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**Sent VIA Federal Express**

November 21, 2012

Mr. Rusty Lundberg  
Director  
Utah Water Quality Board  
Utah Department of Environmental Quality  
195 North 1950 West  
P.O. Box 144810  
Salt Lake City, UT 84114-4820

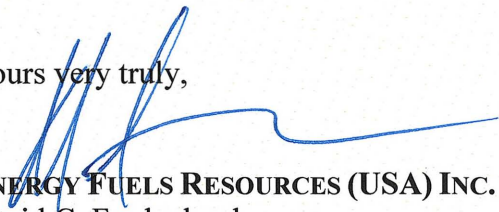
**Re: Transmittal of Annual Seeps and Springs Monitoring Report  
Groundwater Quality Discharge Permit UGW370004 White Mesa Uranium Mill**

Dear Mr. Lundberg:

Enclosed are two copies of the White Mesa Uranium Mill Annual Seeps and Springs Monitoring Report for 2012 as required by the Groundwater Quality Discharge Permit UGW370004, as well as two CDs each containing a word searchable electronic copy of the report.

If you should have any questions regarding this report please contact me.

Yours very truly,



**ENERGY FUELS RESOURCES (USA) INC.**  
David C. Frydenlund  
Senior Vice President, Regulatory Affairs and General Counsel

CC: Jo Ann Tischler  
Harold R. Roberts  
David E. Turk  
Kathy Weinel



**White Mesa Uranium Mill**  
**2012 Annual Seeps and Springs Sampling Report**

**State of Utah**  
**Groundwater Discharge Permit No. UGW370004**

Prepared by:

**Energy Fuels Resources (USA) Inc.**  
225 Union Blvd., Suite 600  
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**November 21, 2012**

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## **2012 ANNUAL SEEPS AND SPRINGS SAMPLING REPORT**

### **1.0 INTRODUCTION**

This is the 2012 Annual Seeps and Springs Sampling Report for the Energy Fuels Resources (USA) Inc. (formerly Denison Mines (USA) Corp.) (“EFRI”) White Mesa Mill (the “Mill”), as required under Part I.F.7 of the Mill’s State of Utah Groundwater Discharge Permit No. UGW370004 (the “Permit”) and Section 6.0 of the Mill’s *Sampling Plan for Seeps and Springs in the Vicinity of the White Mesa Uranium Mill*, Revision: 0, March 17, 2009 (the “Sampling Plan”) and Revision 1, June 10, 2011 (“Draft Sampling Plan”).

### **1.1 Sampling Plan Revisions**

The *Sampling Plan for Seeps and Springs in the Vicinity of the White Mesa Uranium Mill*, was revised during the 2011 reporting period. The revisions were completed to address corrective actions delineated in the 2010 Annual Seeps and Springs Sampling Report for the Mill. The Draft Sampling Plan was submitted to the Utah Division of Radiation Control (“DRC”) via e-mail for review on June 10, 2011. Per conversations with DRC personnel on June 28, 2011, regarding the July 2011 sampling event, EFRI used the 2011 Draft Sampling Plan field forms for the July 2011 sampling event and the June 2012 sampling event even though the 2011 Draft Sampling Plan had not received DRC approval at the time of the sampling event. To date comments have not been received from DRC on the 2011 Draft Sampling Plan.

### **2.0 SAMPLING EVENTS**

Seeps and springs which were identified near the Mill in the 1978 Environmental Report (Plate 2.6-10, Dames and Moore, January 30, 1978) are to be sampled annually in accordance with the Sampling Plan and Part I.E.6 of the Permit. The Sampling Plan specifies the following sample locations: Corral Canyon Seep, Corral Springs, Ruin Spring, Cottonwood Seep, Westwater Seep and Entrance Spring.

### **2.1 June 2012 Sampling**

In accordance with the Permit and the Sampling Plan, DRC was notified of the sampling. The DRC representative was present for this sampling event. On June 20, 2012, EFRI collected seeps and springs samples from Cottonwood Seep, Ruin Spring, Back Spring (duplicate sample of Cottonwood Seep), and Entrance Spring. The DRC representative collected a “split” sample on June 20, 2012 at Cottonwood Seep from the EFRI sampling equipment, using sample containers he provided. Corral Canyon Seep, Westwater Seep, and Corral Springs were all dry on June 20, 2012. All of the data from the June sampling event are included as Attachment D in this report.

### **2.3 Repeat Visits to Dry Seeps and Springs.**

During the June 20, 2012 sampling event, Westwater Seep, Corral Canyon Seep and Corral Springs were dry, could not be sampled, and did not warrant development attempts with limited

hand tool excavation at that time. Additional visits were made to these locations on June 27, 2012 and July 9, 2012 to determine if development attempts with hand tool excavation would yield enough water for sampling. The additional two visits did not indicate any changes; that is there was no indication that development attempts would be successful.

## **2.4 Sampling Procedures**

Samples were collected and analyzed for the parameters listed in Table 2 of the Permit.

During the June sampling event, samples were collected from the locations indicated in Table 1. Sampling procedures for each seep or spring are determined by the site location and access.

The DRC-approved sampling procedures for seeps and springs at the Mill are contained in Sampling Plan, Revision 0. Samples collected under this plan were collected either by direct collection which involves collecting the sample directly into the sample container from the surface water feature or from spring out-flow, or by using a stainless steel ladle to collect water until a sufficient volume is contained in the ladle for transfer to the sample bottle.

Sampling Plan Revision 0, was revised in 2011 to provide flexibility in sampling procedures to address differing site conditions as well as to correct several inconsistencies noted during the 2010 report preparation and review. EFRI provided detailed descriptions of the sampling procedures used in 2010 in the 2010 Annual Seeps and Springs Sampling Report for the Mill, which was accepted by DRC. EFRI determined a revision to Sampling Plan, Revision 0 was necessary, because the procedures in Sampling Plan, Revision 0 do not match the site conditions and do not include the use of a peristaltic pump for sampling or filtering samples for metals and gross alpha analyses. EFRI submitted a Draft Sampling Plan to DRC in 2011. The procedures in the Draft Sampling Plan are consistent with the sampling procedures employed in 2010 and 2011. Samples collected under this plan are collected by direct collection, stainless steel sample ladle, or by use of a peristaltic pump which involves collecting the sample from the source or out-flow using the peristaltic pump. The peristaltic pump is used to deliver the sample from the source or out-flow to the sample bottles. Filtered parameters are pumped through a 0.45 micron filter prior to delivery to the sample bottle.

EFRI employed the previous sampling procedures again in 2012, because the 2010 and 2011 Annual Seeps and Springs Sampling Reports for the Mill were inspected by DRC and determined to be in compliance with the GWDP. Additionally, DRC was present during the 2010, 2011, and 2012 sampling events and did not provide comments noting that the procedures used were unacceptable. Since DRC has not commented on the seeps and springs sampling procedures that were used in 2010 and 2011, EFRI has continued using the procedures implemented in 2010.

### **Ruin Spring**

In the case of Ruin Spring, sample bottles for all analytes during the June sampling event (except gross alpha and heavy metals) were filled directly from the spring out-flow which is a pipe. Samples for heavy metals and gross alpha were collected by means of a peristaltic pump



and delivered directly to the sample containers through a 0.45 micron filter. The appropriate preservatives for the analytical technique were added to the samples.

### Cottonwood Seep and Entrance Spring

For the June samples collected from Cottonwood Seep and Entrance Spring, the samples for all analytes (except gross alpha and heavy metals) were collected by means of a peristaltic pump and delivered directly to the sample containers. In the case of the samples for heavy metals and gross alpha, the samples were delivered by a peristaltic pump directly to the sample containers through a 0.45 micron filter. All samples were preserved by the addition of the appropriate preservative for the analytical technique.

The tubing on the peristaltic pump that comes into contact with the sample water was disposed of between each sampling. As a result, no equipment required decontamination, and no rinsate samples were collected.

All samples were stored at 6° C or lower prior to laboratory analysis. Samples were received by the Mill's contract laboratories, Energy Laboratories ("EL") at 2.2° C and America West Analytical Laboratories ("AWAL") at 4.5° C.

## **2.5 Field Data**

Attached under Tab A are copies of all of the field data sheets recorded in association with the June seeps and springs monitoring events. Photographic documentation of the sampling sites is also included in Tab A. Sampling dates are listed in Table 1 and field parameters collected during the sampling program are included in Tab B.

## **2.6 Field QC Samples**

The field Quality Control ("QC") samples generated during this sampling event included one duplicate per sampling event and one trip blank per shipment to each laboratory which received samples for Volatile Organic Compounds (VOCs). The duplicate samples (Back Spring) were submitted blind to the analytical laboratory. As previously stated, no rinsate blanks were collected during this sampling event as only disposable equipment was used for sample collection.

## **3.0 SEEPS AND SPRINGS SURVEY AND CONTOUR MAP**

Part I.F.7(c) of the Permit requires that a water table contour map that includes the elevations for each well at the facility and the elevations of the phreatic surfaces observed for each of the seeps and springs sampled be submitted with this annual report. Tab C includes two contour maps. The contour map labeled C-1, shows the water table without the water level data associated with the dry ridge ("DR") investigation piezometers. The contour map labeled C-2 shows the water table with the water level data associated with the DR investigation piezometers. It is important to note that Cottonwood Seep is not included in any of the perched water level contouring,

because there is no evidence to establish a hydraulic connection between Cottonwood Seep and the perched water system. Cottonwood Seep is located near the Brushy Basin Member/Westwater Canyon Member contact, approximately 230 feet below the base of the perched water system defined by the Burro Canyon Formation/Brushy Basin Member contact. The stratigraphic position of Cottonwood Seep indicates that its elevation is not representative of the perched potentiometric surface. Exclusion of the Cottonwood Seep from water level contouring is consistent with previous submissions. The contour map includes the corrected survey data from December 2009 as discussed below.

Part I.F.7 (g) of the Permit requires that survey data for the seeps and springs be collected prior to the collection of samples. DRC previously clarified that the requirement to submit survey data applies only to the first sampling event and not on an annual basis. The December 2009 and July 2010 seeps and springs survey data shown in Tab C will be used in all reporting where seeps and springs locations and elevations are relevant.

A full discussion of the survey data and the hydrogeology of seeps and springs at the margins of White Mesa in the vicinity of the Mill and the relationship of these seeps and springs to the hydrogeology of the site, in particular to the occurrence of a relatively shallow perched groundwater zone beneath the site, is contained in *Hydrogeology of the Perched Groundwater Zone and Associated Seeps and Springs Near the White Mesa Uranium Mill Site*, dated November 12, 2010, prepared by Hydro Geo Chem, Inc. and submitted to the Director on November 15, 2010. Additional information is also contained in the *Second Revision Hydrogeology of the Perched Groundwater Zone in the Area Southwest of the Tailings Cells While Mesa Mill Site*, dated November 7, 2012, prepared by Hydro Geo Chem, Inc. and submitted to the Director on November 7, 2012.

## **4.0 QUALITY ASSURANCE AND QUALITY CONTROL**

### **4.1 Laboratory Results**

All analytical results are provided by one of the Mill's two contract analytical laboratories EL or AWAL.

The laboratories utilized during this investigation were certified under the Environmental Lab Certification Program administered by UDEQ Bureau of Lab Improvement for the analyses they completed.

The analytical data as well as the laboratory QA/QC summaries are included under Tab D.

### **4.2 DATA EVALUATION**

The Permit requires that the annual seeps and springs sampling program be conducted in compliance with the requirements specified in the Mill's approved White Mesa Uranium Mill Groundwater Monitoring Quality Assurance Plan ("QAP"), Revision 7.2, dated June 6, 2012, the approved Sampling Plan and the Permit itself. To meet this requirement the data validation



completed for the seeps and springs sampling program as discussed in this section utilized the requirements outlined in the QAP, the Permit and the approved Sampling Plan as necessary. The 2010 Annual Seeps and Springs Monitoring Report noted that in several places the requirements in the QAP, and Sampling Plan, Revision 0, were in conflict. To address these inconsistencies, the Sampling Plan, Revision 0 was revised and, as previously stated, submitted to DRC for review in June 2011. For the purposes of this data review, the Permit and the QAP requirements were used to determine compliance. The Mill QA Manager performed a QA/QC review to confirm compliance of the monitoring program with requirements of the Permit and the QAP. As required in the QAP, data QA includes preparation and analysis of QC samples in the field, review of field procedures, an analyte completeness review, and quality control review of laboratory data methods and data. Identification of field QC samples collected and analyzed is provided in Section 4.5.1. Discussion of adherence to the Sampling Plan is provided in Section 4.3. Analytical completeness review results are provided in Section 4.4. The steps and tests applied to check laboratory data QA/QC are discussed in Sections 4.5.1 through 4.5.9 below.

The analytical laboratories have provided summary reports of the analytical QA/QC measurements necessary to maintain conformance with National Environmental Laboratory Accreditation Conference ("NELAC") certification and reporting protocol. The analytical laboratory QA/QC Summary Reports, including copies of the Mill's Chain of Custody and Analytical Request Record forms for each set of analytical results, follow the analytical results under Tab D. Results of review of the laboratory QA/QC information are provided under Tab E and discussed in Section 4.5 below.

#### **4.3 Adherence to Sampling Plan and Permit Requirements**

On a review of adherence by Mill personnel to the Permit, the QA Manager observed that QA/QC requirements established in the Permit and the QAP were being adhered to and that the requirements were implemented as required except, as noted below.

Sampling procedures varied from those contemplated in the Revision 0, Sampling Plan as discussed in the 2010 Annual Seeps and Springs Sampling Report for the Mill. As previously stated, the Sampling Plan, Revision 0 was revised in June 2011 to accurately reflect the sampling procedures used during the 2009, 2010, 2011, and 2012 sampling events. DRC has not provided comments on the Sampling Plan to date; however, the DRC representative was present for both the 2010, 2011, and 2012 sampling programs and observed the sampling procedures used. The DRC representative accepted the procedures and made no comments regarding the sampling strategies employed. No further discussions regarding the changes to the Revision 0 Sampling Plan sampling procedures are included.

The Permit only requires the measurement of the field parameters pH, conductivity and temperature. Field parameter measurements collected during this sampling event included pH, conductivity, temperature, redox potential, and turbidity. The collection of additional field parameters resulted in no effect on the usability of the data.



#### **4.4 Analyte Completeness Review**

All analyses required by the Permit Table 2 were completed.

#### **4.5 Data Validation**

The QAP and the Permit identify the data validation steps and data quality control checks required for the seeps and springs monitoring program. Consistent with these requirements, the QA Manager performed the following evaluations: a field data QA/QC evaluation, a receipt temperature check, a holding time check, an analytical method check, a reporting limit check, a trip blank check, a QA/QC evaluation of sample duplicates, a gross alpha counting error evaluation and a review of each laboratory's reported QA/QC information. Each evaluation is discussed in the following sections. Data check tables indicating the results of each test are provided under Tab E.

##### **4.5.1 Field Data QA/QC Evaluation**

The QA Manager performs a review of all field recorded parameters to assess their adherence with QAP and Permit requirements. The assessment involved review of the Field Data sheets. Review of the Field Data Sheets noted that all requirements for field data collection were met except as set out below.

##### **4.5.2 Holding Time Evaluation**

QAP Table 1 identifies the method holding times for each suite of parameters. Sample holding time checks are provided under Tab E. All samples were received and analyzed within the required holding time.

##### **4.5.3 Laboratory Receipt Temperature Check**

Chain of Custody sheets were reviewed to confirm compliance with the sample receipt requirements specified in the QAP. Sample receipt temperature checks are provided under Tab E. All samples were received within the QAP required temperature limit.

##### **4.5.4 Analytical Method Check**

All analytical methods reported by both laboratories were checked against the required methods specified in Table 1 of the QAP. Analytical method check results are provided in Tab E.

##### **4.5.5 Reporting Limit Evaluation**

Reporting limits utilized by the laboratory were required to be equal to or lower than the Ground Water Quality Standards set out in Table 2 of the Permit. For TDS, sulfate and chloride, for which Ground Water Quality Standards are not set out in Table 2 of the Permit, reporting limits

specified in Part 1.E.6.e).(1) were used. Those reporting limits are 10 mg/L for TDS, and 1 mg/L for Sulfate and Chloride. All analytical method reporting limits reported by both laboratories were checked against the reporting limits specified in the Permit. Reporting limit evaluations are provided in Tab E. All analytes were measured and reported to the required reporting limits except that the sulfate sample results had the reporting limit raised for samples due to sample dilution necessary to accommodate the sulfate concentrations in the samples. In all cases the reported value for the analyte was higher than the increased detection limit.

#### **4.5.6 Trip Blank Evaluation**

All trip blank results were reviewed to identify any blank contamination. Trip blank evaluations are provided in Tab E. All trip blank results associated with the samples were less than reporting limit for all VOCs.

#### **4.5.7 QA/QC Evaluation for Sample Duplicates**

Section 9.1.4 a) of the QAP states that the Relative Percent Difference (“RPD”) will be calculated for the comparison of duplicate and original field samples. The QAP acceptance limits for RPDs between the duplicate and original field sample is less than or equal to 20% unless the measured results (described as activities in the QAP) are less than 5 times the required detection limit. This standard is based on the EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994, 9240.1-05-01 as cited in the QAP. The RPDs are calculated for all duplicate pairs for all analytes regardless of whether or not the reported concentrations are greater than 5 times the required detection limits; however, data will be considered noncompliant only when the results are greater than 5 times the required detection limit and the RPD is greater than 20%. RPDs are also only calculated when both the sample and the duplicate report a detection for any given analyte. If only one of the pair reports a detection, the RPD cannot be calculated. The additional duplicate information is provided for information purposes.

All duplicate results were within a 20% RPD in the seeps and springs samples except chloride in the Cottonwood Seep/Back Spring duplicate pair. The chloride duplicate RPDs greater than 20% are most likely due to some naturally occurring interference present in the samples. Results of the RPD test are provided under Tab E. Per QAP, Revision 7.2, and in response to requests from UDEQ, a separate corrective action for duplicate RPDs outside of acceptance limits has been developed and is documented in the revised QAP. The revised procedure for duplicate results outside of acceptance limits was implemented for the chloride results in duplicate pair Cottonwood Seep/Ruin Spring. The corrective actions that were taken in accordance with the revised procedure are as follows: the QA Manager contacted the Analytical Laboratory and requested a review of the raw data to assure that there were no transcription errors and the data were accurately reported. The laboratory noted that the data were accurate and reported correctly. Reanalysis was not completed as the samples were beyond the holding time.

Corrective actions were followed per QAP, Revision 7.2, and no formal correct action will be provided.

#### **4.5.8 Radiologics Counting Error**

Section 9.14 of the QAP requires that all gross alpha analysis reported with an activity equal to or greater than the Groundwater Compliance Limits (“GWCL”) set out in the Permit (for the seeps and springs samples the Groundwater Quality Standards [“GWQS”] will be used), shall have a counting variance that is equal to or less than 20% of the reported activity concentration. An error term may be greater than 20% of the reported activity concentration when the sum of the activity concentration and error term is less than or equal to the GWQS.

Section 9.4 of the QAP also requires a comparability check between the sample and field duplicate sample results utilizing the formula provided in the text.

Results of routine radiologic sample QC are provided under Tab E. All seeps and springs radiologic sample results that had positive detections met the QAP specified criteria for radiological counting error. The duplicate samples were nondetect, and as such the duplicate comparability check specified in the QAP does not apply.

#### **4.5.9 Laboratory Matrix QC Evaluation**

Section 9.2 of the QAP requires that the laboratory’s QA/QC Manager check the following items in developing data reports: (1) sample preparation information is correct and complete, (2) analysis information is correct and complete, (3) appropriate analytical laboratory procedures are followed, (4) analytical results are correct and complete, (5) QC samples are within established control limits, (6) blanks are within QC limits, (7) special sample preparation and analytical requirements have been met, and (8) documentation is complete. In addition to other laboratory checks described above, EFRI’s QA Manager rechecks QC samples and blanks (items (5) and (6)) to confirm that the percent recovery for spikes and the relative percent difference for spike duplicates are within the method-specific required limits, or that the case narrative sufficiently explains any deviation from these limits. Results of this quantitative check are provided under Tab E. All lab QA/QC results from both EL and AWAL met these requirements except as described below.

A significant number of the seeps and springs samples had the reporting limit raised for Sulfate due to matrix interference and/or sample dilution. In all cases where the detection limit was increased, the concentration for the analyte was higher than the increased detection limit.

The check samples included at least the following: a method blank, a laboratory control spike (“LCS”), a matrix spike (“MS”) and a matrix spike duplicate (“MSD”), or the equivalent, where applicable. It should be noted that:

- Laboratory fortified blanks are equivalent to LCSs.
- Laboratory reagent blanks are equivalent to method blanks.
- Post digestion spikes are equivalent to MSs.
- Post digestion spike duplicates are equivalent to MSDs.



- For method E900.1, used to determine gross alpha, a sample duplicate was used instead of a MSD.

All qualifiers, and the corresponding explanations reported in the QA/QC Summary Reports for any of the check samples for any of the analytical methods, were reviewed by the QA Manager.

The QAP Section 8.1.2 requires that a MS/MSD (referred to as a Duplicate Spike [Matrix Spike] in the QAP) pair be analyzed with each analytical batch. The QAP does not specify acceptance limits for the MS/MSD pair, and the QAP does not specify that the MS/MSD pair be prepared on EFRI samples only. Acceptance limits for MS/MSDs are set by the laboratories. The review of the information provided by the laboratories in the data packages verified that the QAP requirement to analyze a MS/MSD pair with each analytical batch was met. While the QAP does not require it, the recoveries were reviewed for compliance with each laboratory's established acceptance limits. The QAP does not require this level of review and the results of this review are provided for information only.

The information from the Laboratory QA/QC Summary Reports indicates that the MS/MSDs recoveries and the associated RPDs for all seeps and springs samples were within acceptable laboratory limits except as noted in Tab E. Five MS/MSD recovery RPDs were outside the laboratory established acceptance limits. This result does not affect the quality or usability of the data because the recoveries and RPDs above or below the acceptance limits are indicative of matrix interference. Four MS/MSD recoveries were above the laboratory established acceptance limits, indicating a high bias to the individual sample results. A high bias means that reported results may be higher than the actual results. Two MS/MSD recoveries were below the laboratory established acceptance limits. The recoveries do not affect the quality or usability of the data because the recoveries outside of the acceptance limits are indicative of matrix interference. Furthermore, the MS/MSD analyses samples for Carbon Tetrachloride, Chloromethane, and Toluene which were spiked for analyses were not collected at the Mill, and as such the matrix interference is not applicable to the Mill samples reported herein. The QAP requirement to analyze a MS/MSD pair with each analytical batch was met and as such the data are compliant with the QAP.

The QAP specifies that surrogate compounds shall be employed for all organic analyses, but the QAP does not specify acceptance limits for surrogate recoveries. The analytical data associated with the routine quarterly sampling met the requirement specified in the QAP. The information from the Laboratory QA/QC Summary Reports indicates that the surrogate recoveries for all seeps and springs samples were within acceptable laboratory limits for all surrogate compounds except as indicated in Tab E. Sixteen surrogate recoveries were above the laboratory established acceptance limits, indicating a high bias to the individual sample results. A high bias means that reported results may be higher than the actual results. The surrogate compounds outside of acceptance limits are most likely the result of laboratory spiking compound degradation. This is apparent because the same compounds were out compliance limits in all samples analyzed within a specific period of time. There is no effect on the quality or usability of the data, because the low surrogate recoveries were on a laboratory matrix spike which would indicate surrogate solution degradation at the laboratory. These recoveries do not impact other results, because

there are multiple surrogates added to each sample and all other surrogates were within limits. Furthermore, there are no QAP requirements for surrogate recoveries.

The QAP Section 8.1.2 requires that each analytical batch shall be accompanied by a reagent blank. Contamination detected in analysis of reagent blanks/method blanks will be used to evaluate any analytical laboratory contamination of environmental samples. The QAP specified process for evaluation of reagent/method blanks states that nonconformance will exist when blanks are within an order of magnitude of the sample results. Eight analytes were reported in the reagent/method blanks from EL. Reagent/method blank results are included in Tab E. In all cases the reagent/method blank results were less than an order of magnitude relative to the positive sample results or the associated sample results were nondetect. The QAP requirement to analyze a reagent/method blank with each batch and evaluate the results has therefore been completed as required.

## **5.0 EVALUATION OF ANALYTICAL DATA**

### **Analytical Results**

As previously stated, all samples were analyzed for the groundwater compliance parameters found on Table 2 of the Permit. In addition to these laboratory parameters, the pH, temperature, conductivity, redox potential and turbidity (although not required redox and turbidity were collected) of each sample was measured and recorded in the field.

The samples were not analyzed for semivolatile organic compounds. Although the Sampling Plan, Revision 0, currently states that the samples will also be analyzed for semivolatile organic compounds, the Permit was revised to eliminate the requirement for semivolatile analysis. The requirement to analyze the seeps and springs samples for semivolatile organic compounds has also been eliminated from the Draft Sampling Plan, Revision 1.

### **5.1 Evaluation of Analytical Results**

The results of the June sampling event show no evidence of Mill influence in the water produced by the seeps and springs sampled. The lack of Mill influence on seeps and springs is indicated by the fact that the parameters detected are within the ranges of concentrations for the on-site monitoring wells and for available historic data for the seeps and springs themselves. For those detected analytes, concentrations are shown in Tables 2A, 2B, 2C, and 2D. The data are compared to available historic data for each seep and spring as well as to on-site monitoring well data. Specific discussions about each seep or spring are included below.

#### **5.1.1 Ruin Spring**

No VOCs or radiologics were detected. Metals and major ions were the only analytes detected. The metals detections were minimal with only molybdenum, selenium and uranium having positive detections. A comparison of the 2009, 2010, and 2011 data to the 2012 data shows that the concentrations of most detected analytes remained approximately the same with only minor changes within the limits of normal analytical deviation. The reported values for fluoride,



magnesium, potassium, sodium, total dissolved solids ("TDS"), selenium, and uranium increased from the 2011 sample results, but they are below the upper range of historic values for the on-site monitoring wells. The differences are not significant and are most likely due to normal fluctuations due to flow rates or seasonal variations due to annual precipitation. Overall, the data reported for Ruin Spring are typical for a surface water sample with no indication of Mill influence.

#### **5.1.2 Cottonwood Seep**

No VOCs or radiologics were detected. Metals and major ions were the only analytes detected. The metals detections were minimal with only uranium having a positive detection. A comparison of the 2009, 2010, and 2011 data to the 2012 data shows that the concentrations of most detected analytes remained approximately the same with only minor changes within the limits of normal analytical deviation. The reported values for bicarbonate, calcium, chloride, magnesium, potassium, sodium, and TDS increased from the 2009, 2010, and 2011 sample results. In most cases the increases were minimal and within the range of analytical deviation (e.g. potassium increased 0.3 mg/L). In all cases the detections are significantly below the upper range of historic values for the on-site monitoring wells. The differences are not significant and are most likely due to the normal fluctuations due to flow rates or seasonal variations due to annual precipitation. Overall, the data reported for Cottonwood Seep are typical for a surface water sample with no indication of Mill influence.

#### **5.1.3 Westwater Seep**

Westwater Seep was dry and no sample was collected.

#### **5.1.4 Entrance Spring**

No VOCs were detected. Gross alpha, metals and major ions were the only analytes detected. The metals detections were minimal with only iron, selenium, and uranium having positive detections. A comparison of the 2009, 2010, and 2011 data to the 2012 data shows that the concentrations of most detected analytes remained approximately the same with only minor changes within the limits of normal analytical deviation. The reported values for calcium, chloride, fluoride, magnesium, nitrate, sodium, TDS, selenium, and uranium increased from the 2009, 2010, and 2011 sample results. Gross alpha was reported; however, the result has decreased compared to the 2011 results. The detected concentrations are significantly below the upper range of historic values for the on-site monitoring wells. Overall, the data reported for Entrance Spring are typical for a surface water sample with no indication of Mill influence.

### **6.0 CORRECTIVE ACTION REPORT**

No corrective action reports are required for the 2012 annual sampling event.

#### **6.1 Assessment of Corrective Actions from Previous Period**

No corrective action reports were required for the 2011 annual sampling event.



## **7.0 ELECTRONIC DATA FILES AND FORMAT**

EFRI has provided to the Director electronic copies of all laboratory results as part of the annual seeps and springs monitoring in Comma Separated Values (“CSV”), from the laboratory. A copy of the transmittal e-mail is included under Tab F.

## 8.0 SIGNATURE AND CERTIFICATION

This document was prepared by Energy Fuels Resources (USA) Inc. on November 21, 2012.

Energy Fuels Resources (USA) Inc.

By:

A handwritten signature in blue ink, consisting of a series of loops and a long horizontal stroke, positioned above the printed name.

David C. Frydenlund

Senior Vice President, Regulatory Affairs and General Counsel

### Certification

I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



---

David C. Frydenlund

Senior Vice President, Regulatory Affairs and General Counsel  
Energy Fuels Resources (USA) Inc.



## Tables

**Table 1: Summary of Seeps and Springs Sampling for 2012**

<b>Location</b>	<b>Sample Date</b>	<b>Work Order No./Lab Set ID</b>	<b>Date of Lab Report</b>
Entrance Spring	6/20/2012	EL = C1206931 AWAL = 1207214, 1206379	EL = 7/27/2012 AWAL = 7/3/2012, 7/23/2012
Cottonwood Seep	6/20/2012	EL = C1206931 AWAL = 1207214, 1206379	EL = 7/27/2012 AWAL = 7/3/2012, 7/23/2012
Back Spring (Duplicate of Cottonwood Seep)	6/20/2012	EL = C1206931 AWAL = 1207214, 1206379	EL = 7/27/2012 AWAL = 7/3/2012, 7/23/2012
Ruin Spring	6/20/2012	EL = C1206931 AWAL = 1207214, 1206379	EL = 7/27/2012 AWAL = 7/3/2012, 7/23/2012
Westwater Seep	Not Sampled - Dry	Not Sampled - Dry	Not Sampled - Dry
Corral Spring	Not Sampled - Dry	Not Sampled - Dry	Not Sampled - Dry
Corral Canyon Spring	Not Sampled - Dry	Not Sampled - Dry	Not Sampled - Dry



Table 2A Detected Constituents and Comparison to Historic Values and Mill Site Monitoring Wells

Ruin Spring							
Constituent	2009	2010	2011 - May	2011 - July	2012	Range of Average Historic Values for Monitoring Wells <sup>1 *</sup>	Ave 2003-2004 <sup>2</sup>
Major Ions (mg/l)							
Carbonate	<1	<1	<1	1	<1	--	--
Bicarbonate	233	254	241	239	237	--	--
Calcium	151	136	145	148	147	--	--
Chloride	28	23	25	44	28	ND - 213	27
Fluoride	0.5	0.53	0.45	0.5	0.52	ND - 1.3	0.6
Magnesium	32.3	29.7	30.6	31.1	31.9	--	--
Ammonia	0.09	<0.05	ND	<0.05	<0.05	--	--
Nitrogen-Nitrate	1.4	1.7	1.7	1.6	1.6	--	--
Potassium	3.3	3.07	3.2	3.3	3.5	--	--
Sodium	104	93.4	110	111	115	--	--
Sulfate	528	447	486	484	464	ND - 3455	521
pH (s.u.)	7.85	7.51	7.66	8.14	7.53	6.7 - 8.9	7.9
TDS	1010	903	942	905	1000	1019 - 5548	1053
Metals (ug/l)							
Arsenic	<5	<5	<5	<5	<5	--	--
Beryllium	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	--	--
Cadmium	<0.5	<0.5	<0.5	<0.5	<0.5	ND - 4.78	0.01
Chromium	<25	<25	<25	<25	<25	--	--
Cobalt	<10	<10	<10	<10	<10	--	--
Copper	<10	<10	<10	<10	<10	--	--
Iron	<30	<30	<30	<30	<30	ND - 7942	25
Lead	<1.0	<1.0	<1.0	<1.0	<1.0	--	--
Manganese	<10	<10	<10	<10	<10	ND - 34,550	5
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
Molybdenum	17	17	16	17	16	--	--
Nickel	<20	<20	<20	<20	<20	ND - 61	0.05
Selenium	12.2	10	11.8	10.2	10.8	ND - 106.5	12.1
Silver	<10	<10	<10	<10	<10	--	--
Thallium	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
Tin	<100	<100	<100	<100	<100 (<5.0)**	--	--
Uranium	9.11	8.47	9.35	8.63	8.68	ND - 59.8	10
Vanadium	<15	<15	<15	<15	<15	--	--
Zinc	<10	<10	<10	<10	<10	--	--
Radiologics (pCi/l)							
Gross Alpha	<0.2	<0.2	<-0.3	<-0.05	<-0.09	ND - 36	0.28
VOCS (ug/L)							
Acetone	<20	<20	ND	ND	ND	--	--
Benzene	<1.0	<1.0	ND	ND	ND	--	--
tetrachloride	<1.0	<1.0	ND	ND	ND	--	--



Ruin Spring							
Constituent	2009	2010	2011 - May	2011 - July	2012	Range of Average Historic Values for Monitoring Wells <sup>1 *</sup>	Ave 2003-2004 <sup>2</sup>
Chloroform	<1.0	<1.0	ND	ND	ND	--	--
Chloromethane	<1.0	<1.0	ND	ND	ND	--	--
MEK	<20	<20	ND	ND	ND	--	--
Chloride	<1.0	<1.0	ND	ND	ND	--	--
Naphthalene	<1.0	<1.0	ND	ND	ND	--	--
Tetrahydrofuran	<1.0	<1.0	ND	ND	ND	--	--
Toluene	<1.0	<1.0	ND	ND	ND	--	--
Xylenes	<1.0	<1.0	ND	ND	ND	--	--

<sup>1</sup> From Figure 3, Table 10 and Appendix B of the *Revised Addendum, Background Groundwater Quality Report: New Wells for Denison Mines (USA) Corp's White Mesa Mill Site, San Juan County, Utah*, April 30, 2008, prepared by INTERA, Inc. and Table 16 and Appendix D of the *Revised Background Groundwater Quality Report: Existing Wells for Denison Mines (USA) Corp.'s White Mesa Uranium Mill Site, San Juan County, Utah*, October 2007, prepared by INTERA, Inc.

<sup>2</sup> From Figure 9 of the *Revised Addendum, Evaluation of Available Pre-Operational and Regional Background Data, Background Groundwater Quality Report: Existing Wells for Denison Mines (USA) Corp.'s White Mesa Mill Site, San Juan County, Utah*, November 16, 2007, prepared by INTERA, Inc.

\*Range of average historic values for On-Site Monitoring Wells as reported on April 30, 2008 (MW-1, MW-2, MW-3, MW-3A, MW-4, MW-5, MW-11, MW-12, MW-14, MW-15, MW-17, MW-18, MW-19, MW-20, MW-22, MW-23, MW-24, MW-25, MW-26, MW-27, MW-28, MW-29, MW-30, MW-31 and MW-32)<sup>2</sup>

\*\*In June 2012, the samples collected were inadvertently analyzed twice for Tin only. Both results are shown, and both data packages have been included in this report.



Table 2B Detected Constituents and Comparison to Historic Values and Mill Site Monitoring Wells

Cottonwood Seep							
Constituent	2009	2010	2011 - May	2011 - July	2012	Range of Average Historic Values for Monitoring Wells <sup>1*</sup>	Ave 1977 - 1982 <sup>1</sup>
Major Ions (mg/l)							
Carbonate	<1	<1	<1	6	<1	--	--
Bicarbonate	316	340	330	316	326	--	--
Calcium	90.3	92.2	95.4	94.2	101	--	--
Chloride	124	112	113	134	149	ND - 213	31
Fluoride	0.4	0.38	0.34	0.38	0.38	ND - 1.3	0.8
Magnesium	25	24.8	25.2	25.2	27.7	--	--
Nitrogen-Ammonia	<0.05	<0.05	<0.05	<0.05	<0.05	--	--
Nitrogen-Nitrate	0.1	<0.1	0.1	<0.1	<0.1	--	--
Potassium	5.7	5.77	6	5.9	6.2	--	--
Sodium	205	214	229	227	247	--	--
Sulfate	383	389	394	389	256	ND - 3455	230
pH (s.u.)	7.73	7.47	7.55	8.04	7.53	6.7 - 8.9	7.6
TDS	1010	900	1030	978	1040	1019 - 5548	811
Metals (ug/l)							
Arsenic	<5	<5	<5	<5	<5	--	--
Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
Cadmium	<0.5	<0.5	<0.5	<0.5	<0.5	ND - 4.78	--
Chromium	<25	<25	<25	<25	<25	--	--
Cobalt	<10	<10	<10	<10	<10	--	--
Copper	<10	<10	<10	<10	<10	--	--
Iron	<30	<30	53	<30	<30	ND - 7942	150
Lead	<1.0	<1.0	<1.0	<1.0	<1.0	--	--
Manganese	<10	<10	<10	<10	<10	ND - 34,550	580
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
Molybdenum	<10	<10	<10	<10	<10	--	--
Nickel	<20	<20	<20	<20	<20	ND - 61	--
Selenium	<5.0	<5.0	<5.0	<5.0	<5.0	ND - 106.5	--
Silver	<10	<10	<10	<10	<10	--	--
Thallium	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
Tin	<100	<100	<100	<100	<100 (<5.0)**	--	--
Uranium	8.42	8.24	7.87	8.68	8.17	ND - 59.8	--
Vanadium	<15	<15	<15	<15	<15	--	--
Zinc	<10	<10	<10	<10	<10	--	--
Radiologies (pCi/l)							
Gross Alpha	<0.2	<0.2	<0.1	<-0.1	<-0.2	ND - 36	7.2
VOCS (ug/L)							
Acetone	<20	<20	ND	ND	ND	--	--



Table 2B Detected Constituents and Comparison to Historic Values and Mill Site Monitoring Wells

Cottonwood Seep							
Constituent	2009	2010	2011 - May	2011 - July	2012	Range of Average Historic Values for Monitoring Wells <sup>1*</sup>	Ave 1977 - 1982 <sup>1</sup>
Benzene	<1.0	<1.0	ND	ND	ND	--	--
tetrachloride	<1.0	<1.0	ND	ND	ND	--	--
Chloroform	<1.0	<1.0	ND	ND	ND	--	--
Chloromethane	<1.0	<1.0	ND	ND	ND	--	--
MEK	<20	<20	ND	ND	ND	--	--
Methylene Chloride	<1.0	<1.0	ND	ND	ND	--	--
Naphthalene	<1.0	<1.0	ND	ND	ND	--	--
Tetrahydrofuran	<1.0	<1.0	ND	ND	ND	--	--
Toluene	<1.0	<1.0	ND	ND	ND	--	--
Xylenes	<1.0	<1.0	ND	ND	ND	--	--

<sup>1</sup> From Figure 3, Table 10 and Appendix B of the *Revised Addendum, Background Groundwater Quality Report: New Wells for Denison Mines (USA) Corp's White Mesa Mill Site, San Juan County, Utah*, April 30, 2008, prepared by INTERA, Inc. and Table 16 and Appendix D of the *Revised Background Groundwater Quality Report: Existing Wells for Denison Mines (USA) Corp.'s White Mesa Uranium Mill Site, San Juan County, Utah*, October 2007, prepared by INTERA, Inc.

\*Range of average historic values for On-Site Monitoring Wells as reported on April 30, 2008 (MW-1, MW-2, MW-3, MW-3A, MW-4, MW-5, MW-11, MW-12, MW-14, MW-15, MW-17, MW-18, MW-19, MW-20, MW-22, MW-23, MW-24, MW-25, MW-26, MW-27, MW-28, MW-29, MW-30, MW-31 and MW-32)

\*\*In June 2012, the samples collected were inadvertently analyzed twice for Tin only. Both results are shown, and both data packages have been included in this report.



Table 2C Detected Constituents and Comparison to Historic Values and Mill Site Monitoring Wells

Westwater Seep						
Constituent	2009	2010	2011 - May	2011 - July	2012	Range of Average Historic Values for Monitoring Wells <sup>1</sup> *
Major Ions (mg/l)						
Carbonate	<1	<1	<1	Not Sampled - Dry	Not Sampled - Dry	--
Bicarbonate	465	450	371			--
Calcium	191	179	247			--
Chloride	41	40	21			ND - 213
Fluoride	0.7	0.6	0.54			ND - 1.3
Magnesium	45.9	44.7	34.7			--
Nitrogen-Ammonia	<0.05	0.5	0.06			--
Nitrogen-Nitrate	0.8	<0.1	<0.1			--
Potassium	1.19	6.57	3.9			--
Sodium	196	160	112			--
Sulfate	646	607	354			ND - 3455
pH (s.u.)	8.01	7.38	7.2			6.7 - 8.9
TDS	1370	1270	853			1019 - 5548
Metals (ug/l)						
Arsenic	<5	<5	12.3	Not Sampled - Dry	Not Sampled - Dry	--
Beryllium	<0.5	<0.5	0.91			--
Cadmium	<0.5	<0.5	0.9			ND - 4.78
Chromium	<25	<25	<25			--
Cobalt	<10	<10	<10			--
Copper	<10	<10	16			--
Iron	89	56	4540			ND - 7942
Lead	<1.0	<1.0	41.4			--
Manganese	37	87	268			ND - 34,550
Mercury	<0.5	<0.5	<0.5			--
Molybdenum	29	29	<10			--
Nickel	<20	<20	29			ND - 61
Selenium	<5.0	<5.0	<5.0			ND - 106.5
Silver	<10	<10	<10			--
Thallium	<0.5	<0.5	<0.5			--
Tin	<100	<100	<100			--
Uranium	15.1	46.6	6.64			ND - 59.8
Vanadium	<15	<15	34			--
Zinc	<10	<10	28			--
Radiologies (pCi/l)						
Gross Alpha	< -0.1	<0.3	0.5	Not Sampled - Dry	Not Sampled - Dry	ND - 36



Table 2C Detected Constituents and Comparison to Historic Values and Mill Site Monitoring Wells

Westwater Seep						
Constituent	2009	2010	2011 - May	2011 - July	2012	Range of Average Historic Values for Monitoring Wells <sup>1</sup> *
VOCS (ug/L)						
Acetone	<20	<20	ND	Not Sampled - Dry	Not Sampled - Dry	--
Benzene	<1.0	<1.0	ND			--
Carbon tetrachloride	<1.0	<1.0	ND			--
Chloroform	<1.0	<1.0	ND			--
Chloromethane	<1.0	<1.0	ND			--
MEK	<20	<20	ND			--
Methylene Chloride	<1.0	<1.0	ND			--
Naphthalene	<1.0	<1.0	ND			--
Tetrahydrofuran	<1.0	<1.0	ND			--
Toluene	<1.0	<1.0	ND			--
Xylenes	<1.0	<1.0	ND			--

<sup>1</sup> From Figure 3, Table 10 and Appendix B of the *Revised Addendum, Background Groundwater Quality Report: New Wells for Denison Mines (USA) Corp's White Mesa Mill Site, San Juan County, Utah*, April 30, 2008, prepared by INTERA, Inc. and Table 16 and Appendix D of the *Revised Background Groundwater Quality Report: Existing Wells for Denison Mines (USA) Corp.'s White Mesa Uranium Mill Site, San Juan County, Utah*, October 2007, prepared by INTERA, Inc.

\*Range of average historic values for On-Site Monitoring Wells as reported on April 30, 2008 (MW-1, MW-2, MW-3, MW-3A, MW-4, MW-5, MW-11, MW-12, MW-14, MW-15, MW-17, MW-18, MW-19, MW-20, MW-22, MW-23, MW-24, MW-25, MW-26, MW-27, MW-28, MW-29, MW-30, MW-31 and MW-32)



Table 2D Detected Constituents and Comparison to Historic Values and Mill Site Monitoring Wells

Entrance Spring						
Constituent	2009	2010	2011 - May	2011 - July	2012	Range of Average Historic Values for Monitoring Wells <sup>1</sup> *
Major Ions (mg/l)						
Carbonate	<1	<1	<1	7	<1	--
Bicarbonate	292	332	270	299	298	--
Calcium	90.8	96.5	88.8	96.6	105	--
Chloride	60	63	49	64	78	ND - 213
Fluoride	0.7	0.73	0.58	0.58	0.64	ND - 1.3
Magnesium	26.6	28.9	26.4	28.4	32.7	--
Nitrogen-Ammonia	0.28	<0.05	<0.05	0.32	<0.05	--
Nitrogen-Nitrate	1.4	1	1.4	0.5	2.8	--
Potassium	2.4	2.74	2.6	2.9	2	--
Sodium	61.4	62.7	62.5	68.6	77.4	--
Sulfate	178	179	166	171	171	ND - 3455
pH (s.u.)	7.85	7.56	7.96	8.17	7.5	6.7 - 8.9
TDS	605	661	571	582	660	1019 - 5548
Metals (ug/l)						
Arsenic	<5	<5	<5	<5	<5	--
Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	--
Cadmium	<0.5	<0.5	<0.5	<0.5	<0.5	ND - 4.78
Chromium	<25	<25	<25	<25	<25	--
Cobalt	<10	<10	<10	<10	<10	--
Copper	<10	<10	<10	<10	<10	--
Iron	<30	<30	37	55	34	ND - 7942
Lead	<1.0	<1.0	<1.0	<1.0	<1.0	--
Manganese	54	11	47	84	<10	ND - 34,550
Mercury	<0.5	<0.5	<0.5	<0.5	<0.5	--
Molybdenum	<10	<10	<10	<10	<10	--
Nickel	<20	<20	<20	<20	<20	ND - 61
Selenium	12.1	9.2	13.1	5.5	13.2	ND - 106.5
Silver	<10	<10	<10	<10	<10	--
Thallium	<0.5	<0.5	<0.5	<0.5	<0.5	--
Tin	<100	<100	<100	<100	<100 (<5.0)**	--
Uranium	15.2	17.8	18.8	15.3	21.1	ND - 59.8
Vanadium	<15	<15	<15	<15	<15	--
Zinc	<10	<10	<10	<10	<10	--
Radiologies (pCi/l)						
Gross Alpha	0.9	<0.5	1.5	1.6	0.5	ND - 36
VOCS (ug/L)						
Acetone	<20	<20	ND	ND	ND	--
Benzene	<1.0	<1.0	ND	ND	ND	--



Table 2D Detected Constituents and Comparison to Historic Values and Mill Site Monitoring Wells

Entrance Spring						
Constituent	2009	2010	2011 - May	2011 - July	2012	Range of Average Historic Values for Monitoring Wells <sup>1</sup> *
Carbon tetrachloride	<1.0	<1.0	ND	ND	ND	--
Chloroform	<1.0	<1.0	ND	ND	ND	--
Chloromethane	<1.0	<1.0	ND	ND	ND	--
MEK	<20	<20	ND	ND	ND	--
Methylene Chloride	<1.0	<1.0	ND	ND	ND	--
Naphthalene	<1.0	<1.0	ND	ND	ND	--
Tetrahydrofuran	<1.0	<1.0	ND	ND	ND	--
Toluene	<1.0	<1.0	ND	ND	ND	--
Xylenes	<1.0	<1.0	ND	ND	ND	--

<sup>1</sup> From Figure 3, Table 10 and Appendix B of the *Revised Addendum, Background Groundwater Quality Report: New Wells for Denison Mines (USA) Corp's White Mesa Mill Site, San Juan County, Utah*, April 30, 2008, prepared by INTERA, Inc. and Table 16 and Appendix D of the *Revised Background Groundwater Quality Report: Existing Wells for Denison Mines (USA) Corp.'s White Mesa Uranium Mill Site, San Juan County, Utah*, October 2007, prepared by INTERA, Inc.

\*Range of average historic values for On-Site Monitoring Wells as reported on April 30, 2008 (MW-1, MW-2, MW-3, MW-3A, MW-4, MW-5, MW-11, MW-12, MW-14, MW-15, MW-17, MW-18, MW-19, MW-20, MW-22, MW-23, MW-24, MW-25, MW-26, MW-27, MW-28, MW-29, MW-30, MW-31 and MW-32)

\*\*In June 2012, the samples collected were inadvertently analyzed twice for Tin only. Both results are shown, and both data packages have been included in this report.



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Tab A

Seeps and Springs Field Data Sheets and Photographic Documentation

### Field Data Record-Seeps and Springs Sampling

Seep or Spring Location: Cottonwood Spring

Date For Initial Sampling Visit: 6/20/2012 Time: 0745

Sample Collected: ☒ Yes ☐ No

Date For Second Sampling Visit: \_\_\_\_\_ Time: \_\_\_\_\_

Sample Collected: ☐ Yes ☐ No

Date For Third Sampling Visit: \_\_\_\_\_ Time: \_\_\_\_\_

Sample Collected: ☐ Yes ☐ No

Sampling Personnel: Tanner, Garrin, Deen, Phil

Weather Conditions at Time of Sampling: Sunny

Estimated Seep or Spring Flow Rate: .75 GPM

#### Field Parameter Measurements:

-pH 7.06  
-Temperature (°C) 16.28  
-Conductivity  $\mu$ MHOC/cm 1568  
-Turbidity (NTU) (if measured) 23.4  
-Redox Potential Eh (mV) (if measured) 421

#### Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			
					Direct	Peristaltic Pump	Ladle	Other (describe in notes section)
VOCs	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
THF	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrients	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Non Radiologics	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gross Alpha	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### QC Samples Associated with this Location:

☐ Rinsate Blank

☒ Duplicate

Duplicate Sample Name: Back spring

Notes: Arrived on site at 0730. Tanner, Garrin, Deen, Phil on site.  
Samples were taken at 0745. Left site at 0810  
Toad living in spring at our sampling location.











### Field Data Record-Seeps and Springs Sampling

Seep or Spring Location: Back Spring

Date For Initial Sampling Visit: 6/20/2012 Time: 0745

Sample Collected: ☒ Yes ☐ No

Date For Second Sampling Visit: \_\_\_\_\_ Time: \_\_\_\_\_

Sample Collected: ☐ Yes ☐ No

Date For Third Sampling Visit: \_\_\_\_\_ Time: \_\_\_\_\_

Sample Collected: ☐ Yes ☐ No

Sampling Personnel: Tanner, Garrison, Deen, Phil

Weather Conditions at Time of Sampling: Sunny

Estimated Seep or Spring Flow Rate: .75

#### Field Parameter Measurements:

-pH 7.06  
-Temperature (°C) 16.28  
-Conductivity  $\mu$ MHOC/cm 1568  
-Turbidity (NTU) (if measured) 23.4  
-Redox Potential Eh (mV) (if measured) 421

#### Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			
					Direct	Peristaltic Pump	Ladle	Other (describe in notes section)
VOCs	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
THF	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrients	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Non Radiologics	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gross Alpha	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name: \_\_\_\_\_

Notes: Duplicate of Cottonwood Spring



### Field Data Record-Seeps and Springs Sampling

Seep or Spring Location: Entrance Seep

Date For Initial Sampling Visit: 6/20/2012 Time: 1015

Sample Collected: ☒ Yes ☐ No

Date For Second Sampling Visit: \_\_\_\_\_ Time: \_\_\_\_\_

Sample Collected: ☐ Yes ☐ No

Date For Third Sampling Visit: \_\_\_\_\_ Time: \_\_\_\_\_

Sample Collected: ☐ Yes ☐ No

Sampling Personnel: \_\_\_\_\_

Weather Conditions at Time of Sampling: Sunny with a little wind

Estimated Seep or Spring Flow Rate: .15 GPM

#### Field Parameter Measurements:

-pH 7.57

-Temperature (°C) 20.36

-Conductivity  $\mu$ MHOC/cm 1040

-Turbidity (NTU) (if measured) 10.8

-Redox Potential Eh (mV) (if measured) 292

#### Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			
					Direct	Peristaltic Pump	Ladle	Other (describe in notes section)
VOCs	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
THF	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Non Radiologics	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gross Alpha	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name: \_\_\_\_\_

Notes: Arrived on site at 0955. Tanner, Garrin, Deen, Phil on site.  
Our normal sampling area was diked up. Went down the wash and developed  
a spot in a marsh area. Let water clear then sampled at 1015.











### Field Data Record-Seeps and Springs Sampling

Seep or Spring Location: Ruin Spring

Date For Initial Sampling Visit: 6/20/2012 Time: 0920

Sample Collected: ☒ Yes ☐ No

Date For Second Sampling Visit: \_\_\_\_\_ Time: \_\_\_\_\_

Sample Collected: ☐ Yes ☐ No

Date For Third Sampling Visit: \_\_\_\_\_ Time: \_\_\_\_\_

Sample Collected: ☐ Yes ☐ No

Sampling Personnel: Tanner Holliday, Garrin Palmer, Deen Henderson, Phil Gable

Weather Conditions at Time of Sampling: Clear with some wind

Estimated Seep or Spring Flow Rate: 1 GPM

#### Field Parameter Measurements:

-pH 7.56

-Temperature (°C) 15.86

-Conductivity  $\mu$ MHOC/cm 1367

-Turbidity (NTU) (if measured) 1.3

-Redox Potential Eh (mV) (if measured) 276

#### Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			
					Direct	Peristaltic Pump	Ladle	Other (describe in notes section)
VOCs	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
THF	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrients	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Non Radiologics	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gross Alpha	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name: \_\_\_\_\_

Notes: Arrived on site at 0910. Tanner, Garrin, Deen, Phil on site to sample spring. Sample was taken at 0920 left site at 0931







### Field Data Record-Seeps and Springs Sampling

Seep or Spring Location: Westwater Seep

Date For Initial Sampling Visit: 6/20/2012 Time: 0830

Sample Collected: ☐ Yes ☒ No

Date For Second Sampling Visit: 6/27/2012 Time: 1230

Sample Collected: ☐ Yes ☒ No

Date For Third Sampling Visit: 7/9/2012 Time: 1330

Sample Collected: ☐ Yes ☒ No

Sampling Personnel: \_\_\_\_\_

Weather Conditions at Time of Sampling: \_\_\_\_\_

Estimated Seep or Spring Flow Rate: \_\_\_\_\_

#### Field Parameter Measurements:

-pH \_\_\_\_\_  
-Temperature (°C) \_\_\_\_\_  
-Conductivity  $\mu$ MHOC/cm \_\_\_\_\_  
-Turbidity (NTU) (if measured) \_\_\_\_\_  
-Redox Potential Eh (mV) (if measured) \_\_\_\_\_

#### Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			
					Direct	Peristaltic Pump	Ladle	Other (describe in notes section)
VOCs	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
THF	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrients	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Non Radiologics	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gross Alpha	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name: \_\_\_\_\_

Notes: 6/20/2012 - Seep was dry  
6/27/2012 - Dry  
7/9/2012 - Dry















### Field Data Record-Seeps and Springs Sampling

Seep or Spring Location: Corral Spring

Date For Initial Sampling Visit: 6/20/2012 Time: 1300

Sample Collected: ☐ Yes ☒ No

Date For Second Sampling Visit: 6/27/2012 Time: 1200

Sample Collected: ☐ Yes ☒ No

Date For Third Sampling Visit: 7/9/2012 Time: 1230

Sample Collected: ☐ Yes ☒ No

Sampling Personnel: \_\_\_\_\_

Weather Conditions at Time of Sampling: \_\_\_\_\_

Estimated Seep or Spring Flow Rate: \_\_\_\_\_

#### Field Parameter Measurements:

- pH \_\_\_\_\_
- Temperature (°C) \_\_\_\_\_
- Conductivity  $\mu$ MHOC/cm \_\_\_\_\_
- Turbidity (NTU) (if measured) \_\_\_\_\_
- Redox Potential Eh (mV) (if measured) \_\_\_\_\_

#### Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			
					Direct	Peristaltic Pump	Ladle	Other (describe in notes section)
VOCs	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
THF	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrients	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Non Radiologics	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gross Alpha	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name: \_\_\_\_\_

Notes: 6/20/2012. Spring was dry  
6/27/2012 - Dry  
7/9/2012 - Dry



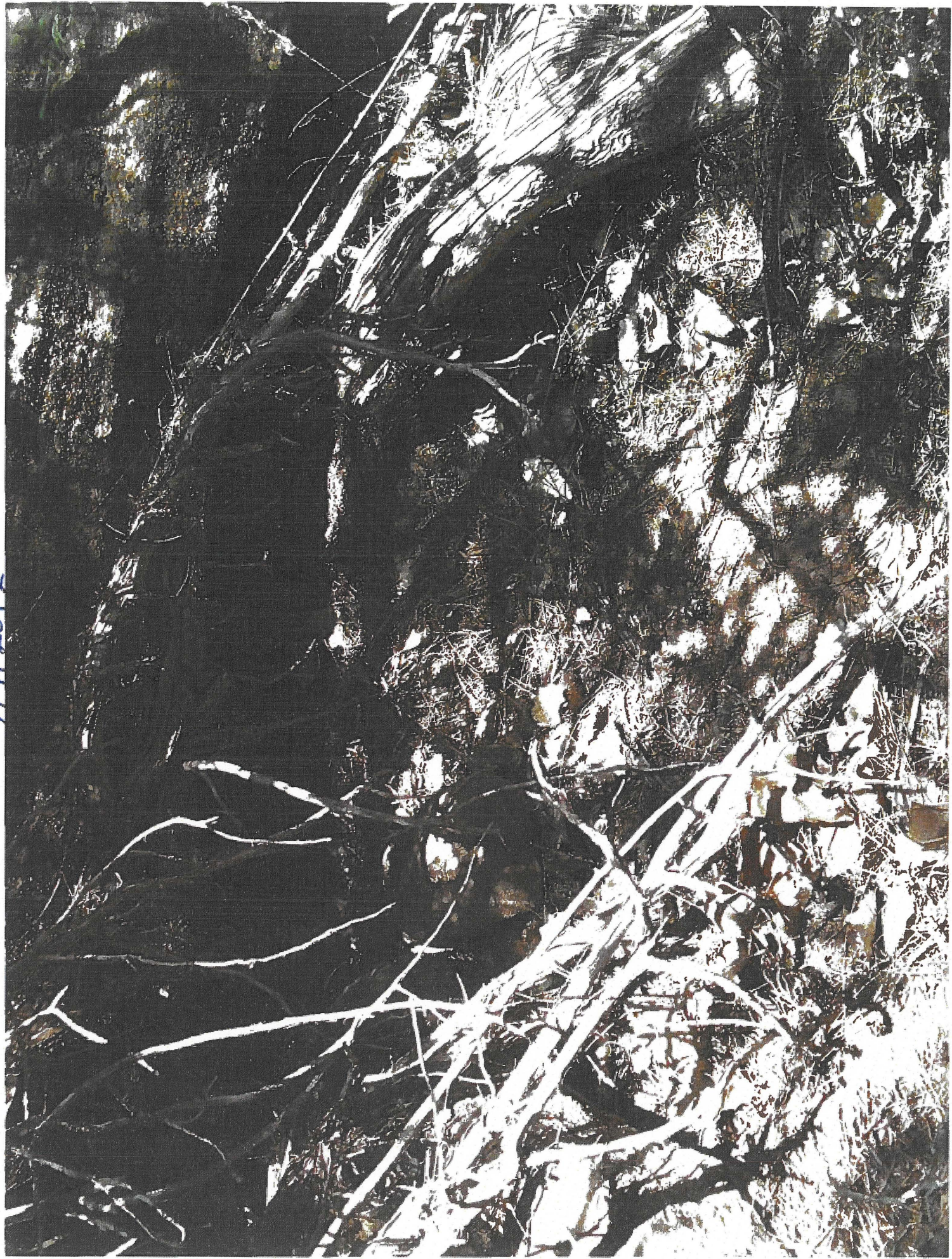








1971-1972





### Field Data Record-Seeps and Springs Sampling

Seep or Spring Location: Coral Canyon Spring

Date For Initial Sampling Visit: 6/20/2012 Time: 1230

Sample Collected: ☐ Yes ☒ No

Date For Second Sampling Visit: 6/27/2012 Time: 1300

Sample Collected: ☐ Yes ☒ No

Date For Third Sampling Visit: 7/9/12 Time: 1300

Sample Collected: ☐ Yes ☒ No

Sampling Personnel: \_\_\_\_\_

Weather Conditions at Time of Sampling: \_\_\_\_\_

Estimated Seep or Spring Flow Rate: \_\_\_\_\_

#### Field Parameter Measurements:

- pH \_\_\_\_\_
- Temperature (°C) \_\_\_\_\_
- Conductivity  $\mu$ MHOC/cm \_\_\_\_\_
- Turbidity (NTU) (if measured) \_\_\_\_\_
- Redox Potential Eh (mV) (if measured) \_\_\_\_\_

#### Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			
					Direct	Peristaltic Pump	Ladle	Other (describe in notes section)
VOCs	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
THF	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrients	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Non Radiologics	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gross Alpha	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name: \_\_\_\_\_

Notes: 6/20/2012 - spring was dry  
6/27/2012 - Dry  
7/9/12 - Dry









2007/11/19







Tab B

Field Parameter Measurement Data



**Field parameters**

<b>Location</b>	<b>pH</b>	<b>Conductivity</b>	<b>Turbidity</b>	<b>Redox</b>	<b>Temperature</b>
<b>Date</b>	June 2012	June 2012	June 2012	June 2012	June 2012
Entrance Spring	7.57	1040	10.8	292	20.36
Cottonwood Seep	7.06	1568	23.4	421	16.28
Back Spring (Duplicate of Cottonwood Spring)	7.06	1568	23.4	421	16.28
Ruin Spring	7.56	1367	1.3	276	15.86
	Not measured	Not measured	Not measured	Not measured	Not measured
Westwater Seep	(dry)	(dry)	(dry)	(dry)	(dry)



Tab C

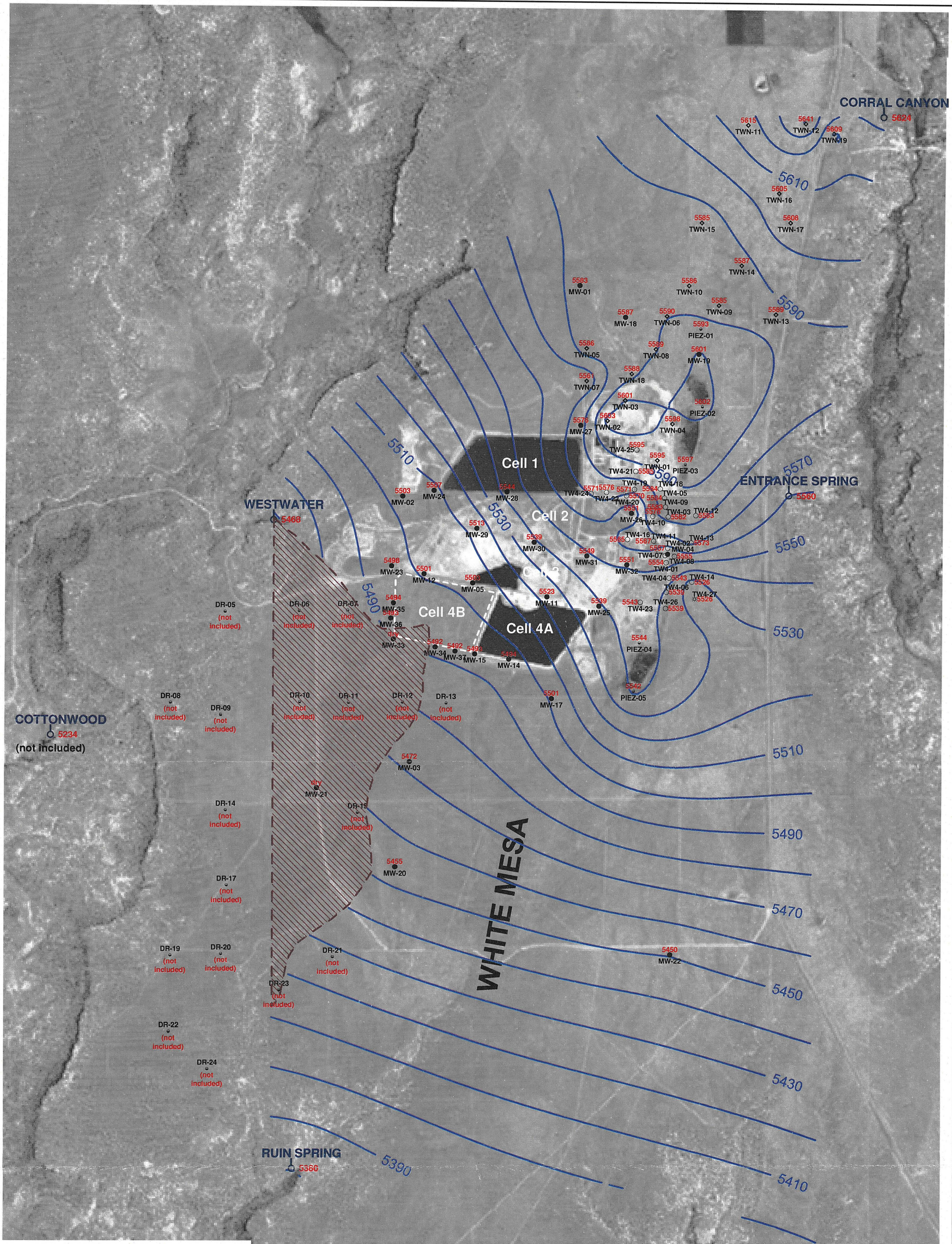
Survey Data and Contour Map



### Seeps and Springs Survey Locations

Mid-December 2009 Survey			
Location	Latitude (N)	Longitude (W)	Elevation
FROG POND	37°33'03.5358"	109°29'04.9552"	5589.56
CORRAL CANYON	37°33'07.1392"	109°29'12.3907"	5623.97
ENTRANCE SPRING	37°32'01.6487"	109°29'33.7005"	5559.71
CORRAL SPRINGS	37°29'37.9192"	109°29'35.8201"	5383.35
RUIN SPRING	37°30'06.0448"	109°31'23.4300"	5380.03
COTTONWOOD	37°31'21.7002"	109°32'14.7923"	5234.33
WESTWATER	37°31'58.5020"	109°31'25.7345"	5468.23
Verification Survey July 2010			
RUIN SPRING	37°30'06.0456"	109°31'23.4181"	5380.01
COTTONWOOD	37°31'21.6987"	109°32'14.7927"	5234.27
WESTWATER	37°31'58.5013"	109°31'25.7357"	5468.32





**EXPLANATION**

- estimated dry area (kriged Brushy Basin surface > kriged water level surface)
- MW-5**  
 5503 perched monitoring well showing elevation in feet amsl
- TW4-12**  
 5583 temporary perched monitoring well showing elevation in feet amsl
- TWN-10**  
 5586 temporary perched nitrate monitoring well showing elevation in feet amsl
- PIEZ-1**  
 5593 perched piezometer showing elevation in feet amsl
- TW4-27**  
 5526 temporary perched monitoring well installed October, 2011 showing elevation in feet amsl
- RUIN SPRING**  
 5380 seep or spring showing elevation in feet amsl



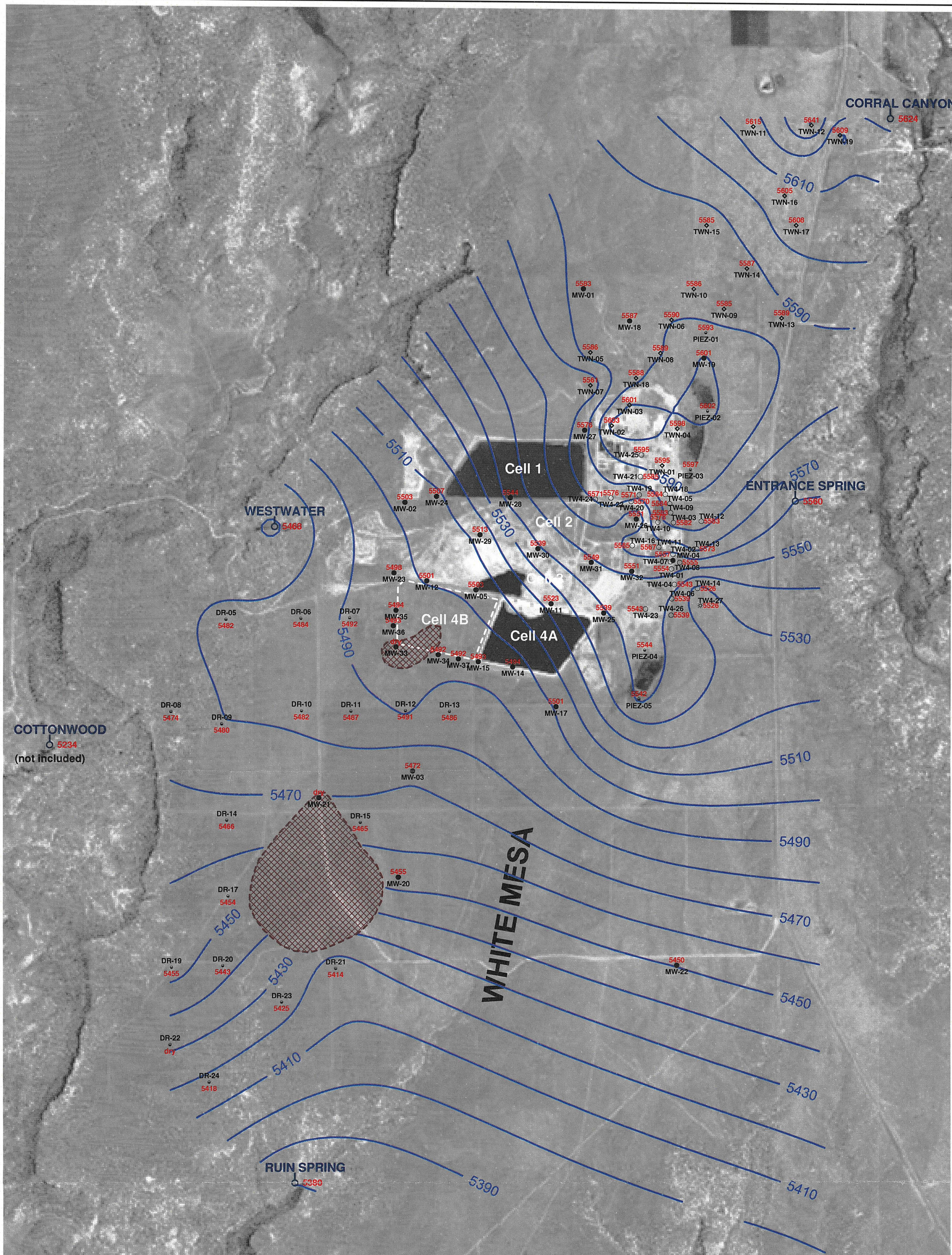
**HYDRO  
GEO  
CHEM, INC.**

**KRIGED 3rd QUARTER, 2012 WATER LEVELS  
DR-SERIES DATA NOT INCLUDED  
WHITE MESA SITE**








APPROVED	DATE	REFERENCE	H:718000/nov12/ seeps_springs/Uwl0912sp_nodr.srf	FIGURE	C-1
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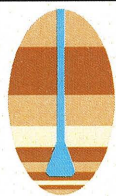
NOTE: MW-4, MW-26, TW4-4, TW4-19, and TW4-20 are pumping wells





#### EXPLANATION

-  estimated dry area (kriged Brushy Basin surface > kriged water level surface)
- MW-5**  
 5503 perched monitoring well showing elevation in feet amsl
- TW4-12**  
 5583 temporary perched monitoring well showing elevation in feet amsl
- TWN-10**  
 5586 temporary perched nitrate monitoring well showing elevation in feet amsl
- PIEZ-1**  
 5593 perched piezometer showing elevation in feet amsl
- TW4-27**  
 5526 temporary perched monitoring well installed October, 2011 showing elevation in feet amsl
- RUIN SPRING**  
 5380 seep or spring showing elevation in feet amsl



HYDRO  
GEO  
CHEM, INC.

#### KRIGED 3rd QUARTER, 2012 WATER LEVELS WHITE MESA SITE

APPROVED

DATE

REFERENCE

H:/718000/nov12/  
seeps\_springs/Uwl0912sp.srf

FIGURE

C-2

NOTE: MW-4, MW-26, TW4-4, TW4-19, and TW4-20 are pumping wells



Tab D

Analytical Laboratory Data



**ANALYTICAL SUMMARY REPORT**

July 27, 2012

Denison Mines USA Corp  
6425 S Hwy 191  
Blanding, UT 84511

Workorder No.: C12060931 Quote ID: C1640 - POC Wells

Project Name: Seeps and Springs 2012

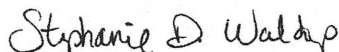
Energy Laboratories, Inc. Casper WY received the following 6 samples for Denison Mines USA Corp on 6/22/2012 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C12060931-001	Entrance Seep	06/20/12 10:15	06/22/12	Aqueous	Alkalinity QA Calculations Chloride Fluoride Metals by ICP, Dissolved Metals by ICP-MS, Dissolved Nitrogen, Ammonia Nitrogen, Nitrate + Nitrite pH Gross Alpha minus Rn222 and Uranium Solids, Total Dissolved Solids, Total Dissolved - Calculated Sulfate SW8260B VOCs, Standard List
C12060931-002	Ruin Spring	06/20/12 9:20	06/22/12	Aqueous	Same As Above
C12060931-003	Cottonwood Spring	06/20/12 7:45	06/22/12	Aqueous	Same As Above
C12060931-004	Back Spring	06/20/12 7:45	06/22/12	Aqueous	Same As Above
C12060931-005	Trip Blank 6746	06/20/12 0:00	06/22/12	Aqueous	SW8260B VOCs, Standard List
C12060931-006	Temp Blank	06/21/12 0:00	06/22/12	Aqueous	Temperature

The results as reported relate only to the item(s) submitted for testing. The analyses presented in this report were performed at Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Radiochemistry analyses were performed at Energy Laboratories, Inc., 2325 Kerzell Lane, Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these test results, please call.

Report Approved By:

  
Reporting SupervisorDigitally signed by  
Stephanie Waldrop  
Date: 2012.07.27 15:42:16 -06:00



**CLIENT:** Denison Mines USA Corp  
**Project:** Seeps and Springs 2012  
**Sample Delivery Group:** C12060931

**Report Date:** 07/27/12

## CASE NARRATIVE

### ORIGINAL SAMPLE SUBMITTAL(S)

All original sample submittals have been returned with the data package.

### SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)

Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

### GROSS ALPHA ANALYSIS

Method 900.0 for gross alpha and gross beta is intended as a drinking water method for low TDS waters. Data provided by this method for non potable waters should be viewed as inconsistent.

### RADON IN AIR ANALYSIS

The desired exposure time is 48 hours (2 days). The time delay in returning the canister to the laboratory for processing should be as short as possible to avoid excessive decay. Maximum recommended delay between end of exposure to beginning of counting should not exceed 8 days.

### SOIL/SOLID SAMPLES

All samples reported on an as received basis unless otherwise indicated.

### ATRAZINE, SIMAZINE AND PCB ANALYSIS

Data for PCBs, Atrazine and Simazine are reported from EPA 525.2. PCB data reported by ELI reflects the results for seven individual Aroclors. When the results for all seven are ND (not detected), the sample meets EPA compliance criteria for PCB monitoring.

### SUBCONTRACTING ANALYSIS

Subcontracting of sample analyses to an outside laboratory may be required. If so, ENERGY LABORATORIES will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

### BRANCH LABORATORY LOCATIONS

eli-b - Energy Laboratories, Inc. - Billings, MT  
eli-g - Energy Laboratories, Inc. - Gillette, WY  
eli-h - Energy Laboratories, Inc. - Helena, MT  
eli-r - Energy Laboratories, Inc. - Rapid City, SD  
eli-t - Energy Laboratories, Inc. - College Station, TX

### CERTIFICATIONS:

USEPA: WY00002, Radiochemical WY00937; FL-DOH NELAC: E87641, Radiochemical E871017; California: 02118CA; Oregon: WY200001, Radiochemical WY200002; Utah: WY00002; Virginia: 00057; Washington: C836

### ISO 17025 DISCLAIMER:

The results of this Analytical Report relate only to the items submitted for analysis.

ENERGY LABORATORIES, INC. - CASPER, WY certifies that certain method selections contained in this report meet requirements as set forth by the above accrediting authorities. Some results requested by the client may not be covered under these certifications. All analysis data to be submitted for regulatory enforcement should be certified in the sample state of origin. Please verify ELI's certification coverage by visiting [www.energylab.com](http://www.energylab.com)

ELI appreciates the opportunity to provide you with this analytical service. For additional information and services visit our web page [www.energylab.com](http://www.energylab.com).



## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp  
**Project:** Seeps and Springs 2012  
**Lab ID:** C12060931-001  
**Client Sample ID:** Entrance Seep

**Report Date:** 07/27/12  
**Collection Date:** 06/20/12 10:15  
**Date Received:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
<b>MAJOR IONS</b>							
Carbonate as CO <sub>3</sub>	ND	mg/L		1		A2320 B	06/22/12 17:29 / jba
Bicarbonate as HCO <sub>3</sub>	298	mg/L		1		A2320 B	06/22/12 17:29 / jba
Calcium	105	mg/L		0.5		E200.7	07/06/12 20:15 / sf
Chloride	78	mg/L		1		A4500-Cl B	06/27/12 14:19 / wc
Fluoride	0.64	mg/L		0.10		A4500-F C	06/25/12 10:09 / jba
Magnesium	32.7	mg/L		0.5		E200.7	07/06/12 20:15 / sf
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH <sub>3</sub> G	06/29/12 17:35 / ljl
Nitrogen, Nitrate+Nitrite as N	2.8	mg/L		0.1		E353.2	06/27/12 15:10 / lr
Potassium	2.0	mg/L		0.5		E200.7	07/06/12 20:15 / sf
Sodium	77.4	mg/L		0.5		E200.7	07/06/12 20:15 / sf
Sulfate	171	mg/L	D	5		A4500-SO <sub>4</sub> E	06/26/12 11:23 / lr
<b>PHYSICAL PROPERTIES</b>							
Solids, Total Dissolved TDS @ 180 C	660	mg/L		10		A2540 C	06/25/12 13:57 / ab
<b>METALS - DISSOLVED</b>							
Arsenic	ND	ug/L		5.0		E200.8	07/11/12 19:25 / cp
Beryllium	ND	ug/L		0.50		E200.8	07/11/12 19:25 / cp
Cadmium	ND	ug/L		0.50		E200.8	07/11/12 19:25 / cp
Chromium	ND	ug/L		25		E200.8	07/11/12 19:25 / cp
Cobalt	ND	ug/L		10		E200.8	07/11/12 19:25 / cp
Copper	ND	ug/L		10		E200.8	07/11/12 19:25 / cp
Iron	34	ug/L		30		E200.7	07/06/12 20:15 / sf
Lead	ND	ug/L		1.0		E200.8	07/11/12 19:25 / cp
Manganese	ND	ug/L		10		E200.8	07/11/12 19:25 / cp
Mercury	ND	ug/L		0.50		E200.8	07/11/12 19:25 / cp
Molybdenum	ND	ug/L		10		E200.8	07/11/12 19:25 / cp
Nickel	ND	ug/L		20		E200.8	07/11/12 19:25 / cp
Selenium	13.2	ug/L		5.0		E200.8	07/11/12 19:25 / cp
Silver	ND	ug/L		10		E200.8	07/11/12 19:25 / cp
Thallium	ND	ug/L		0.50		E200.8	07/11/12 19:25 / cp
Uranium	21.1	ug/L		0.30		E200.8	07/11/12 19:25 / cp
Vanadium	ND	ug/L		15		E200.8	07/11/12 19:25 / cp
Zinc	ND	ug/L		10		E200.8	07/11/12 19:25 / cp
<b>RADIONUCLIDES - DISSOLVED</b>							
Gross Alpha minus Rn & U	0.5	pCi/L				E900.1	07/04/12 10:04 / lbb
Gross Alpha minus Rn & U Precision (±)	0.4	pCi/L				E900.1	07/04/12 10:04 / lbb
Gross Alpha minus Rn & U MDC	0.5	pCi/L				E900.1	07/04/12 10:04 / lbb

**Report** RL - Analyte reporting limit.  
**Definitions:** QCL - Quality control limit.  
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.  
D - RL increased due to sample matrix.



## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp  
**Project:** Seeps and Springs 2012  
**Lab ID:** C12060931-001  
**Client Sample ID:** Entrance Seep

**Report Date:** 07/27/12  
**Collection Date:** 06/20/12 10:15  
**Date Received:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
<b>DATA QUALITY</b>							
A/C Balance (± 5)	2.11	%				A1030 E	07/27/12 10:36 / kbh
Anions	10.9	meq/L				A1030 E	07/27/12 10:36 / kbh
Cations	11.3	meq/L				A1030 E	07/27/12 10:36 / kbh
Solids, Total Dissolved Calculated	650	mg/L				A1030 E	07/27/12 10:36 / kbh
TDS Balance (0.80 - 1.20)	1.02					A1030 E	07/27/12 10:36 / kbh
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	ug/L		20		SW8260B	06/29/12 16:32 / jlr
Benzene	ND	ug/L		1.0		SW8260B	06/29/12 16:32 / jlr
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/29/12 16:32 / jlr
Chloroform	ND	ug/L		1.0		SW8260B	06/29/12 16:32 / jlr
Chloromethane	ND	ug/L		1.0		SW8260B	06/29/12 16:32 / jlr
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/29/12 16:32 / jlr
Methylene chloride	ND	ug/L		1.0		SW8260B	06/29/12 16:32 / jlr
Naphthalene	ND	ug/L		1.0		SW8260B	06/29/12 16:32 / jlr
Toluene	ND	ug/L		1.0		SW8260B	06/29/12 16:32 / jlr
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/29/12 16:32 / jlr
Surr: 1,2-Dichlorobenzene-d4	126	%REC	S	80-120		SW8260B	06/29/12 16:32 / jlr
Surr: Dibromofluoromethane	112	%REC		70-130		SW8260B	06/29/12 16:32 / jlr
Surr: p-Bromofluorobenzene	146	%REC	S	80-120		SW8260B	06/29/12 16:32 / jlr
Surr: Toluene-d8	114	%REC		80-120		SW8260B	06/29/12 16:32 / jlr

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
S - Spike recovery outside of advisory limits.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp  
**Project:** Seeps and Springs 2012  
**Lab ID:** C12060931-002  
**Client Sample ID:** Ruin Spring

**Report Date:** 07/27/12  
**Collection Date:** 06/20/12 09:20  
**Date Received:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
<b>MAJOR IONS</b>							
Carbonate as CO <sub>3</sub>	ND	mg/L		1		A2320 B	06/22/12 17:37 / jba
Bicarbonate as HCO <sub>3</sub>	237	mg/L		1		A2320 B	06/22/12 17:37 / jba
Calcium	147	mg/L		0.5		E200.7	07/06/12 18:54 / sf
Chloride	28	mg/L		1		A4500-Cl B	06/27/12 13:08 / wc
Fluoride	0.52	mg/L		0.10		A4500-F C	06/25/12 10:12 / jba
Magnesium	31.9	mg/L		0.5		E200.7	07/06/12 18:54 / sf
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH <sub>3</sub> G	06/29/12 16:43 / ljl
Nitrogen, Nitrate+Nitrite as N	1.6	mg/L		0.1		E353.2	06/27/12 15:13 / lr
Potassium	3.5	mg/L		0.5		E200.7	07/06/12 18:54 / sf
Sodium	115	mg/L		0.5		E200.7	07/06/12 18:54 / sf
Sulfate	464	mg/L	D	10		A4500-SO <sub>4</sub> E	06/26/12 11:26 / lr
<b>PHYSICAL PROPERTIES</b>							
Solids, Total Dissolved TDS @ 180 C	1000	mg/L		10		A2540 C	06/25/12 13:58 / ab
<b>METALS - DISSOLVED</b>							
Arsenic	ND	ug/L		5.0		E200.8	07/11/12 19:29 / cp
Beryllium	ND	ug/L		0.50		E200.8	07/11/12 19:29 / cp
Cadmium	ND	ug/L		0.50		E200.8	07/11/12 19:29 / cp
Chromium	ND	ug/L		25		E200.8	07/11/12 19:29 / cp
Cobalt	ND	ug/L		10		E200.8	07/11/12 19:29 / cp
Copper	ND	ug/L		10		E200.8	07/11/12 19:29 / cp
Iron	ND	ug/L		30		E200.7	07/06/12 20:27 / sf
Lead	ND	ug/L		1.0		E200.8	07/11/12 19:29 / cp
Manganese	ND	ug/L		10		E200.8	07/11/12 19:29 / cp
Mercury	ND	ug/L		0.50		E200.8	07/11/12 19:29 / cp
Molybdenum	16	ug/L		10		E200.8	07/11/12 19:29 / cp
Nickel	ND	ug/L		20		E200.8	07/11/12 19:29 / cp
Selenium	10.8	ug/L		5.0		E200.8	07/11/12 19:29 / cp
Silver	ND	ug/L		10		E200.8	07/11/12 19:29 / cp
Thallium	ND	ug/L		0.50		E200.8	07/11/12 19:29 / cp
Uranium	8.68	ug/L		0.30		E200.8	07/11/12 19:29 / cp
Vanadium	ND	ug/L		15		E200.8	07/11/12 19:29 / cp
Zinc	ND	ug/L		10		E200.8	07/11/12 19:29 / cp
<b>RADIONUCLIDES - DISSOLVED</b>							
Gross Alpha minus Rn & U	-0.09	pCi/L	U			E900.1	07/04/12 10:04 / lbb
Gross Alpha minus Rn & U Precision (±)	0.3	pCi/L				E900.1	07/04/12 10:04 / lbb
Gross Alpha minus Rn & U MDC	0.5	pCi/L				E900.1	07/04/12 10:04 / lbb

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
MDC - Minimum detectable concentration  
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.  
D - RL increased due to sample matrix.



## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp  
**Project:** Seeps and Springs 2012  
**Lab ID:** C12060931-002  
**Client Sample ID:** Ruin Spring

**Report Date:** 07/27/12  
**Collection Date:** 06/20/12 09:20  
**Date Received:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
<b>DATA QUALITY</b>							
A/C Balance (± 5)	2.03	%				A1030 E	07/27/12 10:38 / kbh
Anions	14.5	meq/L				A1030 E	07/27/12 10:38 / kbh
Cations	15.1	meq/L				A1030 E	07/27/12 10:38 / kbh
Solids, Total Dissolved Calculated	930	mg/L				A1030 E	07/27/12 10:38 / kbh
TDS Balance (0.80 - 1.20)	1.07					A1030 E	07/27/12 10:38 / kbh
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	ug/L		20		SW8260B	06/29/12 17:07 / jlr
Benzene	ND	ug/L		1.0		SW8260B	06/29/12 17:07 / jlr
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/29/12 17:07 / jlr
Chloroform	ND	ug/L		1.0		SW8260B	06/29/12 17:07 / jlr
Chloromethane	ND	ug/L		1.0		SW8260B	06/29/12 17:07 / jlr
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/29/12 17:07 / jlr
Methylene chloride	ND	ug/L		1.0		SW8260B	06/29/12 17:07 / jlr
Naphthalene	ND	ug/L		1.0		SW8260B	06/29/12 17:07 / jlr
Toluene	ND	ug/L		1.0		SW8260B	06/29/12 17:07 / jlr
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/29/12 17:07 / jlr
Surr: 1,2-Dichlorobenzene-d4	122	%REC	S	80-120		SW8260B	06/29/12 17:07 / jlr
Surr: Dibromofluoromethane	115	%REC		70-130		SW8260B	06/29/12 17:07 / jlr
Surr: p-Bromofluorobenzene	140	%REC	S	80-120		SW8260B	06/29/12 17:07 / jlr
Surr: Toluene-d8	110	%REC		80-120		SW8260B	06/29/12 17:07 / jlr

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
S - Spike recovery outside of advisory limits.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp  
**Project:** Seeps and Springs 2012  
**Lab ID:** C12060931-003  
**Client Sample ID:** Cottonwood Spring

**Report Date:** 07/27/12  
**Collection Date:** 06/20/12 07:45  
**Date Received:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
<b>MAJOR IONS</b>							
Carbonate as CO <sub>3</sub>	ND	mg/L		1		A2320 B	06/22/12 17:44 / jba
Bicarbonate as HCO <sub>3</sub>	326	mg/L		1		A2320 B	06/22/12 17:44 / jba
Calcium	101	mg/L		0.5		E200.7	07/06/12 20:31 / sf
Chloride	149	mg/L		1		A4500-Cl B	06/27/12 13:18 / wc
Fluoride	0.38	mg/L		0.10		A4500-F C	06/25/12 10:16 / jba
Magnesium	27.7	mg/L		0.5		E200.7	07/06/12 20:31 / sf
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH <sub>3</sub> G	06/29/12 16:49 / ljl
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.1		E353.2	06/27/12 15:15 / lr
Potassium	6.2	mg/L		0.5		E200.7	07/06/12 20:31 / sf
Sodium	247	mg/L		0.5		E200.7	07/06/12 20:31 / sf
Sulfate	356	mg/L	D	10		A4500-SO <sub>4</sub> E	06/26/12 11:27 / lr
<b>PHYSICAL PROPERTIES</b>							
Solids, Total Dissolved TDS @ 180 C	1040	mg/L		10		A2540 C	06/25/12 13:58 / ab
<b>METALS - DISSOLVED</b>							
Arsenic	ND	ug/L		5.0		E200.8	07/11/12 19:52 / cp
Beryllium	ND	ug/L		0.50		E200.8	07/13/12 07:20 / cp
Cadmium	ND	ug/L		0.50		E200.8	07/11/12 19:52 / cp
Chromium	ND	ug/L		25		E200.8	07/11/12 19:52 / cp
Cobalt	ND	ug/L		10		E200.8	07/11/12 19:52 / cp
Copper	ND	ug/L		10		E200.8	07/11/12 19:52 / cp
Iron	ND	ug/L		30		E200.7	07/06/12 20:31 / sf
Lead	ND	ug/L		1.0		E200.8	07/11/12 19:52 / cp
Manganese	ND	ug/L		10		E200.8	07/11/12 19:52 / cp
Mercury	ND	ug/L		0.50		E200.8	07/11/12 19:52 / cp
Molybdenum	ND	ug/L		10		E200.8	07/11/12 19:52 / cp
Nickel	ND	ug/L		20		E200.8	07/11/12 19:52 / cp
Selenium	ND	ug/L		5.0		E200.8	07/11/12 19:52 / cp
Silver	ND	ug/L		10		E200.8	07/11/12 19:52 / cp
Thallium	ND	ug/L		0.50		E200.8	07/11/12 19:52 / cp
Uranium	8.17	ug/L		0.30		E200.8	07/11/12 19:52 / cp
Vanadium	ND	ug/L		15		E200.8	07/11/12 19:52 / cp
Zinc	ND	ug/L		10		E200.8	07/11/12 19:52 / cp
<b>RADIONUCLIDES - DISSOLVED</b>							
Gross Alpha minus Rn & U	-0.2	pCi/L	U			E900.1	07/04/12 10:04 / lbb
Gross Alpha minus Rn & U Precision (±)	0.2	pCi/L				E900.1	07/04/12 10:04 / lbb
Gross Alpha minus Rn & U MDC	0.5	pCi/L				E900.1	07/04/12 10:04 / lbb

**Report Definitions:**  
 RL - Analyte reporting limit.  
 QCL - Quality control limit.  
 MDC - Minimum detectable concentration  
 U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.  
 ND - Not detected at the reporting limit.  
 D - RL increased due to sample matrix.



## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp  
**Project:** Seeps and Springs 2012  
**Lab ID:** C12060931-003  
**Client Sample ID:** Cottonwood Spring

**Report Date:** 07/27/12  
**Collection Date:** 06/20/12 07:45  
**Date Received:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
<b>DATA QUALITY</b>							
A/C Balance (± 5)	3.60	%				A1030 E	07/27/12 10:38 / kbh
Anions	17.0	meq/L				A1030 E	07/27/12 10:38 / kbh
Cations	18.2	meq/L				A1030 E	07/27/12 10:38 / kbh
Solids, Total Dissolved Calculated	1100	mg/L				A1030 E	07/27/12 10:38 / kbh
TDS Balance (0.80 - 1.20)	0.960					A1030 E	07/27/12 10:38 / kbh
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	ug/L		20		SW8260B	06/29/12 20:01 / jlr
Benzene	ND	ug/L		1.0		SW8260B	06/29/12 20:01 / jlr
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/29/12 20:01 / jlr
Chloroform	ND	ug/L		1.0		SW8260B	06/29/12 20:01 / jlr
Chloromethane	ND	ug/L		1.0		SW8260B	06/29/12 20:01 / jlr
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/29/12 20:01 / jlr
Methylene chloride	ND	ug/L		1.0		SW8260B	06/29/12 20:01 / jlr
Naphthalene	ND	ug/L		1.0		SW8260B	06/29/12 20:01 / jlr
Toluene	ND	ug/L		1.0		SW8260B	06/29/12 20:01 / jlr
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/29/12 20:01 / jlr
Surr: 1,2-Dichlorobenzene-d4	122	%REC	S	80-120		SW8260B	06/29/12 20:01 / jlr
Surr: Dibromofluoromethane	105	%REC		70-130		SW8260B	06/29/12 20:01 / jlr
Surr: p-Bromofluorobenzene	138	%REC	S	80-120		SW8260B	06/29/12 20:01 / jlr
Surr: Toluene-d8	113	%REC		80-120		SW8260B	06/29/12 20:01 / jlr

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
S - Spike recovery outside of advisory limits.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp  
**Project:** Seeps and Springs 2012  
**Lab ID:** C12060931-004  
**Client Sample ID:** Back Spring

**Report Date:** 07/27/12  
**Collection Date:** 06/20/12 07:45  
**Date Received:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
<b>MAJOR IONS</b>							
Carbonate as CO <sub>3</sub>	ND	mg/L		1		A2320 B	06/22/12 17:53 / jba
Bicarbonate as HCO <sub>3</sub>	326	mg/L		1		A2320 B	06/22/12 17:53 / jba
Calcium	93.8	mg/L		0.5		E200.7	07/06/12 19:02 / sf
Chloride	121	mg/L		1		A4500-Cl B	06/27/12 13:25 / wc
Fluoride	0.38	mg/L		0.10		A4500-F C	06/25/12 10:19 / jba
Magnesium	25.5	mg/L		0.5		E200.7	07/06/12 19:02 / sf
Nitrogen, Ammonia as N	ND	mg/L		0.05		A4500-NH <sub>3</sub> G	06/29/12 16:51 / ljl
Nitrogen, Nitrate+Nitrite as N	ND	mg/L		0.1		E353.2	06/27/12 15:18 / lr
Potassium	6.2	mg/L		0.5		E200.7	07/06/12 20:35 / sf
Sodium	223	mg/L		0.5		E200.7	07/06/12 19:02 / sf
Sulfate	366	mg/L	D	10		A4500-SO <sub>4</sub> E	06/26/12 11:35 / lr
<b>PHYSICAL PROPERTIES</b>							
Solids, Total Dissolved TDS @ 180 C	1040	mg/L		10		A2540 C	06/25/12 13:58 / ab
<b>METALS - DISSOLVED</b>							
Arsenic	ND	ug/L		5.0		E200.8	07/11/12 19:57 / cp
Beryllium	ND	ug/L		0.50		E200.8	07/13/12 07:25 / cp
Cadmium	ND	ug/L		0.50		E200.8	07/11/12 19:57 / cp
Chromium	ND	ug/L		25		E200.8	07/11/12 19:57 / cp
Cobalt	ND	ug/L		10		E200.8	07/11/12 19:57 / cp
Copper	ND	ug/L		10		E200.8	07/11/12 19:57 / cp
Iron	ND	ug/L		30		E200.7	07/06/12 20:35 / sf
Lead	ND	ug/L		1.0		E200.8	07/11/12 19:57 / cp
Manganese	ND	ug/L		10		E200.8	07/11/12 19:57 / cp
Mercury	ND	ug/L		0.50		E200.8	07/11/12 19:57 / cp
Molybdenum	ND	ug/L		10		E200.8	07/11/12 19:57 / cp
Nickel	ND	ug/L		20		E200.8	07/11/12 19:57 / cp
Selenium	ND	ug/L		5.0		E200.8	07/11/12 19:57 / cp
Silver	ND	ug/L		10		E200.8	07/11/12 19:57 / cp
Thallium	ND	ug/L		0.50		E200.8	07/11/12 19:57 / cp
Uranium	8.56	ug/L		0.30		E200.8	07/11/12 19:57 / cp
Vanadium	ND	ug/L		15		E200.8	07/11/12 19:57 / cp
Zinc	ND	ug/L		10		E200.8	07/11/12 19:57 / cp
<b>RADIONUCLIDES - DISSOLVED</b>							
Gross Alpha minus Rn & U	0.07	pCi/L	U			E900.1	07/04/12 10:04 / lbb
Gross Alpha minus Rn & U Precision (±)	0.3	pCi/L				E900.1	07/04/12 10:04 / lbb
Gross Alpha minus Rn & U MDC	0.5	pCi/L				E900.1	07/04/12 10:04 / lbb

**Report Definitions:**  
 RL - Analyte reporting limit.  
 QCL - Quality control limit.  
 MDC - Minimum detectable concentration  
 U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.  
 ND - Not detected at the reporting limit.  
 D - RL increased due to sample matrix.



## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp  
**Project:** Seeps and Springs 2012  
**Lab ID:** C12060931-004  
**Client Sample ID:** Back Spring

**Report Date:** 07/27/12  
**Collection Date:** 06/20/12 07:45  
**Date Received:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
<b>DATA QUALITY</b>							
A/C Balance (± 5)	0.740	%				A1030 E	07/27/12 14:49 / sdw
Anions	16.4	meq/L				A1030 E	07/27/12 14:49 / sdw
Cations	16.6	meq/L				A1030 E	07/27/12 14:49 / sdw
Solids, Total Dissolved Calculated	1000	mg/L				A1030 E	07/27/12 14:49 / sdw
TDS Balance (0.80 - 1.20)	1.01					A1030 E	07/27/12 14:49 / sdw
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	ug/L		20		SW8260B	07/02/12 16:05 / jlr
Benzene	ND	ug/L		1.0		SW8260B	07/02/12 16:05 / jlr
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	07/02/12 16:05 / jlr
Chloroform	ND	ug/L		1.0		SW8260B	07/02/12 16:05 / jlr
Chloromethane	ND	ug/L		1.0		SW8260B	07/02/12 16:05 / jlr
Methyl ethyl ketone	ND	ug/L		20		SW8260B	07/02/12 16:05 / jlr
Methylene chloride	ND	ug/L		1.0		SW8260B	07/02/12 16:05 / jlr
Naphthalene	ND	ug/L		1.0		SW8260B	07/02/12 16:05 / jlr
Toluene	ND	ug/L		1.0		SW8260B	07/02/12 16:05 / jlr
Xylenes, Total	ND	ug/L		1.0		SW8260B	07/02/12 16:05 / jlr
Surr: 1,2-Dichlorobenzene-d4	120	%REC		80-120		SW8260B	07/02/12 16:05 / jlr
Surr: Dibromofluoromethane	112	%REC		70-130		SW8260B	07/02/12 16:05 / jlr
Surr: p-Bromofluorobenzene	133	%REC	S	80-120		SW8260B	07/02/12 16:05 / jlr
Surr: Toluene-d8	105	%REC		80-120		SW8260B	07/02/12 16:05 / jlr

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
S - Spike recovery outside of advisory limits.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.





## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp  
**Project:** Seeps and Springs 2012  
**Lab ID:** C12060931-005  
**Client Sample ID:** Trip Blank 6746

**Report Date:** 07/27/12  
**Collection Date:** 06/20/12  
**Date Received:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
<b>VOLATILE ORGANIC COMPOUNDS</b>							
Acetone	ND	ug/L		20		SW8260B	06/29/12 18:16 / jlr
Benzene	ND	ug/L		1.0		SW8260B	06/29/12 18:16 / jlr
Carbon tetrachloride	ND	ug/L		1.0		SW8260B	06/29/12 18:16 / jlr
Chloroform	ND	ug/L		1.0		SW8260B	06/29/12 18:16 / jlr
Chloromethane	ND	ug/L		1.0		SW8260B	06/29/12 18:16 / jlr
Methyl ethyl ketone	ND	ug/L		20		SW8260B	06/29/12 18:16 / jlr
Methylene chloride	ND	ug/L		1.0		SW8260B	06/29/12 18:16 / jlr
Naphthalene	ND	ug/L		1.0		SW8260B	06/29/12 18:16 / jlr
Toluene	ND	ug/L		1.0		SW8260B	06/29/12 18:16 / jlr
Xylenes, Total	ND	ug/L		1.0		SW8260B	06/29/12 18:16 / jlr
Surr: 1,2-Dichlorobenzene-d4	121	%REC	S	80-120		SW8260B	06/29/12 18:16 / jlr
Surr: Dibromofluoromethane	113	%REC		70-130		SW8260B	06/29/12 18:16 / jlr
Surr: p-Bromofluorobenzene	138	%REC	S	80-120		SW8260B	06/29/12 18:16 / jlr
Surr: Toluene-d8	117	%REC		80-120		SW8260B	06/29/12 18:16 / jlr

**Report Definitions:**  
RL - Analyte reporting limit.  
QCL - Quality control limit.  
S - Spike recovery outside of advisory limits.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.





## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp  
**Project:** Seeps and Springs 2012  
**Lab ID:** C12060931-006  
**Client Sample ID:** Temp Blank

**Report Date:** 07/27/12  
**Collection Date:** 06/21/12  
**Date Received:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifier	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
Temperature	2.2	°C				E170.1	06/22/12 09:50 / kbh

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp  
**Project:** Seeps and Springs 2012

**Report Date:** 07/27/12

**Lab ID:** C12060931-001  
**Client Sample ID:** Entrance Seep

**Collection Date:** 06/20/12 10:15  
**DateReceived:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
pH	7.50	s.u.	H	0.01		A4500-H B	06/22/12 13:04 / ab

**Lab ID:** C12060931-002  
**Client Sample ID:** Ruin Spring

**Collection Date:** 06/20/12 09:20  
**DateReceived:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
pH	7.53	s.u.	H	0.01		A4500-H B	06/22/12 13:06 / ab

**Lab ID:** C12060931-003  
**Client Sample ID:** Cottonwood Spring

**Collection Date:** 06/20/12 07:45  
**DateReceived:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
pH	7.53	s.u.	H	0.01		A4500-H B	06/22/12 13:09 / ab

**Lab ID:** C12060931-004  
**Client Sample ID:** Back Spring

**Collection Date:** 06/20/12 07:45  
**DateReceived:** 06/22/12  
**Matrix:** Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>PHYSICAL PROPERTIES</b>							
pH	7.58	s.u.	H	0.01		A4500-H B	06/22/12 13:12 / ab

**Report Definitions:** RL - Analyte reporting limit.  
QCL - Quality control limit.  
H - Analysis performed past recommended holding time.

MCL - Maximum contaminant level.  
ND - Not detected at the reporting limit.



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A2320 B</b>										Batch: R161103
<b>Sample ID: MBLK</b>	3	Method Blank					Run: MANTECH_120622A			06/22/12 14:55
Alkalinity, Total as CaCO <sub>3</sub>		ND	mg/L	5.0						
Carbonate as CO <sub>3</sub>		ND	mg/L	1.0						
Bicarbonate as HCO <sub>3</sub>		1.62	mg/L	1.0						
<b>Sample ID: LCS-6677</b>		Laboratory Control Sample					Run: MANTECH_120622A			06/22/12 15:11
Alkalinity, Total as CaCO <sub>3</sub>		201	mg/L	5.0	101	90	110			
<b>Sample ID: C12060935-003ADUP</b>	3	Sample Duplicate					Run: MANTECH_120622A			06/22/12 20:05
Alkalinity, Total as CaCO <sub>3</sub>		329	mg/L	5.0				0.7	10	
Carbonate as CO <sub>3</sub>		ND	mg/L	5.0					10	
Bicarbonate as HCO <sub>3</sub>		401	mg/L	5.0				0.7	10	
<b>Sample ID: C12060935-005AMS</b>		Sample Matrix Spike					Run: MANTECH_120622A			06/22/12 20:29
Alkalinity, Total as CaCO <sub>3</sub>		299	mg/L	5.0	103	80	120			

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C								Batch: TDS120625A		
Sample ID: MB-1_120625A	Method Blank					Run: BAL-1_120625A		06/25/12 12:04		
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	10						
Sample ID: LCS-2_120625A	Laboratory Control Sample					Run: BAL-1_120625A		06/25/12 12:04		
Solids, Total Dissolved TDS @ 180 C		1100	mg/L	10	99	90	110			
Sample ID: C12060946-002A MS	Sample Matrix Spike					Run: BAL-1_120625A		06/25/12 14:00		
Solids, Total Dissolved TDS @ 180 C		1690	mg/L	10	105	90	110			
Sample ID: C12060983-001A DUP	Sample Duplicate					Run: BAL-1_120625A		06/25/12 14:03		
Solids, Total Dissolved TDS @ 180 C		450	mg/L	10				0.4	5	

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-Cl B								Batch: 120627-CL-TTR-W		
Sample ID: MBLK9-120627	Method Blank					Run: TITRATION_120627A			06/27/12 11:19	
Chloride		ND	mg/L	1.0						
Sample ID: LCS35-120627	Laboratory Control Sample					Run: TITRATION_120627A			06/27/12 13:57	
Chloride		3690	mg/L	1.0	104	90	110			
Sample ID: C12060931-001AMS	Sample Matrix Spike					Run: TITRATION_120627A			06/27/12 14:34	
Chloride		248	mg/L	1.0	96	90	110			
Sample ID: C12060931-001AMSD	Sample Matrix Spike Duplicate					Run: TITRATION_120627A			06/27/12 14:35	
Chloride		248	mg/L	1.0	96	90	110	0.0	10	

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A4500-F C</b>										Batch: R161131
<b>Sample ID: MBLK</b>		Method Blank					Run: MANTECH_120625A			06/25/12 09:31
Fluoride		ND	mg/L	0.10						
<b>Sample ID: LCS-6892</b>		Laboratory Control Sample					Run: MANTECH_120625A			06/25/12 09:34
Fluoride		2.00	mg/L	0.10	100	90	110			
<b>Sample ID: C12060917-005AMS</b>		Sample Matrix Spike					Run: MANTECH_120625A			06/25/12 09:42
Fluoride		2.20	mg/L	0.10	101	80	120			
<b>Sample ID: C12060917-005AMSD</b>		Sample Matrix Spike Duplicate					Run: MANTECH_120625A			06/25/12 09:45
Fluoride		2.20	mg/L	0.10	101	80	120	0.0	10	

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A4500-H B</b>								Analytical Run: PHSC_101-C_120622A		
<b>Sample ID: pH 6.86</b>		Initial Calibration Verification Standard								06/22/12 08:56
pH		6.84	s.u.	0.010	100	98	102			
<b>Sample ID: pH 6.86</b>		Initial Calibration Verification Standard								06/22/12 11:41
pH		6.84	s.u.	0.010	100	98	102			
<b>Method: A4500-H B</b>								Batch: R161051		
<b>Sample ID: C12060894-005ADUP</b>		Sample Duplicate				Run: PHSC_101-C_120622A			06/22/12 09:44	
pH		8.54	s.u.	0.010				0.0	3	

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: A4500-NH3 G</b>										Batch: R161381
<b>Sample ID: MBLK-1</b>		Method Blank								Run: TECHNICON_120629A 06/29/12 15:11
Nitrogen, Ammonia as N		ND	mg/L	0.050						
<b>Sample ID: LCS-2</b>		Laboratory Control Sample								Run: TECHNICON_120629A 06/29/12 15:13
Nitrogen, Ammonia as N		1.98	mg/L	0.050	99	90	110			
<b>Sample ID: LFB-3</b>		Laboratory Fortified Blank								Run: TECHNICON_120629A 06/29/12 15:15
Nitrogen, Ammonia as N		1.87	mg/L	0.050	95	80	120			
<b>Sample ID: C12060931-002CMS</b>		Sample Matrix Spike								Run: TECHNICON_120629A 06/29/12 16:45
Nitrogen, Ammonia as N		1.96	mg/L	0.050	100	90	110			
<b>Sample ID: C12060931-002CMSD</b>		Sample Matrix Spike Duplicate								Run: TECHNICON_120629A 06/29/12 16:47
Nitrogen, Ammonia as N		2.07	mg/L	0.050	106	90	110	5.5	10	

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A4500-SO4 E								Batch: 120626_1_SO4-TURB-W		
Sample ID: LCS-1_120626	Laboratory Control Sample					Run: TURB-2_120626A			06/26/12 10:05	
Sulfate	4740	mg/L		100	99	90	110			
Sample ID: MBLK-1_120626	Method Blank					Run: TURB-2_120626A			06/26/12 10:07	
Sulfate	ND	mg/L		10						
Sample ID: C12060931-003AMS	Sample Matrix Spike					Run: TURB-2_120626A			06/26/12 11:29	
Sulfate	548	mg/L		10	100	90	110			
Sample ID: C12060931-003AMSD	Sample Matrix Spike Duplicate					Run: TURB-2_120626A			06/26/12 11:32	
Sulfate	551	mg/L		10	101	90	110	0.5	10	

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7								Analytical Run: ICP2-C_120706A		
Sample ID: ICV	5	Initial Calibration Verification Standard						07/06/12 11:33		
Calcium		49.7	mg/L	0.50	100	95	105			
Iron		5.08	mg/L	0.030	102	95	105			
Magnesium		52.2	mg/L	0.50	104	95	105			
Potassium		49.7	mg/L	2.7	99	95	105			
Sodium		50.7	mg/L	0.50	101	95	105			
Sample ID: ICSA	5	Interference Check Sample A						07/06/12 12:14		
Calcium		506	mg/L	0.50	101	80	120			
Iron		189	mg/L	0.030	94	80	120			
Magnesium		539	mg/L	0.50	108	80	120			
Potassium		-0.0145	mg/L	0.50						
Sodium		-0.0425	mg/L	0.50						
Sample ID: ICSAB	5	Interference Check Sample AB						07/06/12 12:18		
Calcium		516	mg/L	0.50	103	80	120			
Iron		190	mg/L	0.030	95	80	120			
Magnesium		564	mg/L	0.50	113	80	120			
Potassium		-0.0163	mg/L	0.50						
Sodium		-0.0961	mg/L	0.50						
Method: E200.7								Batch: R161622		
Sample ID: MB-120706A	5	Method Blank				Run: ICP2-C_120706A			07/06/12 12:38	
Calcium		ND	mg/L	0.50						
Iron		ND	mg/L	0.030						
Magnesium		ND	mg/L	0.50						
Potassium		ND	mg/L	0.50						
Sodium		ND	mg/L	0.50						
Sample ID: LFB-120706A	5	Laboratory Fortified Blank				Run: ICP2-C_120706A			07/06/12 12:42	
Calcium		50.0	mg/L	0.50	100	85	115			
Iron		0.983	mg/L	0.030	98	85	115			
Magnesium		50.5	mg/L	0.50	101	85	115			
Potassium		45.8	mg/L	0.50	92	85	115			
Sodium		49.9	mg/L	0.50	100	85	115			
Sample ID: C12060931-001DMS2	5	Sample Matrix Spike				Run: ICP2-C_120706A			07/06/12 20:19	
Calcium		150	mg/L	0.50	89	70	130			
Iron		0.976	mg/L	0.030	92	70	130			
Magnesium		81.7	mg/L	0.50	96	70	130			
Potassium		46.7	mg/L	0.50	88	70	130			
Sodium		130	mg/L	0.50	102	70	130			
Sample ID: C12060931-001DMSD	5	Sample Matrix Spike Duplicate				Run: ICP2-C_120706A			07/06/12 20:23	
Calcium		148	mg/L	0.50	85	70	130	1.2	20	
Iron		0.972	mg/L	0.030	92	70	130	0.4	20	
Magnesium		81.9	mg/L	0.50	96	70	130	0.2	20	

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E200.7</b>										Batch: R161622
<b>Sample ID: C12060931-001DMSD</b>	5	Sample Matrix Spike Duplicate				Run: ICP2-C_120706A				07/06/12 20:23
Potassium		47.1	mg/L	0.50	88	70	130	0.9	20	
Sodium		129	mg/L	0.50	101	70	130	0.4	20	
<b>Method: E200.7</b>										Analytical Run: ICP4-C_120706A
<b>Sample ID: ICV</b>	3	Initial Calibration Verification Standard								07/06/12 12:39
Calcium		50.5	mg/L	0.50	101	95	105			
Magnesium		50.8	mg/L	0.50	102	95	105			
Sodium		52.7	mg/L	0.50	105	95	105			
<b>Sample ID: ICSA</b>	3	Interference Check Sample A								07/06/12 12:53
Calcium		453	mg/L	0.50	91	80	120			
Magnesium		515	mg/L	0.50	103	80	120			
Sodium		0.367	mg/L	0.50						
<b>Sample ID: ICSAB</b>	3	Interference Check Sample AB								07/06/12 12:58
Calcium		450	mg/L	0.50	90	80	120			
Magnesium		515	mg/L	0.50	103	80	120			
Sodium		0.481	mg/L	0.50						
<b>Method: E200.7</b>										Batch: R161661
<b>Sample ID: MB-120706A</b>	3	Method Blank				Run: ICP4-C_120706A				07/06/12 13:02
Calcium		ND	mg/L	0.50						
Magnesium		ND	mg/L	0.50						
Sodium		ND	mg/L	0.50						
<b>Sample ID: LFB-120706A</b>	3	Laboratory Fortified Blank				Run: ICP4-C_120706A				07/06/12 13:05
Calcium		49.7	mg/L	0.50	99	85	115			
Magnesium		49.6	mg/L	0.50	99	85	115			
Sodium		48.9	mg/L	0.50	98	85	115			
<b>Sample ID: C12060931-001DMS2</b>	3	Sample Matrix Spike				Run: ICP4-C_120706A				07/06/12 18:47
Calcium		144	mg/L	0.50	88	70	130			
Magnesium		79.3	mg/L	0.50	97	70	130			
Sodium		125	mg/L	0.50	94	70	130			
<b>Sample ID: C12060931-001DMSD</b>	3	Sample Matrix Spike Duplicate				Run: ICP4-C_120706A				07/06/12 18:51
Calcium		142	mg/L	0.50	85	70	130	1.0	20	
Magnesium		79.0	mg/L	0.50	96	70	130	0.4	20	
Sodium		125	mg/L	0.50	95	70	130	0.3	20	

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E200.8</b>		Analytical Run: ICPMS4-C_120711A								
<b>Sample ID: ICV</b>		17 Initial Calibration Verification Standard								07/11/12 13:43
Arsenic		0.0498	mg/L	0.0010	100	90	110			
Beryllium		0.0508	mg/L	0.0010	102	90	110			
Cadmium		0.0501	mg/L	0.0010	100	90	110			
Chromium		0.0500	mg/L	0.0010	100	90	110			
Cobalt		0.0478	mg/L	0.0010	96	90	110			
Copper		0.0508	mg/L	0.0010	102	90	110			
Lead		0.0483	mg/L	0.0010	97	90	110			
Manganese		0.0505	mg/L	0.0010	101	90	110			
Mercury		0.00508	mg/L	0.0010	102	90	110			
Molybdenum		0.0496	mg/L	0.0010	99	90	110			
Nickel		0.0507	mg/L	0.0010	101	90	110			
Selenium		0.0504	mg/L	0.0010	101	90	110			
Silver		0.0216	mg/L	0.0010	108	90	110			
Thallium		0.0493	mg/L	0.0010	99	90	110			
Uranium		0.0505	mg/L	0.00030	101	90	110			
Vanadium		0.0500	mg/L	0.0010	100	90	110			
Zinc		0.0514	mg/L	0.0010	103	90	110			

<b>Method: E200.8</b>		Batch: R161811								
<b>Sample ID: LRB</b>		17 Method Blank								07/11/12 14:35
		Run: ICPMS4-C_120711A								
Arsenic		ND	mg/L	0.0050						
Beryllium		ND	mg/L	0.00050						
Cadmium		ND	mg/L	0.00050						
Chromium		ND	mg/L	0.020						
Cobalt		ND	mg/L	0.010						
Copper		ND	mg/L	0.010						
Lead		ND	mg/L	0.0010						
Manganese		ND	mg/L	0.010						
Mercury		ND	mg/L	0.00050						
Molybdenum		ND	mg/L	0.010						
Nickel		ND	mg/L	0.020						
Selenium		ND	mg/L	0.0050						
Silver		ND	mg/L	0.010						
Thallium		ND	mg/L	0.00050						
Uranium		ND	mg/L	0.00030						
Vanadium		ND	mg/L	0.010						
Zinc		ND	mg/L	0.010						

<b>Sample ID: LFB</b>		17 Laboratory Fortified Blank								07/11/12 14:39
		Run: ICPMS4-C_120711A								
Arsenic		0.0519	mg/L	0.0010	104	85	115			
Beryllium		0.0507	mg/L	0.0010	101	85	115			
Cadmium		0.0505	mg/L	0.0010	101	85	115			
Chromium		0.0513	mg/L	0.0010	103	85	115			
Cobalt		0.0474	mg/L	0.0010	95	85	115			

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> E200.8										Batch: R161811
<b>Sample ID:</b> LFB 17 Laboratory Fortified Blank										
						Run: ICPMS4-C_120711A				
Copper		0.0515	mg/L	0.0010	103	85	115			
Lead		0.0491	mg/L	0.0010	98	85	115			
Manganese		0.0516	mg/L	0.0010	103	85	115			
Mercury		0.00476	mg/L	0.0010	95	85	115			
Molybdenum		0.0497	mg/L	0.0010	99	85	115			
Nickel		0.0519	mg/L	0.0010	104	85	115			
Selenium		0.0527	mg/L	0.0010	105	85	115			
Silver		0.0186	mg/L	0.0010	93	85	115			
Thallium		0.0500	mg/L	0.0010	100	85	115			
Uranium		0.0508	mg/L	0.00030	102	85	115			
Vanadium		0.0512	mg/L	0.0010	102	85	115			
Zinc		0.0522	mg/L	0.0010	104	85	115			
<b>Sample ID:</b> C12070165-003CMS4 17 Sample Matrix Spike										
						Run: ICPMS4-C_120711A				
Arsenic		0.0549	mg/L	0.0010	109	70	130			07/12/12 14:39
Beryllium		0.0470	mg/L	0.0010	94	70	130			
Cadmium		0.0512	mg/L	0.0010	102	70	130			
Chromium		0.0514	mg/L	0.0050	102	70	130			
Cobalt		0.0518	mg/L	0.0050	103	70	130			
Copper		0.0506	mg/L	0.0050	100	70	130			
Lead		0.0500	mg/L	0.0010	100	70	130			
Manganese		0.0527	mg/L	0.0010	105	70	130			
Mercury		0.00493	mg/L	0.00010	99	70	130			
Molybdenum		0.0517	mg/L	0.0010	97	70	130			
Nickel		0.0507	mg/L	0.0050	101	70	130			
Selenium		0.0640	mg/L	0.0010	102	70	130			
Silver		0.0189	mg/L	0.0010	94	70	130			
Thallium		0.0528	mg/L	0.00050	106	70	130			
Uranium		0.0773	mg/L	0.00030	112	70	130			
Vanadium		0.0529	mg/L	0.010	101	70	130			
Zinc		0.0537	mg/L	0.010	105	70	130			
<b>Sample ID:</b> C12070165-003CMSD 17 Sample Matrix Spike Duplicate										
						Run: ICPMS4-C_120711A				
Arsenic		0.0540	mg/L	0.0010	107	70	130	1.6	20	07/12/12 01:10
Beryllium		0.0472	mg/L	0.0010	94	70	130	0.4	20	
Cadmium		0.0512	mg/L	0.0010	102	70	130	0.0	20	
Chromium		0.0504	mg/L	0.0050	101	70	130	1.9	20	
Cobalt		0.0515	mg/L	0.0050	103	70	130	0.6	20	
Copper		0.0497	mg/L	0.0050	98	70	130	1.7	20	
Lead		0.0499	mg/L	0.0010	100	70	130	0.2	20	
Manganese		0.0522	mg/L	0.0010	104	70	130	0.9	20	
Mercury		0.00499	mg/L	0.00010	100	70	130	1.3	20	
Molybdenum		0.0512	mg/L	0.0010	96	70	130	1.0	20	
Nickel		0.0499	mg/L	0.0050	99	70	130	1.6	20	
Selenium		0.0627	mg/L	0.0010	100	70	130	1.9	20	

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E200.8</b>										Batch: R161811
<b>Sample ID: C12070165-003CMSD</b> 17 Sample Matrix Spike Duplicate										Run: ICPMS4-C_120711A 07/12/12 01:10
Silver		0.0191	mg/L	0.0010	95	70	130	0.9	20	
Thallium		0.0518	mg/L	0.00050	104	70	130	1.9	20	
Uranium		0.0762	mg/L	0.00030	110	70	130	1.4	20	
Vanadium		0.0520	mg/L	0.010	100	70	130	1.7	20	
Zinc		0.0519	mg/L	0.010	102	70	130	3.4	20	
<b>Method: E200.8</b>										Analytical Run: ICPMS4-C_120712A
<b>Sample ID: ICV</b> Initial Calibration Verification Standard										07/12/12 13:01
Beryllium		0.0486	mg/L	0.0010	97	90	110			
<b>Method: E200.8</b>										Batch: R161901
<b>Sample ID: LRB</b> Method Blank										Run: ICPMS4-C_120712A 07/12/12 13:37
Beryllium		ND	mg/L	0.00050						
<b>Sample ID: LFB</b> Laboratory Fortified Blank										Run: ICPMS4-C_120712A 07/12/12 13:41
Beryllium		0.0505	mg/L	0.0010	101	85	115			
<b>Sample ID: C12060931-004DMS</b> Sample Matrix Spike										Run: ICPMS4-C_120712A 07/13/12 07:29
Beryllium		0.0450	mg/L	0.0010	90	70	130			
<b>Sample ID: C12060931-004DMSD</b> Sample Matrix Spike Duplicate										Run: ICPMS4-C_120712A 07/13/12 07:34
Beryllium		0.0459	mg/L	0.0010	92	70	130	2.0	20	

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E353.2</b>										Batch: R161256
<b>Sample ID: MBLK-1</b>		Method Blank								06/27/12 14:53
Nitrogen, Nitrate+Nitrite as N		ND	mg/L	0.10						
<b>Sample ID: LCS-2</b>		Laboratory Control Sample								06/27/12 14:55
Nitrogen, Nitrate+Nitrite as N		2.53	mg/L	0.10	101	90	110			
<b>Sample ID: LFB-3</b>		Laboratory Fortified Blank								06/27/12 14:58
Nitrogen, Nitrate+Nitrite as N		1.94	mg/L	0.10	99	90	110			
<b>Sample ID: C12060198-001BMS</b>		Sample Matrix Spike								06/27/12 15:03
Nitrogen, Nitrate+Nitrite as N		4.93	mg/L	0.10	92	90	110			
<b>Sample ID: C12060198-001BMSD</b>		Sample Matrix Spike Duplicate								06/27/12 15:05
Nitrogen, Nitrate+Nitrite as N		4.98	mg/L	0.10	95	90	110	1.0	10	

### Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

MDC - Minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E900.1</b>										Batch: GA-0542
<b>Sample ID: LCS-GA-0542</b>										
Laboratory Control Sample										Run: BERTHOLD 770-1_120629A 07/04/12 10:04
Gross Alpha minus Rn & U		23.0	pCi/L	113		70	130			
<b>Sample ID: MB-GA-0542</b>										
3 Method Blank										Run: BERTHOLD 770-1_120629A 07/04/12 10:04
Gross Alpha minus Rn & U		-0.249	pCi/L							U
Gross Alpha minus Rn & U Precision (±)		0.207	pCi/L							
Gross Alpha minus Rn & U MDC		0.483	pCi/L							
<b>Sample ID: C12061068-003CMS</b>										
Sample Matrix Spike										Run: BERTHOLD 770-1_120629A 07/04/12 11:44
Gross Alpha minus Rn & U		51.5	pCi/L	121		70	130			
<b>Sample ID: C12061068-003CMSD</b>										
Sample Matrix Spike Duplicate										Run: BERTHOLD 770-1_120629A 07/04/12 11:44
Gross Alpha minus Rn & U		50.0	pCi/L	118		70	130	3.0	24.2	

### Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

U - Not detected at minimum detectable concentration



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>										Batch: R161404
<b>Sample ID: 29-Jun-12_LCS_4</b>	16	Laboratory Control Sample					Run: GCMS2_120629A			06/29/12 12:33
Acetone		100	ug/L	20	101	70	130			
Benzene		9.7	ug/L	1.0	97	70	130			
Carbon tetrachloride		9.4	ug/L	1.0	94	70	130			
Chloroform		9.6	ug/L	1.0	96	70	130			
Chloromethane		9.1	ug/L	1.0	91	70	130			
m+p-Xylenes		19	ug/L	1.0	96	70	130			
Methyl ethyl ketone		100	ug/L	20	102	70	130			
Methylene chloride		9.9	ug/L	1.0	99	70	130			
Naphthalene		8.8	ug/L	1.0	88	70	130			
o-Xylene		9.2	ug/L	1.0	92	70	130			
Toluene		10	ug/L	1.0	104	70	130			
Xylenes, Total		28	ug/L	1.0	94	70	130			
Surr: 1,2-Dichlorobenzene-d4				1.0	103	80	120			
Surr: Dibromofluoromethane				1.0	110	70	130			
Surr: p-Bromofluorobenzene				1.0	105	80	130			
Surr: Toluene-d8				1.0	120	80	120			
<b>Sample ID: 29-Jun-12_MBLK_6</b>	16	Method Blank					Run: GCMS2_120629A			06/29/12 13:43
Acetone		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Naphthalene		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichlorobenzene-d4				1.0	121	80	120			S
Surr: Dibromofluoromethane				1.0	111	70	130			
Surr: p-Bromofluorobenzene				1.0	136	80	120			S
Surr: Toluene-d8				1.0	116	80	120			
<b>Sample ID: C12060931-003EMS</b>	16	Sample Matrix Spike					Run: GCMS2_120629A			06/29/12 20:35
Acetone		2100	ug/L	200	107	70	130			
Benzene		290	ug/L	10	144	70	130			S
Carbon tetrachloride		170	ug/L	10	87	70	130			
Chloroform		180	ug/L	10	88	70	130			
Chloromethane		150	ug/L	10	74	70	130			
m+p-Xylenes		380	ug/L	10	96	70	130			
Methyl ethyl ketone		2200	ug/L	200	108	70	130			
Methylene chloride		170	ug/L	10	84	70	130			
Naphthalene		150	ug/L	10	74	70	130			

### Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> SW8260B										Batch: R161404
<b>Sample ID:</b> C12060931-003EMS	16	Sample Matrix Spike				Run: GCMS2_120629A				06/29/12 20:35
o-Xylene		180	ug/L	10	92	70	130			
Toluene		290	ug/L	10	146	70	130			S
Xylenes, Total		570	ug/L	10	95	70	130			
Surr: 1,2-Dichlorobenzene-d4				1.0	100	80	120			
Surr: Dibromofluoromethane				1.0	108	70	130			
Surr: p-Bromofluorobenzene				1.0	103	80	120			
Surr: Toluene-d8				1.0	171	80	120			S
<b>Sample ID:</b> C12060931-003EMSD	16	Sample Matrix Spike Duplicate				Run: GCMS2_120629A				06/29/12 21:10
Acetone		2400	ug/L	200	119	70	130	11	20	
Benzene		190	ug/L	10	95	70	130	41	20	R
Carbon tetrachloride		180	ug/L	10	90	70	130	3.2	20	
Chloroform		200	ug/L	10	98	70	130	10	20	
Chloromethane		190	ug/L	10	94	70	130	23	20	R
m+p-Xylenes		380	ug/L	10	96	70	130	0.4	20	
Methyl ethyl ketone		2300	ug/L	200	116	70	130	7.1	20	
Methylene chloride		190	ug/L	10	96	70	130	14	20	
Naphthalene		170	ug/L	10	84	70	130	13	20	
o-Xylene		190	ug/L	10	93	70	130	1.3	20	
Toluene		220	ug/L	10	108	70	130	30	20	R
Xylenes, Total		570	ug/L	10	95	70	130	0.7	20	
Surr: 1,2-Dichlorobenzene-d4				1.0	102	80	120	0.0	10	
Surr: Dibromofluoromethane				1.0	116	70	130	0.0	10	
Surr: p-Bromofluorobenzene				1.0	103	80	120	0.0	10	
Surr: Toluene-d8				1.0	123	80	120	0.0	10	S

### Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

S - Spike recovery outside of advisory limits.

ND - Not detected at the reporting limit.

R - RPD exceeds advisory limit.



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: SW8260B</b>										Batch: R161460
<b>Sample ID: 02-Jul-12_LCS_4</b>	16	Laboratory Control Sample		Run: GCMS2_120702A			07/02/12 12:40			
Acetone		100	ug/L	20	103	70	130			
Benzene		12	ug/L	1.0	122	70	130			
Carbon tetrachloride		12	ug/L	1.0	120	70	130			
Chloroform		13	ug/L	1.0	126	70	130			
Chloromethane		13	ug/L	1.0	129	70	130			
m+p-Xylenes		25	ug/L	1.0	124	70	130			
Methyl ethyl ketone		100	ug/L	20	104	70	130			
Methylene chloride		12	ug/L	1.0	124	70	130			
Naphthalene		9.6	ug/L	1.0	96	70	130			
o-Xylene		12	ug/L	1.0	117	70	130			
Toluene		13	ug/L	1.0	130	70	130			
Xylenes, Total		37	ug/L	1.0	122	70	130			
Surr: 1,2-Dichlorobenzene-d4				1.0	95	80	120			
Surr: Dibromofluoromethane				1.0	115	70	130			
Surr: p-Bromofluorobenzene				1.0	92	80	130			
Surr: Toluene-d8				1.0	114	80	120			
<b>Sample ID: 02-Jul-12_MBLK_6</b>	16	Method Blank		Run: GCMS2_120702A			07/02/12 13:50			
Acetone		ND	ug/L	20						
Benzene		ND	ug/L	1.0						
Carbon tetrachloride		ND	ug/L	1.0						
Chloroform		ND	ug/L	1.0						
Chloromethane		ND	ug/L	1.0						
m+p-Xylenes		ND	ug/L	1.0						
Methyl ethyl ketone		ND	ug/L	20						
Methylene chloride		ND	ug/L	1.0						
Naphthalene		ND	ug/L	1.0						
o-Xylene		ND	ug/L	1.0						
Toluene		ND	ug/L	1.0						
Xylenes, Total		ND	ug/L	1.0						
Surr: 1,2-Dichlorobenzene-d4				1.0	121	80	120			S
Surr: Dibromofluoromethane				1.0	107	70	130			
Surr: p-Bromofluorobenzene				1.0	132	80	120			S
Surr: Toluene-d8				1.0	111	80	120			
<b>Sample ID: C12060949-001BMS</b>	16	Sample Matrix Spike		Run: GCMS2_120702A			07/02/12 20:43			
Acetone		2600000	ug/L	200000	130	70	130			
Benzene		210000	ug/L	10000	98	70	130			
Carbon tetrachloride		190000	ug/L	10000	96	70	130			
Chloroform		210000	ug/L	10000	104	70	130			
Chloromethane		260000	ug/L	10000	130	70	130			
m+p-Xylenes		400000	ug/L	10000	97	70	130			
Methyl ethyl ketone		2600000	ug/L	200000	128	70	130			
Methylene chloride		210000	ug/L	10000	103	70	130			
Naphthalene		160000	ug/L	10000	78	70	130			

### Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.



## QA/QC Summary Report

Prepared by Casper, WY Branch

**Client:** Denison Mines USA Corp

**Report Date:** 07/27/12

**Project:** Seeps and Springs 2012

**Work Order:** C12060931

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method:</b> SW8260B										Batch: R161460
<b>Sample ID:</b> C12060949-001BMS 16 Sample Matrix Spike										Run: GCMS2_120702A 07/02/12 20:43
o-Xylene		190000	ug/L	10000	96	70	130			
Toluene		250000	ug/L	10000	109	70	130			
Xylenes, Total		590000	ug/L	10000	97	70	130			
Surr: 1,2-Dichlorobenzene-d4				1.0	101	80	120			
Surr: Dibromofluoromethane				1.0	122	70	130			
Surr: p-Bromofluorobenzene				1.0	97	80	120			
Surr: Toluene-d8				1.0	118	80	120			
<b>Sample ID:</b> C12060949-001BMSD 16 Sample Matrix Spike Duplicate										Run: GCMS2_120702A 07/02/12 21:18
Acetone		2600000	ug/L	200000	129	70	130	0.6	20	
Benzene		250000	ug/L	10000	120	70	130	19	20	
Carbon tetrachloride		97000	ug/L	10000	48	70	130	66	20	SR
Chloroform		210000	ug/L	10000	105	70	130	0.4	20	
Chloromethane		290000	ug/L	10000	145	70	130	10	20	S
m+p-Xylenes		400000	ug/L	10000	97	70	130	0.6	20	
Methyl ethyl ketone		2400000	ug/L	200000	122	70	130	4.5	20	
Methylene chloride		220000	ug/L	10000	112	70	130	8.2	20	
Naphthalene		160000	ug/L	10000	78	70	130	1.0	20	
o-Xylene		190000	ug/L	10000	96	70	130	0.4	20	
Toluene		500000	ug/L	10000	232	70	130	66	20	SR
Xylenes, Total		590000	ug/L	10000	97	70	130	0.3	20	
Surr: 1,2-Dichlorobenzene-d4				1.0	102	80	120	0.0	10	
Surr: Dibromofluoromethane				1.0	122	70	130	0.0	10	
Surr: p-Bromofluorobenzene				1.0	101	80	120	0.0	10	
Surr: Toluene-d8				1.0	233	80	120	0.0	10	S

### Qualifiers:

RL - Analyte reporting limit.

MDC - Minimum detectable concentration

S - Spike recovery outside of advisory limits.

ND - Not detected at the reporting limit.

R - RPD exceeds advisory limit.



# Standard Reporting Procedures

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

## Workorder Receipt Checklist

Denison Mines USA Corp

C12060931

Login completed by: Timothy I.. Houghteling

Date Received: 6/22/2012

Reviewed by: BL2000\kschroeder

Received by: kg

Reviewed Date: 6/27/2012

Carrier Next Day Air  
name:

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? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature:	2.2°C On Ice		
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 checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

Contact and Corrective Action Comments:

None





# Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT (Provide as much information as possible.)

Company Name: <b>Denison Mines</b>	Project Name, PWS, Permit, Etc. <b>Seeps and Springs 2012</b>	Sample Origin State: <b>UT</b>	EPA/State Compliance: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Report Mail Address: <b>PO BOX 809 Blanding UT 84511</b>	Contact Name: <b>Garrin Palmer</b>	Phone/Fax: <b>435 678 2221</b>	Email: <b>Tanner Holliday</b>
Invoice Address: <b>Same</b>	Invoice Contact & Phone: <b>David Turk 435 678 2221</b>	Purchase Order:	Quote/Bottle Order:

## Special Report/Formats:

- ☐ DW ☐ EDD/EDT (Electronic Data)  
☐ POTWW/WTP ☐ Format: \_\_\_\_\_  
☐ State: \_\_\_\_\_ ☐ LEVEL IV  
☐ Other: \_\_\_\_\_ ☐ NELAC

Number of Containers  
Sample Type: A W S V B O DW  
Air Water Soils/Solids  
Vegetation Bioassay Other  
DW - Drinking Water

## ANALYSIS REQUESTED

SEE ATTACHED

Standard Turnaround (TAT)

R  
U  
S  
H

Contact ELI prior to  
**RUSH** sample submittal  
for charges and  
scheduling - See  
Instruction Page

Comments:

Shipped by:

**FE-NDA**

Cooler ID(s):

**clent**

Receipt Temp

**2.2 °C**On Ice: ☒ N

Custody Seal

On Bottle ☒ N  
On Cooler ☒ N

Intact

Signature ☒ N  
Match ☒ N

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX
-----------------------------------------------------------	--------------------	--------------------	--------

1 Enterance Seep	6/20/12	1015	6-W	X
2 Ruin Spring	6/20/12	0920	6-W	X
3 Cottonwood Spring	6/20/12	0745	6-W	X
4 Back Spring	6/20/12	0745	6-W	X
5 Trip Blank 6746	6/20/12			
6 Temp Blank				
7				
8				
9				
10				

Quote # **61640**

LABORATORY USE ONLY

<b>Custody Record MUST be Signed</b>	Relinquished by (print): <b>Tanner Holliday</b>	Date/Time: <b>6/21/2012 1100</b>	Signature: <b>Tanner Holliday</b>	Received by (print):	Date/Time:	Signature:
	Relinquished by (print):	Date/Time:	Signature:	Received by (print):	Date/Time:	Signature:
	Sample Disposal:	Return to Client:	Lab Disposal:	Received by Laboratory:	Date/Time: <b>6-22-12 9:50</b>	Signature: <b>Kris G:32</b>

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested.

This serves as notice of this possibility. All sub-contract data will be clearly notated on your analytical report.

Visit our web site at [www.energy-lab.com](http://www.energy-lab.com) for additional information, downloadable fee schedule, forms, and links.





Jo Ann Tischler  
Denison Mines  
1050 17th Street, # 950  
Denver, CO 80265  
TEL: (303) 389-4132

RE: Seeps and Springs 2012

Dear Jo Ann Tischler:

Lab Set ID: 1206379

463 West 3600 South  
Salt Lake City, UT 84115

American West Analytical Laboratories received 5 sample(s) on 6/22/2012 for the analyses presented in the following report.

Phone: (801) 263-8686  
Toll Free: (888) 263-8686  
Fax: (801) 263-8687  
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web: www.awal-labs.com

American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Association Conference (NELAC) Institute in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, and Missouri. In addition, AWAL is also accredited by the American Analytical Laboratory Association (A2LA) on ISO IEC 17025:2005, Department of Defense (DOD), UST for the State of Wyoming, and the National Lead Laboratory Accreditation Program (NLLAP). All analyses were performed in accordance to The NELAC Institute and/or A2LA protocols unless noted otherwise. Accreditation documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Thank You,

Approved by:

**Kyle F. Gross**  
Digitally signed by Kyle F. Gross  
DN: cn=Kyle F. Gross, o=AWAL, ou=AWAL, email=kyle@awal-labs.com, c=US  
Date: 2012.07.03 13:38:23 -06'00'

Laboratory Director or designee





## SAMPLE SUMMARY

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Set ID:** 1206379  
**Date Received:** 6/22/2012 1030h

**Contact:** Jo Ann Tischler

463 West 3600 South  
Salt Lake City, UT 84115

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e-mail: awal@awal-labs.com

web: www.awal-labs.com

Lab Sample ID	Client Sample ID	Date Collected	Matrix	Analysis
1206379-001A	Entrance Seep	6/20/2012 1015h	Aqueous	VOA by GC/MS Method 8260C/5030C
1206379-001B	Entrance Seep	6/20/2012 1015h	Aqueous	ICPMS Metals, Dissolved
1206379-002A	Ruin Spring	6/20/2012 920h	Aqueous	VOA by GC/MS Method 8260C/5030C
1206379-002B	Ruin Spring	6/20/2012 920h	Aqueous	ICPMS Metals, Dissolved
1206379-003A	Cottonwood Spring	6/20/2012 745h	Aqueous	VOA by GC/MS Method 8260C/5030C
1206379-003B	Cottonwood Spring	6/20/2012 745h	Aqueous	ICPMS Metals, Dissolved
1206379-004A	Back Spring	6/20/2012 745h	Aqueous	VOA by GC/MS Method 8260C/5030C
1206379-004B	Back Spring	6/20/2012 745h	Aqueous	ICPMS Metals, Dissolved
1206379-005A	Trip Blank	6/20/2012	Aqueous	VOA by GC/MS Method 8260C/5030C

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer





## Inorganic Case Narrative

**Client:**  
**Contact:**  
**Project:**  
**Lab Set ID:**

Denison Mines  
Jo Ann Tischler  
Seeps and Springs 2012  
1206379

463 West 3600 South  
Salt Lake City, UT 84115

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

---

### **Sample Receipt Information:**

<b>Date of Receipt:</b>	6/22/2012
<b>Date of Collection:</b>	6/20/2012
<b>Sample Condition:</b>	Intact
<b>C-O-C Discrepancies:</b>	None

**Holding Time and Preservation Requirements:** The analysis of the sample was performed within the method holding times. The sample was properly preserved.

**Preparation and Analysis Requirements:** The sample was analyzed following the methods stated on the analytical reports. The sample was not digested pursuant to the client request.

**Analytical QC Requirements:** All instrument calibration and calibration check requirements were met. All internal standard recoveries met method criterion.

**Corrective Action:** None required.





## Volatile Case Narrative

**Client:**  
**Contact:**  
**Project:**  
**Lab Set ID:**

Denison Mines  
Jo Ann Tischler  
Seeps and Springs 2012  
1206379

463 West 3600 South  
Salt Lake City, UT 84115

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web: www.awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

### **Sample Receipt Information:**

<b>Date of Receipt:</b>	6/22/2012
<b>Date of Collection:</b>	6/20/2012
<b>Sample Condition:</b>	Intact
<b>C-O-C Discrepancies:</b>	None
<b>Method:</b>	SW-846 8260C/5030C
<b>Analysis:</b>	Tetrahydrofuran

**General Set Comments:** Tetrahydrofuran was not observed above reporting limits.

**Holding Time and Preservation Requirements:** All samples were received in appropriate containers and properly preserved. The analysis and preparation of all samples were performed within the method holding times following the methods stated on the analytical reports.

**Analytical QC Requirements:** All instrument calibration and calibration check requirements were met. All internal standard recoveries met method criterion.

**Batch QC Requirements:** MB, LCS, MS, MSD, RPD, and Surrogates:

**Method Blanks (MBs):** No target analytes were detected above reporting limits, indicating that the procedure was free from contamination.

**Laboratory Control Sample (LCSs):** All LCS recoveries were within control limits, indicating that the preparation and analysis were in control.

**Matrix Spike / Matrix Spike Duplicate (MS/MSD):** All percent recoveries and RPDs (Relative Percent Differences) were inside established limits, indicating no apparent matrix interferences.

**Surrogates:** All surrogate recoveries were within established limits.

**Corrective Action:** None required.





## INORGANIC ANALYTICAL REPORT

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Sample ID:** 1206379-001  
**Client Sample ID:** Entrance Seep  
**Collection Date:** 6/20/2012 1015h  
**Received Date:** 6/22/2012 1030h

**Contact:** Jo Ann Tischler

### Analytical Results

### DISSOLVED METALS

463 West 3600 South  
Salt Lake City, UT 84115

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Tin	mg/L		6/27/2012 1106h	E200.8	0.100	< 0.100	

*This sample was not digested pursuant to the client request.*

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer





## INORGANIC ANALYTICAL REPORT

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Sample ID:** 1206379-002  
**Client Sample ID:** Ruin Spring  
**Collection Date:** 6/20/2012 920h  
**Received Date:** 6/22/2012 1030h

**Contact:** Jo Ann Tischler

### Analytical Results

### DISSOLVED METALS

463 West 3600 South  
Salt Lake City, UT 84115

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Tin	mg/L		6/27/2012 1110h	E200.8	0.100	< 0.100	

*This sample was not digested pursuant to the client request.*

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer





## INORGANIC ANALYTICAL REPORT

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Sample ID:** 1206379-003  
**Client Sample ID:** Cottonwood Spring  
**Collection Date:** 6/20/2012 745h  
**Received Date:** 6/22/2012 1030h

**Contact:** Jo Ann Tischler

### Analytical Results

### DISSOLVED METALS

463 West 3600 South  
Salt Lake City, UT 84115

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Tin	mg/L		6/27/2012 1114h	E200.8	0.100	< 0.100	

*This sample was not digested pursuant to the client request.*

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer





## INORGANIC ANALYTICAL REPORT

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Sample ID:** 1206379-004  
**Client Sample ID:** Back Spring  
**Collection Date:** 6/20/2012 745h  
**Received Date:** 6/22/2012 1030h

**Contact:** Jo Ann Tischler

### Analytical Results

### DISSOLVED METALS

463 West 3600 South  
Salt Lake City, UT 84115

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Tin	mg/L		6/27/2012 1118h	E200.8	0.100	< 0.100	

*This sample was not digested pursuant to the client request.*

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer





## ORGANIC ANALYTICAL REPORT

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Sample ID:** 1206379-001A  
**Client Sample ID:** Entrance Seep  
**Collection Date:** 6/20/2012 1015h  
**Received Date:** 6/22/2012 1030h

**Contact:** Jo Ann Tischler

### Analytical Results

VOAs by GC/MS Method 8260C/5030C

**Analyzed:** 6/26/2012 829h

**Units:** µg/L

**Dilution Factor:** 1

**Method:** SW8260C

463 West 3600 South  
Salt Lake City, UT 84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Tetrahydrofuran	109-99-9	1.00	< 1.00	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: Toluene-d8	2037-26-5	44.9	50.00	89.8	77-129	
Surr: Dibromofluoromethane	1868-53-7	49.2	50.00	98.3	80-124	
Surr: 4-Bromofluorobenzene	460-00-4	42.2	50.00	84.4	80-128	
Surr: 1,2-Dichloroethane-d4	17060-07-0	49.0	50.00	98.0	72-151	

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer





## ORGANIC ANALYTICAL REPORT

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Sample ID:** 1206379-002A  
**Client Sample ID:** Ruin Spring  
**Collection Date:** 6/20/2012 920h  
**Received Date:** 6/22/2012 1030h

**Contact:** Jo Ann Tischler

### Analytical Results

VOAs by GC/MS Method 8260C/5030C

**Analyzed:** 6/26/2012 920h

**Units:** µg/L

**Dilution Factor:** 1

**Method:** SW8260C

463 West 3600 South  
Salt Lake City, UT 84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual		
Tetrahydrofuran	109-99-9	1.00	< 1.00			
Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: Toluene-d8	2037-26-5	45.3	50.00	90.5	77-129	
Surr: Dibromofluoromethane	1868-53-7	50.6	50.00	101	80-124	
Surr: 4-Bromofluorobenzene	460-00-4	42.1	50.00	84.2	80-128	
Surr: 1,2-Dichloroethane-d4	17060-07-0	50.9	50.00	102	72-151	

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer





## ORGANIC ANALYTICAL REPORT

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Sample ID:** 1206379-003A  
**Client Sample ID:** Cottonwood Spring  
**Collection Date:** 6/20/2012 745h  
**Received Date:** 6/22/2012 1030h

**Contact:** Jo Ann Tischler

### Analytical Results

VOAs by GC/MS Method 8260C/5030C

**Analyzed:** 6/26/2012 1036h

**Units:** µg/L

**Dilution Factor:** 1

**Method:** SW8260C

463 West 3600 South  
Salt Lake City, UT 84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Tetrahydrofuran	109-99-9	1.00	< 1.00	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: Toluene-d8	2037-26-5	45.8	50.00	91.5	77-129	
Surr: Dibromofluoromethane	1868-53-7	49.5	50.00	99.0	80-124	
Surr: 4-Bromofluorobenzene	460-00-4	42.8	50.00	85.7	80-128	
Surr: 1,2-Dichloroethane-d4	17060-07-0	49.6	50.00	99.2	72-151	

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer





## ORGANIC ANALYTICAL REPORT

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Sample ID:** 1206379-004A  
**Client Sample ID:** Back Spring  
**Collection Date:** 6/20/2012 745h  
**Received Date:** 6/22/2012 1030h

**Contact:** Jo Ann Tischler

### Analytical Results

VOAs by GC/MS Method 8260C/5030C

**Analyzed:** 6/26/2012 1101h

**Units:** µg/L

**Dilution Factor:** 1

**Method:** SW8260C

463 West 3600 South  
Salt Lake City, UT 84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Tetrahydrofuran	109-99-9	1.00	< 1.00	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: Toluene-d8	2037-26-5	44.8	50.00	89.6	77-129	
Surr: Dibromofluoromethane	1868-53-7	49.6	50.00	99.3	80-124	
Surr: 4-Bromofluorobenzene	460-00-4	41.3	50.00	82.6	80-128	
Surr: 1,2-Dichloroethane-d4	17060-07-0	49.4	50.00	98.9	72-151	

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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer





## ORGANIC ANALYTICAL REPORT

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Sample ID:** 1206379-005A  
**Client Sample ID:** Trip Blank  
**Collection Date:** 6/20/2012  
**Received Date:** 6/22/2012 1030h

**Contact:** Jo Ann Tischler

### Analytical Results

VOAs by GC/MS Method 8260C/5030C

**Analyzed:** 6/26/2012 1127h

**Units:** µg/L

**Dilution Factor:** 1

**Method:** SW8260C

463 West 3600 South  
Salt Lake City, UT 84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Tetrahydrofuran	109-99-9	1.00	< 1.00	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: Toluene-d8	2037-26-5	45.2	50.00	90.4	77-129	
Surr: Dibromofluoromethane	1868-53-7	51.3	50.00	103	80-124	
Surr: 4-Bromofluorobenzene	460-00-4	42.3	50.00	84.5	80-128	
Surr: 1,2-Dichloroethane-d4	17060-07-0	51.8	50.00	104	72-151	

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Jose Rocha  
QA Officer





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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Denison Mines  
**Lab Set ID:** 1206379  
**Project:** Seeps and Springs 2012

**Contact:** Jo Ann Tischler  
**Dept:** MSVOA  
**QC Type:** LCS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
LCS VOC 062612A	Tetrahydrofuran	µg/L	SW8260C	16.0	20.00	0	80.1	43-146				6/26/2012 713h
LCS VOC 062612A	Surr: 1,2-Dichloroethane-d4	%REC	SW8260C	48.3	50.00		96.5	76-138				6/26/2012 713h
LCS VOC 062612A	Surr: 4-Bromofluorobenzene	%REC	SW8260C	42.2	50.00		84.5	77-121				6/26/2012 713h
LCS VOC 062612A	Surr: Dibromofluoromethane	%REC	SW8260C	51.2	50.00		102	67-128				6/26/2012 713h
LCS VOC 062612A	Surr: Toluene-d8	%REC	SW8260C	45.2	50.00		90.5	81-135				6/26/2012 713h





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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Denison Mines  
**Lab Set ID:** 1206379  
**Project:** Seeps and Springs 2012

**Contact:** Jo Ann Tischler  
**Dept:** MSVOA  
**QC Type:** MBLK

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
MB VOC 062612A	Tetrahydrofuran	µg/L	SW8260C	< 1.00				-				6/26/2012 804h
MB VOC 062612A	Surr: 1,2-Dichloroethane-d4	%REC	SW8260C	49.6	50.00		99.2	76-138				6/26/2012 804h
MB VOC 062612A	Surr: 4-Bromofluorobenzene	%REC	SW8260C	42.7	50.00		85.3	77-121				6/26/2012 804h
MB VOC 062612A	Surr: Dibromofluoromethane	%REC	SW8260C	49.8	50.00		99.7	67-128				6/26/2012 804h
MB VOC 062612A	Surr: Toluene-d8	%REC	SW8260C	45.2	50.00		90.5	81-135				6/26/2012 804h





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Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Denison Mines  
**Lab Set ID:** 1206379  
**Project:** Seeps and Springs 2012

**Contact:** Jo Ann Tischler  
**Dept:** MSVOA  
**QC Type:** MS

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
1206379-001AMS	Tetrahydrofuran	µg/L	SW8260C	14.4	20.00	0	72.0	43-146				6/26/2012 945h
1206379-001AMS	Surr: 1,2-Dichloroethane-d4	%REC	SW8260C	51.5	50.00		103	72-151				6/26/2012 945h
1206379-001AMS	Surr: 4-Bromofluorobenzene	%REC	SW8260C	41.5	50.00		83.0	80-128				6/26/2012 945h
1206379-001AMS	Surr: Dibromofluoromethane	%REC	SW8260C	52.0	50.00		104	80-124				6/26/2012 945h
1206379-001AMS	Surr: Toluene-d8	%REC	SW8260C	45.0	50.00		90.1	77-129				6/26/2012 945h





463 West 3600 South

Salt Lake City, UT 84115

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e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

## QC SUMMARY REPORT

**Client:** Denison Mines  
**Lab Set ID:** 1206379  
**Project:** Seeps and Springs 2012

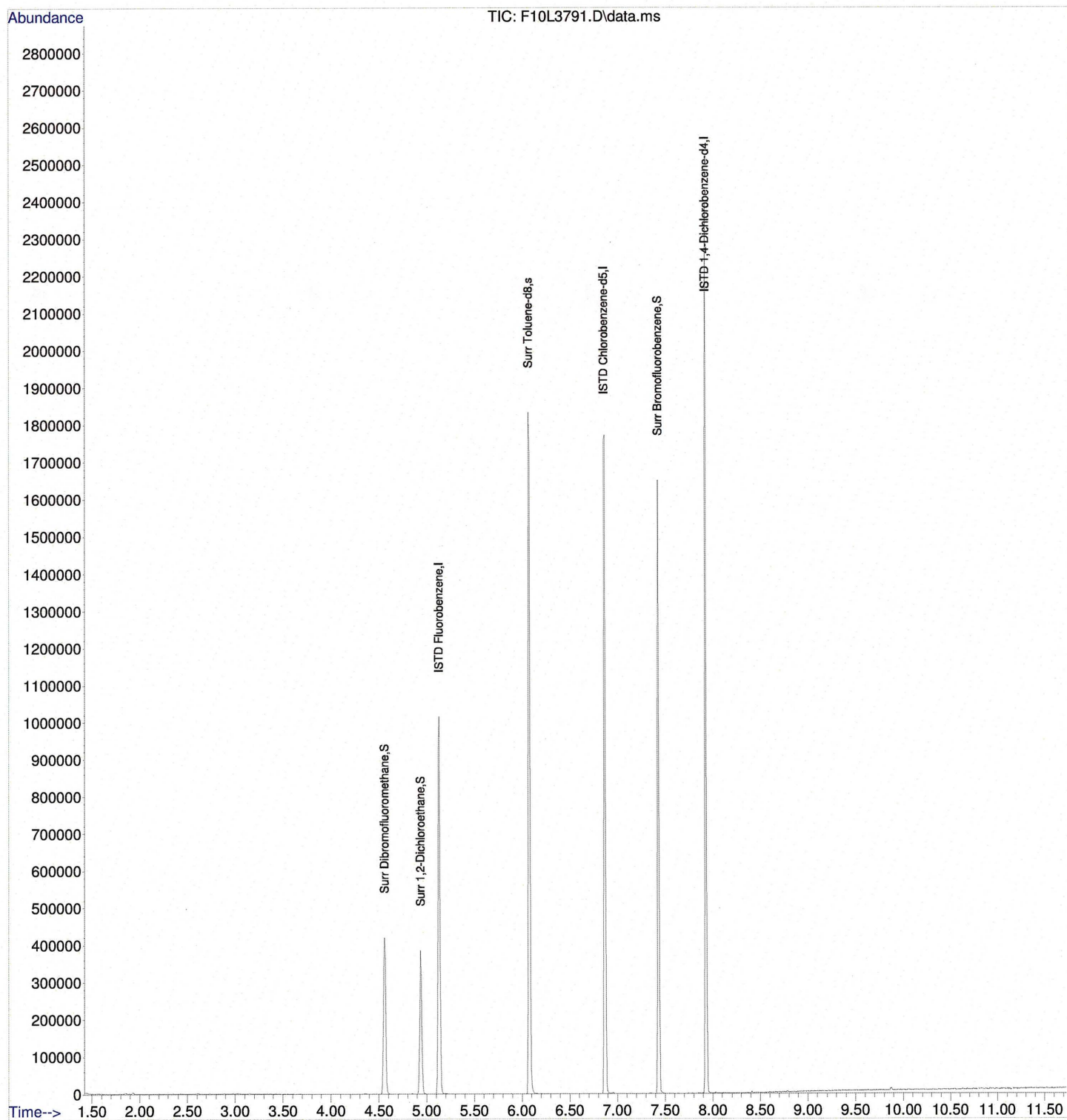
**Contact:** Jo Ann Tischler  
**Dept:** MSVOA  
**QC Type:** MSD

Sample ID	Analyte	Units	Method	Result	Amount Spiked	Original Amount	%REC	Limits	%RPD	RPD Limit	Qual	Date Analyzed
1206379-001AMSD	Tetrahydrofuran	µg/L	SW8260C	13.3	20.00	0	66.3	43-146	8.24	25		6/26/2012 1011h
1206379-001AMSD	Surr: 1,2-Dichloroethane-d4	%REC	SW8260C	49.9	50.00		99.8	72-151				6/26/2012 1011h
1206379-001AMSD	Surr: 4-Bromofluorobenzene	%REC	SW8260C	42.4	50.00		84.9	80-128				6/26/2012 1011h
1206379-001AMSD	Surr: Dibromofluoromethane	%REC	SW8260C	51.9	50.00		104	80-124				6/26/2012 1011h
1206379-001AMSD	Surr: Toluene-d8	%REC	SW8260C	45.1	50.00		90.2	77-129				6/26/2012 1011h



Data Path : C:\msdchem\1\data\JUN12-D\26JUN12\  
Data File : F10L3791.D  
Acq On : 26 Jun 2012 8:29 am  
Operator : AH  
Sample : 1206379-001A  
Misc : SAMP 5.0ML 10F3 SB  
ALS Vial : 6 Sample Multiplier: 1

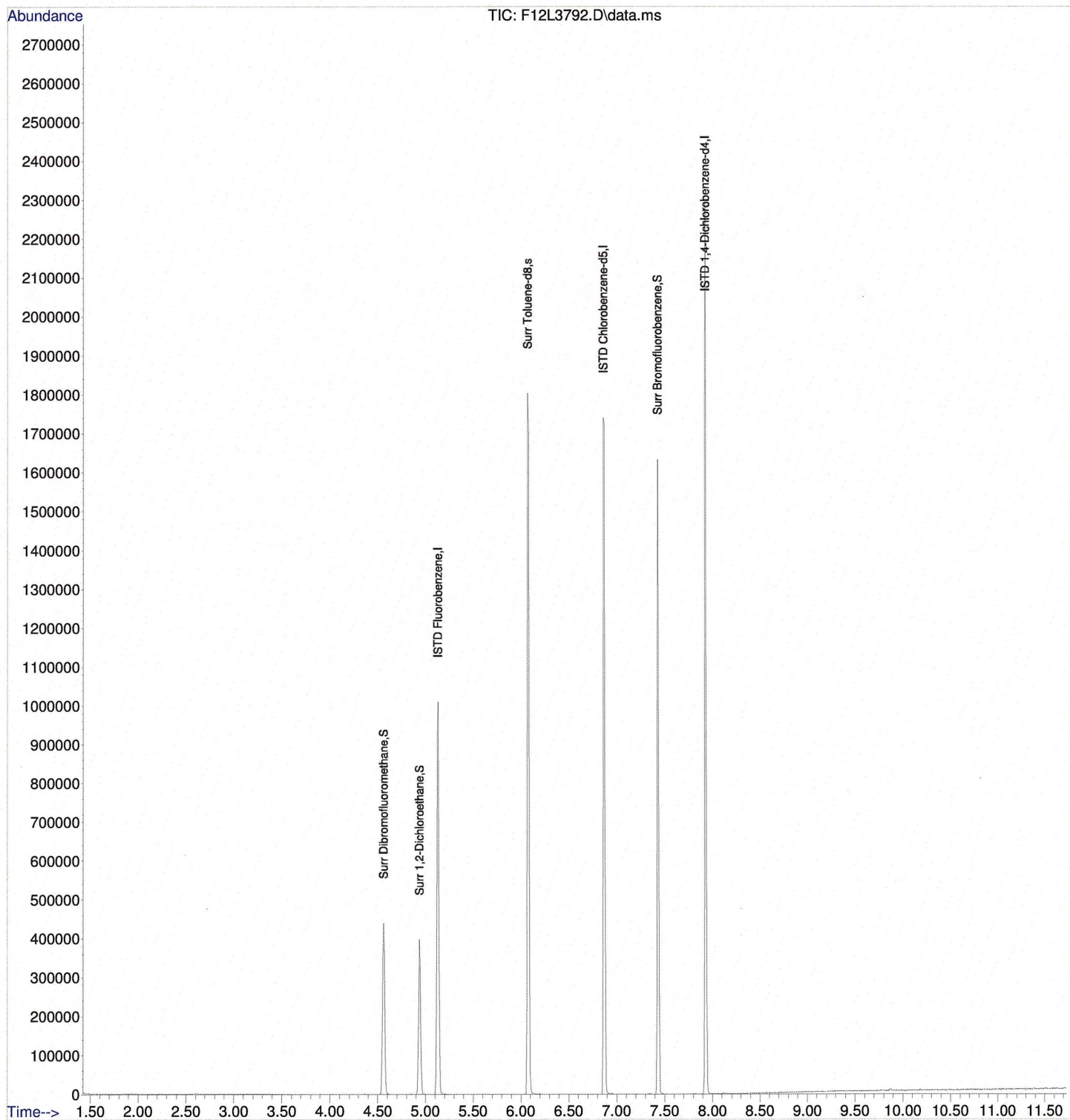
Quant Time: Jun 26 08:42:14 2012  
Quant Method : C:\MSDCHEM\1\METHODS\DFULLW\_01.M  
Quant Title : VOA Calibration  
QLast Update : Fri May 18 13:38:02 2012  
Response via : Initial Calibration





Data Path : C:\msdchem\1\data\JUN12-D\26JUN12\  
Data File : F12L3792.D  
Acq On : 26 Jun 2012 9:20 am  
Operator : AH  
Sample : 1206379-002A  
Misc : SAMP 5.0ML 10F3 SB  
ALS Vial : 8 Sample Multiplier: 1

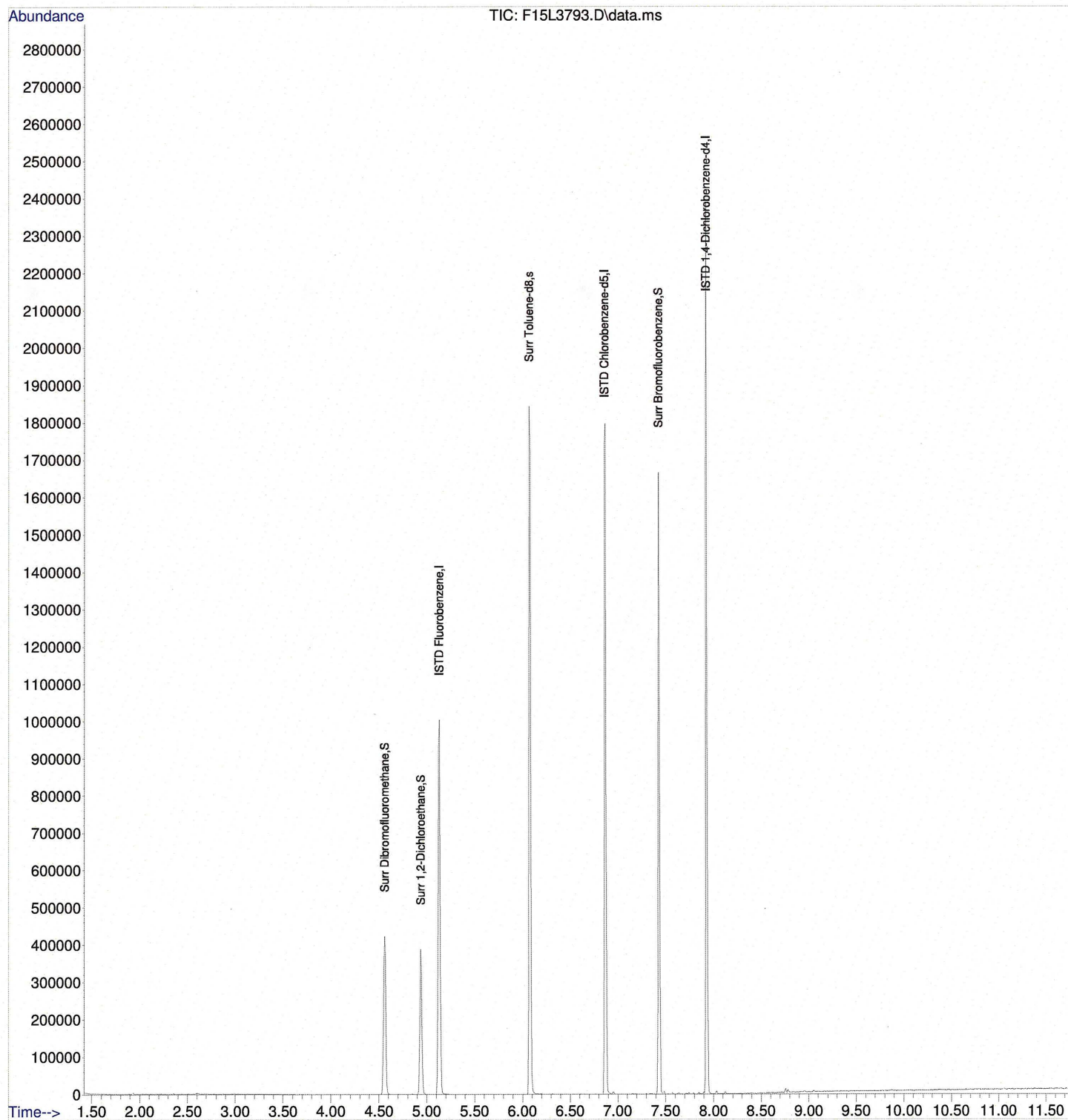
Quant Time: Jun 26 09:32:10 2012  
Quant Method : C:\MSDCHEM\1\METHODS\DFULLW\_01.M  
Quant Title : VOA Calibration  
QLast Update : Fri May 18 13:38:02 2012  
Response via : Initial Calibration





Data Path : C:\msdchem\1\data\JUN12-D\26JUN12\  
Data File : F15L3793.D  
Acq On : 26 Jun 2012 10:36 am  
Operator : AH  
Sample : 1206379-003A  
Misc : SAMP 5.0ML 10F3 SB  
ALS Vial : 11 Sample Multiplier: 1

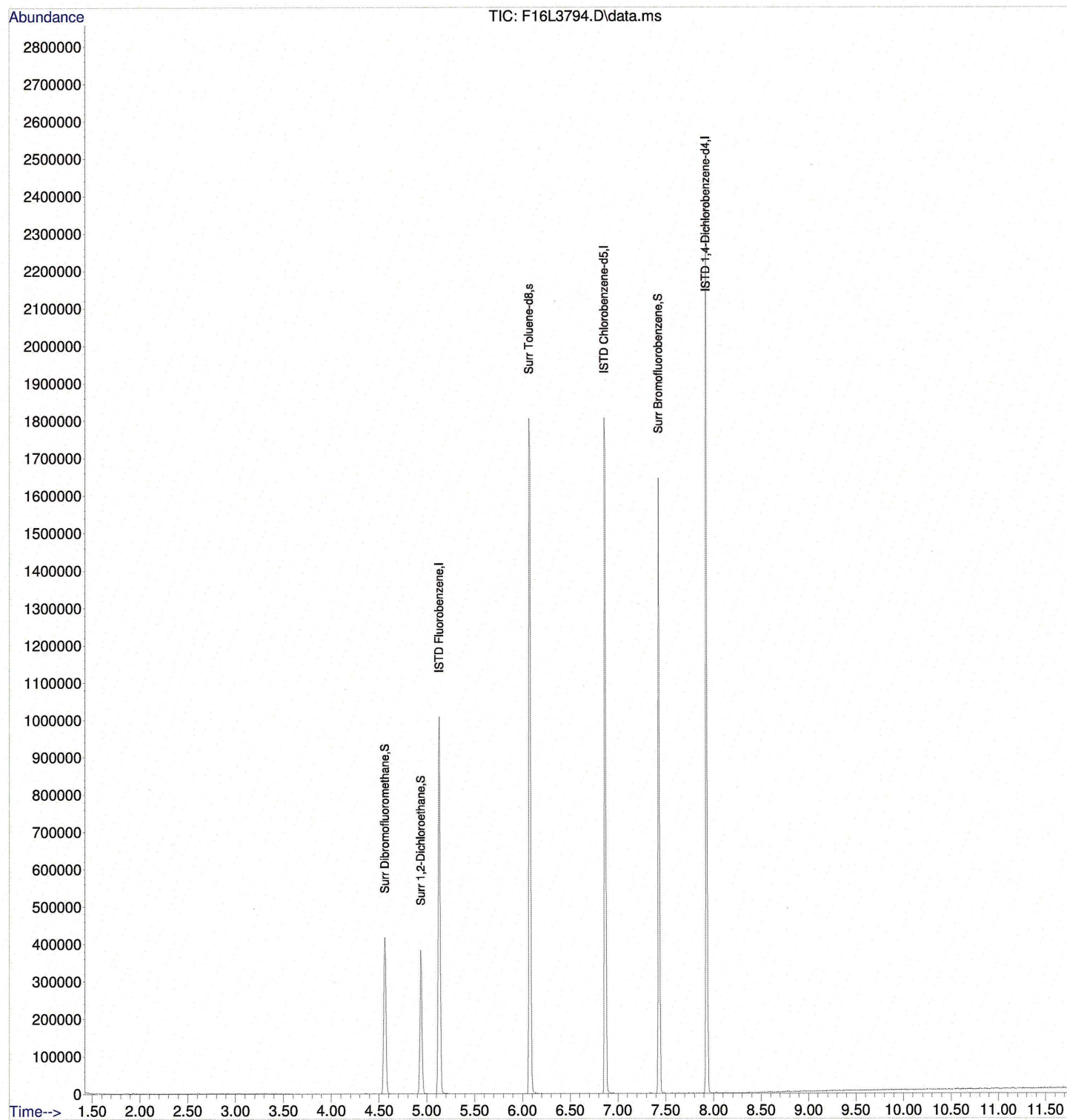
Quant Time: Jun 26 10:48:25 2012  
Quant Method : C:\MSDCHEM\1\METHODS\DFULLW\_01.M  
Quant Title : VOA Calibration  
QLast Update : Fri May 18 13:38:02 2012  
Response via : Initial Calibration





Data Path : C:\msdchem\1\data\JUN12-D\26JUN12\  
Data File : F16L3794.D  
Acq On : 26 Jun 2012 11:01 am  
Operator : AH  
Sample : 1206379-004A  
Misc : SAMP 5.0ML 1OF3 SB  
ALS Vial : 12 Sample Multiplier: 1

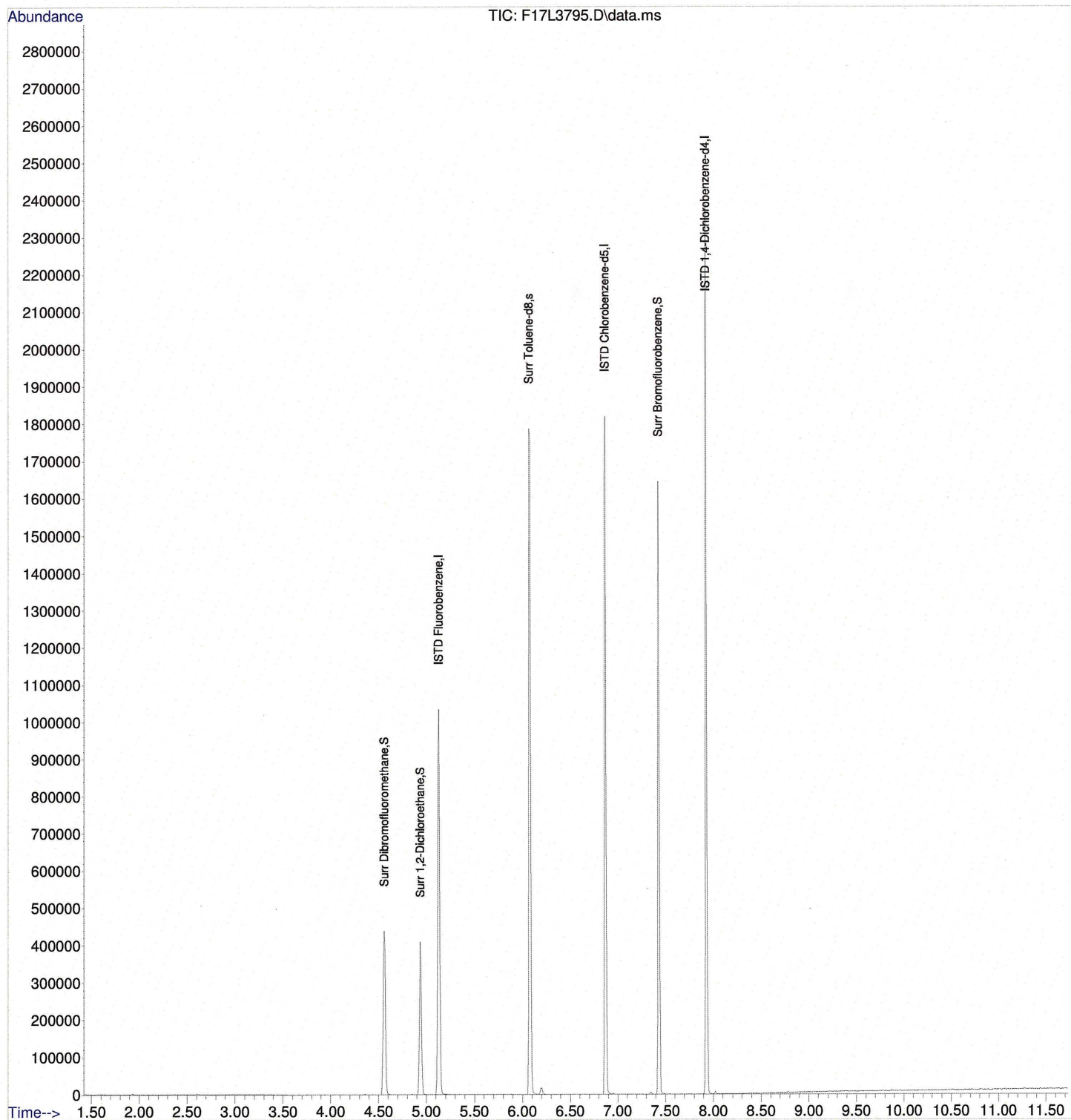
Quant Time: Jun 26 11:13:46 2012  
Quant Method : C:\MSDCHEM\1\METHODS\DFULLW\_01.M  
Quant Title : VOA Calibration  
QLast Update : Fri May 18 13:38:02 2012  
Response via : Initial Calibration





Data Path : C:\msdchem\1\data\JUN12-D\26JUN12\  
Data File : F17L3795.D  
Acq On : 26 Jun 2012 11:27 am  
Operator : AH  
Sample : 1206379-005A  
Misc : SAMP 5.0ML 10F3 SB  
ALS Vial : 13 Sample Multiplier: 1

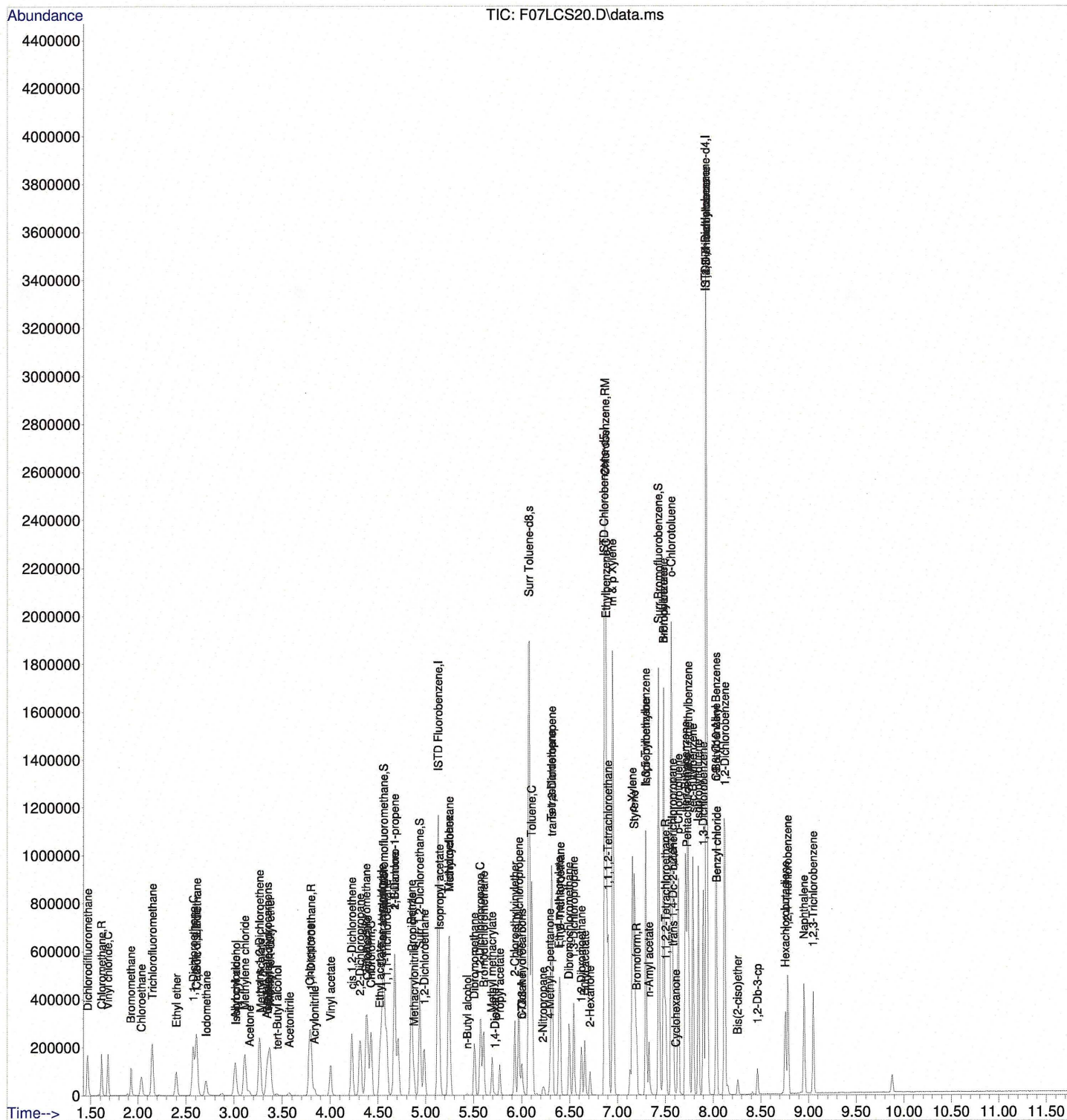
Quant Time: Jun 26 11:39:15 2012  
Quant Method : C:\MSDCHEM\1\METHODS\DFULLW\_01.M  
Quant Title : VOA Calibration  
QLast Update : Fri May 18 13:38:02 2012  
Response via : Initial Calibration





Data Path : C:\msdchem\1\data\JUN12-D\26JUN12\  
Data File : F07LCS20.D  
Acq On : 26 Jun 2012 7:13 am  
Operator : AH  
Sample : LCS VOC 062612A  
Misc : LCS SEE COVERSHEET FOR ID AND AMOUNTS JO  
ALS Vial : 3 Sample Multiplier: 1

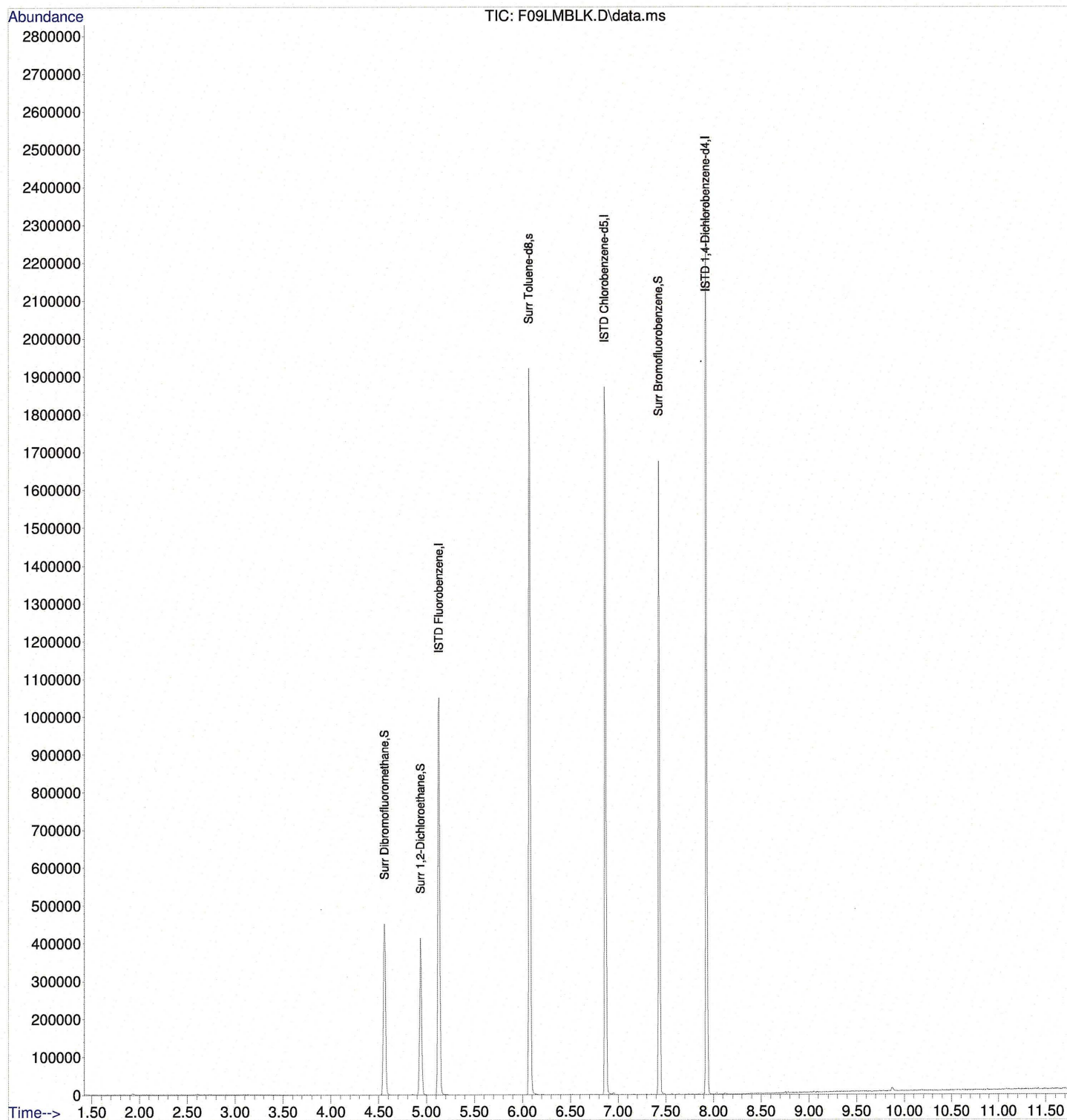
Quant Time: Jun 26 07:43:18 2012  
Quant Method : C:\MSDCHEM\1\METHODS\DFULLW\_01.M  
Quant Title : VOA Calibration  
QLast Update : Fri May 18 13:38:02 2012  
Response via : Initial Calibration





Data Path : C:\msdchem\1\data\JUN12-D\26JUN12\  
Data File : F09LMBLK.D  
Acq On : 26 Jun 2012 8:04 am  
Operator : AH  
Sample : MB VOC 062612A  
Misc : MBLK 5.0ML JO  
ALS Vial : 5 Sample Multiplier: 1

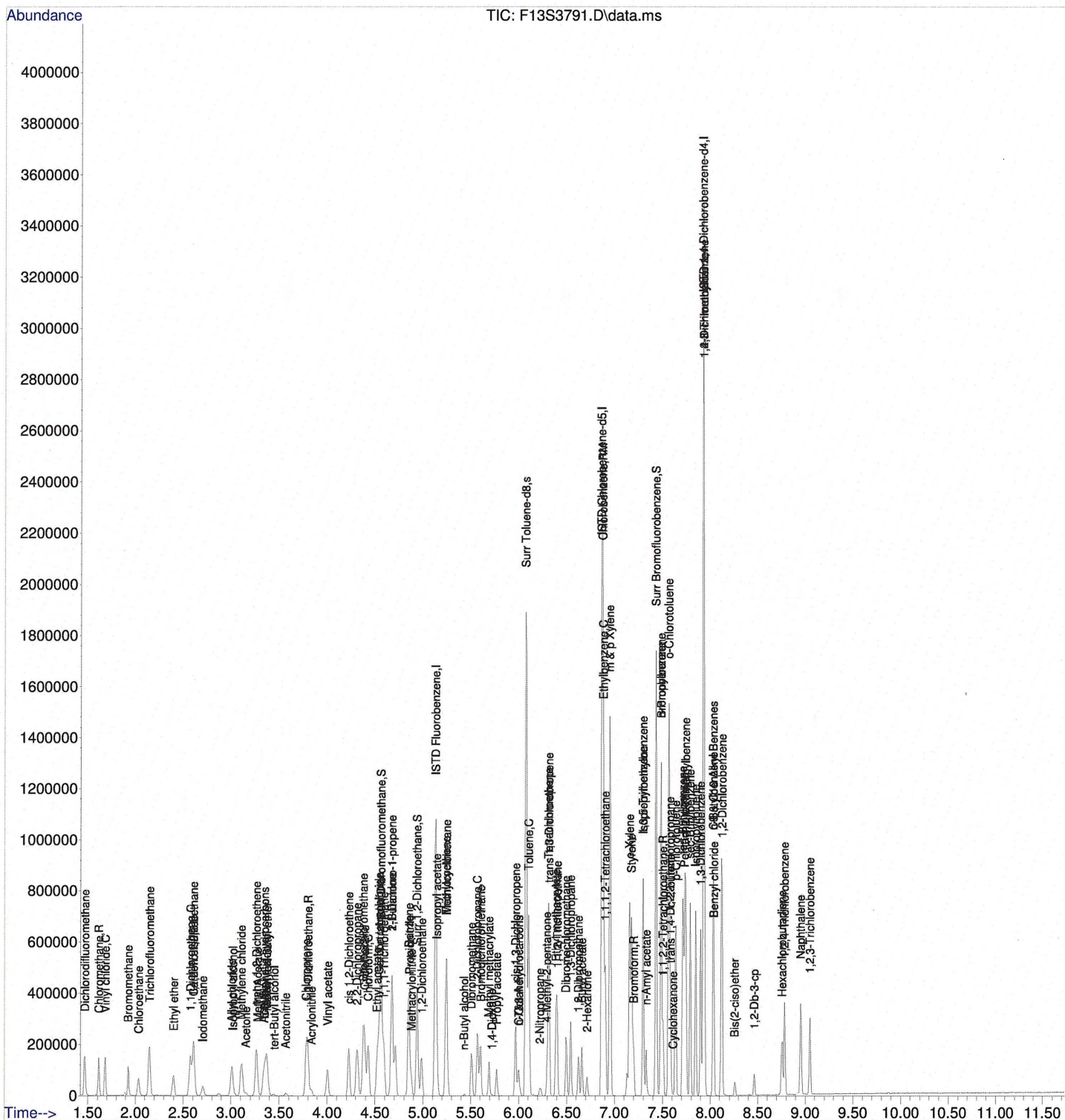
Quant Time: Jun 26 08:15:54 2012  
Quant Method : C:\MSDCHEM\1\METHODS\DFULLW\_01.M  
Quant Title : VOA Calibration  
QLast Update : Fri May 18 13:38:02 2012  
Response via : Initial Calibration





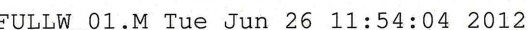
Data Path : C:\msdchem\1\data\JUN12-D\26JUN12\  
Data File : F13S3791.D  
Acq On : 26 Jun 2012 9:45 am  
Operator : AH  
Sample : 1206379-001AMS  
Misc : MS 5.0ML 10F3 SB  
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 26 11:52:10 2012  
Quant Method : C:\MSDCHEM\1\METHODS\DFULLW\_01.M  
Quant Title : VOA Calibration  
QLast Update : Fri May 18 13:38:02 2012  
Response via : Initial Calibration





Quant Time: Jun 26 11:53:41 2012  
Quant Method : C:\MSDCHEM\1\METHODS\DFULLW\_01.M  
Quant Title : VOA Calibration  
QLast Update : Fri May 18 13:38:02 2012  
Response via : Initial Calibration





# American West Analytical Laboratories

UL  
Denison

## WORK ORDER Summary

**Client:** Denison Mines

**Client ID:** DEN100

**Project:** Seeps and Springs 2012

**Comments:** PA Rush. QC 3 & Summary. EDD-EIM into Locus Database. Report THF to 1 µg/L. Samples for metals are field filtered.;

**Contact:** Jo Ann Tischler

**QC Level:** LEVEL III

**Work Order:** 1206379

Page 1 of 1 6/22/2012

**WO Type:** Project

DB

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel	Storage	
1206379-001A	Entrance Seep	6/20/2012 1015h	6/22/2012 1030h	7/3/2012	Aqueous	8260-W	<input checked="" type="checkbox"/>	VOCFridge	3
1206379-001B						200.8-DIS	<input checked="" type="checkbox"/>	df - dis met	1
	SEL Analytes: SN								
1206379-002A	Ruin Spring	6/20/2012 0920h				8260-W	<input checked="" type="checkbox"/>	VOCFridge	3
1206379-002B						200.8-DIS	<input checked="" type="checkbox"/>	df - dis met	1
	SEL Analytes: SN								
1206379-003A	Cottonwood Spring	6/20/2012 0745h				8260-W	<input checked="" type="checkbox"/>	VOCFridge	3
1206379-003B						200.8-DIS	<input checked="" type="checkbox"/>	df - dis met	1
	SEL Analytes: SN								
1206379-004A	Back Spring					8260-W	<input checked="" type="checkbox"/>	VOCFridge	3
1206379-004B						200.8-DIS	<input checked="" type="checkbox"/>	df - dis met	1
	SEL Analytes: SN								
1206379-005A	Trip Blank	6/20/2012				8260-W	<input checked="" type="checkbox"/>	VOCFridge	3





**DENISON  
MINES**

## CHAIN OF CUSTODY

Contact: Garrin Palmer or David Turk  
Ph: 435 678 2221  
[gpalmer@denisonmines.com](mailto:gpalmer@denisonmines.com)  
[dturk@denisonmines.com](mailto:dturk@denisonmines.com)  
[tholliday@denisonmines.com](mailto:tholliday@denisonmines.com)

[illegible]

Relinquished By:(Signature) <i>Janner Holladay</i>	Date/Time 6/21/2012 1100	Received By:(Signature)	Date/Time
Relinquished By:(Signature)	Date/Time	Received By:(Signature) <i>Denise Breese</i>	Date/Time 6/22/12 10:30

4.50

Lab Set ID: 1206379DB 6/22/12

<b>Samples Were:</b>		<b>COC Tape Was:</b>		<b>Container Type:</b>		<b>No. Rec.</b>	
<input checked="" type="checkbox"/> Shipped By: <u>Fed Ex</u>		<b>Present on Outer Package</b>		<input type="checkbox"/> AWAL Supplied Plastic			
<input type="checkbox"/> Hand Delivered		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> AWAL Supplied Clear Glass			
<input type="checkbox"/> Ambient		<b>Unbroken on Outer package</b>		<input type="checkbox"/> AWAL Supplied Amber Glass			
<input checked="" type="checkbox"/> Chilled		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> AWAL Supplied VOA/TOC/TOX Vials			
Temperature <u>4.5</u> °C		<b>Present on Sample</b>		<input type="checkbox"/> Amber <input type="checkbox"/> Clear <input type="checkbox"/> Headspace <input type="checkbox"/> No Headspace			
Rec. Broken/Leaking <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Non AWAL Supplied Container			
<b>Notes:</b>		<b>Unbroken on Sample</b>		<b>Notes:</b>			
<input checked="" type="checkbox"/> Properly Preserved <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		<b>Discrepancies Between Labels and COC</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <b>Notes:</b>			
<b>Notes:</b>		<b>Notes:</b>					
Rec. Within Hold <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
<b>Notes:</b>							

Bottle Type	Preservative	All pHs OK	-001	-002	-003	-004														
Ammonia	pH <2 H <sub>2</sub> SO <sub>4</sub>																			
COD	pH <2 H <sub>2</sub> SO <sub>4</sub>																			
Cyanide	pH >12 NaOH																			
Metals	pH <2 HNO <sub>3</sub>		yes	yes	yes	yes														
NO <sub>2</sub> & NO <sub>3</sub>	pH <2 H <sub>2</sub> SO <sub>4</sub>																			
Nutrients	pH <2 H <sub>2</sub> SO <sub>4</sub>																			
O & G	pH <2 HCL																			
Phenols	pH <2 H <sub>2</sub> SO <sub>4</sub>																			
Sulfide	pH > 9NaOH, ZnAC																			
TKN	pH <2 H <sub>2</sub> SO <sub>4</sub>																			
TOC	pH <2 H <sub>3</sub> PO <sub>4</sub>																			
T PO <sub>4</sub>	pH <2 H <sub>2</sub> SO <sub>4</sub>																			
TPH	pH <2 HCL																			

- Procedure:
- 1) Pour a small amount of sample in the sample lid
  - 2) Pour sample from Lid gently over wide range pH paper
  - 3) Do Not dip the pH paper in the sample bottle or lid
  - 4) If sample is not preserved properly list its extension and receiving pH in the appropriate column above
  - 5) Flag COC and notify client for further instructions
  - 6) Place client conversation on COC
  - 7) Samples may be adjusted at client request





Jo Ann Tischler  
Denison Mines  
1050 17th Street, # 950  
Denver, CO 80265  
TEL: (303) 389-4132

RE: Seeps and Springs 2012

Dear Jo Ann Tischler:

Lab Set ID: 1207214

463 West 3600 South  
Salt Lake City, UT 84115

American West Analytical Laboratories received 4 sample(s) on 7/16/2012 for the analyses presented in the following report.

Phone: (801) 263-8686  
Toll Free: (888) 263-8686  
Fax: (801) 263-8687  
e-mail: awal@awal-labs.com  
web: www.awal-labs.com

American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Association Conference (NELAC) Institute in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, and Missouri. In addition, AWAL is also accredited by the American Analytical Laboratory Association (A2LA) on ISO IEC 17025:2005, Department of Defense (DOD), UST for the State of Wyoming, and the National Lead Laboratory Accreditation Program (NLLAP). All analyses were performed in accordance to The NELAC Institute and/or A2LA protocols unless noted otherwise. Accreditation documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Thank You,

**Kyle F. Gross**  
Digitally signed by Kyle F. Gross  
DN: cn=Kyle F. Gross, o=AWAL,  
ou=AWAL, email=kyle@awal-  
labs.com, c=US  
Date: 2012.07.23 14:09:42 -06'00'

Approved by:

Laboratory Director or designee



## SAMPLE SUMMARY

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Set ID:** 1207214  
**Date Received:** 7/16/2012 945h

**Contact:** Jo Ann Tischler

463 West 3600 South  
Salt Lake City, UT 84115

Lab Sample ID	Client Sample ID	Date Collected		Matrix	Analysis
1207214-001A	Entrance Seep	6/20/2012	1015h	Aqueous-	ICPMS Metals, Dissolved
1207214-002A	Ruin Spring	6/20/2012	920h	Aqueous-	ICPMS Metals, Dissolved
1207214-003A	Cottonwood Spring	6/20/2012	745h	Aqueous-	ICPMS Metals, Dissolved
1207214-004A	Back Spring	6/20/2012	745h	Aqueous-	ICPMS Metals, Dissolved

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web: [www.awal-labs.com](http://www.awal-labs.com)

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer





## Inorganic Case Narrative

**Client:**  
**Contact:**  
**Project:**  
**Lab Set ID:**

Denison Mines  
Jo Ann Tischler  
Seeps and Springs 2012  
1207214

---

463 West 3600 South  
Salt Lake City, UT 84115

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web: www.awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

### **Sample Receipt Information:**

<b>Date of Receipt:</b>	7/16/2012
<b>Date of Collection:</b>	6/20/2012
<b>Sample Condition:</b>	Intact
<b>C-O-C Discrepancies:</b>	None

**Holding Time and Preservation Requirements:** The analysis of all samples was performed within the method holding times. All samples were properly preserved.

**Preparation and Analysis Requirements:** The samples were analyzed following the methods stated on the analytical reports. The samples were not digested pursuant to the client request.

**Analytical QC Requirements:** All instrument calibration and calibration check requirements were met. All internal standard recoveries met method criterion.

**Corrective Action:** None required.



## INORGANIC ANALYTICAL REPORT

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Sample ID:** 1207214-001  
**Client Sample ID:** Entrance Seep  
**Collection Date:** 6/20/2012 1015h  
**Received Date:** 7/16/2012 945h

**Contact:** Jo Ann Tischler

### Analytical Results

### DISSOLVED METALS

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Tin	mg/L		7/21/2012 1844h	E200.8	0.00500	< 0.00500	

*This sample was not digested pursuant to the client request.*

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web: [www.awal-labs.com](http://www.awal-labs.com)

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer





## INORGANIC ANALYTICAL REPORT

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Sample ID:** 1207214-002  
**Client Sample ID:** Ruin Spring  
**Collection Date:** 6/20/2012 920h  
**Received Date:** 7/16/2012 945h

**Contact:** Jo Ann Tischler

### **Analytical Results**

### **DISSOLVED METALS**

<b>Compound</b>	<b>Units</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Method Used</b>	<b>Reporting Limit</b>	<b>Analytical Result</b>	<b>Qual</b>
Tin	mg/L		7/21/2012 1849h	E200.8	0.00500	< 0.00500	

*This sample was not digested pursuant to the client request.*

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web: www.awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer



## INORGANIC ANALYTICAL REPORT

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Sample ID:** 1207214-003  
**Client Sample ID:** Cottonwood Spring  
**Collection Date:** 6/20/2012 745h  
**Received Date:** 7/16/2012 945h

**Contact:** Jo Ann Tischler

### Analytical Results

### DISSOLVED METALS

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Tin	mg/L		7/21/2012 1853h	E200.8	0.00500	< 0.00500	

*This sample was not digested pursuant to the client request.*

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Salt Lake City, UT 84115

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web: www.awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer





## INORGANIC ANALYTICAL REPORT

**Client:** Denison Mines  
**Project:** Seeps and Springs 2012  
**Lab Sample ID:** 1207214-004  
**Client Sample ID:** Back Spring  
**Collection Date:** 6/20/2012 745h  
**Received Date:** 7/16/2012 945h

**Contact:** Jo Ann Tischler

### Analytical Results

### DISSOLVED METALS

463 West 3600 South  
Salt Lake City, UT 84115

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Tin	mg/L		7/21/2012 1858h	E200.8	0.00500	< 0.00500	

*This sample was not digested pursuant to the client request.*

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e-mail: awal@awal-labs.com  
web: www.awal-labs.com

Kyle F. Gross  
Laboratory Director

Jose Rocha  
QA Officer

# American West Analytical Laboratories

UL  
Denison

## WORK ORDER Summary

**Client:** Denison Mines

**Client ID:** DEN100

**Project:** Seeps and Springs 2012

**Comments:** PA Rush. QC 3 & Summary. EDD-EIM into Locus Database. Metals Split. Samples are were field filtered.;

**Contact:** Jo Ann Tischler

**QC Level:** LEVEL III

**Work Order:** 1207214

Page 1 of 1 7/19/2012

**WO Type:** Project

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel	Storage	
1207214-001A	Entrance Seep SEL Analytes: SN	6/20/2012 1015h	7/16/2012 0945h	7/26/2012	Aqueous-Dissolved	200.8-DIS	<input checked="" type="checkbox"/>	df - metals	1
1207214-002A	Ruin Spring SEL Analytes: SN	6/20/2012 0920h				200.8-DIS	<input checked="" type="checkbox"/>	df - metals	
1207214-003A	Cottonwood Spring SEL Analytes: SN	6/20/2012 0745h				200.8-DIS	<input checked="" type="checkbox"/>	df - metals	
1207214-004A	Back Spring SEL Analytes: SN					200.8-DIS	<input checked="" type="checkbox"/>	df - metals	



1207214



# Chain of Custody and Analytical Request Record

Page 1 of 1

PLEASE PRINT (Provide as much information as possible.)

Company Name: <b>Denison Mines</b>	Project Name, PWS, Permit, Etc. <b>Seeps and Springs 2012</b>	Sample Origin State: <b>UT</b>	EPA/State Compliance: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Report Mail Address: <b>PO BOX 809 Blanding UT 84511</b>	Contact Name: <b>Garrin Palmer</b>	Phone/Fax: <b>435 678 2221</b>	Email: <b>Tanner Holliday</b>
Invoice Address: <b>Same</b>	Invoice Contact & Phone: <b>David Turk 435 678 2221</b>	Purchase Order:	Quote/Bottle Order:

## Special Report/Formats:

- ☐ DW  
☐ POTW/WWTP  
☐ State: \_\_\_\_\_  
☐ Other: \_\_\_\_\_
- ☐ EDD/EDT (Electronic Data)  
 Format: \_\_\_\_\_  
☐ LEVEL IV  
☐ NELAC

Number of Containers  
Sample Type: A W S V B O DW  
Air Water Soils/Solids  
Vegetation Bioassay Other  
DW - Drinking Water

## ANALYSIS REQUESTED

SEE ATTACHED

Standard Turnaround (TAT)

R  
U  
S  
H

Contact ELI prior to  
**RUSH** sample submittal  
for charges and  
scheduling - See  
Instruction Page

Comments:

Shipped by:  
**FE-NDA**

Cooler ID(s):

**client**

Receipt Temp  
**2.2 °C**

On Ice: ☒ N

Custody Seal

On Bottle ☒ N

On Cooler ☒ N

Intact ☒ N

Signature Match ☒ N

LABORATORY USE ONLY

SAMPLE IDENTIFICATION (Name, Location, Interval, etc.)	Collection Date	Collection Time	MATRIX
1 Entrance Seep	6/20/12	1015	6-W X
2 Ruin Spring	6/20/12	0920	6-W X
3 Cottonwood Spring	6/20/12	0745	6-W X
4 Back Spring	6/20/12	0745	6-W X
5 Trip Blank 6746	6/20/12		
6 Temp Blank			
7			
8			
9			
10			

Forwarded  
metals splits to  
AWAL per Kathy W.  
for Tin analysis. 7-13-12 KLS

<b>Custody Record MUST be Signed</b>	Relinquished by (print): <b>Tanner Holliday</b>	Date/Time: <b>6/21/2012 1100</b>	Signature: <i>Tanner Holliday</i>	Received by (print): <b>Denise Bruun</b>	Date/Time: <b>7/16/12 9:45</b>	Signature: <i>Denise Bruun</i>
	Relinquished by (print): <b>Ken Schaefer</b>	Date/Time: <b>7/13/12 11:10</b>	Signature: <i>Ken Schaefer</i>	Received by (print): <b>Denise Bruun</b>	Date/Time: <b>7/16/12 9:45</b>	Signature: <i>Denise Bruun</i>
	Sample Disposal:	Return to Client:	Lab Disposal:	Received by Laboratory:	Date/Time: <b>6-27-12 9:50</b>	Signature: <b>KLS G:32</b>

Lab Set ID: 120724

DB 7/16/12

<b>Samples Were:</b>	<b>COC Tape Was:</b>	<b>Container Type:</b>	<b>No. Rec.</b>
<input checked="" type="checkbox"/> Shipped By: <u>FedEx</u>	<b>Present on Outer Package</b>	<input type="checkbox"/> AWAL Supplied Plastic	
<input type="checkbox"/> Hand Delivered	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> AWAL Supplied Clear Glass	
<input checked="" type="checkbox"/> Ambient	<b>Unbroken on Outer package</b>	<input type="checkbox"/> AWAL Supplied Amber Glass	
<input type="checkbox"/> Chilled	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	<input type="checkbox"/> AWAL Supplied VOA/TOC/TOX Vials	
Temperature <u>17.2</u> °C	<b>Present on Sample</b>	<input type="checkbox"/> Amber <input type="checkbox"/> Clear <input type="checkbox"/> Headspace <input type="checkbox"/> No Headspace	
Rec. Broken/Leaking <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Non AWAL Supplied Container	
<b>Notes:</b>	<b>Unbroken on Sample</b>	<b>Notes:</b>	
Properly Preserved <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
<b>Notes:</b>	<b>Notes:</b>		
Rec. Within Hold <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>Discrepancies Between Labels and COC</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Notes:</b>		<b>Notes:</b>	

Bottle Type	Preservative	All pHs OK
Ammonia	pH <2 H <sub>2</sub> SO <sub>4</sub>	
COD	pH <2 H <sub>2</sub> SO <sub>4</sub>	
Cyanide	PH >12 NaOH	
Metals	pH <2 HNO <sub>3</sub>	
NO <sub>2</sub> & NO <sub>3</sub>	pH <2 H <sub>2</sub> SO <sub>4</sub>	
Nutrients	pH <2 H <sub>2</sub> SO <sub>4</sub>	
O & G	pH <2 HCL	
Phenols	pH <2 H <sub>2</sub> SO <sub>4</sub>	
Sulfide	pH > 9NaOH, ZnAC	
TKN	pH <2 H <sub>2</sub> SO <sub>4</sub>	
TOC	pH <2 H <sub>3</sub> PO <sub>4</sub>	
T PO <sub>4</sub>	pH <2 H <sub>2</sub> SO <sub>4</sub>	
TPH	pH <2 HCL	

Procedure:

- 1) Pour a small amount of sample in the sample lid
- 2) Pour sample from Lid gently over wide range pH paper
- 3) **Do Not** dip the pH paper in the sample bottle or lid
- 4) If sample is not preserved properly list its extension and receiving pH in the appropriate column above
- 5) Flag COC and notify client for further instructions
- 6) Place client conversation on COC
- 7) Samples may be adjusted at client request



Tab E

Quality Assurance and Data Validation Tables

**Table E-1 Holding Time Evaluation**

	Required Holding Time	Entrance Seep	Westwater Seep	Cottonwood Seep	Ruin Spring	Back Spring (duplicate of Cottonwood Seep)
<b>Major Ions</b>						
Carbonate	14 days	OK	Not Sampled - Dry	OK	OK	OK
Bicarbonate	14 days	OK		OK	OK	OK
Calcium	6 months	OK		OK	OK	OK
Chloride	28 days	OK		OK	OK	OK
Fluoride	28 days	OK		OK	OK	OK
Magnesium	6 months	OK		OK	OK	OK
Nitrogen-Ammonia	28 days	OK		OK	OK	OK
Nitrogen-Nitrate	28 days	OK		OK	OK	OK
Potassium	6 months	OK		OK	OK	OK
Sodium	6 months	OK		OK	OK	OK
Sulfate	28 days	OK		OK	OK	OK
pH (s.u.)	N/A	OK		OK	OK	OK
TDS	7 days	OK		OK	OK	OK
<b>Metals</b>	6 months (except mercury which is 28 days)	OK		OK	OK	OK
<b>Radiologics</b>	6 months	OK		OK	OK	OK
<b>VOCS (including THF)</b>	14 days	OK		OK	OK	OK



### E-2 Laboratory Receipt Temperature Check

Work Order Number/Lab Set ID	Receipt Temp
EL – C12060931	2.2°C
AWAL -1206379 (THF and Tin)	4.5°C
AWAL -1207214 (Tin)	N/A

N/A = These shipments contained samples for the analysis of tin only.  
Per Table 1 in all revisions of the approved QAPs that were in effect during this sampling period, (Revisions 6, 7.1 and 7.2), samples submitted for tin analyses do not have a sample temperature requirement.

**E-3: Analytical Method Check - Routine Samples**

Parameter	QAP/Permit Method	Method Used by Lab
Ammonia (as N)	A4500-NH3 G or E350.1	A4500-NH3 G
Nitrate + Nitrite (as N)	E353.1 or E353.2	E353.2
Metals except Iron	E 200.7 or E200.8	E200.8
Iron	E 200.7 or E200.8	E200.7
Gross Alpha	E900.0 or E900.1	E900.1
VOCs except Tetrahydrofuran	SW8260B or SW8260C	SW8260B
Tetrahydrofuran	SW8260B or SW8260C	SW8260C
Chloride	A4500-Cl B, A4500-Cl E, or E300.0	A4500-Cl B
Fluoride	A4500-F C or E300.0	A4500-F C
Sulfate	A4500-SO4 E or E300.0	A4500-SO4 E
TDS	A2540 C	A2540 C
Carbonate as CO <sub>3</sub> , Bicarbonate as HCO <sub>3</sub>	A2320 B	A2320 B
Calcium, Magnesium, Potassium, Sodium	E200.7	E200.7



#### E-4 Reporting Limit Evaluation

Parameter	Permit-Specified RL
Ammonia (as N)	25 mg/L
Nitrate + Nitrite (as N)	10 mg/L
<b>Metals ug/L</b>	
Arsenic	50
Beryllium	4
Cadmium	5
Chromium	100
Cobalt	730
Copper	1300
Iron	11000
Lead	15
Manganese	800
Mercury	2
Molybdenum	40
Nickel	100
Selenium	50
Silver	100
Thallium	2
Tin	17000
Uranium	30
Vanadium	60
Zinc	5000
Gross Alpha	15
<b>VOCs ug/L</b>	
Acetone	700
Benzene	5
Carbon tetrachloride	5
Chloroform	70
Chloromethane	30
MEK	4000
Methylene Chloride	5
Naphthalene	100
Tetrahydrofuran	46
Toluene	1000
Xylenes	10000
<b>Major Ions mg/L</b>	
Chloride	1
Fluoride	4
Sulfate	1
TDS	10
Carbonate as CO <sub>3</sub> , Bicarbonate as HCO <sub>3</sub>	Not Specified
Calcium, Magnesium, Potassium, Sodium	Not Specified

All analyses were reported to the required  
RLs unless noted in the text.

#### E-5: Trip Blank Evaluation

All trip blanks for the 2012 sampling program were nondetect.

Blank	Sample Date	Laboratory
1	6/20/2012	AWAL
2	6/20/2012	EL



**E-6 Duplicate Sample Relative Percent Difference**

Major Ions (mg/l)	Cottonwood Spring	Back Spring (Duplicate of Cottonwood Spring)	RPD %
Carbonate	<1	<1	N/C
Bicarbonate	326	326	0.0
Calcium	101	93.8	7.4
Chloride	149	121	20.7
Fluoride	0.38	0.38	0.0
Magnesium	27.7	25.5	8.3
Nitrogen-Ammonia	<0.05	<0.05	N/C
Nitrogen-Nitrate	<0.1	<0.1	N/C
Potassium	6.2	6.2	0.0
Sodium	247	223	10.2
Sulfate	356	366	2.8
pH (s.u.)	7.06	7.06	0.0
TDS	1040	1040	0.0
<b>Metals (ug/l)</b>			
Arsenic	<5	<5	N/C
Beryllium	< 0.5	< 0.5	N/C
Cadmium	<0.5	<0.5	N/C
Chromium	<25	<25	N/C
Cobalt	<10	<10	N/C
Copper	<10	<10	N/C
Iron	<30	<30	N/C
Lead	<1.0	<1.0	N/C
Manganese	<10	<10	N/C
Mercury	<0.5	<0.5	N/C
Molybdenum	<10	<10	N/C
Nickel	<20	<20	N/C
Selenium	<5	<5	N/C
Silver	<10	<10	N/C
Thallium	<0.5	<0.5	N/C
Tin	<100	<100	N/C
Uranium	8.17	8.56	4.7
Vanadium	<15	<15	N/C
Zinc	<10	<10	N/C
<b>Radiologics (pCi/l)</b>			
Gross Alpha	<-0.2	<0.07	N/C
<b>VOCS (ug/L)</b>			
Acetone	ND	ND	N/C
Benzene	ND	ND	N/C
Carbon tetrachloride	ND	ND	N/C
Chloroform	ND	ND	N/C

**E-6 Duplicate Sample Relative Percent Difference**

<b>Major Ions (mg/l)</b>	<b>Cottonwood Spring</b>	<b>Back Spring (Duplicate of Cottonwood Spring)</b>	<b>RPD %</b>
Chloromethane	ND	ND	N/C
MEK	ND	ND	N/C
Methylene Chloride	ND	ND	N/C
Naphthalene	ND	ND	N/C
Tetrahydrofuran	ND	ND	N/C
Toluene	ND	ND	N/C
Xylenes	ND	ND	N/C



### E-7 Radiologics Counting Error

Sample ID	Gross Alpha minus Rn & U	Gross Alpha minus Rn & U Precision ( $\pm$ )	Counting Error $\leq$ 20%	GWQS	Within GWQS
Entrance Seep	0.5	0.4	NA	15	NA
Westwater Seep	NS	NS	NA	15	NA
Cottonwood Seep	<-0.2	0.2	NA	15	NA
Ruin Spring	<-0.09	0.3	NA	15	NA
Back Spring (duplicate of Cottonwood Seep)	<0.07	0.3	NA	15	NA

NS - Westwater Seep was dry and not  
sampled 2012

E-8: Laboratory Matrix QC

**Matrix Spike % Recovery Comparison**

Lab Report	Well	Analyte	MS %REC	MSD %REC	REC Range	RPD
C12060931	Cottonwood Spring	Benzene	144	95	70-130	41
C12060931	Cottonwood Spring	Chloromethane	74	94	70-130	23
C12060931	Cottonwood Spring	Toluene	146	108	70-130	30
C12060931	N/A	Carbon Tetrachloride	96	48	70-130	66
C12060931	N/A	Chloromethane	130	145	70-130	10
C12060931	N/A	Toluene	109	232	70-130	66

NA = MS samples were not Denison samples.

**Surrogate % Recovery**

Lab Report	Well/Sample	Analyte	Surrogate %REC	Lab Specified REC Range	QAP Required Range
C12060931	Entrance Spring	1,2-Dichlorobenzene	126	80 - 120	None
C12060931	Entrance Spring	p-Bromofluorobenzene	146	80 - 120	None
C12060931	Ruin Spring	1,2-Dichlorobenzene	122	80 - 120	None
C12060931	Ruin Spring	p-Bromofluorobenzene	140	80 - 120	None
C12060931	Cottonwood Spring	1,2-Dichlorobenzene	122	80 - 120	None
C12060931	Cottonwood Spring	p-Bromofluorobenzene	138	80 - 120	None
C12060931	Back Spring	p-Bromofluorobenzene	133	80 - 120	None
C12060931	Trip Blank	1,2-Dichlorobenzene	121	80 - 120	None
C12060931	Trip Blank	p-Bromofluorobenzene	138	80 - 120	None
C12060931	Method Blank	1,2-Dichlorobenzene	121	80 - 120	None
C12060931	Method Blank	p-Bromofluorobenzene	136	80 - 120	None
C12060931	Cottonwood Spring (Matrix Spike)	Toluene-d8	171	80 - 120	None
C12060931	Cottonwood Spring (Matrix Spike Duplicate)	Toluene-d8	123	80 - 120	None
C12060931	Method Blank	1,2-Dichlorobenzene	121	80 - 120	None
C12060931	Method Blank	p-Bromofluorobenzene	132	80 - 120	None
C12060931	N/A (Matrix Spike Duplicate)	Toluene-d8	233	80 - 120	None

NA = MS samples were not Denison samples.

**Method/Laboratory Reagent Blank detections**

Lab Report	Well/Sample	Analyte	Reported Concentration
C12060931	MB	Bicarbonate	1.62 mg/L



## Kathy Weinel

---

**From:** Kathy Weinel  
**Sent:** Wednesday, November 21, 2012 8:52 AM  
**To:** 'rlundberg@utah.gov'  
**Cc:** Dean Henderson; 'Phillip Goble'; Harold Roberts; David Frydenlund; Jo Ann Tischler; Jaime Massey; David Turk; N. Tanner Holliday; Garrin Palmer  
**Subject:** Transmittal of CSV Files White Mesa Mill 2012 Seeps and Springs Monitoring  
**Attachments:** C12060931.csv; 1207214-EDD.csv; 1206379-EDD.csv

Mr. Lundberg,

Attached to this e-mail are electronic copies of laboratory results for annual seeps and springs monitoring conducted at the White Mesa Mill during 2012, in Comma Separated Value (CSV) format.

Please contact me at 303-389-4134 if you have any questions on this transmittal.

Yours Truly

Kathy Weinel

Tab G

DRC Correspondence Regarding Annual Seeps and Springs Reports and Data Use



This attachment has been intentionally left blank.