

Remediation Summary Report North Benson Queen Unit Tank Battery Produced Water Spill

Prepared By:

A handwritten signature in cursive script, appearing to read "Fred Holmes".

Fred Holmes
Project Manager
Etech Environmental & Safety Solutions, Inc.

Reviewed By:

A handwritten signature in cursive script, appearing to read "Shane Estep".

Shane Estep
Senior Environmental Scientist
Etech Environmental & Safety Solutions, Inc.

| | |
|-----------------|--|
| Prepared By: | Etech Environmental & Safety Solutions, Inc. |
| Date Prepared: | June 21, 2010 |
| Project Number: | 094-1749-000 |

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Executive Summary

On August 3, 2008, a produced water release occurred at the Arena Resources, Inc. (Arena) NBQU Tank Battery facility located in Lea County, New Mexico. Before cleanup of the spills, a second release occurred on August 28, 2008 at the NBQU Tank Battery.

Arena Resources, Inc. (Arena) contracted Etech Environmental and Safety Solutions, Inc. (Etech) to; 1. Prepare and submit a corrective action plan (CAP) to the State of New Mexico, Oil Conservation Division (OCD) and, 2. Implement the CAP once approved. The approved CAP called for the construction of an on-site soil washing system to remove the chlorides from the soils. Once the soils reached a threshold level of 500 mg/kg or less of chlorides, the soils would be removed and the process repeated until all soils associated with the above releases had been mitigated. On October of 2008 Etech began excavation of the impacted soils and construction of the washing unit. Soils washing operations started in December of 2008 and were concluded in May of 2010. It should be noted that the unit was also used to wash chloride impacted soils from a flowline leak which had occurred at the NBQU Well # 16. A remediation report for that section was prepared and submitted to the OCD. The site was considered mitigated in August of 2009 and consequently is not part of this report

A three-tiered sampling and analysis plan was utilized to field screen and laboratory validate that the soils were remediated to the proper levels. All samples analyzed by Etech and by the third party laboratory confirmed the soils were cleaned to the objective levels of the corrective action plan.

Following the completion of the remediation of all of the excavated soils, the geotextile membrane and majority of the filter rock were removed from the treatment cell. As per approval from the OCD, the polyethylene liners were left in place. The cell was backfilled in 6-12 inch lifts and tire compacted to surface. The final surface area was contoured so that any water or spills would flow back towards the center of the site.

After completion of all of the activities, and the results of the analyses, the impacted soils from the two spills at the NBQU tank battery site have been successfully remediated.

Introduction

On August 3, 2008, a produced water release occurred at the Arena Resources, Inc. (Arena) NBQU Tank Battery facility located in Lea County, New Mexico. Before cleanup of the spills, a second release occurred on August 28, 2008 at the NBQU Tank Battery. Particulars on each spill are as follows:

Site:NBQU Tank Battery

Unit No:NMNM70993X

Latitude:.....N32° 42' 57.100"

Longitude:.....W103° 58" 17.900"

Quantity Released:.....580 BBLs.

Cause: Electrical storm shut down power to the facility. Sand tanks continued to send water to the water tank causing it to run over.

Site:NBQU Tank Battery

Unit No:NMNM70993X

Latitude:.....N32° 42' 57.100"

Longitude:.....W103° 58" 17.900"

Quantity Released:.....120 BBLs.

Cause: Lightning struck the north tank. A fire ensued causing the tank adjacent to the south to explode.

Arena Resources, Inc. (Arena) contracted Etech Environmental and Safety Solutions, Inc. (Etech) to; 1. Prepare and submit a corrective action plan (CAP) to the State of New Mexico, Oil Conservation Division and, 2. Implement the CAP once approved. The approved CAP called for the construction of an on-site soil washing system to remove the chlorides from the soils. Once the soils reached a threshold level of 500 mg/kg or less of chlorides, the soils would be removed and the process repeated until all soils associated with the above releases had been mitigated. On October of 2008 Etech began excavation of the impacted soils and construction of the washing unit. Soils washing operations started in December of 2008 and were concluded in May of 2010. It should be noted that the unit was also used to wash chloride impacted soils from a flowline leak which had occurred at the NBQU Well # 16. A remediation report for that section was prepared and submitted to the OCD. The site was considered mitigated in August of 2009 and consequently is not part of this report. A site location map is provided in Attachment A. A copy of the final NM C-141 Spill Reports is provided in Attachment B.

Remediation Summary

The process involved using freshwater as a solvent to remove the chlorides from the soil. Once the soil and water were added to the treatment cell, they were agitated to promote a uniform mixture then allowed to filter through a rock sieve covered with a geotextile membrane and flow to a separate collection area. The wash water was then transferred to a produced water tank at the facility and disposed of along with produced water from production operations at the fields produced water injection well. Photographs of the construction and cell operation are provided in Photos 1-6 on the following pages.

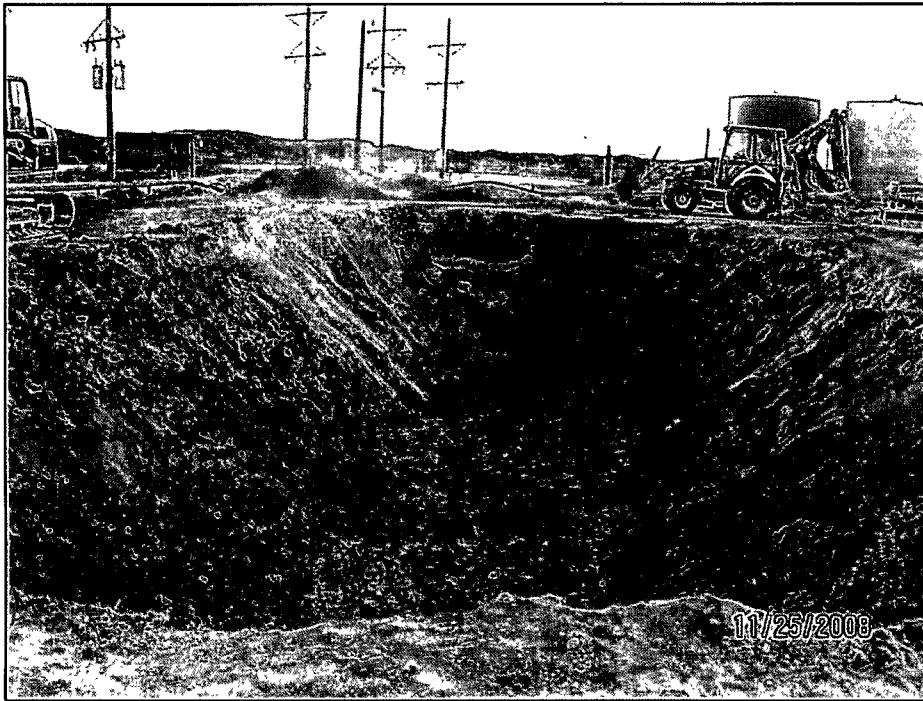


Photo 1: View of the cell following excavation.



Photo 2: View of the cell following the installation of the primary, 40 mil polyethylene liner.

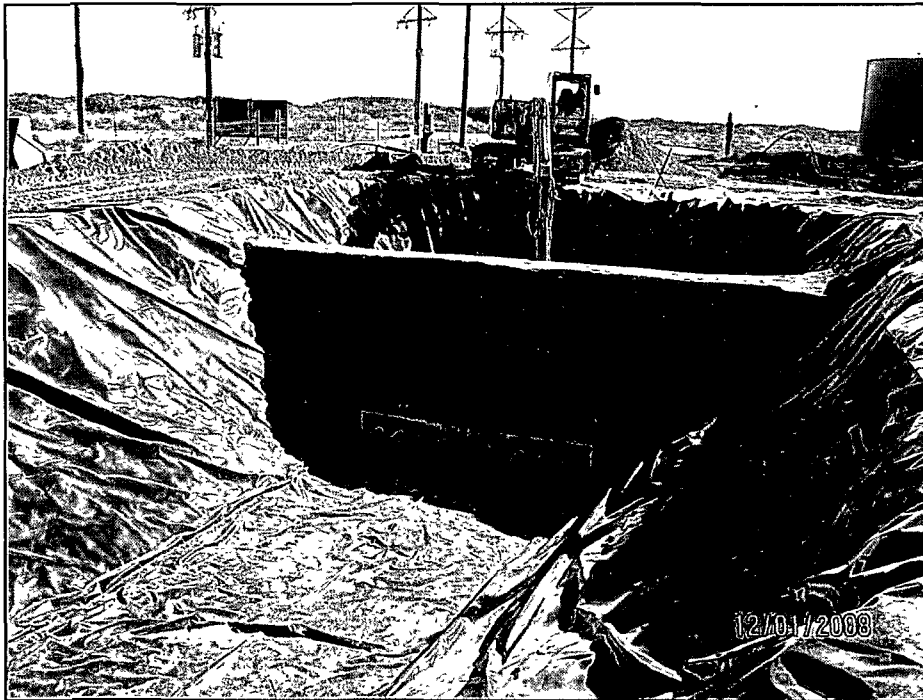


Photo 3: View of the completed divider wall to allow washing and the collection of rinsate.



Photo 4: View with secondary 40 mil polyethylene liner, filter rock, and geotextile membrane in place. Cell is ready to wash soil.



Photo 5 : Soil and water are being added to the washing side of the treatment cell.



Photo 6: View of water entering the collection area from the other side of the wash area. Pump (middle right) is used to transfer water to the produced water tank for disposal.

Validation Procedures and Analyses

Samples were collected daily by Etech's operations technician. A 25 gram aliquot of soil was placed in a sample jar along with 100 ml of distilled water and 1/8 of a tsp of calcium sulfate. The sample was agitated for 1-2 minutes then allowed to settle. Once settled, the clear phase of the liquid was extracted and placed in a clean sample vial and a HACH Quantab ® low-range titrator was inserted into the liquid. When the titrator indicated it had reached its end point, the value was read on the titrator and the result recorded. When the titrator indicated the sample was near 100 mg/kg, the soil was removed and stockpiled. Otherwise, the soil was washed again until it reached the targeted results. A copy of the field analysis sheets is provided in Attachment C.

Samples were collected from the stockpiles and tested monthly at Etech using Standard Method 4500 CIB which is identical to the sample procedure used by third party laboratories for the analysis of chlorides. If the analytical results determined the washed soil it was within the CAP objectives of 500 mg/kg or less the stockpiled material was staged to a clean area. A copy of the in-house analytical results is provided in Attachment D.

Etech also periodically collected samples from the stockpiles and sent them to Cardinal laboratories in Hobbs, NM for validation analyses. A portion of these sampling events were also witnessed by a representative of the OCD. A copy of the results of all laboratory validation analyses are provided in Attachment E.

All samples analyzed by Etech and by the third party laboratory confirmed the soils were cleaned to the objective levels of the corrective action plan.

Closure

Following the completion of the remediation of all of the excavated soils, the geotextile membrane and majority of the filter rock were removed from the treatment cell. As per approval from the OCD, the polyethylene liners were left in place. However a two-foot deep trench was excavated around the perimeter of the soil-washing unit. The primary and secondary liners were trimmed and folded into this trench then backfilled. The rationale for this approach was that Arena had plans in place to potentially construct and install a produced water tank battery over this area. It was decided that it would be technically a sound idea to leave the liners in place in the event another major upset of this type occurred again, that there would be a lower level of containment underneath the tanks.

Once this was completed, the cell was backfilled in 6-12 inch lifts and tire compacted to surface. The final surface area was contoured so that any water or spills would flow back towards the center of the site. Photographs of the closure process are presented on the following pages.



Photo 7: View of the removal of the geotextile fabric in progress.



Photo 8: View of the trench for folding back the near surface sections of the primary and secondary liners. Note the near completion of the filling of the cell.

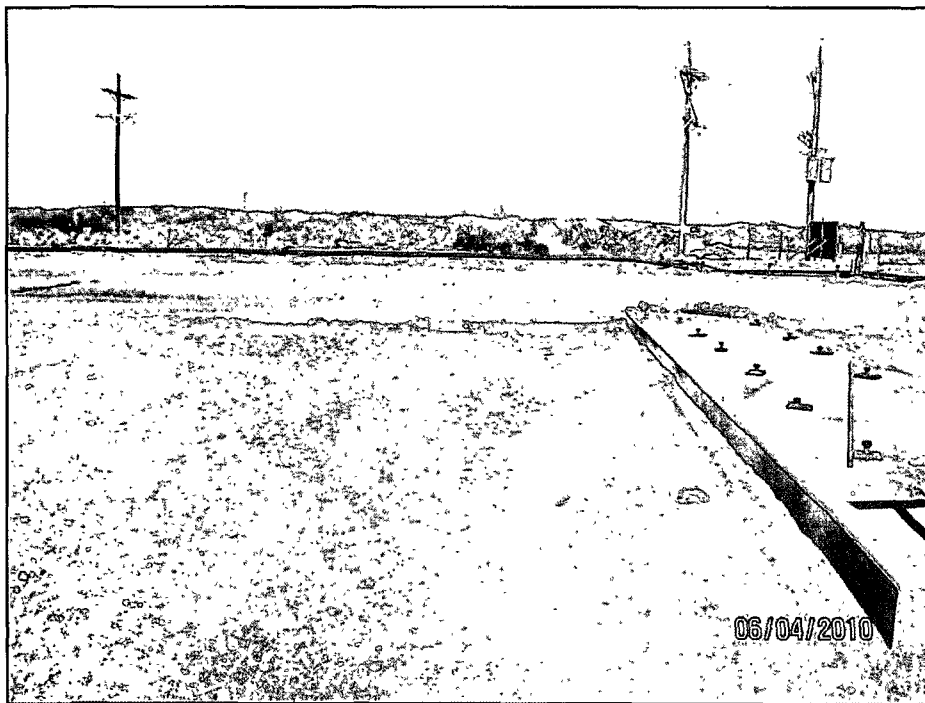
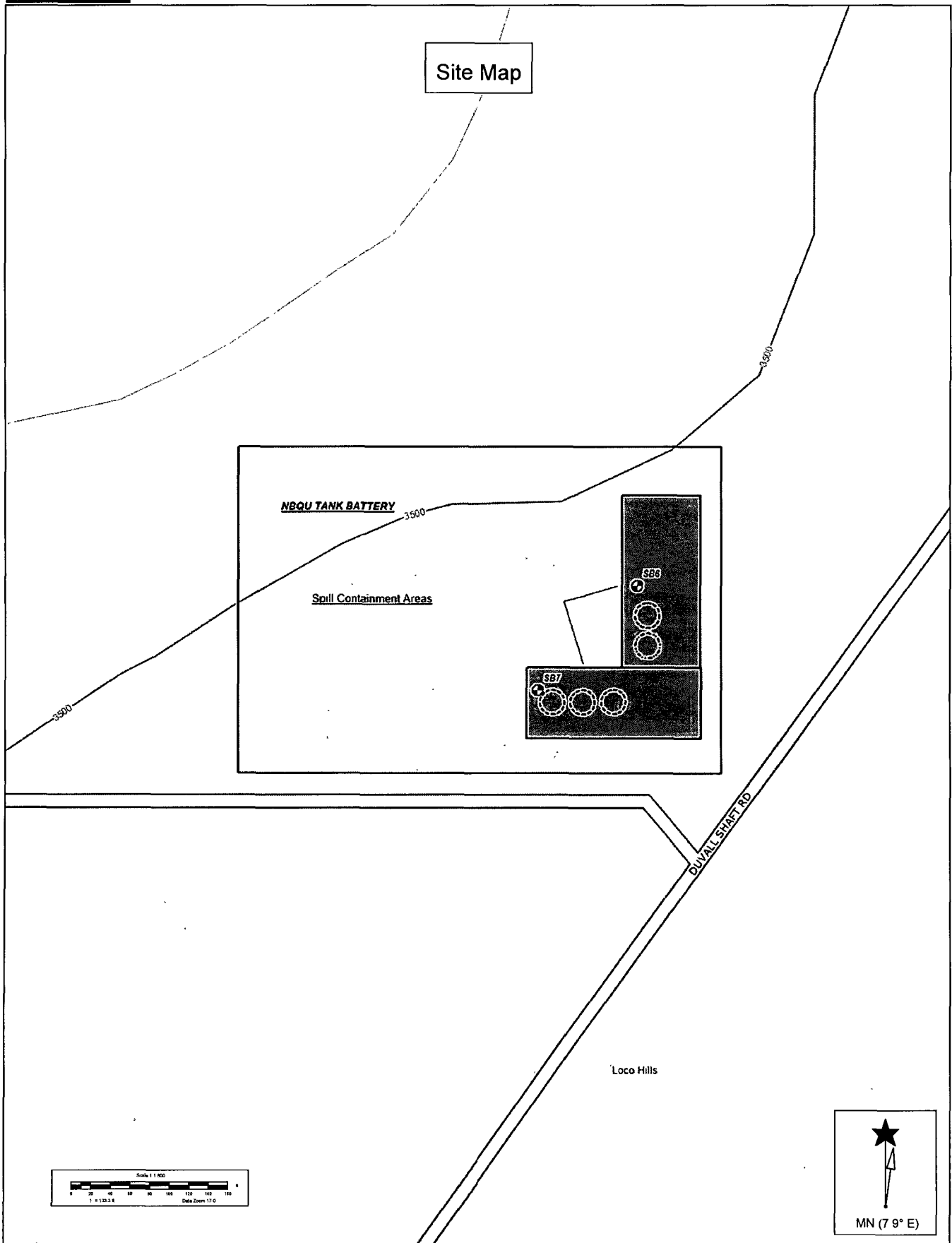


Photo 9: View looking east of the area where the treatment cell was located after completion of closure.

Conclusion

After completion of all of the activities, and the results of the analyses, the impacted soils from the two spills at the NBQU tank battery site have been successfully remediated and complete.

Attachment A
Site Map



Data use subject to license

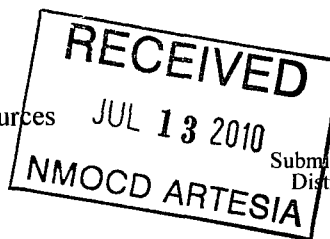
© DeLorme. XMap® 5.2 Professional.

www.delorme.com

Attachment B
Finalized C-141 Report

District I
1625 N French Dr , Hobbs, NM 88240
District II
1301 W Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, 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



Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

| | | |
|---|--|------------------|
| Name of Company: Arena Resources, Inc. | Contact: Fred Holmes | |
| Address: 2130 W. Bender Blvd. | Telephone No.: 575-738-1739/432-563-2200 | |
| Facility Name: North Benson Queen Battery | Facility Type: Oil and Produced Water Tank Battery | |
| Surface Owner: BLM | Mineral Owner: BLM | Lease No.: 33129 |

LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| J | 28 | 18S | 30E | 1743 | FSL | 784 | FEL | Lea |

Latitude: N32 43' 03.1" Longitude: W103 58' 24.4"

NATURE OF RELEASE

| | | |
|--|---|--|
| Type of Release: Produced Water & Oil | Volume of Release: 700 | Volume Recovered: 0 |
| Source of Release: Power Failure and Lightning Strike | Date and Hour of Occurrence: 08/28/2008 0100 hrs | Date and Hour of Discovery: 08/29/08 0700 hrs |
| Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom? Sherry Bonham, OCD/ James Amos, BLM | |
| By Whom? Fred Holmes - Consultant | Date and Hour 08/29/08 0800 | |
| Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If YES, Volume Impacting the Watercourse. | |

If a Watercourse was Impacted, Describe Fully.*:

Describe Cause of Problem and Remedial Action Taken.*: Battery wash involved in two spills, one from a backflow when an electrical storm shut power down to the system causing the tanks to overflow and a second where lightning struck the tank battery produced water tanks setting a portion of them on fire.

Describe Area Affected and Cleanup Action Taken.* : Affected area measured 200' x 100' x 6' vertical. Soil was excavated and a soil washing system conducted in the excavated area. The cleaned soil was then used to backfill the site once remediation was completed.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

| | | | |
|---|----------------------------------|-----------------------------------|--|
| Signature: | OIL CONSERVATION DIVISION | | |
| Printed Name: Colleen Robinson | Approved by District Supervisor: | | |
| Title: Regulatory Affairs Liason | Approval Date: | Expiration Date: | |
| E-mail Address: crobinson@arenaresourcesinc.com | Conditions of Approval: | Attached <input type="checkbox"/> | |
| Date: 06/21/10 | Phone: 575-738-1739 | | |

* Attach Additional Sheets If Necessary

Attachment C
Field Analysis Results

Quantab Chloride Test Strip Analysis Sheet

Date: 12/4/2008 Client: Arena Resources, Inc

Site: N Benson Queen Unit

Project Number: 094-1749 & 1748 - 000

Technician: Latta

Strip Lot Number(s): A9167

| Sample ID | Titration Range | Dilution | Test Strip Result (ppm) | Final Result (ppm) | Notations |
|-----------|-----------------|----------|-------------------------|--------------------|-------------------------------------|
| 12/04/08 | A | 4 | 76.0 | 304.00 | Move to clean area- Sample to Lab |
| 12/05/08 | A | 4 | 94.0 | 376.00 | Move to clean area |
| 12/08/08 | A | 4 | 60.0 | 240.00 | Move to clean area |
| 12/09/08 | A | 4 | 104.0 | 416.00 | Move to clean area |
| 12/11/08 | A | 4 | 68.0 | 272.00 | Move to clean area |
| 12/12/08 | A | 4 | 94.0 | 376.00 | Move to clean area |
| 12/15/08 | A | 4 | 34.0 | 136.00 | Move to clean area |
| 12/16/08 | A | 4 | 94.0 | 376.00 | Move to clean area |
| 12/17/08 | A | 4 | 94.0 | 376.00 | Pump Frozen - Left in Cell |
| 12/19/08 | A | 4 | 34.0 | 136.00 | Move to clean area |
| 12/23/08 | A | 4 | 46.0 | 184.00 | Move to clean area |
| 12/24/08 | A | 4 | 68.0 | 272.00 | Move to clean area - SD for Holiday |
| 12/31/08 | A | 4 | 29.0 | 116.00 | Move to clean area |
| 01/05/09 | A | 4 | 34.0 | 136.00 | Move to clean area |
| 01/06/09 | A | 4 | 150.0 | 600.00 | Rewash Soil |
| 01/07/09 | A | 4 | 104.0 | 416.00 | Move to clean area |
| 01/08/09 | A | 4 | 178.0 | 712.00 | Rewash Soil |
| 01/09/09 | A | 4 | 94.0 | 376.00 | Move to clean area |
| 01/13/09 | A | 4 | 60.0 | 240.00 | Move to clean area |
| 01/14/09 | A | 4 | 94.0 | 376.00 | Move to clean area |
| 01/15/09 | A | 4 | 68.0 | 272.00 | Move to clean area |
| 01/16/09 | A | 4 | 104.0 | 416.00 | Move to clean area |
| 01/19/09 | A | 4 | 60.0 | 240.00 | Move to clean area |
| 01/20/09 | A | 4 | 60.0 | 240.00 | Move to clean area |
| 01/21/09 | A | 4 | 178.0 | 712.00 | Rewash Soil |
| 01/22/09 | A | 4 | 94.0 | 376.00 | Move to clean area |
| 01/23/09 | A | 4 | 60.0 | 240.00 | Move to clean area |
| 01/26/09 | A | 4 | 34.0 | 136.00 | Move to clean area |
| 01/28/09 | A | 4 | 40.0 | 160.00 | Move to clean area |
| 01/29/09 | A | 4 | 60.0 | 240.00 | Move to clean area |
| 01/30/09 | A | 4 | 68.0 | 272.00 | Move to clean area |
| 02/02/09 | A | 4 | 94.0 | 376.00 | Move to clean area |
| 02/03/09 | A | 4 | 104.0 | 416.00 | Move to clean area |

Titration Range: A= 30-600 B=300-6000 ppm

Soil Sample Volume: 25 Grams

Distilled Water Volume = 100 ml

Quantab Chloride Test Strip Analysis Sheet

Date: 2/4/2009 Client: Arena Resources, Inc

Site: N. Benson Queen Unit

Project Number: 094-1749 & 1748 - 000

Technician: Latta

Strip Lot Number(s): A9167

| Sample ID | Titration Range | Dilution | Test Strip Result (ppm) | Final Result (ppm) | Notations |
|-----------|-----------------|----------|-------------------------|--------------------|---|
| 02/04/09 | A | 4 | 193.0 | 772.00 | Rewash Soil |
| 02/05/09 | A | 4 | 178.0 | 712.00 | Rewash Soil-Clean Filtration Area |
| 02/06/09 | A | 4 | 164.0 | 656.00 | Rewash Soil |
| 02/09/09 | A | 4 | 53.0 | 212.00 | Move to clean area |
| 02/10/09 | A | 4 | 104.0 | 416.00 | Move to clean area |
| 02/12/09 | A | 4 | 68.0 | 272.00 | Move to clean area |
| 02/13/09 | A | 4 | 126.0 | 504.00 | Rewash Soil |
| 02/16/09 | A | 4 | 68.0 | 272.00 | Move to clean area |
| 02/17/09 | A | 4 | 85.0 | 340.00 | Move to clean area |
| 02/18/09 | A | 4 | 76.0 | 304.00 | Move to clean area |
| 02/19/09 | A | 4 | 94.0 | 376.00 | Move to clean area |
| 02/23/09 | A | 4 | | | Prod. water pump leaked and sprayed on some of the stacks on the south side containment. Removed soils for rewashing. |
| 03/02/09 | A | 4 | 138.0 | 552.00 | Rewashing Soil |
| 03/03/09 | A | 4 | 94.0 | 376.00 | Rewashing Soil - Move to clean area |
| 03/04/09 | A | 4 | 68.0 | 272.00 | Rewashing Soil - Move to clean area |
| 03/05/09 | A | 4 | 76.0 | 304.00 | Rewashing Soil - Move to clean area |
| 03/09/09 | A | 4 | 53.0 | 212.00 | Move to clean area |
| 03/25/09 | A | 4 | 94.0 | 376.00 | Move to clean area |
| 03/26/09 | A | 4 | 126.0 | 504.00 | Rewash Soil |
| 03/27/09 | A | 4 | 60.0 | 240.00 | Move to clean area |
| 03/30/09 | A | 4 | 193.0 | 772.00 | Rewash Soil |
| 03/31/09 | A | 4 | 126.0 | 504.00 | Rewash Soil - Lg amount of silt |
| 04/01/09 | A | 4 | 76.0 | 304.00 | Move to clean area |
| 04/02/09 | A | 4 | 68.0 | 272.00 | Move to clean area |
| 04/09/09 | A | 4 | 76.0 | 304.00 | Move to clean area |
| 04/13/09 | A | 4 | 126.0 | 504.00 | Rewash Soil |
| 04/15/09 | A | 4 | 76.0 | 304.00 | Move to clean area |
| 04/20/09 | A | 4 | 29.0 | 116.00 | Move to clean area |
| 04/21/09 | A | 4 | 126.0 | 504.00 | Rewash Soil |
| 04/22/09 | A | 4 | 209.0 | 836.00 | Rewash Soil |
| 04/23/09 | A | 4 | 138.0 | 552.00 | Rewash Soil - Lg amount of silts |
| 04/28/09 | A | 4 | 104.0 | 416.00 | Rewash Soil - Clear Drain Area |
| 04/29/09 | A | 4 | 53.0 | 212.00 | Move to clean area |

Titration Range: A= 30-600 B=300-6000 ppm

Soil Sample Volume: 25 Grams

Distilled Water Volume = 100 ml

Quantab Chloride Test Strip Analysis Sheet

Date: 4/30/2009 Client: Arena Resources, Inc.

Site: N. Benson Queen Unit

Project Number: 094-1749 & 1748 - 000

Technician: Latta

Strip Lot Number(s): A9167

| Sample ID | Titration Range | Dilution | Test Strip Result (ppm) | Final Result (ppm) | Notations |
|-----------|-----------------|----------|-------------------------|--------------------|---|
| 04/30/09 | A | 4 | 46.0 | 184.00 | Move to clean area |
| 05/01/09 | A | 4 | 68.0 | 272.00 | Move to clean area - SD to move to reclaim area |
| 06/10/09 | A | 4 | 34.0 | 136.00 | Move to clean area |
| 06/11/09 | A | 4 | 68.0 | 272.00 | Move to clean area |
| 06/15/09 | A | 4 | 85.0 | 340.00 | Move to clean area |
| 06/16/09 | A | 4 | 85.0 | 340.00 | Move to clean area |
| 06/29/09 | A | 4 | 40.0 | 160.00 | Rewash soil |
| 06/30/09 | A | 4 | 29.0 | 116.00 | Move to clean area |
| 07/01/09 | A | 4 | 65.0 | 260.00 | Rewash soil |
| 07/07/09 | A | 4 | 76.0 | 304.00 | Rewash soil |
| 07/08/09 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 07/09/09 | A | 4 | 76.0 | 304.00 | Rewash soil |
| 07/10/09 | A | 4 | 245.0 | 980.00 | Rewash soil |
| 07/10/09 | A | 4 | 94.0 | 376.00 | Took sample to lab |
| 07/13/09 | A | 4 | 164.0 | 656.00 | Rewash soil |
| 07/14/09 | A | 4 | 76.0 | 304.00 | Rewash soil |
| 07/20/09 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 08/05/09 | A | 4 | 29.0 | 116.00 | Move to clean area |
| 08/06/09 | A | 4 | 46.0 | 184.00 | Cleaning out wash pit |
| 08/18/09 | A | 4 | 29.0 | 116.00 | Move to clean area |
| 08/19/09 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 08/20/09 | A | 4 | 29.0 | 116.00 | Move to clean area |
| 08/21/09 | A | 4 | 34.0 | 136.00 | Rewash soil |
| 08/24/09 | A | 4 | 29.0 | 116.00 | Move to clean area |
| 08/25/09 | A | 4 | 40.0 | 160.00 | Move to clean area |
| 08/26/09 | A | 4 | 40.0 | 160.00 | Move to clean area |
| 08/27/09 | A | 4 | 245.0 | 980.00 | Rewash soil |
| 08/28/09 | A | 4 | 126.0 | 504.00 | Rewash soil |
| 09/01/09 | A | 4 | 53.0 | 212.00 | Rewash soil |
| 09/03/09 | A | 4 | 34.0 | 136.00 | Move to clean area |
| 09/08/09 | A | 4 | 138.0 | 552.00 | Rewash soil |
| 09/09/09 | A | 4 | 104.0 | 416.00 | Rewash soil |
| 09/10/09 | A | 4 | 85.0 | 340.00 | Rewash soil |

Titration Range: A= 30-600 B=300-6000 ppm

Soil Sample Volume: 25 Grams

Distilled Water Volume = 100 ml

Quantab Chloride Test Strip Analysis Sheet

Date: 9/11/2009 Client: Arena Resources, Inc.

Site: N. Benson Queen Unit

Project Number: 094-1749 & 1748 - 000

Technican: Latta

Strip Lot Number(s): A9167

| Sample ID | Titration Range | Dilution | Test Strip Result (ppm) | Final Result (ppm) | Notations |
|-----------|-----------------|----------|-------------------------|--------------------|-------------------------------------|
| 09/11/09 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 09/14/09 | A | 4 | 29.0 | 116.00 | Rewash soil |
| 09/15/09 | A | 4 | 411.0 | 1644.00 | Rewash soil |
| 09/16/09 | A | 4 | 193.0 | 772.00 | Rewash soil |
| 09/22/09 | A | 4 | 138.0 | 552.00 | Rewash soil |
| 09/23/09 | A | 4 | 68.0 | 272.00 | Rewash soil |
| 09/24/09 | A | 4 | 40.0 | 160.00 | Move to clean area |
| 09/29/09 | A | 4 | 115.0 | 460.00 | Rewash soil |
| 10/05/09 | A | 4 | 104.0 | 416.00 | Rewash soil |
| 10/07/09 | A | 4 | 85.0 | 340.00 | Rewash soil |
| 10/12/09 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 10/14/09 | A | 4 | 34.0 | 136.00 | Move to clean area |
| 10/20/09 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 10/26/09 | A | 4 | 29.0 | 116.00 | Rewash soil |
| 10/27/09 | A | 4 | 85.0 | 340.00 | Rewash soil |
| 10/28/09 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 10/29/09 | A | 4 | 46.0 | 184.00 | Move to clean area |
| 11/03/09 | A | 4 | 29.0 | 116.00 | Move to clean area |
| 11/09/09 | A | 4 | 126.0 | 504.00 | Rewash soil |
| 11/10/09 | A | 4 | 104.0 | 416.00 | Rewash soil |
| 11/12/09 | A | 4 | 46.0 | 184.00 | Move to clean area |
| 11/16/09 | A | 4 | 355.0 | 1420.00 | Rewash soil |
| 11/17/09 | A | 4 | 104.0 | 416.00 | Rewash soil |
| 11/18/09 | A | 4 | | | Washed soil down and worked on pump |
| 11/19/09 | A | 4 | 85.0 | 340.00 | Rewash soil |
| 11/20/09 | A | 4 | 53.0 | 212.00 | Rewash soil |
| 11/23/09 | A | 4 | 53.0 | 212.00 | Rewash soil |
| 11/24/09 | A | 4 | 34.0 | 136.00 | Move to clean area |
| 11/25/09 | A | 4 | 193.0 | 772.00 | Rewash soil |
| 11/30/09 | A | 4 | 245.0 | 980.00 | Rewash soil |
| 12/08/09 | A | 4 | 53.0 | 212.00 | Rewash soil |
| 12/10/09 | A | 4 | 53.0 | 212.00 | Rewash soil |
| 12/11/09 | A | 4 | 53.0 | 212.00 | Rewash soil |

Titration Range: A= 30-600 B=300-6000 ppm

Soil Sample Volume: 25 Grams

Distilled Water Volume = 100 ml

Quantab Chloride Test Strip Analysis Sheet

Date: 12/14/2009 **Client:** Arena Resources, Inc.

Site: N. Benson Queen Unit **Project Number:** 094-1749 & 1748 - 000

Project Number: 094-1749 & 1748 - 000

Technician: Latta

Strip Lot Number(s): A9167

[illegible]

Titrator Range: A= 30-600 B=300-6000 ppm

Soil Sample Volume: 25 Grams

Distilled Water Volume = 100 ml

Quantab Chloride Test Strip Analysis Sheet

Date: 1/4/2010 Client: Arena Resources, Inc.

Site: N. Benson Queen Unit

Project Number: 094-1749 & 1748 - 000

Technician: Latta

Strip Lot Number(s): A9167

| Sample ID | Titration Range | Dilution | Test Strip Result (ppm) | Final Result (ppm) | Notations |
|-----------|-----------------|----------|-------------------------|--------------------|--------------------|
| 01/04/10 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 01/05/10 | A | 4 | 29.0 | 116.00 | Move to clean area |
| 01/06/10 | A | 4 | 34.0 | 136.00 | Rewash soil |
| 01/11/10 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 01/12/10 | A | 4 | 53.0 | 212.00 | Rewash soil |
| 01/13/10 | A | 4 | 46.0 | 184.00 | Rewash soil |
| 01/14/10 | A | 4 | 85.0 | 340.00 | Rewash soil |
| 01/18/10 | A | 4 | 138.0 | 552.00 | Rewash soil |
| 01/19/10 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 01/20/10 | A | 4 | 53.0 | 212.00 | Rewash soil |
| 01/22/10 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 02/02/10 | A | 4 | 29.0 | 116.00 | Move to clean area |
| 02/05/10 | A | 4 | 178.0 | 712.00 | Rewash soil |
| 02/08/10 | A | 4 | 164.0 | 656.00 | Rewash soil |
| 02/10/10 | A | 4 | 85.0 | 340.00 | Rewash soil |
| 02/11/10 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 02/12/10 | A | 4 | 104.0 | 416.00 | Rewash soil |
| 02/15/10 | A | 4 | 76.0 | 304.00 | Rewash soil |
| 02/18/10 | A | 4 | 76.0 | 304.00 | Rewash soil |
| 02/19/10 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 02/22/10 | A | 4 | 29.0 | 116.00 | Move to clean area |
| 02/25/10 | A | 4 | 307.0 | 1228.00 | Rewash soil |
| 03/01/10 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 03/02/10 | A | 4 | 53.0 | 212.00 | Rewash soil |
| 03/03/10 | A | 4 | 53.0 | 212.00 | Rewash soil |
| 03/04/10 | A | 4 | 40.0 | 160.00 | Move to clean area |
| 03/05/10 | A | 4 | 126.0 | 504.00 | Rewash soil |
| 03/06/10 | A | 4 | 76.0 | 304.00 | Rewash soil |
| 03/08/10 | A | 4 | 104.0 | 416.00 | Rewash soil |
| 03/09/10 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 03/10/10 | A | 4 | 85.0 | 340.00 | Rewash soil |
| 03/11/10 | A | 4 | 53.0 | 212.00 | Rewash soil |
| 03/12/10 | A | 4 | 46.0 | 184.00 | Rewash soil |

Titration Range: A= 30-600 B=300-6000 ppm

Soil Sample Volume: 25 Grams

Distilled Water Volume = 100 ml

Quantab Chloride Test Strip Analysis Sheet

Date: 3/13/2010 **Client:** Arena Resources, Inc.

Site: N. Benson Queen Unit

Project Number: 094-1749 & 1748 - 000

Technician: Latta

Strip Lot Number(s): A9167

| Sample ID | Titration Range | Dilution | Test Strip Result (ppm) | Final Result (ppm) | Notations |
|-----------|-----------------|----------|-------------------------|--------------------|------------------------------|
| 03/13/10 | A | 4 | 33.0 | 132.00 | Move to clean area |
| 03/15/10 | A | 4 | 115.0 | 460.00 | Rewash soil |
| 03/16/10 | A | 4 | 245.0 | 980.00 | Rewash soil |
| 03/17/10 | A | 4 | 85.0 | 340.00 | Rewash soil |
| 03/18/10 | A | 4 | 46.0 | 184.00 | Rewash soil |
| 03/19/10 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 03/20/10 | A | 4 | 40.0 | 160.00 | Rewash soil |
| 03/22/10 | A | 4 | 126.0 | 504.00 | Rewash soil |
| 03/23/10 | A | 4 | 85.0 | 340.00 | Rewash soil |
| 03/24/10 | A | 4 | 46.0 | 184.00 | Rewash soil |
| 03/25/10 | A | 4 | 71.0 | 284.00 | Rewash soil |
| 03/26/10 | A | 4 | 40.0 | 160.00 | Move to clean area |
| 03/29/10 | A | 4 | 214.0 | 856.00 | Rewash soil |
| 03/30/10 | A | 4 | 109.0 | 436.00 | Rewash soil |
| 03/31/10 | A | 4 | 109.0 | 436.00 | Rewash soil |
| 04/01/10 | A | 4 | 60.0 | 240.00 | Rewash soil |
| 04/02/10 | A | 4 | 109.0 | 436.00 | Rewash soil |
| 04/03/10 | A | 4 | 46.0 | 184.00 | Move to clean area |
| 04/05/10 | A | 4 | 606.0 | 2424.00 | Rewash soil |
| 04/06/10 | A | 4 | 214.0 | 856.00 | Rewash soil |
| 04/08/10 | A | 4 | 156.0 | 624.00 | Rewash soil |
| 04/09/10 | A | 4 | 63.0 | 252.00 | Rewash soil |
| 04/10/10 | A | 4 | 99.0 | 396.00 | Rewash soil |
| 04/12/10 | A | 4 | 63.0 | 252.00 | Rewash soil |
| 04/13/10 | A | 4 | 63.0 | 252.00 | Rewash soil |
| 04/14/10 | A | 4 | 53.0 | 212.00 | Rewash soil |
| 04/15/10 | A | 4 | 40.0 | 160.00 | Move to clean area |
| 04/19/10 | A | 4 | 231.0 | 924.00 | Rewash soil |
| 04/20/10 | A | 4 | 169.0 | 676.00 | Rewash soil |
| 04/21/10 | A | 4 | 109.0 | 436.00 | Rewash soil |
| 04/22/10 | A | 4 | 89.0 | 356.00 | Move to clean area |
| 04/23/10 | A | 4 | | | No Sample - Changed out pump |
| 04/24/10 | A | 4 | 99.0 | 396.00 | Rewash soil |

Titration Range: A= 30-600 B=300-6000 ppm

Soil Sample Volume: 25 Grams

Distilled Water Volume = 100 ml

Quantab Chloride Test Strip Analysis Sheet

Date: 4/26/2010 **Client:** Arena Resources, Inc.

Site: N Benson Queen Unit

Project Number: 094-1749 & 1748 - 000

Technician: Latta

Strip Lot Number(s): A9167

| Sample ID | Titration Range | Dilution | Test Strip Result (ppm) | Final Result (ppm) | Notations |
|-----------|-----------------|----------|-------------------------|--------------------|-------------------------------|
| 04/26/10 | A | 4 | 63.0 | 252.00 | Rewash soil |
| 04/27/10 | A | 4 | | | No Sample - cleaned sump |
| 04/28/10 | A | 4 | | | No Sample - cleaned sump |
| 04/29/10 | A | 4 | | | No Sample - cleaned sump |
| 04/30/10 | A | 4 | 71.0 | 284.00 | Rewash soil |
| 05/01/10 | A | 4 | 33.0 | 132.00 | Move to clean area |
| 05/03/10 | A | 4 | | | No Sample - washing new batch |
| 05/04/10 | A | 4 | 416.0 | 1664.00 | Rewash soil |
| 05/05/10 | A | 4 | 214.0 | 856.00 | Rewash soil |
| 05/07/10 | A | 4 | 289.0 | 1156.00 | Rewash soil |
| 05/08/10 | A | 4 | 214.0 | 856.00 | Rewash soil |
| 05/10/10 | A | 4 | 214.0 | 856.00 | Rewash soil |
| 05/10/10 | A | 4 | 126.0 | 504.00 | Afternoon test |
| 05/11/10 | A | 4 | 169.0 | 676.00 | Rewash soil |
| 05/12/10 | A | 4 | 99.0 | 396.00 | Rewash soil |
| 05/14/10 | A | 4 | 120.0 | 480.00 | Rewash soil |
| 05/17/10 | A | 4 | 89.0 | 356.00 | Rewash soil |
| 05/18/10 | A | 4 | 63.0 | 252.00 | Rewash soil |
| 05/19/10 | A | 4 | 33.0 | 132.00 | Rewash soil |
| 05/20/10 | A | 4 | 249.0 | 996.00 | Rewash soil |
| 05/21/10 | A | 4 | 335.0 | 1340.00 | Rewash soil |
| 05/22/10 | A | 4 | 180.0 | 720.00 | Rewash soil |
| 05/23/10 | A | 4 | 71.0 | 284.00 | Move to clean area |

Titration Range: A= 30-600 B=300-6000 ppm

Soil Sample Volume: 25 Grams

Distilled Water Volume = 100 ml

Attachment D
In-House Analytical Data

In-House Sample Analysis Sheet

Date: 5/24/2010 **Client:** Arena Resources, Inc.
Site: NBQU Soil Washing **Project Number:** 094-1748 & 1749
Pro. Mgr. Fred Holmes **Contaminant:** Chlorides
Method: Standard Method 4500-CIB **QA/QC Standard:** 500 mg/kg

| Treated Sample Lot (Date) | Milliliters of Sample Used | Dilution | AgNO ₃ 0.028(N) | Result (mg/kg) | Lab Result (mg/kg) | Notations |
|--|-------------------------------------|----------|-------------------------------|-------------------|---------------------------|---|
| 12/4/2008 | 10 | 4 | 0.700 | 277.928 | 272 | Sample to Lab for Verification |
| 1/5/2009 | 10 | 4 | 0.600 | 238.224 | N/A | Treated pile spot check. Passed |
| 1/14/2009 | 10 | 4 | 0.450 | 178.668 | 160 | Treated pile monthly composite, sample to lab for verification |
| 2/3/2009 | 10 | 4 | 0.550 | 218.372 | N/A | Treated pile spot check. Passed |
| 2/16/2009 | 10 | 4 | 1.200 | 476.448 | 432 | Treated pile monthly composite, sample to lab for verification |
| 3/9/2009 | 10 | 4 | 0.500 | 198.52 | 160 | Treated pile monthly composite, sample to lab for verification |
| 4/6/2009 | 10 | 4 | 0.600 | 238.224 | N/A | Treated pile spot check. Passed |
| 4/29/2009 | 10 | 4 | 0.650 | 258.076 | 224 | Treated pile monthly composite, sample to lab for verification |
| 6/1/2009 | 10 | 4 | 0.550 | 218.372 | N/A | Treated pile spot check. Passed |
| 6/15/2009 | 10 | 4 | 0.250 | 99.26 | 96 | Treated pile monthly composite, sample to lab for verification |
| 8/20/2009 | 10 | 4 | 0.500 | 198.52 | 160 | Treated pile monthly composite, sample to lab for verification |
| 9/6/2009 | 10 | 4 | 0.450 | 178.668 | 144 | Treated pile monthly composite, sample to lab for verification |
| 10/28/2009 | 10 | 4 | 0.400 | 158.816 | 144 | Treated pile monthly composite, sample to lab for verification |
| 12/14/2009 | 10 | 4 | 0.600 | 238.224 | 256 | Treated pile monthly composite, sample to lab for verification |
| 1/11/2010 | 10 | 4 | 0.700 | 277.928 | 256 | Treated pile monthly composite, sample to lab for verification |
| 3/1/2010 | 10 | 4 | 0.600 | 238.224 | 208 | Treated pile monthly composite, sample to lab for verification |
| 3/25/2010 | 10 | 4 | 0.800 | 317.632 | 272 | Treated pile monthly composite, sample to lab for verification |
| 4/29/2010 | 10 | 4 | 0.900 | 357.336 | 368 | Treated pile monthly composite, sample to lab for verification |
| Clearance Sampling For Pooled Areas | Milliliters of Sample Used | Dilution | AgNO ₃ 0.028(N) | Result (mg/kg) | Lab Results (mg/kg) | Notations |
| N. Pool Area Clearance | 10 | 4 | 1.150 | 456.596 | 480 | Clearance sample, split to lab |
| W. Pool Area Clearance | 10 | 4 | 0.400 | 158.816 | 144 | Clearance sample, split to lab |
| Storm Water Drainage Clearance | 10 | 4 | 0.450 | 178.668 | 176 | Clearance sample, split to lab |

$F = (ml \text{ AgNO}_3)(N)(35450)/ml. \text{ sample used}$
 Soil Sample Volume: 25 Grams
 Deionized Water Volume = 100 ml

Attachment E
Third Party Laboratory Analyses Data

Project Sample Analysis Lab Validation Sheet

Date: 5/24/2010 **Client:** Arena Resources, Inc.
Site: NBQU Soil Washing **Project Number:** 094-1748 & 1749
Pro. Mgr. Fred Holmes **Contaminant:** Chlorides
Method: Standard Method 4500-CIB **QA/QC Standard:** 500 mg/kg

| Treated Sample Lot (Date) | Milliliters of Sample Used | Dilution | AgNO ₃ 0.028(N) | Result (mg/kg) | Lab Result (mg/kg) | Notations |
|------------------------------|-------------------------------------|----------|-------------------------------|-------------------|--------------------------|----------------------------------|
| 1/14/2009 | | | | | 160 | Batch complete, moved to staging |
| 2/16/2009 | | | | | 432 | Batch complete, moved to staging |
| 3/9/2009 | | | | | 160 | Batch complete, moved to staging |
| 4/29/2009 | | | | | 224 | Batch complete, moved to staging |
| 6/15/2009 | | | | | 192 | Batch complete, moved to staging |
| 6/17/2009 | | | | | 144 | Batch complete, moved to staging |
| 8/21/2009 | | | | | 1,120 | Nonwashed soil |
| 8/21/2009 | | | | | 96 | Batch complete, moved to staging |
| 8/25/2009 | | | | | 160 | Batch complete, moved to staging |
| 9/9/2009 | | | | | 144 | Batch complete, moved to staging |
| 10/30/2009 | | | | | 144 | Batch complete, moved to staging |
| 12/16/2009 | | | | | 256 | Batch complete, moved to staging |
| 1/13/2010 | | | | | 256 | Batch complete, moved to staging |
| 3/4/2010 | | | | | 208 | Batch complete, moved to staging |
| 3/29/2010 | | | | | 272 | Batch complete, moved to staging |
| 5/4/2010 | | | | | 368 | Batch complete, moved to staging |

F = (ml AgNO₃)(N)(35450)/ml. sample used

Soil Sample Volume: 25 Grams

Deionized Water Volume = 100 ml



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

May 5, 2010

Fred Holmes
ETECH Environmental & Safety Solutions, Inc.
P.O. Box 8469
Midland, TX 79708

Re: NBQIF

Enclosed are the results of analyses for sample number H19816, received by the laboratory on 05/04/10 at 3:45 pm.

Cardinal Laboratories is accredited through Texas NELAP for:

| | |
|--------------------|--|
| Method SW-846 8021 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method SW-846 8260 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method TX 1005 | Total Petroleum Hydrocarbons |

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 524.2 | Regulated VOCs (V2, V3) |

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,

Celey D. Keene
Laboratory Director

This report conforms with NELAP requirements.



ANALYTICAL RESULTS FOR
ETECH ENVIRONMENTAL & SAFETY SOLUTIONS, INC.
ATTN: FRED HOLMES
P.O. BOX 8469
MIDLAND, TX 79708
FAX TO: (432) 563-2213

Analysis Date: 05/05/10
Sampling Date: 05/04/10
Sample Type: SOIL
Sample Condition: COOL & INTACT @ 6°C
Sample Received By: JH
Analyzed By: HM

| LAB NO. | SAMPLE ID | Cr (mg/kg) |
|-----------------------------|------------------------|---------------|
| H19816-1 | APRIL COMPOSITE SAMPLE | 368 |
| | WASHED SOIL | |
| | | |
| | | |
| | | |
| | | |
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| | | |
| | | |
| | | |
| | | |
| Quality Control | | 500 |
| True Value QC | | 500 |
| % Recovery | | 100 |
| Relative Percent Difference | | < 0.1 |

4500-CIB

Note: Analysis performed on a 1:4 w:v aqueous extract.

Cheryl Keene
Chemist

05/05/10

Date

H19816 Etech

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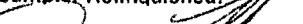




101 East Marland, Hobbs, NM 88240

(575) 393-2326 Fax (575) 393-2476

Page _____ of _____

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| | | | | | |
|---|--|--|--|---|--|
| Sampler Relinquished:  | | Received By: _____ | | Phone Result: <input type="checkbox"/> No Add'l Phone #: _____ | |
| Date: <u>5-4-10</u> | | Time: _____ | | Fax Result: <input type="checkbox"/> No Add'l Fax #: _____ | |
| REMARKS: _____ | | | | | |
| Relinquished By: _____ | | Date: <u>5/4/10</u> | | Received By:  | |
| Time: <u>3:45</u> | | Temp: <u>10 C</u> | | Sample Condition: _____ | |
| Delivered By: (Circle One) <u>Sampler</u> | | UPS - Bus - Other: _____ | | CHECKED BY:  | |
| Cool: <input checked="" type="checkbox"/> Yes Intact: <input checked="" type="checkbox"/> Yes | | No: <input type="checkbox"/> No No: <input type="checkbox"/> No | | (Initials) _____ | |

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#26



ARDINAL LABORATORIES

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

April 1, 2010

Fred Holmes
ETECH Environmental & Safety Solutions, Inc.
P.O. Box 8469
Midland, TX 79708

Re: NBQIF (094 001749-000)

Enclosed are the results of analyses for sample number H19570, received by the laboratory on 03/2910 at 4:20 pm.

Cardinal Laboratories is accredited through Texas NELAP for:

| | |
|--------------------|--|
| Method SW-846 8021 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method SW-846 8260 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method TX 1005 | Total Petroleum Hydrocarbons |

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accredited though 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 524.2 | Regulated VOCs (V2, V3) |

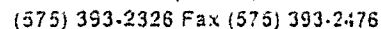
Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,

Celey D. Keene
Laboratory Director

This report conforms with NELAP requirements.



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CARDINAL LABORATORIES

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

March 8, 2010

Fred Holmes
ETECH Environmental & Safety Solutions, Inc.
P.O. Box 8469
Midland, TX 79708

Re: 094-001749-000 (Arena)

Enclosed are the results of analyses for sample number H19376, received by the laboratory on 03/04/10 at 3:35 pm.

Cardinal Laboratories is accredited through Texas NELAP for:

| | |
|--------------------|--|
| Method SW-846 8021 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method SW-846 8260 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method TX 1005 | Total Petroleum Hydrocarbons |

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

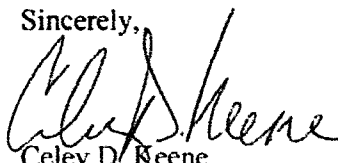
Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

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

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,


Celey D. Keene
Laboratory Director

This report conforms with NELAP requirements.



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

ANALYTICAL RESULTS FOR
ETECH ENVIRONMENTAL & SAFETY SOLUTIONS, INC.
ATTN: FRED HOLMES
P.O. BOX 8469
MIDLAND, TX 79708
FAX TO: (432) 563-2213

Receiving Date: 03/04/10
Reporting Date: 03/05/10
Project Number: 094-001749-000 (ARENA)
Project Name: NBQIF
Project Location: CARLSBAD, NM

Analysis Date: 03/05/10
Sampling Date: 03/04/10
Sample Type: SOIL
Sample Condition: INTACT @ 24°C
Sample Received By: JH
Analyzed By: HM

| LAB NO. | SAMPLE ID | CIT (mg/kg) |
|-----------------------------|-------------|----------------|
| H19376-1 | WASHED SOIL | 208 |
| | | |
| | | |
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| | | |
| | | |
| | | |
| | | |
| Quality Control | | 500 |
| True Value QC | | 500 |
| % Recovery | | 100 |
| Relative Percent Difference | | 2.0 |

METHOD: Standard Methods

4500-CIB

Note: Analysis performed on a 1:4 w:v aqueous extract.

Alfred J. Kene
Chemist

03/08/10
Date

H19376 Etech

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| | | | | | |
|---|--|---|--|--|--|
| Sampler Relinquished: <i>[Signature]</i> Date: <i>3-4-96</i> Time: <i>3:25 PM</i> | | Received By: Date: Time: | | Phone Result: <input type="checkbox"/> No Add'l Phone #: _____ Fax Result: <input type="checkbox"/> No Add'l Fax #: _____ REMARKS: | |
| Relinquished By: <i>[Signature]</i> Date: Time: | | Received By: Date: Time: | | Delivered By: (Circle One) Sampler - UPS - Bus - Other. | |
| Temp. <i>24°C</i> Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No | | CHECKED BY: (Initials) <i>[Signature]</i> | | | |

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#26



ARDINAL LABORATORIES

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

July 1, 2009

Fred Holmes
Etech Environmental & Safety Solutions, Inc.
P.O. Box 8469
Midland, TX 79708

Re: NBQU Injection – Soil Washing

Enclosed are the results of analyses for sample number H17718, received by the laboratory on 06/30/09 at 9:29 am.

Cardinal Laboratories is accredited through Texas NELAP for:

| | |
|--------------------|--|
| Method SW-846 8021 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method SW-846 8260 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method TX 1005 | Total Petroleum Hydrocarbons |

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,

Celey D. Keene
Laboratory Director

This report conforms with NELAP requirements.



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

ANALYTICAL RESULTS FOR
ETECH ENVIRONMENTAL & SAFETY SOLUTIONS, INC.
ATTN: FRED HOLMES
P.O. BOX 8469
MIDLAND, TX 79708
FAX TO: (432) 563-2213

Receiving Date: 06/30/09
Reporting Date: 06/30/09
Project Number: 094-1749
Project Name: NBQU INJECTION-SOIL WASHING
Project Location: EDDY COUNTY, NM

Analysis Date: 06/30/09
Sampling Date: 01/14/09
Sample Type: SOIL
Sample Condition: INTACT @ 24°C
Sample Received By: ML
Analyzed By: HM

| LAB NO. | SAMPLE ID | C ⁻ (mg/kg) |
|-----------------------------|------------|---------------------------|
| H17718-1 | 01-14-2009 | 160 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Quality Control | | 500 |
| True Value QC | | 500 |
| % Recovery | | 100 |
| Relative Percent Difference | | <0.1 |

METHOD: Standard Methods

4500-CIB

Note: Analysis performed on a 1:4 w:v aqueous extract. Analyzed outside EPA recommended hold time, however sample results should not be affected.

Chemist

Date

H17718 Etech

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



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

| Company Name: | | | | | | Etech Env. & Safety Solutions, Inc. | | | | | | | | | | | | | |
|--|-------------|---------------------------------|--|---|--|-------------------------------------|-------------------|-----------|--|--|--|--|--|--|--|--|--|--|--|
| BILL TO | | | | | | | | | | | | | | | | | | | |
| ANALYSIS REQUEST | | | | | | | | | | | | | | | | | | | |
| Project Manager: Fred Holmes | | | | | | P.O. #: 941749000 | | | | | | | | | | | | | |
| Address: P.O. Box 8469 | | | | | | Company: | | | | | | | | | | | | | |
| City: Midland | | State: TX | | Zip: 79708 | | Attn: | | | | | | | | | | | | | |
| Phone #: 432-563-2200 | | Fax #: 432-563-2213 | | | | Address: | | | | | | | | | | | | | |
| Project #: 094-1749 | | Project Owner: | | | | City: | | | | | | | | | | | | | |
| Project Name: NBQU Injection - Soil Washing | | | | | | State: Zip: | | | | | | | | | | | | | |
| Project Location: Eddy County, NM | | | | | | Phone #: | | | | | | | | | | | | | |
| Sampler Name: Jay Latta - Fred Holmes | | | | | | Fax #: | | | | | | | | | | | | | |
| FOR LAB USE ONLY | | | | | | | | | | | | | | | | | | | |
| Lab I.D. | Sample I.D. | (GRAB OR COMB.) # CONTAINERS | MATRIX <input type="checkbox"/> GROUNDWATER <input type="checkbox"/> WASTEWATER <input checked="" type="checkbox"/> SOIL <input type="checkbox"/> OIL <input type="checkbox"/> SLUDGE <input type="checkbox"/> OTHER : | PRESERV. <input type="checkbox"/> ACID/BASE: <input type="checkbox"/> ICE / COOL <input type="checkbox"/> OTHER : | SAMPLING DATE TIME | TPH (801S) | TPH Ext (TX 100S) | Chlorides | | | | | | | | | | | |
| H17718-1 | 01-14-2009 | C 1 | X | | 1/14/09 1500 | | | X | | | | | | | | | | | |
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| Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice and all costs of collections, including attorney's fees | | | | | | | | | | | | | | | | | | | |
| Sampler Relinquished: | | Date: 6-30-09 | Received By: Misty LeBeau | | Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No | | Add'l Phone #: | | | | | | | | | | | | |
| Relinquished By: | | Time: 9:29 | Received By: | | Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No | | Add'l Fax #: | | | | | | | | | | | | |
| | | Date: | | | REMARKS: | | | | | | | | | | | | | | |
| | | Time: | | | | | | | | | | | | | | | | | |
| Delivered By: (Circle One) Sampler - UPS - Bus - Other: | | | Temp.: 24°C | Sample Condition: Cool Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No | CHECKED BY: (Initials) UPAB | | | | | | | | | | | | | | |

*† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.

#26



ANALYTICAL RESULTS FOR
ETECH ENVIRONMENTAL & SAFETY SOLUTIONS, INC.
ATTN: FRED HOLMES
P.O. BOX 8469
MIDLAND, TX 79708
FAX TO: (432) 563-2213

Analysis Date: 11/02/09
Sampling Date: 10/29/09
Sample Type: SOIL
Sample Condition: INTACT
Sample Received By: ML
Analyzed By: HM

METHOD: Standard Methods 4500-CIB

Chemist

11/03/09
Date

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ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240
(505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

[illegible]

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ARDINAL LABORATORIES

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

August 28, 2009

Fred Holmes
ETECH Environmental & Safety Solutions, Inc.
P.O. Box 8469
Midland, TX 79708

Re: NBQU Injection – Soil Washing

Enclosed are the results of analyses for sample number H18112, received by the laboratory on 08/28/09 at 7:25 am.

Cardinal Laboratories is accredited through Texas NELAP for:

| | |
|--------------------|--|
| Method SW-846 8021 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method SW-846 8260 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method TX 1005 | Total Petroleum Hydrocarbons |

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 524.2 | Regulated VOCs (V2, V3) |

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,

Celey D. Keene
Laboratory Director

This report conforms with NELAP requirements.



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

ANALYTICAL RESULTS FOR
ETECH ENVIRONMENTAL & SAFETY SOLUTIONS, INC.
ATTN: FRED HOLMES
P.O. BOX 8469
MIDLAND, TX 79708
FAX TO: (432) 563-2213

Receiving Date: 08/28/09
Reporting Date: 08/28/09
Project Number: 094-1749
Project Name: NBQU INJECTION - SOIL WASHING
Project Location: EDDY COUNTY, NM

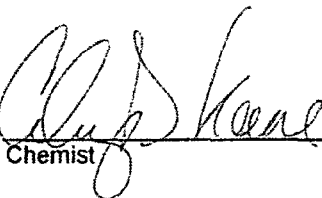
Analysis Date: 08/28/09
Sampling Date: 08/25/09
Sample Type: SOIL
Sample Condition: INTACT @ 10°C
Sample Received By: AB
Analyzed By: HM

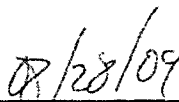
| LAB NO. | SAMPLE ID | Cl ⁻ (mg/kg) |
|-----------------------------|-------------|----------------------------|
| H18112-1 | 082509 WASH | 160 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Quality Control | | 500 |
| True Value QC | | 500 |
| % Recovery | | 100 |
| Relative Percent Difference | | 2.0 |

METHOD: Standard Methods

4500-Cl⁻B

Note: Analysis performed on a 1:4 w:v aqueous extract.


Chemist


Date

H18112 Etech

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

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CARDINAL LABORATORIES

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

September 14, 2009

Fred Holmes
ETECH Environmental & Safety Solutions, Inc.
P.O. Box 8469
Midland, TX 79708

Re: NBQU Injection – Soil Washing

Enclosed are the results of analyses for sample number H18227, received by the laboratory on 09/11/09 at 8:00 am.

Cardinal Laboratories is accredited through Texas NELAP for:

| | |
|--------------------|--|
| Method SW-846 8021 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method SW-846 8260 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method TX 1005 | Total Petroleum Hydrocarbons |

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 524.2 | Regulated VOCs (V2, V3) |

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,

Celey D. Keene
Laboratory Director

This report conforms with NELAP requirements.



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

ANALYTICAL RESULTS FOR
ETECH ENVIRONMENTAL & SAFETY SOLUTIONS, INC.
ATTN: FRED HOLMES
P.O. BOX 8469
MIDLAND, TX 79708
FAX TO: (432) 563-2213

Receiving Date: 09/11/09
Reporting Date: 09/13/09
Project Number: 094-1749
Project Name: NBQU INJECTION - SOIL WASHING
Project Location: EDDY COUNTY, NM

Analysis Date: 09/11/09
Sampling Date: 09/09/09
Sample Type: SOIL
Sample Condition: INTACT @ 22.5°C
Sample Received By: CK
Analyzed By: HM

| LAB NO. | SAMPLE ID | C ⁻ (mg/kg) |
|-----------------------------|-----------------------|---------------------------|
| H18227-1 | 090909 WASH COMPOSITE | 144 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Quality Control | | 500 |
| True Value QC | | 500 |
| % Recovery | | 100 |
| Relative Percent Difference | | < 0.1 |

METHOD: Standard Methods

4500-CIB

Note: Analysis performed on a 1:4 w:v aqueous extract.

Ch. S. Kane
Chemist

09/14/09
Date

H18227 Etech

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|---------------------|--|-------------------|--|--------------|--|------------|--|--|--|-------|--|------|--|-------------------------|--|--|--|-------------|--|----------|--|----------|--|------------|--|-------------------|--|-----------|--|
| Company Name: Etech Env. & Safety Solutions, Inc. | | | | BILL TO | | | | | | | | | | | | ANALYSIS REQUEST | | | | | | | | | | | | | | | |
| Project Manager: Fred Holmes | | | | P.O. #: 941749000 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Address: P.O. Box 8469 | | | | Company: | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| City: Midland | | State: TX | | Zip: 79708 | | Attn: | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phone #: 432-563-2200 | | Fax #: 432-563-2213 | | Address: | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project #: 094-1749 | | Project Owner: | | City: | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Name: NBQU Injection - Soil Washing | | | | State: Zip: | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Location: Eddy County, NM | | | | Phone #: | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampler Name: Jay Latta - Fred Holmes | | | | Fax #: | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FOR LAB USE ONLY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lab I.D. | | Sample I.D. | | GIRAB OR C/COMP. | | # CONTAINERS | | | | | | | | | | | | | | MATRIX | | PRESERV. | | SAMPLING | | TPH (8015) | | TPH Ext (TX 1005) | | Chlorides | |
| | | | | | | | | | | | | | | | | | | | | GROUNDWATER | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | WASTEWATER | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | SOIL | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | OIL | | | | | | | | | | | |
| | | | | | | | | SLUDGE | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | OTHER: | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | ACID/BASE: | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | ICE / COOL | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | OTHER: | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | DATE | | TIME | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | 9-Sep | | 1500 | | | | | | | | | | | | | | | | | |

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

| | | | | | | | | | |
|------------------------------|--|---------------|--|---|--|--|--|----------------|--|
| Sampler Relinquished: | | Date: 9/16/09 | | Received By: | | Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No | | Add'l Phone #: | |
| Relinquished By: | | Time: 1500 | | Received By: | | Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No | | Add'l Fax #: | |
| Delivered By: (Circle One) | | Temp: | | Sample Condition | | CHECKED BY: | | REMARKS: | |
| Sampler - UPS - Bus - Other: | | 22.5°C | | Cool <input type="checkbox"/> Intact <input type="checkbox"/> | | (Initials) | | | |
| | | | | Yes <input type="checkbox"/> No <input type="checkbox"/> | | col | | | |

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ARDINAL LABORATORIES

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

August 25, 2009

Fred Holmes
ETECH Environmental & Safety Solutions, Inc.
P.O. Box 8469
Midland, TX 79708

Re: North Benson Queen Injection Facility

Enclosed are the results of analyses for sample number H18061, received by the laboratory on 08/24/09 at 8:30 am.

Cardinal Laboratories is accredited through Texas NELAP for:

| | |
|--------------------|--|
| Method SW-846 8021 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method SW-846 8260 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method TX 1005 | Total Petroleum Hydrocarbons |

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

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 524.2 | Regulated VOCs (V2, V3) |

Accreditation applies to public drinking water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,

Celey D. Keene
Laboratory Director

This report conforms with NELAP requirements.



Analysis Date: 08/24/09
Sampling Date: 08/21/09
Sample Type: SOIL
Sample Condition: INTACT @ 21°C
Sample Received By: ML
Analyzed By: HM

| | |
|--------------------------|----------|
| METHOD: Standard Methods | 4500-CIB |
|--------------------------|----------|

Chad Keene
Chemist

08/25/09

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Page ____ of ____

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|------------------------|--|--------------------|--|--------------|--|-------------------------|--|---------|--|----------------|--|------|--|--|--|--|--|----------|--|--|--|
| Company Name: E-Tech | | | | BILL TO | | | | ANALYSIS REQUEST | | | | | | | | | | | | | | | |
| Project Manager: Fred | | | | P.O. #: | | | | | | | | | | | | | | | | | | | |
| Address: | | | | Company: | | | | | | | | | | | | | | | | | | | |
| City: | | | | Attn: | | | | | | | | | | | | | | | | | | | |
| State: | | | | Address: | | | | | | | | | | | | | | | | | | | |
| Zip: | | | | City: | | | | | | | | | | | | | | | | | | | |
| Phone #: | | | | State: | | | | | | | | | | | | | | | | | | | |
| Fax #: | | | | Zip: | | | | | | | | | | | | | | | | | | | |
| Project #: | | | | Project Owner: | | | | | | | | | | | | | | | | Phone #: | | | |
| Project Name: North Benson Queen Injection | | | | City: | | | | Fax #: | | | | | | | | | | | | | | | |
| Project Location: | | | | State: | | | | | | | | | | | | | | | | | | | |
| Sampler Name: | | | | Zip: | | | | | | | | | | | | | | | | | | | |
| FOR LAB USE ONLY | | | | | | | | | | | | | | | | | | | | | | | |
| Lab I.D. | | Sample I.D. | | (GRAB OR COMPOUND) | | # CONTAINERS | | MATRIX | | PRESERV | | SAMPLING | | | | | | | | | | | |
| | | | | | | | | GROUNDWATER | | | | | | | | | | | | | | | |
| | | | | | | | | WASTEWATER | | | | | | | | | | | | | | | |
| | | | | | | | | SOIL | | | | | | | | | | | | | | | |
| | | | | | | | | OIL | | | | | | | | | | | | | | | |
| | | | | | | | | SLUDGE | | | | | | | | | | | | | | | |
| | | | | | | | | OTHER | | | | | | | | | | | | | | | |
| | | | | | | | | ACIDBASE | | | | | | | | | | | | | | | |
| | | | | | | | | ICE / COOL | | | | | | | | | | | | | | | |
| | | | | | | | | OTHER | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | DATE | | TIME | | | | | | | | | |
| H18061-1 | | Non-Washed Soil | | | | | | | | | | 8/21/09 | | | | | | | | | | | |
| -2 | | Washed Soil | | | | | | | | | | I | | | | | | | | | | | |

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| | | | | | |
|-------------------------------------|--|-----------------------|---|---|----------------|
| Samples Returned: | | Date: 8/24/09 | Received By: CB | Phone Result: <input type="checkbox"/> No | Add'l Phone #: |
| Time: 8:30a | | | | Fax Result: <input type="checkbox"/> No | Add'l Fax #: |
| Relinquished By: [Signature] | | Date: | Received By: | REMARKS: | |
| Time: | | | | | |
| Delivered By: (Circle One) | | Temp: #26 21°C | Sample Condition: <input checked="" type="checkbox"/> Cool <input checked="" type="checkbox"/> Intact | CHECKED BY: [Signature] | |
| Sampler - UPS - Bus - Other: | | | <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | |

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.



Analysis Date: 06/18/09
Sampling Date: 06/17/09
Sample Type: SOIL
Sample Condition: INTACT @ 33°C
Sample Received By: ML
Analyzed By: AB

Note: Analysis performed on a 1:4 w:v aqueous extract.

Date 01/12/09

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Page of

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice and all costs of collections, including attorney's fees.

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.



**ARDINAL
LABORATORIES**

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

July 1, 2009

Fred Holmes
Etech Environmental & Safety Solutions, Inc.
P.O. Box 8469
Midland, TX 79708

Re: NBQU Injection – Soil Washing

Enclosed are the results of analyses for sample number H17722, received by the laboratory on 06/30/09 at 9:30 am.

Cardinal Laboratories is accredited through Texas NELAP for:

| | |
|--------------------|--|
| Method SW-846 8021 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method SW-846 8260 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method TX 1005 | Total Petroleum Hydrocarbons |

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,

Celey D. Keene
Laboratory Director

This report conforms with NELAP requirements.



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

ANALYTICAL RESULTS FOR
ETECH ENVIRONMENTAL & SAFETY SOLUTIONS, INC.
ATTN: FRED HOLMES
P.O. BOX 8469
MIDLAND, TX 79708
FAX TO: (432) 563-2213

Receiving Date: 06/30/09
Reporting Date: 06/30/09
Project Number: 094-1749
Project Name: NBQU INJECTION-SOIL WASHING
Project Location: EDDY COUNTY, NM

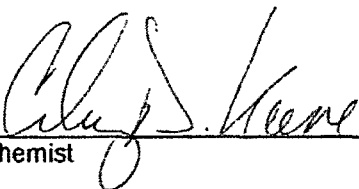
Analysis Date: 06/30/09
Sampling Date: 06/15/09
Sample Type: SOIL
Sample Condition: INTACT @ 24°C
Sample Received By: ML
Analyzed By: HM

| LAB NO. | SAMPLE ID | Cl ⁻ (mg/kg) |
|-----------------------------|------------|----------------------------|
| H17722-1 | 06-15-2009 | 192 |
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| | | |
| Quality Control | | 500 |
| True Value QC | | 500 |
| % Recovery | | 100 |
| Relative Percent Difference | | <0.1 |

METHOD: Standard Methods

4500-Cl⁻B

Note: Analysis performed on a 1:4 w:v aqueous extract.


Chemist

07/01/09
Date

H17722 Etech

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



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---------------------|--|--|--|--|--|--|--|----------------|--|--|--|---|--|--|--|--|--|--|--|--|--|--|--|
| Company Name: Etch Env. & Safety Solutions, Inc. | | | | BILL TO | | | | ANALYSIS REQUEST | | | | | | | | | | | | | | | | | |
| Project Manager: Fred Holmes | | | | P.O. #: 941749000 | | | | | | | | | | | | | | | | | | | | | |
| Address: P.O. Box 8469 | | | | Company: | | | | | | | | | | | | | | | | | | | | | |
| City: Midland | | State: TX | | Zip: 79708 | | Attn: | | | | | | | | | | | | | | | | | | | |
| Phone #: 432-563-2200 | | Fax #: 432-563-2213 | | Address: | | | | | | | | | | | | | | | | | | | | | |
| Project #: 094-1749 | | Project Owner: | | City: | | | | | | | | | | | | | | | | | | | | | |
| Project Name: NBQU Injection - Soil Washing | | | | State: Zip: | | | | | | | | | | | | | | | | | | | | | |
| Project Location: Eddy County, NM | | | | Phone #: | | | | | | | | | | | | | | | | | | | | | |
| Sampler Name: Jay Latta - Fred Holmes | | | | Fax #: | | | | | | | | | | | | | | | | | | | | | |
| FOR LAB USE ONLY | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lab I.D. | | Sample I.D. | | G/RAB OR (COMP. # CONTAINERS) | | MATRIX | | PRESERV. | | SAMPLING | | | | | | | | | | | | | | | |
| | | | | | | GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER: | | ACID/BASE: ICE / COOL OTHER: | | DATE TIME | | TPH (8015) TPH Ext (TX 1005) Chlorides | | | | | | | | | | | | | |
| H17722-1 | | 06-15-2009 | | Q1 | | X | | | | 06/15 1445 | | X | | | | | | | | | | | | | |
| PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. | | | | | | | | | | | | | | Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice and all costs of collections, including attorney's fees. | | | | | | | | | | | |
| Sampler Relinquished: | | Date: 6/16/09 | | Received By: [Signature] | | Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No | | Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No | | Add'l Phone #: | | | | | | | | | | | | | | | |
| Relinquished By: [Signature] | | Date: 6/16/09 | | Received By: [Signature] | | REMARKS: | | | | | | | | | | | | | | | | | | | |
| Delivered By: (Circle One) | | Temp: 74°C | | Sample Condition: Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No | | CHECKED BY: [Signature] | | | | | | | | | | | | | | | | | | | |
| Sampler - UPS - Bus - Other: | | | | | | | | | | | | | | | | | | | | | | | | | |

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.

#26



ARDINAL LABORATORIES

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

July 1, 2009

Fred Holmes
Etech Environmental & Safety Solutions, Inc.
P.O. Box 8469
Midland, TX 79708

Re: NBQU Injection – Soil Washing

Enclosed are the results of analyses for sample number H17721, received by the laboratory on 06/30/09 at 9:30 am.

Cardinal Laboratories is accredited through Texas NELAP for:

| | |
|--------------------|--|
| Method SW-846 8021 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method SW-846 8260 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method TX 1005 | Total Petroleum Hydrocarbons |

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,

Celey D. Keene
Laboratory Director

This report conforms with NELAP requirements.



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

ANALYTICAL RESULTS FOR
ETECH ENVIRONMENTAL & SAFETY SOLUTIONS, INC.
ATTN: FRED HOLMES
P.O. BOX 8469
MIDLAND, TX 79708
FAX TO: (432) 563-2213

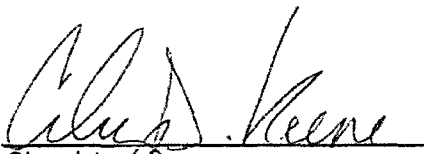
Receiving Date: 06/30/09
Reporting Date: 06/30/09
Project Number: 094-1749
Project Name: NBQU INJECTION-SOIL WASHING
Project Location: EDDY COUNTY, NM

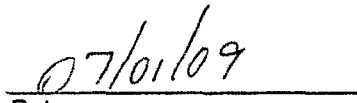
Analysis Date: 06/30/09
Sampling Date: 04/29/09
Sample Type: SOIL
Sample Condition: INTACT @ 24°C
Sample Received By: ML
Analyzed By: HM

| LAB NO. | SAMPLE ID | Cl ⁻ (mg/kg) |
|-----------------------------|------------|----------------------------|
| H17721-1 | 04-29-2009 | 224 |
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| | | |
| Quality Control | | 500 |
| True Value QC | | 500 |
| % Recovery | | 100 |
| Relative Percent Difference | | <0.1 |

METHOD: Standard Methods 4500-Cl⁻B

Note: Analysis performed on a 1:4 w:v aqueous extract. Analyzed outside EPA recommended hold time, however sample results should not be affected.


Chemist


Date

H17721 Etech

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**ARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240
(505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUESTPage 1 of 1

| Company Name: Etch Env. & Safety Solutions, Inc. | | | | BILL TO | | | | ANALYSIS REQUEST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|----------|--|-------------------|--|-----------------|--|-------------------------|--|--------|--|-----|--|----------|--|----------|--|------------|--|-------------------|--|-----------|--|----------|--|------|--|--|--|--|--|--|--|--|--|---|--|--|--|
| Project Manager: Fred Holmes | | | | P.O. #: 941749000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Address: P.O. Box 8469 | | | | Company: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| City: Midland State: TX Zip: 79708 | | | | Attn: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phone #: 432-563-2200 Fax #: 432-563-2213 | | | | Address: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project #: 094-1749 Project Owner: | | | | City: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Name: NBQU Injection - Soil Washing | | | | State: Zip: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Location: Eddy County, NM | | | | Phone #: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampler Name: Jay Latta - Fred Holmes | | | | Fax #: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FOR LAB USE ONLY | | Lab I.D. | | Sample I.D. | | GRAB OR (C)OMP. | | # CONTAINERS | | MATRIX | | | | PRESERV. | | SAMPLING | | TPH (8015) | | TPH Ext (TX 1005) | | Chlorides | | | | | | | | | | | | | | | | | |
| | | | | | | GROUNDWATER | | WASTEWATER | | SOIL | | OIL | | SLUDGE | | OTHER: | | ACID/BASE: | | ICE / COOL | | OTHER: | | DATE | | TIME | | | | | | | | | | | | | |
| H17721-1 | | 04-29-09 | | 01 | | | | | | X | | | | | | | | | | | | | | 04/29/09 | | 1515 | | | | | | | | | | X | | | |
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PHONE (575) 393-2326 • 101 E MARLAND • HOBBS, NM 88240

Receiving Date: 03/27/09
Reporting Date: 03/30/09
Project Number: 094-1749-000
Project Name: NBQU INJECTION FACILITY
Project Location: CARLSBAD

Analysis Date: 03/30/09
Sampling Date: 03/26/09
Sample Type: SOIL
Sample Condition: INTACT
Sample Received By: NF
Analyzed By: HM

| LAB NO. | SAMPLE ID | C ⁻ (mg/kg) |
|-----------------------------|-------------|---------------------------|
| H17148-1 | CLEAN | 368 |
| H17148-2 | IN PROGRESS | 400 |
| | | |
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| | | |
| | | |
| | | |
| Quality Control | | 500 |
| True Value QC | | 500 |
| % Recovery | | 100 |
| Relative Percent Difference | | < 0.1 |

METHOD: Standard Methods

4500-CIB

Note: Analyses performed on 1:4 w:v aqueous extracts.

Chemist 0

Date 03/30/09

H17148 Etech

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101 East Marland, Hobbs, NM 88240



(505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice and all costs of collections, including attorney's fees.

| | | | | | | | |
|---|--|------------------------------|---|---|--|--|--|
| Sampler Relinquished:  | | Date: 3/27/09 Time: 16:00 | | Received By: Nick Fullerton | | Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #: Add'l Fax #: REMARKS: | |
| Relinquished By: | | Date: Time: | | Received By: | | | |
| Delivered By: (Circle One) Sampler - UPS - Bus - Other: | | Temp. | Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No | CHECKED BY: (Initials)  | | | |

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.



ARDINAL LABORATORIES

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

July 1, 2009

Fred Holmes
Etech Environmental & Safety Solutions, Inc.
P.O. Box 8469
Midland, TX 79708

Re: NBQU Injection – Soil Washing

Enclosed are the results of analyses for sample number H17720, received by the laboratory on 06/30/09 at 9:30 am.

Cardinal Laboratories is accredited through Texas NELAP for:

| | |
|--------------------|--|
| Method SW-846 8021 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method SW-846 8260 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method TX 1005 | Total Petroleum Hydrocarbons |

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,

Celey D. Keene
Laboratory Director

This report conforms with NELAP requirements.



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

ANALYTICAL RESULTS FOR
ETECH ENVIRONMENTAL & SAFETY SOLUTIONS, INC.
ATTN: FRED HOLMES
P.O. BOX 8469
MIDLAND, TX 79708
FAX TO: (432) 563-2213

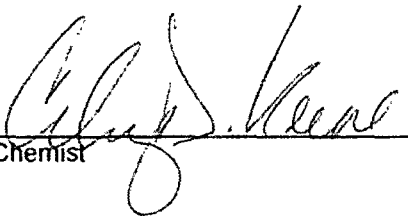
Receiving Date: 06/30/09
Reporting Date: 06/30/09
Project Number: 094-1749
Project Name: NBQU INJECTION-SOIL WASHING
Project Location: EDDY COUNTY, NM


Analysis Date: 06/30/09
Sampling Date: 03/09/09
Sample Type: SOIL
Sample Condition: INTACT @ 24°C
Sample Received By: ML
Analyzed By: HM

| LAB NO. | SAMPLE ID | Cl ⁻ (mg/kg) |
|-----------------------------|------------|----------------------------|
| H17720-1 | 03-09-2009 | 160 |
| | | |
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| | | |
| | | |
| | | |
| Quality Control | | 500 |
| True Value QC | | 500 |
| % Recovery | | 100 |
| Relative Percent Difference | | <0.1 |

METHOD: Standard Methods 4500-Cl⁻B

Note: Analysis performed on a 1:4 w:v aqueous extract. Analyzed outside EPA recommended hold time, however sample results should not be affected.


Chemist


Date

H17720 Etech

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

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#26



ARDINAL LABORATORIES

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

July 1, 2009

Fred Holmes
Etech Environmental & Safety Solutions, Inc.
P.O. Box 8469
Midland, TX 79708

Re: NBQU Injection – Soil Washing

Enclosed are the results of analyses for sample number H17719, received by the laboratory on 06/30/09 at 9:29 am.

Cardinal Laboratories is accredited through Texas NELAP for:

| | |
|--------------------|--|
| Method SW-846 8021 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method SW-846 8260 | Benzene, Toluene, Ethyl Benzene, and Total Xylenes |
| Method TX 1005 | Total Petroleum Hydrocarbons |

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Total Number of Pages of Report: 3 (includes Chain of Custody)

Sincerely,

Celey D. Keene
Laboratory Director

This report conforms with NELAP requirements.



ANALYTICAL RESULTS FOR
ETECH ENVIRONMENTAL & SAFETY SOLUTIONS, INC.
ATTN: FRED HOLMES
P.O. BOX 8469
MIDLAND, TX 79708
FAX TO: (432) 563-2213

Analysis Date: 06/30/09
Sampling Date: 02/16/09
Sample Type: SOIL
Sample Condition: INTACT @ 24°C
Sample Received By: ML
Analyzed By: HM

[illegible]

4500-CIB

Note: Analysis performed on a 1:4 w:v aqueous extract. Analyzed outside EPA recommended hold time, however sample results should not be affected.

07/01/09
Date

H17719 Etech

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

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#24



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

**ANALYTICAL RESULTS FOR
ETECH ENVIRONMENTAL & SAFETY SOLUTIONS, INC.
ATTN: FRED HOLMES
P.O. BOX 8469
MIDLAND, TX 79708
FAX TO: (432) 563-2213**

Receiving Date: 12/16/08
Reporting Date: 12/17/08
Project Number: 094-1749-000
Project Name: NBQU
Project Location: CARLSBAD, NM

Analysis Date: 12/17/08
Sampling Date: 12/15/08
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: TR

[illegible]

| | |
|--------------------------|----------|
| METHOD: Standard Methods | 4500-CfB |
|--------------------------|----------|

Note: Analysis performed on a 1:4 w:v aqueous extract.

Chemist

Date


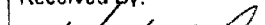

H16534 Etech

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|--|--|---|---|--|--|
| Sampler Relinquished:  Date: 12-16-08 Time: 1:20 | | Received By:  Date: 12-16-08 Time: 1:20 | | Phone Result: <input type="checkbox"/> No Add'l Phone #: _____ Fax Result: <input type="checkbox"/> No Add'l Fax #: _____ REMARKS: | |
| Relinquished By: Date: _____ Time: _____ | | Received By: Date: _____ Time: _____ | | | |
| Delivered By: (Circle One) Sampler - UPS - Bus - Other: | | Temp.: _____ | Sample Condition: Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | CHECKED BY: (Initials)  | |

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CARDINAL LABORATORIES

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

Page ____ of ____

| Company Name: <u>ETECH Environmental</u> | | | | BILL TO | | | | ANALYSIS REQUEST | | | | | | | | | | | | | | | | | | | | |
|--|-----------------------|-------------------|--------------|-------------|------------|------|-----|------------------|----------|-----------|----------|--------|----------------|---------------|---|--|--|--|--|--|--|--|--|--|------|------|--|--|
| Project Manager: <u>Fred</u> | | | | P.O. #: | | | | | | | | | | | | | | | | | | | | | | | | |
| Address: | | | | Company: | | | | | | | | | | | | | | | | | | | | | | | | |
| City: State: Zip: | | | | Attn: | | | | | | | | | | | | | | | | | | | | | | | | |
| Phone #: Fax #: | | | | Address: | | | | | | | | | | | | | | | | | | | | | | | | |
| Project #: Project Owner: | | | | City: | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Name: <u>North Benson Queen Injection Facility</u> | | | | State: Zip: | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Location: | | | | Phone #: | | | | | | | | | | | | | | | | | | | | | | | | |
| Sampler Name: | | | | Fax #: | | | | | | | | | | | | | | | | | | | | | | | | |
| FOR LAB USE ONLY | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lab I.D. | Sample I.D. | (GIRAB OR (C)COMP | # CONTAINERS | MATRIX | | | | | PRESERV. | | SAMPLING | | | | | | | | | | | | | | | | | |
| | | | | GROUNDWATER | WASTEWATER | SOIL | OIL | SLUDGE | OTHER: | ACIDBASE: | ICE/COOL | OTHER: | | | | | | | | | | | | | DATE | TIME | | |
| <u>H164720-1</u> | <u>Post Sample #1</u> | | | | | X | | | | | | | <u>12/4/08</u> | <u>10:40a</u> | X | | | | | | | | | | | | | |
| <u>-2</u> | <u>PRE SAMPLE</u> | | | | | X | | | | | | | <u>↓</u> | <u>10:50a</u> | X | | | | | | | | | | | | | |
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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

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|--|--|-----------------------|--|---|
| Sampler Relinquished: <u>[Signature]</u> | | Date: <u>12/04/08</u> | Received By: <u>[Signature]</u> | Phone Result: <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #: |
| Relinquished By: <u>[Signature]</u> | | Time: <u>11:20a</u> | Received By: <u>[Signature]</u> | Fax Result: <input type="checkbox"/> No <input type="checkbox"/> Add'l Fax #: |
| Delivered By: (Circle One) Sampler - UPS - Bus - Other: | | Temp. <u> </u> | Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | CHECKED BY: (Initials) <u>[Signature]</u> |
| REMARKS: <u>Call w/ Results</u> <u>Jay 432-634-9050</u> | | | | |

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