred to or otherwise.

+ Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

# RICE ENVIRONMENTAL CONSULTING & SAFETY

122 West Taylor Hobbs, NM 88240  
PHONE: (505) 393-9174 FAX: (505) 397-1471  
PID METER CALIBRATION & FIELD REPORT FORM

|       |   |                 |                       |
|-------|---|-----------------|-----------------------|
| CK.   |   | MODEL: PGM 7300 | SERIAL NO: 590-000508 |
| MODEL |   | MODEL: PGM 7300 | SERIAL NO: 590-000504 |
| NO.   | X | MODEL: PGM 7320 | SERIAL NO: 592-903318 |
|       |   | MODEL: PGM 7300 | SERIAL NO: 590-000183 |

GAS COMPOSITION: ISOBUTYLENE 100PPM / AIR: BALANCE

|                             |                           |
|-----------------------------|---------------------------|
| LOT NO: HAL-248-100-1       | EXPIRATION DATE: 7/1/2015 |
| METER READING ACCURACY: 100 |                           |

ACCURACY : +/- 2%

|                |
|----------------|
| <b>COMPANY</b> |
| RICE OPERATING |

| SYSTEM | JUNCTION | UNIT | SECTION | TOWN SHIP | RANGE |
|--------|----------|------|---------|-----------|-------|
| EME    | Jct. 1-9 | I    | 9       | 20S       | 36E   |

| SAMPLE ID | PID | SAMPLE ID | PID |
|-----------|-----|-----------|-----|
| Blowsand  | 2.1 |           |     |
|           |     |           |     |
|           |     |           |     |
|           |     |           |     |
|           |     |           |     |
|           |     |           |     |
|           |     |           |     |
|           |     |           |     |
|           |     |           |     |
|           |     |           |     |
|           |     |           |     |
|           |     |           |     |
|           |     |           |     |
|           |     |           |     |

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

SIGNATURE: \_\_\_\_\_ Not available \_\_\_\_\_ DATE: 6/5/2013



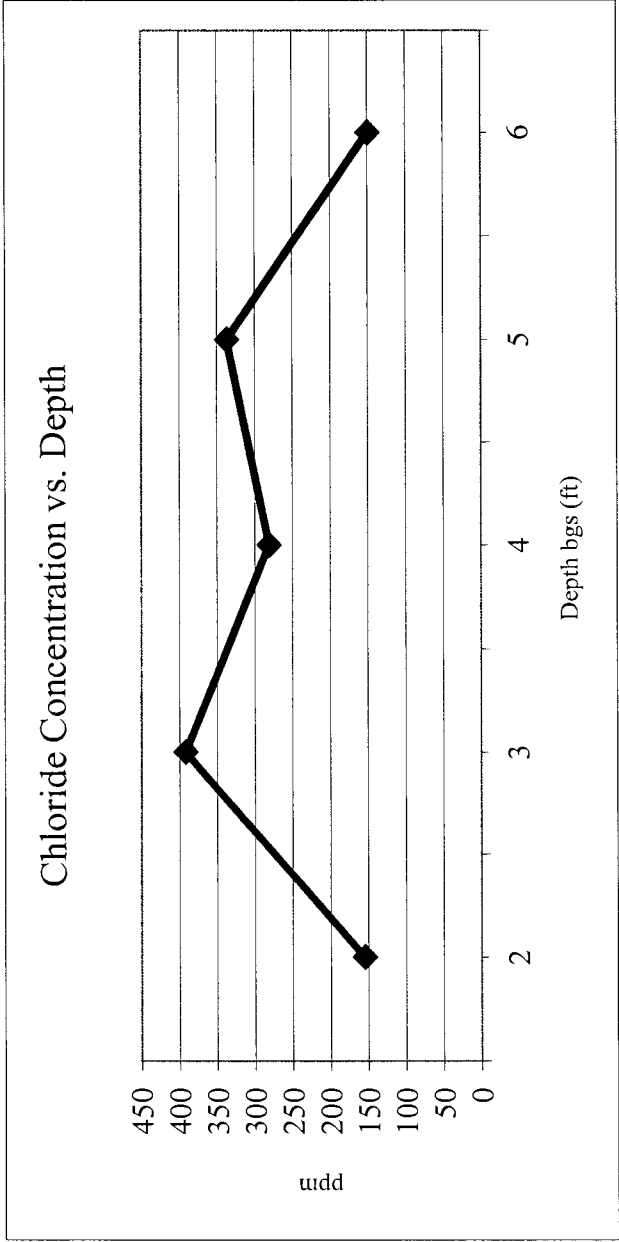
EME Jct. I-9

Unit 'I', Sec. 9, T20S, R36E

Backhoe samples at junction (source)

| Depth bgs (ft) | Chloride (ppm) |
|----------------|----------------|
| 2              | 155            |
| 3              | 392            |
| 4              | 281            |
| 5              | 337            |
| 6              | 150            |
| 7              | 111            |

Groundwater = 32 ft





PO Box 5630  
Hobbs, NM 88241  
Phone: (575) 393-4411  
Fax: (575) 393-0293



## VEGETATION FORM

### 1. General Information

|  |              |                 |              |               |                         |                           |
|--|--------------|-----------------|--------------|---------------|-------------------------|---------------------------|
| Site name: EME Jct. I-9                |              |                 |              |               |                         |                           |
| U/L<br>1                               | Section<br>9 | Township<br>20S | Range<br>36E | County<br>Lea | Latitude<br>N-32°35.251 | Longitude<br>W-103°21.048 |
| Contact Name: Zach Conder              |              |                 |              |               |                         |                           |
| Email: zconder@rice-ecs.com            |              |                 |              |               |                         |                           |
| Site size: 25x25 square feet 615 sq ft |              |                 |              |               |                         |                           |

### 2. Soils

*\*Do not rip caliche subsoils; caliche rocks brought to the surface by ripping shall be removed.*

|                    |                          |               |                                     |            |                          |         |                                     |            |                          |            |                          |
|--------------------|--------------------------|---------------|-------------------------------------|------------|--------------------------|---------|-------------------------------------|------------|--------------------------|------------|--------------------------|
| Salvaged from site | <input type="checkbox"/> | Bioremediated | <input checked="" type="checkbox"/> | Imported   | <input type="checkbox"/> | Blended | <input type="checkbox"/>            | Depth (in) | <input type="checkbox"/> |            |                          |
| Texture:           | Describe soil & subsoil: |               |                                     |            |                          |         |                                     |            |                          |            |                          |
| Soil prep methods: | <input type="checkbox"/> | Rip           | <input type="checkbox"/>            | Depth (in) | <input type="checkbox"/> | Disc    | <input checked="" type="checkbox"/> | Depth (in) | <input type="checkbox"/> | Rollerpack | <input type="checkbox"/> |
| Date completed:    |                          |               |                                     |            |                          |         |                                     |            |                          |            |                          |

### 3. Bioremediation

|            |                                     |     |                          |       |  |
|------------|-------------------------------------|-----|--------------------------|-------|--|
| Fertilizer | <input checked="" type="checkbox"/> | Hay | <input type="checkbox"/> | Other | <input type="checkbox"/>   |
| Type:      |                                     |     |                          |       | Describe: 6 bags of RestoreNhance, 1 bag of Manure, 2 bags of potting soil |
| Lbs/acre:  |                                     |     |                          |       |  |

### 4. Seeding

*\*Attach seed bag tags to this form. Seed bag tags shall contain the site name and S-T-R.*

|                              |                                     |                |                                     |                |  |       |                          |
|------------------------------|-------------------------------------|----------------|-------------------------------------|----------------|--|-------|--------------------------|
| Custom Seed Mix              | <input checked="" type="checkbox"/> | Prescribed Mix | <input type="checkbox"/>            | Seed Mix Name: | 7.5 lbs of blue gramma, 7.5 lbs of side oats | Date: | 6/7/2013                 |
| Broadcast                    | <input checked="" type="checkbox"/> | Method:        | Portable Seeder                     |                |  |       |                          |
| Soil conditions during seed: | <input type="checkbox"/>            | Dry            | <input checked="" type="checkbox"/> | Damp           | <input type="checkbox"/>                     | Wet   | <input type="checkbox"/> |
| Observations:                |                                     |                |                                     |                |  |       |                          |

### 5. Certification

I hereby certify that the information in this form and attachments is true and complete to the best of my knowledge and belief.

|                      |                           |                |
|----------------------|---------------------------|----------------|
| Name: Eduardo Garcia | Title: Environmental Tech | Date: 6/7/2013 |
| Signature:           | Not available             |                |

# **RICE** *Operating Company*

122 West Taylor • Hobbs, New Mexico 88240

Phone: (575) 393-9174 • Fax: (575) 397-1471

RECEIVED OGD

2014 MAR 32 A 10: 17

April 1, 2014

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

RE: JUNCTION BOX UPGRADE REPORT for 2013  
EME SWD SYSTEM  
Lea County, New Mexico

Mr. Lowe:

Rice Operating Company (ROC) takes this opportunity to submit the Junction Box Upgrade results for the year 2013. Enclosed is a list of the completed junction boxes and their respective closure/disclosure dates. These boxes are located in the Eunice-Monument-Eumont (EME) Salt Water Disposal (SWD) System located in the vicinity of Eunice, New Mexico.

ROC completed 11 junction boxes in 2013.

Enclosed are the 2008 results (17 sites evaluated with 22 sampling locations) from the PID/BTEX study described in the NMOCD-approved Revised Junction Box Upgrade Work Plan (July 16, 2003). A third-party analysis, conducted by Peter Galusky, Jr. Ph.D. of Texerra, concluded from the data collected thus far that field-composited values tend to produce slightly higher BTEX numbers above the point at which BTEX concentrations become significant. This is likely due to the fact that BTEX is volatile and quickly biodegradable. This analysis was submitted to NMOCD on March 12, 2009. An appropriate number of sample sites could not be obtained to conduct a 2013 BTEX comparison analysis. Peter Galusky, Jr. Ph.D. of Texerra also compared ROC's 2013 chloride field tests to chloride laboratory analyses; the analysis is also enclosed. The study of this data continues to validate the accuracy of the chloride field tests employed by ROC.

ROC is the service provider (agent) for the EME SWD System and has no ownership of any portion of the pipeline, well, or facility. The System is owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.



Replacement/closure projects of this magnitude require System Party AFE approval and work begins as funds are received.

Thank you for your consideration of this Junction Box Upgrade Report for 2013.

RICE OPERATING COMPANY

A handwritten signature in black ink, appearing to read 'H. Conder', with a long horizontal flourish extending to the right.

Hack Conder  
Environmental Manager

enclosures as stated

cc: SC, file, Mr. Geoffrey Leking  
NMOCD, District I Office  
1625 N. French Drive  
Hobbs, NM 88240

**Rice Operating Company  
EME SWD System Junction Box Upgrade Project  
2013 Completed Boxes**

|    |              | Legal Description |     |     |     |                 |                            |                  |                |
|----|--------------|-------------------|-----|-----|-----|-----------------|----------------------------|------------------|----------------|
|    | Jct Box Name | Unit              | Sec | T   | R   | Completion Date | OCD<br>Assessment<br>Score | Report<br>Status | Case<br>Number |
| 1  | B-19 EOL     | B                 | 19  | 19S | 37E | 6/28/2013       | 20                         | Closure          |                |
| 2  | E-21 EOL     | E                 | 21  | 20S | 37E | 1/8/2014        | 20                         | Closure          |                |
| 3  | JCT. D-19    | D                 | 19  | 19S | 37E | 5/10/2013       | 20                         | Closure          |                |
| 4  | JCT. D-20    | D                 | 20  | 19S | 37E | 6/10/2013       | 20                         | Closure          |                |
| 5  | JCT. F-26    | F                 | 26  | 20S | 36E | 11/7/2012       | 0                          | Closure          |                |
| 6  | JCT. H-4     | H                 | 4   | 20S | 36E | 6/7/2013        | 20                         | Closure          |                |
| 7  | JCT. I-9     | I                 | 9   | 20S | 36E | 6/7/2013        | 20                         | Closure          |                |
| 8  | JCT. K-19    | K                 | 19  | 19S | 37E | 6/11/2013       | 20                         | Closure          |                |
| 9  | M-9 EOL      | M                 | 9   | 21S | 36E | 6/24/2013       | 0                          | Closure          |                |
| 10 | O-28 EOL     | O                 | 28  | 20S | 36E | n/a             | 0                          | Closure          |                |
| 11 | P-5 EOL      | P                 | 5   | 21S | 36E | 6/24/2013       | 0                          | Closure          |                |

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

**Texerra**

**505 N Big Spring, Suite 404 Midland, Texas 79701**

**Tel: 432-634-9257 E-mail: lpg@texerra.com**

March 10<sup>th</sup>, 2009

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

Re: Comparison of Field versus Lab Compositing of BTEX soil samples  
Rice Operating Company, Junction Box Upgrade Work Plan

Sent via Certified Mail w/ Return Receipt No. 7006 0100 0001 2438 3944

Dear Mr. Jones:

On behalf of Rice Operating Company (ROC) I am submitting the attached comparison and analysis of field versus laboratory soil compositing for soil BTEX samples. This is to address the question of whether it is better to mix multiple samples in the field or to do so in the laboratory in order to produce a composite, representative sample for analysis. This work was undertaken in support of ROC's Junction Box Upgrade Work Plan to ensure the quality of their field analysis program.

In brief, this work indicates that field compositing of soil samples generally gives rise to *slightly* higher BTEX values than does laboratory compositing of multiple samples. This is presumably due to the likelihood that field compositing and packaging of soil samples better preserves sample integrity. It would therefore appear that field compositing would represent the better method of procuring soil samples for subsequent analysis of BTEX.

Please call me if you have any questions or wish to discuss any of the details of this study.

ROC is the service provider (agent) for various Salt Water Disposal Systems (SWDs) and has no ownership of any portion of pipeline, well or facility. The SWD Systems that ROC operates are owned by a consortium of oil producers, System Partners, who provide all operating capital on a percentage ownership/usage basis.

Sincerely,



L. Peter Galusky, Jr. Ph.D.  
Principal

Copy: Rice Operating Company,  
Edward Hansen (NMOCD) sent certified mail w/ return receipt  
No. 7006 0100 0001 2438 3937

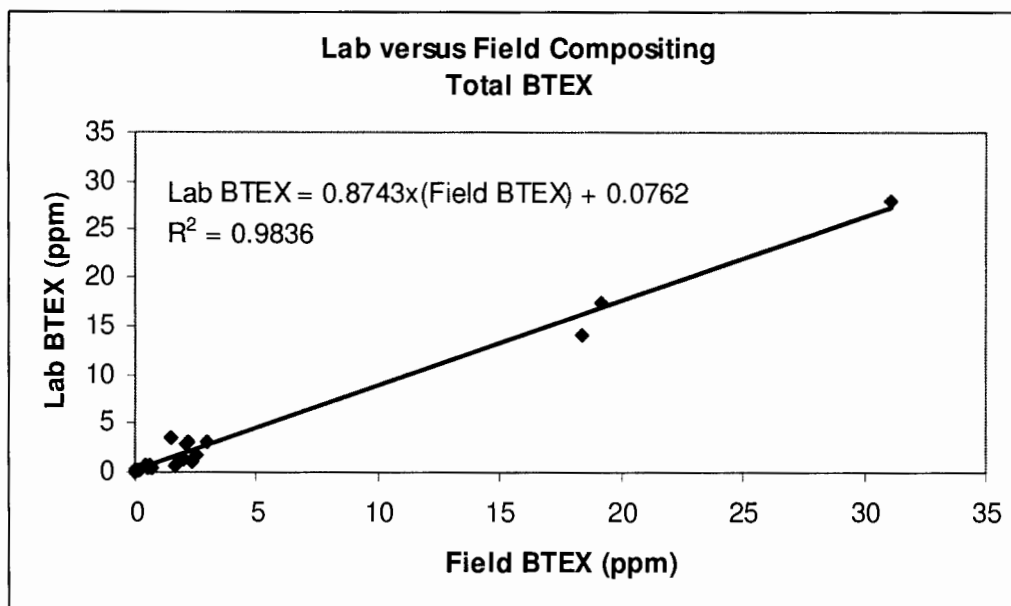
Attachment: As noted, above.

## Rice Operating Company

### Comparison of Field Compositing versus Laboratory Compositing of Soil BTEX Samples<sup>1</sup>

The careful mixing of multiple soil samples is critical in order to produce a representative, composite sample from a respective study area (such as an excavation face or bottom). Field technicians typically take four or five “grab” samples from excavation walls and/or bottom and send each of these to a laboratory for analysis of the composite, or mixed, sample. It would be far simpler, however, to composite such samples in the field. This study was undertaken to determine if field compositing produced results substantially different than laboratory compositing for the analysis of BTEX. Data were provided by Rice Operating Company encompassing 22 sampling locations over the period of 2004 through 2008.

A comparison of lab-composited soil samples versus field-composited soil samples revealed a close correspondence for total BTEX between the two methods (Figure 1).



**Figure 1** - Laboratory versus field-composited soil samples analyzed for BTEX.

The high  $R^2$  value (0.9836) of the best-fit statistical regression line indicates a high degree of reliability in using the field-compositing method over the range of values observed. Below a “field-composited BTEX” value of 0.61 ppm the “lab-composited BTEX” values are slightly lower. However, above a field-composited BTEX value of 0.61 the lab-composited values run slightly lower. In other words, the field-composited values tended to produce slightly higher BTEX numbers above the point at which BTEX concentrations become significant.

There is a reason for this. BTEX is volatile and quickly biodegradable. The compositing and “packaging” of soil samples in the field minimize the handling and aeration that occur in the laboratory. Thus, field-composited soil samples lose less BTEX to evaporation and/or biodegradation prior to laboratory analysis. In other words, the field compositing and packaging of soil samples better preserves sample integrity, and for this reasons would appear to represent the better method of procuring soil samples for subsequent analysis of BTEX.

<sup>1</sup> Prepared 03-12-09 by L. Peter Galusky, Jr. of Texerra.

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

**Texerra LLC**

**20055 Laredo Lane Monument, CO 80132  
Tel: 719-339-6791 E-mail: [lpg@texerra.com](mailto:lpg@texerra.com)**

March 25<sup>th</sup>, 2014

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

Re: Comparison of 2013 Laboratory versus Field Measured Soil Chloride Values  
Rice Operating Company, Junction Box Upgrade Work Plan

Mr. Lowe:

The attached comparison and analysis of 2013 laboratory versus field measured soil chloride values is submitted in support of Rice Operating Company's (ROC's) Junction Box Upgrade Work Plan to ensure the quality of their field analysis program.

In brief, this work indicates that Rice's 2013 field chloride measurement efforts provided a reasonable qualitative approximation of the laboratory-measured (and presumed true) values.

ROC is the service provider (agent) for various Salt Water Disposal Systems (SWDs) and has no ownership of any portion of pipeline, well or facility. The SWD Systems that ROC operates are owned by a consortium of oil producers, System Parties, who provide all operating capital on a percentage ownership/usage basis.

Please call me if you have any questions or wish to discuss this study.

Sincerely,

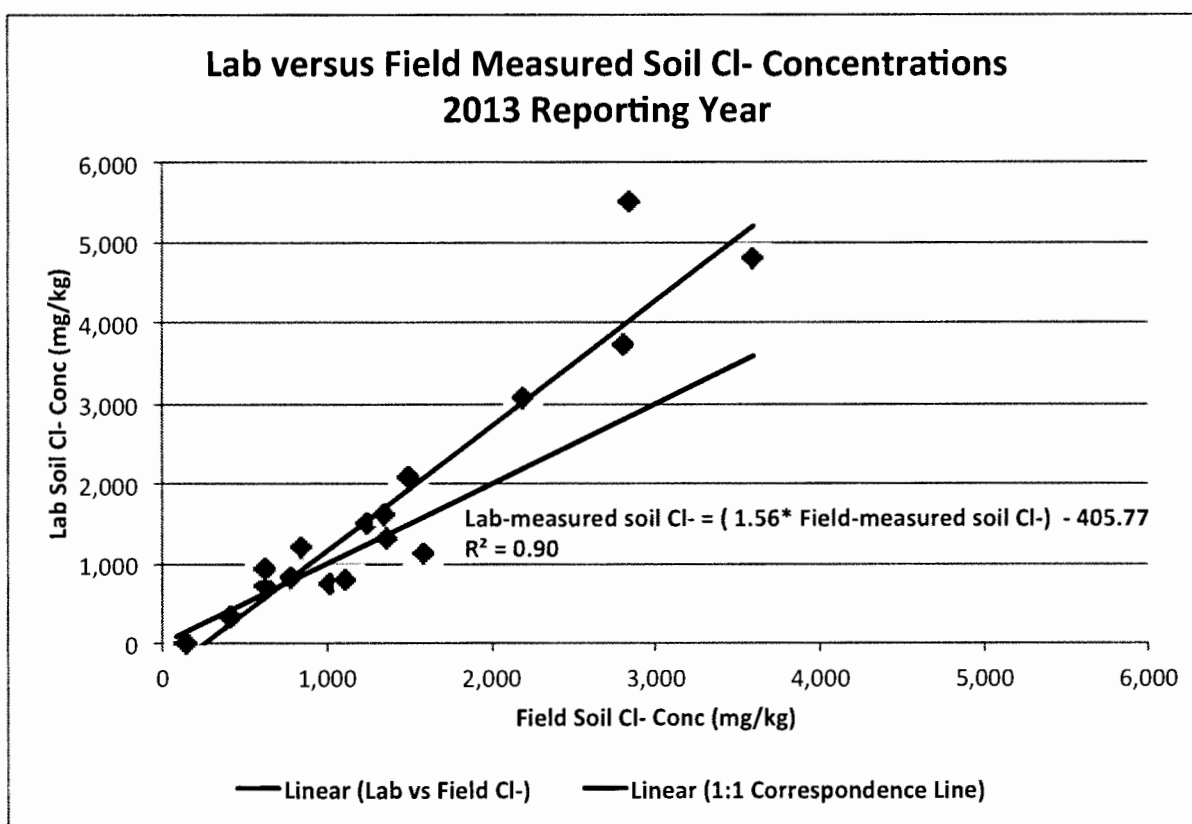


L. Peter Galusky, Jr. Ph.D.  
Principal

Copy: Glenn VonGonten, NMOCD; Rice Operating Company  
Attachment: As noted, above.

**Rice Operating Company**  
**Comparison of Laboratory to Field Measured Soil Chloride Concentrations**  
**Based upon 2013 Field Data**

A representative sample of 29 pairs of laboratory versus field measured soil chloride values was compared to determine how well field measurements matched laboratory measurements. It is assumed that laboratory measurements better represent the “true” values due to the controlled environment that a laboratory provides. A simple plot of the laboratory versus field measured soil chloride values is given below (Figure 1).



**Figure 1** – Laboratory versus field measured soil chloride measurements (n = 29 paired sets).

A straight line fit to the data confirms a general linear trend over a wide range of soil chloride concentrations, and the  $R^2$  value (0.90) indicates that field measurements provide a reliable approximation of laboratory-measured values. Based on the best-fit line of lab vs field measured values, field measured values overestimate lab measure values below a field measured value of 723 mg/kg and above this underestimate the lab-measured values. This is indicated in the graph where the (blue) best-fit line of lab vs field measured chlorides crosses the (black) line which would indicate a 1:1 correspondence.



## Junction Box Upgrade Program Closure/Disclosure Submissions for 2013

Updated 3-31-14

| <b>BD</b>    |           |  |  |  |  |  |  |  |  |  | <b>Closures</b> | <b>Disclosures</b> |
|--------------|-----------|--|--|--|--|--|--|--|--|--|-----------------|--------------------|
| Closure      | 4         |  |  |  |  |  |  |  |  |  | 4               |                    |
| Disclosure   | 8         |  |  |  |  |  |  |  |  |  |                 | 8                  |
| <b>EME</b>   |           |  |  |  |  |  |  |  |  |  |                 |                    |
| Closure      | 11        |  |  |  |  |  |  |  |  |  | 11              |                    |
| Disclosure   | 0         |  |  |  |  |  |  |  |  |  |                 | 0                  |
| <b>Total</b> | <b>23</b> |  |  |  |  |  |  |  |  |  | <b>15</b>       | <b>8</b>           |