



02231396

Form 14 # 2597032

Form 27 # 6787

NOAV # 200332643

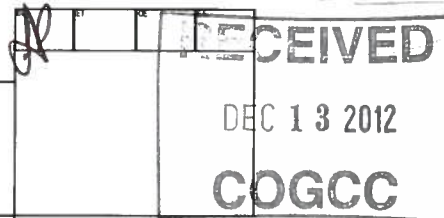
Page 1

FORM  
4  
Rev 12/05

State of Colorado

Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax: (303)894-2109



## SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b).

|   |  |  |  |   |  |
|---|--|--|--|---|--|
| 1. OGCC Operator Number: 10079                              |  | 4. Contact Name<br>Cole Kilstrom                 |  | Complete the Attachment Checklist                       |  |
| 2. Name of Operator: Antero Resources Piceance Corporation  |  | Phone: 303-357-6709                              |  | OP OGCC   |  |
| 3. Address: 1625 17th St STE 300 ATTN: Cole Kilstrom        |  | Fax: 303-357-7315                                |  |   |  |
| City: Denver State: CO Zip: 80202                           |  |  |  |   |  |
| 5. API Number 05- N/A                                       |  | OGCC Facility ID Number 336037                   |  | Survey Plat   |  |
| 6. Well/Facility Name: Gypsum Ranch B Pad                   |  | 7. Well/Facility Number Produced water flow line |  | Directional Survey                                      |  |
| 8. Location (Qtr/Sec, Twp, Rng, Meridian): NWNE 14 6S 93W 6 |  |  |  | Surface Equipmt Diagram                                 |  |
| 9. County: Garfield   |  | 10. Field Name: Mamm Creek                       |  | Technical Info Page <input checked="" type="checkbox"/> |  |
| 11. Federal, Indian or State Lease Number:                  |  |  |  | Other   |  |

## General Notice

|  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|--|---------|--|---------|--|--|--|--|--|--|--|--|--|--|--|--|
| <input type="checkbox"/> CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit) |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Change of Surface Footage from Exterior Section Lines:   | <table border="1"> <tr> <td></td> <td>FNL/FSL</td> <td></td> <td>FEL/FWL</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table> |  | FNL/FSL |  | FEL/FWL |  |  |  |  |  |  |  |  |  |  |  |  |
|  | FNL/FSL   |  | FEL/FWL |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
|  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
|  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
|  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Change of Surface Footage to Exterior Section Lines:   |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Change of Bottomhole Footage from Exterior Section Lines:  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Change of Bottomhole Footage to Exterior Section Lines:  | attach directional survey   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Bottomhole location Qtr/Sec, Twp, Rng, Mer   |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Latitude   | Distance to nearest property line   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Longitude  | Distance to nearest bldg, public rd, utility or RR  |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Ground Elevation   | Distance to nearest lease line  |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Is location in a High Density Area (rule 603b)? Yes/No  |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Distance to nearest well same formation   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Surface owner consultation date:  |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| GPS DATA:  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Date of Measurement  | PDOP Reading  |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Instrument Operator's Name  |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> CHANGE SPACING UNIT   |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Formation  | Formation Code  |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Spacing order number   | Unit Acreage  |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Unit configuration  |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Remove from surface bond  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Signed surface use agreement attached  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling):   |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Effective Date:  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> CHANGE WELL NAME  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| From:  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| To:  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Effective Date:  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> ABANDONED LOCATION:   |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Is site ready for inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No   |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Date Ready for Inspection:   |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Date well shut in or temporarily abandoned:  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No                                  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| MIT required if shut in longer than two years. Date of last MIT  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> SPUD DATE:  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK   |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| *submit cbl and cement job summaries   |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Method used  | Cementing tool setting/perf depth   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Cement volume  | Cement top  |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Cement bottom  | Date  |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004.                         |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| Final reclamation will commence on approximately   |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Final reclamation is completed and site is ready for inspection.  |   |  |         |  |         |  |  |  |  |  |  |  |  |  |  |  |  |

## Technical Engineering/Environmental Notice

|   |  |   |  |
|---|--|---|--|
| <input type="checkbox"/> Notice of Intent   |  | <input type="checkbox"/> Report of Work Done                                  |  |
| Approximate Start Date:   |  | Date Work Completed:  |  |
| Details of work must be described in full on Technical Information Page (Page 2 must be submitted.) |  |   |  |
| <input type="checkbox"/> Intent to Recomplete (submit form 2)                                       | <input type="checkbox"/> Request to Vent or Flare    | <input type="checkbox"/> E&P Waste Disposal                                   |  |
| <input type="checkbox"/> Change Drilling Plans  | <input type="checkbox"/> Repair Well                 | <input type="checkbox"/> Beneficial Reuse of E&P Waste                        |  |
| <input type="checkbox"/> Gross Interval Changed?  | <input type="checkbox"/> Rule 502 variance requested | <input checked="" type="checkbox"/> Status Update/Change of Remediation Plans |  |
| <input type="checkbox"/> Casing/Cementing Program Change  | <input type="checkbox"/> Other:                      | for Spills and Releases   |  |

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: Cole Kilstrom

Date: 12/12/12 Email: ckilstrom@anteroresources.com

Print Name: Cole KilstromTitle: ENV SpecialistCOGCC Approved: [Signature]Title: Env. SupvDate: 1/4/13

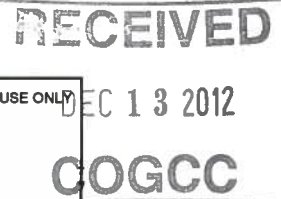
CONDITIONS OF APPROVAL IF ANY:

See Attached comments.

## TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY



1. OGCC Operator Number: 10079 API Number: N/A  
2. Name of Operator: Antero Resources Piceance OGCC Facility ID # 336037  
3. Well/Facility Name: Gypsum Ranch B Pad Well/Facility Number: Water Line  
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): NWNE 14 6S 93W 6

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5. DESCRIBE PROPOSED OR COMPLETED OPERATIONS

## Summary of Corrective Actions and Request for NOAV Closure:

On December 6, 2011, a frozen valve ruptured resulting in the release of produced water near Antero's Gypsum Ranch B Pad. The produced water flowed down the access road and pooled atop the ice on a frozen pond. The unauthorized release resulted in the COGCC's issuance of NOAV # 200332643.

COGCC NOAV # 200332643 required the following corrective actions from Antero:

1. Perform engineering evaluation of failure per Rule 906.e;
2. Develop a Form 27 Site Investigation and Remediation Work Plan (Rule 906.d) for approval prior to implementation to delineate the horizontal and vertical extent of the impact in soil and ice;
3. Collect analytical samples of impacted soil and ice/water at pond entry point for Table 910-1 constituents plus TDS, CL analysis for pond ice/water sample;
4. Provide chemical analysis of produced water that was in gathering line;
5. Provide pipeline design and integrity testing records for the pipeline;
6. Inform landowners of ongoing work and subsequent results of the work being conducted and provide regular status updates;
7. Provide chemical inventory sheets for all wells on gathering line per Rule 205; and
8. Provide written copy of Post-Construction Stormwater Program in compliance with Rule 1002.f.(1).

Antero responded to the NOAV on January 16, 2012 with a submittal to the COGCC. Antero's response included the following:

1. An engineering evaluation of the water line failure;
2. Antero's remediation response;
3. Confirmation samples within COGCC Table 910-1 standards;
4. Chemical analysis of the produced water in the water line;
5. Pipeline integrity test records;
6. A response to COGCC's request for chemical inventory records; and
7. A description and copies of Antero's Post Construction Stormwater Program and Work Orders.

Antero also requested that the COGCC agree that further remediation at the site would be unnecessary, based upon the analytical data.

In a letter dated July 10, 2012, Linda Spry O'Rourke, on behalf of the COGCC, wrote Antero and approved the closure of Remediation Project # 6787 (assigned to this matter). The letter stated that "COGCC agrees that no further action relative to the spill is required at this site until final reclamation activities." In regards to evaluating the closure of the NOAV, Ms. O'Rourke wrote that the COGCC required further information regarding items 6 and 8 of the NOAV.

In regards to item 6 involving landowner consultation, Kip Constanzo, a contractor for Antero, contacted Mr. Scott Balcom, the surface owner, via phone on or about January 20, 2012 to inform him of Antero's remediation plan. The excavation (ice removal) was completed on January 30, 2012.

Regarding item 8, Antero provided the COGCC with a narrative of its Post Construction Stormwater Program in its January 16, 2012 Form 27 (Remediation Project # 6787), attached hereto. Please also find Antero's original, and renewed CDPS Stormwater Discharge permits attached.

Antero has performed and completed all of the requested corrective action stated in the NOAV, and thus respectfully requests final COGCC closure of NOAV # 200332643 in accordance with COGCC Rule 522(b).

*See Attached Comments.*

*No documentation re: phone conversation. However, Kip Constanzo has had several conversations w/ Mr. Balcom per (note Kilstrom) Antero's conversation w/ COGCC 1/13/13*

Based on review of information presented on data presented it appears that no further action is necessary at this time, and COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if ground water is found to be significantly impacted, then further investigation and/or remediation activities may be required at the site.

*1/4/13*

FORM  
NOAV  
Rev 5/99

State of Colorado  
Oil and Gas Conservation Commission  
1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303) 894-2100 Fax: (303) 894-2109



FOR OGCC USE ONLY  
12/12/2011  
200332648

RECEIVED  
DEC 13 2012  
Date Notice Issued:  
12/12/2011 COGCC

\*\*\* NOTICE OF ALLEGED VIOLATION \*\*\*

OGCC Operator Number: 10079  
Name of Operator: ANTERO RESOURCES PICEANCE CORPORATION  
Address: 1625 17TH ST STE 300 ATTN: TERRELL A DOBKINS  
City: DENVER State: CO Zip: 80202  
Company Representative: JERRY ALBERTS

Well Name: Well Number: Facility Number: 336037  
Location (QtrQtr, Sec, Twp, Rng, Meridian): NWNE 14 6S 93W 6 County: GARFIELD  
API Number: 05 Lease Number:

COGCC Representative: SPRY OROURKE LINDA Phone Number: 970 625-2497

THE FOLLOWING ALLEGED VIOLATION WAS FOUND BY THE COGCC REPRESENTATIVE FOR THE SITE LISTED  
Date of Alleged Violation: 12/06/2011 Approximate Time of Violation: 2:46PM  
Description of Alleged Violation:  
A ruptured frozen valve resulted in a release of produced water which pooled on the pad, then flowed down the access road and impacted the gravel pit pond which is adjacent to the pad access road. The pond entry point lies approximately 1044 feet from the Colorado River channel. Conditions of Approval placed on all permitted wells on this location state "If fluids are conveyed via pipeline, operator must implement best management practices to contain any unintentional release of fluids". Adequate stormwater controls were not in place between road and pond to contain the pipeline release. The release to waters of the state was first reported to the COGCC on 12/7/2011 @ 17:37, more than 24 hours after the release occurred.

Act, Order, Regulation, Permit Conditions Cited:  
324.A.a, 324.A.b, 901.f, 906.b.(3), 907.a.(1), 907.a.(2), 1002.f.(2)

Abatement or Corrective Action Required to be Performed by Operator:  
1. Perform engineering evaluation of failure per Rule 906.e.(2). Develop a Form 27 Site Investigation and Remediation Work Plan (Rule 906.d) for approval prior to implementation to delineate the horizontal and vertical extent of the impact in soil and ice. 4. Collect analytical samples of impacted soil and ice/water at pond entry point for Table 910-1 constituents plus TDS, CL analysis for pond ice/water sample. 4. Provide chemical analysis of produced water that was in gathering line. 5. Provide pipeline design and integrity testing records for the pipeline 6. Inform landowners of ongoing work and subsequent results of the work being conducted and provide regular status updates 7. Provide chemical inventory sheets for all wells on gathering line per Rule 205. 8. Provide written copy of Post-Construction Stormwater Program in compliance with Rule 1002.f.(1).  
Abatement or Corrective Action to be Completed by (date): 01/15/2011  
\* Proper and timely abatement does not necessarily preclude the assessment of penalties and an Order Finding Violation.

TO BE COMPLETED BY OPERATOR - When alleged violation is corrected, sign this notice and return to above address:  
Company Representative Name: Cole Kilstrom Title: ENV specialist  
Signature: [Signature] Date: 12/12/12  
Company Comments: See attached Form 4 for additional information

\*\*\* THIS NOTICE CONSTITUTES A SEPARATE NOTICE OF ALLEGED VIOLATION FOR EACH VIOLATION LISTED \*\*\*

WARNING  
Abatement and reporting time frames for Notices of Alleged Violation begin upon receipt of the Notice of five days after the date it is mailed, whichever is earlier. Each violation must be abated within the prescribed time upon receipt of this Notice, reported to the Colorado Oil and Gas Conservation Commission at the address shown above, and postmarked no later than the next business day after the prescribed time for abatement. Should abatement or corrective action fail to occur, the Director may make application to the Commission for an Order Finding Violation. Proper and timely abatement does not necessarily preclude the assessment of penalties and an Order Finding Violation.

PENALTY PROPOSED BY THE DIRECTOR PER RULE 523  
The Director may propose a penalty as listed in the table below. The proposed penalty amount will be limited to \$10,000.00 per violation if the violation does not result in significant waste of oil and gas resources, damage to correlative rights, or a significant adverse impact on public health, safety, or welfare. Such proposed penalty amount may be increased if aggravating factors indicate the violation: was intentional or reckless; had, or threatened to have, a significant negative impact on public health, safety, or welfare; resulted in significant waste of oil and gas resources; had a significant negative impact on correlative rights of other parties; resulted in, or threatened to result in, significant loss or damage to public or private property; involved recalcitrance or recidivism upon the part of the violator; involved intentional false reporting or record keeping; resulted in economic benefit to the violator. Such proposed penalty amount may be decreased if mitigating factors indicate the violator: self-reported; promptly, effectively and prudently responded to the violation; cooperated with the Commission or other agencies with respect to the violation; could not reasonably control, or be responsible for, the cause of the violation; made a good faith effort to comply with applicable requirements prior to the Commission learning of the violation; had any economic benefit reduced or eliminated due to the cost of correcting the violation; has demonstrated a history of compliance with Commission rules, regulations and orders. The Commission has final authority over the penalty amount assessed.  
The Commission or other agencies with respect to the violation; could not reasonably control, or be responsible for, the cause of the violation; made a good faith effort to comply with applicable requirements prior to the Commission learning of the violation; had any economic benefit reduced or eliminated due to the cost of correcting the violation; has demonstrated a history of compliance with Commission rules, regulations, and orders. The Commission has final authority over the penalty amount assessed.  
BASE FINE \$250.00 PER DAY PER VIOLATION: RULES 210, 307, 311, 312, 313, 314A, 315, 403, 405, 603, 804  
BASE FINE \$500.00 PER DAY PER VIOLATION: RULES 205, 206, 207, 208, 302, 306, 309, 310, 316A, 321, 322, 326, 329, 330, 331, 332, 401  
BASE FINE \$750.00 PER DAY PER VIOLATION: RULES 605, 805A, 906B, 907  
BASE FINE \$1,000.00 PER DAY PER VIOLATION: RULES 209, 301, 303, 305, 306, 316B, 317, 317A, 318, 319, 320, 323, 324, 325, 326, 327, 333, 404, 602, 603, 604, 703, 704, 705, 706, 707, 708, 709, 711, 802, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 1002, 1003, 1004, 1101, 1102, 1103  
In accordance with Rule 523.a.(4), fines for violations for which no base fine is listed shall be determined by the Commission at its discretion.

Signature of COGCC Representative: [Signature] Date: 12/12/2011 Time: 16:25  
Resolution Approved by: [Signature] Date: 1/4/13  
See REM 6787  
Form 19 2597032  
WON FACILITY ID: 426957

# **Antero Resources**

## **Gypsum Ranch B Pad Response to NOAV 200332643**

January 16<sup>th</sup> 2012



## TABLE OF CONTENTS

| <b><u>Section No.</u></b>                                      | <b><u>Page No.</u></b> |
|--|------------------------|
| 1.0 Remediation Plan .....                                     | 1                      |
| 2.0 Engineering Evaluation of the Water Line Failure .....     | 1&2                    |
| 3.0 Ice/Water Samples of the Impacted Pond at Entry Point..... | 2                      |
| 4.0 Chemical Analysis of Produced Water in the Water Line..... | 2                      |
| 5.0 Gypsum Ranch B Pad Chemical Inventory.....                 | 2                      |
| 6.0 Antero's Post Construction Stormwater Program.....         | 2                      |

### **Appendices**

Appendix A: Gypsum Ranch B Pad Form 19  
Appendix B: Pad Sampling Analytical Results  
Appendix C: Example Drawing of Failure  
Appendix D: Integrity Test Records  
Appendix E: Produced Water Analysis  
Appendix F: Gypsum Ranch B Pad Storm Water Work Orders  
Appendix G: Sensitive Area Determination

**Antero Resources**  
**Gypsum Ranch B Pad: Response to NOAV 200332643**  
Spill/Release Tracking Number 2597032

**Introduction**

On December 6, 2011 a produced water spill occurred at Antero Resources' ("Antero") Gypsum Ranch B Pad. The details of this spill were provided to the COGCC in a Form 19 on December 12, 2011. The information provided in the Form 19 contained among other things; Antero's detailed description of the cause of the spill, Antero's emergency spill response and Antero's proposed actions to prevent the problem from reoccurring. The submitted Form 19 is provided with this submittal in Appendix A, "Gypsum Ranch B Pad Form 19."

The produced water spill impacted approximately 11,758 total square feet. The majority of the spill was limited to the Gypsum Ranch B pad and access road, however approximately 1 bbl of produced water impacted the adjacent gravel pit pond. A map of the impacted area is provided in Appendix A.

At the time of the incident the temperature was significantly below freezing and the impacted pond was frozen. Based on Antero's investigation of the spill, the produced water that impacted the pond was limited to a thin layer on top of the frozen pond surface and the produced water soon froze to the ponds surface.

**Section 1: Remediation Plan**

Antero implemented a strategy to remediate the impacted area of the frozen pond by removing the ice with a track hoe. The area of pond impacted by the spill is approximately 15 feet by 15 feet starting at the point of entry. Antero utilized a track hoe with a 27 foot reach to break the impacted ice and store the ice at the Gypsum Ranch B Pad. A confirmation water sample was collected from the water surface once the impacted ice was removed. The removed ice was placed in a metal trough located within the Gypsum Ranch B pad perimeter berm. When the ice melted, the water was transported to Antero's Wasatch Bench Water Management Facility to be re-used in Antero's water recycling system.

Immediately upon the spill discovery, Vac Trucks were sent to the location to remove the free standing liquids. Microblaze was applied to the impacted areas soon after the liquids were removed with a Vac Truck. Soil samples were collected two days later on December 8, 2011 by a third party and analyzed for compliance with the Table 910-1 constituents. Analytical summary tables, the lab results, and the soil and water sample location map are provided in Appendix B "Pad Sampling Analytical Results." The results show that the impacted areas do not exceed Table 910-1 standards for soil and water. Antero had deemed the site as in compliance with the COGCC cleanup standards and therefore is not planning to conduct additional pad and access road remediation work.

**Section 2: Engineering Evaluation of the Water Line Failure**

The spill was located at an above ground pipeline manifold at the Gypsum Ranch B Pad of Antero's Phase V of the Piceance water network. The well pads connected by Phase V of the water network are the Snyder C Pad, Snyder D Pad, Snyder A Pad, Gypsum Ranch B Pad, and the Gypsum Ranch A Pad. The purpose of Phase V of the network was to extend the pipeline infrastructure from the Dever A Pad to the Snyder C Pad and continue it west to the Gypsum Ranch A Pad. The pipeline is design with 12 inch PE-4710, SDR 9.0 pipeline. The material pressure rating is 252 psi, with a design pressure of 200 psi.

The cause of the spill was due to the insufficient closing of the gate valve on the pipeline manifold. Since the gate valve wasn't completely closed, there was a small space for produced water to slowly move from the main water line into the valve cap space. The cap area slowly filled with water and when temperatures were well below freezing for a significant period of time, the water expanded by 10% in volume by converting to ice. Due to the increase in volume, pressure built up inside the valve cap and caused it to release at the point of least resistance, the metal cap. A typical drawing of what occurred and a picture of the rupture is provided in Appendix C.



Three direct measures are being taken to prevent this problem from re-occurring, as stated in the submitted Form 19. The measures include the following; 1) insulate above ground pipeline manifolds, 2) drain the production water from isolated pipeline sections that are not used daily, and 3) conduct monthly field wide maintenance/housekeeping visits during the winter months (e.g. checking gate valves).

Integrity testing of this specific section of the Phase V pipeline network was conducted most recently on November 22, 2011. The original integrity test conducted after installation was completed on February 18, 2009. These two integrity tests are included in Appendix D, "Integrity Testing Records."

### **Section 3: Ice/Water Samples of the Impacted Pond at Entry Point**

Antero engaged a third party consulting firm to assess the spill impacts and to collect water quality data to support this analysis. As such, a water sample was collected at the pond entry point on December 8, 2011. At the time of collection, the water sample was collected by chipping ice from the surface of the pond until a representative sample of produced water at the impact point was collected. The results from this sampling are included in Appendix B and show small traces of diesel range organics, benzene, and toluene, but all the parameters analyzed meet Table 910-1 standards.

A confirmation water sample was taken on January 31, 2012 by a third party consulting firm. This sample was taken after the impacted frozen surface layers of the pond were removed. The results of the sampling are including in Appendix B. The results show no detectable traces of hydrocarbons and a pH in the normal range. All other sampled parameters tested for meet Table 910-1 standards. Based on the analytical results obtained from the pond sample, Antero requests that no further pond remediation is necessary.

### **Section 4: Chemical Analysis of the Produced Water in the Water Line**

After the spill incident, Phase V of Antero's water pipeline was drained and a produced water sample could not be collected straight from the waterline at the spill origin. However, a representative sample of the produced water that was in the water pipeline was collected at the Wasatch Bench Pond on December 21, 2011. This sample is similar to the produced water that spilled on December 6, 2011. The water line produced water results are provided in Appendix E.

### **Section 5: Gypsum Ranch B Pad Chemical Inventory**

Condition number seven of NOAV 200332643 requests that Antero provide the chemical inventory sheets for all wells on the gathering line. The most recent wells in this area were drilled and completed in 2007 and 2008. As such, Antero does not have chemical inventory records for these wells. However, Antero is maintaining chemical inventory records for its wells drilled and completed after the effective date of the chemical inventory rule.

### **Section 6: Antero's Post Construction Stormwater Program**

Antero's stormwater program commences prior to pad construction with the installation of proposed stormwater Best Management Practices ("BMP's") as designed by a third party survey company. The BMPs are identified on the pad plat package and are designed by a water engineer or stormwater specialist employed or contracted by the survey company. The BMPs are maintained during the active life of the well pad. Antero engaged LT Environmental (LTE) to perform routine stormwater inspections at all of its pads and pipelines. Pads and pipelines are inspected on a 14-day schedule until the ground is stabilized by erosion blankets or by vegetation cover. Stabilized sites are subject to a 30-day inspection schedule until the site is fully reclaimed (80% or greater relative cover of surrounding vegetation). The focus of the stormwater inspections is to prevent discharges of sediment offsite. The LTE inspections are followed by an "Antero Daily Stormwater Contractor Work Order." The work order reports include instructions on the maintenance required and the location of each stormwater corrective action. Antero routinely follows-up on each work order until they have been closed out by our field personnel. These stormwater work orders are passed on to Stampfel Construction Company, a construction company that carries out the BMP maintenance.

A copy of the November and December 2011 stormwater inspection work orders for the Gypsum Ranch B Pad are provided in Appendix F, "Gypsum Ranch B Pad Stormwater Work Orders." A copy of Antero's Stormwater Management Plan is available upon request.

**Conclusion**

The purpose of this submittal is to provide the COGCC with an update regarding the remediation work following the Gypsum Ranch B Pad spill that occurred on December 6, 2011. Remediation of the spill was completed early this year and a confirmation water sample was taken on January 31, 2012. The confirmation water sample shows compliance with Table 910-1 standards. Based on the analytical data Antero requests your concurrence that further remediation at this site is not necessary. Antero has identified the cause of the spill and has taken direct measures to address the problem to prevent future spills.



Appendix B: Soil Sample Results

| Metals                |             |                                  |                                 |                     |                     |                    |                     |                      |                    |                  |                    |                      |                    |                  | Moisture & pH          |      | Organic Compounds                                 |  |
|-----------------------|-------------|----------------------------------|---------------------------------|---------------------|---------------------|--------------------|---------------------|----------------------|--------------------|------------------|--------------------|----------------------|--------------------|------------------|------------------------|------|---|--|
| Sample ID             | Sample Date | Chromium, Hexavalent (mg/Kg-dry) | Chromium, Trivalent (mg/Kg-dry) | Mercury (mg/Kg-dry) | Arsenic (mg/Kg-dry) | Barium (mg/Kg-dry) | Cadmium (mg/Kg-dry) | Chromium (mg/Kg-dry) | Copper (mg/Kg-dry) | Lead (mg/Kg-dry) | Nickel (mg/Kg-dry) | Selenium (mg/Kg-dry) | Silver (mg/Kg-dry) | Zinc (mg/Kg-dry) | Moisture (% of sample) | pH   | Diesel Range Organics - DRO (C10-C28) (mg/Kg-dry) | Gasoline Range Organics - GRO (C6-C10) (mg/Kg-dry) |
| Table 910-1 Standards | 12/8/2011   | 23                               | 120,000                         | 23                  | 0.39                | 15,000             | 70                  |                      | 3,100              | 400              | 1,600              | 390                  | 390                | 23,000           |                        |      | 500   | 500  |
| Point of Origin       | 12/8/2011   | < 0.57                           | 9.6                             | < 0.018             | 3.0                 | 500                | 0.99                | 9.6                  | 9.1                | 82               | 9.7                | 0.96                 | < 0.88             | 140              | 14                     | 7.96 | 27  | < 5.8  |
| Sample Pt 1           | 12/8/2011   | < 0.56                           | 7.9                             | < 0.022             | 2.8                 | 290                | 1.2                 | 7.9                  | 7.8                | 79               | 7.8                | < 0.74               | < 0.74             | 140              | 13                     | 8.79 | 39  | < 5.8  |
| Sample Pt 2           | 12/8/2011   | < 0.54                           | 7.0                             | < 0.019             | 1.3                 | 910                | < 0.35              | 7.0                  | 6.5                | 8.0              | 6.2                | < 0.88               | < 0.88             | 59               | 8.7                    | 8.90 | 33  | < 5.5  |
| Sample Pt 3           | 12/8/2011   | < 0.55                           | 8.2                             | < 0.019             | 2.8                 | 290                | 1.0                 | 8.2                  | 7.3                | 84               | 8.3                | < 0.68               | < 0.68             | 130              | 11                     | 8.45 | 110   | < 5.6  |
| Sample Pt 4           | 12/8/2011   | < 0.55                           | 8.9                             | < 0.021             | 2.6                 | 650                | 0.55                | 8.9                  | 8.2                | 32               | 8.5                | < 0.77               | < 0.77             | 79               | 11                     | 8.61 | 39  | < 5.6  |
| BKGD 1                | 12/8/2011   |                                  |                                 |                     | 2.4                 |                    |                     |                      |                    |                  |                    |                      |                    |                  | 34                     |      |   |  |
| BKGD 2                | 12/8/2011   |                                  |                                 |                     | 4.2                 |                    |                     |                      |                    |                  |                    |                      |                    |                  | 8.6                    |      |   |  |
| BKGD 3                | 12/8/2011   |                                  |                                 |                     | 3.4                 |                    |                     |                      |                    |                  |                    |                      |                    |                  | 5.8                    | 8.73 |   |  |

| Volatile Organic Compounds |             |                     |                          |                        |                      |                     |                            | Sodium Absorption Ratio |
|----------------------------|-------------|---------------------|--------------------------|------------------------|----------------------|---------------------|----------------------------|-------------------------|
| Sample ID                  | Sample Date | Benzene (µg/Kg-dry) | Ethylbenzene (µg/Kg-dry) | m,p-Xylene (µg/Kg-dry) | o-Xylene (µg/Kg-dry) | Toluene (µg/Kg-dry) | Xylenes, Total (µg/Kg-dry) | SAR                     |
| Table 910-1 Standards      | 12/8/2011   | 170                 | 100,000                  | 175,000                | 175,000              | 85,000              | 175,000                    | <12                     |
| Point of Origin            | 12/8/2011   | < 120               | < 230                    | < 230                  | < 120                | < 170               | < 350                      | 89.9                    |
| Sample Pt 1                | 12/8/2011   | < 120               | < 230                    | < 230                  | < 120                | < 170               | < 350                      | 78.5                    |
| Sample Pt 2                | 12/8/2011   | < 110               | < 220                    | < 220                  | < 110                | < 160               | < 330                      | 55                      |
| Sample Pt 3                | 12/8/2011   | < 110               | < 220                    | < 220                  | < 110                | < 170               | < 340                      | 78.3                    |
| Sample Pt 4                | 12/8/2011   | < 110               | < 220                    | < 220                  | < 110                | < 170               | < 340                      | 41.5                    |
| BKGD 1                     | 12/8/2011   |                     |                          |                        |                      |                     |                            |                         |
| BKGD 2                     | 12/8/2011   |                     |                          |                        |                      |                     |                            |                         |
| BKGD 3                     | 12/8/2011   |                     |                          |                        |                      |                     |                            | 40.5                    |

| Semi-Volatile Organic Compounds |             |                          |                        |                                |                            |                                 |                                 |                                |                      |                                |                          |                      |                                 |                         |                    |
|---------------------------------|-------------|--------------------------|------------------------|--------------------------------|----------------------------|---------------------------------|---------------------------------|--------------------------------|----------------------|--------------------------------|--------------------------|----------------------|---------------------------------|-------------------------|--------------------|
| Sample ID                       | Sample Date | Acenaphthene (µg/Kg-dry) | Anthracene (µg/Kg-dry) | Benzo(a)anthracene (µg/Kg-dry) | Benzo(a)pyrene (µg/Kg-dry) | Benzo(b)fluoranthene (µg/Kg-dr) | Benzo(g,h,i)perylene (µg/Kg-dr) | Benzo(k)fluoranthene (µg/Kg-dr | Chrysene (µg/Kg-dry) | Dibenzo(a,h)anthracene (µg/Kg- | Fluoranthene (µg/Kg-dry) | Fluorene (µg/Kg-dry) | Indeno (1,2,3-cd)pyrene (µg/Kg- | Naphthalene (µg/Kg-dry) | Pyrene (µg/Kg-dry) |
| Table 910-1 Standards           | 12/8/2011   | 1,000,000                | 1,000,000              | 220                            | 22                         | 220                             |                                 | 2200                           | 22,000               | 22                             | 1,000,000                | 1,000,000            | 220                             | 23,000                  | 1,000,000          |
| Point of Origin                 | 12/8/2011   | < 34                     | < 34                   | < 34                           | < 34                       | < 34                            | < 34                            | < 34                           | < 34                 | < 34                           | < 34                     | < 34                 | < 34                            | < 34                    | < 34               |
| Sample Pt 1                     | 12/8/2011   | < 34                     | < 34                   | < 34                           | < 34                       | < 34                            | < 34                            | < 34                           | < 34                 | < 34                           | < 34                     | < 34                 | < 34                            | 74                      | < 34               |
| Sample Pt 2                     | 12/8/2011   | < 33                     | < 33                   | < 33                           | < 33                       | < 33                            | < 33                            | < 33                           | < 33                 | < 33                           | < 33                     | < 33                 | < 33                            | < 33                    | < 33               |
| Sample Pt 3                     | 12/8/2011   | < 33                     | < 33                   | < 33                           | < 33                       | < 33                            | < 33                            | < 33                           | < 33                 | < 33                           | < 33                     | < 33                 | < 33                            | 72                      | < 33               |
| Sample Pt 4                     | 12/8/2011   | < 33                     | < 33                   | < 33                           | < 33                       | < 33                            | < 33                            | < 33                           | < 33                 | < 33                           | < 33                     | < 33                 | < 33                            | < 33                    | < 33               |

Confirmation Water Sample

| Volatile Organic Compounds |             |                     |                          |                        |                      |                     |                            |
|----------------------------|-------------|---------------------|--------------------------|------------------------|----------------------|---------------------|----------------------------|
| Sample ID                  | Sample Date | Benzene (µg/Kg-dry) | Ethylbenzene (µg/Kg-dry) | m,p-Xylene (µg/Kg-dry) | o-Xylene (µg/Kg-dry) | Toluene (µg/Kg-dry) | Xylenes, Total (µg/Kg-dry) |
| Table 910-1 Standards      | 1/31/2012   | <1.0                | <1.0                     | <2.0                   | <1.0                 | <1.0                | <3.0                       |
| Pond Sample                | 1/31/2012   | ND                  | ND                       | ND                     | ND                   | ND                  | ND                         |

| Anions by Ion Chromatograph |             |                    |                    |
|-----------------------------|-------------|--------------------|--------------------|
| Sample ID                   | Sample Date | Chloride           | Sulfate            |
| Table 910-1 Standards       | 1/31/2012   | <1.25 x background | <1.25 x background |
| Pond Sample                 | 1/31/2012   | 170                | 350                |

| PH                    |             |      |
|-----------------------|-------------|------|
| Sample ID             | Sample Date | PH   |
| Table 910-1 Standards | 1/31/2012   | 6-9  |
| Pond Sample           | 1/31/2012   | 7.77 |

| Total Dissolved Solids |             |                    |
|------------------------|-------------|--------------------|
| Sample ID              | Sample Date | TDS                |
| Table 910-1 Standards  | 1/31/2012   | <1.25 x background |
| Pond Sample            | 1/31/2012   | 1,100              |

# STATE OF COLORADO

Bill Ritter, Jr., Governor  
James B. Martin, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.      Laboratory Services Division  
Denver, Colorado 80246-1530      8100 Lowry Blvd.  
Phone (303) 692-2000      Denver, Colorado 80230-6928  
TDD Line (303) 691-7700      (303) 692-3090  
Located in Glendale, Colorado

<http://www.cdphe.state.co.us>



Colorado Department  
of Public Health  
and Environment

July 1, 2007

Terrell A. Dobkins, VP of Production  
Antero Resources Piceance Corp,  
1625 - 17 St Ste 300  
Denver, CO 80202  
303/357-7318

RE: Final Permit, Colorado Discharge Permit System – Stormwater  
Certification No: COR-038500  
Antero Resources Piceance Basin Project  
Garfield County

Local Contact: Robert Mueller, Chief Geologist  
303/ 357-7317

Dear Sir or Madam:

Enclosed please find a copy of the new permit and certification which have been re-issued to you under the Colorado Water Quality Control Act.

Your old permit expired on June 30, 2007. This is a renewal to the permit, and replaces the old one. See page 2 of the Rationale (the pages in italics) for a summary of the changes to the permit.

Your Certification under the permit requires that specific actions be performed at designated times. You are legally obligated to comply with all terms and conditions of the permit.

Please read the permit and certification. If you have any questions please visit our website at : [www.cdphe.state.co.us/wq/permitsunit/stormwater](http://www.cdphe.state.co.us/wq/permitsunit/stormwater) or contact Matt Czahor at (303) 692-3517.

Sincerely,

Kathryn Dolan  
Stormwater Program Coordinator  
Permits Unit  
WATER QUALITY CONTROL DIVISION  
xc: Regional Council of Governments  
Local County Health Department  
District Engineer, Technical Services, WQCD  
Permit File

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT  
WATER QUALITY CONTROL DIVISION  
TELEPHONE: (303) 692-3500

# STATE OF COLORADO



**CERTIFICATION TO DISCHARGE  
UNDER  
CDPS GENERAL PERMIT COR-030000  
STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION**

Certification Number **COR038500**

**This Certification to Discharge specifically authorizes:**

***Antero Resources Piceance Corp***

**LEGAL CONTACT:**

***Terrell A. Dobkins, VP of Production  
Antero Resources Piceance Corp  
1625 - 17 St Ste 300  
Denver, CO 80202  
Phone # 303/357-7318***

**LOCAL CONTACT:**

***Robert Mueller, Chief Geologist,  
Phone # 303/ 357-7317  
rmueller@anteroresources.com***

**During the Construction Activity: Gas/Oil Field Exploration and/or  
Development**

**to discharge stormwater from the facility identified as Antero Resources Piceance  
Basin Project  
which is located at:**

**I70 Exit 94 & Frontage Rd  
Rifle, CO**

**Latitude 39/32/27, Longitude 107/42/01  
In Garfield County**

**to: -- Colorado River**

**Anticipated Activity begins 07/01/2005 continuing through 09/30/2009  
On 69.68 acres (69.68 acres disturbed)**

**Certification is effective: 07/01/2007**

**Certification Expires: 06/30/2012**

**Annual Fee: \$245.00 (DO NOT PAY NOW – A prorated bill will be sent shortly.)**

# STATE OF COLORADO

John W. Hickenlooper, Governor  
Christopher E. Urbina, MD, MPH  
Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.      Laboratory Services Division  
Denver, Colorado 80246-1530      8100 Lowry Blvd.  
Phone (303) 692-2000      Denver, Colorado 80230-6928  
Located in Glendale, Colorado      (303) 692-3090  
<http://www.cdphe.state.co.us>



Colorado Department  
of Public Health  
and Environment

June 21, 2012

Gerard G Alberts, Mgr Env & Reg  
Antero Resources Piceance Corp  
1625 17 St Ste 300  
Denver, CO 80202

**RE:      Renewal of Permit/Certification  
         Administrative Continuation  
         For: Antero Resources Piceance Basin Project  
         Located at: I-70 Exit 94 & Frontage Rd, Rifle, Garfield County  
         Permit No.: COR038500**

Dear Mr. Alberts;

The Division has received an application to renew the above permit/certification. It has been determined that there is sufficient information to make this permit/certification eligible for renewal. More information may be requested by the Division as progress is made in developing a new permit/certification for the above listed facility. This information must be made available to the Division when requested to complete the permit process.

The Division is currently in the process of developing a new permit or master general permit and associated certification for the above permitted facility. The development and review procedures required by law have not yet been completed. When the discharge permit issued to you for your facility expired on **June 30, 2012** your permit is administratively continued and remains in effect under Section 104(7) of the Administrative Procedures Act, C.R.S. 1973, 24-4-101, et seq (1982 repl. vol. 10) until the new permit/certification is issued and effective.

All effluent permit terms and conditions in your current permit will remain in effect until your new permit/certification is issued and effective.

**PLEASE KEEP THIS LETTER WITH YOUR PERMIT AND SWMP TO SHOW  
CONTINUATION OF PERMIT COVERAGE.**

Sincerely,

Debbie Jessop  
Permits Section  
WATER QUALITY CONTROL DIVISION

xc:      Permit File

## **PRIOR HISTORY**



DEPARTMENT OF NATURAL RESOURCES

*John W. Hickenlooper, Governor*  
707 Wapiti Ct. Suite 204  
Rifle, CO 81650  
Phone: (970) 625-2497  
FAX: (970) 625-5682  
[www.colorado.gov/cogcc](http://www.colorado.gov/cogcc)

July 10, 2012

Mr. Jerry Alberts  
Antero Resources  
Manager, Environmental & Regulatory  
1625 17th Street  
Suite 300  
Denver, CO 80202

Re: Facility ID Number 336037, Gypsum Ranch B Pad  
Site Investigation and Remediation Plan # 6787  
No Further Action Request  
NOAV# 200332643  
NWNE Section 14, 6S 93W  
Garfield County, Colorado

Dear Mr. Alberts,

This letter is in response to Antero Resources' July 10, 2012 "Response to NOAV 200332643" submitted to the Colorado Oil and Gas Conservation Commission (COGCC) in regard to the site investigation and remediation required by the referenced NOAV. A Site Investigation and Remediation Plan for this project was previously submitted and assigned remediation number #6787. Based on the information provided, the COGCC staff approves the closure of the remediation project #6787. The COGCC agrees that no further action relative to this spill is required at this site until final reclamation activities. However, should future conditions at the site be discovered of contaminant concentrations in soils exceeding COGCC standards or if ground or surface water is found to be significantly impacted, then Antero may be required to conduct further investigation and/or remediation at the site.

I have also reviewed the status of NOAV 200332643 and accompanying documents. At this time, Antero has conducted and submitted documentation for corrective action items 1, 2, 3, 4, 5, and 7 listed in the NOAV, which have been met. The COGCC has not received information satisfying NOAV corrective action items 6 or 8. When corrective actions are complete, and all required information has been submitted to the COGCC, the NOAV must be signed and returned to the COGCC.

DEPARTMENT OF NATURAL RESOURCES: Mike King, Executive Director

COGCC COMMISSION: Richard Alward – John Benton – Thomas L. Compton – DeAnn Craig – Tommy Holton – W. Perry Pearce — Andrew Spielman – Mike King – Chris Urbina  
COGCC STAFF: Thom Kerr, Acting Director – Margaret Ash, Field Inspection Manager – Karen Spray, Acting Environmental Manager – Stuart Ellsworth, Engineering Manager

The NOAV 200332643 cannot be closed at this time for the reasons above. Additionally, an "Answer for NOAV" form and instructions as to its use were emailed and mailed to Antero with the NOAV on December 12, 2011. As outlined in the transmittal letter, the Answer for NOAV needed to be returned to Mr. Peter Gowen, COGCC Acting Hearings Manager with 20 days of receipt of the letter. The COGCC has no record of having received a completed "Answer for NOAV 200332643" from Antero to date.

When the remaining abatement action documentation and the Answer for NOAV have been received, the COGCC will evaluate the closure of the NOAV at that time.

Regards,

Linda Spry O'Rourke  
Environmental Protection Specialist, Northwest Region

Cc: Thom Kerr – Acting COGCC Director  
Karen Spray – Acting Environmental Manager  
Alex Fischer – Western Environmental Manager  
Patrick Patton – Antero Resources  
Cole Kilstrom – Antero Resources Environmental



#6787

FORM  
27  
Rev 6/99State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109



FOR OGCC USE ONLY

Received  
1/16/2012  
Rifle COGCC

## SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

OGCC Employee:

☐ Spill ☐ Complaint  
☐ Inspection ☒ NOAV

Tracking No: 200332643

## CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☒ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☐ Other (describe):

|  |  |  |  |
|--|--|--|--|
| OGCC Operator Number: 10079  |  | Contact Name and Telephone:                  |  |
| Name of Operator: Antero Resources                                       |  | Cole Kilstrom                                |  |
| Address: 1625 17th Street  |  | No: 303-357-6709                             |  |
| City: Denver State: CO Zip: 80202  |  | Fax: 303-357-7314                            |  |
| API Number: N/A  |  | County: Garfield                             |  |
| Facility Name: Gypsum Ranch B Pad  |  | Facility Number: N/A - Flow line Loc# 426957 |  |
| Well Name: N/A NWNE  |  | Well Number: N/A                             |  |
| Location: (QtrQtr, Sec, Twp, Rng, Meridian): NENW, Section 14, T6S, R93W |  | Latitude: 39.53102 Longitude: -107.740032    |  |

## TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): produced water

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☒ Y ☐ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Gravel Pit, Oil & Gas, grazing

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Torrifluvents

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Surface water (50 ft), wetlands (50 ft), Water well (1000 ft)

Description of Impact (if previously provided, refer to that form or document):

| Impacted Media (check):                           | Extent of Impact:                                    | How Determined:                               |
|---|--|---|
| <input checked="" type="checkbox"/> Soils         | 11,758 Sq Feet, approx 1.25 inches of depth          | Third Party GPS Impact Mapping                |
| <input type="checkbox"/> Vegetation               |  |   |
| <input type="checkbox"/> Groundwater              |  |   |
| <input checked="" type="checkbox"/> Surface Water | 1 bbl of produced fluid impacted the surface of pond | visual estimation - approximately 225 sq feet |

## REMEDIALATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Please see Form 19 Submitted to the COGCC on December 12, 2011. Doc# 02597032

Describe how source is to be removed:

Please see Attachment : Gypsum Ranch B Pad: Response to NOAV 200332643, Section 1: Remediation Plan.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Please see Attachment: Gypsum Ranch B Pad Response to NOAV 200332643, Section 1: Remediation Plan.

FORM  
27  
Rev 6/99

State of Colorado  
Oil and Gas Conservation Commission  
1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
(303)894-2100 Fax: (303)894-2109



Page 2

**REMEDATION WORKPLAN (Cont.)**

Tracking Number: \_\_\_\_\_  
Name of Operator: \_\_\_\_\_  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: \_\_\_\_\_  
Facility Name & No: \_\_\_\_\_

OGCC Employee: \_\_\_\_\_

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

No groundwater has been impacted.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

The spill impacted gravel on the surface of the Gypsum Ranch B Pad and the gravel on the access road. Since the pad and access road are used daily for operations, there is no proposed reclamation plan associated with this spill. Prior to interim reclamation, Antero will investigate the sodium absorption ratios, but Antero anticipates the SAR values will decrease through natural attenuation prior to commencing interim or final reclamation.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? ☒ Y ☐ N If yes, describe:

Further site investigation will be conducted after the produced water impacts associated with the pond are removed. Further site investigation will be taking confirmatory samples of the water underneath the frozen pond surface. Samples will be analyzed for Table 910-1 constituents.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Ice/water recovered will be re-used for fracing operations on future wells.

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: 12/6/2011 Date Site Investigation Completed: TBD Date Remediation Plan Submitted: 1/14/2012  
Remediation Start Date: TBD Anticipated Completion Date: 2/28/2012 Actual Completion Date: TBD

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Cole Kilstrom

Signed: \_\_\_\_\_

Title: Environmental Specialist

Date: 1/16/12

OGCC Approved: Linda Spry Rourke Title: NW EPS II Date: 1/18/2012

COA: Include TDS and CL analysis on confirmation water sample collected from the water underneath the frozen surface once the impacted ice is removed.  
- And COAs -

# **Antero Resources**

## **Gypsum Ranch B Pad Response to NOAV 200332643**

January 16<sup>th</sup> 2012



## TABLE OF CONTENTS

| <b><u>Section No.</u></b>                                      | <b><u>Page No.</u></b> |
|--|------------------------|
| 1.0 Remediation Plan .....                                     | 1                      |
| 2.0 Engineering Evaluation of the Water Line Failure .....     | 1&2                    |
| 3.0 Ice/Water Samples of the Impacted Pond at Entry Point..... | 2                      |
| 4.0 Chemical Analysis of Produced Water in the Water Line..... | 2                      |
| 5.0 Gypsum Ranch B Pad Chemical Inventory.....                 | 2                      |
| 6.0 Antero's Post Construction Stormwater Program.....         | 2                      |

### **Appendices**

Appendix A: Gypsum Ranch B Pad Form 19  
Appendix B: Pad Sampling Analytical Results  
Appendix C: Example Drawing of Failure  
Appendix D: Integrity Test Records  
Appendix E: Produced Water Analysis  
Appendix F: Gypsum Ranch B Pad Storm Water Work Orders  
Appendix G: Sensitive Area Determination

**Antero Resources**  
**Gypsum Ranch B Pad: Response to NOAV 200332643**  
Spill/Release Tracking Number 2597032

**Introduction**

On December 6, 2011 a produced water spill occurred at Antero Resources' ("Antero") Gypsum Ranch B Pad. The details of this spill were provided to the COGCC in a Form 19 on December 12, 2011. The information provided in the Form 19 contained among other things; Antero's detailed description of the cause of the spill, Antero's emergency spill response and Antero's proposed actions to prevent the problem from reoccurring. The submitted Form 19 is provided with this submittal in Appendix A, "Gypsum Ranch B Pad Form 19."

The produced water spill impacted approximately 11,758 total square feet. The majority of the spill was limited to the Gypsum Ranch B pad and access road, however approximately 1 bbl of produced water impacted the adjacent gravel pit pond. A map of the impacted area is provided in Appendix A.

At the time of the incident the temperature was significantly below freezing and the impacted pond was frozen. Based on Antero's investigation of the spill, the produced water that impacted the pond was limited to a thin layer on top of the frozen pond surface and the produced water soon froze to the ponds surface. The current pond conditions have not changed and to date the pond remains frozen with approximately 10 to 12 inches of frozen ice and some snow on its surface.

**Section 1: Remediation Plan**

Antero is proposing to remediate the impacted area of the frozen pond by removing the ice with a track hoe. The area of pond impacted by the spill is approximately 15 feet by 15 feet starting at the point of entry. Antero is proposing to utilize a track hoe with a 27 foot reach to break the impacted ice and store the ice at the Gypsum Ranch B Pad. A confirmation water sample will be collected from the water underneath the frozen surface once the impacted ice is removed. The removed ice will be placed in a metal trough located within the Gypsum Ranch B pad perimeter berm. When the ice melts, the water will be transported to Antero's Wasatch Bench Water Management Facility to be re-used in Antero's water recycling system.

Immediately upon the spill discovery, Vac Trucks were sent to the location to remove the free standing liquids. Microblaze was applied to the impacted areas soon after the liquids were removed with a Vac Truck. Soil samples were collected two days later on December 8, 2011 by a third party and analyzed for compliance with the Table 910-1 constituents. Analytical summary tables, the lab results, and the soil sample location map are provided in Appendix B "Pad Sampling Analytical Results." The results show that the impacted areas do not exceed Table 910-1 standards for soil. Antero had deemed the site as in compliance with the COGCC cleanup standards and therefore is not planning to conduct additional pad and access road remediation work.

**Section 2: Engineering Evaluation of the Water Line Failure**

The spill was located at an above ground pipeline manifold at the Gypsum Ranch B Pad of Antero's Phase V of the Piceance water network. The well pads connected by Phase V of the water network are the Snyder C Pad, Snyder D Pad, Snyder A Pad, Gypsum Ranch B Pad, and the Gypsum Ranch A Pad. The purpose of Phase V of the network was to extend the pipeline infrastructure from the Dever A Pad to the Snyder C Pad and continue it west to the Gypsum Ranch A Pad. The pipeline is design with 12 inch PE-4710, SDR 9.0 pipeline. The material pressure rating is 252 psi, with a design pressure of 200 psi.

The cause of the spill was due to the insufficient closing of the gate valve on the pipeline manifold. Since the gate valve wasn't completely closed, there was a small space for produced water to slowly move from the main water line into the valve cap space. The cap area slowly filled with water and when temperatures were well below freezing for a significant period of time, the water expanded by 10% in volume by converting to ice. Due to the

increase in volume, pressure built up inside the valve cap and caused it to release at the point of least resistance, the metal cap. A typical drawing of what occurred and a picture of the rupture is provided in Appendix C.

Three direct measures are being taken to prevent this problem from re-occurring, as stated in the submitted Form 19. The measures include the following; 1) insulate above ground pipeline manifolds, 2) drain the production water from isolated pipeline sections that are not used daily, and 3) conduct monthly field wide maintenance/housekeeping visits during the winter months (e.g. checking gate valves).

Integrity testing of this specific section of the Phase V pipeline network was conducted most recently on November 22, 2011. The original integrity test conducted after installation was completed on February 18, 2009. These two integrity tests are included in Appendix D, "Integrity Testing Records."

### **Section 3: Ice/Water Samples of the Impacted Pond at Entry Point**

Antero engaged a third party consulting firm to assess the spill impacts and to collect water quality data to support this analysis. As such, a water sample was collected at the pond entry point on December 8, 2011. At the time of collection, the water sample was collected by chipping ice from the surface of the pond until a representative sample of produced water at the impact point was collected. The results from this sampling are included in Appendix B and show small traces of diesel range organics, benzene, and toluene, but all the parameters analyzed meet Table 910-1 standards.

### **Section 4: Chemical Analysis of the Produced Water in the Water Line**

After the spill incident, Phase V of Antero's water pipeline was drained and a produced water sample could not be collected straight from the waterline at the spill origin. However, a representative sample of the produced water that was in the water pipeline was collected at the Wasatch Bench Pond on December 21, 2011. This sample is similar to the produced water that spilled on December 6, 2011. The water line produced water results are provided in Appendix E.

### **Section 5: Gypsum Ranch B Pad Chemical Inventory**

Condition number seven of NOAV 200332643 requests that Antero provide the chemical inventory sheets for all wells on the gathering line. The most recent wells in this area were drilled and completed in 2007 and 2008. As such, Antero does not have chemical inventory records for these wells. However, Antero is maintaining chemical inventory records for its wells drilled and completed after the effective date of the chemical inventory rule.

### **Section 6: Antero's Post Construction Stormwater Program**

Antero's stormwater program commences prior to pad construction with the installation of proposed stormwater Best Management Practices ("BMP's") as designed by a third party survey company. The BMPs are identified on the pad plat package and are designed by a water engineer or stormwater specialist employed or contracted by the survey company. The BMPs are maintained during the active life of the well pad. Antero engaged LT Environmental (LTE) to perform routine stormwater inspections at all of its pads and pipelines. Pads and pipelines are inspected on a 14-day schedule until the ground is stabilized by erosion blankets or by vegetation cover. Stabilized sites are subject to a 30-day inspection schedule until the site is fully reclaimed (80% or greater relative cover of surrounding vegetation). The focus of the stormwater inspections is to prevent discharges of sediment offsite. The LTE inspections are followed by an "Antero Daily Stormwater Contractor Work Order." The work order reports include instructions on the maintenance required and the location of each stormwater corrective action. Antero routinely follows-up on each work order until they have been closed out by our field personnel. These stormwater work orders are passed on to Stampfel Construction Company, a construction company that carries out the BMP maintenance.

A copy of the November and December 2011 stormwater inspection work orders for the Gypsum Ranch B Pad are provided in Appendix F, "Gypsum Ranch B Pad Stormwater Work Orders." A copy of Antero's Stormwater Management Plan is available upon request.

# Appendix A

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Gypsum Ranch B Pad Form 19 Submittal



# State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax: (303)894-2109



FOR OGCC USE ONLY

## SPILL/RELEASE REPORT

This form is to be submitted by the party responsible for the oil and gas spill or release. Any spill or release which may impact waters of the State must be reported as soon as practicable; any spill over 20 bbls must be reported within 24 hours and all spills over five bbls must be reported within ten days. Submit a Site Investigation and Remediation Workplan (Form 27) when requested by the Director.

Spill report taken by:

FACILITY ID:

## OPERATOR INFORMATION

|   |                                    |  |
|---|------------------------------------|--|
| Name of Operator: <u>Antero Resources</u> | OGCC Operator No: <u>10079</u>     | Phone Numbers                                |
| Address: <u>1625 17th Street</u>          |                                    | No: <u>3033576709</u>                        |
| City: <u>Denver</u>                       | State: <u>CO</u> Zip: <u>80202</u> | Fax: <u>3033577315</u>                       |
| Contact Person: <u>Cole Kilstrom</u>      |                                    | E-Mail: <u>ckilstrom@anteroresources.com</u> |

## DESCRIPTION OF SPILL OR RELEASE

|   |   |  |
|---|---|--|
| Date of Incident: <u>12/6/2011</u>  | Facility Name & No.: <u>Gypsum Ranch B Pad</u>  | County: <u>Garfield</u>  |
| Type of Facility (well, tank battery, flow line, pit): <u>Flow line</u>   |   | QtrQtr: <u>NE1/4NW1/4</u> Section: <u>14</u>   |
| Well Name and Number: <u>N/A: Produced water pipeline at the Gypsum Ranch B Pad</u>   |   | Township: <u>6 South</u> Range: <u>93 West</u>   |
| API Number: <u>N/A</u>  |   | Meridian: <u>6th</u>   |
| Specify volume spilled and recovered (in bbls) for the following materials:   |   |  |
| Oil spilled: <u>~0.312</u>  | Oil recov'd: <u>~0.311</u>  | Water spilled: <u>~390.7</u> Water recov'd: <u>389.7</u> Other spilled: <u>n/a</u> Other recov'd: <u>n/a</u> |
| Ground Water impacted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  | Surface Water impacted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| Contained within berm? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  | Area and vertical extent of spill: <u>11,758 sq ft</u> x <u>1.25 inch depth (gravel)</u>    |  |
| Current land use: <u>Gravel pit, Oil &amp; gas, grazing</u>   | Weather conditions: <u>Clear, cold - 7 degrees F, ground frozen, pond frozen</u>            |  |
| Soil/geology description: <u>Torrifluvents, nearly level</u>  |   |  |
| IF LESS THAN A MILE, report distance IN FEET to nearest.... Surface water: <u>~50 ft</u> wetlands: <u>~50 ft</u> buildings: <u>~2,400 ft</u>  |   |  |
| Livestock: <u>&gt; 500 ft</u> water wells: <u>~1000 ft</u> Depth to shallowest ground water: <u>~20 ft</u>  |   |  |
| Cause of spill (e.g., equipment failure, human error, etc.): <u>Equipment Failure - frozen water inside valve broke the cap</u> Detailed description of the spill/release incident: |   |  |
| Please see Attachment A for complete details of the spill.  |   |  |

## CORRECTIVE ACTION

Describe immediate response (how stopped, contained and recovered):  
Booms and absorbent pads were placed at strategic locations along the access road and at the entrance to the pad to divert the spill from the pond. A vac truck was sent to the location to suck up the free flowing liquids. The spill was stopped after the frozen water had thawed, allowing the gate valve to close.

Describe any emergency pits constructed:  
No emergency pits were constructed. Absorbent booms and pads were placed in locations to prevent the migration of the spill.

How was the extent of contamination determined:  
A third party mapped the impacted area with a GPS device. Please see Attachment B "Spill Location Map."

Further remediation activities proposed (attach separate sheet if needed):  
Antero will submit a Form 27 to the COGCC detailing the proposed remediation strategies.

Describe measures taken to prevent problem from reoccurring:  
1) Insulate above ground pipeline manifolds. 2) Drain production water from isolated pipeline sections that are not used daily. 3) Monthly fieldwide maintenance/housekeeping visits during winter months (e.g. checking gate valves).

## OTHER NOTIFICATIONS

List the parties and agencies notified (County, BLM, EPA, DOT, Local Emergency Planning Coordinator or other).

| Date      | Agency                       | Contact                                   | Phone        | Response   |
|-----------|------------------------------|---|--------------|--|
| 12/7/2011 | COGCC                        | Linda Spry O'Rourke                       | 970-625-2487 | Voicemail  |
| 12/7/2011 | CDPHE                        | CDPHE Spill Reporting Hotline             | 877-518-5608 | Voicemail, follow up conversation. Report #2011-0875 |
| 12/7/2011 | EPA National Response Center | Spill Report Hotline                      | 800-424-8802 | Filed a Report - #997468                             |
| 12/7/2011 | Rifle Watershed Program      | Michael Erion                             | 970-945-6777 | Voicemail. Follow up conversation on 12/8/11         |
| 12/7/2011 | see attached                 | See attached list for additional contacts |              |  |

Spill/Release Tracking No: \_\_\_\_\_

## **ATTACHMENT A**

### **Detailed Description of the Spill/Release Incident:**

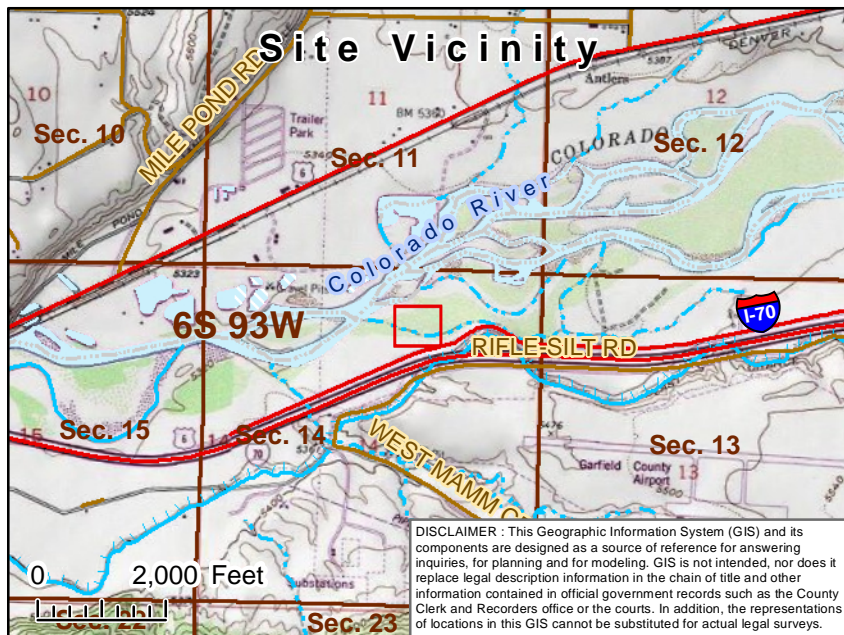
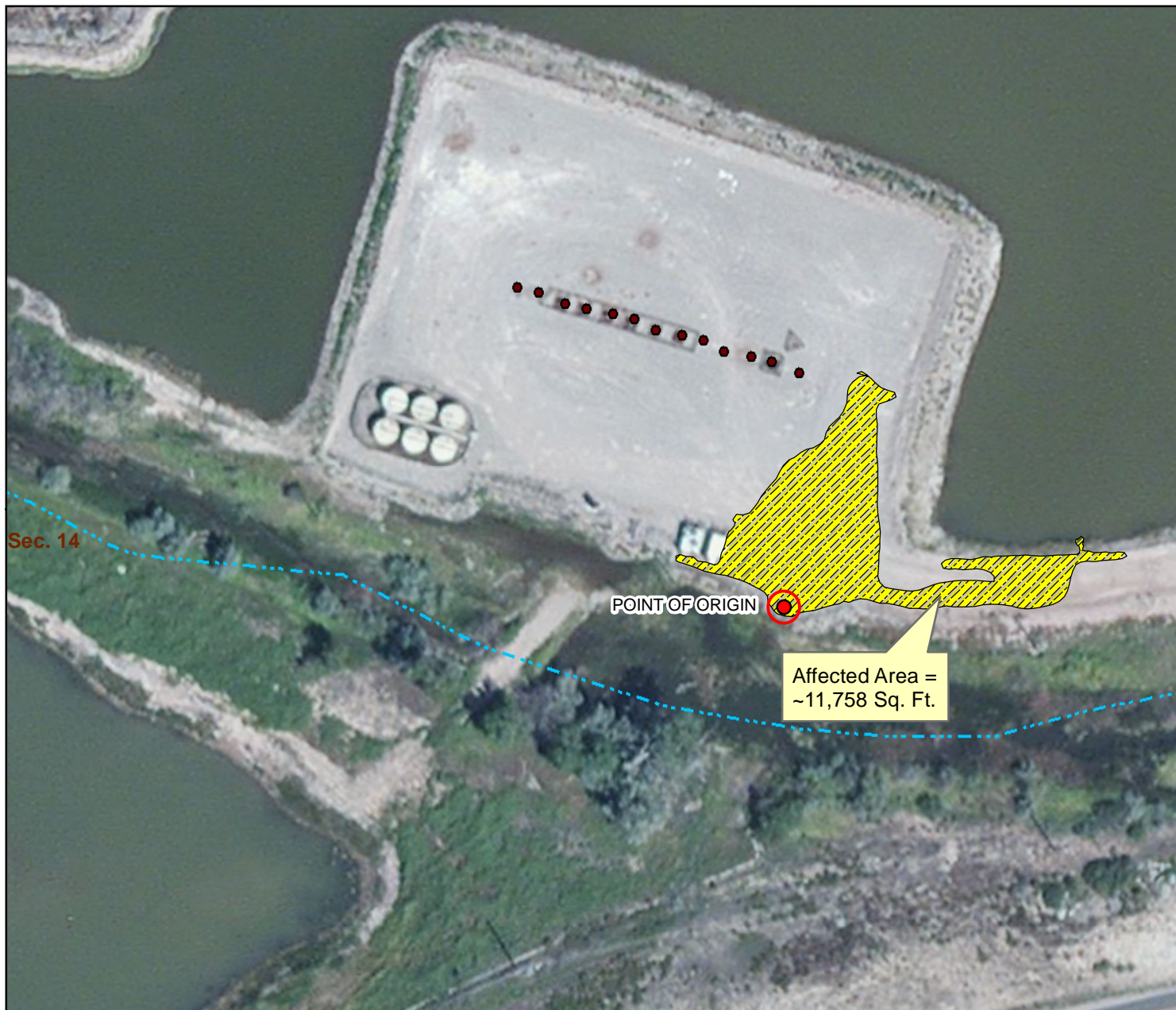
At approximately 2:46 p.m. on December 6, 2011 an Antero water hauling contractor noticed produced water escaping from a broken cap on the water pipeline at the Gypsum Ranch B pad. Antero was immediately contacted and implemented its emergency spill response plan. The emergency response plan involved placing absorbent pads and booms along the access road and at the pad entrance to divert the spill from the adjacent pond and keep the majority of the spill contained on the pad. A vac truck was also sent to the location to suck up the pooling water.

During the spill, the "gate" valve on the pipeline manifold was not completely closed due to ice buildup and could not be immediately closed to stop the spill. The ice in the pipeline manifold thawed and at approximately 5:00 p.m. water line "gate" valve was closed and the spill ceased. The majority of the spill was contained on the pad site and the access road, however approximately 1 bbl of produced water impacted the adjacent gravel pit pond. The pond was frozen at the time and the produced water that impacted the pond was frozen on the surface of pond. Further remediation strategies will be provided to the COGCC via a Form 27.

### **Notification List:**

12/7/2011 – Rifle Public Water Supply – 970-625-2353 – Voicemail

12/7/2011 – Colorado Division of Wildlife – 970-255-4261 - Voicemail



Attachment B--Spill Location Map  
 Location: Gypsum Ranch B  
 Antero Resources Piceance Corp.

### Legend

#### PLSS

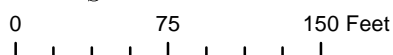
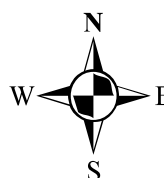
- Township
- Section

#### Transportation Features

- Highways
- Public Roads

#### Hydrographic Features

- Perennial Stream
- Intermittent Stream
- Ditch/Canal
- River



# Appendix B

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Pad Sampling Analytical Results

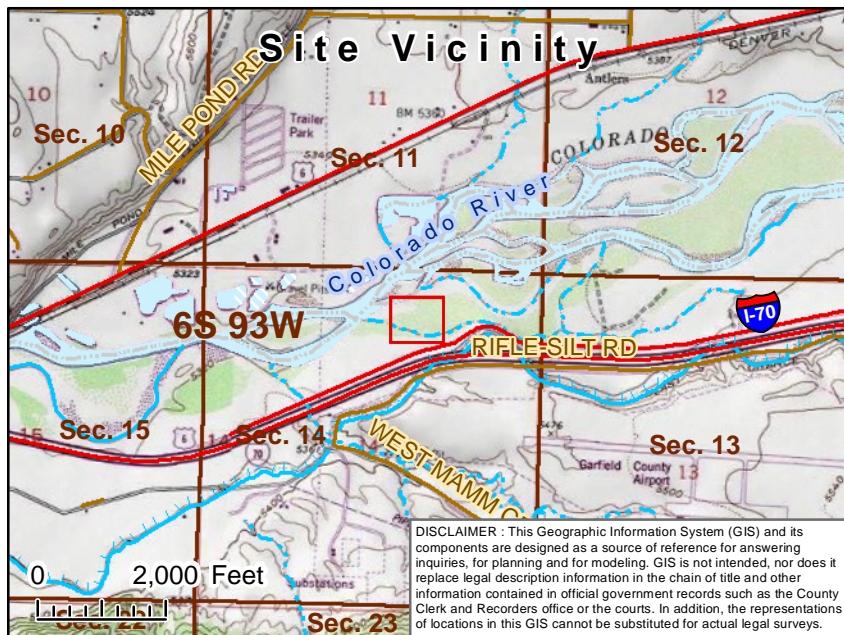
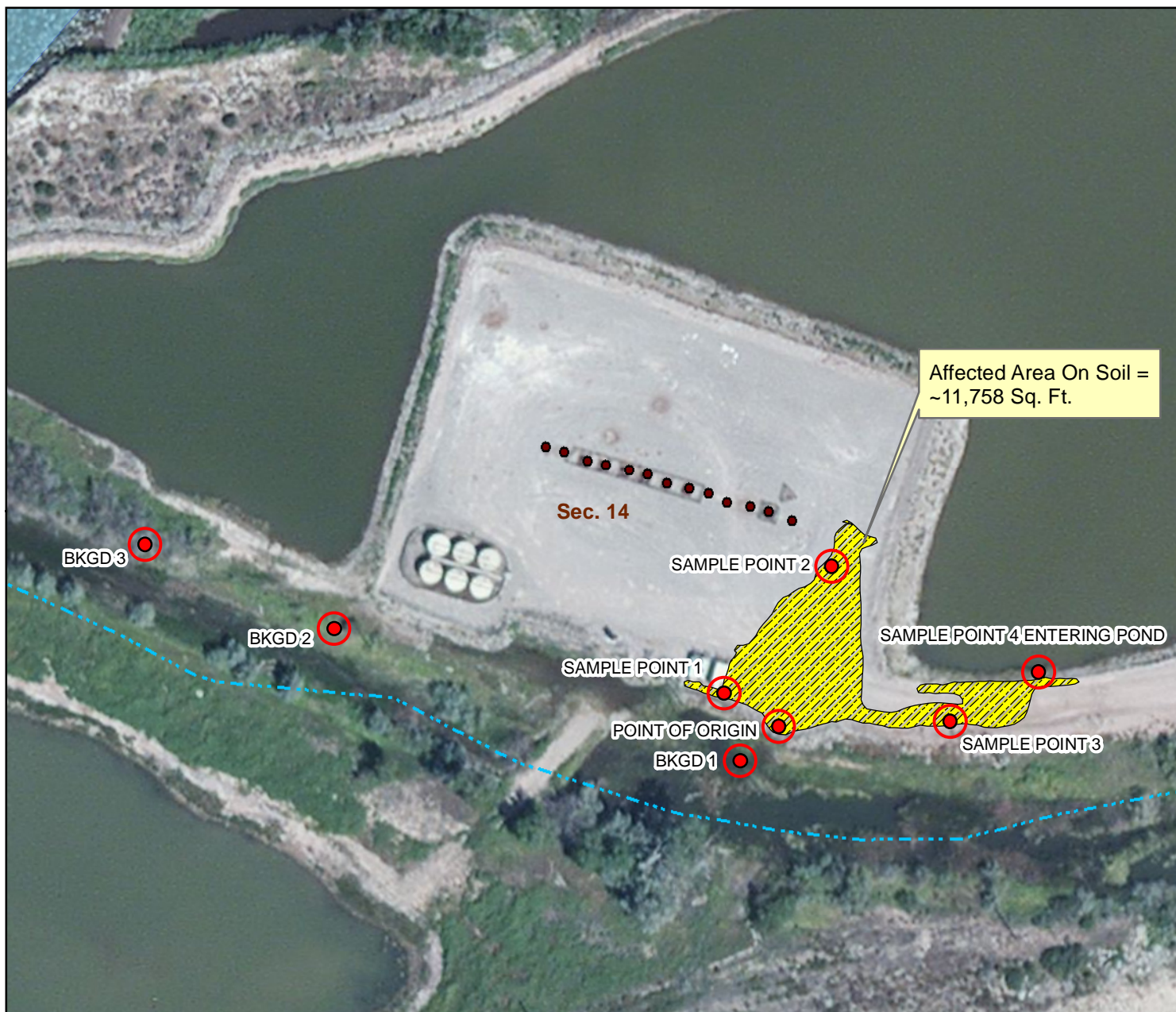


## Appendix B: Soil Sample Results

|                       |             | Metals                           |                                 |                     |                     |                    |                     |                      |                    |                  |                    |                      |                    |                  | Moisture & pH          |      | Organic Compounds                                 |  |
|-----------------------|-------------|----------------------------------|---------------------------------|---------------------|---------------------|--------------------|---------------------|----------------------|--------------------|------------------|--------------------|----------------------|--------------------|------------------|------------------------|------|---|--|
| Sample ID             | Sample Date | Chromium, Hexavalent (mg/Kg-dry) | Chromium, Trivalent (mg/Kg-dry) | Mercury (mg/Kg-dry) | Arsenic (mg/Kg-dry) | Barium (mg/Kg-dry) | Cadmium (mg/Kg-dry) | Chromium (mg/Kg-dry) | Copper (mg/Kg-dry) | Lead (mg/Kg-dry) | Nickel (mg/Kg-dry) | Selenium (mg/Kg-dry) | Silver (mg/Kg-dry) | Zinc (mg/Kg-dry) | Moisture (% of sample) | pH   | Diesel Range Organics - DRO (C10-C28) (mg/Kg-dry) | Gasoline Range Organics - GRO (C6-C10) (mg/Kg-dry) |
| Table 910-1 Standards |             | 12/8/2011                        | 23                              | 120,000             | 23                  | 0.39               | 15,000              | 70                   | 3,100              | 400              | 1,600              | 390                  | 390                | 23,000           |                        |      | 500   | 500  |
| Point of Origin       | 12/8/2011   | < 0.57                           | 9.6                             | < 0.018             | 3.0                 | 500                | 0.99                | 9.6                  | 9.1                | 82               | 9.7                | 0.96                 | < 0.88             | 140              | 14                     | 7.96 | 27  | < 5.8  |
| Sample Pt 1           | 12/8/2011   | < 0.56                           | 7.9                             | < 0.022             | 2.8                 | 290                | 1.2                 | 7.9                  | 7.8                | 79               | 7.8                | < 0.74               | < 0.74             | 140              | 13                     | 8.79 | 39  | < 5.8  |
| Sample Pt 2           | 12/8/2011   | < 0.54                           | 7.0                             | < 0.019             | 1.3                 | 910                | < 0.35              | 7.0                  | 6.5                | 8.0              | 6.2                | < 0.88               | < 0.88             | 59               | 8.7                    | 8.90 | 33  | < 5.5  |
| Sample Pt 3           | 12/8/2011   | < 0.55                           | 8.2                             | < 0.019             | 2.8                 | 290                | 1.0                 | 8.2                  | 7.3                | 84               | 8.3                | < 0.68               | < 0.68             | 130              | 11                     | 8.45 | 110   | < 5.6  |
| Sample Pt 4           | 12/8/2011   | < 0.55                           | 8.9                             | < 0.021             | 2.6                 | 650                | 0.55                | 8.9                  | 8.2                | 32               | 8.5                | < 0.77               | < 0.77             | 79               | 11                     | 8.61 | 39  | < 5.6  |
| BKGD 1                | 12/8/2011   |                                  |                                 |                     | 2.4                 |                    |                     |                      |                    |                  |                    |                      |                    |                  | 34                     |      |   |  |
| BKGD 2                | 12/8/2011   |                                  |                                 |                     | 4.2                 |                    |                     |                      |                    |                  |                    |                      |                    |                  | 8.6                    |      |   |  |
| BKGD 3                | 12/8/2011   |                                  |                                 |                     | 3.4                 |                    |                     |                      |                    |                  |                    |                      |                    |                  | 5.8                    | 8.73 |   |  |

|                       |             | Volatile Organic Compounds |                          |                        |                      |                     |                            | Sodium Absorption Ratio |
|-----------------------|-------------|----------------------------|--------------------------|------------------------|----------------------|---------------------|----------------------------|-------------------------|
| Sample ID             | Sample Date | Benzene (µg/Kg-dry)        | Ethylbenzene (µg/Kg-dry) | m,p-Xylene (µg/Kg-dry) | o-Xylene (µg/Kg-dry) | Toluene (µg/Kg-dry) | Xylenes, Total (µg/Kg-dry) | SAR                     |
| Table 910-1 Standards | 12/8/2011   | 170                        | 100,000                  | 175,000                | 175,000              | 85,000              | 175,000                    | <12                     |
| Point of Origin       | 12/8/2011   | < 120                      | < 230                    | < 230                  | < 120                | < 170               | < 350                      | 89.9                    |
| Sample Pt 1           | 12/8/2011   | < 120                      | < 230                    | < 230                  | < 120                | < 170               | < 350                      | 78.5                    |
| Sample Pt 2           | 12/8/2011   | < 110                      | < 220                    | < 220                  | < 110                | < 160               | < 330                      | 55                      |
| Sample Pt 3           | 12/8/2011   | < 110                      | < 220                    | < 220                  | < 110                | < 170               | < 340                      | 78.3                    |
| Sample Pt 4           | 12/8/2011   | < 110                      | < 220                    | < 220                  | < 110                | < 170               | < 340                      | 41.5                    |
| BKGD 1                | 12/8/2011   |                            |                          |                        |                      |                     |                            |                         |
| BKGD 2                | 12/8/2011   |                            |                          |                        |                      |                     |                            |                         |
| BKGD 3                | 12/8/2011   |                            |                          |                        |                      |                     |                            | 40.5                    |

[illegible]



**Soil Sample Location Map**  
**Location: Gypsum Ranch B**  
*Antero Resources Piceance Corp.*

**Legend**

**PLSS**

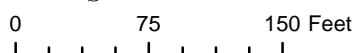
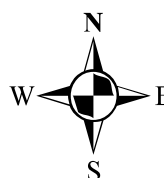
- Township
- Section

**Transportation Features**

- Highways
- Public Roads

**Hydrographic Features**

- Perennial Stream
- Intermittent Stream
- Ditch/Canal
- River





19-Dec-2011

Mark Mumby  
HRL Compliance Solutions  
744 Horizon Ct. Suite 140  
Grand Junction, CO 81506

Re: **Gypsum Ranch B Pad 12/8/11**

Work Order: **1112376**

Dear Mark,

ALS Environmental received 9 samples on 12-Dec-2011 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 51.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN331938

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental The ALS logo, a stylized blue triangle with a yellow flame inside.

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Work Order:** 1112376

**Work Order Sample Summary**

| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u>              |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 1112376-01         | BKGD 1                  | Soil          |                   | 12/8/2011 11:50        | 12/12/2011 09:00     | <input type="checkbox"/> |
| 1112376-02         | BKGD 2                  | Soil          |                   | 12/8/2011 11:55        | 12/12/2011 09:00     | <input type="checkbox"/> |
| 1112376-03         | BKGD 3                  | Soil          |                   | 12/8/2011 12:00        | 12/12/2011 09:00     | <input type="checkbox"/> |
| 1112376-04         | Point of Origin         | Soil          |                   | 12/8/2011 12:10        | 12/12/2011 09:00     | <input type="checkbox"/> |
| 1112376-05         | Sample Pt 1             | Soil          |                   | 12/8/2011 12:15        | 12/12/2011 09:00     | <input type="checkbox"/> |
| 1112376-06         | Sample Pt 2             | Soil          |                   | 12/8/2011 12:20        | 12/12/2011 09:00     | <input type="checkbox"/> |
| 1112376-07         | Sample Pt 3             | Soil          |                   | 12/8/2011 12:25        | 12/12/2011 09:00     | <input type="checkbox"/> |
| 1112376-08         | Sample Pt 4             | Soil          |                   | 12/8/2011 12:30        | 12/12/2011 09:00     | <input type="checkbox"/> |
| 1112376-09         | Pond sample             | Water         |                   | 12/8/2011 12:45        | 12/12/2011 09:00     | <input type="checkbox"/> |

---

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Work Order:** 1112376

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**Case Narrative**

At the client's request, Metals were not analyzed for the Pond sample.

Batch 38160MS/MSD data for Metals is not related to this project's samples.

Batch 38197 sample BKGD 3 MS/MSD recoveries for Barium and inc were outside control limits, however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for these elements.

Batch 38205 MS/MSD data for Hexavalent Chromium is not related to this project's samples.

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**WorkOrder:** 1112376

## **QUALIFIERS, ACRONYMS, UNITS**

| <b><u>Qualifier</u></b> | <b><u>Description</u></b>   |
|-------------------------|---|
| *                       | Value exceeds Regulatory Limit  |
| a                       | Not accredited  |
| B                       | Analyte detected in the associated Method Blank above the Reporting Limit |
| E                       | Value above quantitation range  |
| H                       | Analyzed outside of Holding Time  |
| J                       | Analyte detected below quantitation limit                                 |
| n                       | Not offered for accreditation   |
| ND                      | Not Detected at the Reporting Limit                                       |
| O                       | Sample amount is > 4 times amount spiked                                  |
| P                       | Dual Column results percent difference > 40%                              |
| R                       | RPD above laboratory control limit  |
| S                       | Spike Recovery outside laboratory control limits                          |
| U                       | Analyzed but not detected above the MDL                                   |

| <b><u>Acronym</u></b> | <b><u>Description</u></b>           |
|-----------------------|-------------------------------------|
| DUP                   | Method Duplicate                    |
| LCS                   | Laboratory Control Sample           |
| LCSD                  | Laboratory Control Sample Duplicate |
| MBLK                  | Method Blank                        |
| MDL                   | Method Detection Limit              |
| MQL                   | Method Quantitation Limit           |
| MS                    | Matrix Spike                        |
| MSD                   | Matrix Spike Duplicate              |
| PDS                   | Post Digestion Spike                |
| PQL                   | Practical Quantitation Limit        |
| RPD                   | Relative Percent Difference         |
| SD                    | Serial Dilution                     |
| TDL                   | Target Detection Limit              |

| <b><u>Units Reported</u></b> | <b><u>Description</u></b>          |
|------------------------------|------------------------------------|
| % of sample                  | Percent of Sample                  |
| µg/Kg-dry                    | Micrograms per Kilogram Dry Weight |
| µg/L                         | Micrograms per Liter               |
| as noted                     |                                    |
| mg/Kg-dry                    | Milligrams per Kilogram Dry Weight |
| mg/L                         | Milligrams per Liter               |
| s.u.                         | Standard Units                     |

## ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** BKGD 1  
**Collection Date:** 12/8/2011 11:50 AM

**Work Order:** 1112376  
**Lab ID:** 1112376-01  
**Matrix:** SOIL

| Analyses                | Result | Qual | Report<br>Limit | Units       | Dilution<br>Factor           | Date Analyzed       |
|-------------------------|--------|------|-----------------|-------------|------------------------------|---------------------|
| <b>METALS BY ICP-MS</b> |        |      | <b>SW6020A</b>  |             | Prep Date: <b>12/13/2011</b> | Analyst: <b>CES</b> |
| Arsenic                 | 2.4    |      | 1.0             | mg/Kg-dry   | 2                            | 12/15/2011 07:06 PM |
| <b>MOISTURE</b>         |        |      | <b>A2540 G</b>  |             |                              | Analyst: <b>CG</b>  |
| Moisture                | 34     |      | 0.050           | % of sample | 1                            | 12/14/2011 03:17 PM |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

## ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** BKGD 2  
**Collection Date:** 12/8/2011 11:55 AM

**Work Order:** 1112376  
**Lab ID:** 1112376-02  
**Matrix:** SOIL

| Analyses                | Result | Qual | Report<br>Limit | Units       | Dilution<br>Factor           | Date Analyzed       |
|-------------------------|--------|------|-----------------|-------------|------------------------------|---------------------|
| <b>METALS BY ICP-MS</b> |        |      | <b>SW6020A</b>  |             | Prep Date: <b>12/13/2011</b> | Analyst: <b>CES</b> |
| Arsenic                 | 4.2    |      | 0.74            | mg/Kg-dry   | 2                            | 12/15/2011 07:11 PM |
| <b>MOISTURE</b>         |        |      | <b>A2540 G</b>  |             |                              | Analyst: <b>CG</b>  |
| Moisture                | 8.6    |      | 0.050           | % of sample | 1                            | 12/14/2011 03:17 PM |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**ALS Group USA, Corp**

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** BKGD 3  
**Collection Date:** 12/8/2011 12:00 PM

**Work Order:** 1112376  
**Lab ID:** 1112376-03  
**Matrix:** SOIL

| Analyses                      | Result        | Qual | Report Limit     | Units       | Dilution Factor            | Date Analyzed                       |
|-------------------------------|---------------|------|------------------|-------------|----------------------------|-------------------------------------|
| <b>METALS BY ICP-MS</b>       |               |      |                  |             |                            |                                     |
| Arsenic                       | 3.4           |      | SW6020A<br>0.91  | mg/Kg-dry   | Prep Date: 12/14/2011<br>2 | Analyst: CES<br>12/15/2011 07:58 PM |
| <b>SUBCONTRACTED ANALYSES</b> |               |      |                  |             |                            |                                     |
| Subcontracted Analyses        | Rcvd 12/15/11 |      | SUBCONTRACT      | as noted    | 1                          | Analyst: A&LGL<br>12/15/2011        |
| <b>MOISTURE</b>               |               |      |                  |             |                            |                                     |
| Moisture                      | 5.8           |      | A2540 G<br>0.050 | % of sample | 1                          | Analyst: CG<br>12/14/2011 03:17 PM  |
| <b>PH</b>                     |               |      |                  |             |                            |                                     |
| pH                            | 8.73          |      | SW9045D          | s.u.        | 1                          | Analyst: JJG<br>12/12/2011 10:15 AM |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** Point of Origin  
**Collection Date:** 12/8/2011 12:10 PM

**Work Order:** 1112376  
**Lab ID:** 1112376-04  
**Matrix:** SOIL

| Analyses                                 | Result        | Qual | Report Limit       | Units            | Dilution Factor              | Date Analyzed             |
|--|---------------|------|--------------------|------------------|------------------------------|---------------------------|
| <b>DIESEL RANGE ORGANICS BY GC-FID</b>   |               |      |                    |                  |                              |                           |
|  |               |      | <b>SW8015M</b>     |                  | Prep Date: <b>12/13/2011</b> | Analyst: <b>RM</b>        |
| <b>DRO (C10-C28)</b>                     | <b>27</b>     |      | <b>4.8</b>         | <b>mg/Kg-dry</b> | 1                            | 12/15/2011 11:58 AM       |
| Surr: 4-Terphenyl-d14                    | 77.1          |      | 39-115             | %REC             | 1                            | 12/15/2011 11:58 AM       |
| <b>GASOLINE RANGE ORGANICS BY GC-FID</b> |               |      |                    |                  |                              |                           |
|  |               |      | <b>SW8015</b>      |                  |                              | Analyst: <b>RM</b>        |
| GRO (C6-C10)                             | ND            |      | 5.8                | mg/Kg-dry        | 100                          | 12/15/2011 10:55 PM       |
| Surr: Toluene-d8                         | 108           |      | 50-150             | %REC             | 100                          | 12/15/2011 10:55 PM       |
| <b>MERCURY BY CVAA</b>                   |               |      |                    |                  |                              |                           |
|  |               |      | <b>SW7471</b>      |                  | Prep Date: <b>12/15/2011</b> | Analyst: <b>LR</b>        |
| Mercury                                  | ND            |      | 0.018              | mg/Kg-dry        | 1                            | 12/15/2011 01:25 PM       |
| <b>METALS BY ICP-MS</b>                  |               |      |                    |                  |                              |                           |
|  |               |      | <b>SW6020A</b>     |                  | Prep Date: <b>12/14/2011</b> | Analyst: <b>CES</b>       |
| Arsenic                                  | 3.0           |      | 0.88               | mg/Kg-dry        | 2                            | 12/15/2011 08:24 PM       |
| Barium                                   | 500           |      | 8.8                | mg/Kg-dry        | 20                           | 12/16/2011 12:23 PM       |
| Cadmium                                  | 0.99          |      | 0.35               | mg/Kg-dry        | 2                            | 12/15/2011 08:24 PM       |
| Chromium                                 | 9.6           |      | 0.88               | mg/Kg-dry        | 2                            | 12/15/2011 08:24 PM       |
| Copper                                   | 9.1           |      | 0.88               | mg/Kg-dry        | 2                            | 12/15/2011 08:24 PM       |
| Lead                                     | 82            |      | 0.88               | mg/Kg-dry        | 2                            | 12/15/2011 08:24 PM       |
| Nickel                                   | 9.7           |      | 0.88               | mg/Kg-dry        | 2                            | 12/15/2011 08:24 PM       |
| Selenium                                 | 0.96          |      | 0.88               | mg/Kg-dry        | 2                            | 12/15/2011 08:24 PM       |
| Silver                                   | ND            |      | 0.88               | mg/Kg-dry        | 2                            | 12/15/2011 08:24 PM       |
| Zinc                                     | 140           |      | 1.8                | mg/Kg-dry        | 2                            | 12/15/2011 08:24 PM       |
| <b>SUBCONTRACTED ANALYSES</b>            |               |      |                    |                  |                              |                           |
| Subcontracted Analyses                   | Rcvd 12/15/11 |      | <b>SUBCONTRACT</b> |                  |                              | Analyst: <b>A&amp;LGL</b> |
|  |               |      | as noted           |                  | 1                            | 12/15/2011                |
| <b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>   |               |      |                    |                  |                              |                           |
|  |               |      | <b>SW8270</b>      |                  | Prep Date: <b>12/13/2011</b> | Analyst: <b>HL</b>        |
| Acenaphthene                             | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Anthracene                               | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Benzo(a)anthracene                       | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Benzo(a)pyrene                           | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Benzo(b)fluoranthene                     | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Benzo(g,h,i)perylene                     | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Benzo(k)fluoranthene                     | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Chrysene                                 | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Dibenzo(a,h)anthracene                   | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Fluoranthene                             | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Fluorene                                 | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Indeno(1,2,3-cd)pyrene                   | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Naphthalene                              | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Pyrene                                   | ND            |      | 34                 | µg/Kg-dry        | 1                            | 12/17/2011 11:51 PM       |
| Surr: 2,4,6-Tribromophenol               | 79.1          |      | 34-140             | %REC             | 1                            | 12/17/2011 11:51 PM       |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



# ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** Point of Origin  
**Collection Date:** 12/8/2011 12:10 PM

**Work Order:** 1112376  
**Lab ID:** 1112376-04  
**Matrix:** SOIL

| Analyses                           | Result | Qual | Report Limit       | Units       | Dilution Factor              | Date Analyzed       |
|------------------------------------|--------|------|--------------------|-------------|------------------------------|---------------------|
| <i>Surr: 2-Fluorobiphenyl</i>      | 69.0   |      | 12-100             | %REC        | 1                            | 12/17/2011 11:51 PM |
| <i>Surr: 2-Fluorophenol</i>        | 92.2   |      | 33-117             | %REC        | 1                            | 12/17/2011 11:51 PM |
| <i>Surr: 4-Terphenyl-d14</i>       | 108    |      | 25-137             | %REC        | 1                            | 12/17/2011 11:51 PM |
| <i>Surr: Nitrobenzene-d5</i>       | 67.5   |      | 37-107             | %REC        | 1                            | 12/17/2011 11:51 PM |
| <i>Surr: Phenol-d6</i>             | 87.7   |      | 40-106             | %REC        | 1                            | 12/17/2011 11:51 PM |
| <b>VOLATILE ORGANIC COMPOUNDS</b>  |        |      | <b>SW8260</b>      |             |                              | Analyst: <b>MK</b>  |
| Benzene                            | ND     |      | 120                | µg/Kg-dry   | 100                          | 12/18/2011 08:04 PM |
| Ethylbenzene                       | ND     |      | 230                | µg/Kg-dry   | 100                          | 12/18/2011 08:04 PM |
| m,p-Xylene                         | ND     |      | 230                | µg/Kg-dry   | 100                          | 12/18/2011 08:04 PM |
| o-Xylene                           | ND     |      | 120                | µg/Kg-dry   | 100                          | 12/18/2011 08:04 PM |
| Toluene                            | ND     |      | 170                | µg/Kg-dry   | 100                          | 12/18/2011 08:04 PM |
| Xylenes, Total                     | ND     |      | 350                | µg/Kg-dry   | 100                          | 12/18/2011 08:04 PM |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 112    |      | 70-120             | %REC        | 100                          | 12/18/2011 08:04 PM |
| <i>Surr: 4-Bromofluorobenzene</i>  | 100    |      | 75-120             | %REC        | 100                          | 12/18/2011 08:04 PM |
| <i>Surr: Dibromofluoromethane</i>  | 96.2   |      | 85-115             | %REC        | 100                          | 12/18/2011 08:04 PM |
| <i>Surr: Toluene-d8</i>            | 102    |      | 85-115             | %REC        | 100                          | 12/18/2011 08:04 PM |
| <b>CHROMIUM, TRIVALENT</b>         |        |      | <b>CALCULATION</b> |             |                              | Analyst: <b>JJG</b> |
| Chromium, Trivalent                | 9.6    |      | 0.58               | mg/Kg-dry   | 1                            | 12/19/2011 08:03 AM |
| <b>CHROMIUM, HEXAVALENT</b>        |        |      | <b>SW7196A</b>     |             | Prep Date: <b>12/13/2011</b> | Analyst: <b>MB</b>  |
| Chromium, Hexavalent               | ND     |      | 0.57               | mg/Kg-dry   | 1                            | 12/14/2011 02:50 PM |
| <b>MOISTURE</b>                    |        |      | <b>A2540 G</b>     |             |                              | Analyst: <b>CG</b>  |
| Moisture                           | 14     |      | 0.050              | % of sample | 1                            | 12/14/2011 03:17 PM |
| <b>PH</b>                          |        |      | <b>SW9045D</b>     |             |                              | Analyst: <b>JJG</b> |
| pH                                 | 7.96   |      |                    | s.u.        | 1                            | 12/12/2011 10:15 AM |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** Sample Pt 1  
**Collection Date:** 12/8/2011 12:15 PM

**Work Order:** 1112376  
**Lab ID:** 1112376-05  
**Matrix:** SOIL

| Analyses                                 | Result               | Qual | Report Limit       | Units            | Dilution Factor              | Date Analyzed             |
|--|----------------------|------|--------------------|------------------|------------------------------|---------------------------|
| <b>DIESEL RANGE ORGANICS BY GC-FID</b>   |                      |      |                    |                  |                              |                           |
| <b>DRO (C10-C28)</b>                     | <b>39</b>            |      | <b>SW8015M</b>     |                  | Prep Date: <b>12/13/2011</b> | Analyst: <b>RM</b>        |
|  |                      |      | <b>4.8</b>         | <b>mg/Kg-dry</b> | 1                            | 12/15/2011 12:20 PM       |
| Surr: 4-Terphenyl-d14                    | 71.8                 |      | 39-115             | %REC             | 1                            | 12/15/2011 12:20 PM       |
| <b>GASOLINE RANGE ORGANICS BY GC-FID</b> |                      |      |                    |                  |                              |                           |
| <b>GRO (C6-C10)</b>                      | <b>ND</b>            |      | <b>SW8015</b>      |                  |                              | Analyst: <b>RM</b>        |
|  |                      |      | <b>5.8</b>         | <b>mg/Kg-dry</b> | 100                          | 12/15/2011 11:20 PM       |
| Surr: Toluene-d8                         | 109                  |      | 50-150             | %REC             | 100                          | 12/15/2011 11:20 PM       |
| <b>MERCURY BY CVAA</b>                   |                      |      |                    |                  |                              |                           |
| <b>Mercury</b>                           | <b>ND</b>            |      | <b>SW7471</b>      |                  | Prep Date: <b>12/15/2011</b> | Analyst: <b>LR</b>        |
|  |                      |      | <b>0.022</b>       | <b>mg/Kg-dry</b> | 1                            | 12/15/2011 01:27 PM       |
| <b>METALS BY ICP-MS</b>                  |                      |      |                    |                  |                              |                           |
| <b>Arsenic</b>                           | <b>2.8</b>           |      | <b>SW6020A</b>     |                  | Prep Date: <b>12/14/2011</b> | Analyst: <b>CES</b>       |
|  |                      |      | <b>0.74</b>        | <b>mg/Kg-dry</b> | 2                            | 12/15/2011 08:29 PM       |
| <b>Barium</b>                            | <b>290</b>           |      | <b>7.4</b>         | <b>mg/Kg-dry</b> | 20                           | 12/16/2011 12:28 PM       |
| <b>Cadmium</b>                           | <b>1.2</b>           |      | <b>0.29</b>        | <b>mg/Kg-dry</b> | 2                            | 12/15/2011 08:29 PM       |
| <b>Chromium</b>                          | <b>7.9</b>           |      | <b>0.74</b>        | <b>mg/Kg-dry</b> | 2                            | 12/15/2011 08:29 PM       |
| <b>Copper</b>                            | <b>7.8</b>           |      | <b>0.74</b>        | <b>mg/Kg-dry</b> | 2                            | 12/15/2011 08:29 PM       |
| <b>Lead</b>                              | <b>79</b>            |      | <b>0.74</b>        | <b>mg/Kg-dry</b> | 2                            | 12/15/2011 08:29 PM       |
| <b>Nickel</b>                            | <b>7.8</b>           |      | <b>0.74</b>        | <b>mg/Kg-dry</b> | 2                            | 12/15/2011 08:29 PM       |
| Selenium                                 | ND                   |      | 0.74               | mg/Kg-dry        | 2                            | 12/15/2011 08:29 PM       |
| Silver                                   | ND                   |      | 0.74               | mg/Kg-dry        | 2                            | 12/15/2011 08:29 PM       |
| <b>Zinc</b>                              | <b>140</b>           |      | <b>1.5</b>         | <b>mg/Kg-dry</b> | 2                            | 12/15/2011 08:29 PM       |
| <b>SUBCONTRACTED ANALYSES</b>            |                      |      |                    |                  |                              |                           |
| <b>Subcontracted Analyses</b>            | <b>Rcvd 12/15/11</b> |      | <b>SUBCONTRACT</b> |                  |                              | Analyst: <b>A&amp;LGL</b> |
|  |                      |      | <b>as noted</b>    |                  | 1                            | 12/15/2011                |
| <b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>   |                      |      |                    |                  |                              |                           |
| <b>Acenaphthene</b>                      | <b>ND</b>            |      | <b>SW8270</b>      |                  | Prep Date: <b>12/13/2011</b> | Analyst: <b>HL</b>        |
|  |                      |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| <b>Anthracene</b>                        | <b>ND</b>            |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| <b>Benzo(a)anthracene</b>                | <b>ND</b>            |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| <b>Benzo(a)pyrene</b>                    | <b>ND</b>            |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| <b>Benzo(b)fluoranthene</b>              | <b>ND</b>            |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| <b>Benzo(g,h,i)perylene</b>              | <b>ND</b>            |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| <b>Benzo(k)fluoranthene</b>              | <b>ND</b>            |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| <b>Chrysene</b>                          | <b>ND</b>            |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| <b>Dibenzo(a,h)anthracene</b>            | <b>ND</b>            |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| <b>Fluoranthene</b>                      | <b>ND</b>            |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| <b>Fluorene</b>                          | <b>ND</b>            |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| <b>Indeno(1,2,3-cd)pyrene</b>            | <b>ND</b>            |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| <b>Naphthalene</b>                       | <b>74</b>            |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| <b>Pyrene</b>                            | <b>ND</b>            |      | <b>34</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:17 PM       |
| Surr: 2,4,6-Tribromophenol               | 81.8                 |      | 34-140             | %REC             | 1                            | 12/18/2011 12:17 PM       |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** Sample Pt 1  
**Collection Date:** 12/8/2011 12:15 PM

**Work Order:** 1112376  
**Lab ID:** 1112376-05  
**Matrix:** SOIL

| Analyses                           | Result | Qual | Report Limit       | Units       | Dilution Factor              | Date Analyzed       |
|------------------------------------|--------|------|--------------------|-------------|------------------------------|---------------------|
| <i>Surr: 2-Fluorobiphenyl</i>      | 64.7   |      | 12-100             | %REC        | 1                            | 12/18/2011 12:17 PM |
| <i>Surr: 2-Fluorophenol</i>        | 82.7   |      | 33-117             | %REC        | 1                            | 12/18/2011 12:17 PM |
| <i>Surr: 4-Terphenyl-d14</i>       | 111    |      | 25-137             | %REC        | 1                            | 12/18/2011 12:17 PM |
| <i>Surr: Nitrobenzene-d5</i>       | 60.6   |      | 37-107             | %REC        | 1                            | 12/18/2011 12:17 PM |
| <i>Surr: Phenol-d6</i>             | 81.6   |      | 40-106             | %REC        | 1                            | 12/18/2011 12:17 PM |
| <b>VOLATILE ORGANIC COMPOUNDS</b>  |        |      | <b>SW8260</b>      |             |                              | Analyst: <b>MK</b>  |
| Benzene                            | ND     |      | 120                | µg/Kg-dry   | 100                          | 12/18/2011 08:30 PM |
| Ethylbenzene                       | ND     |      | 230                | µg/Kg-dry   | 100                          | 12/18/2011 08:30 PM |
| m,p-Xylene                         | ND     |      | 230                | µg/Kg-dry   | 100                          | 12/18/2011 08:30 PM |
| o-Xylene                           | ND     |      | 120                | µg/Kg-dry   | 100                          | 12/18/2011 08:30 PM |
| Toluene                            | ND     |      | 170                | µg/Kg-dry   | 100                          | 12/18/2011 08:30 PM |
| Xylenes, Total                     | ND     |      | 350                | µg/Kg-dry   | 100                          | 12/18/2011 08:30 PM |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 115    |      | 70-120             | %REC        | 100                          | 12/18/2011 08:30 PM |
| <i>Surr: 4-Bromofluorobenzene</i>  | 101    |      | 75-120             | %REC        | 100                          | 12/18/2011 08:30 PM |
| <i>Surr: Dibromofluoromethane</i>  | 94.7   |      | 85-115             | %REC        | 100                          | 12/18/2011 08:30 PM |
| <i>Surr: Toluene-d8</i>            | 102    |      | 85-115             | %REC        | 100                          | 12/18/2011 08:30 PM |
| <b>CHROMIUM, TRIVALENT</b>         |        |      | <b>CALCULATION</b> |             |                              | Analyst: <b>JJG</b> |
| Chromium, Trivalent                | 7.9    |      | 0.58               | mg/Kg-dry   | 1                            | 12/19/2011 08:03 AM |
| <b>CHROMIUM, HEXAVALENT</b>        |        |      | <b>SW7196A</b>     |             | Prep Date: <b>12/13/2011</b> | Analyst: <b>MB</b>  |
| Chromium, Hexavalent               | ND     |      | 0.56               | mg/Kg-dry   | 1                            | 12/14/2011 02:50 PM |
| <b>MOISTURE</b>                    |        |      | <b>A2540 G</b>     |             |                              | Analyst: <b>CG</b>  |
| Moisture                           | 13     |      | 0.050              | % of sample | 1                            | 12/14/2011 03:17 PM |
| <b>PH</b>                          |        |      | <b>SW9045D</b>     |             |                              | Analyst: <b>JJG</b> |
| pH                                 | 8.79   |      |                    | s.u.        | 1                            | 12/12/2011 10:15 AM |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** Sample Pt 2  
**Collection Date:** 12/8/2011 12:20 PM

**Work Order:** 1112376  
**Lab ID:** 1112376-06  
**Matrix:** SOIL

| Analyses                                 | Result               | Qual | Report Limit       | Units            | Dilution Factor              | Date Analyzed             |
|--|----------------------|------|--------------------|------------------|------------------------------|---------------------------|
| <b>DIESEL RANGE ORGANICS BY GC-FID</b>   |                      |      |                    |                  |                              |                           |
| <b>DRO (C10-C28)</b>                     | <b>33</b>            |      | <b>SW8015M</b>     |                  | Prep Date: <b>12/13/2011</b> | Analyst: <b>RM</b>        |
|  |                      |      | <b>4.5</b>         | <b>mg/Kg-dry</b> | 1                            | 12/15/2011 12:20 PM       |
| Surr: 4-Terphenyl-d14                    | 81.5                 |      | 39-115             | %REC             | 1                            | 12/15/2011 12:20 PM       |
| <b>GASOLINE RANGE ORGANICS BY GC-FID</b> |                      |      |                    |                  |                              |                           |
| <b>GRO (C6-C10)</b>                      | <b>ND</b>            |      | <b>SW8015</b>      |                  |                              | Analyst: <b>RM</b>        |
|  |                      |      | <b>5.5</b>         | <b>mg/Kg-dry</b> | 100                          | 12/15/2011 11:45 PM       |
| Surr: Toluene-d8                         | 108                  |      | 50-150             | %REC             | 100                          | 12/15/2011 11:45 PM       |
| <b>MERCURY BY CVAA</b>                   |                      |      |                    |                  |                              |                           |
| <b>Mercury</b>                           | <b>ND</b>            |      | <b>SW7471</b>      |                  | Prep Date: <b>12/15/2011</b> | Analyst: <b>LR</b>        |
|  |                      |      | <b>0.019</b>       | <b>mg/Kg-dry</b> | 1                            | 12/15/2011 01:30 PM       |
| <b>METALS BY ICP-MS</b>                  |                      |      |                    |                  |                              |                           |
| <b>Arsenic</b>                           | <b>1.3</b>           |      | <b>SW6020A</b>     |                  | Prep Date: <b>12/14/2011</b> | Analyst: <b>CES</b>       |
|  |                      |      | <b>0.88</b>        | <b>mg/Kg-dry</b> | 2                            | 12/15/2011 08:55 PM       |
| <b>Barium</b>                            | <b>910</b>           |      | <b>8.8</b>         | <b>mg/Kg-dry</b> | 20                           | 12/16/2011 12:33 PM       |
| Cadmium                                  | ND                   |      | 0.35               | mg/Kg-dry        | 2                            | 12/15/2011 08:55 PM       |
| <b>Chromium</b>                          | <b>7.0</b>           |      | <b>0.88</b>        | <b>mg/Kg-dry</b> | 2                            | 12/15/2011 08:55 PM       |
| <b>Copper</b>                            | <b>6.5</b>           |      | <b>0.88</b>        | <b>mg/Kg-dry</b> | 2                            | 12/15/2011 08:55 PM       |
| <b>Lead</b>                              | <b>8.0</b>           |      | <b>0.88</b>        | <b>mg/Kg-dry</b> | 2                            | 12/15/2011 08:55 PM       |
| <b>Nickel</b>                            | <b>6.2</b>           |      | <b>0.88</b>        | <b>mg/Kg-dry</b> | 2                            | 12/15/2011 08:55 PM       |
| Selenium                                 | ND                   |      | 0.88               | mg/Kg-dry        | 2                            | 12/15/2011 08:55 PM       |
| Silver                                   | ND                   |      | 0.88               | mg/Kg-dry        | 2                            | 12/15/2011 08:55 PM       |
| <b>Zinc</b>                              | <b>59</b>            |      | <b>1.8</b>         | <b>mg/Kg-dry</b> | 2                            | 12/15/2011 08:55 PM       |
| <b>SUBCONTRACTED ANALYSES</b>            |                      |      |                    |                  |                              |                           |
| <b>Subcontracted Analyses</b>            | <b>Rcvd 12/15/11</b> |      | <b>SUBCONTRACT</b> |                  |                              | Analyst: <b>A&amp;LGL</b> |
|  |                      |      | <b>as noted</b>    |                  | 1                            | 12/15/2011                |
| <b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>   |                      |      |                    |                  |                              |                           |
| <b>Acenaphthene</b>                      | <b>ND</b>            |      | <b>SW8270</b>      |                  | Prep Date: <b>12/13/2011</b> | Analyst: <b>HL</b>        |
|  |                      |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| <b>Anthracene</b>                        | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| <b>Benzo(a)anthracene</b>                | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| <b>Benzo(a)pyrene</b>                    | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| <b>Benzo(b)fluoranthene</b>              | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| <b>Benzo(g,h,i)perylene</b>              | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| <b>Benzo(k)fluoranthene</b>              | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| <b>Chrysene</b>                          | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| <b>Dibenzo(a,h)anthracene</b>            | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| <b>Fluoranthene</b>                      | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| <b>Fluorene</b>                          | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| <b>Indeno(1,2,3-cd)pyrene</b>            | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| <b>Naphthalene</b>                       | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| <b>Pyrene</b>                            | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | 1                            | 12/18/2011 12:44 PM       |
| Surr: 2,4,6-Tribromophenol               | 81.1                 |      | 34-140             | %REC             | 1                            | 12/18/2011 12:44 PM       |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** Sample Pt 2  
**Collection Date:** 12/8/2011 12:20 PM

**Work Order:** 1112376  
**Lab ID:** 1112376-06  
**Matrix:** SOIL

| Analyses                           | Result | Qual | Report Limit       | Units       | Dilution Factor              | Date Analyzed       |
|------------------------------------|--------|------|--------------------|-------------|------------------------------|---------------------|
| <i>Surr: 2-Fluorobiphenyl</i>      | 70.4   |      | 12-100             | %REC        | 1                            | 12/18/2011 12:44 PM |
| <i>Surr: 2-Fluorophenol</i>        | 91.5   |      | 33-117             | %REC        | 1                            | 12/18/2011 12:44 PM |
| <i>Surr: 4-Terphenyl-d14</i>       | 109    |      | 25-137             | %REC        | 1                            | 12/18/2011 12:44 PM |
| <i>Surr: Nitrobenzene-d5</i>       | 66.9   |      | 37-107             | %REC        | 1                            | 12/18/2011 12:44 PM |
| <i>Surr: Phenol-d6</i>             | 85.4   |      | 40-106             | %REC        | 1                            | 12/18/2011 12:44 PM |
| <b>VOLATILE ORGANIC COMPOUNDS</b>  |        |      | <b>SW8260</b>      |             |                              | Analyst: <b>BG</b>  |
| Benzene                            | ND     |      | 110                | µg/Kg-dry   | 100                          | 12/16/2011 07:16 AM |
| Ethylbenzene                       | ND     |      | 220                | µg/Kg-dry   | 100                          | 12/16/2011 07:16 AM |
| m,p-Xylene                         | ND     |      | 220                | µg/Kg-dry   | 100                          | 12/16/2011 07:16 AM |
| o-Xylene                           | ND     |      | 110                | µg/Kg-dry   | 100                          | 12/16/2011 07:16 AM |
| Toluene                            | ND     |      | 160                | µg/Kg-dry   | 100                          | 12/16/2011 07:16 AM |
| Xylenes, Total                     | ND     |      | 330                | µg/Kg-dry   | 100                          | 12/16/2011 07:16 AM |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 97.1   |      | 70-120             | %REC        | 100                          | 12/16/2011 07:16 AM |
| <i>Surr: 4-Bromofluorobenzene</i>  | 95.2   |      | 75-120             | %REC        | 100                          | 12/16/2011 07:16 AM |
| <i>Surr: Dibromofluoromethane</i>  | 94.4   |      | 85-115             | %REC        | 100                          | 12/16/2011 07:16 AM |
| <i>Surr: Toluene-d8</i>            | 100    |      | 85-115             | %REC        | 100                          | 12/16/2011 07:16 AM |
| <b>CHROMIUM, TRIVALENT</b>         |        |      | <b>CALCULATION</b> |             |                              | Analyst: <b>JJG</b> |
| Chromium, Trivalent                | 7.0    |      | 0.55               | mg/Kg-dry   | 1                            | 12/19/2011 08:03 AM |
| <b>CHROMIUM, HEXAVALENT</b>        |        |      | <b>SW7196A</b>     |             | Prep Date: <b>12/13/2011</b> | Analyst: <b>MB</b>  |
| Chromium, Hexavalent               | ND     |      | 0.54               | mg/Kg-dry   | 1                            | 12/14/2011 02:50 PM |
| <b>MOISTURE</b>                    |        |      | <b>A2540 G</b>     |             |                              | Analyst: <b>CG</b>  |
| Moisture                           | 8.7    |      | 0.050              | % of sample | 1                            | 12/14/2011 03:17 PM |
| <b>PH</b>                          |        |      | <b>SW9045D</b>     |             |                              | Analyst: <b>JJG</b> |
| pH                                 | 8.90   |      |                    | s.u.        | 1                            | 12/12/2011 10:15 AM |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** Sample Pt 3  
**Collection Date:** 12/8/2011 12:25 PM

**Work Order:** 1112376  
**Lab ID:** 1112376-07  
**Matrix:** SOIL

| Analyses                                 | Result               | Qual | Report Limit       | Units            | Dilution Factor              | Date Analyzed              |
|--|----------------------|------|--------------------|------------------|------------------------------|----------------------------|
| <b>DIESEL RANGE ORGANICS BY GC-FID</b>   |                      |      |                    |                  |                              |                            |
| <b>DRO (C10-C28)</b>                     | <b>110</b>           |      | <b>SW8015M</b>     |                  | Prep Date: <b>12/13/2011</b> | Analyst: <b>RM</b>         |
| <i>Surr: 4-Terphenyl-d14</i>             | <i>64.4</i>          |      | <i>39-115</i>      | <i>%REC</i>      | <i>1</i>                     | <i>12/15/2011 12:42 PM</i> |
| <b>GASOLINE RANGE ORGANICS BY GC-FID</b> |                      |      |                    |                  |                              |                            |
| <b>GRO (C6-C10)</b>                      | <b>ND</b>            |      | <b>SW8015</b>      |                  |                              | Analyst: <b>RM</b>         |
| <i>Surr: Toluene-d8</i>                  | <i>107</i>           |      | <i>50-150</i>      | <i>%REC</i>      | <i>100</i>                   | <i>12/16/2011 12:10 PM</i> |
| <b>MERCURY BY CVAA</b>                   |                      |      |                    |                  |                              |                            |
| Mercury                                  | ND                   |      | <b>SW7471</b>      |                  | Prep Date: <b>12/15/2011</b> | Analyst: <b>LR</b>         |
|  |                      |      | 0.019              | mg/Kg-dry        | 1                            | 12/15/2011 01:32 PM        |
| <b>METALS BY ICP-MS</b>                  |                      |      |                    |                  |                              |                            |
| <b>Arsenic</b>                           | <b>2.8</b>           |      | <b>SW6020A</b>     |                  | Prep Date: <b>12/14/2011</b> | Analyst: <b>CES</b>        |
| <b>Barium</b>                            | <b>290</b>           |      | <b>0.68</b>        | <b>mg/Kg-dry</b> | <b>2</b>                     | <b>12/15/2011 09:00 PM</b> |
| <b>Cadmium</b>                           | <b>1.0</b>           |      | <b>6.8</b>         | <b>mg/Kg-dry</b> | <b>20</b>                    | <b>12/16/2011 12:39 PM</b> |
| <b>Chromium</b>                          | <b>8.2</b>           |      | <b>0.27</b>        | <b>mg/Kg-dry</b> | <b>2</b>                     | <b>12/15/2011 09:00 PM</b> |
| <b>Copper</b>                            | <b>7.3</b>           |      | <b>0.68</b>        | <b>mg/Kg-dry</b> | <b>2</b>                     | <b>12/15/2011 09:00 PM</b> |
| <b>Lead</b>                              | <b>84</b>            |      | <b>0.68</b>        | <b>mg/Kg-dry</b> | <b>2</b>                     | <b>12/15/2011 09:00 PM</b> |
| <b>Nickel</b>                            | <b>8.3</b>           |      | <b>0.68</b>        | <b>mg/Kg-dry</b> | <b>2</b>                     | <b>12/15/2011 09:00 PM</b> |
| Selenium                                 | ND                   |      | 0.68               | mg/Kg-dry        | 2                            | 12/15/2011 09:00 PM        |
| Silver                                   | ND                   |      | 0.68               | mg/Kg-dry        | 2                            | 12/15/2011 09:00 PM        |
| <b>Zinc</b>                              | <b>130</b>           |      | <b>1.4</b>         | <b>mg/Kg-dry</b> | <b>2</b>                     | <b>12/15/2011 09:00 PM</b> |
| <b>SUBCONTRACTED ANALYSES</b>            |                      |      |                    |                  |                              |                            |
| <b>Subcontracted Analyses</b>            | <b>Rcvd 12/15/11</b> |      | <b>SUBCONTRACT</b> |                  |                              | Analyst: <b>A&amp;LGL</b>  |
|  |                      |      | as noted           |                  | 1                            | 12/15/2011                 |
| <b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>   |                      |      |                    |                  |                              |                            |
| <b>Acenaphthene</b>                      | <b>ND</b>            |      | <b>SW8270</b>      |                  | Prep Date: <b>12/13/2011</b> | Analyst: <b>HL</b>         |
| <b>Anthracene</b>                        | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | <b>1</b>                     | <b>12/18/2011 01:10 AM</b> |
| <b>Benzo(a)anthracene</b>                | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | <b>1</b>                     | <b>12/18/2011 01:10 AM</b> |
| <b>Benzo(a)pyrene</b>                    | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | <b>1</b>                     | <b>12/18/2011 01:10 AM</b> |
| <b>Benzo(b)fluoranthene</b>              | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | <b>1</b>                     | <b>12/18/2011 01:10 AM</b> |
| <b>Benzo(g,h,i)perylene</b>              | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | <b>1</b>                     | <b>12/18/2011 01:10 AM</b> |
| <b>Benzo(k)fluoranthene</b>              | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | <b>1</b>                     | <b>12/18/2011 01:10 AM</b> |
| <b>Chrysene</b>                          | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | <b>1</b>                     | <b>12/18/2011 01:10 AM</b> |
| <b>Dibenzo(a,h)anthracene</b>            | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | <b>1</b>                     | <b>12/18/2011 01:10 AM</b> |
| <b>Fluoranthene</b>                      | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | <b>1</b>                     | <b>12/18/2011 01:10 AM</b> |
| <b>Fluorene</b>                          | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | <b>1</b>                     | <b>12/18/2011 01:10 AM</b> |
| <b>Indeno(1,2,3-cd)pyrene</b>            | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | <b>1</b>                     | <b>12/18/2011 01:10 AM</b> |
| <b>Naphthalene</b>                       | <b>72</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | <b>1</b>                     | <b>12/18/2011 01:10 AM</b> |
| <b>Pyrene</b>                            | <b>ND</b>            |      | <b>33</b>          | <b>µg/Kg-dry</b> | <b>1</b>                     | <b>12/18/2011 01:10 AM</b> |
| <i>Surr: 2,4,6-Tribromophenol</i>        | <i>79.7</i>          |      | <i>34-140</i>      | <i>%REC</i>      | <i>1</i>                     | <i>12/18/2011 01:10 AM</i> |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** Sample Pt 3  
**Collection Date:** 12/8/2011 12:25 PM

**Work Order:** 1112376  
**Lab ID:** 1112376-07  
**Matrix:** SOIL

| Analyses                           | Result | Qual | Report Limit       | Units       | Dilution Factor              | Date Analyzed       |
|------------------------------------|--------|------|--------------------|-------------|------------------------------|---------------------|
| <i>Surr: 2-Fluorobiphenyl</i>      | 75.2   |      | 12-100             | %REC        | 1                            | 12/18/2011 01:10 AM |
| <i>Surr: 2-Fluorophenol</i>        | 95.3   |      | 33-117             | %REC        | 1                            | 12/18/2011 01:10 AM |
| <i>Surr: 4-Terphenyl-d14</i>       | 106    |      | 25-137             | %REC        | 1                            | 12/18/2011 01:10 AM |
| <i>Surr: Nitrobenzene-d5</i>       | 71.1   |      | 37-107             | %REC        | 1                            | 12/18/2011 01:10 AM |
| <i>Surr: Phenol-d6</i>             | 92.4   |      | 40-106             | %REC        | 1                            | 12/18/2011 01:10 AM |
| <b>VOLATILE ORGANIC COMPOUNDS</b>  |        |      | <b>SW8260</b>      |             |                              | Analyst: <b>MK</b>  |
| Benzene                            | ND     |      | 110                | µg/Kg-dry   | 100                          | 12/17/2011 07:16 AM |
| Ethylbenzene                       | ND     |      | 220                | µg/Kg-dry   | 100                          | 12/17/2011 07:16 AM |
| m,p-Xylene                         | ND     |      | 220                | µg/Kg-dry   | 100                          | 12/17/2011 07:16 AM |
| o-Xylene                           | ND     |      | 110                | µg/Kg-dry   | 100                          | 12/17/2011 07:16 AM |
| Toluene                            | ND     |      | 170                | µg/Kg-dry   | 100                          | 12/17/2011 07:16 AM |
| Xylenes, Total                     | ND     |      | 340                | µg/Kg-dry   | 100                          | 12/17/2011 07:16 AM |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 110    |      | 70-120             | %REC        | 100                          | 12/17/2011 07:16 AM |
| <i>Surr: 4-Bromofluorobenzene</i>  | 94.0   |      | 75-120             | %REC        | 100                          | 12/17/2011 07:16 AM |
| <i>Surr: Dibromofluoromethane</i>  | 99.9   |      | 85-115             | %REC        | 100                          | 12/17/2011 07:16 AM |
| <i>Surr: Toluene-d8</i>            | 99.9   |      | 85-115             | %REC        | 100                          | 12/17/2011 07:16 AM |
| <b>CHROMIUM, TRIVALENT</b>         |        |      | <b>CALCULATION</b> |             |                              | Analyst: <b>JJG</b> |
| Chromium, Trivalent                | 8.2    |      | 0.56               | mg/Kg-dry   | 1                            | 12/19/2011 08:03 AM |
| <b>CHROMIUM, HEXAVALENT</b>        |        |      | <b>SW7196A</b>     |             | Prep Date: <b>12/13/2011</b> | Analyst: <b>MB</b>  |
| Chromium, Hexavalent               | ND     |      | 0.55               | mg/Kg-dry   | 1                            | 12/14/2011 02:50 PM |
| <b>MOISTURE</b>                    |        |      | <b>A2540 G</b>     |             |                              | Analyst: <b>CG</b>  |
| Moisture                           | 11     |      | 0.050              | % of sample | 1                            | 12/14/2011 03:17 PM |
| <b>PH</b>                          |        |      | <b>SW9045D</b>     |             |                              | Analyst: <b>JJG</b> |
| pH                                 | 8.45   |      |                    | s.u.        | 1                            | 12/12/2011 10:15 AM |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** Sample Pt 4  
**Collection Date:** 12/8/2011 12:30 PM

**Work Order:** 1112376  
**Lab ID:** 1112376-08  
**Matrix:** SOIL

| Analyses                                 | Result               | Qual | Report Limit       | Units     | Dilution Factor              | Date Analyzed             |
|--|----------------------|------|--------------------|-----------|------------------------------|---------------------------|
| <b>DIESEL RANGE ORGANICS BY GC-FID</b>   |                      |      |                    |           |                              |                           |
| <b>DRO (C10-C28)</b>                     | <b>39</b>            |      | <b>SW8015M</b>     |           | Prep Date: <b>12/13/2011</b> | Analyst: <b>RM</b>        |
| <i>Surr: 4-Terphenyl-d14</i>             | 66.3                 |      | 4.6                | mg/Kg-dry | 1                            | 12/15/2011 12:42 PM       |
|  |                      |      | 39-115             | %REC      | 1                            | 12/15/2011 12:42 PM       |
| <b>GASOLINE RANGE ORGANICS BY GC-FID</b> |                      |      |                    |           |                              |                           |
| <b>GRO (C6-C10)</b>                      | <b>ND</b>            |      | <b>SW8015</b>      |           |                              | Analyst: <b>RM</b>        |
| <i>Surr: Toluene-d8</i>                  | 109                  |      | 5.6                | mg/Kg-dry | 100                          | 12/16/2011 12:35 PM       |
|  |                      |      | 50-150             | %REC      | 100                          | 12/16/2011 12:35 PM       |
| <b>MERCURY BY CVAA</b>                   |                      |      |                    |           |                              |                           |
| Mercury                                  | ND                   |      | <b>SW7471</b>      |           | Prep Date: <b>12/15/2011</b> | Analyst: <b>LR</b>        |
|  |                      |      | 0.021              | mg/Kg-dry | 1                            | 12/15/2011 01:34 PM       |
| <b>METALS BY ICP-MS</b>                  |                      |      |                    |           |                              |                           |
| <b>Arsenic</b>                           | <b>2.6</b>           |      | <b>SW6020A</b>     |           | Prep Date: <b>12/14/2011</b> | Analyst: <b>CES</b>       |
| <b>Barium</b>                            | <b>650</b>           |      | 0.77               | mg/Kg-dry | 2                            | 12/15/2011 09:05 PM       |
| <b>Cadmium</b>                           | <b>0.55</b>          |      | 7.7                | mg/Kg-dry | 20                           | 12/16/2011 12:44 PM       |
| <b>Chromium</b>                          | <b>8.9</b>           |      | 0.31               | mg/Kg-dry | 2                            | 12/15/2011 09:05 PM       |
| <b>Copper</b>                            | <b>8.2</b>           |      | 0.77               | mg/Kg-dry | 2                            | 12/15/2011 09:05 PM       |
| <b>Lead</b>                              | <b>32</b>            |      | 0.77               | mg/Kg-dry | 2                            | 12/15/2011 09:05 PM       |
| <b>Nickel</b>                            | <b>8.5</b>           |      | 0.77               | mg/Kg-dry | 2                            | 12/15/2011 09:05 PM       |
| Selenium                                 | ND                   |      | 0.77               | mg/Kg-dry | 2                            | 12/15/2011 09:05 PM       |
| Silver                                   | ND                   |      | 0.77               | mg/Kg-dry | 2                            | 12/15/2011 09:05 PM       |
| <b>Zinc</b>                              | <b>79</b>            |      | 1.5                | mg/Kg-dry | 2                            | 12/15/2011 09:05 PM       |
| <b>SUBCONTRACTED ANALYSES</b>            |                      |      |                    |           |                              |                           |
| <b>Subcontracted Analyses</b>            | <b>Rcvd 12/15/11</b> |      | <b>SUBCONTRACT</b> |           |                              | Analyst: <b>A&amp;LGL</b> |
|  |                      |      | as noted           |           | 1                            | 12/15/2011                |
| <b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>   |                      |      |                    |           |                              |                           |
| <b>Acenaphthene</b>                      | <b>ND</b>            |      | <b>SW8270</b>      |           | Prep Date: <b>12/13/2011</b> | Analyst: <b>HL</b>        |
| <b>Anthracene</b>                        | <b>ND</b>            |      | 33                 | µg/Kg-dry | 1                            | 12/18/2011 01:36 AM       |
| <b>Benzo(a)anthracene</b>                | <b>ND</b>            |      | 33                 | µg/Kg-dry | 1                            | 12/18/2011 01:36 AM       |
| <b>Benzo(a)pyrene</b>                    | <b>ND</b>            |      | 33                 | µg/Kg-dry | 1                            | 12/18/2011 01:36 AM       |
| <b>Benzo(b)fluoranthene</b>              | <b>ND</b>            |      | 33                 | µg/Kg-dry | 1                            | 12/18/2011 01:36 AM       |
| <b>Benzo(g,h,i)perylene</b>              | <b>ND</b>            |      | 33                 | µg/Kg-dry | 1                            | 12/18/2011 01:36 AM       |
| <b>Benzo(k)fluoranthene</b>              | <b>ND</b>            |      | 33                 | µg/Kg-dry | 1                            | 12/18/2011 01:36 AM       |
| <b>Chrysene</b>                          | <b>ND</b>            |      | 33                 | µg/Kg-dry | 1                            | 12/18/2011 01:36 AM       |
| <b>Dibenzo(a,h)anthracene</b>            | <b>ND</b>            |      | 33                 | µg/Kg-dry | 1                            | 12/18/2011 01:36 AM       |
| <b>Fluoranthene</b>                      | <b>ND</b>            |      | 33                 | µg/Kg-dry | 1                            | 12/18/2011 01:36 AM       |
| <b>Fluorene</b>                          | <b>ND</b>            |      | 33                 | µg/Kg-dry | 1                            | 12/18/2011 01:36 AM       |
| <b>Indeno(1,2,3-cd)pyrene</b>            | <b>ND</b>            |      | 33                 | µg/Kg-dry | 1                            | 12/18/2011 01:36 AM       |
| <b>Naphthalene</b>                       | <b>ND</b>            |      | 33                 | µg/Kg-dry | 1                            | 12/18/2011 01:36 AM       |
| <b>Pyrene</b>                            | <b>ND</b>            |      | 33                 | µg/Kg-dry | 1                            | 12/18/2011 01:36 AM       |
| <i>Surr: 2,4,6-Tribromophenol</i>        | 78.4                 |      | 34-140             | %REC      | 1                            | 12/18/2011 01:36 AM       |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



# ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** Sample Pt 4  
**Collection Date:** 12/8/2011 12:30 PM

**Work Order:** 1112376  
**Lab ID:** 1112376-08  
**Matrix:** SOIL

| Analyses                           | Result | Qual | Report Limit       | Units       | Dilution Factor              | Date Analyzed       |
|------------------------------------|--------|------|--------------------|-------------|------------------------------|---------------------|
| <i>Surr: 2-Fluorobiphenyl</i>      | 70.4   |      | 12-100             | %REC        | 1                            | 12/18/2011 01:36 AM |
| <i>Surr: 2-Fluorophenol</i>        | 94.0   |      | 33-117             | %REC        | 1                            | 12/18/2011 01:36 AM |
| <i>Surr: 4-Terphenyl-d14</i>       | 101    |      | 25-137             | %REC        | 1                            | 12/18/2011 01:36 AM |
| <i>Surr: Nitrobenzene-d5</i>       | 68.0   |      | 37-107             | %REC        | 1                            | 12/18/2011 01:36 AM |
| <i>Surr: Phenol-d6</i>             | 89.9   |      | 40-106             | %REC        | 1                            | 12/18/2011 01:36 AM |
| <b>VOLATILE ORGANIC COMPOUNDS</b>  |        |      | <b>SW8260</b>      |             |                              | Analyst: <b>MK</b>  |
| Benzene                            | ND     |      | 110                | µg/Kg-dry   | 100                          | 12/17/2011 07:42 AM |
| Ethylbenzene                       | ND     |      | 220                | µg/Kg-dry   | 100                          | 12/17/2011 07:42 AM |
| m,p-Xylene                         | ND     |      | 220                | µg/Kg-dry   | 100                          | 12/17/2011 07:42 AM |
| o-Xylene                           | ND     |      | 110                | µg/Kg-dry   | 100                          | 12/17/2011 07:42 AM |
| Toluene                            | ND     |      | 170                | µg/Kg-dry   | 100                          | 12/17/2011 07:42 AM |
| Xylenes, Total                     | ND     |      | 340                | µg/Kg-dry   | 100                          | 12/17/2011 07:42 AM |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 109    |      | 70-120             | %REC        | 100                          | 12/17/2011 07:42 AM |
| <i>Surr: 4-Bromofluorobenzene</i>  | 95.8   |      | 75-120             | %REC        | 100                          | 12/17/2011 07:42 AM |
| <i>Surr: Dibromofluoromethane</i>  | 99.7   |      | 85-115             | %REC        | 100                          | 12/17/2011 07:42 AM |
| <i>Surr: Toluene-d8</i>            | 99.6   |      | 85-115             | %REC        | 100                          | 12/17/2011 07:42 AM |
| <b>CHROMIUM, TRIVALENT</b>         |        |      | <b>CALCULATION</b> |             |                              | Analyst: <b>JJG</b> |
| Chromium, Trivalent                | 8.9    |      | 0.56               | mg/Kg-dry   | 1                            | 12/19/2011 08:03 AM |
| <b>CHROMIUM, HEXAVALENT</b>        |        |      | <b>SW7196A</b>     |             | Prep Date: <b>12/13/2011</b> | Analyst: <b>MB</b>  |
| Chromium, Hexavalent               | ND     |      | 0.55               | mg/Kg-dry   | 1                            | 12/14/2011 02:50 PM |
| <b>MOISTURE</b>                    |        |      | <b>A2540 G</b>     |             |                              | Analyst: <b>CG</b>  |
| Moisture                           | 11     |      | 0.050              | % of sample | 1                            | 12/14/2011 03:17 PM |
| <b>PH</b>                          |        |      | <b>SW9045D</b>     |             |                              | Analyst: <b>JJG</b> |
| pH                                 | 8.61   |      |                    | s.u.        | 1                            | 12/12/2011 10:15 AM |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** Pond sample  
**Collection Date:** 12/8/2011 12:45 PM

**Work Order:** 1112376  
**Lab ID:** 1112376-09  
**Matrix:** WATER

| Analyses                                 | Result      | Qual | Report Limit   | Units       | Dilution Factor              | Date Analyzed       |
|--|-------------|------|----------------|-------------|------------------------------|---------------------|
| <b>DIESEL RANGE ORGANICS BY GC-FID</b>   |             |      | <b>SW8015M</b> |             | Prep Date: <b>12/12/2011</b> | Analyst: <b>RM</b>  |
| <b>DRO (C10-C28)</b>                     | <b>0.20</b> |      | <b>0.10</b>    | <b>mg/L</b> | 1                            | 12/13/2011 09:01 PM |
| Surr: 4-Terphenyl-d14                    | 31.0        |      | 26-109         | %REC        | 1                            | 12/13/2011 09:01 PM |
| <b>GASOLINE RANGE ORGANICS BY GC-FID</b> |             |      | <b>SW8015</b>  |             |                              | Analyst: <b>JD</b>  |
| GRO (C6-C10)                             | ND          |      | 0.20           | mg/L        | 1                            | 12/16/2011 10:11 AM |
| Surr: Toluene-d8                         | 97.5        |      | 70-130         | %REC        | 1                            | 12/16/2011 10:11 AM |
| <b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>   |             |      | <b>SW8270</b>  |             | Prep Date: <b>12/12/2011</b> | Analyst: <b>CW</b>  |
| Acenaphthene                             | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Acenaphthylene                           | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Anthracene                               | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Benzo(a)anthracene                       | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Benzo(a)pyrene                           | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Benzo(b)fluoranthene                     | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Benzo(g,h,i)perylene                     | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Benzo(k)fluoranthene                     | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Chrysene                                 | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Dibenzo(a,h)anthracene                   | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Fluoranthene                             | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Fluorene                                 | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Indeno(1,2,3-cd)pyrene                   | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Naphthalene                              | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Phenanthrene                             | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Pyrene                                   | ND          |      | 5.0            | µg/L        | 1                            | 12/18/2011 01:49 AM |
| Surr: 2,4,6-Tribromophenol               | 73.3        |      | 21-125         | %REC        | 1                            | 12/18/2011 01:49 AM |
| Surr: 2-Fluorobiphenyl                   | 70.6        |      | 36-94          | %REC        | 1                            | 12/18/2011 01:49 AM |
| Surr: 2-Fluorophenol                     | 42.0        |      | 10-75          | %REC        | 1                            | 12/18/2011 01:49 AM |
| Surr: 4-Terphenyl-d14                    | 68.8        |      | 26-119         | %REC        | 1                            | 12/18/2011 01:49 AM |
| Surr: Nitrobenzene-d5                    | 76.3        |      | 41-104         | %REC        | 1                            | 12/18/2011 01:49 AM |
| Surr: Phenol-d6                          | 29.5        |      | 11-50          | %REC        | 1                            | 12/18/2011 01:49 AM |
| <b>VOLATILE ORGANIC COMPOUNDS</b>        |             |      | <b>SW8260</b>  |             |                              | Analyst: <b>MK</b>  |
| <b>Benzene</b>                           | <b>1.7</b>  |      | <b>1.0</b>     | <b>µg/L</b> | 1                            | 12/18/2011 04:09 PM |
| Ethylbenzene                             | ND          |      | 1.0            | µg/L        | 1                            | 12/18/2011 04:09 PM |
| m,p-Xylene                               | ND          |      | 2.0            | µg/L        | 1                            | 12/18/2011 04:09 PM |
| o-Xylene                                 | ND          |      | 1.0            | µg/L        | 1                            | 12/18/2011 04:09 PM |
| <b>Toluene</b>                           | <b>4.0</b>  |      | <b>1.0</b>     | <b>µg/L</b> | 1                            | 12/18/2011 04:09 PM |
| Xylenes, Total                           | ND          |      | 3.0            | µg/L        | 1                            | 12/18/2011 04:09 PM |
| Surr: 1,2-Dichloroethane-d4              | 118         |      | 70-120         | %REC        | 1                            | 12/18/2011 04:09 PM |
| Surr: 4-Bromofluorobenzene               | 89.3        |      | 75-120         | %REC        | 1                            | 12/18/2011 04:09 PM |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

## ALS Group USA, Corp

Date: 19-Dec-11

**Client:** HRL Compliance Solutions  
**Project:** Gypsum Ranch B Pad 12/8/11  
**Sample ID:** Pond sample  
**Collection Date:** 12/8/2011 12:45 PM

**Work Order:** 1112376  
**Lab ID:** 1112376-09  
**Matrix:** WATER

| Analyses                   | Result | Qual | Report<br>Limit | Units | Dilution<br>Factor | Date Analyzed       |
|----------------------------|--------|------|-----------------|-------|--------------------|---------------------|
| Surr: Dibromofluoromethane | 101    |      | 85-115          | %REC  | 1                  | 12/18/2011 04:09 PM |
| Surr: Toluene-d8           | 101    |      | 85-120          | %REC  | 1                  | 12/18/2011 04:09 PM |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

Report Number: F11347-0396

Account Number: 91000

# A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 260-483-4759 • Fax 260-483-5274

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QUALITY ANALYSES FOR INFORMED DECISIONS

TO: ALS LABORATORY GROUP  
3352 128TH AVE  
HOLLAND, MI 49424-9263

RE: 1112376

DATE RECEIVED: 12/13/2011

DATE REPORTED: 12/15/2011

PAGE: 1

P.O. NUMBER: 20-1112376

ATTN: ANN PRESTON

## REPORT OF ANALYSIS

| LAB NO. | SAMPLE ID | ANALYSIS                        | RESULT | UNIT    | METHOD           |
|---------|-----------|---------------------------------|--------|---------|------------------|
| 64728   | 03B       | Sat'd Paste Extraction with DIW | 1      |         | USDA Handbook 60 |
|         |           | Conductivity (ECe)              | 3.86   | mmho/cm | USDA Handbook 60 |
|         |           | Calcium (Sat'd Paste)           | 248    | ppm     | USDA Handbook 60 |
|         |           | Magnesium (Sat'd Paste)         | 91     | ppm     | USDA Handbook 60 |
|         |           | Sodium (Sat'd Paste)            | 2978   | ppm     | USDA Handbook 60 |
|         |           | Sodium Adsorption Ratio (SAR)   | 40.5   | -       | USDA Handbook 60 |
| 64729   | 04C       | Sat'd Paste Extraction with DIW | 1      |         | USDA Handbook 60 |
|         |           | Conductivity (ECe)              | 50.80  | mmho/cm | USDA Handbook 60 |
|         |           | Calcium (Sat'd Paste)           | 1758   | ppm     | USDA Handbook 60 |
|         |           | Magnesium (Sat'd Paste)         | 3786   | ppm     | USDA Handbook 60 |
|         |           | Sodium (Sat'd Paste)            | 29355  | ppm     | USDA Handbook 60 |
|         |           | Sodium Adsorption Ratio (SAR)   | 89.9   | -       | USDA Handbook 60 |
| 64730   | 05C       | Sat'd Paste Extraction with DIW | 1      |         | USDA Handbook 60 |
|         |           | Conductivity (ECe)              | 4.79   | mmho/cm | USDA Handbook 60 |
|         |           | Calcium (Sat'd Paste)           | 173    | ppm     | USDA Handbook 60 |
|         |           | Magnesium (Sat'd Paste)         | 46     | ppm     | USDA Handbook 60 |
|         |           | Sodium (Sat'd Paste)            | 4508   | ppm     | USDA Handbook 60 |
|         |           | Sodium Adsorption Ratio (SAR)   | 78.5   | -       | USDA Handbook 60 |
| 64731   | 06C       | Sat'd Paste Extraction with DIW | 1      |         | USDA Handbook 60 |
|         |           | Conductivity (ECe)              | 4.43   | mmho/cm | USDA Handbook 60 |
|         |           | Calcium (Sat'd Paste)           | 208    | ppm     | USDA Handbook 60 |
|         |           | Magnesium (Sat'd Paste)         | 63     | ppm     | USDA Handbook 60 |
|         |           | Sodium (Sat'd Paste)            | 3538   | ppm     | USDA Handbook 60 |
|         |           | Sodium Adsorption Ratio (SAR)   | 55.0   | -       | USDA Handbook 60 |

Report Number: F11347-0396

Account Number: 91000

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www.algreatlakes.com • lab@algreatlakes.com



QUALITY ANALYSES FOR INFORMED DECISIONS

TO: ALS LABORATORY GROUP  
3352 128TH AVE  
HOLLAND, MI 49424-9263

RE: 1112376

DATE RECEIVED: 12/13/2011

DATE REPORTED: 12/15/2011

PAGE: 2

P.O. NUMBER: 20-1112376

ATTN: ANN PRESTON

## REPORT OF ANALYSIS

| LAB NO. | SAMPLE ID | ANALYSIS                        | RESULT | UNIT    | METHOD           |
|---------|-----------|---------------------------------|--------|---------|------------------|
| 64732   | 07C       | Sat'd Paste Extraction with DIW | 1      |         | USDA Handbook 60 |
|         |           | Conductivity (ECe)              | 5.29   | mmho/cm | USDA Handbook 60 |
|         |           | Calcium (Sat'd Paste)           | 171    | ppm     | USDA Handbook 60 |
|         |           | Magnesium (Sat'd Paste)         | 40     | ppm     | USDA Handbook 60 |
|         |           | Sodium (Sat'd Paste)            | 4387   | ppm     | USDA Handbook 60 |
|         |           | Sodium Adsorption Ratio (SAR)   | 78.3   | -       | USDA Handbook 60 |
| 64733   | 08C       | Sat'd Paste Extraction with DIW | 1      |         | USDA Handbook 60 |
|         |           | Conductivity (ECe)              | 4.13   | mmho/cm | USDA Handbook 60 |
|         |           | Calcium (Sat'd Paste)           | 231    | ppm     | USDA Handbook 60 |
|         |           | Magnesium (Sat'd Paste)         | 67     | ppm     | USDA Handbook 60 |
|         |           | Sodium (Sat'd Paste)            | 2796   | ppm     | USDA Handbook 60 |
|         |           | Sodium Adsorption Ratio (SAR)   | 41.5   | -       | USDA Handbook 60 |

# ALS Group USA, Corp

Date: 19-Dec-11

Client: HRL Compliance Solutions

## QC BATCH REPORT

Work Order: 1112376

Project: Gypsum Ranch B Pad 12/8/11

Batch ID: 38100

Instrument ID GC8

Method: SW8015M

|                       |         |                                      |         |               |      |                       |               |   |           |              |
|-----------------------|---------|--------------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>MBLK</b>           |         | Sample ID: <b>DBLKW1-38100-38100</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/13/2011 06:25 PM</b> |           |              |
| Client ID:            |         | Run ID: <b>GC8_111213A</b>           |         |               |      | SeqNo: <b>1852138</b> |               | Prep Date: <b>12/12/2011</b>              |           | DF: <b>1</b> |
| Analyte               | Result  | PQL                                  | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| DRO (C10-C28)         | ND      | 0.10                                 |         |               |      |                       |               |   |           |              |
| Surr: 4-Terphenyl-d14 | 0.01642 | 0                                    | 0.05    | 0             | 32.8 | 26-109                | 0             |   |           |              |

|                       |         |                                      |         |               |      |                       |               |   |           |              |
|-----------------------|---------|--------------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>LCS</b>            |         | Sample ID: <b>DLCSW1-38100-38100</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/13/2011 05:19 PM</b> |           |              |
| Client ID:            |         | Run ID: <b>GC8_111213A</b>           |         |               |      | SeqNo: <b>1852136</b> |               | Prep Date: <b>12/12/2011</b>              |           | DF: <b>1</b> |
| Analyte               | Result  | PQL                                  | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| DRO (C10-C28)         | 3.785   | 0.10                                 | 5       | 0             | 75.7 | 60-130                | 0             |   |           |              |
| Surr: 4-Terphenyl-d14 | 0.01844 | 0                                    | 0.05    | 0             | 36.9 | 26-109                | 0             |   |           |              |

|                       |         |                                       |         |               |      |                       |               |   |           |              |
|-----------------------|---------|---------------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>LCSD</b>           |         | Sample ID: <b>DLCSDW1-38100-38100</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/13/2011 05:19 PM</b> |           |              |
| Client ID:            |         | Run ID: <b>GC8_111213A</b>            |         |               |      | SeqNo: <b>1852145</b> |               | Prep Date: <b>12/12/2011</b>              |           | DF: <b>1</b> |
| Analyte               | Result  | PQL                                   | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| DRO (C10-C28)         | 4.933   | 0.10                                  | 5       | 0             | 98.7 | 60-130                | 3.785         | 26.3                                      | 30        |              |
| Surr: 4-Terphenyl-d14 | 0.01989 | 0                                     | 0.05    | 0             | 39.8 | 26-109                | 0.01844       | 7.57                                      | 30        |              |

|                       |        |                                  |         |               |      |                       |               |   |           |              |
|-----------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>MS</b>             |        | Sample ID: <b>1112358-04C MS</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/13/2011 05:41 PM</b> |           |              |
| Client ID:            |        | Run ID: <b>GC8_111213A</b>       |         |               |      | SeqNo: <b>1852137</b> |               | Prep Date: <b>12/12/2011</b>              |           | DF: <b>1</b> |
| Analyte               | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| DRO (C10-C28)         | 41.11  | 1.0                              | 50      | 0             | 82.2 | 60-130                | 0             |   |           |              |
| Surr: 4-Terphenyl-d14 | 0.2016 | 0                                | 0.5     | 0             | 40.3 | 26-109                | 0             |   |           |              |

|                       |        |                                   |         |               |      |                       |               |   |           |              |
|-----------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>MSD</b>            |        | Sample ID: <b>1112358-04C MSD</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/13/2011 05:41 PM</b> |           |              |
| Client ID:            |        | Run ID: <b>GC8_111213A</b>        |         |               |      | SeqNo: <b>1852146</b> |               | Prep Date: <b>12/12/2011</b>              |           | DF: <b>1</b> |
| Analyte               | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| DRO (C10-C28)         | 47.51  | 1.0                               | 50      | 0             | 95   | 60-130                | 41.11         | 14.4                                      | 30        |              |
| Surr: 4-Terphenyl-d14 | 0.2103 | 0                                 | 0.5     | 0             | 42.1 | 26-109                | 0.2016        | 4.22                                      | 30        |              |

The following samples were analyzed in this batch:

1112376-09B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **38138** Instrument ID **GC8** Method: **SW8015M**

|                       |                                      |     |         |               |                       |                     |                              |   |              |      |
|-----------------------|--------------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>MBLK</b>           | Sample ID: <b>DBLKS1-38138-38138</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 11:36 AM</b> |              |      |
| Client ID:            | Run ID: <b>GC8_111215A</b>           |     |         |               | SeqNo: <b>1853460</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>1</b> |      |
| Analyte               | Result                               | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |
| DRO (C10-C28)         | ND                                   | 4.2 |         |               |                       |                     |                              |   |              |      |
| Surr: 4-Terphenyl-d14 | 1.066                                | 0   | 1.667   | 0             | 64                    | 39-115              | 0                            |   |              |      |

|                       |                                      |     |         |               |                       |                     |                              |   |              |      |
|-----------------------|--------------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>LCS</b>            | Sample ID: <b>DLCSS1-38138-38138</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 10:31 AM</b> |              |      |
| Client ID:            | Run ID: <b>GC8_111215A</b>           |     |         |               | SeqNo: <b>1853458</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>1</b> |      |
| Analyte               | Result                               | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |
| DRO (C10-C28)         | 138.2                                | 4.2 | 166.7   | 0             | 82.9                  | 60-130              | 0                            |   |              |      |
| Surr: 4-Terphenyl-d14 | 0.912                                | 0   | 1.667   | 0             | 54.7                  | 39-115              | 0                            |   |              |      |

|                       |                                       |     |         |               |                       |                     |                              |   |              |      |
|-----------------------|---------------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>LCSD</b>           | Sample ID: <b>DLCSDS1-38138-38138</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 10:31 AM</b> |              |      |
| Client ID:            | Run ID: <b>GC8_111215A</b>            |     |         |               | SeqNo: <b>1853464</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>1</b> |      |
| Analyte               | Result                                | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |
| DRO (C10-C28)         | 148                                   | 4.2 | 166.7   | 0             | 88.8                  | 60-130              | 138.2                        | 6.87                                      | 30           |      |
| Surr: 4-Terphenyl-d14 | 0.9177                                | 0   | 1.667   | 0             | 55.1                  | 39-115              | 0.912                        | 0.619                                     | 30           |      |

|                       |                                  |     |         |               |                       |                     |                              |   |              |      |
|-----------------------|----------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>MS</b>             | Sample ID: <b>1112352-05B MS</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 10:52 AM</b> |              |      |
| Client ID:            | Run ID: <b>GC8_111215A</b>       |     |         |               | SeqNo: <b>1853459</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>1</b> |      |
| Analyte               | Result                           | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |
| DRO (C10-C28)         | 491.1                            | 12  | 482.7   | 0             | 102                   | 60-130              | 0                            |   |              |      |
| Surr: 4-Terphenyl-d14 | 3.019                            | 0   | 4.827   | 0             | 62.5                  | 39-115              | 0                            |   |              |      |

|                       |                                   |     |         |               |                       |                     |                              |   |              |      |
|-----------------------|-----------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>MSD</b>            | Sample ID: <b>1112352-05B MSD</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 10:52 AM</b> |              |      |
| Client ID:            | Run ID: <b>GC8_111215A</b>        |     |         |               | SeqNo: <b>1853465</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>1</b> |      |
| Analyte               | Result                            | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |
| DRO (C10-C28)         | 397.5                             | 12  | 484.4   | 0             | 82.1                  | 60-130              | 491.1                        | 21.1                                      | 30           |      |
| Surr: 4-Terphenyl-d14 | 3.021                             | 0   | 4.844   | 0             | 62.4                  | 39-115              | 3.019                        | 0.0696                                    | 30           |      |

The following samples were analyzed in this batch:

|             |             |             |
|-------------|-------------|-------------|
| 1112376-04B | 1112376-05B | 1112376-06B |
| 1112376-07B | 1112376-08B |             |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **R99138** Instrument ID **GC10** Method: **SW8015**

| <b>MBLK</b>             | Sample ID: <b>MBLK-R99138-R99138</b> |     |         |               |                       | Units: <b>µg/L</b> |               | Analysis Date: <b>12/16/2011 02:00 AM</b> |              |      |
|-------------------------|--------------------------------------|-----|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| Client ID:              | Run ID: <b>GC10_111216A</b>          |     |         |               | SeqNo: <b>1854681</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte                 | Result                               | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |
| GRO (C6-C10)            | ND                                   | 200 |         |               |                       |                    |               |   |              |      |
| <i>Surr: Toluene-d8</i> | 103.6                                | 0   | 100     | 0             | 104                   | 70-130             | 0             |   |              |      |

| <b>LCS</b>              | Sample ID: <b>LCS-R99138-R99138</b> |     |         |               |                       | Units: <b>µg/L</b> |               | Analysis Date: <b>12/16/2011 12:46 PM</b> |              |      |
|-------------------------|-------------------------------------|-----|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| Client ID:              | Run ID: <b>GC10_111216A</b>         |     |         |               | SeqNo: <b>1854684</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte                 | Result                              | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |
| GRO (C6-C10)            | 27400                               | 200 | 25000   | 0             | 110                   | 70-130             | 0             |   |              |      |
| <i>Surr: Toluene-d8</i> | 96.55                               | 0   | 100     | 0             | 96.6                  | 70-130             | 0             |   |              |      |

| <b>LCSD</b>             | Sample ID: <b>LCSD-R99138-R99138</b> |     |         |               |                       | Units: <b>µg/L</b> |               | Analysis Date: <b>12/16/2011 01:11 AM</b> |              |      |
|-------------------------|--------------------------------------|-----|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| Client ID:              | Run ID: <b>GC10_111216A</b>          |     |         |               | SeqNo: <b>1854680</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte                 | Result                               | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |
| GRO (C6-C10)            | 26800                                | 200 | 25000   | 0             | 107                   | 70-130             | 27400         | 2.23                                      | 30           |      |
| <i>Surr: Toluene-d8</i> | 98.49                                | 0   | 100     | 0             | 98.5                  | 70-130             | 96.55         | 1.99                                      | 30           |      |

| <b>MS</b>               | Sample ID: <b>1112352-05A MS</b> |       |         |               |                       | Units: <b>µg/Kg</b> |               | Analysis Date: <b>12/16/2011 10:36 AM</b> |               |      |
|-------------------------|----------------------------------|-------|---------|---------------|-----------------------|---------------------|---------------|---|---------------|------|
| Client ID:              | Run ID: <b>GC10_111216A</b>      |       |         |               | SeqNo: <b>1854703</b> |                     | Prep Date:    |   | DF: <b>50</b> |      |
| Analyte                 | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value | %RPD                                      | RPD Limit     | Qual |
| GRO (C6-C10)            | 1362000                          | 2,500 | 1250000 | 0             | 109                   | 70-130              | 0             |   |               |      |
| <i>Surr: Toluene-d8</i> | 4581                             | 0     | 5000    | 0             | 91.6                  | 50-150              | 0             |   |               |      |

| <b>MSD</b>              | Sample ID: <b>1112352-05A MSD</b> |       |         |               |                       | Units: <b>µg/Kg</b> |               | Analysis Date: <b>12/16/2011 11:01 AM</b> |               |      |
|-------------------------|-----------------------------------|-------|---------|---------------|-----------------------|---------------------|---------------|---|---------------|------|
| Client ID:              | Run ID: <b>GC10_111216A</b>       |       |         |               | SeqNo: <b>1854704</b> |                     | Prep Date:    |   | DF: <b>50</b> |      |
| Analyte                 | Result                            | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value | %RPD                                      | RPD Limit     | Qual |
| GRO (C6-C10)            | 1342000                           | 2,500 | 1250000 | 0             | 107                   | 70-130              | 1362000       | 1.43                                      | 30            |      |
| <i>Surr: Toluene-d8</i> | 4824                              | 0     | 5000    | 0             | 96.5                  | 50-150              | 4581          | 5.18                                      | 30            |      |

The following samples were analyzed in this batch: 1112376-09A

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **R99165** Instrument ID **GC9** Method: **SW8015**

| <b>MBLK</b>             | Sample ID: <b>MBLK-R99165-R99165</b> |     |         |               |                       | Units: <b>µg/L</b> |               | Analysis Date: <b>12/15/2011 06:43 PM</b> |              |      |
|-------------------------|--------------------------------------|-----|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| Client ID:              | Run ID: <b>GC9_111215A</b>           |     |         |               | SeqNo: <b>1855588</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte                 | Result                               | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |
| GRO (C6-C10)            | ND                                   | 200 |         |               |                       |                    |               |   |              |      |
| <i>Surr: Toluene-d8</i> | 112                                  | 0   | 100     | 0             | 112                   | 70-130             | 0             |   |              |      |

| <b>LCS</b>              | Sample ID: <b>LCS-R99165-R99165</b> |     |         |               |                       | Units: <b>µg/L</b> |               | Analysis Date: <b>12/15/2011 05:28 PM</b> |              |      |
|-------------------------|-------------------------------------|-----|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| Client ID:              | Run ID: <b>GC9_111215A</b>          |     |         |               | SeqNo: <b>1855586</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte                 | Result                              | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |
| GRO (C6-C10)            | 21850                               | 200 | 25000   | 0             | 87.4                  | 70-130             | 0             |   |              |      |
| <i>Surr: Toluene-d8</i> | 105.6                               | 0   | 100     | 0             | 106                   | 70-130             | 0             |   |              |      |

| <b>LCSD</b>             | Sample ID: <b>LCSD-R99165-R99165</b> |     |         |               |                       | Units: <b>µg/L</b> |               | Analysis Date: <b>12/15/2011 05:53 PM</b> |              |      |
|-------------------------|--------------------------------------|-----|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| Client ID:              | Run ID: <b>GC9_111215A</b>           |     |         |               | SeqNo: <b>1855587</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte                 | Result                               | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |
| GRO (C6-C10)            | 24070                                | 200 | 25000   | 0             | 96.3                  | 70-130             | 21850         | 9.67                                      | 30           |      |
| <i>Surr: Toluene-d8</i> | 107.3                                | 0   | 100     | 0             | 107                   | 70-130             | 105.6         | 1.65                                      | 30           |      |

| <b>MS</b>               | Sample ID: <b>1112406-01A MS</b> |     |         |               |                       | Units: <b>µg/L</b> |               | Analysis Date: <b>12/16/2011 03:31 AM</b> |              |      |
|-------------------------|----------------------------------|-----|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| Client ID:              | Run ID: <b>GC9_111215A</b>       |     |         |               | SeqNo: <b>1855595</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte                 | Result                           | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |
| GRO (C6-C10)            | 18970                            | 200 | 25000   | 0             | 75.9                  | 70-130             | 0             |   |              |      |
| <i>Surr: Toluene-d8</i> | 92.92                            | 0   | 100     | 0             | 92.9                  | 70-130             | 0             |   |              |      |

| <b>MSD</b>              | Sample ID: <b>1112406-01A MSD</b> |     |         |               |                       | Units: <b>µg/L</b> |               | Analysis Date: <b>12/16/2011 03:56 AM</b> |              |      |
|-------------------------|-----------------------------------|-----|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| Client ID:              | Run ID: <b>GC9_111215A</b>        |     |         |               | SeqNo: <b>1855596</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte                 | Result                            | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |
| GRO (C6-C10)            | 19400                             | 200 | 25000   | 0             | 77.6                  | 70-130             | 18970         | 2.22                                      | 30           |      |
| <i>Surr: Toluene-d8</i> | 85.92                             | 0   | 100     | 0             | 85.9                  | 70-130             | 92.92         | 7.83                                      | 30           |      |

The following samples were analyzed in this batch:

|             |             |             |
|-------------|-------------|-------------|
| 1112376-04A | 1112376-05A | 1112376-06A |
| 1112376-07A | 1112376-08A |             |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions  
 Work Order: 1112376  
 Project: Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **38209** Instrument ID **HG1** Method: **SW7471**

|             |                                    |     |         |               |                       |                     |                              |   |              |      |
|-------------|------------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>MBLK</b> | Sample ID: <b>MBLK-38209-38209</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 12:59 PM</b> |              |      |
| Client ID:  | Run ID: <b>HG1_111215A</b>         |     |         |               | SeqNo: <b>1853150</b> |                     | Prep Date: <b>12/15/2011</b> |   | DF: <b>1</b> |      |
| Analyte     | Result                             | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |

Mercury ND 0.020

|            |                                   |     |         |               |                       |                     |                              |   |              |      |
|------------|-----------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>LCS</b> | Sample ID: <b>LCS-38209-38209</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 01:01 PM</b> |              |      |
| Client ID: | Run ID: <b>HG1_111215A</b>        |     |         |               | SeqNo: <b>1853151</b> |                     | Prep Date: <b>12/15/2011</b> |   | DF: <b>1</b> |      |
| Analyte    | Result                            | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |

Mercury 0.174 0.020 0.1665 0 105 80-120 0

|             |                                    |     |         |               |                       |                     |                              |   |              |      |
|-------------|------------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>LCSD</b> | Sample ID: <b>LCSD-38209-38209</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 01:03 PM</b> |              |      |
| Client ID:  | Run ID: <b>HG1_111215A</b>         |     |         |               | SeqNo: <b>1853152</b> |                     | Prep Date: <b>12/15/2011</b> |   | DF: <b>1</b> |      |
| Analyte     | Result                             | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |

Mercury 0.1726 0.020 0.1665 0 104 80-120 0.174 0.818 20

|            |                                 |     |         |               |                       |                     |                              |   |              |      |
|------------|---------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>MS</b>  | Sample ID: <b>1112337-07AMS</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 01:10 PM</b> |              |      |
| Client ID: | Run ID: <b>HG1_111215A</b>      |     |         |               | SeqNo: <b>1853155</b> |                     | Prep Date: <b>12/15/2011</b> |   | DF: <b>1</b> |      |
| Analyte    | Result                          | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |

Mercury 0.1414 0.016 0.1311 -0.0005529 108 75-125 0

|            |                                  |     |         |               |                       |                     |                              |   |              |      |
|------------|----------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>MSD</b> | Sample ID: <b>1112337-07AMSD</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 01:12 PM</b> |              |      |
| Client ID: | Run ID: <b>HG1_111215A</b>       |     |         |               | SeqNo: <b>1853156</b> |                     | Prep Date: <b>12/15/2011</b> |   | DF: <b>1</b> |      |
| Analyte    | Result                           | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |

Mercury 0.1378 0.015 0.1273 -0.0005529 109 75-125 0.1414 2.6 35

The following samples were analyzed in this batch:

|             |             |             |
|-------------|-------------|-------------|
| 1112376-04B | 1112376-05B | 1112376-06B |
| 1112376-07B | 1112376-08B |             |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions  
 Work Order: 1112376  
 Project: Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **38160** Instrument ID **ICPMS1** Method: **SW6020A**

|             |                                    |     |         |               |                       |                     |                              |   |              |      |
|-------------|------------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>MBLK</b> | Sample ID: <b>MBLK-38160-38160</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 04:14 PM</b> |              |      |
| Client ID:  | Run ID: <b>ICPMS1_111214A</b>      |     |         |               | SeqNo: <b>1853903</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>1</b> |      |
| Analyte     | Result                             | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |

Arsenic ND 0.25

|            |                                   |     |         |               |                       |                     |                              |   |              |      |
|------------|-----------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>LCS</b> | Sample ID: <b>LCS-38160-38160</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 04:20 PM</b> |              |      |
| Client ID: | Run ID: <b>ICPMS1_111214A</b>     |     |         |               | SeqNo: <b>1853904</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>2</b> |      |
| Analyte    | Result                            | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |

Arsenic 4.801 0.50 5 0 96 80-120 0

|             |                                    |     |         |               |                       |                     |                              |   |              |      |
|-------------|------------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>LCSD</b> | Sample ID: <b>LCSD-38160-38160</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 04:25 PM</b> |              |      |
| Client ID:  | Run ID: <b>ICPMS1_111214A</b>      |     |         |               | SeqNo: <b>1853905</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>2</b> |      |
| Analyte     | Result                             | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |

Arsenic 4.768 0.50 5 0 95.4 80-120 4.801 0.69 20

|            |                                 |     |         |               |                       |                     |                              |   |               |      |
|------------|---------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|---------------|------|
| <b>MS</b>  | Sample ID: <b>1112295-53AMS</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 04:40 PM</b> |               |      |
| Client ID: | Run ID: <b>ICPMS1_111214A</b>   |     |         |               | SeqNo: <b>1853908</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>10</b> |      |
| Analyte    | Result                          | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit     | Qual |

Arsenic 17.12 3.6 7.102 11.66 76.9 80-120 0 S

|            |                                  |     |         |               |                       |                     |                              |   |               |      |
|------------|----------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|---------------|------|
| <b>MSD</b> | Sample ID: <b>1112295-53AMSD</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/15/2011 04:45 PM</b> |               |      |
| Client ID: | Run ID: <b>ICPMS1_111214A</b>    |     |         |               | SeqNo: <b>1853909</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>10</b> |      |
| Analyte    | Result                           | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit     | Qual |

Arsenic 16.06 3.6 7.194 11.66 61.2 80-120 17.12 6.38 25 S

The following samples were analyzed in this batch:

1112376-01A 1112376-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **38197** Instrument ID **ICPMS1** Method: **SW6020A**

| MBLK Sample ID: <b>MBLK-38197-38197</b> |        |                               |         | Units: <b>mg/Kg</b>   |      |                              | Analysis Date: <b>12/15/2011 07:43 PM</b> |              |           |      |
|---|--------|-------------------------------|---------|-----------------------|------|------------------------------|---|--------------|-----------|------|
| Client ID:                              |        | Run ID: <b>ICPMS1_111214A</b> |         | SeqNo: <b>1853942</b> |      | Prep Date: <b>12/14/2011</b> |   | DF: <b>1</b> |           |      |
| Analyte                                 | Result | PQL                           | SPK Val | SPK Ref Value         | %REC | Control Limit                | RPD Ref Value                             | %RPD         | RPD Limit | Qual |
| Arsenic                                 | ND     | 0.25                          |         |                       |      |                              |   |              |           |      |
| Barium                                  | 0.0455 | 0.25                          |         |                       |      |                              |   |              |           | J    |
| Cadmium                                 | ND     | 0.10                          |         |                       |      |                              |   |              |           |      |
| Chromium                                | 0.0086 | 0.25                          |         |                       |      |                              |   |              |           | J    |
| Copper                                  | ND     | 0.25                          |         |                       |      |                              |   |              |           |      |
| Lead                                    | 0.0551 | 0.25                          |         |                       |      |                              |   |              |           | J    |
| Nickel                                  | ND     | 0.25                          |         |                       |      |                              |   |              |           |      |
| Selenium                                | ND     | 0.25                          |         |                       |      |                              |   |              |           |      |
| Silver                                  | ND     | 0.25                          |         |                       |      |                              |   |              |           |      |
| Zinc                                    | 0.1658 | 0.50                          |         |                       |      |                              |   |              |           | J    |

| LCS Sample ID: <b>LCS-38197-38197</b> |        |                               |         | Units: <b>mg/Kg</b>   |      |                              | Analysis Date: <b>12/15/2011 07:48 PM</b> |              |           |      |
|---------------------------------------|--------|-------------------------------|---------|-----------------------|------|------------------------------|---|--------------|-----------|------|
| Client ID:                            |        | Run ID: <b>ICPMS1_111214A</b> |         | SeqNo: <b>1853943</b> |      | Prep Date: <b>12/14/2011</b> |   | DF: <b>2</b> |           |      |
| Analyte                               | Result | PQL                           | SPK Val | SPK Ref Value         | %REC | Control Limit                | RPD Ref Value                             | %RPD         | RPD Limit | Qual |
| Arsenic                               | 4.925  | 0.50                          | 5       | 0                     | 98.5 | 80-120                       | 0   |              |           |      |
| Barium                                | 5.227  | 0.50                          | 5       | 0                     | 105  | 80-120                       | 0   |              |           |      |
| Cadmium                               | 5.125  | 0.20                          | 5       | 0                     | 102  | 80-120                       | 0   |              |           |      |
| Chromium                              | 5.053  | 0.50                          | 5       | 0                     | 101  | 80-120                       | 0   |              |           |      |
| Copper                                | 5.207  | 0.50                          | 5       | 0                     | 104  | 80-120                       | 0   |              |           |      |
| Lead                                  | 5.197  | 0.50                          | 5       | 0                     | 104  | 80-120                       | 0   |              |           |      |
| Nickel                                | 5.204  | 0.50                          | 5       | 0                     | 104  | 80-120                       | 0   |              |           |      |
| Selenium                              | 4.473  | 0.50                          | 5       | 0                     | 89.5 | 80-120                       | 0   |              |           |      |
| Silver                                | 4.835  | 0.50                          | 5       | 0                     | 96.7 | 80-120                       | 0   |              |           |      |
| Zinc                                  | 5.107  | 1.0                           | 5       | 0                     | 102  | 80-120                       | 0   |              |           |      |

| LCSD Sample ID: <b>LCSD-38197-38197</b> |        |                               |         | Units: <b>mg/Kg</b>   |      |                              | Analysis Date: <b>12/15/2011 07:53 PM</b> |              |           |      |
|---|--------|-------------------------------|---------|-----------------------|------|------------------------------|---|--------------|-----------|------|
| Client ID:                              |        | Run ID: <b>ICPMS1_111214A</b> |         | SeqNo: <b>1853944</b> |      | Prep Date: <b>12/14/2011</b> |   | DF: <b>2</b> |           |      |
| Analyte                                 | Result | PQL                           | SPK Val | SPK Ref Value         | %REC | Control Limit                | RPD Ref Value                             | %RPD         | RPD Limit | Qual |
| Arsenic                                 | 4.902  | 0.50                          | 5       | 0                     | 98   | 80-120                       | 4.925                                     | 0.468        | 20        |      |
| Barium                                  | 5.189  | 0.50                          | 5       | 0                     | 104  | 80-120                       | 5.227                                     | 0.73         | 20        |      |
| Cadmium                                 | 5.088  | 0.20                          | 5       | 0                     | 102  | 80-120                       | 5.125                                     | 0.725        | 20        |      |
| Chromium                                | 5.128  | 0.50                          | 5       | 0                     | 103  | 80-120                       | 5.053                                     | 1.47         | 20        |      |
| Copper                                  | 5.188  | 0.50                          | 5       | 0                     | 104  | 80-120                       | 5.207                                     | 0.366        | 20        |      |
| Lead                                    | 5.136  | 0.50                          | 5       | 0                     | 103  | 80-120                       | 5.197                                     | 1.18         | 20        |      |
| Nickel                                  | 5.17   | 0.50                          | 5       | 0                     | 103  | 80-120                       | 5.204                                     | 0.655        | 20        |      |
| Selenium                                | 4.5    | 0.50                          | 5       | 0                     | 90   | 80-120                       | 4.473                                     | 0.602        | 20        |      |
| Silver                                  | 4.833  | 0.50                          | 5       | 0                     | 96.7 | 80-120                       | 4.835                                     | 0.0414       | 20        |      |
| Zinc                                    | 5.071  | 1.0                           | 5       | 0                     | 101  | 80-120                       | 5.107                                     | 0.707        | 20        |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **38197** Instrument ID **ICPMS1** Method: **SW6020A**

| MS Sample ID: 1112376-03AMS |        |                        |         | Units: mg/Kg   |      |                       | Analysis Date: 12/15/2011 08:09 PM |       |           |      |
|-----------------------------|--------|------------------------|---------|----------------|------|-----------------------|------------------------------------|-------|-----------|------|
| Client ID: BKGD 3           |        | Run ID: ICPMS1_111214A |         | SeqNo: 1853947 |      | Prep Date: 12/14/2011 |                                    | DF: 2 |           |      |
| Analyte                     | Result | PQL                    | SPK Val | SPK Ref Value  | %REC | Control Limit         | RPD Ref Value                      | %RPD  | RPD Limit | Qual |
| Arsenic                     | 11.51  | 0.92                   | 9.174   | 3.224          | 90.3 | 80-120                | 0                                  |       |           |      |
| Barium                      | 203.7  | 0.92                   | 9.174   | 167.1          | 399  | 80-120                | 0                                  |       |           | SO   |
| Cadmium                     | 9.534  | 0.37                   | 9.174   | 0.4402         | 99.1 | 80-120                | 0                                  |       |           |      |
| Chromium                    | 19.91  | 0.92                   | 9.174   | 11.24          | 94.4 | 80-120                | 0                                  |       |           |      |
| Copper                      | 17.3   | 0.92                   | 9.174   | 8.861          | 92   | 80-120                | 0                                  |       |           |      |
| Lead                        | 25.52  | 0.92                   | 9.174   | 17.05          | 92.4 | 80-120                | 0                                  |       |           |      |
| Nickel                      | 19.98  | 0.92                   | 9.174   | 11.61          | 91.2 | 80-120                | 0                                  |       |           |      |
| Selenium                    | 8.488  | 0.92                   | 9.174   | 0.8829         | 82.9 | 80-120                | 0                                  |       |           |      |
| Silver                      | 8.011  | 0.92                   | 9.174   | 0.07685        | 86.5 | 80-120                | 0                                  |       |           |      |
| Zinc                        | 62.29  | 1.8                    | 9.174   | 56.03          | 68.3 | 80-120                | 0                                  |       |           | SO   |

| MSD Sample ID: 1112376-03AMSD |        |                        |         | Units: mg/Kg   |      |                       | Analysis Date: 12/15/2011 08:14 PM |       |           |      |
|-------------------------------|--------|------------------------|---------|----------------|------|-----------------------|------------------------------------|-------|-----------|------|
| Client ID: BKGD 3             |        | Run ID: ICPMS1_111214A |         | SeqNo: 1853948 |      | Prep Date: 12/14/2011 |                                    | DF: 2 |           |      |
| Analyte                       | Result | PQL                    | SPK Val | SPK Ref Value  | %REC | Control Limit         | RPD Ref Value                      | %RPD  | RPD Limit | Qual |
| Arsenic                       | 10.95  | 0.83                   | 8.264   | 3.224          | 93.4 | 80-120                | 11.51                              | 5.03  | 25        |      |
| Barium                        | 195.5  | 0.83                   | 8.264   | 167.1          | 344  | 80-120                | 203.7                              | 4.07  | 25        | SO   |
| Cadmium                       | 8.46   | 0.33                   | 8.264   | 0.4402         | 97   | 80-120                | 9.534                              | 11.9  | 25        |      |
| Chromium                      | 19.12  | 0.83                   | 8.264   | 11.24          | 95.3 | 80-120                | 19.91                              | 4.02  | 25        |      |
| Copper                        | 15.99  | 0.83                   | 8.264   | 8.861          | 86.2 | 80-120                | 17.3                               | 7.92  | 25        |      |
| Lead                          | 23.8   | 0.83                   | 8.264   | 17.05          | 81.7 | 80-120                | 25.52                              | 6.98  | 25        |      |
| Nickel                        | 19.29  | 0.83                   | 8.264   | 11.61          | 92.9 | 80-120                | 19.98                              | 3.53  | 25        |      |
| Selenium                      | 7.83   | 0.83                   | 8.264   | 0.8829         | 84.1 | 80-120                | 8.488                              | 8.07  | 25        |      |
| Silver                        | 7.026  | 0.83                   | 8.264   | 0.07685        | 84.1 | 80-120                | 8.011                              | 13.1  | 25        |      |
| Zinc                          | 61.74  | 1.7                    | 8.264   | 56.03          | 69.1 | 80-120                | 62.29                              | 0.9   | 25        | SO   |

The following samples were analyzed in this batch:

|             |             |             |
|-------------|-------------|-------------|
| 1112376-03A | 1112376-04B | 1112376-05B |
| 1112376-06B | 1112376-07B | 1112376-08B |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **38099**      Instrument ID **SVMS7**      Method: **SW8270**

| <b>MBLK</b>                       |              | Sample ID: <b>SBLKW1-38099-38099</b> |           |               |             | Units: <b>µg/L</b>    |               | Analysis Date: <b>12/16/2011 04:17 PM</b> |           |              |
|-----------------------------------|--------------|--------------------------------------|-----------|---------------|-------------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                        |              | Run ID: <b>SVMS7_111216A</b>         |           |               |             | SeqNo: <b>1854946</b> |               | Prep Date: <b>12/12/2011</b>              |           | DF: <b>1</b> |
| Analyte                           | Result       | PQL                                  | SPK Val   | SPK Ref Value | %REC        | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Acenaphthene                      | 1.18         | 5.0                                  |           |               |             |                       |               |   |           | J            |
| Acenaphthylene                    | ND           | 5.0                                  |           |               |             |                       |               |   |           |              |
| Anthracene                        | ND           | 5.0                                  |           |               |             |                       |               |   |           |              |
| Benzo(a)anthracene                | ND           | 5.0                                  |           |               |             |                       |               |   |           |              |
| Benzo(a)pyrene                    | ND           | 5.0                                  |           |               |             |                       |               |   |           |              |
| Benzo(b)fluoranthene              | ND           | 5.0                                  |           |               |             |                       |               |   |           |              |
| Benzo(g,h,i)perylene              | ND           | 5.0                                  |           |               |             |                       |               |   |           |              |
| Benzo(k)fluoranthene              | ND           | 5.0                                  |           |               |             |                       |               |   |           |              |
| Chrysene                          | ND           | 5.0                                  |           |               |             |                       |               |   |           |              |
| Dibenzo(a,h)anthracene            | ND           | 5.0                                  |           |               |             |                       |               |   |           |              |
| Fluoranthene                      | 1.1          | 5.0                                  |           |               |             |                       |               |   |           | J            |
| Fluorene                          | 0.95         | 5.0                                  |           |               |             |                       |               |   |           | J            |
| Indeno(1,2,3-cd)pyrene            | ND           | 5.0                                  |           |               |             |                       |               |   |           |              |
| Naphthalene                       | ND           | 5.0                                  |           |               |             |                       |               |   |           |              |
| Phenanthrene                      | 3.85         | 5.0                                  |           |               |             |                       |               |   |           | J            |
| Pyrene                            | 1.1          | 5.0                                  |           |               |             |                       |               |   |           | J            |
| <i>Surr: 2,4,6-Tribromophenol</i> | <i>37.09</i> | <i>0</i>                             | <i>50</i> | <i>0</i>      | <i>74.2</i> | <i>21-125</i>         | <i>0</i>      |   |           |              |
| <i>Surr: 2-Fluorobiphenyl</i>     | <i>35.7</i>  | <i>0</i>                             | <i>50</i> | <i>0</i>      | <i>71.4</i> | <i>36-94</i>          | <i>0</i>      |   |           |              |
| <i>Surr: 2-Fluorophenol</i>       | <i>23.52</i> | <i>0</i>                             | <i>50</i> | <i>0</i>      | <i>47</i>   | <i>10-75</i>          | <i>0</i>      |   |           |              |
| <i>Surr: 4-Terphenyl-d14</i>      | <i>39.46</i> | <i>0</i>                             | <i>50</i> | <i>0</i>      | <i>78.9</i> | <i>26-119</i>         | <i>0</i>      |   |           |              |
| <i>Surr: Nitrobenzene-d5</i>      | <i>38.65</i> | <i>0</i>                             | <i>50</i> | <i>0</i>      | <i>77.3</i> | <i>41-104</i>         | <i>0</i>      |   |           |              |
| <i>Surr: Phenol-d6</i>            | <i>15.46</i> | <i>0</i>                             | <i>50</i> | <i>0</i>      | <i>30.9</i> | <i>11-50</i>          | <i>0</i>      |   |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **38099**      Instrument ID **SVMS7**      Method: **SW8270**

| <b>LCS</b>                        |              | Sample ID: <b>SLCSW1-38099-38099</b> |           |               |             | Units: <b>µg/L</b>    |               | Analysis Date: <b>12/16/2011 04:46 PM</b> |           |              |
|-----------------------------------|--------------|--------------------------------------|-----------|---------------|-------------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                        |              | Run ID: <b>SVMS7_111216A</b>         |           |               |             | SeqNo: <b>1854947</b> |               | Prep Date: <b>12/12/2011</b>              |           | DF: <b>1</b> |
| Analyte                           | Result       | PQL                                  | SPK Val   | SPK Ref Value | %REC        | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Acenaphthene                      | 33.86        | 5.0                                  | 40        | 0             | 84.6        | 45-110                | 0             |   |           |              |
| Acenaphthylene                    | 35.64        | 5.0                                  | 40        | 0             | 89.1        | 50-105                | 0             |   |           |              |
| Anthracene                        | 37.75        | 5.0                                  | 40        | 0             | 94.4        | 55-110                | 0             |   |           |              |
| Benzo(a)anthracene                | 37.08        | 5.0                                  | 40        | 0             | 92.7        | 55-110                | 0             |   |           |              |
| Benzo(a)pyrene                    | 39.79        | 5.0                                  | 40        | 0             | 99.5        | 55-110                | 0             |   |           |              |
| Benzo(b)fluoranthene              | 37.9         | 5.0                                  | 40        | 0             | 94.8        | 45-120                | 0             |   |           |              |
| Benzo(g,h,i)perylene              | 39.83        | 5.0                                  | 40        | 0             | 99.6        | 40-125                | 0             |   |           |              |
| Benzo(k)fluoranthene              | 35.84        | 5.0                                  | 40        | 0             | 89.6        | 45-125                | 0             |   |           |              |
| Chrysene                          | 36.91        | 5.0                                  | 40        | 0             | 92.3        | 55-110                | 0             |   |           |              |
| Dibenzo(a,h)anthracene            | 43.04        | 5.0                                  | 40        | 0             | 108         | 40-125                | 0             |   |           |              |
| Fluoranthene                      | 36.79        | 5.0                                  | 40        | 0             | 92          | 55-115                | 0             |   |           |              |
| Fluorene                          | 35.72        | 5.0                                  | 40        | 0             | 89.3        | 50-110                | 0             |   |           |              |
| Indeno(1,2,3-cd)pyrene            | 41.48        | 5.0                                  | 40        | 0             | 104         | 45-125                | 0             |   |           |              |
| Naphthalene                       | 32.18        | 5.0                                  | 40        | 0             | 80.4        | 40-100                | 0             |   |           |              |
| Phenanthrene                      | 36.86        | 5.0                                  | 40        | 0             | 92.2        | 50-115                | 0             |   |           |              |
| Pyrene                            | 37.23        | 5.0                                  | 40        | 0             | 93.1        | 50-130                | 0             |   |           |              |
| <i>Surr: 2,4,6-Tribromophenol</i> | <i>46.65</i> | <i>0</i>                             | <i>50</i> | <i>0</i>      | <i>93.3</i> | <i>21-125</i>         | <i>0</i>      |   |           |              |
| <i>Surr: 2-Fluorobiphenyl</i>     | <i>39.6</i>  | <i>0</i>                             | <i>50</i> | <i>0</i>      | <i>79.2</i> | <i>36-94</i>          | <i>0</i>      |   |           |              |
| <i>Surr: 2-Fluorophenol</i>       | <i>22.28</i> | <i>0</i>                             | <i>50</i> | <i>0</i>      | <i>44.6</i> | <i>10-75</i>          | <i>0</i>      |   |           |              |
| <i>Surr: 4-Terphenyl-d14</i>      | <i>32.17</i> | <i>0</i>                             | <i>50</i> | <i>0</i>      | <i>64.3</i> | <i>26-119</i>         | <i>0</i>      |   |           |              |
| <i>Surr: Nitrobenzene-d5</i>      | <i>40.64</i> | <i>0</i>                             | <i>50</i> | <i>0</i>      | <i>81.3</i> | <i>41-104</i>         | <i>0</i>      |   |           |              |
| <i>Surr: Phenol-d6</i>            | <i>14.53</i> | <i>0</i>                             | <i>50</i> | <i>0</i>      | <i>29.1</i> | <i>11-50</i>          | <i>0</i>      |   |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **38099**      Instrument ID **SVMS7**      Method: **SW8270**

| LCSD                              |              | Sample ID: <b>SLCSDW1-38099-38099</b> |           |               |             | Units: <b>µg/L</b>    |               | Analysis Date: <b>12/16/2011 05:15 PM</b> |           |              |
|-----------------------------------|--------------|---------------------------------------|-----------|---------------|-------------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                        |              | Run ID: <b>SVMS7_111216A</b>          |           |               |             | SeqNo: <b>1854948</b> |               | Prep Date: <b>12/12/2011</b>              |           | DF: <b>1</b> |
| Analyte                           | Result       | PQL                                   | SPK Val   | SPK Ref Value | %REC        | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Acenaphthene                      | 34.11        | 5.0                                   | 40        | 0             | 85.3        | 45-110                | 33.86         | 0.736                                     | 30        |              |
| Acenaphthylene                    | 35.65        | 5.0                                   | 40        | 0             | 89.1        | 50-105                | 35.64         | 0.0281                                    | 30        |              |
| Anthracene                        | 37.53        | 5.0                                   | 40        | 0             | 93.8        | 55-110                | 37.75         | 0.584                                     | 30        |              |
| Benzo(a)anthracene                | 37.21        | 5.0                                   | 40        | 0             | 93          | 55-110                | 37.08         | 0.35                                      | 30        |              |
| Benzo(a)pyrene                    | 39.71        | 5.0                                   | 40        | 0             | 99.3        | 55-110                | 39.79         | 0.201                                     | 30        |              |
| Benzo(b)fluoranthene              | 37.4         | 5.0                                   | 40        | 0             | 93.5        | 45-120                | 37.9          | 1.33                                      | 30        |              |
| Benzo(g,h,i)perylene              | 39.61        | 5.0                                   | 40        | 0             | 99          | 40-125                | 39.83         | 0.554                                     | 30        |              |
| Benzo(k)fluoranthene              | 36.27        | 5.0                                   | 40        | 0             | 90.7        | 45-125                | 35.84         | 1.19                                      | 30        |              |
| Chrysene                          | 36.99        | 5.0                                   | 40        | 0             | 92.5        | 55-110                | 36.91         | 0.217                                     | 30        |              |
| Dibenzo(a,h)anthracene            | 43.12        | 5.0                                   | 40        | 0             | 108         | 40-125                | 43.04         | 0.186                                     | 30        |              |
| Fluoranthene                      | 36.47        | 5.0                                   | 40        | 0             | 91.2        | 55-115                | 36.79         | 0.874                                     | 30        |              |
| Fluorene                          | 35.66        | 5.0                                   | 40        | 0             | 89.2        | 50-110                | 35.72         | 0.168                                     | 30        |              |
| Indeno(1,2,3-cd)pyrene            | 41.59        | 5.0                                   | 40        | 0             | 104         | 45-125                | 41.48         | 0.265                                     | 30        |              |
| Naphthalene                       | 33.14        | 5.0                                   | 40        | 0             | 82.8        | 40-100                | 32.18         | 2.94                                      | 30        |              |
| Phenanthrene                      | 36.66        | 5.0                                   | 40        | 0             | 91.6        | 50-115                | 36.86         | 0.544                                     | 30        |              |
| Pyrene                            | 37.27        | 5.0                                   | 40        | 0             | 93.2        | 50-130                | 37.23         | 0.107                                     | 30        |              |
| <i>Surr: 2,4,6-Tribromophenol</i> | <i>47.81</i> | <i>0</i>                              | <i>50</i> | <i>0</i>      | <i>95.6</i> | <i>21-125</i>         | <i>46.65</i>  | <i>2.46</i>                               | <i>40</i> |              |
| <i>Surr: 2-Fluorobiphenyl</i>     | <i>41.04</i> | <i>0</i>                              | <i>50</i> | <i>0</i>      | <i>82.1</i> | <i>36-94</i>          | <i>39.6</i>   | <i>3.57</i>                               | <i>40</i> |              |
| <i>Surr: 2-Fluorophenol</i>       | <i>24.64</i> | <i>0</i>                              | <i>50</i> | <i>0</i>      | <i>49.3</i> | <i>10-75</i>          | <i>22.28</i>  | <i>10.1</i>                               | <i>40</i> |              |
| <i>Surr: 4-Terphenyl-d14</i>      | <i>42.41</i> | <i>0</i>                              | <i>50</i> | <i>0</i>      | <i>84.8</i> | <i>26-119</i>         | <i>32.17</i>  | <i>27.5</i>                               | <i>40</i> |              |
| <i>Surr: Nitrobenzene-d5</i>      | <i>42.83</i> | <i>0</i>                              | <i>50</i> | <i>0</i>      | <i>85.7</i> | <i>41-104</i>         | <i>40.64</i>  | <i>5.25</i>                               | <i>40</i> |              |
| <i>Surr: Phenol-d6</i>            | <i>16.04</i> | <i>0</i>                              | <i>50</i> | <i>0</i>      | <i>32.1</i> | <i>11-50</i>          | <i>14.53</i>  | <i>9.88</i>                               | <i>40</i> |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **38099**      Instrument ID **SVMS7**      Method: **SW8270**

| MS                                |              |          |            | Sample ID: <b>1112358-04C MS</b> |             |               | Units: <b>µg/L</b>    |      | Analysis Date: <b>12/16/2011 05:44 PM</b> |      |
|-----------------------------------|--------------|----------|------------|----------------------------------|-------------|---------------|-----------------------|------|---|------|
| Client ID:                        |              |          |            | Run ID: <b>SVMS7_111216A</b>     |             |               | SeqNo: <b>1854949</b> |      | Prep Date: <b>12/12/2011</b>              |      |
|                                   |              |          |            |                                  |             |               | DF: <b>1</b>          |      |   |      |
| Analyte                           | Result       | PQL      | SPK Val    | SPK Ref Value                    | %REC        | Control Limit | RPD Ref Value         | %RPD | RPD Limit                                 | Qual |
| Acenaphthene                      | 314.3        | 50       | 400        | 0                                | 78.6        | 45-110        | 0                     |      |   |      |
| Acenaphthylene                    | 342.1        | 50       | 400        | 0                                | 85.5        | 50-105        | 0                     |      |   |      |
| Anthracene                        | 360.4        | 50       | 400        | 0                                | 90.1        | 55-110        | 0                     |      |   |      |
| Benzo(a)anthracene                | 349          | 50       | 400        | 0                                | 87.2        | 55-110        | 0                     |      |   |      |
| Benzo(a)pyrene                    | 376.4        | 50       | 400        | 0                                | 94.1        | 55-110        | 0                     |      |   |      |
| Benzo(b)fluoranthene              | 358          | 50       | 400        | 0                                | 89.5        | 45-120        | 0                     |      |   |      |
| Benzo(g,h,i)perylene              | 375.4        | 50       | 400        | 0                                | 93.8        | 40-125        | 0                     |      |   |      |
| Benzo(k)fluoranthene              | 344          | 50       | 400        | 0                                | 86          | 45-125        | 0                     |      |   |      |
| Chrysene                          | 348.6        | 50       | 400        | 0                                | 87.2        | 55-110        | 0                     |      |   |      |
| Dibenzo(a,h)anthracene            | 405.8        | 50       | 400        | 0                                | 101         | 40-125        | 0                     |      |   |      |
| Fluoranthene                      | 352.1        | 50       | 400        | 0                                | 88          | 55-115        | 0                     |      |   |      |
| Fluorene                          | 344.3        | 50       | 400        | 0                                | 86.1        | 50-110        | 0                     |      |   |      |
| Indeno(1,2,3-cd)pyrene            | 391.6        | 50       | 400        | 0                                | 97.9        | 45-125        | 0                     |      |   |      |
| Naphthalene                       | 307.4        | 50       | 400        | 0                                | 76.8        | 40-100        | 0                     |      |   |      |
| Phenanthrene                      | 350.5        | 50       | 400        | 0                                | 87.6        | 50-115        | 0                     |      |   |      |
| Pyrene                            | 353.2        | 50       | 400        | 0                                | 88.3        | 50-130        | 0                     |      |   |      |
| <i>Surr: 2,4,6-Tribromophenol</i> | <i>434.1</i> | <i>0</i> | <i>500</i> | <i>0</i>                         | <i>86.8</i> | <i>21-125</i> | <i>0</i>              |      |   |      |
| <i>Surr: 2-Fluorobiphenyl</i>     | <i>378.2</i> | <i>0</i> | <i>500</i> | <i>0</i>                         | <i>75.6</i> | <i>36-94</i>  | <i>0</i>              |      |   |      |
| <i>Surr: 2-Fluorophenol</i>       | <i>193.4</i> | <i>0</i> | <i>500</i> | <i>0</i>                         | <i>38.7</i> | <i>10-75</i>  | <i>0</i>              |      |   |      |
| <i>Surr: 4-Terphenyl-d14</i>      | <i>367.7</i> | <i>0</i> | <i>500</i> | <i>0</i>                         | <i>73.5</i> | <i>26-119</i> | <i>0</i>              |      |   |      |
| <i>Surr: Nitrobenzene-d5</i>      | <i>389.5</i> | <i>0</i> | <i>500</i> | <i>0</i>                         | <i>77.9</i> | <i>41-104</i> | <i>0</i>              |      |   |      |
| <i>Surr: Phenol-d6</i>            | <i>129.5</i> | <i>0</i> | <i>500</i> | <i>0</i>                         | <i>25.9</i> | <i>11-50</i>  | <i>0</i>              |      |   |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

# QC BATCH REPORT

Batch ID: **38099**      Instrument ID **SVMS7**      Method: **SW8270**

| MSD                        |        |     |                       | Sample ID: 1112358-04C MSD |      |                | Units: µg/L   |                       | Analysis Date: 12/16/2011 06:13 PM |       |  |
|----------------------------|--------|-----|-----------------------|----------------------------|------|----------------|---------------|-----------------------|------------------------------------|-------|--|
| Client ID:                 |        |     | Run ID: SVMS7_111216A |                            |      | SeqNo: 1854950 |               | Prep Date: 12/12/2011 |                                    | DF: 1 |  |
| Analyte                    | Result | PQL | SPK Val               | SPK Ref Value              | %REC | Control Limit  | RPD Ref Value | %RPD                  | RPD Limit                          | Qual  |  |
| Acenaphthene               | 319.4  | 50  | 400                   | 0                          | 79.8 | 45-110         | 314.3         | 1.61                  | 30                                 |       |  |
| Acenaphthylene             | 342.9  | 50  | 400                   | 0                          | 85.7 | 50-105         | 342.1         | 0.234                 | 30                                 |       |  |
| Anthracene                 | 368.1  | 50  | 400                   | 0                          | 92   | 55-110         | 360.4         | 2.11                  | 30                                 |       |  |
| Benzo(a)anthracene         | 361.5  | 50  | 400                   | 0                          | 90.4 | 55-110         | 349           | 3.52                  | 30                                 |       |  |
| Benzo(a)pyrene             | 386.3  | 50  | 400                   | 0                          | 96.6 | 55-110         | 376.4         | 2.6                   | 30                                 |       |  |
| Benzo(b)fluoranthene       | 360.8  | 50  | 400                   | 0                          | 90.2 | 45-120         | 358           | 0.779                 | 30                                 |       |  |
| Benzo(g,h,i)perylene       | 385.4  | 50  | 400                   | 0                          | 96.4 | 40-125         | 375.4         | 2.63                  | 30                                 |       |  |
| Benzo(k)fluoranthene       | 362.1  | 50  | 400                   | 0                          | 90.5 | 45-125         | 344           | 5.13                  | 30                                 |       |  |
| Chrysene                   | 362.5  | 50  | 400                   | 0                          | 90.6 | 55-110         | 348.6         | 3.91                  | 30                                 |       |  |
| Dibenzo(a,h)anthracene     | 418.7  | 50  | 400                   | 0                          | 105  | 40-125         | 405.8         | 3.13                  | 30                                 |       |  |
| Fluoranthene               | 353.5  | 50  | 400                   | 0                          | 88.4 | 55-115         | 352.1         | 0.397                 | 30                                 |       |  |
| Fluorene                   | 349.6  | 50  | 400                   | 0                          | 87.4 | 50-110         | 344.3         | 1.53                  | 30                                 |       |  |
| Indeno(1,2,3-cd)pyrene     | 403.1  | 50  | 400                   | 0                          | 101  | 45-125         | 391.6         | 2.89                  | 30                                 |       |  |
| Naphthalene                | 315.2  | 50  | 400                   | 0                          | 78.8 | 40-100         | 307.4         | 2.51                  | 30                                 |       |  |
| Phenanthrene               | 359.6  | 50  | 400                   | 0                          | 89.9 | 50-115         | 350.5         | 2.56                  | 30                                 |       |  |
| Pyrene                     | 376.9  | 50  | 400                   | 0                          | 94.2 | 50-130         | 353.2         | 6.49                  | 30                                 |       |  |
| Surr: 2,4,6-Tribromophenol | 451.4  | 0   | 500                   | 0                          | 90.3 | 21-125         | 434.1         | 3.91                  | 40                                 |       |  |
| Surr: 2-Fluorobiphenyl     | 387.4  | 0   | 500                   | 0                          | 77.5 | 36-94          | 378.2         | 2.4                   | 40                                 |       |  |
| Surr: 2-Fluorophenol       | 200.5  | 0   | 500                   | 0                          | 40.1 | 10-75          | 193.4         | 3.6                   | 40                                 |       |  |
| Surr: 4-Terphenyl-d14      | 437.2  | 0   | 500                   | 0                          | 87.4 | 26-119         | 367.7         | 17.3                  | 40                                 |       |  |
| Surr: Nitrobenzene-d5      | 404.5  | 0   | 500                   | 0                          | 80.9 | 41-104         | 389.5         | 3.78                  | 40                                 |       |  |
| Surr: Phenol-d6            | 139.6  | 0   | 500                   | 0                          | 27.9 | 11-50          | 129.5         | 7.51                  | 40                                 |       |  |

The following samples were analyzed in this batch:

1112376-09B

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **38137**      Instrument ID **SVMS7**      Method: **SW8270**

| <b>MBLK</b>                       |        | Sample ID: <b>SBLKS1-38137-38137</b> |         |               |      | Units: <b>µg/Kg</b>   |               | Analysis Date: <b>12/14/2011 09:15 AM</b> |           |              |
|-----------------------------------|--------|--------------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                        |        | Run ID: <b>SVMS7_111214A</b>         |         |               |      | SeqNo: <b>1851481</b> |               | Prep Date: <b>12/13/2011</b>              |           | DF: <b>1</b> |
| Analyte                           | Result | PQL                                  | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Acenaphthene                      | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| Anthracene                        | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| Benzo(a)anthracene                | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| Benzo(a)pyrene                    | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| Benzo(b)fluoranthene              | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| Benzo(g,h,i)perylene              | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| Benzo(k)fluoranthene              | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| Chrysene                          | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| Dibenzo(a,h)anthracene            | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| Fluoranthene                      | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| Fluorene                          | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| Indeno(1,2,3-cd)pyrene            | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| Naphthalene                       | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| Pyrene                            | ND     | 30                                   |         |               |      |                       |               |   |           |              |
| <i>Surr: 2,4,6-Tribromophenol</i> | 687    | 0                                    | 1667    | 0             | 41.2 | 34-140                | 0             |   |           |              |
| <i>Surr: 2-Fluorobiphenyl</i>     | 749.7  | 0                                    | 1667    | 0             | 45   | 12-100                | 0             |   |           |              |
| <i>Surr: 2-Fluorophenol</i>       | 815.7  | 0                                    | 1667    | 0             | 48.9 | 33-117                | 0             |   |           |              |
| <i>Surr: 4-Terphenyl-d14</i>      | 932    | 0                                    | 1667    | 0             | 55.9 | 25-137                | 0             |   |           |              |
| <i>Surr: Nitrobenzene-d5</i>      | 772.3  | 0                                    | 1667    | 0             | 46.3 | 37-107                | 0             |   |           |              |
| <i>Surr: Phenol-d6</i>            | 825    | 0                                    | 1667    | 0             | 49.5 | 40-106                | 0             |   |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **38137**      Instrument ID **SVMS7**      Method: **SW8270**

| <b>LCS</b>                 |        | Sample ID: <b>SLCSS1-38137-38137</b> |         |               |      | Units: <b>µg/Kg</b>   |               | Analysis Date: <b>12/14/2011 09:44 AM</b> |           |              |
|----------------------------|--------|--------------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                 |        | Run ID: <b>SVMS7_111214A</b>         |         |               |      | SeqNo: <b>1851482</b> |               | Prep Date: <b>12/13/2011</b>              |           | DF: <b>1</b> |
| Analyte                    | Result | PQL                                  | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Acenaphthene               | 871.7  | 30                                   | 1333    | 0             | 65.4 | 45-110                | 0             |   |           |              |
| Anthracene                 | 984.7  | 30                                   | 1333    | 0             | 73.9 | 55-105                | 0             |   |           |              |
| Benzo(a)anthracene         | 973    | 30                                   | 1333    | 0             | 73   | 50-110                | 0             |   |           |              |
| Benzo(a)pyrene             | 991.7  | 30                                   | 1333    | 0             | 74.4 | 50-110                | 0             |   |           |              |
| Benzo(b)fluoranthene       | 956.7  | 30                                   | 1333    | 0             | 71.8 | 45-115                | 0             |   |           |              |
| Benzo(g,h,i)perylene       | 990    | 30                                   | 1333    | 0             | 74.3 | 40-125                | 0             |   |           |              |
| Benzo(k)fluoranthene       | 984.3  | 30                                   | 1333    | 0             | 73.8 | 45-115                | 0             |   |           |              |
| Chrysene                   | 949.7  | 30                                   | 1333    | 0             | 71.2 | 55-110                | 0             |   |           |              |
| Dibenzo(a,h)anthracene     | 1011   | 30                                   | 1333    | 0             | 75.8 | 40-125                | 0             |   |           |              |
| Fluoranthene               | 1069   | 30                                   | 1333    | 0             | 80.2 | 55-115                | 0             |   |           |              |
| Fluorene                   | 979.7  | 30                                   | 1333    | 0             | 73.5 | 50-110                | 0             |   |           |              |
| Indeno(1,2,3-cd)pyrene     | 1006   | 30                                   | 1333    | 0             | 75.5 | 40-120                | 0             |   |           |              |
| Naphthalene                | 763.7  | 30                                   | 1333    | 0             | 57.3 | 40-105                | 0             |   |           |              |
| Pyrene                     | 968.3  | 30                                   | 1333    | 0             | 72.6 | 45-125                | 0             |   |           |              |
| Surr: 2,4,6-Tribromophenol | 1102   | 0                                    | 1667    | 0             | 66.1 | 34-140                | 0             |   |           |              |
| Surr: 2-Fluorobiphenyl     | 938.3  | 0                                    | 1667    | 0             | 56.3 | 12-100                | 0             |   |           |              |
| Surr: 2-Fluorophenol       | 878.3  | 0                                    | 1667    | 0             | 52.7 | 33-117                | 0             |   |           |              |
| Surr: 4-Terphenyl-d14      | 1207   | 0                                    | 1667    | 0             | 72.4 | 25-137                | 0             |   |           |              |
| Surr: Nitrobenzene-d5      | 903.3  | 0                                    | 1667    | 0             | 54.2 | 37-107                | 0             |   |           |              |
| Surr: Phenol-d6            | 896    | 0                                    | 1667    | 0             | 53.8 | 40-106                | 0             |   |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **38137**      Instrument ID **SVMS7**      Method: **SW8270**

| <b>LCSD</b>                |        | Sample ID: <b>SLCSDS1-38137-38137</b> |         |               |      | Units: <b>µg/Kg</b>   |               | Analysis Date: <b>12/14/2011 10:13 AM</b> |           |              |
|----------------------------|--------|---------------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                 |        | Run ID: <b>SVMS7_111214A</b>          |         |               |      | SeqNo: <b>1851483</b> |               | Prep Date: <b>12/13/2011</b>              |           | DF: <b>1</b> |
| Analyte                    | Result | PQL                                   | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Acenaphthene               | 772    | 30                                    | 1333    | 0             | 57.9 | 45-110                | 871.7         | 12.1                                      | 25        |              |
| Anthracene                 | 903.7  | 30                                    | 1333    | 0             | 67.8 | 55-105                | 984.7         | 8.58                                      | 25        |              |
| Benzo(a)anthracene         | 881    | 30                                    | 1333    | 0             | 66.1 | 50-110                | 973           | 9.92                                      | 25        |              |
| Benzo(a)pyrene             | 906.7  | 30                                    | 1333    | 0             | 68   | 50-110                | 991.7         | 8.96                                      | 25        |              |
| Benzo(b)fluoranthene       | 900.7  | 30                                    | 1333    | 0             | 67.6 | 45-115                | 956.7         | 6.03                                      | 25        |              |
| Benzo(g,h,i)perylene       | 943    | 30                                    | 1333    | 0             | 70.7 | 40-125                | 990           | 4.86                                      | 25        |              |
| Benzo(k)fluoranthene       | 868.3  | 30                                    | 1333    | 0             | 65.1 | 45-115                | 984.3         | 12.5                                      | 25        |              |
| Chrysene                   | 883    | 30                                    | 1333    | 0             | 66.2 | 55-110                | 949.7         | 7.28                                      | 25        |              |
| Dibenzo(a,h)anthracene     | 947.7  | 30                                    | 1333    | 0             | 71.1 | 40-125                | 1011          | 6.47                                      | 25        |              |
| Fluoranthene               | 989    | 30                                    | 1333    | 0             | 74.2 | 55-115                | 1069          | 7.77                                      | 25        |              |
| Fluorene                   | 866.3  | 30                                    | 1333    | 0             | 65   | 50-110                | 979.7         | 12.3                                      | 25        |              |
| Indeno(1,2,3-cd)pyrene     | 943    | 30                                    | 1333    | 0             | 70.7 | 40-120                | 1006          | 6.46                                      | 25        |              |
| Naphthalene                | 734.3  | 30                                    | 1333    | 0             | 55.1 | 40-105                | 763.7         | 3.92                                      | 25        |              |
| Pyrene                     | 890.7  | 30                                    | 1333    | 0             | 66.8 | 45-125                | 968.3         | 8.36                                      | 25        |              |
| Surr: 2,4,6-Tribromophenol | 992    | 0                                     | 1667    | 0             | 59.5 | 34-140                | 1102          | 10.5                                      | 40        |              |
| Surr: 2-Fluorobiphenyl     | 870    | 0                                     | 1667    | 0             | 52.2 | 12-100                | 938.3         | 7.56                                      | 40        |              |
| Surr: 2-Fluorophenol       | 854.3  | 0                                     | 1667    | 0             | 51.3 | 33-117                | 878.3         | 2.77                                      | 40        |              |
| Surr: 4-Terphenyl-d14      | 1095   | 0                                     | 1667    | 0             | 65.7 | 25-137                | 1207          | 9.7                                       | 40        |              |
| Surr: Nitrobenzene-d5      | 858.7  | 0                                     | 1667    | 0             | 51.5 | 37-107                | 903.3         | 5.07                                      | 40        |              |
| Surr: Phenol-d6            | 863.7  | 0                                     | 1667    | 0             | 51.8 | 40-106                | 896           | 3.67                                      | 40        |              |

The following samples were analyzed in this batch:

|             |             |             |
|-------------|-------------|-------------|
| 1112376-04B | 1112376-05B | 1112376-06B |
| 1112376-07B | 1112376-08B |             |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions  
 Work Order: 1112376  
 Project: Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **R99089** Instrument ID **VMS6** Method: **SW8260**

| <b>MBLK</b>                 |        | Sample ID: <b>VBLKW2-111215-R99089</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>12/16/2011 12:33 PM</b> |           |              |
|-----------------------------|--------|--|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                  |        | Run ID: <b>VMS6_111215B</b>            |         |               |      | SeqNo: <b>1854315</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                     | Result | PQL                                    | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Benzene                     | ND     | 1.0                                    |         |               |      |                       |               |   |           |              |
| Ethylbenzene                | ND     | 1.0                                    |         |               |      |                       |               |   |           |              |
| m,p-Xylene                  | ND     | 2.0                                    |         |               |      |                       |               |   |           |              |
| o-Xylene                    | ND     | 1.0                                    |         |               |      |                       |               |   |           |              |
| Toluene                     | ND     | 1.0                                    |         |               |      |                       |               |   |           |              |
| Xylenes, Total              | ND     | 3.0                                    |         |               |      |                       |               |   |           |              |
| Surr: 1,2-Dichloroethane-d4 | 101.5  | 0                                      | 100     | 0             | 102  | 70-120                | 0             |   |           |              |
| Surr: 4-Bromofluorobenzene  | 96.75  | 0                                      | 100     | 0             | 96.8 | 75-120                | 0             |   |           |              |
| Surr: Dibromofluoromethane  | 101.5  | 0                                      | 100     | 0             | 102  | 85-115                | 0             |   |           |              |
| Surr: Toluene-d8            | 99.59  | 0                                      | 100     | 0             | 99.6 | 85-120                | 0             |   |           |              |

| <b>LCS</b>                  |        | Sample ID: <b>VLCSW2-111215-R99089</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>12/15/2011 11:19 PM</b> |           |              |
|-----------------------------|--------|--|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                  |        | Run ID: <b>VMS6_111215B</b>            |         |               |      | SeqNo: <b>1854313</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                     | Result | PQL                                    | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Benzene                     | 21.49  | 1.0                                    | 20      | 0             | 107  | 80-120                | 0             |   |           |              |
| Ethylbenzene                | 22.47  | 1.0                                    | 20      | 0             | 112  | 75-125                | 0             |   |           |              |
| m,p-Xylene                  | 44.61  | 2.0                                    | 40      | 0             | 112  | 75-130                | 0             |   |           |              |
| o-Xylene                    | 22.09  | 1.0                                    | 20      | 0             | 110  | 80-120                | 0             |   |           |              |
| Toluene                     | 23.02  | 1.0                                    | 20      | 0             | 115  | 75-120                | 0             |   |           |              |
| Xylenes, Total              | 66.7   | 3.0                                    | 60      | 0             | 111  | 75-130                | 0             |   |           |              |
| Surr: 1,2-Dichloroethane-d4 | 101.3  | 0                                      | 100     | 0             | 101  | 70-120                | 0             |   |           |              |
| Surr: 4-Bromofluorobenzene  | 98.27  | 0                                      | 100     | 0             | 98.3 | 75-120                | 0             |   |           |              |
| Surr: Dibromofluoromethane  | 102.2  | 0                                      | 100     | 0             | 102  | 85-115                | 0             |   |           |              |
| Surr: Toluene-d8            | 99.73  | 0                                      | 100     | 0             | 99.7 | 85-120                | 0             |   |           |              |

| <b>LCSD</b>                 |        | Sample ID: <b>VLCSDW2-111215-R99089</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>12/15/2011 11:44 PM</b> |           |              |
|-----------------------------|--------|---|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                  |        | Run ID: <b>VMS6_111215B</b>             |         |               |      | SeqNo: <b>1854314</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                     | Result | PQL                                     | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Benzene                     | 20.26  | 1.0                                     | 20      | 0             | 101  | 80-120                | 21.49         | 5.89                                      | 30        |              |
| Ethylbenzene                | 20.62  | 1.0                                     | 20      | 0             | 103  | 75-125                | 22.47         | 8.59                                      | 30        |              |
| m,p-Xylene                  | 41.08  | 2.0                                     | 40      | 0             | 103  | 75-130                | 44.61         | 8.24                                      | 30        |              |
| o-Xylene                    | 20.68  | 1.0                                     | 20      | 0             | 103  | 80-120                | 22.09         | 6.59                                      | 30        |              |
| Toluene                     | 21.4   | 1.0                                     | 20      | 0             | 107  | 75-120                | 23.02         | 7.29                                      | 30        |              |
| Xylenes, Total              | 61.76  | 3.0                                     | 60      | 0             | 103  | 75-130                | 66.7          | 7.69                                      | 30        |              |
| Surr: 1,2-Dichloroethane-d4 | 99.5   | 0                                       | 100     | 0             | 99.5 | 70-120                | 101.3         | 1.78                                      | 30        |              |
| Surr: 4-Bromofluorobenzene  | 96.93  | 0                                       | 100     | 0             | 96.9 | 75-120                | 98.27         | 1.37                                      | 30        |              |
| Surr: Dibromofluoromethane  | 100.6  | 0                                       | 100     | 0             | 101  | 85-115                | 102.2         | 1.55                                      | 30        |              |
| Surr: Toluene-d8            | 99.2   | 0                                       | 100     | 0             | 99.2 | 85-120                | 99.73         | 0.533                                     | 30        |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions  
 Work Order: 1112376  
 Project: Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **R99089** Instrument ID **VMS6** Method: **SW8260**

| MS Sample ID: 1112293-12A MS |        |                      |         | Units: µg/L    |      | Analysis Date: 12/16/2011 09:02 AM |               |       |           |      |
|------------------------------|--------|----------------------|---------|----------------|------|------------------------------------|---------------|-------|-----------|------|
| Client ID:                   |        | Run ID: VMS6_111215B |         | SeqNo: 1854367 |      | Prep Date:                         |               | DF: 1 |           |      |
| Analyte                      | Result | PQL                  | SPK Val | SPK Ref Value  | %REC | Control Limit                      | RPD Ref Value | %RPD  | RPD Limit | Qual |
| Benzene                      | 17.97  | 1.0                  | 20      | 0              | 89.8 | 80-120                             | 0             |       |           |      |
| Ethylbenzene                 | 18.39  | 1.0                  | 20      | 0              | 92   | 75-125                             | 0             |       |           |      |
| m,p-Xylene                   | 36.39  | 2.0                  | 40      | 0              | 91   | 75-130                             | 0             |       |           |      |
| o-Xylene                     | 18.12  | 1.0                  | 20      | 0              | 90.6 | 80-120                             | 0             |       |           |      |
| Toluene                      | 19.06  | 1.0                  | 20      | 0              | 95.3 | 75-120                             | 0             |       |           |      |
| Xylenes, Total               | 54.51  | 3.0                  | 60      | 0              | 90.8 | 75-130                             | 0             |       |           |      |
| Surr: 1,2-Dichloroethane-d4  | 99.21  | 0                    | 100     | 0              | 99.2 | 70-120                             | 0             |       |           |      |
| Surr: 4-Bromofluorobenzene   | 98.11  | 0                    | 100     | 0              | 98.1 | 75-120                             | 0             |       |           |      |
| Surr: Dibromofluoromethane   | 100.9  | 0                    | 100     | 0              | 101  | 85-115                             | 0             |       |           |      |
| Surr: Toluene-d8             | 98.01  | 0                    | 100     | 0              | 98   | 85-120                             | 0             |       |           |      |

| MSD Sample ID: 1112293-12A MSD |        |                      |         | Units: µg/L    |      | Analysis Date: 12/16/2011 09:27 AM |               |        |           |      |
|--------------------------------|--------|----------------------|---------|----------------|------|------------------------------------|---------------|--------|-----------|------|
| Client ID:                     |        | Run ID: VMS6_111215B |         | SeqNo: 1854368 |      | Prep Date:                         |               | DF: 1  |           |      |
| Analyte                        | Result | PQL                  | SPK Val | SPK Ref Value  | %REC | Control Limit                      | RPD Ref Value | %RPD   | RPD Limit | Qual |
| Benzene                        | 18.64  | 1.0                  | 20      | 0              | 93.2 | 80-120                             | 17.97         | 3.66   | 30        |      |
| Ethylbenzene                   | 18.6   | 1.0                  | 20      | 0              | 93   | 75-125                             | 18.39         | 1.14   | 30        |      |
| m,p-Xylene                     | 36.45  | 2.0                  | 40      | 0              | 91.1 | 75-130                             | 36.39         | 0.165  | 30        |      |
| o-Xylene                       | 20.34  | 1.0                  | 20      | 0              | 102  | 80-120                             | 18.12         | 11.5   | 30        |      |
| Toluene                        | 19.33  | 1.0                  | 20      | 0              | 96.6 | 75-120                             | 19.06         | 1.41   | 30        |      |
| Xylenes, Total                 | 56.79  | 3.0                  | 60      | 0              | 94.6 | 75-130                             | 54.51         | 4.1    | 30        |      |
| Surr: 1,2-Dichloroethane-d4    | 98.97  | 0                    | 100     | 0              | 99   | 70-120                             | 99.21         | 0.242  | 30        |      |
| Surr: 4-Bromofluorobenzene     | 108.4  | 0                    | 100     | 0              | 108  | 75-120                             | 98.11         | 9.97   | 30        |      |
| Surr: Dibromofluoromethane     | 101    | 0                    | 100     | 0              | 101  | 85-115                             | 100.9         | 0.0694 | 30        |      |
| Surr: Toluene-d8               | 97.02  | 0                    | 100     | 0              | 97   | 85-120                             | 98.01         | 1.02   | 30        |      |

The following samples were analyzed in this batch:

1112376-06A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions  
 Work Order: 1112376  
 Project: Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **R99147** Instrument ID **VMS5** Method: **SW8260**

| MBLK Sample ID: <b>VBLKW2-111216-R99147</b> |        |                             |         | Units: <b>µg/L</b>    |      |               | Analysis Date: <b>12/17/2011 04:15 AM</b> |              |           |      |
|---|--------|-----------------------------|---------|-----------------------|------|---------------|---|--------------|-----------|------|
| Client ID:                                  |        | Run ID: <b>VMS5_111216B</b> |         | SeqNo: <b>1854808</b> |      | Prep Date:    |   | DF: <b>1</b> |           |      |
| Analyte                                     | Result | PQL                         | SPK Val | SPK Ref Value         | %REC | Control Limit | RPD Ref Value                             | %RPD         | RPD Limit | Qual |
| Benzene                                     | ND     | 1.0                         |         |                       |      |               |   |              |           |      |
| Ethylbenzene                                | ND     | 1.0                         |         |                       |      |               |   |              |           |      |
| m,p-Xylene                                  | ND     | 2.0                         |         |                       |      |               |   |              |           |      |
| o-Xylene                                    | ND     | 1.0                         |         |                       |      |               |   |              |           |      |
| Toluene                                     | ND     | 1.0                         |         |                       |      |               |   |              |           |      |
| Xylenes, Total                              | ND     | 3.0                         |         |                       |      |               |   |              |           |      |
| Surr: 1,2-Dichloroethane-d4                 | 105.1  | 0                           | 100     | 0                     | 105  | 70-120        | 0   |              |           |      |
| Surr: 4-Bromofluorobenzene                  | 94.19  | 0                           | 100     | 0                     | 94.2 | 75-120        | 0   |              |           |      |
| Surr: Dibromofluoromethane                  | 98.6   | 0                           | 100     | 0                     | 98.6 | 85-115        | 0   |              |           |      |
| Surr: Toluene-d8                            | 98.62  | 0                           | 100     | 0                     | 98.6 | 85-120        | 0   |              |           |      |

| LCS Sample ID: <b>VLCSW2-111216-R99147</b> |        |                             |         | Units: <b>µg/L</b>    |      |               | Analysis Date: <b>12/17/2011 02:57 AM</b> |              |           |      |
|--|--------|-----------------------------|---------|-----------------------|------|---------------|---|--------------|-----------|------|
| Client ID:                                 |        | Run ID: <b>VMS5_111216B</b> |         | SeqNo: <b>1854806</b> |      | Prep Date:    |   | DF: <b>1</b> |           |      |
| Analyte                                    | Result | PQL                         | SPK Val | SPK Ref Value         | %REC | Control Limit | RPD Ref Value                             | %RPD         | RPD Limit | Qual |
| Benzene                                    | 20.12  | 1.0                         | 20      | 0                     | 101  | 80-120        | 0   |              |           |      |
| Ethylbenzene                               | 21.27  | 1.0                         | 20      | 0                     | 106  | 75-125        | 0   |              |           |      |
| m,p-Xylene                                 | 39.37  | 2.0                         | 40      | 0                     | 98.4 | 75-130        | 0   |              |           |      |
| o-Xylene                                   | 19.63  | 1.0                         | 20      | 0                     | 98.2 | 80-120        | 0   |              |           |      |
| Toluene                                    | 19.73  | 1.0                         | 20      | 0                     | 98.6 | 75-120        | 0   |              |           |      |
| Xylenes, Total                             | 59     | 3.0                         | 60      | 0                     | 98.3 | 75-130        | 0   |              |           |      |
| Surr: 1,2-Dichloroethane-d4                | 103.7  | 0                           | 100     | 0                     | 104  | 70-120        | 0   |              |           |      |
| Surr: 4-Bromofluorobenzene                 | 96.64  | 0                           | 100     | 0                     | 96.6 | 75-120        | 0   |              |           |      |
| Surr: Dibromofluoromethane                 | 101.7  | 0                           | 100     | 0                     | 102  | 85-115        | 0   |              |           |      |
| Surr: Toluene-d8                           | 98.51  | 0                           | 100     | 0                     | 98.5 | 85-120        | 0   |              |           |      |

| LCSD Sample ID: <b>VLCSDW2-111216-R99147</b> |        |                             |         | Units: <b>µg/L</b>    |      |               | Analysis Date: <b>12/17/2011 03:22 AM</b> |              |           |      |
|--|--------|-----------------------------|---------|-----------------------|------|---------------|---|--------------|-----------|------|
| Client ID:                                   |        | Run ID: <b>VMS5_111216B</b> |         | SeqNo: <b>1854807</b> |      | Prep Date:    |   | DF: <b>1</b> |           |      |
| Analyte                                      | Result | PQL                         | SPK Val | SPK Ref Value         | %REC | Control Limit | RPD Ref Value                             | %RPD         | RPD Limit | Qual |
| Benzene                                      | 20.6   | 1.0                         | 20      | 0                     | 103  | 80-120        | 20.12                                     | 2.36         | 30        |      |
| Ethylbenzene                                 | 21.54  | 1.0                         | 20      | 0                     | 108  | 75-125        | 21.27                                     | 1.26         | 30        |      |
| m,p-Xylene                                   | 39.64  | 2.0                         | 40      | 0                     | 99.1 | 75-130        | 39.37                                     | 0.683        | 30        |      |
| o-Xylene                                     | 19.96  | 1.0                         | 20      | 0                     | 99.8 | 80-120        | 19.63                                     | 1.67         | 30        |      |
| Toluene                                      | 19.89  | 1.0                         | 20      | 0                     | 99.4 | 75-120        | 19.73                                     | 0.808        | 30        |      |
| Xylenes, Total                               | 59.6   | 3.0                         | 60      | 0                     | 99.3 | 75-130        | 59  | 1.01         | 30        |      |
| Surr: 1,2-Dichloroethane-d4                  | 105.7  | 0                           | 100     | 0                     | 106  | 70-120        | 103.7                                     | 1.87         | 30        |      |
| Surr: 4-Bromofluorobenzene                   | 97.64  | 0                           | 100     | 0                     | 97.6 | 75-120        | 96.64                                     | 1.03         | 30        |      |
| Surr: Dibromofluoromethane                   | 102    | 0                           | 100     | 0                     | 102  | 85-115        | 101.7                                     | 0.344        | 30        |      |
| Surr: Toluene-d8                             | 98.8   | 0                           | 100     | 0                     | 98.8 | 85-120        | 98.51                                     | 0.294        | 30        |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



Client: HRL Compliance Solutions  
 Work Order: 1112376  
 Project: Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **R99147** Instrument ID **VMS5** Method: **SW8260**

| MS                          |        |     |         | Sample ID: 1112293-09A MS |      |               | Units: µg/L    |      | Analysis Date: 12/17/2011 01:23 PM |      |
|-----------------------------|--------|-----|---------|---------------------------|------|---------------|----------------|------|------------------------------------|------|
| Client ID:                  |        |     |         | Run ID: VMS5_111216B      |      |               | SeqNo: 1855067 |      | Prep Date:                         |      |
|                             |        |     |         |                           |      |               |                |      | DF: 5                              |      |
| Analyte                     | Result | PQL | SPK Val | SPK Ref Value             | %REC | Control Limit | RPD Ref Value  | %RPD | RPD Limit                          | Qual |
| Benzene                     | 163.7  | 5.0 | 100     | 66.9                      | 96.8 | 80-120        | 0              |      |                                    |      |
| Ethylbenzene                | 175.8  | 5.0 | 100     | 68.3                      | 108  | 75-125        | 0              |      |                                    |      |
| m,p-Xylene                  | 232    | 10  | 200     | 26.15                     | 103  | 75-130        | 0              |      |                                    |      |
| o-Xylene                    | 120.1  | 5.0 | 100     | 14.45                     | 106  | 80-120        | 0              |      |                                    |      |
| Toluene                     | 120    | 5.0 | 100     | 19.05                     | 101  | 75-120        | 0              |      |                                    |      |
| Xylenes, Total              | 352.1  | 15  | 300     | 40.6                      | 104  | 75-130        | 0              |      |                                    |      |
| Surr: 1,2-Dichloroethane-d4 | 533    | 0   | 500     | 0                         | 107  | 70-120        | 0              |      |                                    |      |
| Surr: 4-Bromofluorobenzene  | 515.6  | 0   | 500     | 0                         | 103  | 75-120        | 0              |      |                                    |      |
| Surr: Dibromofluoromethane  | 497    | 0   | 500     | 0                         | 99.4 | 85-115        | 0              |      |                                    |      |
| Surr: Toluene-d8            | 502.8  | 0   | 500     | 0                         | 101  | 85-120        | 0              |      |                                    |      |

| MSD                         |        |     |         | Sample ID: 1112293-09A MSD |      |               | Units: µg/L    |      | Analysis Date: 12/17/2011 01:49 PM |      |
|-----------------------------|--------|-----|---------|----------------------------|------|---------------|----------------|------|------------------------------------|------|
| Client ID:                  |        |     |         | Run ID: VMS5_111216B       |      |               | SeqNo: 1855068 |      | Prep Date:                         |      |
|                             |        |     |         |                            |      |               |                |      | DF: 5                              |      |
| Analyte                     | Result | PQL | SPK Val | SPK Ref Value              | %REC | Control Limit | RPD Ref Value  | %RPD | RPD Limit                          | Qual |
| Benzene                     | 153    | 5.0 | 100     | 66.9                       | 86   | 80-120        | 163.7          | 6.79 | 30                                 |      |
| Ethylbenzene                | 159.8  | 5.0 | 100     | 68.3                       | 91.5 | 75-125        | 175.8          | 9.54 | 30                                 |      |
| m,p-Xylene                  | 213.2  | 10  | 200     | 26.15                      | 93.5 | 75-130        | 232            | 8.47 | 30                                 |      |
| o-Xylene                    | 109.3  | 5.0 | 100     | 14.45                      | 94.8 | 80-120        | 120.1          | 9.42 | 30                                 |      |
| Toluene                     | 110.6  | 5.0 | 100     | 19.05                      | 91.5 | 75-120        | 120            | 8.16 | 30                                 |      |
| Xylenes, Total              | 322.4  | 15  | 300     | 40.6                       | 94   | 75-130        | 352.1          | 8.79 | 30                                 |      |
| Surr: 1,2-Dichloroethane-d4 | 539.9  | 0   | 500     | 0                          | 108  | 70-120        | 533            | 1.3  | 30                                 |      |
| Surr: 4-Bromofluorobenzene  | 504.2  | 0   | 500     | 0                          | 101  | 75-120        | 515.6          | 2.23 | 30                                 |      |
| Surr: Dibromofluoromethane  | 508.6  | 0   | 500     | 0                          | 102  | 85-115        | 497            | 2.31 | 30                                 |      |
| Surr: Toluene-d8            | 497.7  | 0   | 500     | 0                          | 99.5 | 85-120        | 502.8          | 1.02 | 30                                 |      |

The following samples were analyzed in this batch:

1112376-07A 1112376-08A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions  
 Work Order: 1112376  
 Project: Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **R99164A** Instrument ID **VMS5** Method: **SW8260**

| MBLK Sample ID: <b>VBLKW1-111218-R99164A</b> |        |                             |         | Units: <b>µg/L</b>    |      |               | Analysis Date: <b>12/18/2011 02:51 PM</b> |              |           |      |
|--|--------|-----------------------------|---------|-----------------------|------|---------------|---|--------------|-----------|------|
| Client ID:                                   |        | Run ID: <b>VMS5_111218A</b> |         | SeqNo: <b>1856003</b> |      | Prep Date:    |   | DF: <b>1</b> |           |      |
| Analyte                                      | Result | PQL                         | SPK Val | SPK Ref Value         | %REC | Control Limit | RPD Ref Value                             | %RPD         | RPD Limit | Qual |
| Benzene                                      | ND     | 1.0                         |         |                       |      |               |   |              |           |      |
| Ethylbenzene                                 | ND     | 1.0                         |         |                       |      |               |   |              |           |      |
| m,p-Xylene                                   | ND     | 2.0                         |         |                       |      |               |   |              |           |      |
| o-Xylene                                     | ND     | 1.0                         |         |                       |      |               |   |              |           |      |
| Toluene                                      | ND     | 1.0                         |         |                       |      |               |   |              |           |      |
| Xylenes, Total                               | ND     | 3.0                         |         |                       |      |               |   |              |           |      |
| Surr: 1,2-Dichloroethane-d4                  | 115.1  | 0                           | 100     | 0                     | 115  | 70-120        | 0   |              |           |      |
| Surr: 4-Bromofluorobenzene                   | 95.58  | 0                           | 100     | 0                     | 95.6 | 75-120        | 0   |              |           |      |
| Surr: Dibromofluoromethane                   | 99.51  | 0                           | 100     | 0                     | 99.5 | 85-115        | 0   |              |           |      |
| Surr: Toluene-d8                             | 101.1  | 0                           | 100     | 0                     | 101  | 85-120        | 0   |              |           |      |

| LCS Sample ID: <b>VLCSW1-111218-R99164A</b> |        |                             |         | Units: <b>µg/L</b>    |      |               | Analysis Date: <b>12/18/2011 01:33 PM</b> |              |           |      |
|---|--------|-----------------------------|---------|-----------------------|------|---------------|---|--------------|-----------|------|
| Client ID:                                  |        | Run ID: <b>VMS5_111218A</b> |         | SeqNo: <b>1855584</b> |      | Prep Date:    |   | DF: <b>1</b> |           |      |
| Analyte                                     | Result | PQL                         | SPK Val | SPK Ref Value         | %REC | Control Limit | RPD Ref Value                             | %RPD         | RPD Limit | Qual |
| Benzene                                     | 21.82  | 1.0                         | 20      | 0                     | 109  | 80-120        | 0   |              |           |      |
| Ethylbenzene                                | 23.53  | 1.0                         | 20      | 0                     | 118  | 75-125        | 0   |              |           |      |
| m,p-Xylene                                  | 43.31  | 2.0                         | 40      | 0                     | 108  | 75-130        | 0   |              |           |      |
| o-Xylene                                    | 21.44  | 1.0                         | 20      | 0                     | 107  | 80-120        | 0   |              |           |      |
| Toluene                                     | 21.45  | 1.0                         | 20      | 0                     | 107  | 75-120        | 0   |              |           |      |
| Xylenes, Total                              | 64.75  | 3.0                         | 60      | 0                     | 108  | 75-130        | 0   |              |           |      |
| Surr: 1,2-Dichloroethane-d4                 | 111.6  | 0                           | 100     | 0                     | 112  | 70-120        | 0   |              |           |      |
| Surr: 4-Bromofluorobenzene                  | 99.33  | 0                           | 100     | 0                     | 99.3 | 75-120        | 0   |              |           |      |
| Surr: Dibromofluoromethane                  | 104.1  | 0                           | 100     | 0                     | 104  | 85-115        | 0   |              |           |      |
| Surr: Toluene-d8                            | 99.64  | 0                           | 100     | 0                     | 99.6 | 85-120        | 0   |              |           |      |

| LCSD Sample ID: <b>VLCSDW1-111218-R99164A</b> |        |                             |         | Units: <b>µg/L</b>    |      |               | Analysis Date: <b>12/18/2011 01:59 PM</b> |              |           |      |
|---|--------|-----------------------------|---------|-----------------------|------|---------------|---|--------------|-----------|------|
| Client ID:                                    |        | Run ID: <b>VMS5_111218A</b> |         | SeqNo: <b>1855585</b> |      | Prep Date:    |   | DF: <b>1</b> |           |      |
| Analyte                                       | Result | PQL                         | SPK Val | SPK Ref Value         | %REC | Control Limit | RPD Ref Value                             | %RPD         | RPD Limit | Qual |
| Benzene                                       | 20.9   | 1.0                         | 20      | 0                     | 104  | 80-120        | 21.82                                     | 4.31         | 30        |      |
| Ethylbenzene                                  | 22.26  | 1.0                         | 20      | 0                     | 111  | 75-125        | 23.53                                     | 5.55         | 30        |      |
| m,p-Xylene                                    | 41.61  | 2.0                         | 40      | 0                     | 104  | 75-130        | 43.31                                     | 4            | 30        |      |
| o-Xylene                                      | 20.74  | 1.0                         | 20      | 0                     | 104  | 80-120        | 21.44                                     | 3.32         | 30        |      |
| Toluene                                       | 20.43  | 1.0                         | 20      | 0                     | 102  | 75-120        | 21.45                                     | 4.87         | 30        |      |
| Xylenes, Total                                | 62.35  | 3.0                         | 60      | 0                     | 104  | 75-130        | 64.75                                     | 3.78         | 30        |      |
| Surr: 1,2-Dichloroethane-d4                   | 112.2  | 0                           | 100     | 0                     | 112  | 70-120        | 111.6                                     | 0.509        | 30        |      |
| Surr: 4-Bromofluorobenzene                    | 102.1  | 0                           | 100     | 0                     | 102  | 75-120        | 99.33                                     | 2.72         | 30        |      |
| Surr: Dibromofluoromethane                    | 101.2  | 0                           | 100     | 0                     | 101  | 85-115        | 104.1                                     | 2.81         | 30        |      |
| Surr: Toluene-d8                              | 100.7  | 0                           | 100     | 0                     | 101  | 85-120        | 99.64                                     | 1.09         | 30        |      |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions  
 Work Order: 1112376  
 Project: Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **R99164A** Instrument ID **VMS5** Method: **SW8260**

| MS Sample ID: 1112376-09A MS |        |                      |         | Units: µg/L    |      |               | Analysis Date: 12/19/2011 12:25 PM |       |           |      |
|------------------------------|--------|----------------------|---------|----------------|------|---------------|------------------------------------|-------|-----------|------|
| Client ID: Pond sample       |        | Run ID: VMS5_111218A |         | SeqNo: 1856021 |      | Prep Date:    |                                    | DF: 1 |           |      |
| Analyte                      | Result | PQL                  | SPK Val | SPK Ref Value  | %REC | Control Limit | RPD Ref Value                      | %RPD  | RPD Limit | Qual |
| Benzene                      | 21.86  | 1.0                  | 20      | 1.69           | 101  | 80-120        | 0                                  |       |           |      |
| Ethylbenzene                 | 23.41  | 1.0                  | 20      | 0              | 117  | 75-125        | 0                                  |       |           |      |
| m,p-Xylene                   | 44.4   | 2.0                  | 40      | 1.29           | 108  | 75-130        | 0                                  |       |           |      |
| o-Xylene                     | 21.43  | 1.0                  | 20      | 0              | 107  | 80-120        | 0                                  |       |           |      |
| Toluene                      | 23.72  | 1.0                  | 20      | 3.99           | 98.6 | 75-120        | 0                                  |       |           |      |
| Xylenes, Total               | 65.83  | 3.0                  | 60      | 1.29           | 108  | 75-130        | 0                                  |       |           |      |
| Surr: 1,2-Dichloroethane-d4  | 106.9  | 0                    | 100     | 0              | 107  | 70-120        | 0                                  |       |           |      |
| Surr: 4-Bromofluorobenzene   | 101.8  | 0                    | 100     | 0              | 102  | 75-120        | 0                                  |       |           |      |
| Surr: Dibromofluoromethane   | 99.99  | 0                    | 100     | 0              | 100  | 85-115        | 0                                  |       |           |      |
| Surr: Toluene-d8             | 102    | 0                    | 100     | 0              | 102  | 85-120        | 0                                  |       |           |      |

| MSD Sample ID: 1112376-09A MSD |        |                      |         | Units: µg/L    |      |               | Analysis Date: 12/19/2011 12:51 PM |       |           |      |
|--------------------------------|--------|----------------------|---------|----------------|------|---------------|------------------------------------|-------|-----------|------|
| Client ID: Pond sample         |        | Run ID: VMS5_111218A |         | SeqNo: 1856022 |      | Prep Date:    |                                    | DF: 1 |           |      |
| Analyte                        | Result | PQL                  | SPK Val | SPK Ref Value  | %REC | Control Limit | RPD Ref Value                      | %RPD  | RPD Limit | Qual |
| Benzene                        | 21.31  | 1.0                  | 20      | 1.69           | 98.1 | 80-120        | 21.86                              | 2.55  | 30        |      |
| Ethylbenzene                   | 22.66  | 1.0                  | 20      | 0              | 113  | 75-125        | 23.41                              | 3.26  | 30        |      |
| m,p-Xylene                     | 42.67  | 2.0                  | 40      | 1.29           | 103  | 75-130        | 44.4                               | 3.97  | 30        |      |
| o-Xylene                       | 20.81  | 1.0                  | 20      | 0              | 104  | 80-120        | 21.43                              | 2.94  | 30        |      |
| Toluene                        | 23.17  | 1.0                  | 20      | 3.99           | 95.9 | 75-120        | 23.72                              | 2.35  | 30        |      |
| Xylenes, Total                 | 63.48  | 3.0                  | 60      | 1.29           | 104  | 75-130        | 65.83                              | 3.63  | 30        |      |
| Surr: 1,2-Dichloroethane-d4    | 105.9  | 0                    | 100     | 0              | 106  | 70-120        | 106.9                              | 0.987 | 30        |      |
| Surr: 4-Bromofluorobenzene     | 100.4  | 0                    | 100     | 0              | 100  | 75-120        | 101.8                              | 1.33  | 30        |      |
| Surr: Dibromofluoromethane     | 100.7  | 0                    | 100     | 0              | 101  | 85-115        | 99.99                              | 0.668 | 30        |      |
| Surr: Toluene-d8               | 104.5  | 0                    | 100     | 0              | 104  | 85-120        | 102                                | 2.35  | 30        |      |

The following samples were analyzed in this batch:

|             |             |             |
|-------------|-------------|-------------|
| 1112376-04A | 1112376-05A | 1112376-09A |
|-------------|-------------|-------------|

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions  
 Work Order: 1112376  
 Project: Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **38205** Instrument ID **WETCHEM** Method: **SW7196A**

|             |                                    |     |         |               |                       |                     |                              |   |              |      |
|-------------|------------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>MBLK</b> | Sample ID: <b>MBLK-38205-38205</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/14/2011 02:50 PM</b> |              |      |
| Client ID:  | Run ID: <b>WETCHEM_111214C</b>     |     |         |               | SeqNo: <b>1851838</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>1</b> |      |
| Analyte     | Result                             | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |

Chromium, Hexavalent ND 0.49

|            |                                   |     |         |               |                       |                     |                              |   |              |      |
|------------|-----------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>LCS</b> | Sample ID: <b>LCS-38205-38205</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/14/2011 02:50 PM</b> |              |      |
| Client ID: | Run ID: <b>WETCHEM_111214C</b>    |     |         |               | SeqNo: <b>1851836</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>1</b> |      |
| Analyte    | Result                            | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |

Chromium, Hexavalent 2.024 0.50 1.992 0 102 75-110 0

|             |                                    |     |         |               |                       |                     |                              |   |              |      |
|-------------|------------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>LCSD</b> | Sample ID: <b>LCSD-38205-38205</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/14/2011 02:50 PM</b> |              |      |
| Client ID:  | Run ID: <b>WETCHEM_111214C</b>     |     |         |               | SeqNo: <b>1851837</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>1</b> |      |
| Analyte     | Result                             | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |

Chromium, Hexavalent 1.869 0.50 1.992 0 93.8 75-110 2.024 7.98 20

|            |                                  |     |         |               |                       |                     |                              |   |              |      |
|------------|----------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>MS</b>  | Sample ID: <b>1112278-03A MS</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/14/2011 02:50 PM</b> |              |      |
| Client ID: | Run ID: <b>WETCHEM_111214C</b>   |     |         |               | SeqNo: <b>1851826</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>1</b> |      |
| Analyte    | Result                           | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |

Chromium, Hexavalent 0.9283 0.50 1.992 0.1434 39.4 60-130 0 S

|            |                                   |     |         |               |                       |                     |                              |   |              |      |
|------------|-----------------------------------|-----|---------|---------------|-----------------------|---------------------|------------------------------|---|--------------|------|
| <b>MSD</b> | Sample ID: <b>1112278-03A MSD</b> |     |         |               |                       | Units: <b>mg/Kg</b> |                              | Analysis Date: <b>12/14/2011 02:50 PM</b> |              |      |
| Client ID: | Run ID: <b>WETCHEM_111214C</b>    |     |         |               | SeqNo: <b>1851827</b> |                     | Prep Date: <b>12/13/2011</b> |   | DF: <b>1</b> |      |
| Analyte    | Result                            | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit       | RPD Ref Value                | %RPD                                      | RPD Limit    | Qual |

Chromium, Hexavalent 0.984 0.50 2 0.1434 42 60-130 0.9283 5.83 30 S

The following samples were analyzed in this batch:

|             |             |             |
|-------------|-------------|-------------|
| 1112376-04B | 1112376-05B | 1112376-06B |
| 1112376-07B | 1112376-08B |             |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **R98893** Instrument ID **WETCHEM** Method: **SW9045D**

|            |        |                              |         |               |                |               |               |                                    |           |      |
|------------|--------|------------------------------|---------|---------------|----------------|---------------|---------------|------------------------------------|-----------|------|
| LCS        |        | Sample ID: LCS-R98893-R98893 |         |               |                | Units: s.u.   |               | Analysis Date: 12/12/2011 10:15 AM |           |      |
| Client ID: |        | Run ID: WETCHEM_111212C      |         |               | SeqNo: 1848751 |               | Prep Date:    |                                    | DF: 1     |      |
| Analyte    | Result | PQL                          | SPK Val | SPK Ref Value | %REC           | Control Limit | RPD Ref Value | %RPD                               | RPD Limit | Qual |
| pH         | 4.32   | 0                            | 4.4     | 0             | 98.2           | 90-110        | 0             |                                    |           |      |

|            |  |  |  |                            |  |     |  |                |  |               |  |                                    |  |               |  |               |  |      |  |           |  |      |  |
|------------|--|--|--|----------------------------|--|-----|--|----------------|--|---------------|--|------------------------------------|--|---------------|--|---------------|--|------|--|-----------|--|------|--|
| DUP        |  |  |  | Sample ID: 1112341-18A DUP |  |     |  | Units: s.u.    |  |               |  | Analysis Date: 12/12/2011 10:15 AM |  |               |  |               |  |      |  |           |  |      |  |
| Client ID: |  |  |  | Run ID: WETCHEM_111212C    |  |     |  | SeqNo: 1848756 |  |               |  | Prep Date:                         |  |               |  | DF: 1         |  |      |  |           |  |      |  |
| Analyte    |  |  |  | Result                     |  | PQL |  | SPK Val        |  | SPK Ref Value |  | %REC                               |  | Control Limit |  | RPD Ref Value |  | %RPD |  | RPD Limit |  | Qual |  |
| pH         |  |  |  | 6.83                       |  | 0   |  | 0              |  | 0             |  | 0                                  |  | 0-0           |  | 6.83          |  | 0    |  | 20        |  |      |  |

|                   |        |     |         |                            |      |               |               |                |           |            |                                    |       |  |
|-------------------|--------|-----|---------|----------------------------|------|---------------|---------------|----------------|-----------|------------|------------------------------------|-------|--|
| DUP               |        |     |         | Sample ID: 1112376-03A DUP |      |               |               | Units: s.u.    |           |            | Analysis Date: 12/12/2011 10:15 AM |       |  |
| Client ID: BKGD 3 |        |     |         | Run ID: WETCHEM_111212C    |      |               |               | SeqNo: 1848768 |           | Prep Date: |                                    | DF: 1 |  |
| Analyte           | Result | PQL | SPK Val | SPK Ref Value              | %REC | Control Limit | RPD Ref Value | %RPD           | RPD Limit | Qual       |                                    |       |  |
| pH                | 8.73   | 0   | 0       | 0                          | 0    | 0-0           | 8.73          | 0              | 20        |            |                                    |       |  |

The following samples were analyzed in this batch:

|             |             |             |
|-------------|-------------|-------------|
| 1112376-03A | 1112376-04B | 1112376-05B |
| 1112376-06B | 1112376-07B | 1112376-08B |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112376  
**Project:** Gypsum Ranch B Pad 12/8/11

## QC BATCH REPORT

Batch ID: **R99048**      Instrument ID **MOIST**      Method: **A2540 G**

|             |        |                                 |         |               |      |                       |               |      |   |      |  |
|-------------|--------|---------------------------------|---------|---------------|------|-----------------------|---------------|------|---|------|--|
| <b>MBLK</b> |        | Sample ID: <b>WBLKS1-R99048</b> |         |               |      | Units: % of sample    |               |      | Analysis Date: <b>12/14/2011 03:17 PM</b> |      |  |
| Client ID:  |        | Run ID: <b>MOIST_111214B</b>    |         |               |      | SeqNo: <b>1852929</b> |               |      | Prep Date:                                |      |  |
|             |        |                                 |         |               |      |                       |               |      | DF: <b>1</b>                              |      |  |
| Analyte     | Result | PQL                             | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD | RPD Limit                                 | Qual |  |

Moisture      ND      0.050

|            |        |                              |         |               |      |                       |               |      |   |      |  |
|------------|--------|------------------------------|---------|---------------|------|-----------------------|---------------|------|---|------|--|
| <b>LCS</b> |        | Sample ID: <b>LCS-R99048</b> |         |               |      | Units: % of sample    |               |      | Analysis Date: <b>12/14/2011 03:17 PM</b> |      |  |
| Client ID: |        | Run ID: <b>MOIST_111214B</b> |         |               |      | SeqNo: <b>1852927</b> |               |      | Prep Date:                                |      |  |
|            |        |                              |         |               |      |                       |               |      | DF: <b>1</b>                              |      |  |
| Analyte    | Result | PQL                          | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD | RPD Limit                                 | Qual |  |

Moisture      100      0.050      100      0      100      99.5-100.5      0

|            |        |                                  |         |               |      |                       |               |      |   |      |  |
|------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|------|---|------|--|
| <b>DUP</b> |        | Sample ID: <b>1112338-10ADUP</b> |         |               |      | Units: % of sample    |               |      | Analysis Date: <b>12/14/2011 03:17 PM</b> |      |  |
| Client ID: |        | Run ID: <b>MOIST_111214B</b>     |         |               |      | SeqNo: <b>1852897</b> |               |      | Prep Date:                                |      |  |
|            |        |                                  |         |               |      |                       |               |      | DF: <b>1</b>                              |      |  |
| Analyte    | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD | RPD Limit                                 | Qual |  |

Moisture      11.2      0.050      0      0      0      0-0      11.24      0.357      20

|                          |        |                                  |         |               |      |                       |               |      |   |      |  |
|--------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|------|---|------|--|
| <b>DUP</b>               |        | Sample ID: <b>1112376-03ADUP</b> |         |               |      | Units: % of sample    |               |      | Analysis Date: <b>12/14/2011 03:17 PM</b> |      |  |
| Client ID: <b>BKGD 3</b> |        | Run ID: <b>MOIST_111214B</b>     |         |               |      | SeqNo: <b>1852903</b> |               |      | Prep Date:                                |      |  |
|                          |        |                                  |         |               |      |                       |               |      | DF: <b>1</b>                              |      |  |
| Analyte                  | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD | RPD Limit                                 | Qual |  |

Moisture      5.8      0.050      0      0      0      0-0      5.8      0      20

The following samples were analyzed in this batch:

|             |             |             |
|-------------|-------------|-------------|
| 1112376-01A | 1112376-02A | 1112376-03A |
| 1112376-04B | 1112376-05B | 1112376-06B |
| 1112376-07B | 1112376-08B |             |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Sample Receipt Checklist

Client Name: HRL

Date/Time Received: 12-Dec-11 09:00

Work Order: 1112376

Received by: DS

Checklist completed by *Diane Shaw* 12-Dec-11  
eSignature Date

Reviewed by: *Alex Csaszar* 12-Dec-11  
eSignature Date

Matrices: Soil, water

Carrier name: FedEx

|   |   |                             |   |
|---|---|-----------------------------|---|
| Shipping container/cooler in good condition?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| Custody seals intact on shipping container/cooler?      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| Custody seals intact on sample bottles?                 | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Container/Temp Blank temperature in compliance?         | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Temperature(s)/Thermometer(s):                          | <u>4.0 c</u>                            |                             |   |
| Cooler(s)/Kit(s):                                       |   |                             |   |
| Water - VOA vials have zero headspace?                  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input type="checkbox"/> |
| Water - pH acceptable upon receipt?                     | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/>         |
| pH adjusted?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/>         |
| pH adjusted by:   |   |                             |   |

Login Notes:

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Client Contacted: HRL

Date Contacted: 12-Dec-11

Person Contacted: Mark Mumby

Contacted By: Alex Csaszar

Regarding: Insufficient Sample Volume

Comments: Contacted client concerning the Pond Sample on the COC. We did not receive a sample bottle for metals analysis and did not have enough sample volume to pour off from other containers for Pond sample.

CorrectiveAction: Client said to remove the metals analyses from the Pond sample.



# ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524  
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

## Chain-of-Custody

WORKORDER  
#

1112376

Form 202r8

|                    |                 |                          |             |                    |           |                    |    |                                    |   |           |   |          |  |                            |  |
|--------------------|-----------------|--------------------------|-------------|--------------------|-----------|--------------------|----|------------------------------------|---|-----------|---|----------|--|----------------------------|--|
| PROJECT NAME       |                 | Gypsum Ranch B Pad       |             | SAMPLER            |           | Reed Wold          |    | DATE                               |   | 12/9/2011 |   | PAGE     |  | 1 of 1                     |  |
| PROJECT No.        |                 |                          |             | SITE ID            |           | Gypsum Ranch B Pad |    | TURNAROUND                         |   | 5 day     |   | DISPOSAL |  | By Lab or Return to Client |  |
| COMPANY NAME       |                 | HRL Compliance           |             | BILL TO COMPANY    |           | HCSI               |    | BTEX/ GRO                          |   |           |   |          |  |                            |  |
| SEND REPORT TO     |                 | Mark Mumby               |             | INVOICE ATTN TO    |           | Mark Mumby         |    | DRO/ PAH/ Metals (Per table 910-1) |   |           |   |          |  |                            |  |
| ADDRESS            |                 | 744 Horizon Ct Ste. 140  |             | ADDRESS            |           |                    |    | SAR/ EC/ pH                        |   |           |   |          |  |                            |  |
| CITY / STATE / ZIP |                 | Grand Junction, CO 81506 |             | CITY / STATE / ZIP |           |                    |    | Arsenic                            |   |           |   |          |  |                            |  |
| PHONE              |                 | 970-243-3271             |             | PHONE              |           |                    |    |                                    |   |           |   |          |  |                            |  |
| FAX                |                 | 970-243-3280             |             | FAX                |           |                    |    |                                    |   |           |   |          |  |                            |  |
| E-MAIL             |                 | Mmumby@hrlcomp.com       |             | E-MAIL             |           |                    |    |                                    |   |           |   |          |  |                            |  |
| Lab ID             | Field ID        | Matrix                   | Sample Date | Sample Time        | # Bottles | Pres.              | QC |                                    |   |           |   |          |  |                            |  |
| 1                  | BKGD 1          | SO                       | 12/8/2011   | 11:50              | 1         | 8                  |    |                                    |   |           | X |          |  |                            |  |
| 2                  | BKGD 2          | SO                       | 12/8/2011   | 11:55              | 1         | 8                  |    |                                    |   |           | X |          |  |                            |  |
| 3                  | BKGD 3          | SO                       | 12/8/2011   | 12:00              | 2         | 8                  |    |                                    |   | X         | X |          |  |                            |  |
| 4                  | Point of Origin | SO                       | 12/8/2011   | 12:10              | 3         | 8                  |    | X                                  | X | X         |   |          |  |                            |  |
| 5                  | Sample Pt 1     | SO                       | 12/8/2011   | 12:15              | 3         | 8                  |    | X                                  | X | X         |   |          |  |                            |  |
| 6                  | Sample Pt 2     | SO                       | 12/8/2011   | 12:20              | 3         | 8                  |    | X                                  | X | X         |   |          |  |                            |  |
| 7                  | Sample Pt 3     | SO                       | 12/8/2011   | 12:25              | 3         | 8                  |    | X                                  | X | X         |   |          |  |                            |  |
| 8                  | Sample Pt 4     | SO                       | 12/8/2011   | 12:30              | 3         | 8                  |    | X                                  | X | X         |   |          |  |                            |  |
| 9                  | Pond sample     | W                        | 12/8/2011   | 12:45              | 6         | 1, 8               |    | X                                  | X |           |   |          |  |                            |  |

\*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

|   |                                      |
|---|--------------------------------------|
| Comments:   | QC PACKAGE (check below)             |
| 4.0-2<br>BZ   | X LEVEL II (Standard QC)             |
|   | LEVEL III (Std QC + forms)           |
|   | LEVEL IV (Std QC + forms + raw data) |
|   |                                      |
| Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035 |                                      |

| SIGNATURE                        | PRINTED NAME  | DATE     | TIME |
|----------------------------------|---------------|----------|------|
| RELINQUISHED BY <i>Reed Wold</i> | Reed Wold     | 12/9/11  | 5:00 |
| RECEIVED BY <i>Diane F. Shaw</i> | Diane F. Shaw | 12/12/11 | 0900 |
| RELINQUISHED BY                  |               |          |      |
| RECEIVED BY                      |               |          |      |
| RELINQUISHED BY                  |               |          |      |
| RECEIVED BY                      |               |          |      |





**Environmental**

**Subcontractor:**  
A & L Great Lakes Agricultural La  
3505 Conestoga Dr

TEL: (260) 483-4759  
FAX: (260) 483-5274  
Acct #: 91000

Fl. Wayne, IN 46808

Salesperson **Debbie Fazio**

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: **12-Dec-11**  
COC ID: **3350**  
Due Date: **16-Dec-11**

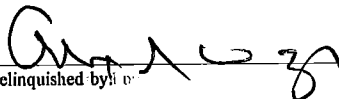
| Customer Information |                              | Project Information |                              | Parameter/Method Request for Analysis |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|------------------------------|---------------------|------------------------------|---------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Purchase Order:      | 20-1112376                   | Project Name:       | 1112376                      | A                                     | Subcontracted Analyses (SUBCONTRACT) <b>SAR-EC</b> |  |  |  |  |  |  |  |  |  |  |  |
| Work Order:          |                              | Project Number:     |                              | B                                     |  |  |  |  |  |  |  |  |  |  |  |  |
| Company Name:        | ALS Group USA, Corp          | Bill To Company:    | ALS Group USA, Corp          | C                                     |  |  |  |  |  |  |  |  |  |  |  |  |
| Send Report To:      | Ann Preston                  | Inv Attn:           | Accounts Payable             | D                                     |  |  |  |  |  |  |  |  |  |  |  |  |
| Address:             | 3352 128th Avenue            | Address:            | 3352 128th Avenue            | E                                     |  |  |  |  |  |  |  |  |  |  |  |  |
|                      |                              |                     |                              | F                                     |  |  |  |  |  |  |  |  |  |  |  |  |
| City/State/Zip:      | Holland, Michigan 49424-9263 | City/State/Zip:     | Holland, Michigan 49424-9263 | G                                     |  |  |  |  |  |  |  |  |  |  |  |  |
| Phone:               | (616) 399-6070               | Phone:              | (616) 399-6070               | H                                     |  |  |  |  |  |  |  |  |  |  |  |  |
| Fax:                 | (616) 399-6185               | Fax:                | (616) 399-6185               | I                                     |  |  |  |  |  |  |  |  |  |  |  |  |
| eMail Address:       | ann.preston@alsglobal.com    | eMail CC:           |                              | J                                     |  |  |  |  |  |  |  |  |  |  |  |  |

| Sample ID   | Matrix | Collection Date 24hr | Bottle   | A | B | C | D | E | F | G | H | I | J |
|-------------|--------|----------------------|----------|---|---|---|---|---|---|---|---|---|---|
| 1112376-03B | Soil   | 8/Dec/2011 12:00     | (1) MISC | X |   |   |   |   |   |   |   |   |   |
| 1112376-04C | Soil   | 8/Dec/2011 12:10     | (1) MISC | X |   |   |   |   |   |   |   |   |   |
| 1112376-05C | Soil   | 8/Dec/2011 12:15     | (1) MISC | X |   |   |   |   |   |   |   |   |   |
| 1112376-06C | Soil   | 8/Dec/2011 12:20     | (1) MISC | X |   |   |   |   |   |   |   |   |   |
| 1112376-07C | Soil   | 8/Dec/2011 12:25     | (1) MISC | X |   |   |   |   |   |   |   |   |   |
| 1112376-08C | Soil   | 8/Dec/2011 12:30     | (1) MISC | X |   |   |   |   |   |   |   |   |   |

**Comments:**

Please analyze for SAR-EC. Email results to Ann Preston.

|  |                           |              |            |            |                 |
|--|---------------------------|--------------|------------|------------|-----------------|
| Relinquished by:  | Date/Time: 12/12/11 13:00 | Received by: | Date/Time: | Cooler IDs | Report/QC Level |
|  |                           |              |            |            | Std             |
| Relinquished by:   | Date/Time:                | Received by: | Date/Time: |            |                 |

800-255-3950 • 304-265-3900  
Quality Environmental Containers

FedEx



SEAL

SIGNATURE

DATE

1 From

Date

12/15/11

Sender's FedEx  
Account Number

Sender's  
Name

Red, C.O.

Phone

970 243 3271

Company

HCST

Address

799 Holbrook St. Suite 140

City

Ward Junction

State

CO

ZIP

91401

2 Your Internal Billing Reference

3 To

Recipient's  
Name

Sample Receiving

Phone

616 399 6070

Company

ABS Group

Address

3350 1st St.

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City

Ward Junction

State

CO

ZIP

91424

01

HOLD Weekday  
FedEx location address  
REQUIRED. NOT available for  
FedEx First Overnight.

31

HOLD Saturday  
FedEx location address  
REQUIRED. Available ONLY for  
FedEx Priority Overnight and  
FedEx 2Day to select locations.

0200

Form  
ID No.

FedEx Retrieval Copy

4 Express Package Service

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs.  
For packages over 150 lbs., use the new  
FedEx Express Freight US Airbill.

Next Business Day

06

FedEx First Overnight  
Earliest next business morning delivery to select  
locations. Friday shipments will be delivered on  
Monday unless SATURDAY Delivery is selected.

01

FedEx Priority Overnight  
Next business morning. Friday shipments will be  
delivered on Monday unless SATURDAY Delivery  
is selected.

05

FedEx Standard Overnight  
Next business afternoon.  
Saturday Delivery NOT available.

2 or 3 Business Days

49

NEW FedEx 2Day A.M.  
Second business morning.  
Saturday Delivery NOT available.

03

FedEx 2Day  
Second business afternoon. Thursday shipments  
will be delivered on Monday unless SATURDAY  
Delivery is selected.

20

FedEx Express Saver  
Third business day.  
Saturday Delivery NOT available.

5 Packaging

\*Declared value limit (\$500).

06

FedEx Envelope\*

02

FedEx Pak\*

03

FedEx  
Box

04

FedEx  
Tube

01

Other

6 Special Handling and Delivery Signature Options

03 SATURDAY DELIVERY

02

No Signature Required  
Package may be left without  
obtaining a signature for delivery.

10

Direct Signature  
Someone at recipient's address  
may sign for delivery. Fee applies.

34

Indirect Signature  
If no one is available at recipient's  
address, someone at a neighboring  
address may sign for delivery. For  
residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

One box must be checked.

04

No  
Yes  
As per attached  
Shipper's Declaration.

06

Dry Ice  
Dry Ice, 3, UN 1845

kg  
Cargo Aircraft Only

7 Payment Bill to:

1

Sender  
Acct. No. in Section 2

2

Recipient

3

Third Party

4

Credit Card

5

Cash/Check

Total Packages

Total Weight

1

47

lbs.

Credit Card Auth.



8769 1479 3059

Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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612

fedex.com 1.800.GoFedEx 1.800.463.3339

fedex.com 1.800.GoFedEx 1.800.463.3339

**FedEx** NEW Package  
Express US Airbill

FedEx  
Tracking  
Number

8769 1479 3118

0200 Form  
10 No.

FedEx Retrieval Copy

Packages up to 150 lbs.  
For packages over 150 lbs. use the NEW  
FedEx Express Freight US Airbill.

**1 From**

Date

12/19/11

Sender's FedEx  
Account Number

Sender's  
Name

Reed W. D.

Phone 970 243-2271

Company

HCS

Address

749 Helix Ave Ste 140

Dept./Floor/Suite/Room

City

Grand Junction

State

CO ZIP 81506

**2 Your Internal Billing Reference**

**3 To**

Recipient's  
Name

Summit Receiving

Phone 616 379-6070

Company

AKS Group

Address

3350 125th Ave

Dept./Floor/Suite/Room

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City

Holland

State

MI ZIP 49424

**4 Express Package Service**

\* To most locations.

NOTE: Service order has changed. Please select carefully.

**Next Business Day**

- ☐ 06 FedEx First Overnight  
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☒ 01 FedEx Priority Overnight  
Next business morning. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ 05 FedEx Standard Overnight  
Next business afternoon. Saturday Delivery NOT available.

**2 or 3 Business Days**

- ☐ 49 NEW FedEx 2Day A.M.  
Second business morning. Saturday Delivery NOT available.
- ☐ 03 FedEx 2Day  
Second business afternoon. Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ 20 FedEx Express Saver  
Third business day. Saturday Delivery NOT available.

**5 Packaging**

\* Declared value limit \$500.

- ☐ 06 FedEx Envelope\* ☐ 02 FedEx Pak\* ☐ 03 FedEx Box ☐ 04 FedEx Tube ☒ 01 Other

**6 Special Handling and Delivery Signature Options**

☒ 03 SATURDAY DELIVERY

☒ No Signature Required  
Package may be left without obtaining a signature for delivery.

☐ 10 Direct Signature  
Someone at recipient's address may sign for delivery. Fee applies.

☐ 34 Indirect Signature  
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

☒ No 04 Yes - As per attached Shipper's Declaration. ☐ Yes - Shipper's Declaration not required.

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

☐ 06 Dry Ice  
Dry ice, 9 UN 1845 ☐ Cargo Aircraft Only

**7 Payment Bill to:**

Enter FedEx Acct. No. or Credit Card No. below.

Obtain recip.  
Acct. No.

- ☐ 1 Sender Acct. No. in Section 1 (Will be billed) ☒ 2 Recipient ☐ 3 Third Party ☐ 4 Credit Card ☐ 5 Cash/Check

Total Packages 1 Total Weight 10.3 Credit Card Auth.



**CUSTODY SEAL**

DATE

12/19/11

SIGNATURE

Reed W. D.

**QEC**

Quality Environmental Containers  
800-255-3950 • 304-255-3900

612

fedex.com 1.800.GoFedEx 1.800.463.3339

fedex.com 1.800.GoFedEx 1.800.463.3339



04-Jan-2012

Mark Mumby  
HRL Compliance Solutions  
744 Horizon Ct. Suite 140  
Grand Junction, CO 81506

Re: **Antero Gypsum Ranch B Pad 12/23/11**

Work Order: **1112850**

Dear Mark,

ALS Environmental received 1 sample on 29-Dec-2011 10:15 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 11.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN331938

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental The ALS logo, which is a stylized blue and green shape.

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

---

**Client:** HRL Compliance Solutions  
**Project:** Antero Gypsum Ranch B Pad 12/23/11  
**Work Order:** 1112850

---

**Work Order Sample Summary**

---

| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u>              |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 1112850-01         | Pond Sample             | Water         |                   | 12/23/2011 11:00       | 12/29/2011 10:15     | <input type="checkbox"/> |

---

## ALS Group USA, Corp

*Date: 04-Jan-12*

---

**Client:** HRL Compliance Solutions  
**Project:** Antero Gypsum Ranch B Pad 12/23/11  
**Work Order:** 1112850

---

### Case Narrative

Batch R99615 sample 1112850-01 for pH was received after the hold time had expired.

**Client:** HRL Compliance Solutions  
**Project:** Antero Gypsum Ranch B Pad 12/23/11  
**WorkOrder:** 1112850

## **QUALIFIERS, ACRONYMS, UNITS**

| <b><u>Qualifier</u></b> | <b><u>Description</u></b>   |
|-------------------------|---|
| *                       | Value exceeds Regulatory Limit  |
| a                       | Not accredited  |
| B                       | Analyte detected in the associated Method Blank above the Reporting Limit |
| E                       | Value above quantitation range  |
| H                       | Analyzed outside of Holding Time  |
| J                       | Analyte detected below quantitation limit                                 |
| n                       | Not offered for accreditation   |
| ND                      | Not Detected at the Reporting Limit                                       |
| O                       | Sample amount is > 4 times amount spiked                                  |
| P                       | Dual Column results percent difference > 40%                              |
| R                       | RPD above laboratory control limit  |
| S                       | Spike Recovery outside laboratory control limits                          |
| U                       | Analyzed but not detected above the MDL                                   |

| <b><u>Acronym</u></b> | <b><u>Description</u></b>           |
|-----------------------|-------------------------------------|
| DUP                   | Method Duplicate                    |
| LCS                   | Laboratory Control Sample           |
| LCSD                  | Laboratory Control Sample Duplicate |
| MBLK                  | Method Blank                        |
| MDL                   | Method Detection Limit              |
| MQL                   | Method Quantitation Limit           |
| MS                    | Matrix Spike                        |
| MSD                   | Matrix Spike Duplicate              |
| PDS                   | Post Digestion Spike                |
| PQL                   | Practical Quantitation Limit        |
| RPD                   | Relative Percent Difference         |
| SD                    | Serial Dilution                     |
| TDL                   | Target Detection Limit              |

| <b><u>Units Reported</u></b> | <b><u>Description</u></b> |
|------------------------------|---------------------------|
| mg/L                         | Milligrams per Liter      |
| s.u.                         | Standard Units            |

**ALS Group USA, Corp****Date:** 04-Jan-12**Client:** HRL Compliance Solutions**Project:** Antero Gypsum Ranch B Pad 12/23/11**Work Order:** 1112850**Sample ID:** Pond Sample**Lab ID:** 1112850-01**Collection Date:** 12/23/2011 11:00 AM**Matrix:** WATER

| Analyses                            | Result | Qual | Report<br>Limit | Units | Dilution<br>Factor | Date Analyzed       |
|-------------------------------------|--------|------|-----------------|-------|--------------------|---------------------|
| <b>ANIONS BY ION CHROMATOGRAPHY</b> |        |      | <b>SW9056</b>   |       |                    | Analyst: <b>ED</b>  |
| Chloride                            | ND     |      | 1.0             | mg/L  | 1                  | 12/29/2011 03:41 PM |
| Sulfate                             | ND     |      | 1.0             | mg/L  | 1                  | 12/29/2011 03:41 PM |
| <b>PH</b>                           |        |      | <b>SW9040</b>   |       |                    | Analyst: <b>EE</b>  |
| pH                                  | 6.32   | H    |                 | s.u.  | 1                  | 12/29/2011 10:30 AM |
| <b>TOTAL DISSOLVED SOLIDS</b>       |        |      | <b>A2540 C</b>  |       |                    | Analyst: <b>JS</b>  |
| Total Dissolved Solids              | ND     |      | 10              | mg/L  | 1                  | 12/29/2011 12:53 PM |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



Client: HRL Compliance Solutions

Work Order: 1112850

Project: Antero Gypsum Ranch B Pad 12/23/11

## QC BATCH REPORT

Batch ID: R99615

Instrument ID WETCHEM

Method: SW9040

|            |        |                              |         |               |                |               |               |                                    |           |      |
|------------|--------|------------------------------|---------|---------------|----------------|---------------|---------------|------------------------------------|-----------|------|
| LCS        |        | Sample ID: LCS-R99615-R99615 |         |               |                | Units: s.u.   |               | Analysis Date: 12/29/2011 10:30 AM |           |      |
| Client ID: |        | Run ID: WETCHEM_111229A      |         |               | SeqNo: 1867133 |               | Prep Date:    |                                    | DF: 1     |      |
| Analyte    | Result | PQL                          | SPK Val | SPK Ref Value | %REC           | Control Limit | RPD Ref Value | %RPD                               | RPD Limit | Qual |
| pH         | 4.37   | 0                            | 4.4     | 0             | 99.3           | 90-110        |               | 0                                  |           |      |

|            |        |                            |         |               |                |               |               |                                    |           |      |
|------------|--------|----------------------------|---------|---------------|----------------|---------------|---------------|------------------------------------|-----------|------|
| DUP        |        | Sample ID: 1112842-02A DUP |         |               |                | Units: s.u.   |               | Analysis Date: 12/29/2011 10:30 AM |           |      |
| Client ID: |        | Run ID: WETCHEM_111229A    |         |               | SeqNo: 1867135 |               | Prep Date:    |                                    | DF: 1     |      |
| Analyte    | Result | PQL                        | SPK Val | SPK Ref Value | %REC           | Control Limit | RPD Ref Value | %RPD                               | RPD Limit | Qual |
| pH         | 14     | 0                          | 0       | 0             | 0              | 0-0           |               | 14                                 | 0         | 20   |

The following samples were analyzed in this batch:

1112850-01A

**Client:** HRL Compliance Solutions  
**Work Order:** 1112850  
**Project:** Antero Gypsum Ranch B Pad 12/23/11

## QC BATCH REPORT

Batch ID: **R99636** Instrument ID **TDS** Method: **A2540 C**

|            |        |                         |         |               |      |                |               |                                    |           |       |
|------------|--------|-------------------------|---------|---------------|------|----------------|---------------|------------------------------------|-----------|-------|
| MBLK       |        | Sample ID: BLANK-R99636 |         |               |      | Units: mg/L    |               | Analysis Date: 12/29/2011 12:53 PM |           |       |
| Client ID: |        | Run ID: TDS_111229A     |         |               |      | SeqNo: 1867401 |               | Prep Date:                         |           | DF: 1 |
| Analyte    | Result | PQL                     | SPK Val | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD                               | RPD Limit | Qual  |

Total Dissolved Solids ND 10

|            |        |                       |         |               |      |                |               |                                    |           |       |
|------------|--------|-----------------------|---------|---------------|------|----------------|---------------|------------------------------------|-----------|-------|
| LCS        |        | Sample ID: LCS-R99636 |         |               |      | Units: mg/L    |               | Analysis Date: 12/29/2011 12:53 PM |           |       |
| Client ID: |        | Run ID: TDS_111229A   |         |               |      | SeqNo: 1867402 |               | Prep Date:                         |           | DF: 1 |
| Analyte    | Result | PQL                   | SPK Val | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD                               | RPD Limit | Qual  |

Total Dissolved Solids 460 10 495 0 92.9 80-120 0

|            |        |                        |         |               |      |                |               |                                    |           |       |
|------------|--------|------------------------|---------|---------------|------|----------------|---------------|------------------------------------|-----------|-------|
| LCSD       |        | Sample ID: LCSD-R99636 |         |               |      | Units: mg/L    |               | Analysis Date: 12/29/2011 12:53 PM |           |       |
| Client ID: |        | Run ID: TDS_111229A    |         |               |      | SeqNo: 1867410 |               | Prep Date:                         |           | DF: 1 |
| Analyte    | Result | PQL                    | SPK Val | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD                               | RPD Limit | Qual  |

Total Dissolved Solids 476 10 495 0 96.2 80-120 460 3.42 20

|            |        |                                  |         |               |                       |                    |               |   |              |      |
|------------|--------|----------------------------------|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| <b>DUP</b> |        | Sample ID: <b>1112830-01ADUP</b> |         |               |                       | Units: <b>mg/L</b> |               | Analysis Date: <b>12/29/2011 12:53 PM</b> |              |      |
| Client ID: |        | Run ID: <b>TDS_111229A</b>       |         |               | SeqNo: <b>1867405</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte    | Result | PQL                              | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |

Total Dissolved Solids 452 10 0 0 0 0-0 457 1.1 20

The following samples were analyzed in this batch:

1112850-01A

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112850  
**Project:** Antero Gypsum Ranch B Pad 12/23/11

## QC BATCH REPORT

Batch ID: **R99639** Instrument ID **IC3** Method: **SW9056**

|             |        |                                   |         |               |      |                       |               |   |           |              |
|-------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>MBLK</b> |        | Sample ID: <b>CCB/MBLK-R99639</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/29/2011 02:38 PM</b> |           |              |
| Client ID:  |        | Run ID: <b>IC3_111229A</b>        |         |               |      | SeqNo: <b>1867435</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte     | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Chloride    | 0.4742 | 1.0                               |         |               |      |                       |               |   |           | J            |
| Sulfate     | ND     | 1.0                               |         |               |      |                       |               |   |           |              |

|            |        |                                  |         |               |      |                       |               |   |           |              |
|------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>LCS</b> |        | Sample ID: <b>CCV/LCS-R99639</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/29/2011 02:58 PM</b> |           |              |
| Client ID: |        | Run ID: <b>IC3_111229A</b>       |         |               |      | SeqNo: <b>1867436</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte    | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Chloride   | 9.578  | 1.0                              | 10      | 0             | 95.8 | 88-107                | 0             |   |           |              |
| Sulfate    | 9.897  | 1.0                              | 10      | 0             | 99   | 85-110                | 0             |   |           |              |

|             |        |                                   |         |               |      |                       |               |   |           |              |
|-------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>LCSD</b> |        | Sample ID: <b>CCV/LCSD-R99639</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/29/2011 03:21 PM</b> |           |              |
| Client ID:  |        | Run ID: <b>IC3_111229A</b>        |         |               |      | SeqNo: <b>1867437</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte     | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Chloride    | 9.736  | 1.0                               | 10      | 0             | 97.4 | 88-107                | 9.578         | 1.63                                      | 20        |              |
| Sulfate     | 10.18  | 1.0                               | 10      | 0             | 102  | 85-110                | 9.897         | 2.8                                       | 20        |              |

|                               |        |                                  |         |               |      |                       |               |   |           |              |
|-------------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>MS</b>                     |        | Sample ID: <b>1112850-01A MS</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/29/2011 06:27 PM</b> |           |              |
| Client ID: <b>Pond Sample</b> |        | Run ID: <b>IC3_111229A</b>       |         |               |      | SeqNo: <b>1867442</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                       | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Chloride                      | 10.36  | 1.0                              | 10      | 0.5409        | 98.2 | 75-125                | 0             |   |           |              |
| Sulfate                       | 10.54  | 1.0                              | 10      | 0.4582        | 101  | 75-125                | 0             |   |           |              |

|                               |        |                                   |         |               |      |                       |               |   |           |              |
|-------------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>MSD</b>                    |        | Sample ID: <b>1112850-01A MSD</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/29/2011 06:47 PM</b> |           |              |
| Client ID: <b>Pond Sample</b> |        | Run ID: <b>IC3_111229A</b>        |         |               |      | SeqNo: <b>1867443</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                       | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Chloride                      | 10.85  | 1.0                               | 10      | 0.5409        | 103  | 75-125                | 10.36         | 4.58                                      | 20        |              |
| Sulfate                       | 10.57  | 1.0                               | 10      | 0.4582        | 101  | 75-125                | 10.54         | 0.256                                     | 20        |              |

The following samples were analyzed in this batch: 1112850-01A

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

## Chain-of-Custody

Form 202r8

**WORKORDER**  
**#**

1712850

**PAGE**

of /

## DISPOSAL



☒ By Lab or ☐ Return to Client

[illegible]

\*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

**For metals or anions, please detail analytes below.**

|   |                                     |                                      |
|---|-------------------------------------|--------------------------------------|
| <b>Comments:</b><br><br><br><br><div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-size: 2em;">3.8°C</div> | <b>QC PACKAGE (check below)</b>     |                                      |
|   | <input checked="" type="checkbox"/> | LEVEL II (Standard QC)               |
|   | <input type="checkbox"/>            | LEVEL III (Std QC + forms)           |
|   | <input checked="" type="checkbox"/> | LEVEL IV (Std QC + forms + raw data) |
|   | <input type="checkbox"/>            |                                      |
| <b>Preservative Key:</b> 1-HCl   2-HNO3   3-H2SO4   4-NaOH   5-NaHSO4   7-Other   8-4 degrees C   9-5035  |                                     |                                      |

|                 | SIGNATURE   | PRINTED NAME  | DATE     | TIME  |
|-----------------|---|---------------|----------|-------|
| RELINQUISHED BY |  | Mark E. Mumby | 12/28/11 | 17:00 |
| RECEIVED BY     |  | Diane F. Shaw | 12/29/11 | 1015  |
| RELINQUISHED BY |   |               |          |       |
| RECEIVED BY     |   |               |          |       |
| RELINQUISHED BY |   |               |          |       |
| RECEIVED BY     |   |               |          |       |

Sample Receipt Checklist

Client Name: HRL

Date/Time Received: 29-Dec-11 10:15

Work Order: 1112850

Received by: DS

Checklist completed by Diane Shaw 29-Dec-11  
eSignature Date

Reviewed by: Alex Csaszar 29-Dec-11  
eSignature Date

Matrices: Water

Carrier name: FedEx

|   |   |                             |  |
|---|---|-----------------------------|--|
| Shipping container/cooler in good condition?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>                       |
| Custody seals intact on shipping container/cooler?      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>                       |
| Custody seals intact on sample bottles?                 | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/>            |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Container/Temp Blank temperature in compliance?         | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |  |
| Temperature(s)/Thermometer(s):                          | <u>3.8 c</u>                            |                             |  |
| Cooler(s)/Kit(s):                                       |   |                             |  |
| Water - VOA vials have zero headspace?                  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | No VOA vials submitted <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt?                     | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/>                    |
| pH adjusted?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/>                    |
| pH adjusted by:   |   |                             |  |
| Login Notes:  |   |                             |  |

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

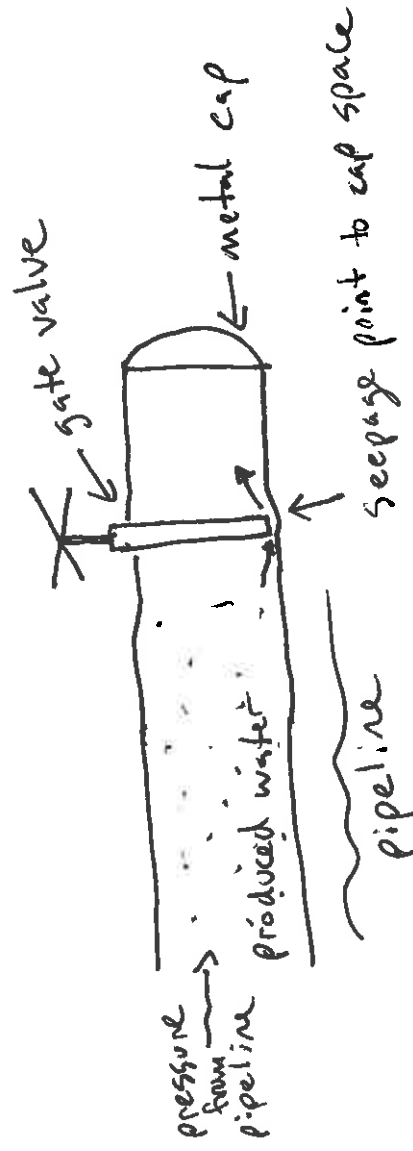
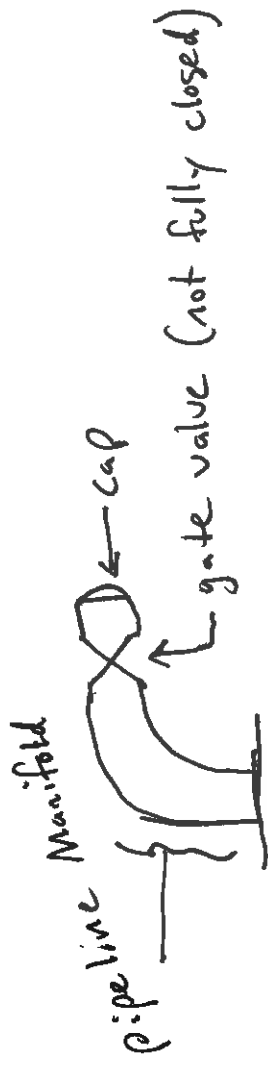


# Appendix C

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Example Drawing of Failure

# Appendix C: Example Drawing







Picture of cap rupture

# Appendix D

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Integrity Test Records

# PRESSURE PROOF TEST AND DEAD WEIGHT READINGS RECORD

Page \_\_\_\_\_ of \_\_\_\_\_

|   |  |   |      |                  |
|---|--|---|------|------------------|
| PIPELINE OWNER'S NAME: <u>Antero</u>                |  |   | APR: |                  |
| PROJECT LOCATION OR NAME: <u>Gypsum Ranch A Pad</u> |  |   |      |                  |
| CONTRACTOR:   |  | TESTING CONTRACTOR:                           |      |                  |
| EMERGENCY STOCK:                                    |  | NEW CONSTRUCTION:                             |      | REQUALIFICATION: |
| TESTING SECTION FROM STA: <u>Gypsum Ranch A</u>     |  | TO STA: <u>Snyder C Isolation</u>             |      | LENGTH:          |
| PIPE DESCRIPTION: SIZE:                             |  | WALL THICKNESS:                               |      |                  |
| DEAD WEIGHT SN:                                     |  | RANGE:  |      |                  |
| TEMPERATURE RECORDER SN                             |  | RANGE:  |      |                  |
| PRESSURE RECORDER SN:                               |  | RANGE:  |      |                  |
| MINIMUM ELEVATION:                                  |  | MAXIMUM ELEVATION:                            |      |                  |
| MINIMUM PRESSURE: <u>220 Supply line</u>            |  | MAXIMUM PRESSURE: <u>220 Supply line</u>      |      |                  |
| MINIMUM GAGE PRESSURE: <u>215 Return line</u>       |  | MAXIMUM GAGE PRESSURE: <u>220 Return line</u> |      |                  |
| DATE AND TIME TEST STARTED: <u>1130 11-22-11</u>    |  |   |      |                  |
| DATE AND TIME TEST COMPLETED: <u>1 1/2 Test</u>     |  |   |      |                  |

| TIME     | DEAD WEIGHT PSIG |        | TEMPERATURE<br>Degrees F. | MEDIUM<br>(Water-Nitrogen-Gas-Air) |
|----------|------------------|--------|---------------------------|------------------------------------|
|          | Supply           | Return |                           |                                    |
| 1130 am  | 220              | 220    |                           |                                    |
| 12:00 pm | 220              | 220    |                           |                                    |
| 12:30    | 220              | 215    |                           |                                    |
| 1:00     | 220              | 215    |                           |                                    |
|          |                  |        |                           |                                    |
|          |                  |        |                           |                                    |
|          |                  |        |                           |                                    |
|          |                  |        |                           |                                    |
|          |                  |        |                           |                                    |
|          |                  |        |                           |                                    |
|          |                  |        |                           |                                    |
|          |                  |        |                           |                                    |

|  |             |                       |
|--|-------------|-----------------------|
| RESULTS OF TEST  | ACCEPTABLE: | UNACCEPTABLE:         |
| TEST RESULTS, MINIMUM PRESSURE:                        |             | DURATION:             |
| REMARKS: <u>Bret Long inspected Surface facilities</u> |             |                       |
|  |             |                       |
| CONTRACTOR'S TEST REPRESENTATIVE: <u>Terry Doh</u>     |             | DATE: <u>11-22-11</u> |
| Company's TEST REPRESENTATIVE:                         |             | DATE:                 |

## Page \_\_\_\_\_ of \_\_\_\_\_

|                                |                |
|--------------------------------|----------------|
| Company's TEST REPRESENTATIVE: | DATE: 11-22-11 |
|                                | DATE:          |

# PRESSURE PROOF TEST AND DEAD WEIGHT READINGS RECORD

Page \_\_\_\_\_ of \_\_\_\_\_

| PIPELINE OWNER'S NAME: <u>Antero</u>                          |                  |   | AGE: _____                |                                    |
|---|------------------|---|---------------------------|------------------------------------|
| PROJECT LOCATION OR NAME: <u>Snyder A Pad</u>                 |                  |   |                           |                                    |
| CONTRACTOR: _____   |                  | TESTING CONTRACTOR: _____                     |                           |                                    |
| EMERGENCY STOCK: _____  |                  | NEW CONSTRUCTION: _____                       |                           | REQUALIFICATION: _____             |
| TESTING SECTION FROM STA: <u>Snyder A</u>                     |                  | TO STA: <u>Snyder C Isolation</u>             |                           | LENGTH: _____                      |
| PIPE DESCRIPTION: SIZE: _____                                 |                  | WALL THICKNESS: _____                         |                           |                                    |
| DEAD WEIGHT SN: _____   |                  | RANGE: _____                                  |                           |                                    |
| TEMPERATURE RECORDER SN: _____                                |                  | RANGE: _____                                  |                           |                                    |
| PRESSURE RECORDER SN: _____                                   |                  | RANGE: _____                                  |                           |                                    |
| MINIMUM ELEVATION: _____                                      |                  | MAXIMUM ELEVATION: _____                      |                           |                                    |
| MINIMUM PRESSURE: <u>210 Supply line</u>                      |                  | MAXIMUM PRESSURE: <u>215 Supply line</u>      |                           |                                    |
| MINIMUM GAGE PRESSURE: <u>210 Return line</u>                 |                  | MAXIMUM GAGE PRESSURE: <u>220 Return line</u> |                           |                                    |
| DATE AND TIME TEST STARTED: <u>11-22-11 3:30/pm</u>           |                  |   |                           |                                    |
| DATE AND TIME TEST COMPLETED: <u>1 1/2 Test</u>               |                  |   |                           |                                    |
| TIME  | DEAD WEIGHT PSIG |   | TEMPERATURE<br>Degrees F. | MEDIUM<br>(Water-Nitrogen-Gas-Air) |
|   | Supply           | Return  |                           |                                    |
| <u>3:30/pm</u>  | <u>215</u>       | <u>220</u>                                    |                           |                                    |
| <u>4:00</u>   | <u>210</u>       | <u>220</u>                                    |                           |                                    |
| <u>4:30</u>   | <u>210</u>       | <u>210</u>                                    |                           |                                    |
| <u>5:00</u>   | <u>210</u>       | <u>210</u>                                    |                           |                                    |
|   |                  |   |                           |                                    |
|   |                  |   |                           |                                    |
|   |                  |   |                           |                                    |
|   |                  |   |                           |                                    |
|   |                  |   |                           |                                    |
|   |                  |   |                           |                                    |
|   |                  |   |                           |                                    |
|   |                  |   |                           |                                    |
|   |                  |   |                           |                                    |
| RESULTS OF TEST   |                  | ACCEPTABLE: _____                             |                           | UNACCEPTABLE: _____                |
| TEST RESULTS, MINIMUM PRESSURE: _____                         |                  | DURATION: _____                               |                           |                                    |
| REMARKS: <u>Brat Long inspected Surface Lines</u>             |                  |   |                           |                                    |
|   |                  |   |                           |                                    |
| CONTRACTOR'S TEST REPRESENTATIVE: <u>Terry D. [Signature]</u> |                  |   | DATE: <u>11-22-11</u>     |                                    |
| Company's TEST REPRESENTATIVE: _____                          |                  |   | DATE: _____               |                                    |

## Page \_\_\_\_\_ of \_\_\_\_\_

[illegible]



# PRESSURE PROOF TEST AND DEAD WEIGHT READINGS RECORD

Page \_\_\_\_\_ of \_\_\_\_\_

PIPELINE OWNER'S NAME: Antero AFE: \_\_\_\_\_

PROJECT LOCATION OR NAME: Gate Entrance Isolation

CONTRACTOR: \_\_\_\_\_ TESTING CONTRACTOR: \_\_\_\_\_

EMERGENCY STOCK: \_\_\_\_\_ NEW CONSTRUCTION: \_\_\_\_\_ REQUALIFICATION: \_\_\_\_\_

TESTING SECTION FROM STA: Gate Entrance Isolation TO STA: Snyder C Isolation LENGTH: \_\_\_\_\_

PIPE DESCRIPTION: SIZE: \_\_\_\_\_ WALL THICKNESS: \_\_\_\_\_

DEAD WEIGHT SN: \_\_\_\_\_ RANGE: \_\_\_\_\_

TEMPERATURE RECORDER SN: \_\_\_\_\_ RANGE: \_\_\_\_\_

PRESSURE RECORDER SN: \_\_\_\_\_ RANGE: \_\_\_\_\_

MINIMUM ELEVATION: \_\_\_\_\_ MAXIMUM ELEVATION: \_\_\_\_\_

MINIMUM PRESSURE: 215 Supply line MAXIMUM PRESSURE: 226 Supply line

MINIMUM GAGE PRESSURE: 222 Return line MAXIMUM GAGE PRESSURE: 230 Return line

DATE AND TIME TEST STARTED: 11-23-11 3:30 pm

DATE AND TIME TEST COMPLETED: 3:15 hr test

| TIME    | DEAD WEIGHT PSIG |        | TEMPERATURE<br>Degrees F. | MEDIUM<br>(Water-Nitrogen-Gas-Air) |
|---------|------------------|--------|---------------------------|------------------------------------|
|         | Supply           | Return |                           |                                    |
| 3:30 pm | 226              | 230    |                           |                                    |
| 4:00    | 220              | 222    |                           |                                    |
| 4:30    | 215              | 222    |                           |                                    |
| 5:00    | 215              | 222    |                           |                                    |
|         |                  |        |                           |                                    |
|         |                  |        |                           |                                    |
|         |                  |        |                           |                                    |
|         |                  |        |                           |                                    |
|         |                  |        |                           |                                    |
|         |                  |        |                           |                                    |
|         |                  |        |                           |                                    |
|         |                  |        |                           |                                    |
|         |                  |        |                           |                                    |
|         |                  |        |                           |                                    |
|         |                  |        |                           |                                    |

RESULTS OF TEST ACCEPTABLE: \_\_\_\_\_ UNACCEPTABLE: \_\_\_\_\_

TEST RESULTS, MINIMUM PRESSURE: \_\_\_\_\_ DURATION: \_\_\_\_\_

REMARKS: \_\_\_\_\_

Brit long inspected Surface Lines

CONTRACTOR'S TEST REPRESENTATIVE: Terry Dash

DATE: 11-23-11

Company's TEST REPRESENTATIVE: \_\_\_\_\_ DATE: \_\_\_\_\_





# PRESSURE PROOF TEST AND DEAD WEIGHT READINGS RECORD

Page 1 of 2

| PIPELINE OWNER'S NAME: <u>Antero Resources</u>            |                          |                              |   | APP: _____                         |                      |
|---|--------------------------|------------------------------|---|------------------------------------|----------------------|
| PROJECT LOCATION OR NAME: <u>Dever A - Gypsum Ranch A</u> |                          |                              |   |                                    |                      |
| CONTRACTOR: <u>Ritter / Wehling</u>                       |                          |                              | TESTING CONTRACTOR: <u>Ritter / Wehling</u> |                                    |                      |
| EMERGENCY STOCK: _____                                    |                          | NEW CONSTRUCTION: <u>Yes</u> |   | REQUALIFICATION: _____             |                      |
| TESTING SECTION FROM STA.: _____                          |                          | TO STA.: _____               |   | LENGTH: _____                      |                      |
| PIPE DESCRIPTION: SIZE: <u>12" SDR9</u>                   |                          | WALL THICKNESS: _____        |   |                                    |                      |
| DEAD WEIGHT S/N: _____                                    |                          |                              | RANGE: _____                                |                                    |                      |
| TEMPERATURE RECORDER S/N: _____                           |                          |                              | RANGE: _____                                |                                    |                      |
| PRESSURE RECORDER S/N: _____                              |                          |                              | RANGE: _____                                |                                    |                      |
| MINIMUM ELEVATION: _____                                  |                          |                              | MAXIMUM ELEVATION: _____                    |                                    |                      |
| MINIMUM PRESSURE: _____                                   |                          |                              | MAXIMUM PRESSURE: _____                     |                                    |                      |
| MINIMUM GAGE PRESSURE: _____                              |                          |                              | MAXIMUM GAGE PRESSURE: _____                |                                    |                      |
| DATE AND TIME TEST STARTED: _____                         |                          |                              |   |                                    |                      |
| DATE AND TIME TEST COMPLETED: _____                       |                          |                              |   |                                    |                      |
| TIME  | DEAD WEIGHT PSIG         |                              | TEMPERATURE<br>Degrees F.                   | MEDIUM<br>(Water-Nitrogen-Gas-Air) |                      |
| 9:45  | <sup>supply</sup><br>280 | <sup>return</sup><br>280     | 29°   | <u>Water</u>                       |                      |
| 10:00   | 280                      | 280                          | 31°   |                                    |                      |
| 10:15   | 283                      | 282                          | <u>Bump pressure</u>                        |                                    |                      |
| 10:30   | 278                      | 278                          |   |                                    |                      |
| 10:45   | 280                      | 280                          | <u>Bump pressure</u>                        |                                    |                      |
| 11:00   | <del>280</del> 275       | 275                          | <u>Line equalizing</u>                      |                                    |                      |
| 11:15   | 280                      | 280                          | <u>Bump pressure</u>                        |                                    |                      |
| 11:30   | 279                      | 279                          | 34°   |                                    |                      |
| 11:45   | 278                      | 278                          |   |                                    |                      |
| 12:00   | 277                      | 276                          |   |                                    |                      |
| 12:15   | 285                      | 285                          | <u>Bump pressure</u>                        |                                    |                      |
| RESULTS OF TEST   |                          | ACCEPTABLE: _____            |   | UNACCEPTABLE: _____                |                      |
| TEST RESULTS, MINIMUM PRESSURE: _____                     |                          |                              | DURATION: _____                             |                                    |                      |
| REMARKS: _____  |                          |                              |   |                                    |                      |
|   |                          |                              |   |                                    |                      |
| CONTRACTOR'S TEST REPRESENTATIVE: _____                   |                          |                              |   |                                    | DATE: _____          |
| Company's TEST REPRESENTATIVE: <u>Mike Samuels</u>        |                          |                              |   |                                    | DATE: <u>2-18-09</u> |

## Page \_\_\_\_\_ of \_\_\_\_\_

[illegible]

# Appendix E

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Produced Water Analysis



03-Jan-2012

Mark Mumby  
HRL Compliance Solutions  
744 Horizon Ct. Suite 140  
Grand Junction, CO 81506

Re: **Antero Gypsum Ranch B Pad Water Rel. 12/21/11**

Work Order: **1112786**

Dear Mark,

ALS Environmental received 1 sample on 23-Dec-2011 11:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 25.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN331938

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental The ALS logo, which is a stylized blue triangle with a yellow flame inside.

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** HRL Compliance Solutions  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11  
**Work Order:** 1112786

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**Work Order Sample Summary**

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| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u>              |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 1112786-01         | Water Line Water Sample | Water         |                   | 12/21/2011 14:20       | 12/23/2011 11:30     | <input type="checkbox"/> |

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**Client:** HRL Compliance Solutions  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11  
**Work Order:** 1112786

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**Case Narrative**

Batch 38452 samples Water Line Water Sample MS recovery for ORO and MSD recovery for DRO were above control limits due to matrix interference. The surrogate recoveries are unavailable due to dilution below the calibration range. The MSD recovery for ORO and RPD and MS recovery for DRO and RPD met quality control criteria.

Batch R99530 sample Water Line Water Sample was analyzed outside of the holding time. There was not enough time to get the sample on the instrument after receipt. Sample reporting limits should be considered as estimated for Nitrate & Nitrite. The MS/MSD recoveries for Fluoride and Nitrate/Nitrite were below control limits. The results may be biased low in the parent sample for Fluoride and Nitrate/Nitrite. The MS/MSD recoveries for Chloride were below control limits, however, the result in the parent sample is greater than 4x the spiked amount. No qualification is required for Chloride.

Batch R99579A sample Water Line Water Sample MS/MSD recoveries for Sodium and Calcium were below control limits, however, the results in the parent sample is greater than 4x the spiked amount. No qualification is required for Sodium and Calcium. The MS/MSD recoveries for Manganese were below control limits. The result for Manganese in the parent sample may be biased low. The MSD recoveries for Magnesium and Potassium were below control limits, but both the MS recoveries and RPDs met quality control criteria. No data requires qualification for Magnesium and Potassium.

Batch 38451 sample Water Line Water Sample MS/MSD recoveries for Naphthalene were above control limits. The result for Naphthalene in the parent sample may be biased high due to matrix interference.

**Client:** HRL Compliance Solutions  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11  
**WorkOrder:** 1112786

## **QUALIFIERS, ACRONYMS, UNITS**

| <b><u>Qualifier</u></b> | <b><u>Description</u></b>   |
|-------------------------|---|
| *                       | Value exceeds Regulatory Limit  |
| a                       | Not accredited  |
| B                       | Analyte detected in the associated Method Blank above the Reporting Limit |
| E                       | Value above quantitation range  |
| H                       | Analyzed outside of Holding Time  |
| J                       | Analyte detected below quantitation limit                                 |
| n                       | Not offered for accreditation   |
| ND                      | Not Detected at the Reporting Limit                                       |
| O                       | Sample amount is > 4 times amount spiked                                  |
| P                       | Dual Column results percent difference > 40%                              |
| R                       | RPD above laboratory control limit  |
| S                       | Spike Recovery outside laboratory control limits                          |
| U                       | Analyzed but not detected above the MDL                                   |

| <b><u>Acronym</u></b> | <b><u>Description</u></b>           |
|-----------------------|-------------------------------------|
| DUP                   | Method Duplicate                    |
| LCS                   | Laboratory Control Sample           |
| LCSD                  | Laboratory Control Sample Duplicate |
| MBLK                  | Method Blank                        |
| MDL                   | Method Detection Limit              |
| MQL                   | Method Quantitation Limit           |
| MS                    | Matrix Spike                        |
| MSD                   | Matrix Spike Duplicate              |
| PDS                   | Post Digestion Spike                |
| PQL                   | Practical Quantitation Limit        |
| RPD                   | Relative Percent Difference         |
| SD                    | Serial Dilution                     |
| TDL                   | Target Detection Limit              |

| <b><u>Units Reported</u></b> | <b><u>Description</u></b> |
|------------------------------|---------------------------|
| µg/L                         | Micrograms per Liter      |
| mg/L                         | Milligrams per Liter      |
| s.u.                         | Standard Units            |

# ALS Group USA, Corp

Date: 03-Jan-12

Client: HRL Compliance Solutions

Project: Antero Gypsum Ranch B Pad Water Rel. 12/21/11

Work Order: 1112786

Sample ID: Water Line Water Sample

Lab ID: 1112786-01

Collection Date: 12/21/2011 02:20 PM

Matrix: WATER

| Analyses                                 | Result       | Qual | Report Limit   | Units       | Dilution Factor              | Date Analyzed       |
|--|--------------|------|----------------|-------------|------------------------------|---------------------|
| <b>DIESEL RANGE ORGANICS BY GC-FID</b>   |              |      | <b>SW8015M</b> |             | Prep Date: <b>12/28/2011</b> | Analyst: <b>RM</b>  |
| <b>DRO (C10-C28)</b>                     | <b>48</b>    |      | <b>1.0</b>     | <b>mg/L</b> | 10                           | 12/29/2011 12:19 PM |
| <b>ORO (C28-C40)</b>                     | <b>11</b>    |      | <b>1.0</b>     | <b>mg/L</b> | 10                           | 12/29/2011 12:19 PM |
| Surr: 4-Terphenyl-d14                    | 0            | S    | 26-109         | %REC        | 10                           | 12/29/2011 12:19 PM |
| <b>GASOLINE RANGE ORGANICS BY GC-FID</b> |              |      | <b>SW8015</b>  |             |                              | Analyst: <b>RM</b>  |
| <b>GRO (C6-C10)</b>                      | <b>50</b>    |      | <b>0.20</b>    | <b>mg/L</b> | 1                            | 12/29/2011 04:52 PM |
| Surr: Toluene-d8                         | 87.5         |      | 70-130         | %REC        | 1                            | 12/29/2011 04:52 PM |
| <b>METALS BY ICP-MS (DISSOLVED)</b>      |              |      | <b>SW6020A</b> |             |                              | Analyst: <b>RH</b>  |
| <b>Calcium</b>                           | <b>100</b>   |      | <b>0.50</b>    | <b>mg/L</b> | 1                            | 12/28/2011 07:35 PM |
| <b>Iron</b>                              | <b>11</b>    |      | <b>0.080</b>   | <b>mg/L</b> | 1                            | 12/28/2011 07:35 PM |
| <b>Magnesium</b>                         | <b>17</b>    |      | <b>0.20</b>    | <b>mg/L</b> | 1                            | 12/28/2011 07:35 PM |
| <b>Manganese</b>                         | <b>0.31</b>  |      | <b>0.0050</b>  | <b>mg/L</b> | 1                            | 12/28/2011 07:35 PM |
| <b>Potassium</b>                         | <b>25</b>    |      | <b>0.20</b>    | <b>mg/L</b> | 1                            | 12/28/2011 07:35 PM |
| <b>Sodium</b>                            | <b>2,900</b> |      | <b>20</b>      | <b>mg/L</b> | 100                          | 12/29/2011 10:24 AM |
| <b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>   |              |      | <b>SW8270</b>  |             | Prep Date: <b>12/28/2011</b> | Analyst: <b>CW</b>  |
| Acenaphthene                             | ND           |      | 5.0            | µg/L        | 1                            | 12/28/2011 08:32 PM |
| Acenaphthylene                           | ND           |      | 5.0            | µg/L        | 1                            | 12/28/2011 08:32 PM |
| Anthracene                               | ND           |      | 5.0            | µg/L        | 1                            | 12/28/2011 08:32 PM |
| Benzo(a)anthracene                       | ND           |      | 5.0            | µg/L        | 1                            | 12/28/2011 08:32 PM |
| Benzo(a)pyrene                           | ND           |      | 5.0            | µg/L        | 1                            | 12/28/2011 08:32 PM |
| Benzo(b)fluoranthene                     | ND           |      | 5.0            | µg/L        | 1                            | 12/28/2011 08:32 PM |
| Benzo(g,h,i)perylene                     | ND           |      | 5.0            | µg/L        | 1                            | 12/28/2011 08:32 PM |
| Benzo(k)fluoranthene                     | ND           |      | 5.0            | µg/L        | 1                            | 12/28/2011 08:32 PM |
| Chrysene                                 | ND           |      | 5.0            | µg/L        | 1                            | 12/28/2011 08:32 PM |
| Dibenzo(a,h)anthracene                   | ND           |      | 5.0            | µg/L        | 1                            | 12/28/2011 08:32 PM |
| Fluoranthene                             | ND           |      | 5.0            | µg/L        | 1                            | 12/28/2011 08:32 PM |
| <b>Fluorene</b>                          | <b>12</b>    |      | <b>5.0</b>     | <b>µg/L</b> | 1                            | 12/28/2011 08:32 PM |
| Indeno(1,2,3-cd)pyrene                   | ND           |      | 5.0            | µg/L        | 1                            | 12/28/2011 08:32 PM |
| <b>Naphthalene</b>                       | <b>70</b>    |      | <b>50</b>      | <b>µg/L</b> | 10                           | 12/29/2011 10:43 AM |
| <b>Phenanthrene</b>                      | <b>13</b>    |      | <b>5.0</b>     | <b>µg/L</b> | 1                            | 12/28/2011 08:32 PM |
| Pyrene                                   | ND           |      | 5.0            | µg/L        | 1                            | 12/28/2011 08:32 PM |
| Surr: 2,4,6-Tribromophenol               | 77.7         |      | 21-125         | %REC        | 1                            | 12/28/2011 08:32 PM |
| Surr: 2-Fluorobiphenyl                   | 69.7         |      | 36-94          | %REC        | 1                            | 12/28/2011 08:32 PM |
| Surr: 2-Fluorophenol                     | 36.2         |      | 10-75          | %REC        | 1                            | 12/28/2011 08:32 PM |
| Surr: 4-Terphenyl-d14                    | 34.3         |      | 26-119         | %REC        | 1                            | 12/28/2011 08:32 PM |
| Surr: Nitrobenzene-d5                    | 71.6         |      | 41-104         | %REC        | 1                            | 12/28/2011 08:32 PM |
| Surr: Phenol-d6                          | 15.4         |      | 11-50          | %REC        | 1                            | 12/28/2011 08:32 PM |
| <b>VOLATILE ORGANIC COMPOUNDS</b>        |              |      | <b>SW8260</b>  |             |                              | Analyst: <b>AK</b>  |

Note: See Qualifiers page for a list of qualifiers and their definitions.



# ALS Group USA, Corp

Date: 03-Jan-12

Client: HRL Compliance Solutions

Project: Antero Gypsum Ranch B Pad Water Rel. 12/21/11

Work Order: 1112786

Sample ID: Water Line Water Sample

Lab ID: 1112786-01

Collection Date: 12/21/2011 02:20 PM

Matrix: WATER

| Analyses                            | Result       | Qual | Report Limit   | Units       | Dilution Factor | Date Analyzed       |
|-------------------------------------|--------------|------|----------------|-------------|-----------------|---------------------|
| <b>Benzene</b>                      | <b>3,400</b> |      | <b>50</b>      | <b>µg/L</b> | 50              | 12/30/2011 06:57 PM |
| <b>Ethylbenzene</b>                 | <b>350</b>   |      | <b>50</b>      | <b>µg/L</b> | 50              | 12/30/2011 06:57 PM |
| <b>m,p-Xylene</b>                   | <b>3,900</b> |      | <b>100</b>     | <b>µg/L</b> | 50              | 12/30/2011 06:57 PM |
| <b>o-Xylene</b>                     | <b>820</b>   |      | <b>50</b>      | <b>µg/L</b> | 50              | 12/30/2011 06:57 PM |
| <b>Toluene</b>                      | <b>9,100</b> |      | <b>5,000</b>   | <b>µg/L</b> | 5000            | 12/30/2011 12:35 PM |
| <b>Xylenes, Total</b>               | <b>4,700</b> |      | <b>150</b>     | <b>µg/L</b> | 50              | 12/30/2011 06:57 PM |
| Surr: 1,2-Dichloroethane-d4         | 92.3         |      | 70-120         | %REC        | 50              | 12/30/2011 06:57 PM |
| Surr: 1,2-Dichloroethane-d4         | 99.4         |      | 70-120         | %REC        | 5000            | 12/30/2011 12:35 PM |
| Surr: 4-Bromofluorobenzene          | 102          |      | 75-120         | %REC        | 50              | 12/30/2011 06:57 PM |
| Surr: 4-Bromofluorobenzene          | 97.2         |      | 75-120         | %REC        | 5000            | 12/30/2011 12:35 PM |
| Surr: Dibromofluoromethane          | 98.4         |      | 85-115         | %REC        | 50              | 12/30/2011 06:57 PM |
| Surr: Dibromofluoromethane          | 101          |      | 85-115         | %REC        | 5000            | 12/30/2011 12:35 PM |
| Surr: Toluene-d8                    | 97.3         |      | 85-120         | %REC        | 50              | 12/30/2011 06:57 PM |
| Surr: Toluene-d8                    | 98.3         |      | 85-120         | %REC        | 5000            | 12/30/2011 12:35 PM |
| <b>ANIONS BY ION CHROMATOGRAPHY</b> |              |      | <b>SW9056</b>  |             |                 | Analyst: <b>ED</b>  |
| <b>Bromide</b>                      | <b>25</b>    |      | <b>1.0</b>     | <b>mg/L</b> | 10              | 12/27/2011 02:05 PM |
| <b>Chloride</b>                     | <b>3,800</b> |      | <b>200</b>     | <b>mg/L</b> | 200             | 12/27/2011 03:26 PM |
| <b>Fluoride</b>                     | <b>0.20</b>  |      | <b>0.10</b>    | <b>mg/L</b> | 1               | 12/27/2011 12:48 PM |
| Nitrogen, Nitrate                   | ND           | H    | 0.020          | mg/L        | 1               | 12/27/2011 12:48 PM |
| Nitrogen, Nitrite                   | ND           | H    | 0.020          | mg/L        | 1               | 12/27/2011 12:48 PM |
| <b>Sulfate</b>                      | <b>47</b>    |      | <b>10</b>      | <b>mg/L</b> | 10              | 12/27/2011 02:05 PM |
| Nitrogen, Nitrate-Nitrite           | ND           |      | 0.020          | mg/L        | 1               | 12/27/2011 12:48 PM |
| <b>PH</b>                           |              |      | <b>SW9040</b>  |             |                 | Analyst: <b>KV</b>  |
| <b>pH</b>                           | <b>7.39</b>  |      |                | <b>s.u.</b> | 1               | 12/23/2011 12:30 PM |
| <b>TOTAL DISSOLVED SOLIDS</b>       |              |      | <b>A2540 C</b> |             |                 | Analyst: <b>JS</b>  |
| <b>Total Dissolved Solids</b>       | <b>9,100</b> |      | <b>10</b>      | <b>mg/L</b> | 1               | 12/27/2011 03:16 PM |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

Client: HRL Compliance Solutions

Work Order: 1112786

Project: Antero Gypsum Ranch B Pad Water Rel. 12/21/11

# QC BATCH REPORT

Batch ID: 38452

Instrument ID GC8

Method: SW8015M

|                       |        |                                      |         |               |      |                       |               |   |           |              |
|-----------------------|--------|--------------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>MBLK</b>           |        | Sample ID: <b>DBLKW1-38452-38452</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/29/2011 09:44 AM</b> |           |              |
| Client ID:            |        | Run ID: <b>GC8_111229B</b>           |         |               |      | SeqNo: <b>1867140</b> |               | Prep Date: <b>12/28/2011</b>              |           | DF: <b>1</b> |
| Analyte               | Result | PQL                                  | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| DRO (C10-C28)         | ND     | 0.10                                 |         |               |      |                       |               |   |           |              |
| ORO (C28-C40)         | ND     | 0.10                                 |         |               |      |                       |               |   |           |              |
| Surr: 4-Terphenyl-d14 | 0.024  | 0                                    | 0.05    | 0             | 48   | 26-109                | 0             |   |           |              |

|                       |        |                                      |         |               |      |                       |               |   |           |              |
|-----------------------|--------|--------------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>LCS</b>            |        | Sample ID: <b>DLCSW1-38452-38452</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/29/2011 02:32 PM</b> |           |              |
| Client ID:            |        | Run ID: <b>GC8_111229B</b>           |         |               |      | SeqNo: <b>1867147</b> |               | Prep Date: <b>12/28/2011</b>              |           | DF: <b>1</b> |
| Analyte               | Result | PQL                                  | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| DRO (C10-C28)         | 4.753  | 0.10                                 | 5       | 0             | 95.1 | 60-130                | 0             |   |           |              |
| ORO (C28-C40)         | 5.142  | 0.10                                 | 5       | 0             | 103  | 60-130                | 0             |   |           |              |
| Surr: 4-Terphenyl-d14 | 0.0217 | 0                                    | 0.05    | 0             | 43.4 | 26-109                | 0             |   |           |              |

|                       |         |                                       |         |               |      |                       |               |   |           |              |
|-----------------------|---------|---------------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>LCSD</b>           |         | Sample ID: <b>DLCSDW1-38452-38452</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/29/2011 02:54 PM</b> |           |              |
| Client ID:            |         | Run ID: <b>GC8_111229B</b>            |         |               |      | SeqNo: <b>1867142</b> |               | Prep Date: <b>12/28/2011</b>              |           | DF: <b>1</b> |
| Analyte               | Result  | PQL                                   | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| DRO (C10-C28)         | 5.418   | 0.10                                  | 5       | 0             | 108  | 60-130                | 4.753         | 13.1                                      | 30        |              |
| ORO (C28-C40)         | 5.303   | 0.10                                  | 5       | 0             | 106  | 60-130                | 5.142         | 3.09                                      | 30        |              |
| Surr: 4-Terphenyl-d14 | 0.02341 | 0                                     | 0.05    | 0             | 46.8 | 26-109                | 0.0217        | 7.58                                      | 30        |              |

|   |        |                                  |         |               |      |                       |               |   |           |               |
|---|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|---------------|
| <b>MS</b>                                 |        | Sample ID: <b>1112786-01B MS</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/29/2011 01:03 PM</b> |           |               |
| Client ID: <b>Water Line Water Sample</b> |        | Run ID: <b>GC8_111229B</b>       |         |               |      | SeqNo: <b>1867146</b> |               | Prep Date: <b>12/28/2011</b>              |           | DF: <b>10</b> |
| Analyte                                   | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual          |
| DRO (C10-C28)                             | 106.5  | 10                               | 50      | 47.71         | 118  | 60-130                | 0             |   |           |               |
| ORO (C28-C40)                             | 109.1  | 10                               | 50      | 11.44         | 195  | 60-130                | 0             |   |           | S             |
| Surr: 4-Terphenyl-d14                     | ND     | 0                                | 0.5     | 0             | 0    | 26-109                | 0             |   |           | S             |

|   |        |                                   |         |               |      |                       |               |   |           |               |
|---|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|---------------|
| <b>MSD</b>                                |        | Sample ID: <b>1112786-01B MSD</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/29/2011 01:25 PM</b> |           |               |
| Client ID: <b>Water Line Water Sample</b> |        | Run ID: <b>GC8_111229B</b>        |         |               |      | SeqNo: <b>1867141</b> |               | Prep Date: <b>12/28/2011</b>              |           | DF: <b>10</b> |
| Analyte                                   | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual          |
| DRO (C10-C28)                             | 126.4  | 10                                | 50      | 47.71         | 157  | 60-130                | 106.5         | 17.1                                      | 30        | S             |
| ORO (C28-C40)                             | 123.5  | 10                                | 50      | 11.44         | 224  | 60-1330               | 109.1         | 12.4                                      | 30        |               |
| Surr: 4-Terphenyl-d14                     | ND     | 0                                 | 0.5     | 0             | 0    | 26-109                | 0             | 0   | 30        | S             |

The following samples were analyzed in this batch:

1112786-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112786  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **R99626**      Instrument ID **GC9**      Method: **SW8015**

| <b>MBLK</b>             |              | Sample ID: <b>MBLK-R99626-R99626</b> |            |               |            | Units: <b>µg/L</b>    |               | Analysis Date: <b>12/29/2011 11:36 AM</b> |           |              |
|-------------------------|--------------|--------------------------------------|------------|---------------|------------|-----------------------|---------------|---|-----------|--------------|
| Client ID:              |              | Run ID: <b>GC9_111229A</b>           |            |               |            | SeqNo: <b>1867262</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                 | Result       | PQL                                  | SPK Val    | SPK Ref Value | %REC       | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| GRO (C6-C10)            | ND           | 200                                  |            |               |            |                       |               |   |           |              |
| <i>Surr: Toluene-d8</i> | <i>111.6</i> | <i>0</i>                             | <i>100</i> | <i>0</i>      | <i>112</i> | <i>70-130</i>         | <i>0</i>      |   |           |              |

| <b>LCS</b>              |              | Sample ID: <b>LCS-R99626-R99626</b> |            |               |            | Units: <b>µg/L</b>    |               | Analysis Date: <b>12/29/2011 10:23 AM</b> |           |              |
|-------------------------|--------------|-------------------------------------|------------|---------------|------------|-----------------------|---------------|---|-----------|--------------|
| Client ID:              |              | Run ID: <b>GC9_111229A</b>          |            |               |            | SeqNo: <b>1867260</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                 | Result       | PQL                                 | SPK Val    | SPK Ref Value | %REC       | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| GRO (C6-C10)            | 26520        | 200                                 | 25000      | 0             | 106        | 70-130                | 0             |   |           |              |
| <i>Surr: Toluene-d8</i> | <i>110.1</i> | <i>0</i>                            | <i>100</i> | <i>0</i>      | <i>110</i> | <i>70-130</i>         | <i>0</i>      |   |           |              |

| <b>LCSD</b>             |              | Sample ID: <b>LCSD-R99626-R99626</b> |            |               |            | Units: <b>µg/L</b>    |               | Analysis Date: <b>12/29/2011 10:47 AM</b> |           |              |
|-------------------------|--------------|--------------------------------------|------------|---------------|------------|-----------------------|---------------|---|-----------|--------------|
| Client ID:              |              | Run ID: <b>GC9_111229A</b>           |            |               |            | SeqNo: <b>1867261</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                 | Result       | PQL                                  | SPK Val    | SPK Ref Value | %REC       | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| GRO (C6-C10)            | 25790        | 200                                  | 25000      | 0             | 103        | 70-130                | 26520         | 2.79                                      | 30        |              |
| <i>Surr: Toluene-d8</i> | <i>111.6</i> | <i>0</i>                             | <i>100</i> | <i>0</i>      | <i>112</i> | <i>70-130</i>         | <i>110.1</i>  | <i>1.38</i>                               | <i>30</i> |              |

The following samples were analyzed in this batch:

1112786-01A

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112786  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **R99579A**      Instrument ID **ICPMS2**      Method: **SW6020A**      (**Dissolve**)

| <b>MBLK</b> |         | Sample ID: <b>MBLK-R99579A-R99579A</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/28/2011 07:10 PM</b> |           |              |
|-------------|---------|--|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:  |         | Run ID: <b>ICPMS2_111227C</b>          |         |               |      | SeqNo: <b>1866227</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte     | Result  | PQL                                    | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Calcium     | 0.02843 | 0.50                                   |         |               |      |                       |               |   |           | J            |
| Iron        | 0.01216 | 0.080                                  |         |               |      |                       |               |   |           | J            |
| Magnesium   | 0.01136 | 0.20                                   |         |               |      |                       |               |   |           | J            |
| Manganese   | ND      | 0.0050                                 |         |               |      |                       |               |   |           |              |
| Potassium   | 0.02146 | 0.20                                   |         |               |      |                       |               |   |           | J            |
| Sodium      | ND      | 0.20                                   |         |               |      |                       |               |   |           |              |

| <b>LCS</b> |        | Sample ID: <b>LCS-R99579A-R99579A</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/28/2011 07:05 PM</b> |           |              |
|------------|--------|---------------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID: |        | Run ID: <b>ICPMS2_111227C</b>         |         |               |      | SeqNo: <b>1866226</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte    | Result | PQL                                   | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Calcium    | 10.47  | 0.50                                  | 10      | 0             | 105  | 80-120                | 0             |   |           |              |
| Iron       | 10.03  | 0.080                                 | 10      | 0             | 100  | 80-120                | 0             |   |           |              |
| Magnesium  | 10.98  | 0.20                                  | 10      | 0             | 110  | 80-120                | 0             |   |           |              |
| Manganese  | 0.1017 | 0.0050                                | 0.1     | 0             | 102  | 80-120                | 0             |   |           |              |
| Potassium  | 10.83  | 0.20                                  | 10      | 0             | 108  | 80-120                | 0             |   |           |              |
| Sodium     | 10.81  | 0.20                                  | 10      | 0             | 108  | 80-120                | 0             |   |           |              |

| <b>LCSD</b> |        | Sample ID: <b>LCSD-R99579A-R99579A</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/28/2011 07:54 PM</b> |           |              |
|-------------|--------|--|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:  |        | Run ID: <b>ICPMS2_111227C</b>          |         |               |      | SeqNo: <b>1866228</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte     | Result | PQL                                    | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Calcium     | 10.42  | 0.50                                   | 10      | 0             | 104  | 80-120                | 10.47         | 0.479                                     | 20        |              |
| Iron        | 9.94   | 0.080                                  | 10      | 0             | 99.4 | 80-120                | 10.03         | 0.901                                     | 20        |              |
| Magnesium   | 10.55  | 0.20                                   | 10      | 0             | 106  | 80-120                | 10.98         | 3.99                                      | 20        |              |
| Manganese   | 0.1018 | 0.0050                                 | 0.1     | 0             | 102  | 80-120                | 0.1017        | 0.0983                                    | 20        |              |
| Potassium   | 10.82  | 0.20                                   | 10      | 0             | 108  | 80-120                | 10.83         | 0.0924                                    | 20        |              |
| Sodium      | 10.4   | 0.20                                   | 10      | 0             | 104  | 80-120                | 10.81         | 3.87                                      | 20        |              |

| <b>MS</b>                                 |        | Sample ID: <b>1112786-01CMS</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/28/2011 07:39 PM</b> |           |              |
|---|--------|---------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID: <b>Water Line Water Sample</b> |        | Run ID: <b>ICPMS2_111227C</b>   |         |               |      | SeqNo: <b>1866221</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                                   | Result | PQL                             | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Calcium                                   | 108.5  | 0.50                            | 10      | 103.2         | 53   | 80-120                | 0             |   |           | SO           |
| Iron                                      | 19.49  | 0.080                           | 10      | 11.05         | 84.4 | 80-120                | 0             |   |           |              |
| Magnesium                                 | 24.75  | 0.20                            | 10      | 16.63         | 81.2 | 80-120                | 0             |   |           |              |
| Manganese                                 | 0.3861 | 0.0050                          | 0.1     | 0.3067        | 79.4 | 80-120                | 0             |   |           | S            |
| Potassium                                 | 33.96  | 0.20                            | 10      | 25.36         | 86   | 80-120                | 0             |   |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112786  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **R99579A** Instrument ID **ICPMS2** Method: **SW6020A (Dissolve)**

|   |        |                                 |         |               |      |                       |               |   |           |                |
|---|--------|---------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|----------------|
| <b>MS</b>                                 |        | Sample ID: <b>1112786-01CMS</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/29/2011 10:29 AM</b> |           |                |
| Client ID: <b>Water Line Water Sample</b> |        | Run ID: <b>ICPMS2_111229A</b>   |         |               |      | SeqNo: <b>1866849</b> |               | Prep Date:                                |           | DF: <b>100</b> |
| Analyte                                   | Result | PQL                             | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual           |

|        |      |    |    |      |      |        |   |  |  |    |
|--------|------|----|----|------|------|--------|---|--|--|----|
| Sodium | 2850 | 20 | 10 | 2900 | -500 | 80-120 | 0 |  |  | SO |
|--------|------|----|----|------|------|--------|---|--|--|----|

|   |        |                                  |         |               |      |                       |               |   |           |              |
|---|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>MSD</b>                                |        | Sample ID: <b>1112786-01CMSD</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/28/2011 07:44 PM</b> |           |              |
| Client ID: <b>Water Line Water Sample</b> |        | Run ID: <b>ICPMS2_111227C</b>    |         |               |      | SeqNo: <b>1866222</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                                   | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |

|           |        |        |     |        |      |        |        |      |    |    |
|-----------|--------|--------|-----|--------|------|--------|--------|------|----|----|
| Calcium   | 106.7  | 0.50   | 10  | 103.2  | 35   | 80-120 | 108.5  | 1.67 | 20 | SO |
| Iron      | 19.21  | 0.080  | 10  | 11.05  | 81.6 | 80-120 | 19.49  | 1.45 | 20 |    |
| Magnesium | 23.93  | 0.20   | 10  | 16.63  | 73   | 80-120 | 24.75  | 3.37 | 20 | S  |
| Manganese | 0.3819 | 0.0050 | 0.1 | 0.3067 | 75.2 | 80-120 | 0.3861 | 1.09 | 20 | S  |
| Potassium | 33.29  | 0.20   | 10  | 25.36  | 79.3 | 80-120 | 33.96  | 1.99 | 20 | S  |

|   |        |                                  |         |               |      |                       |               |   |           |                |
|---|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|----------------|
| <b>MSD</b>                                |        | Sample ID: <b>1112786-01CMSD</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/29/2011 10:34 AM</b> |           |                |
| Client ID: <b>Water Line Water Sample</b> |        | Run ID: <b>ICPMS2_111229A</b>    |         |               |      | SeqNo: <b>1866850</b> |               | Prep Date:                                |           | DF: <b>100</b> |
| Analyte                                   | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual           |

|        |      |    |    |      |      |        |      |      |    |    |
|--------|------|----|----|------|------|--------|------|------|----|----|
| Sodium | 3223 | 20 | 10 | 2900 | 3230 | 80-120 | 2850 | 12.3 | 20 | SO |
|--------|------|----|----|------|------|--------|------|------|----|----|

The following samples were analyzed in this batch:

1112786-01C

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112786  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **38451**      Instrument ID **SVMS5**      Method: **SW8270**

| <b>MBLK</b>                       |        | Sample ID: <b>SBLKW1-38451-38451</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>12/28/2011 05:37 PM</b> |           |              |
|-----------------------------------|--------|--------------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                        |        | Run ID: <b>SVMS5_111228A</b>         |         |               |      | SeqNo: <b>1866289</b> |               | Prep Date: <b>12/28/2011</b>              |           | DF: <b>1</b> |
| Analyte                           | Result | PQL                                  | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Acenaphthene                      | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Acenaphthylene                    | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Anthracene                        | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Benzo(a)anthracene                | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Benzo(a)pyrene                    | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Benzo(b)fluoranthene              | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Benzo(g,h,i)perylene              | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Benzo(k)fluoranthene              | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Chrysene                          | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Dibenzo(a,h)anthracene            | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Fluoranthene                      | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Fluorene                          | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Indeno(1,2,3-cd)pyrene            | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Naphthalene                       | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Phenanthrene                      | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| Pyrene                            | ND     | 5.0                                  |         |               |      |                       |               |   |           |              |
| <i>Surr: 2,4,6-Tribromophenol</i> | 35.55  | 0                                    | 50      | 0             | 71.1 | 21-125                |               | 0   |           |              |
| <i>Surr: 2-Fluorobiphenyl</i>     | 37.29  | 0                                    | 50      | 0             | 74.6 | 36-94                 |               | 0   |           |              |
| <i>Surr: 2-Fluorophenol</i>       | 26.87  | 0                                    | 50      | 0             | 53.7 | 10-75                 |               | 0   |           |              |
| <i>Surr: 4-Terphenyl-d14</i>      | 39.22  | 0                                    | 50      | 0             | 78.4 | 26-119                |               | 0   |           |              |
| <i>Surr: Nitrobenzene-d5</i>      | 41.61  | 0                                    | 50      | 0             | 83.2 | 41-104                |               | 0   |           |              |
| <i>Surr: Phenol-d6</i>            | 15.75  | 0                                    | 50      | 0             | 31.5 | 11-50                 |               | 0   |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112786  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **38451**      Instrument ID **SVMS5**      Method: **SW8270**

| <b>LCS</b>                 |        | Sample ID: <b>SLCSW1-38451-38451</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>12/28/2011 06:12 PM</b> |           |              |
|----------------------------|--------|--------------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                 |        | Run ID: <b>SVMS5_111228A</b>         |         |               |      | SeqNo: <b>1866292</b> |               | Prep Date: <b>12/28/2011</b>              |           | DF: <b>1</b> |
| Analyte                    | Result | PQL                                  | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Acenaphthene               | 31.19  | 5.0                                  | 40      | 0             | 78   | 45-110                | 0             |   |           |              |
| Acenaphthylene             | 31.64  | 5.0                                  | 40      | 0             | 79.1 | 50-105                | 0             |   |           |              |
| Anthracene                 | 33.31  | 5.0                                  | 40      | 0             | 83.3 | 55-110                | 0             |   |           |              |
| Benzo(a)anthracene         | 34.38  | 5.0                                  | 40      | 0             | 86   | 55-110                | 0             |   |           |              |
| Benzo(a)pyrene             | 36.05  | 5.0                                  | 40      | 0             | 90.1 | 55-110                | 0             |   |           |              |
| Benzo(b)fluoranthene       | 39.71  | 5.0                                  | 40      | 0             | 99.3 | 45-120                | 0             |   |           |              |
| Benzo(g,h,i)perylene       | 31.46  | 5.0                                  | 40      | 0             | 78.6 | 40-125                | 0             |   |           |              |
| Benzo(k)fluoranthene       | 33.1   | 5.0                                  | 40      | 0             | 82.8 | 45-125                | 0             |   |           |              |
| Chrysene                   | 31.87  | 5.0                                  | 40      | 0             | 79.7 | 55-110                | 0             |   |           |              |
| Dibenzo(a,h)anthracene     | 34.46  | 5.0                                  | 40      | 0             | 86.2 | 40-125                | 0             |   |           |              |
| Fluoranthene               | 33.58  | 5.0                                  | 40      | 0             | 84   | 55-115                | 0             |   |           |              |
| Fluorene                   | 32.91  | 5.0                                  | 40      | 0             | 82.3 | 50-110                | 0             |   |           |              |
| Indeno(1,2,3-cd)pyrene     | 34.16  | 5.0                                  | 40      | 0             | 85.4 | 45-125                | 0             |   |           |              |
| Naphthalene                | 30.05  | 5.0                                  | 40      | 0             | 75.1 | 40-100                | 0             |   |           |              |
| Phenanthrene               | 34.03  | 5.0                                  | 40      | 0             | 85.1 | 50-115                | 0             |   |           |              |
| Pyrene                     | 33.97  | 5.0                                  | 40      | 0             | 84.9 | 50-130                | 0             |   |           |              |
| Surr: 2,4,6-Tribromophenol | 42.24  | 0                                    | 50      | 0             | 84.5 | 21-125                | 0             |   |           |              |
| Surr: 2-Fluorobiphenyl     | 36.88  | 0                                    | 50      | 0             | 73.8 | 36-94                 | 0             |   |           |              |
| Surr: 2-Fluorophenol       | 24.05  | 0                                    | 50      | 0             | 48.1 | 10-75                 | 0             |   |           |              |
| Surr: 4-Terphenyl-d14      | 28.53  | 0                                    | 50      | 0             | 57.1 | 26-119                | 0             |   |           |              |
| Surr: Nitrobenzene-d5      | 39.18  | 0                                    | 50      | 0             | 78.4 | 41-104                | 0             |   |           |              |
| Surr: Phenol-d6            | 14.35  | 0                                    | 50      | 0             | 28.7 | 11-50                 | 0             |   |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112786  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **38451**      Instrument ID **SVMS5**      Method: **SW8270**

| <b>LCSD</b>                |        | Sample ID: <b>SLCSDW1-38451-38451</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>12/28/2011 06:47 PM</b> |           |              |
|----------------------------|--------|---------------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                 |        | Run ID: <b>SVMS5_111228A</b>          |         |               |      | SeqNo: <b>1866293</b> |               | Prep Date: <b>12/28/2011</b>              |           | DF: <b>1</b> |
| Analyte                    | Result | PQL                                   | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Acenaphthene               | 33.14  | 5.0                                   | 40      | 0             | 82.8 | 45-110                | 31.19         | 6.06                                      | 30        |              |
| Acenaphthylene             | 33.65  | 5.0                                   | 40      | 0             | 84.1 | 50-105                | 31.64         | 6.16                                      | 30        |              |
| Anthracene                 | 34.3   | 5.0                                   | 40      | 0             | 85.8 | 55-110                | 33.31         | 2.93                                      | 30        |              |
| Benzo(a)anthracene         | 35.48  | 5.0                                   | 40      | 0             | 88.7 | 55-110                | 34.38         | 3.15                                      | 30        |              |
| Benzo(a)pyrene             | 37.49  | 5.0                                   | 40      | 0             | 93.7 | 55-110                | 36.05         | 3.92                                      | 30        |              |
| Benzo(b)fluoranthene       | 39.85  | 5.0                                   | 40      | 0             | 99.6 | 45-120                | 39.71         | 0.352                                     | 30        |              |
| Benzo(g,h,i)perylene       | 32.29  | 5.0                                   | 40      | 0             | 80.7 | 40-125                | 31.46         | 2.6                                       | 30        |              |
| Benzo(k)fluoranthene       | 35.6   | 5.0                                   | 40      | 0             | 89   | 45-125                | 33.1          | 7.28                                      | 30        |              |
| Chrysene                   | 33.07  | 5.0                                   | 40      | 0             | 82.7 | 55-110                | 31.87         | 3.7                                       | 30        |              |
| Dibenzo(a,h)anthracene     | 35.45  | 5.0                                   | 40      | 0             | 88.6 | 40-125                | 34.46         | 2.83                                      | 30        |              |
| Fluoranthene               | 34.65  | 5.0                                   | 40      | 0             | 86.6 | 55-115                | 33.58         | 3.14                                      | 30        |              |
| Fluorene                   | 34.65  | 5.0                                   | 40      | 0             | 86.6 | 50-110                | 32.91         | 5.15                                      | 30        |              |
| Indeno(1,2,3-cd)pyrene     | 35.21  | 5.0                                   | 40      | 0             | 88   | 45-125                | 34.16         | 3.03                                      | 30        |              |
| Naphthalene                | 32.98  | 5.0                                   | 40      | 0             | 82.4 | 40-100                | 30.05         | 9.3                                       | 30        |              |
| Phenanthrene               | 35.26  | 5.0                                   | 40      | 0             | 88.2 | 50-115                | 34.03         | 3.55                                      | 30        |              |
| Pyrene                     | 34.52  | 5.0                                   | 40      | 0             | 86.3 | 50-130                | 33.97         | 1.61                                      | 30        |              |
| Surr: 2,4,6-Tribromophenol | 44.18  | 0                                     | 50      | 0             | 88.4 | 21-125                | 42.24         | 4.49                                      | 40        |              |
| Surr: 2-Fluorobiphenyl     | 39.19  | 0                                     | 50      | 0             | 78.4 | 36-94                 | 36.88         | 6.07                                      | 40        |              |
| Surr: 2-Fluorophenol       | 25.41  | 0                                     | 50      | 0             | 50.8 | 10-75                 | 24.05         | 5.5                                       | 40        |              |
| Surr: 4-Terphenyl-d14      | 28.43  | 0                                     | 50      | 0             | 56.9 | 26-119                | 28.53         | 0.351                                     | 40        |              |
| Surr: Nitrobenzene-d5      | 42.58  | 0                                     | 50      | 0             | 85.2 | 41-104                | 39.18         | 8.32                                      | 40        |              |
| Surr: Phenol-d6            | 14.89  | 0                                     | 50      | 0             | 29.8 | 11-50                 | 14.35         | 3.69                                      | 40        |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** HRL Compliance Solutions  
**Work Order:** 1112786  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **38451**      Instrument ID **SVMS5**      Method: **SW8270**

| MS  |        |     |         | Sample ID: <b>1112786-01B MS</b> |      |               | Units: <b>µg/L</b>    |      | Analysis Date: <b>12/28/2011 07:22 PM</b> |      |
|---|--------|-----|---------|----------------------------------|------|---------------|-----------------------|------|---|------|
| Client ID: <b>Water Line Water Sample</b> |        |     |         | Run ID: <b>SVMS5_111228A</b>     |      |               | SeqNo: <b>1866294</b> |      | Prep Date: <b>12/28/2011</b>              |      |
|   |        |     |         |                                  |      |               | DF: <b>1</b>          |      |   |      |
| Analyte                                   | Result | PQL | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value         | %RPD | RPD Limit                                 | Qual |
| Acenaphthene                              | 344.7  | 50  | 400     | 0                                | 86.2 | 45-110        | 0                     |      |   |      |
| Acenaphthylene                            | 303.9  | 50  | 400     | 0                                | 76   | 50-105        | 0                     |      |   |      |
| Anthracene                                | 362.6  | 50  | 400     | 0                                | 90.6 | 55-110        | 0                     |      |   |      |
| Benzo(a)anthracene                        | 354.1  | 50  | 400     | 0                                | 88.5 | 55-110        | 0                     |      |   |      |
| Benzo(a)pyrene                            | 366.8  | 50  | 400     | 0                                | 91.7 | 55-110        | 0                     |      |   |      |
| Benzo(b)fluoranthene                      | 374.1  | 50  | 400     | 0                                | 93.5 | 45-120        | 0                     |      |   |      |
| Benzo(g,h,i)perylene                      | 336.3  | 50  | 400     | 0                                | 84.1 | 40-125        | 0                     |      |   |      |
| Benzo(k)fluoranthene                      | 391.3  | 50  | 400     | 0                                | 97.8 | 45-125        | 0                     |      |   |      |
| Chrysene                                  | 318.2  | 50  | 400     | 0                                | 79.6 | 55-110        | 0                     |      |   |      |
| Dibenzo(a,h)anthracene                    | 348.3  | 50  | 400     | 0                                | 87.1 | 40-125        | 0                     |      |   |      |
| Fluoranthene                              | 354.8  | 50  | 400     | 0                                | 88.7 | 55-115        | 0                     |      |   |      |
| Fluorene                                  | 384.8  | 50  | 400     | 11.7                             | 93.3 | 50-110        | 0                     |      |   |      |
| Indeno(1,2,3-cd)pyrene                    | 353    | 50  | 400     | 0                                | 88.2 | 45-125        | 0                     |      |   |      |
| Naphthalene                               | 485.9  | 50  | 400     | 62.24                            | 106  | 40-100        | 0                     |      |   | S    |
| Phenanthrene                              | 382.1  | 50  | 400     | 12.74                            | 92.3 | 50-115        | 0                     |      |   |      |
| Pyrene                                    | 331.2  | 50  | 400     | 0                                | 82.8 | 50-130        | 0                     |      |   |      |
| Surr: 2,4,6-Tribromophenol                | 410.9  | 0   | 500     | 0                                | 82.2 | 21-125        | 0                     |      |   |      |
| Surr: 2-Fluorobiphenyl                    | 436.9  | 0   | 500     | 0                                | 87.4 | 36-94         | 0                     |      |   |      |
| Surr: 2-Fluorophenol                      | 232.4  | 0   | 500     | 0                                | 46.5 | 10-75         | 0                     |      |   |      |
| Surr: 4-Terphenyl-d14                     | 340.4  | 0   | 500     | 0                                | 68.1 | 26-119        | 0                     |      |   |      |
| Surr: Nitrobenzene-d5                     | 423.3  | 0   | 500     | 0                                | 84.7 | 41-104        | 0                     |      |   |      |
| Surr: Phenol-d6                           | 153.8  | 0   | 500     | 0                                | 30.8 | 11-50         | 0                     |      |   |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112786  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **38451**      Instrument ID **SVMS5**      Method: **SW8270**

| MSD                                |        |     |                       | Sample ID: 1112786-01B MSD |      |                | Units: µg/L   |                       | Analysis Date: 12/28/2011 07:57 PM |       |
|------------------------------------|--------|-----|-----------------------|----------------------------|------|----------------|---------------|-----------------------|------------------------------------|-------|
| Client ID: Water Line Water Sample |        |     | Run ID: SVMS5_111228A |                            |      | SeqNo: 1866295 |               | Prep Date: 12/28/2011 |                                    | DF: 1 |
| Analyte                            | Result | PQL | SPK Val               | SPK Ref Value              | %REC | Control Limit  | RPD Ref Value | %RPD                  | RPD Limit                          | Qual  |
| Acenaphthene                       | 341.2  | 50  | 400                   | 0                          | 85.3 | 45-110         | 344.7         | 1.02                  | 30                                 |       |
| Acenaphthylene                     | 353.7  | 50  | 400                   | 0                          | 88.4 | 50-105         | 303.9         | 15.1                  | 30                                 |       |
| Anthracene                         | 363.8  | 50  | 400                   | 0                          | 91   | 55-110         | 362.6         | 0.33                  | 30                                 |       |
| Benzo(a)anthracene                 | 360.2  | 50  | 400                   | 0                          | 90   | 55-110         | 354.1         | 1.71                  | 30                                 |       |
| Benzo(a)pyrene                     | 296.7  | 50  | 400                   | 0                          | 74.2 | 55-110         | 366.8         | 21.1                  | 30                                 |       |
| Benzo(b)fluoranthene               | 425.6  | 50  | 400                   | 0                          | 106  | 45-120         | 374.1         | 12.9                  | 30                                 |       |
| Benzo(g,h,i)perylene               | 364    | 50  | 400                   | 0                          | 91   | 40-125         | 336.3         | 7.91                  | 30                                 |       |
| Benzo(k)fluoranthene               | 423.2  | 50  | 400                   | 0                          | 106  | 45-125         | 391.3         | 7.83                  | 30                                 |       |
| Chrysene                           | 315.5  | 50  | 400                   | 0                          | 78.9 | 55-110         | 318.2         | 0.852                 | 30                                 |       |
| Dibenzo(a,h)anthracene             | 382.9  | 50  | 400                   | 0                          | 95.7 | 40-125         | 348.3         | 9.46                  | 30                                 |       |
| Fluoranthene                       | 343.5  | 50  | 400                   | 0                          | 85.9 | 55-115         | 354.8         | 3.24                  | 30                                 |       |
| Fluorene                           | 371.8  | 50  | 400                   | 11.7                       | 90   | 50-110         | 384.8         | 3.44                  | 30                                 |       |
| Indeno(1,2,3-cd)pyrene             | 384.4  | 50  | 400                   | 0                          | 96.1 | 45-125         | 353           | 8.52                  | 30                                 |       |
| Naphthalene                        | 489.1  | 50  | 400                   | 62.24                      | 107  | 40-100         | 485.9         | 0.656                 | 30                                 | S     |
| Phenanthrene                       | 381.8  | 50  | 400                   | 12.74                      | 92.3 | 50-115         | 382.1         | 0.0785                | 30                                 |       |
| Pyrene                             | 323.2  | 50  | 400                   | 0                          | 80.8 | 50-130         | 331.2         | 2.44                  | 30                                 |       |
| Surr: 2,4,6-Tribromophenol         | 423.6  | 0   | 500                   | 0                          | 84.7 | 21-125         | 410.9         | 3.04                  | 40                                 |       |
| Surr: 2-Fluorobiphenyl             | 411.4  | 0   | 500                   | 0                          | 82.3 | 36-94          | 436.9         | 6.01                  | 40                                 |       |
| Surr: 2-Fluorophenol               | 226.8  | 0   | 500                   | 0                          | 45.4 | 10-75          | 232.4         | 2.44                  | 40                                 |       |
| Surr: 4-Terphenyl-d14              | 322.5  | 0   | 500                   | 0                          | 64.5 | 26-119         | 340.4         | 5.4                   | 40                                 |       |
| Surr: Nitrobenzene-d5              | 420.9  | 0   | 500                   | 0                          | 84.2 | 41-104         | 423.3         | 0.569                 | 40                                 |       |
| Surr: Phenol-d6                    | 149.9  | 0   | 500                   | 0                          | 30   | 11-50          | 153.8         | 2.57                  | 40                                 |       |

The following samples were analyzed in this batch:

1112786-01B

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112786  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **R99644A**      Instrument ID **VMS9**      Method: **SW8260**

| MBLK Sample ID: <b>VBLKW1-111230-R99644A</b> |        |                             |         | Units: <b>µg/L</b>    |      |               | Analysis Date: <b>12/30/2011 11:23 AM</b> |              |           |      |
|--|--------|-----------------------------|---------|-----------------------|------|---------------|---|--------------|-----------|------|
| Client ID:                                   |        | Run ID: <b>VMS9_111230A</b> |         | SeqNo: <b>1867905</b> |      | Prep Date:    |   | DF: <b>1</b> |           |      |
| Analyte                                      | Result | PQL                         | SPK Val | SPK Ref Value         | %REC | Control Limit | RPD Ref Value                             | %RPD         | RPD Limit | Qual |
| Benzene                                      | ND     | 1.0                         |         |                       |      |               |   |              |           |      |
| Ethylbenzene                                 | ND     | 1.0                         |         |                       |      |               |   |              |           |      |
| m,p-Xylene                                   | ND     | 2.0                         |         |                       |      |               |   |              |           |      |
| o-Xylene                                     | ND     | 1.0                         |         |                       |      |               |   |              |           |      |
| Toluene                                      | ND     | 1.0                         |         |                       |      |               |   |              |           |      |
| Xylenes, Total                               | ND     | 3.0                         |         |                       |      |               |   |              |           |      |
| Surr: 1,2-Dichloroethane-d4                  | 99.13  | 0                           | 100     | 0                     | 99.1 | 70-120        | 0   |              |           |      |
| Surr: 4-Bromofluorobenzene                   | 98.83  | 0                           | 100     | 0                     | 98.8 | 75-120        | 0   |              |           |      |
| Surr: Dibromofluoromethane                   | 102.6  | 0                           | 100     | 0                     | 103  | 85-115        | 0   |              |           |      |
| Surr: Toluene-d8                             | 100.5  | 0                           | 100     | 0                     | 100  | 85-120        | 0   |              |           |      |

| LCS Sample ID: <b>VLCSW1-111230-R99644A</b> |        |                             |         | Units: <b>µg/L</b>    |      |               | Analysis Date: <b>12/30/2011 10:12 AM</b> |              |           |      |
|---|--------|-----------------------------|---------|-----------------------|------|---------------|---|--------------|-----------|------|
| Client ID:                                  |        | Run ID: <b>VMS9_111230A</b> |         | SeqNo: <b>1867534</b> |      | Prep Date:    |   | DF: <b>1</b> |           |      |
| Analyte                                     | Result | PQL                         | SPK Val | SPK Ref Value         | %REC | Control Limit | RPD Ref Value                             | %RPD         | RPD Limit | Qual |
| Benzene                                     | 19.87  | 1.0                         | 20      | 0                     | 99.4 | 80-120        | 0   |              |           |      |
| Ethylbenzene                                | 18.39  | 1.0                         | 20      | 0                     | 92   | 75-125        | 0   |              |           |      |
| m,p-Xylene                                  | 36.39  | 2.0                         | 40      | 0                     | 91   | 75-130        | 0   |              |           |      |
| o-Xylene                                    | 18.05  | 1.0                         | 20      | 0                     | 90.2 | 80-120        | 0   |              |           |      |
| Toluene                                     | 19.84  | 1.0                         | 20      | 0                     | 99.2 | 75-120        | 0   |              |           |      |
| Xylenes, Total                              | 54.44  | 3.0                         | 60      | 0                     | 90.7 | 75-130        | 0   |              |           |      |
| Surr: 1,2-Dichloroethane-d4                 | 99.2   | 0                           | 100     | 0                     | 99.2 | 70-120        | 0   |              |           |      |
| Surr: 4-Bromofluorobenzene                  | 99.4   | 0                           | 100     | 0                     | 99.4 | 75-120        | 0   |              |           |      |
| Surr: Dibromofluoromethane                  | 100.8  | 0                           | 100     | 0                     | 101  | 85-115        | 0   |              |           |      |
| Surr: Toluene-d8                            | 100.2  | 0                           | 100     | 0                     | 100  | 85-120        | 0   |              |           |      |

| LCSD Sample ID: <b>VLCSDW1-111230-R99644A</b> |        |                             |         | Units: <b>µg/L</b>    |      |               | Analysis Date: <b>12/30/2011 10:36 AM</b> |              |           |      |
|---|--------|-----------------------------|---------|-----------------------|------|---------------|---|--------------|-----------|------|
| Client ID:                                    |        | Run ID: <b>VMS9_111230A</b> |         | SeqNo: <b>1867594</b> |      | Prep Date:    |   | DF: <b>1</b> |           |      |
| Analyte                                       | Result | PQL                         | SPK Val | SPK Ref Value         | %REC | Control Limit | RPD Ref Value                             | %RPD         | RPD Limit | Qual |
| Benzene                                       | 19.7   | 1.0                         | 20      | 0                     | 98.5 | 80-120        | 19.87                                     | 0.859        | 30        |      |
| Ethylbenzene                                  | 18.38  | 1.0                         | 20      | 0                     | 91.9 | 75-125        | 18.39                                     | 0.0544       | 30        |      |
| m,p-Xylene                                    | 36.12  | 2.0                         | 40      | 0                     | 90.3 | 75-130        | 36.39                                     | 0.745        | 30        |      |
| o-Xylene                                      | 18.01  | 1.0                         | 20      | 0                     | 90   | 80-120        | 18.05                                     | 0.222        | 30        |      |
| Toluene                                       | 19.7   | 1.0                         | 20      | 0                     | 98.5 | 75-120        | 19.84                                     | 0.708        | 30        |      |
| Xylenes, Total                                | 54.13  | 3.0                         | 60      | 0                     | 90.2 | 75-130        | 54.44                                     | 0.571        | 30        |      |
| Surr: 1,2-Dichloroethane-d4                   | 98.57  | 0                           | 100     | 0                     | 98.6 | 70-120        | 99.2                                      | 0.637        | 30        |      |
| Surr: 4-Bromofluorobenzene                    | 100    | 0                           | 100     | 0                     | 100  | 75-120        | 99.4                                      | 0.602        | 30        |      |
| Surr: Dibromofluoromethane                    | 101.7  | 0                           | 100     | 0                     | 102  | 85-115        | 100.8                                     | 0.82         | 30        |      |
| Surr: Toluene-d8                              | 101.3  | 0                           | 100     | 0                     | 101  | 85-120        | 100.2                                     | 1.14         | 30        |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions  
 Work Order: 1112786  
 Project: Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **R99644A** Instrument ID **VMS9** Method: **SW8260**

| MS Sample ID: 1112796-15A MS |        |                      |         | Units: µg/L    |      |               | Analysis Date: 12/30/2011 07:45 PM |        |           |      |
|------------------------------|--------|----------------------|---------|----------------|------|---------------|------------------------------------|--------|-----------|------|
| Client ID:                   |        | Run ID: VMS9_111230A |         | SeqNo: 1868170 |      | Prep Date:    |                                    | DF: 10 |           |      |
| Analyte                      | Result | PQL                  | SPK Val | SPK Ref Value  | %REC | Control Limit | RPD Ref Value                      | %RPD   | RPD Limit | Qual |
| Benzene                      | 201.2  | 10                   | 200     | 0              | 101  | 80-120        | 0                                  |        |           |      |
| Ethylbenzene                 | 188.4  | 10                   | 200     | 0              | 94.2 | 75-125        | 0                                  |        |           |      |
| m,p-Xylene                   | 368.1  | 20                   | 400     | 0              | 92   | 75-130        | 0                                  |        |           |      |
| o-Xylene                     | 182.1  | 10                   | 200     | 0              | 91   | 80-120        | 0                                  |        |           |      |
| Toluene                      | 205.9  | 10                   | 200     | 0              | 103  | 75-120        | 0                                  |        |           |      |
| Xylenes, Total               | 550.2  | 30                   | 600     | 0              | 91.7 | 75-130        | 0                                  |        |           |      |
| Surr: 1,2-Dichloroethane-d4  | 932    | 0                    | 1000    | 0              | 93.2 | 70-120        | 0                                  |        |           |      |
| Surr: 4-Bromofluorobenzene   | 958.8  | 0                    | 1000    | 0              | 95.9 | 75-120        | 0                                  |        |           |      |
| Surr: Dibromofluoromethane   | 985.3  | 0                    | 1000    | 0              | 98.5 | 85-115        | 0                                  |        |           |      |
| Surr: Toluene-d8             | 1023   | 0                    | 1000    | 0              | 102  | 85-120        | 0                                  |        |           |      |

| MSD Sample ID: 1112796-15A MSD |        |                      |         | Units: µg/L    |      |               | Analysis Date: 12/30/2011 08:08 PM |        |           |      |
|--------------------------------|--------|----------------------|---------|----------------|------|---------------|------------------------------------|--------|-----------|------|
| Client ID:                     |        | Run ID: VMS9_111230A |         | SeqNo: 1868171 |      | Prep Date:    |                                    | DF: 10 |           |      |
| Analyte                        | Result | PQL                  | SPK Val | SPK Ref Value  | %REC | Control Limit | RPD Ref Value                      | %RPD   | RPD Limit | Qual |
| Benzene                        | 194    | 10                   | 200     | 0              | 97   | 80-120        | 201.2                              | 3.64   | 30        |      |
| Ethylbenzene                   | 179.6  | 10                   | 200     | 0              | 89.8 | 75-125        | 188.4                              | 4.78   | 30        |      |
| m,p-Xylene                     | 352    | 20                   | 400     | 0              | 88   | 75-130        | 368.1                              | 4.47   | 30        |      |
| o-Xylene                       | 174.3  | 10                   | 200     | 0              | 87.2 | 80-120        | 182.1                              | 4.38   | 30        |      |
| Toluene                        | 191.4  | 10                   | 200     | 0              | 95.7 | 75-120        | 205.9                              | 7.3    | 30        |      |
| Xylenes, Total                 | 526.3  | 30                   | 600     | 0              | 87.7 | 75-130        | 550.2                              | 4.44   | 30        |      |
| Surr: 1,2-Dichloroethane-d4    | 938.6  | 0                    | 1000    | 0              | 93.9 | 70-120        | 932                                | 0.706  | 30        |      |
| Surr: 4-Bromofluorobenzene     | 936.4  | 0                    | 1000    | 0              | 93.6 | 75-120        | 958.8                              | 2.36   | 30        |      |
| Surr: Dibromofluoromethane     | 991.9  | 0                    | 1000    | 0              | 99.2 | 85-115        | 985.3                              | 0.668  | 30        |      |
| Surr: Toluene-d8               | 1000   | 0                    | 1000    | 0              | 100  | 85-120        | 1023                               | 2.24   | 30        |      |

The following samples were analyzed in this batch:

1112786-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112786  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **R99444** Instrument ID **WETCHEM** Method: **SW9040**

|            |  |        |     |                              |               |      |               |                |      |           |                                    |  |       |  |
|------------|--|--------|-----|------------------------------|---------------|------|---------------|----------------|------|-----------|------------------------------------|--|-------|--|
| LCS        |  |        |     | Sample ID: LCS-R99444-R99444 |               |      |               | Units: s.u.    |      |           | Analysis Date: 12/23/2011 12:30 PM |  |       |  |
| Client ID: |  |        |     | Run ID: WETCHEM_111223A      |               |      |               | SeqNo: 1863279 |      |           | Prep Date:                         |  | DF: 1 |  |
| Analyte    |  | Result | PQL | SPK Val                      | SPK Ref Value | %REC | Control Limit | RPD Ref Value  | %RPD | RPD Limit | Qual                               |  |       |  |
| pH         |  | 4.38   | 0   | 4.4                          | 0             | 99.5 | 90-110        | 0              |      |           |                                    |  |       |  |

|            |        |                            |                         |               |      |                |               |            |                                    |       |
|------------|--------|----------------------------|-------------------------|---------------|------|----------------|---------------|------------|------------------------------------|-------|
| DUP        |        | Sample ID: 1112782-02A DUP |                         |               |      |                | Units: s.u.   |            | Analysis Date: 12/23/2011 12:30 PM |       |
| Client ID: |        |                            | Run ID: WETCHEM_111223A |               |      | SeqNo: 1863281 |               | Prep Date: |                                    | DF: 1 |
| Analyte    | Result | PQL                        | SPK Val                 | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD       | RPD Limit                          | Qual  |
| pH         | 9.52   | 0                          | 0                       | 0             | 0    | 0-0            | 9.52          | 0          | 20                                 |       |

The following samples were analyzed in this batch:

1112786-01C

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112786  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **R99530**      Instrument ID **IC4**      Method: **SW9056**

| <b>MBLK</b>               |        | Sample ID: <b>CCB/MBLK-R99530</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/27/2011 10:24 AM</b> |           |              |
|---------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                |        | Run ID: <b>IC4_111227A</b>        |         |               |      | SeqNo: <b>1865151</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Bromide                   | ND     | 0.10                              |         |               |      |                       |               |   |           |              |
| Chloride                  | 0.5055 | 1.0                               |         |               |      |                       |               |   |           | J            |
| Fluoride                  | ND     | 0.10                              |         |               |      |                       |               |   |           |              |
| Nitrogen, Nitrate         | ND     | 0.020                             |         |               |      |                       |               |   |           |              |
| Nitrogen, Nitrite         | ND     | 0.020                             |         |               |      |                       |               |   |           |              |
| Sulfate                   | ND     | 1.0                               |         |               |      |                       |               |   |           |              |
| Nitrogen, Nitrate-Nitrite | ND     | 0.020                             |         |               |      |                       |               |   |           |              |

| <b>LCS</b>                |        | Sample ID: <b>CCV/LCS-R99530</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/27/2011 10:44 AM</b> |           |              |
|---------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                |        | Run ID: <b>IC4_111227A</b>       |         |               |      | SeqNo: <b>1865153</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Bromide                   | 2.032  | 0.10                             | 2       | 0             | 102  | 88-113                | 0             |   |           |              |
| Chloride                  | 9.395  | 1.0                              | 10      | 0             | 94   | 88-107                | 0             |   |           |              |
| Fluoride                  | 1.918  | 0.10                             | 2       | 0             | 95.9 | 86-111                | 0             |   |           |              |
| Nitrogen, Nitrate         | 0.2542 | 0.020                            | 0.25    | 0             | 102  | 81-116                | 0             |   |           |              |
| Nitrogen, Nitrite         | 0.2531 | 0.020                            | 0.25    | 0             | 101  | 84-115                | 0             |   |           |              |
| Sulfate                   | 9.807  | 1.0                              | 10      | 0             | 98.1 | 85-110                | 0             |   |           |              |
| Nitrogen, Nitrate-Nitrite | 0.5073 | 0.020                            | 0.5     | 0             | 101  | 90-110                | 0             |   |           |              |

| <b>LCSD</b>               |        | Sample ID: <b>CCV/LCSD-R99530</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/27/2011 12:25 PM</b> |           |              |
|---------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID:                |        | Run ID: <b>IC4_111227A</b>        |         |               |      | SeqNo: <b>1865155</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Bromide                   | 1.948  | 0.10                              | 2       | 0             | 97.4 | 88-113                | 2.032         | 4.25                                      | 20        |              |
| Chloride                  | 9.622  | 1.0                               | 10      | 0             | 96.2 | 88-107                | 9.395         | 2.38                                      | 20        |              |
| Fluoride                  | 1.893  | 0.10                              | 2       | 0             | 94.6 | 86-111                | 1.918         | 1.29                                      | 20        |              |
| Nitrogen, Nitrate         | 0.2384 | 0.020                             | 0.25    | 0             | 95.4 | 81-116                | 0.2542        | 6.41                                      | 20        |              |
| Nitrogen, Nitrite         | 0.2549 | 0.020                             | 0.25    | 0             | 102  | 84-115                | 0.2531        | 0.709                                     | 20        |              |
| Sulfate                   | 9.84   | 1.0                               | 10      | 0             | 98.4 | 85-110                | 9.807         | 0.333                                     | 20        |              |
| Nitrogen, Nitrate-Nitrite | 0.4933 | 0.020                             | 0.5     | 0             | 98.7 | 90-110                | 0.5073        | 2.8                                       | 20        |              |

| <b>MS</b>                                 |        | Sample ID: <b>1112786-01C MS</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/27/2011 01:25 PM</b> |           |              |
|---|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| Client ID: <b>Water Line Water Sample</b> |        | Run ID: <b>IC4_111227A</b>       |         |               |      | SeqNo: <b>1865157</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                                   | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |
| Fluoride                                  | 0.6832 | 0.10                             | 2       | 0.1967        | 24.3 | 75-125                | 0             |   |           | S            |
| Nitrogen, Nitrate                         | 0.4055 | 0.020                            | 0.5     | 0             | 81.1 | 75-125                | 0             |   |           | H            |
| Nitrogen, Nitrite                         | ND     | 0.020                            | 0.5     | 0             | 0    | 75-125                | 0             |   |           | SH           |
| Nitrogen, Nitrate-Nitrite                 | 0.4055 | 0.020                            | 1       | 0             | 40.6 | 75-125                | 0             |   |           | S            |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112786  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **R99530** Instrument ID **IC4** Method: **SW9056**

|   |        |                                  |         |               |      |                       |               |   |           |               |
|---|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|---------------|
| <b>MS</b>                                 |        | Sample ID: <b>1112786-01C MS</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/27/2011 02:25 PM</b> |           |               |
| Client ID: <b>Water Line Water Sample</b> |        | Run ID: <b>IC4_111227A</b>       |         |               |      | SeqNo: <b>1865160</b> |               | Prep Date:                                |           | DF: <b>10</b> |
| Analyte                                   | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual          |

|         |       |     |    |       |      |        |   |  |  |   |
|---------|-------|-----|----|-------|------|--------|---|--|--|---|
| Bromide | 27.25 | 1.0 | 2  | 25.4  | 92.3 | 75-125 | 0 |  |  | O |
| Sulfate | 55.56 | 10  | 10 | 47.16 | 84   | 75-125 | 0 |  |  | O |

|   |        |                                  |         |               |      |                       |               |   |           |                |
|---|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|----------------|
| <b>MS</b>                                 |        | Sample ID: <b>1112786-01C MS</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/27/2011 03:46 PM</b> |           |                |
| Client ID: <b>Water Line Water Sample</b> |        | Run ID: <b>IC4_111227A</b>       |         |               |      | SeqNo: <b>1865164</b> |               | Prep Date:                                |           | DF: <b>200</b> |
| Analyte                                   | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual           |

|          |      |     |    |      |      |        |   |  |  |    |
|----------|------|-----|----|------|------|--------|---|--|--|----|
| Chloride | 3679 | 200 | 10 | 3751 | -713 | 75-125 | 0 |  |  | SO |
|----------|------|-----|----|------|------|--------|---|--|--|----|

|   |        |                                   |         |               |      |                       |               |   |           |              |
|---|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|--------------|
| <b>MSD</b>                                |        | Sample ID: <b>1112786-01C MSD</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/27/2011 01:45 PM</b> |           |              |
| Client ID: <b>Water Line Water Sample</b> |        | Run ID: <b>IC4_111227A</b>        |         |               |      | SeqNo: <b>1865158</b> |               | Prep Date:                                |           | DF: <b>1</b> |
| Analyte                                   | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual         |

|                           |        |       |     |        |      |        |        |      |    |    |
|---------------------------|--------|-------|-----|--------|------|--------|--------|------|----|----|
| Fluoride                  | 0.6907 | 0.10  | 2   | 0.1967 | 24.7 | 75-125 | 0.6832 | 1.09 | 20 | S  |
| Nitrogen, Nitrate         | 0.4112 | 0.020 | 0.5 | 0      | 82.2 | 75-125 | 0.4055 | 1.4  | 20 | H  |
| Nitrogen, Nitrite         | ND     | 0.020 | 0.5 | 0      | 0    | 75-125 | 0      | 0    | 20 | SH |
| Nitrogen, Nitrate-Nitrite | 0.4112 | 0.020 | 1   | 0      | 41.1 | 75-125 | 0.4055 | 1.4  | 20 | S  |

|   |        |                                   |         |               |      |                       |               |   |           |               |
|---|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|---------------|
| <b>MSD</b>                                |        | Sample ID: <b>1112786-01C MSD</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/27/2011 02:45 PM</b> |           |               |
| Client ID: <b>Water Line Water Sample</b> |        | Run ID: <b>IC4_111227A</b>        |         |               |      | SeqNo: <b>1865161</b> |               | Prep Date:                                |           | DF: <b>10</b> |
| Analyte                                   | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual          |

|         |       |     |    |       |      |        |       |       |    |   |
|---------|-------|-----|----|-------|------|--------|-------|-------|----|---|
| Bromide | 27.28 | 1.0 | 2  | 25.4  | 93.8 | 75-125 | 27.25 | 0.114 | 20 | O |
| Sulfate | 55.39 | 10  | 10 | 47.16 | 82.3 | 75-125 | 55.56 | 0.308 | 20 | O |

|   |        |                                   |         |               |      |                       |               |   |           |                |
|---|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|---|-----------|----------------|
| <b>MSD</b>                                |        | Sample ID: <b>1112786-01C MSD</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>12/27/2011 04:06 PM</b> |           |                |
| Client ID: <b>Water Line Water Sample</b> |        | Run ID: <b>IC4_111227A</b>        |         |               |      | SeqNo: <b>1865165</b> |               | Prep Date:                                |           | DF: <b>200</b> |
| Analyte                                   | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                      | RPD Limit | Qual           |

|          |      |     |    |      |      |        |      |       |    |    |
|----------|------|-----|----|------|------|--------|------|-------|----|----|
| Chloride | 3689 | 200 | 10 | 3751 | -620 | 75-125 | 3679 | 0.254 | 20 | SO |
|----------|------|-----|----|------|------|--------|------|-------|----|----|

The following samples were analyzed in this batch: | 1112786-01C |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1112786  
**Project:** Antero Gypsum Ranch B Pad Water Rel. 12/21/11

## QC BATCH REPORT

Batch ID: **R99532**      Instrument ID **TDS**      Method: **A2540 C**

|             |                                |     |         |               |                       |                    |               |   |              |      |
|-------------|--------------------------------|-----|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| <b>MBLK</b> | Sample ID: <b>BLANK-R99532</b> |     |         |               |                       | Units: <b>mg/L</b> |               | Analysis Date: <b>12/27/2011 03:16 PM</b> |              |      |
| Client ID:  | Run ID: <b>TDS_111227A</b>     |     |         |               | SeqNo: <b>1865174</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte     | Result                         | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |

Total Dissolved Solids      ND      10

|            |                              |     |         |               |                       |                    |               |   |              |      |
|------------|------------------------------|-----|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| <b>LCS</b> | Sample ID: <b>LCS-R99532</b> |     |         |               |                       | Units: <b>mg/L</b> |               | Analysis Date: <b>12/27/2011 03:16 PM</b> |              |      |
| Client ID: | Run ID: <b>TDS_111227A</b>   |     |         |               | SeqNo: <b>1865175</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte    | Result                       | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |

Total Dissolved Solids      485      10      495      0      98      80-120      0

|             |                               |     |         |               |                       |                    |               |   |              |      |
|-------------|-------------------------------|-----|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| <b>LCSD</b> | Sample ID: <b>LCSD-R99532</b> |     |         |               |                       | Units: <b>mg/L</b> |               | Analysis Date: <b>12/27/2011 03:16 PM</b> |              |      |
| Client ID:  | Run ID: <b>TDS_111227A</b>    |     |         |               | SeqNo: <b>1865190</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte     | Result                        | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |

Total Dissolved Solids      484      10      495      0      97.8      80-120      485      0.206      20

|            |                                  |     |         |               |                       |                    |               |   |              |      |
|------------|----------------------------------|-----|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| <b>DUP</b> | Sample ID: <b>1112780-01BDUP</b> |     |         |               |                       | Units: <b>mg/L</b> |               | Analysis Date: <b>12/27/2011 03:16 PM</b> |              |      |
| Client ID: | Run ID: <b>TDS_111227A</b>       |     |         |               | SeqNo: <b>1865184</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte    | Result                           | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |

Total Dissolved Solids      6295      10      0      0      0      0-0      6225      1.12      20

|            |                                  |     |         |               |                       |                    |               |   |              |      |
|------------|----------------------------------|-----|---------|---------------|-----------------------|--------------------|---------------|---|--------------|------|
| <b>DUP</b> | Sample ID: <b>1112780-04BDUP</b> |     |         |               |                       | Units: <b>mg/L</b> |               | Analysis Date: <b>12/27/2011 03:16 PM</b> |              |      |
| Client ID: | Run ID: <b>TDS_111227A</b>       |     |         |               | SeqNo: <b>1865188</b> |                    | Prep Date:    |   | DF: <b>1</b> |      |
| Analyte    | Result                           | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit      | RPD Ref Value | %RPD                                      | RPD Limit    | Qual |

Total Dissolved Solids      4808      10      0      0      0      0-0      4759      1.02      20

The following samples were analyzed in this batch:

1112786-01C

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**WORKORDER**  
#

1112786

PAGE

1 of 1

## DISPOSAL

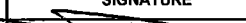

By Lab or Return to Client

[illegible]

\*Time Zone (Circle): EST CST **MST** PST Matrix: O = oil S = soil NS = non-soil solid **W = water** L = liquid E = extract F = filter

**For metals or anions, please detail analytes below.**

|   |                                 |                                      |
|---|---------------------------------|--------------------------------------|
| <b>Comments:</b><br><br><div style="text-align: center; font-size: 2em;">3.0°C</div> <div style="text-align: right; font-size: 2em;">K2</div> | <b>QC PACKAGE (check below)</b> |                                      |
|   | x                               | LEVEL II (Standard QC)               |
|   |                                 | LEVEL III (Std QC + forms)           |
|   |                                 | LEVEL IV (Std QC + forms + raw data) |
|   |                                 |                                      |
| <b>Preservative Key:</b> 1-HCl   2-HNO3   3-H2SO4   4-NaOH   5-NaHSO4   7-Other   8-4 degrees C   9-5035                                      |                                 |                                      |

|                 | SIGNATURE   | PRINTED NAME  | DATE       | TIME |
|-----------------|---|---------------|------------|------|
| RELINQUISHED BY |  | Dan Pinegar   | 12/21/2011 | 1700 |
| RECEIVED BY     |  | Diane F. Shaw | 12/23/11   | 1130 |
| RELINQUISHED BY |   |               |            |      |
| RECEIVED BY     |   |               |            |      |
| RELINQUISHED BY |   |               |            |      |
| RECEIVED BY     |   |               |            |      |

## Ann Preston

---

**From:** Mark Mumby [mmumby@hrlcomp.com]  
**Sent:** Thursday, December 22, 2011 6:09 PM  
**To:** Ann Preston  
**Subject:** Gypsum Ranch B Water Samples

Ann,

You should have received some water samples for Antero today. I need you to add one additional parameter. We sent an extra 1-Liter amber. If we have enough water left over I need you to run for sulfates please.

Let me know if you can.

Thanks

**Mark E. Mumby, RPG**  
**HRL Compliance Solutions, Inc.**  
**744 Horizon Ct., Suite 140**  
**Grand Junction, CO 81506**  
**970-243-3271 office**  
**970-260-1576 cell**  
**970-243-3280 fax**  
**mmumby@hrlcomp.com**

ALS Group: Click [here](#) to report this email as spam.

Sample Receipt Checklist

Client Name: HRL

Date/Time Received: 23-Dec-11 11:30

Work Order: 1112786

Received by: DS

Checklist completed by Diane Shaw 23-Dec-11  
eSignature Date

Reviewed by: Ann Preston 03-Jan-12  
eSignature Date

Matrices: Water

Carrier name: FedEx

|   |   |                             |   |
|---|---|-----------------------------|---|
| Shipping container/cooler in good condition?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| Custody seals intact on shipping container/cooler?      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| Custody seals intact on sample bottles?                 | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Container/Temp Blank temperature in compliance?         | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Temperature(s)/Thermometer(s):                          | <u>3.0 c</u>                            |                             |   |
| Cooler(s)/Kit(s):                                       |   |                             |   |
| Water - VOA vials have zero headspace?                  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input type="checkbox"/> |
| Water - pH acceptable upon receipt?                     | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/>         |
| pH adjusted?  | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/>         |
| pH adjusted by:   |   |                             |   |
| Login Notes:  |   |                             |   |

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

800-255-3950 • 304-255-3900  
Quality Environmental Containers



SIGNATURE  
DATE  
CUSTODY SEAL

**FedEx** NEW Package  
Express US Airbill

FedEx  
Tracking  
Number

8769 1479 9930

0200 Form  
ID No.

FedEx Retrieval Copy

1 From **R-21-11** Sender's FedEx  
Date Account Number  
Sender's Name **DAN PINIGAR** Phone **978 243-3271**  
Company **HC SF**  
Address **744 HORIZON CT. STE. 140** Dept./Floor/Suite/Room  
City **BRANDSTATION CO** State ZIP **01506**

2 Your Internal Billing Reference

3 To Recipient's Name **SAMPLE RECLUING** Phone **616.399-6076**  
Company **ALB GROUP**  
Address **335 2128th AVE** Dept./Floor/Suite/Room  
We cannot deliver to P.O. boxes or P.O. ZIP codes.  
Address Use this line for the HOLD location address or for continuation of your shipping address.  
City **HOLLAND** State **MI** ZIP **49427**

01

HOLD Weekday  
FedEx location address  
REQUIRED. NOT available for  
FedEx First Overnight.

31

HOLD Saturday  
FedEx location address  
REQUIRED. Available ONLY for  
FedEx Priority Overnight and  
FedEx 2Day to select locations.

4 Express Package Service

NOTE: Service order has changed. Please select carefully.

06

FedEx First Overnight  
Earliest next business morning delivery to select  
locations. Friday shipments will be delivered on  
Monday unless SATURDAY Delivery is selected.

01

FedEx Priority Overnight  
Next business morning. Friday shipments will be  
delivered on Monday unless SATURDAY Delivery  
is selected.

05

FedEx Standard Overnight  
Next business afternoon.  
Saturday Delivery NOT available.

5 Packaging \*Declared value limit \$500.

06

FedEx Envelope\*

02

FedEx Pak\*

03

FedEx  
Box

04

FedEx  
Tube

01

Other

6 Special Handling and Delivery Signature Options

03 SATURDAY DELIVERY

☒ No Signature Required  
Package may be left without  
obtaining a signature for delivery.

10

Direct Signature  
Someone at recipient's address  
may sign for delivery. Fee applies.

34

Indirect Signature  
If no one is available at recipient's  
address, someone at a neighboring  
address may sign for delivery. For  
residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

One box must be checked.

☒ No 04

☐ Yes  
As per attached  
Shipper's Declaration.

☐ Yes  
Shipper's Declaration  
not required.

06

Dry Ice  
Dry Ice, 9, UN 1845

☐ Cargo Aircraft Only.

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging  
or placed in a FedEx Express Drop Box.

7 Payment Bill to:

Enter FedEx Acct. No. or Credit Card No. below.

Obtain recip.  
Acct. No. ☐

1 Sender  
Acct. No. in Section  
1 will be billed.

2 Recipient

3 Third Party

4 Credit Card

5 Cash/Check

Total Packages

Total Weight

Credit Card Auth.

Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

612

fedex.com 1800.GoFedEx 1800.463.3339

fedex.com 1800.GoFedEx 1800.463.3339



8769 1479 9930

# Appendix F

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Gypsum Ranch B Pad Stormwater Work Orders

# Antero Daily Stormwater Contractor Work Order - GravelTrend

Site ID: 045-15762      Inspection Date: 12/16/2011  
Area: GravelTrend      Site Name: Gypsum Ranch B Pad

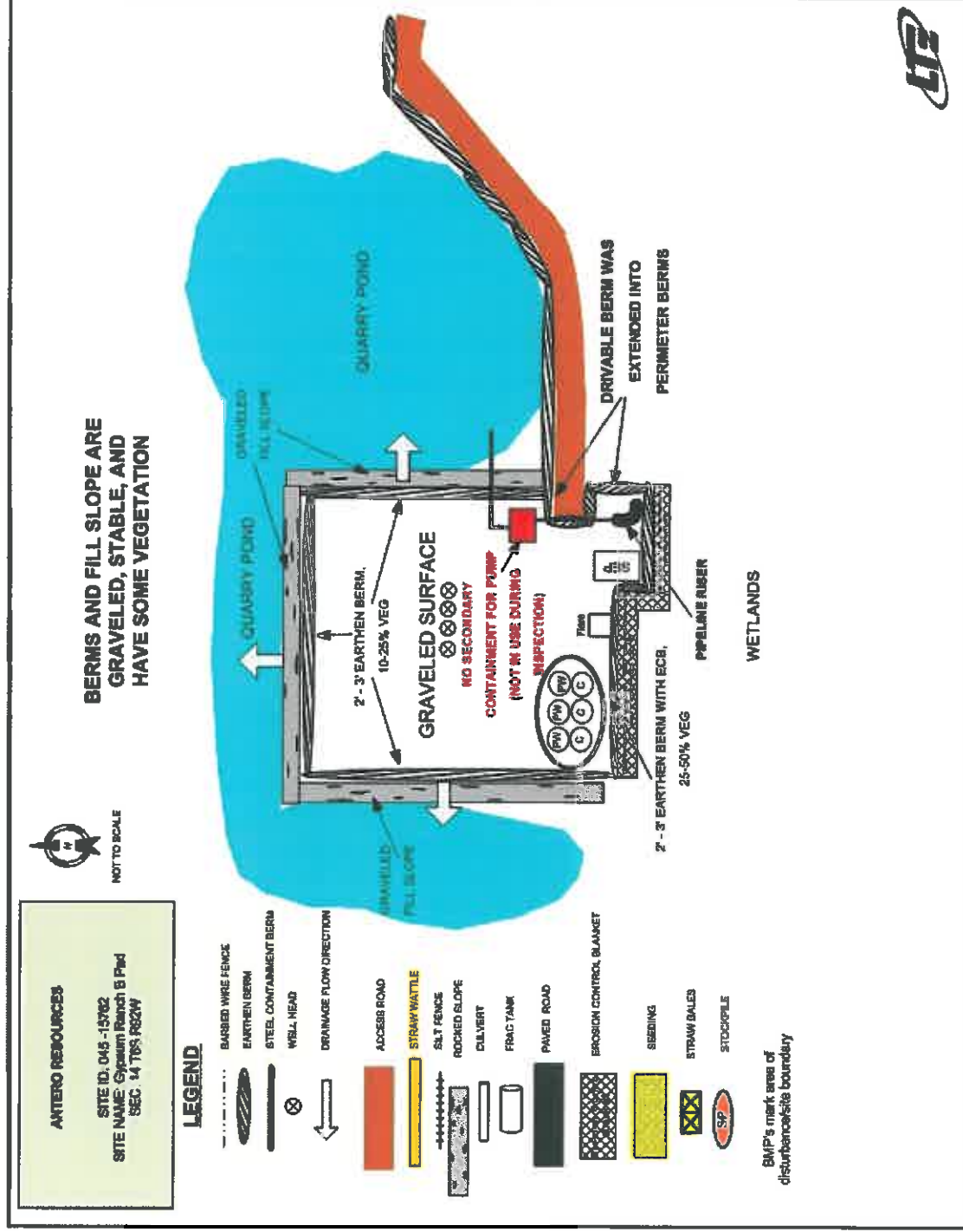
SiteType: Drill Pad  
Location: Garfield County, Sec 14 T6S R92W  
LTE Inspector: Steve Sivigliano

| SPILLS AND LEAKS |  | Observed | Description of Problem   | Assigned To | Status | Estimated Date | Completed |
|------------------|--|----------|--|-------------|--------|----------------|-----------|
| Other            |  | Yes      | Pump at pad entry does not have secondary containment. The perimeter berm was extended into drivable berm at pad entry and does serve as primary containment for pump. | Terry Dick  |        |                |           |

Overall Comment: Drivable berm at pad entry was extended into perimeter berms. Pump at pad entry does not have secondary containment.

# Antero Daily Stormwater Contractor Work Order - GravelTrend

Site ID: 045-15762      Inspection Date: 12/16/2011      Site Name: Gypsum Ranch B Pad  
Area: GravelTrend



# Antero Daily Stormwater Contractor Work Order - GravelTrend

Site ID: 045-15762      Inspection Date: 11/21/2011  
Area: GravelTrend      Site Name: Gypsum Ranch B Pad

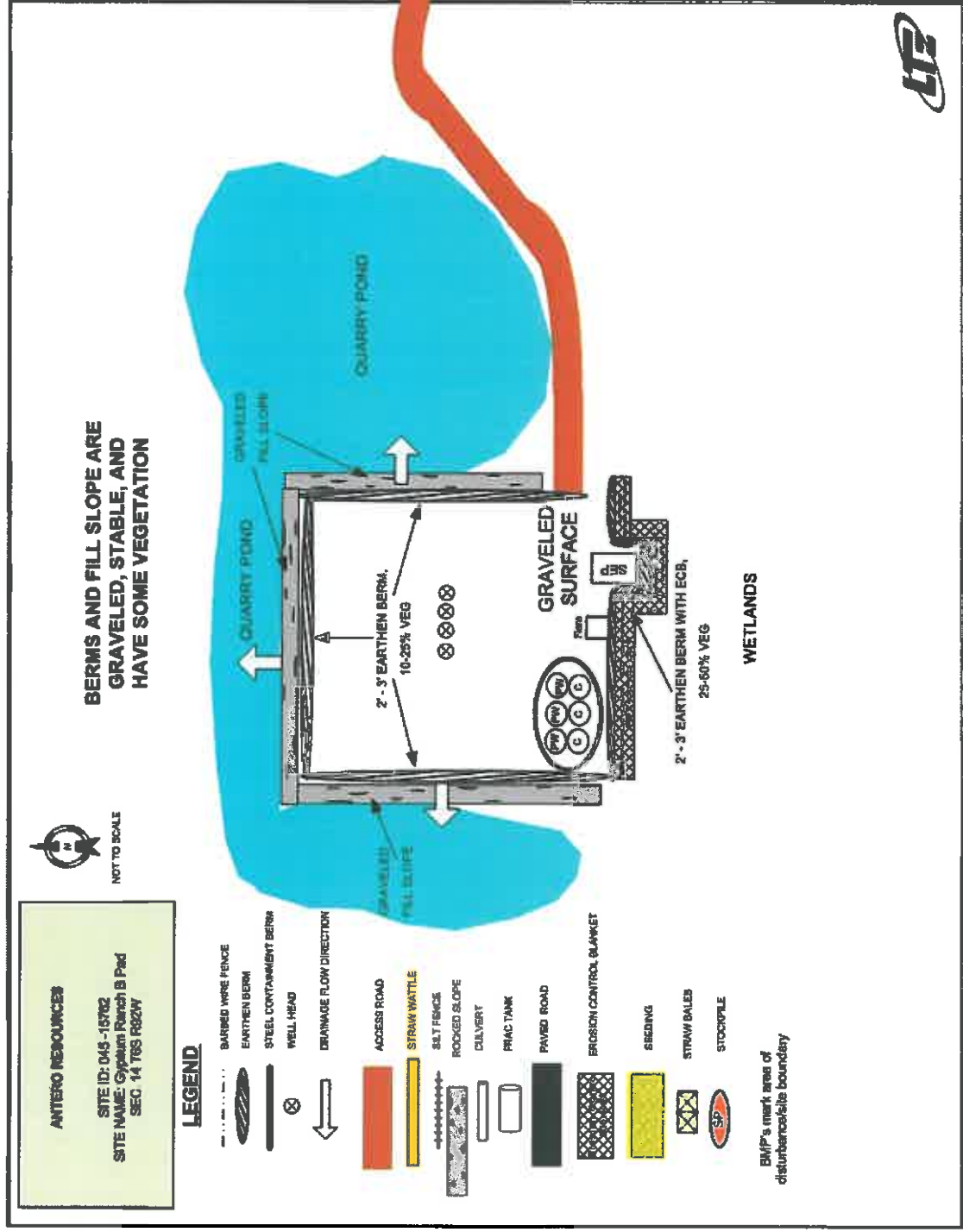
SiteType: Drill Pad  
Location: Garfield County, Sec 14 T6S R92W  
LTE Inspector: Steve Sivigliano

| SPILLS AND LEAKS |  | Observed | Description of Problem   | Assigned To | Status | Estimated Date | Completed |
|------------------|--|----------|--|-------------|--------|----------------|-----------|
| Leaking Valves   |  | Yes      | Slow drip observed from drain valve on tank C2 (middle condensate tank). | Terry Dick  |        |                |           |



# Antero Daily Stormwater Contractor Work Order - GravelTrend

Site ID: 045-15762      Inspection Date: 11/21/2011  
Area: GravelTrend      Site Name: Gypsum Ranch B Pad



# Appendix G

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Sensitive Area Determination

## Sensitive Area Determination Checklist

| Antero Resources                             |                                  |             |
|--|----------------------------------|-------------|
| <b>Person(s) Conducting Field Inspection</b> | Mark E. Mumby                    | 12/21/2011  |
| <b>Site Information</b>                      |                                  |             |
| Location:                                    | Gypsum Ranch B Pad               | Time: 16:00 |
| Type of Facility:                            | Existing Well Pad                |             |
| <b>Environmental Conditions</b>              | Clear, Cold, Freezing Conditions |             |
|  |                                  |             |
| Temperature (°F)                             | ~28                              |             |

Has the proposed, new or existing location been designated as a sensitive area?

☒ Yes      ☐ No

### **SURFACE WATER**

1. Are there any surface water features or SWSAs adjacent to or within ¼ mile of the proposed/new or existing facility?

☒ Yes      ☐ No

If yes, list type of surface water feature(s), i.e. rivers, creeks, streams, seeps, springs, wetlands: The Colorado River, two gravel pit ponds, and one USGS indentified unnamed intermittent drainage. All features possess hydraulic connectivity with one another.

If yes, describe location relative to facility: The Colorado River is located 500 feet to the northwest; one of the gravel pit ponds is adjacent to the east, west, and northern boundaries; the second is located approximately 187 feet to the southwest; and the unnamed intermittent drainage is located 228 feet to the southwest of the existing facility.

2. Could a potential release from the facility reach surface water features?

☒ Yes      ☐ No

If yes, describe the pathway a release from the facility would likely follow to determine if the potential to impact surface water is high or low. A potential release, if it were to migrate off the facility, would tend to flow off the southeastern corner where the access road enters the facility.

3. Is the potential to impact surface water from a facility release high or low?

☒ High      ☐ Low



## GROUNDWATER

1. Will the proposed/new or existing facility have any pits which will contain hydrocarbons and chlorides or other E&P wastes?  
☐ Yes      ☒ No  
If yes, List the pit type(s):
2. Is the site of the proposed facility underlain by an unconfined aquifer or recharge zone?  
☒ Yes      ☐ No
3. Is the hydraulic conductivity of the underlying soil or geologic material  $\leq 1.0 \times 10^{-7}$  cm/sec?  
☐ Yes      ☒ No
4. Is the proposed facility located within 1/8 mile of a domestic water well or 1/4 mile of a public water supply well which would use the same aquifer?  
☐ Yes      ☒ No
5. Is the proposed facility located within a 100 year floodplain?  
☒ Yes (*Sensitive Area*)      ☐ No (*If no, proceed to question #6.*)
6. Is the depth to groundwater known?  
☒ Yes (*If yes, follow instructions provided in 6(a) of this section.*)  
☐ No (*If no, follow instructions provided in 6(b) of this section.*)
  - (a) If yes, could a potential release from the proposed facility reach groundwater?  
☒ Yes      ☐ No  
If yes, explain: Based on visual observations, the depth to groundwater is less than 20 feet. If a large release were to infiltrate into the underlying soils, due to their high porosity and permeability, groundwater could potentially be impacted. Refer to the additional comments section of this SAD for further explanation.
  - (b) If no:
    - (i) Evaluate surrounding soils, topography, and vegetation which may suggest the presence of shallow groundwater.
    - (ii) Gather information from surrounding well data in order to determine a depth to groundwater, i.e. State Engineers Office.
7. Is the potential to impact ground water from the facility in the event of a release high or low?

☒ High

☐ Low

### **Additional Comments:**

As stated in the surface water section of this sensitive area determination, the existing facility is located adjacent to a former gravel pit which has previously been mined. The mined area has been allowed to flood back forming a pond adjacent to the facility. In addition, the facility is located less than 500 feet from an unnamed intermittent drainage, which is tributary to the Colorado River, and lies within the 100-year flood plain. By COGCC decision this would classify the facility as being in a sensitive area. It is not anticipated that the gravel pit pond to the southwest of the facility would be impacted by a potential overland release due to fact the unnamed intermittent drainage separates the facility from the pond. However, the pond could be impacted by a potential release that may impact groundwater due to the hydraulic connectivity of the surface water features in the immediate vicinity of the facility. The facility, as it is currently constructed, limits the direction of a potential release to primarily the southeastern corner where the access road enters the facility. A potential release, if it were to migrate off the facility, could flow down the access road and impact the pond adjacent to and east of the facility. Best management practices (BMPs) are currently installed in the form of an earthen perimeter berm around the entire of the facility with the exception of the access road. The perimeter berm is quite large and appears to have been well maintained. It would be recommended, however, that an earthen water bar be installed on the access road where it enters the facility. This would further aid in full containment within the facility boundary in the event of a release.

The State Engineers Office and USGS records were reviewed and it was revealed that there is one permitted monitoring well located on the pad itself. However review on the State Engineers records indicated the permit has been allowed to expire and thus no information is available on the depth to groundwater. It can be assumed the water levels in the adjacent and nearby ponds are representative of the water table indicating that the depth to groundwater is shallow (i.e. less than 20 feet). with sufficient BMPs installed, the greatest potential for impacts from a potential release would be to groundwater if the release was large and occurred over a longer period of time. Due to the high porosity and permeability of the underlying soils, impacts from a potential release if left unattended could migrate into the surrounding ponds and potentially the Colorado River.

Based on the information collected during the site visit and desktop review, the potential to impact both surface water and ground water is high. The potential for impacts to actual surface water features from an overland release is moderate due to the BMPs currently installed. In addition, if BMPs are installed on the southeastern corner complete site containment is feasible in the event of a release. The greatest potential for impacts would be to shallow groundwater if a



release were to migrate into the subsurface. If that were to occur, the probability would be high that impacts could migrate out into the surface water features (ponds) and potentially the Colorado River. With the potential to impact both surface water and groundwater having been deemed high and the fact that the facility lies within the 100-year floodplain of the Colorado River, the facility should be designated as being in a sensitive area.

Inspector Signature(s): Mark E. Mumby Date: 12/21/2011

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