Energy Fuels Resources (USA) Inc.
225 Union Blvd. Suite 600
Lakewood, CO, US, 80228
303 974 2140
www.energyfuels.com

DRC-2018-012000

November 9, 2018

Sent VIA OVERNIGHT DELIVERY

Mr. Scott Anderson
Director
Division of Waste Management and Radiation Control
Utah Department of Environmental Quality
195 North 1950 West
P.O. Box 144850
Salt Lake City, UT 84114-4820

Re: Transmittal of Annual Tailings System Wastewater Monitoring Report
Groundwater Quality Discharge Permit UGW370004 White Mesa Uranium Mill

Dear Mr. Anderson:

Enclosed are two copies of the White Mesa Uranium Mill Annual Tailings System Wastewater Monitoring Report for 2018 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,

Kathy Weinel

ENERGY FUELS RESOURCES (USA) INC.
Kathy Weinel
Quality Assurance Manager

cc: Scott A. Bakken
Mark Chalmers
Terry Slade
Dave Frydenlund
Logan Shumway
Paul Goranson

Energy Fuels Resources (USA) Inc.
225 Union Blvd. Suite 600
Lakewood, CO, US, 80228
303 974 2140
www.energyfuels.com

November 9, 2018

Sent VIA OVERNIGHT DELIVERY

Mr. Scott Anderson
Director
Division of Waste Management and Radiation Control
Utah Department of Environmental Quality
195 North 1950 West
P.O. Box 144850
Salt Lake City, UT 84114-4820

Re: Transmittal of Annual Tailings System Wastewater Monitoring Report
Groundwater Quality Discharge Permit UGW370004 White Mesa Uranium Mill

Dear Mr. Anderson:

Enclosed are two copies of the White Mesa Uranium Mill Annual Tailings System Wastewater Monitoring Report for 2018 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,

Kathy Weinel

ENERGY FUELS RESOURCES (USA) INC.
Kathy Weinel
Quality Assurance Manager

cc: Scott A. Bakken
Mark Chalmers
Terry Slade
Dave Frydenlund
Logan Shumway
Paul Goranson

White Mesa Uranium Mill

2018 Annual Tailings System Wastewater Sampling Report

State of Utah
Groundwater Discharge Permit No. UGW370004

Prepared by:

Energy Fuels Resources (USA) Inc.
225 Union Boulevard, Suite 600
Lakewood, CO 80228

November 9, 2018

TABLE OF CONTENTS

1.0 INTRODUCTION 1
2.0 SUMMARY OF MILL TAILINGS SYSTEM ACTIVITIES IN 2017 1
2.1 Cell 1 2
2.2 Cell 2 2
2.3 Cell 3 2
2.4 Cell 4A 2
2.4 Cell 4B 2
3.0 SAMPLING EVENTS AND SAMPLING METHODOLOGY 2
3.1 Sampling Events 2
3.2 Field Data 3
3.3 Sampling Methodology, Equipment and Decontamination Procedures 3
3.3.1 Cells 4
3.3.2 Cell 2 Slimes Drain 4
3.3.3 Cell 4A Leak Detection Systems 4
3.3.4 Cell 4B Leak Detection Systems 4
3.3.5 Cells 1, 2, 3, ... 4
3.4 Field QC Samples 4
3.5 Laboratory Results 5
4.0 QUALITY ASSURANCE AND DATA EVALUATION 5
4.1 Adherence to Sampling Plan and Permit Requirements 5
4.2 Analyte Completeness Review 6
4.3 Data Validation 6
4.3.1 Field Data QA/QC Evaluation 6
4.3.2 Holding Time Evaluation 6
4.3.3 Laboratory Receipt Temperature Check 6
4.3.4 Analytical Method Check 7
4.3.5 Reporting Limit Evaluation 7
4.3.6 Trip Blank Evaluation 7
4.3.7 QA/QC Evaluation for Sample Duplicates 7
4.3.8 Radiologic Counting Error 8
4.3.9 Laboratory Matrix QC Evaluation 9

5.0 HISTORIC DATA 11
6.0 SUMMARY AND CONCLUSIONS 11
6.1 Cell 1 11
6.2 Cell 3 12
6.3 Cell 4A 12
6.4 Cell 4B 13
6.5 Cell 2 Slimes Drain 14
6.6 Cells 3, 4A and 4B Slimes Drain 14
6.7 Cell 2 Leak Detection System 14
6.8 Cells 1 and 3 Leak Detection System 14
6.9 Cell 4A Leak Detection System 14
6.10 Cell 4B Leak Detection System 15
6.11 Summary and Conclusions of Analytical Results 15
7.0 CORRECTIVE ACTION REPORT 15
7.1 Assessment of Corrective Actions from Previous Period 16
8.0 SIGNATURE AND CERTIFICATION 17

LIST OF TABLES

Table 1 Summary of Tailings System Wastewater Monitoring

INDEX OF TABS

Tab A Tailings and Slimes Drain Field Sheets

Tab B Sample Location Figures

Tab C Laboratory Analytical Reports

Tab D Chemical and Radiological Summary Tables

Tab E Quality Assurance and Data Validation Tables
- E-1 Holding Time Evaluation
- E-2 Laboratory Receipt Temperature Check
- E-3 Analytical Method Check
- E-4 Reporting Limit Evaluation
- E-5 Trip Blank Evaluation
- E-6 QA/QC Evaluation for Sample Duplicates
- E-7 Radiologic Counting Error
- E-8 Laboratory Matrix QC Evaluation

2018 ANNUAL TAILINGS SYSTEM WASTEWATER SAMPLING REPORT

1.0 INTRODUCTION

This is the 2018 Annual Tailings System Wastewater Sampling Report for the Energy Fuels Resources (USA) Inc. ("EFRI") White Mesa Mill (the "Mill"), as required under Part I.F.9 of the Mill's State of Utah Groundwater Discharge Permit No. UGW370004 (the "Permit") and Section 6.0 of the *Mill's Sampling and Analysis Plan for The Tailings Management System, Leak Detection Systems and Slimes Drains,* Revision: 3.0, dated July 8, 2016 (the "Sampling Plan") and approved by the State of Utah Division of Waste Management and Radiation Control (the "DWMRC" on August 8, 2016.

Cell solution and slimes drain sampling is required under the Sampling Plan and Part I.E.10 of the Permit to be conducted on an annual basis in August of each year for the solutions in Cells 1, 3, 4A, and 4B, the solutions in the slimes drains in Cells 2, 3, 4A, and 4B (for Cells 3, 4A and 4B after the commencement of dewatering), the solutions in the leak detection system (the "LDS") in Cell 4A and 4B and any detected solutions in the LDS in Cells 1, 2, and 3 at the time of the August Sampling event. The results of the sampling event are required to be reported to the DWMRC with the Mill's Third Quarter Groundwater Monitoring Report due December 1, of each year.

2.0 SUMMARY OF MILL TAILINGS SYSTEM ACTIVITIES IN 2017

This section provides a brief description of the Mill's tailings management system, and any changes that were made as a result of Mill activities during the reporting year. A description of which systems were sampled is provided in Section 3.0.

The Mill is designed not to discharge to groundwater or surface waters. Instead, the Mill tailings system utilizes tailings and evaporation cells for disposal, evaporation, and management of Mill tailings, effluents, and other wastes as indicated below:

- Cell 1: dedicated to evaporation of Mill waste solutions;
- Cell 2: contains Mill tailings and has been closed to tailings disposal since 1995 and 11e.(2) byproduct materials since 2000. Cell 2 Phase 1 cover placement commenced in April 2016;
- Cell 3: contains Mill tailings and is in the final stages of filling. It also accepts other Mill wastes and 11e.(2) material from in-situ recovery ("ISR") operations;
- Cell 4A: receives Mill tailings and is used for evaporation of Mill solutions; and
- Cell 4B: is used for evaporation of Mill solutions.

2.1 Cell 1

Cell 1 is a 55-acre impoundment built in June of 1981. It operates as an evaporation pond which receives solutions only. Cell 1 is equipped with a LDS. In 2018, Cell 1 received fluid from the Mill process, storm water run-off, and Mill laboratory waste. The LDS in Cell 1 was dry in 2018.

2.2 Cell 2

Cell 2 is a 67-acre impoundment built in May of 1980. Cell 2 contains Mill tailings and has been closed to tailings disposal since 1995 and 11e.(2) byproduct materials since 2000. Cell 2 Phase 1 cover placement commenced in April 2016. Cell 2 is equipped with a LDS and a slimes drain. The LDS was dry in 2018. As part of closure activities, EFRI began monitoring the slimes drain system in 2008. The fluid from the slimes drain is pumped to Cell 4A. Cell 2 no longer receives any solutions or solids.

2.3 Cell 3

Cell 3 is a 71-acre impoundment built in September 1982. Cell 3 is nearly full of solids and is undergoing pre-closure steps. This cell is equipped with a LDS and a slimes drain. The LDS was dry in 2018 and the slimes drain system will be monitored once dewatering begins. In 2018, Cell 3 received solid Mill waste and solid 11e.2 byproduct material from in situ recovery ("ISR") facilities.

2.4 Cell 4A

Cell 4A is a 40-acre impoundment built in 2008. This cell is equipped with a LDS and a slimes drain. The slimes drain system will be monitored once dewatering begins. The LDS in Cell 4A was sampled in 2018, as described below. In 2018, Cell 4A received solutions from the Mill process, and solid tailings sands.

2.4 Cell 4B

Cell 4B is a 40-acre impoundment built in 2011. It operates as an evaporation pond which receives solutions only. Cell 4B is equipped with a LDS. In 2018, Cell 4B received fluid from the Mill process. The LDS in Cell 4B was sampled in 2018, as described below.

3.0 SAMPLING EVENTS AND SAMPLING METHODOLOGY

3.1 Sampling Events

Samples of solutions from Cells 1, 3, 4A, and 4B, the Cell 2 slimes drain and the Cell 4A and Cell 4B LDSs were collected on August 1, 2018. Upon receipt of the data, review of the Semivolatile Organic Compounds ("SVOCs") data indicated that the laboratory was unable to meet the required reporting limits ("RLs") for the SVOCs on the Cell 1 and Cell 3 Tailings Fluid samples collected August 1, 2018. EFRI notified DWMRC via telephone of the raised RL and

the likely reasons for the difficulty. DWMRC directed EFRI to recollect the samples from Cell 1 and Cell 3 to attempt to address the raised RLs. DWMRC noted that if the resampling did not address the issue, no further sampling was required. This additional sampling event on September 5, 2018, did result in data with acceptable RLs, and no further sampling was conducted after that date.

In accordance with the Permit, DWMRC was notified of the sampling event, and a DWMRC representative was present for a part of the sampling. The DWMRC representative collected a split sample aliquots.

Maps showing the locations of the solution and slimes drain and, when applicable, LDS sampling locations are attached under Tab B. Table 1, included in the Tables Tab, provides an overview of all solution monitoring samples collected during the current period and includes the sampling date, laboratory report date, and the work order/lab set ID associated with the analytical data.

The Permit requires that the samples be analyzed for the water quality parameters listed in Table 2 of the Permit and SVOCs.

Additionally, in order to further characterize the radiological constituents and physical properties of the solution, EFRI conducted voluntary analyses on the August 1, 2018 samples for radium-226, thorium-228, thorium-230, thorium-232, uranium-233/234, uranium-235/236, uranium-238, and specific gravity. The additional data from the August 1, 2018 sampling event are included in separate data tables in Tab D. The gross alpha results have been evaluated and are included as required. These additional data are included in this report for informational purposes only. EFRI may or may not choose to continue these analyses in future sampling events.

3.2 Field Data

Attached under Tab A are copies of all of the field data sheets recorded in association with the annual tailings system monitoring program. Sampling dates are listed in Table 1.

3.3 Sampling Methodology, Equipment and Decontamination Procedures

As noted in the DWMRC-approved Sampling Plan, Revision 3.0, dated July 8, 2016, field filtering and preservation of metals and gross alpha sample aliquots was not completed due to safety concerns associated with the filtering apparatus and the backpressure created by the increased viscosity of these samples. The gross alpha and metals aliquots were filtered and preserved as necessary by the analytical laboratory. It is important to note that field preservation of the samples is to preclude biological growth and prevent the inorganic analytes from precipitating. Based on past field data, the cell solutions and LDS and slimes drain samples are at a pH of 3.0 or less at the time of collection without additional preservative. The addition of acidic preservatives in the field would add minimal if any protection from biological growth or precipitation. The VOC sample aliquots were preserved in the field.

3.3.1 Cells

Cell solution samples were collected at the cell sampling stations shown on the Figures in Tab B using approved procedures described in the DWMRC-approved Sampling Plan, Section 3.1.2.

Disposable or dedicated sampling equipment was used during this sampling event and, as such, rinsate samples were not required.

3.3.2 Cell 2 Slimes Drain

Once a tailings cell has started the dewatering procedures, a sample will be collected from the slimes drain system. At this time Cell 2 is the only slimes drain that requires sampling. The location of the slimes drain for Cell 2 is shown in Tab B. While Cells 3, 4A and 4B are equipped with slimes drain sample locations, Cells 3 and 4A are still active and Cell 4B is being used as an evaporation pond, and the slimes drains will not be pumped (and/or sampled) until dewatering operations have commenced.

The Cell 2 slimes drain, shown on the Figures in Tab B, was sampled using a disposable bailer as noted in the DWMRC-approved Sampling Plan, Section 3.1.3.

Due to the use of a disposable bailer, a rinsate sample was not required.

3.3.3 Cell 4A Leak Detection Systems

The Cell 4A LDS sample was collected from the sampling station shown on the Figures in Tab B using a dedicated stainless steel bucket and ladle as noted in the DWMRC-approved Sampling Plan, Section 3.2.2.

3.3.4 Cell 4B Leak Detection Systems

The Cell 4B LDS sample was collected from the sampling station shown on the Figures in Tab B using a dedicated stainless steel bucket and ladle as noted in the DWMRC-approved Sampling Plan, Section 3.2.2.

3.3.5 Cells 1, 2, 3,

The Cells 1, 2, 3 LDSs were not sampled during the 2018 sampling event because the systems were dry.

3.4 Field QC Samples

The field Quality Control ("QC") samples generated during this sampling event included one duplicate and one trip blank per shipment to each laboratory which received samples for VOCs. The duplicate sample (Cell 65) was submitted blind to the analytical laboratory. As previously

stated, no rinsate blanks were collected during this sampling event as only dedicated or disposable equipment was used for sample collection.

3.5 Laboratory Results

All analytical results were provided by one of the Mill's two contract analytical laboratories, GEL Laboratories ("GEL") or American West Analytical Laboratories ("AWAL").

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

The analytical data as well as the laboratory Quality Assurance ("QA")/QC summaries are included under Tab C.

4.0 QUALITY ASSURANCE AND DATA EVALUATION

The Permit requires that the annual tailings system wastewater 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"), the approved Sampling Plan and the Permit itself. To meet these requirements, the data validation completed for the tailings system wastewater sampling program and discussed in this Section utilized the requirements outlined in the QAP, the Permit and the approved Sampling Plan as necessary. The Mill Quality Assurance Manager ("QAM") performed a QA/QC review to confirm compliance of the monitoring program with the requirements of the Permit, the QAP, and the Sampling Plan. As required, 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 that were collected and analyzed is provided in Section 3.4 and 4.3.1. Discussion of adherence to the Sampling Plan is provided in Section 4.1. Analytical completeness review results are provided in Section 4.2. The steps and tests applied to check laboratory data QA/QC are discussed in Section 4.3.

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 Chain of Custody forms for each set of Analytical Results, follow the analytical results under Tab C. Results of review of the laboratory QA/QC information are provided under Tab E and discussed in Section 4.3, below.

4.1 Adherence to Sampling Plan and Permit Requirements

On a review of adherence by Mill personnel to the QA/QC requirements, the QAM observed that QA/QC requirements established in the Permit, the QAP, and the Sampling Plan were met, as discussed below.

4.2 Analyte Completeness Review

All analyses required by the Permit Table 2 were completed. In addition, all cell solution samples were analyzed for SVOCs as required by the Permit.

4.3 Data Validation

The QAP and the Permit identify the data validation steps and data quality control checks required for the tailings system wastewater monitoring program. Consistent with these requirements, the QAM 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.

4.3.1 Field Data QA/QC Evaluation

The QAM performs a review of all field recorded data to assess adherence with QAP, Permit, and Sampling Plan 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.

4.3.2 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 analyzed within the required holding time.

It is important to note that pH is analyzed by the laboratory and is not measured in the field because the acidic nature of the samples requires a more robust meter than what is available for field use. In most circumstances pH is measured at the time of sample collection and a holding time is not assessed. If pH is not measured at the time of collection, a 15-minute time limit is set. AWAL flagged the pH results with an "H" flag because the pH was measured beyond the 15-minute limit. This does not affect the usability of the data, as the sample matrices are stable and pH is collected for informational purposes only and there are no compliance criteria for pH measurements.

4.3.3 Laboratory Receipt Temperature Check

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

4.3.4 Analytical Method Check

All analytical methods reported by both laboratories were checked against the required methods specified in Table 1 of the QAP. It is important to note that neither the QAP nor the Permit specify a method for laboratory pH or conductivity. The QAM verified that the methods used by the laboratory were appropriate and provided accurate data. Analytical method check results are provided in Tab E.

4.3.5 Reporting Limit Evaluation

All analytical method reporting limits reported by both laboratories were checked against the reporting limits specified in the Permit. Section I.E.4 of the Permit requires the following Reporting Limits:

> "all water quality analyses reported shall have a minimum detection limit or reporting limit that is less than or equal to the respective:
>
> i. Ground Water Quality Standards ("GWQS") concentrations defined in Table 2 of this Permit,
>
> ii. For TDS, Sulfate, and Chloride, the Minimum Detection Limit for those constituents for Cell solution monitoring will be as follows: 1,000 mg/L, 1,000 mg/L, and 1 mg/L, respectively, and
>
> iii. Lower limits of quantitation for groundwater for semi-volatile organic compounds listed in Table 2 of EPA Method 8270D, Revision 4, dated February, 2007."

Reporting limit evaluations are provided in Tab E. All analytes were measured and reported to or reported below the required reporting limits except the Cell 1 and Cell 3 SVOCs as noted in Section 3.1. The Cell 1 and Cell 3 tailings fluid samples were recollected and the reanalyzed samples met the RL requirements of the Permit. In addition, several sets of sample results had the reporting limit raised for at least one analyte due to sample dilution. In all cases the reported value for the analyte was higher than the increased detection limit.

4.3.6 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 the reporting limit for all VOCs.

4.3.7 QA/QC Evaluation for Sample Duplicates

Section 9.1.4 a) of the QAP states that the relative percent difference (the "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 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 20% RPD except for fluoride, Nitrate-Nitrite as N ("nitrate"), chloroform, acetone, and gross alpha in the duplicate pair Cell 2 Slimes/Cell 65. The gross alpha duplicate results are discussed in Section 4.3.8 below. The acetone RPD is greater than 20%. The acetone sample and duplicate results reported for Cell 2 Slimes/Cell 65 were not five times greater than the RLs, and, as such, the deviation from the 20% RPD requirement is acceptable.

The fluoride, nitrate and chloroform results for the duplicate sample Cell 2 Slimes/Cell 65 did not meet the duplicate comparability check. Per the QAP, Revision 7.2, and in response to requests from DWMRC, a separate corrective action for duplicate RPDs outside of acceptance limits has been developed. The revised procedure for duplicate results outside of acceptance limits was implemented for the ammonia results in duplicate pair Cell 2 Slimes/Cell 65. The corrective actions that were taken in accordance with the revised procedure are as follows: the QAM 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 RPDs above the limit are likely due to interferences caused by the matrix, as discussed below. There is no effect on the usability of the data due to the duplicate results exceeding the comparability criteria because the matrix of the sample solution caused the noncompliance.

Results of the RPD test are provided under Tab E. The radiologic duplicates are discussed in Section 4.3.8 below.

4.3.8 Radiologic 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 Limit (the "GWCL") (for the tailings system wastewater samples the 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.

Results of routine radiologic sample QC are provided under Tab E. All tailings system wastewater radiologic sample results met the counting error requirement.

Section 9.1.4 of the QAP also requires a comparability check between the sample and field duplicate sample results utilizing the formula provided below:

$$| A\text{-}B | /(s_a^2+s_b^2)^{1/2} \leq 2$$

The original and duplicate sample did not meet the duplicate comparability check specified in the QAP for gross alpha. Results of the RPD test are provided under Tab E. Per QAP, Revision 7.2, and in response to requests from DWMRC, 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 gross alpha results in duplicate pair Cell 2 Slimes/Cell 65. 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 RPDs above the limit are likely due to interferences caused by the matrix as discussed below.

The lack of comparability of the gross alpha results is indicative of a matrix interference and does not affect the usability of the data. Matrix interference is most likely caused by high concentrations of TDS and other constituents in the sample.

4.3.9 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 QAM 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 CTF and GEL met these requirements. There were QC results which did not meet laboratory established acceptance limits, as identified in Tab E and described below.

A significant number of the tailings system wastewater samples had the RL raised for multiple analytes due to matrix interference and/or sample dilution. RL evaluations are discussed in Section 4.3.5.

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 QAM.

The QAP Section 8.1.2 requires that a MS/MSD pair be analyzed with each analytical batch, depending upon the analytical method requirements and/or method limitations. 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 the laboratory 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 tailings system wastewater samples were within acceptable laboratory limits for all regulated compounds except as indicated in Tab E. The recoveries and RPDs which are outside of the laboratory established acceptance limits do not affect the quality or usability of the data because the recoveries and RPDs outside of the acceptance limits are indicative of matrix interference. The recoveries outside of acceptance limits reported in these analyses were due to a matrix interference caused by high levels of metals and other inorganic constituents. 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.

Twenty-nine MS/MSD recoveries were not calculated because the analyte level in the natural sample was 4 times greater than the spike level added by the laboratory. It is not possible to calculate the MS/MSD recovery when the sample results are significantly higher than the spike amount added. In effect, the sample results mask the spike results and the calculations are not possible. There is no effect on the quality or usability of the data.

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 tailings system wastewater samples were within acceptable laboratory limits for all surrogate compounds except as indicated in Tab E.

There are fourteen surrogate recoveries outside of acceptance limits for the SVOC analyses. In all instances the surrogate recoveries outside of acceptance limits were the result of a matrix interference. A matrix interference resulted in the surrogate compounds being outside of the acceptance limits noted in Tab E. There are other surrogate compounds used for SVOC analyses which were all within acceptance limits. As such there is no effect on the quality or usability of the data. Since surrogate compounds were added to all of the organic analyses as required by the QAP, the data are compliant with the QAP requirements.

The information from the Laboratory QA/QC Summary Reports indicates that the LCS recoveries for the samples were within acceptable laboratory limits for all LCS compounds except as noted in Tab E. The LCS recovery for 2,4,6-trichlorophenol was above the laboratory established control limits. The high recovery indicates a possible high bias to samples with a reported detection, however, there were no reported detections of 2,4,6-trichlorophenol in any of the samples and there is no effect on the quality or usability of the data.

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 blank) will be used to evaluate any analytical laboratory contamination of environmental samples. The QAP criteria for method blanks states that nonconformance will exist when blanks are within an order of magnitude of the sample results. Methylene chloride was reported the method blank from AWAL. The QAP criteria were not met for methylene chloride because the method blank detections were not less than an order of magnitude of the sample results. The method blank detection indicates false positive results or high biased for methylene chloride in the samples. No specific corrective actions are specified in the QAP. The QAM alerted the laboratory so that AWAL could take measures to prevent recurrence. The QAP requirement to analyze a method blank with each batch and evaluate the results has been completed as required. Method blank results are included in Tab E.

5.0 HISTORIC DATA

The historic analytical data for the tailings system wastewater sampling program are included in Tab D. In addition, the minimum and maximum concentrations compiled in the DWMRC GWDP, Statement of Basis for a Uranium Mining Facility at White Mesa, South of Blanding, Utah, dated December 1, 2004 are included in Tab D.

6.0 SUMMARY AND CONCLUSIONS

6.1 Cell 1

Cell 1 solutions were acidic in nature with a laboratory pH of <1.00. As expected, the solutions contained gross alpha, major ions, metals, and Volatile Organic Compounds ("VOCs"). SVOCs were not detected. Regarding major ions, chloride, fluoride, magnesium, ammonia, potassium, sodium and sulfate were one or more orders of magnitude greater in concentration than the other major ions. Metals exhibiting the greatest concentration by at least one order of magnitude higher than the other metals analyzed included arsenic, beryllium, cadmium, chromium, cobalt,

copper, iron, lead, manganese, molybdenum, nickel, selenium, silver, uranium, vanadium and zinc. An increase was noted in the gross alpha concentration in the August 2018 sample, but it is the same order of magnitude as the 2017 sample. The variable gross alpha results are being caused by matrix interference due to the nature of the tailings solution and are not representative of gross alpha from radium concentrations in the solution. This is evidenced by the results of the voluntary additional analyses. The results of the voluntary analyses are shown in Tab D.

The concentrations reported in the 2018 sample remained within historic ranges. It is important to note that not all constituents present in the tailings fluids will exhibit the same behavior as a result of concentration of the tailings fluids and any increases or decreases in constituent results will not be linear. The individual constituent results are greatly affected by the matrix of the tailings fluids and each constituent will behave differently based on the matrix interactions and the differing solubility properties of the constituent.

Comparison of Cell 1 fluids to those of Cells 4A, and 4B reveals that Cell 1 is similar in composition and concentration ratios to the fluids in Cells 4A and 4B.

6.2 Cell 3

Cell 3 solutions were acidic in nature, with a laboratory pH of 1.32. As expected, the solutions contained gross alpha, major ions, metals, and VOCs. SVOCs were not detected. Regarding major ions, chloride, fluoride, magnesium, ammonia, potassium, sodium and sulfate were generally one or more orders of magnitude greater in concentration than the other major ions. Metals exhibiting the greatest concentration by at least one order of magnitude greater than the other metals analyzed included arsenic, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, nickel, selenium, silver, thallium, uranium, vanadium and zinc. An increase in the gross alpha and many metals and ions concentrations was noted in the August 2018 sample. The reason for the increase in many constituent concentrations was due to the majority of the liquid pool having evaporated in 2018. As a result of the evaporation the liquid was has concentrated. Gross alpha results are not representative of gross alpha from radium concentrations in the solution. This is evidenced by the results of the voluntary additional analyses which are shown in Tab D.

The concentrations reported in the 2018 sample are above previous results due to the cell liquid pool shrinking due to severe drought conditions in 2018 which concentrated the constituents. It is important to note that not all constituents present in the tailings fluids will exhibit the same behavior as a result of concentration of the tailings fluids and the increases in constituent results will not be linear. The individual constituent results are greatly affected by the matrix of the tailings fluids and each constituent will behave differently based on the matrix interactions and the differing solubility properties of the constituent.

6.3 Cell 4A

Cell 4A solutions were acidic in nature, with a laboratory pH of 1.25. As expected, the solutions contained gross alpha, major ions, metals, and VOCs. One SVOC was detected. Cell 4A fluid

exhibited the highest major ion concentrations for chloride, fluoride, magnesium, ammonia, potassium, sodium and sulfate. The metals arsenic, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, nickel, selenium, uranium, vanadium and zinc were one or more orders of magnitude greater than the other metals analyzed. An increase in the gross alpha concentration was noted in the 2018 sample. The variable and increased gross alpha results are being caused by matrix interference due to the nature of the tailings solution and are not representative of gross alpha from radium concentrations in the solution. This is evidenced by the results of the voluntary additional analyses which are shown in Tab D.

Overall, the concentrations reported in the 2018 sample remained approximately the same as the 2017 sample. Concentration changes noted are within the analytical accuracy of the methods used for analysis. It is important to note that not all constituents present in the tailings fluids will exhibit the same behavior as a result of concentration of the tailings fluids and the increases in constituent results will not be linear. The individual constituent results are greatly affected by the matrix of the tailings fluids and each constituent will behave differently based on the matrix interactions and the differing solubility properties of the constituent.

Comparison of Cell 4A fluids to those of Cells 1, and 4B reveals that Cell 4A is similar in composition and concentration ratios to the fluids in Cells 1, and 4B.

6.4 Cell 4B

Cell 4B solutions were acidic in nature, with a laboratory pH of 1.24. As expected, the solutions contained gross alpha, major ions, metals and VOCs. One SVOCs was detected. Cell 4B fluid exhibited the highest major ion concentrations for chloride, fluoride, magnesium, potassium, sodium and sulfate. The metals arsenic, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, nickel, selenium, uranium, vanadium and zinc were one or more orders of magnitude greater than the other metals analyzed. An increase in the gross alpha concentration was noted in the 2018 sample, but it is the same order of magnitude as the 2017 sample. The variable gross alpha results are being caused by matrix interference due to the nature of the tailings solution and are not representative of gross alpha from radium concentrations in the solution. This is evidenced by the results of the voluntary additional analyses which are shown in Tab D.

The concentrations reported in the 2018 sample remained approximately the same as the 2017 sample. Concentration changes noted are within the analytical accuracy of the methods used for analysis. It is important to note that not all constituents present in the tailings fluids will exhibit the same behavior as a result of concentration of the tailings fluids and the increases in constituent results will not be linear. The individual constituent results are greatly affected by the matrix of the tailings fluids and each constituent will behave differently based on the matrix interactions and the differing solubility properties of the constituent.

Comparison of Cell 4B fluids to those of Cells 1, and 4A reveals that Cell 4B is similar in composition and concentration ratios to the fluids in Cells 1, and 4A.

6.5 Cell 2 Slimes Drain

Cell 2 Slimes drain fluid was acidic in nature, with a laboratory pH of 2.89. As expected, the solutions contained gross alpha, major ions, metals, and VOCs. SVOCs were not detected. Major ions that were highest in concentration by one or more orders of magnitude included chloride, magnesium, ammonia, sodium and sulfate. For metals, arsenic, cadmium, chromium, cobalt, copper, iron, manganese, molybdenum, nickel, uranium, vanadium and zinc were at least one order of magnitude greater in concentration than other metals analyzed. A slight increase in the gross alpha concentration was noted in the 2018 sample. The gross alpha result decreased but is the same order of magnitude of the historic data. Overall, the concentrations reported in the 2018 sample remained approximately the same as the 2017 sample. Concentration changes noted are within the analytical accuracy of the methods used for analysis.

6.6 Cells 3, 4A and 4B Slimes Drain

In accordance with the Permit, the slimes drains for Cell 3, 4A and 4B are not required to be sampled until dewatering operations have begun. Cell 1 was designed to be used solely as an evaporation pond and does not have a slimes drain.

6.7 Cell 2 Leak Detection System

Consistent with the Permit, the Cell 2 LDS was not sampled during the 2018 sampling event. The Cell 2 LDS is now dry and covered to prevent precipitation inflow.

6.8 Cells 1 and 3 Leak Detection System

Consistent with the Permit, the Cells 1 and 3 leak detection systems were not sampled during the 2018 sampling event because the systems were dry.

6.9 Cell 4A Leak Detection System

Cell 4A LDS solutions were acidic in nature, with a laboratory pH of 1.88. As expected, the solutions contained gross alpha, major ions, metals and VOCs. Two SVOCs were detected. Cell 4A LDS fluid exhibited the highest major ion concentrations for chloride, magnesium, ammonia, sodium, and sulfate. The metals arsenic, cadmium, chromium, cobalt, copper, iron, manganese, molybdenum, nickel, selenium, uranium, vanadium, and zinc were one or more orders of magnitude greater than the other metals analyzed. A slight decrease in the gross alpha concentration was noted in the 2018 sample. The variable gross alpha results are being caused by matrix interference due to the nature of the tailings solution and are not representative of gross alpha from radium concentrations in the solution. This is evidenced by the results of the voluntary additional analyses which are shown in Tab D.

Overall, the concentrations reported in the 2018 Cell 4A LDS sample remained within historic ranges.

6.10 Cell 4B Leak Detection System

Cell 4B LDS solutions were acidic in nature, with a laboratory pH of 1.35. As expected, the solutions contained gross alpha, major ions, metals, VOCs and one SVOC. Cell 4B LDS fluid exhibited the highest major ion concentrations for chloride, fluoride, magnesium, ammonia, potassium, sodium, and sulfate. The metals arsenic, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, nickel, selenium, uranium, vanadium and zinc were one or more orders of magnitude greater than the other metals analyzed. An increase in the gross alpha concentration was noted in the 2018 sample, but it is the same order of magnitude as the 2017 sample. The variable gross alpha results are being caused by matrix interference due to the nature of the tailings solution and are not representative of gross alpha from radium concentrations in the solution. This is evidenced by the results of the voluntary additional analyses which are shown in Tab D.

Overall, the concentrations reported in the 2018 Cell 4B LDS sample are within historic ranges.

6.11 Summary and Conclusions of Analytical Results

The metals arsenic, cadmium, chromium, cobalt, copper, iron, manganese, molybdenum, nickel, selenium, uranium, vanadium and zinc were generally present in greatest concentration for all samples. For major ions, chloride, fluoride, magnesium, ammonia, sodium, and sulfate were predominant. Increases were noted for several metals and major anions as well as in some of the gross alpha concentrations. However, one gross alpha concentrations decreased. EFRI conducted additional voluntary analyses (not required by the GWDP) in order to further characterize the radiological and physical properties of the tailings solution, as discussed Section 3.1 above. The results of the additional voluntary analyses for radium-226, thorium-228, thorium-230, thorium-232, uranium-233/234, uranium-235/236, uranium-238, and specific gravity show that the variability in gross alpha results are being caused by matrix interference due to the nature of the tailings solution and are not representative of gross alpha from radium concentrations in the solution. EFRI may or may not choose to continue these additional analyses in the future. The changes in concentrations of metals and major ions are indicative of a "concentration effect" during the severe drought conditions in 2018 and are off-set by the addition of fluids during periods of operation, which provide information relative to the system as a whole. The individual constituent results are greatly affected by the matrix of the tailings fluids and each constituent will behave differently based on the matrix interactions and the differing solubility properties of the constituent. Overall, the results of the 2018 tailings solutions are within historic, expected ranges.

7.0 CORRECTIVE ACTION REPORT

No corrective action reports are required for the 2018 annual sampling event.

7.1 Assessment of Corrective Actions from Previous Period

No corrective action reports were required for the 2017 annual sampling event and as such there is no assessment of previous actions necessary.

8.0 SIGNATURE AND CERTIFICATION

This document was prepared by Energy Fuels Resources (USA) Inc.

Energy Fuels Resources (USA) Inc.

By:

Scott A. Bakken
Senior Director Regulatory Affairs

11/9/18
Date

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.

Scott A. Bakken
Senior Director Regulatory Affairs
Energy Fuels Resources (USA) Inc.

TABLES

Table 1
Summary of 2018 Tailings System Wastewater Monitoring

Location	Sample Date	Date of Laboratory Report	Work Order Number/Lab Set ID
Cell 1 Solutions	8/01/2018*	GEL- 09/05/2018	GEL - 456584
		AWAL - 8/21/2018	AWAL - 1808037
Cell 1 Solutions (Resample)**	09/05/2018**	AWAL - 9/18/2018	AWAL - 1809117
Cell 2 Slimes Drain	8/01/2018*	GEL- 09/05/2018	GEL - 456584
		AWAL - 8/21/2018	AWAL - 1808037
Cell 3 Solutions	8/01/2018*	GEL- 09/05/2018	GEL - 456584
		AWAL - 8/21/2018	AWAL - 1808037
Cell 3 Solutions (Resample)**	09/05/2018**	AWAL - 9/18/2018	AWAL - 1809117
Cell 4A Solutions	8/01/2018*	GEL- 09/05/2018	GEL - 456584
		AWAL - 8/21/2018	AWAL - 1808037
Cell 4A LDS	8/01/2018*	GEL- 09/05/2018	GEL - 456584
		AWAL - 8/21/2018	AWAL - 1808037
Cell 4B Solutions	8/01/2018*	GEL- 09/05/2018	GEL - 456584
		AWAL - 8/21/2018	AWAL - 1808037
Cell 4B LDS	8/01/2018*	GEL- 09/05/2018	GEL - 456584
		AWAL - 8/21/2018	AWAL - 1808037
Cell 65 - Duplicate of Cell 2 Slim Drain	8/01/2018*	GEL- 09/05/2018	GEL - 456584
		AWAL - 8/21/2018	AWAL - 1808037

Notes:

GEL = GEL Laboratories, LLC
AWAL = American West Analytical Laboratories

***EFRI conducted the annual sampling event in August 2018. EFRI collected additional samples aliquots for specific gravity and additional radiological constituents.**

****Due to matrix interferences, the laboratory was unable to meet the required reporting limits for the semivolatile organic compounds (SVOCs) in the Cell 1 and Cell 3 Solution samples collected August 1, 2018. Pursuant to a phone conversation with DWMRC, SVOC samples were recollected from Cell 1 and Cell 3 and analyzed for SVOCs only.**

INDEX OF TABS

Tab A Tailings System Monitoring Field Sheets

Tab B Sample Location Figures

Tab C Laboratory Analytical Reports

Tab D Chemical and Radiological Summary Tables

Tab E Quality Assurance and Data Validation Tables

- E-1 Holding Time Evaluation
- E-2 Laboratory Receipt Temperature Check
- E-3 Analytical Method Check
- E-4 Reporting Limit Evaluation
- E-5 Trip Blank Evaluation
- E-6 QA/QC Evaluation for Sample Duplicates
- E-7 Radiologic Counting Error
- E-8 Laboratory Matrix QC Evaluation

Tab A

Tailings System Monitoring Field Sheets

Field Data Record-Tailings Solutions, LDS and Slimes Drain Sampling

Location: Cell 1 **Sampling Personnel:** Tanner Holliday, Deen Lyman, Garrin Palmer

Is this a Slimes Drain? ☐ Yes ☒ No 8/1/2018

If this is a Slimes Drain, measure depth to wastewater immediately before sampling.

DTW immediately before sampling (slimes only): N/A

Weather Conditions at Time of Sampling: Partly Cloudy, Smoke Haze

Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			Lab Name
					Peristaltic Pump	Bailer	Ladle	
VOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Metals	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Nutrients	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Other Non Radiologics	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Gross Alpha	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	GEL
SVOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Conductivity	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL

QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name: _____

Notes: Arrived on site at 0842. Tanner, Garrin, Deen all present to collect samples. DEQ and DOH all on site to observe sampling event. Samples collected at 0845. Left site at 0852

Field Data Record-Tailings Solutions, LDS and Slimes Drain Sampling

Location: Cell 1 Resample **Sampling Personnel:** Tanner Holliday, Deen Lyman

9/5/2018

Is this a Slimes Drain? ☐ Yes ☒ No

If this is a Slimes Drain, measure depth to wastewater immediately before sampling.

DTW immediately before sampling (slimes only): N/A

Weather Conditions at Time of Sampling: Sunny

Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			Lab Name
					Peristaltic Pump	Bailer	Ladle	
VOCs	☐ Yes	☐ No	☐ Yes	☐ No	☐	☐	☐	
Metals	☐ Yes	☐ No	☐ Yes	☐ No	☐	☐	☐	
Nutrients	☐ Yes	☐ No	☐ Yes	☐ No	☐	☐	☐	
Other Non Radiologics	☐ Yes	☐ No	☐ Yes	☐ No	☐	☐	☐	
Gross Alpha	☐ Yes	☐ No	☐ Yes	☐ No	☐	☐	☐	
SVOCs	☒ Yes	☐ No	☐ Yes	☒ No	☐	☐	☒	AWAL
Conductivity	☐ Yes	☐ No	☐ Yes	☐ No	☐	☐	☐	

QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name:_____

Notes: Arrived on site at 1332. Samples collected at 1335 with a ladle. Left site at 1340

Field Data Record-Tailings Solutions, LDS and Slimes Drain Sampling

Location: Slimes # 2 **Sampling Personnel:** Tanner Holliday, Deen Lyman, Garrin Palmer

Is this a Slimes Drain? ☒ Yes ☐ No 8/1/2018

If this is a Slimes Drain, measure depth to wastewater immediately before sampling.

DTW immediately before sampling (slimes only): 34.53

Weather Conditions at Time of Sampling: Partly Cloudy, Smoke Haze

Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			Lab Name
					Peristaltic Pump	Bailer	Ladle	
VOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	AWAL
Metals	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	AWAL
Nutrients	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	AWAL
Other Non Radiologics	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	AWAL
Gross Alpha	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	GEL
SVOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	AWAL
Conductivity	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	AWAL

QC Samples Associated with this Location:

☐ Rinsate Blank

☒ Duplicate

Duplicate Sample Name: Cell 65

Notes: Arrived on site at 0854. Tanner, Garrin, Deen all present to collect samples. Depth to Water was 34.53. Samples collected at 0900 ~~Water~~ Left site at 0913

Field Data Record-Tailings Solutions, LDS and Slimes Drain Sampling

Location: Cell 3 **Sampling Personnel:** Tanner Holliday, Deen Lyman, Garrin Palmer

Is this a Slimes Drain? ☐ Yes ☒ No 8/1/2018

If this is a Slimes Drain, measure depth to wastewater immediately before sampling.

DTW immediately before sampling (slimes only): N/A

Weather Conditions at Time of Sampling: Partly Cloudy, Smoke Haze

Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			Lab Name
					Peristaltic Pump	Bailer	Ladle	
VOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Metals	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Nutrients	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Other Non Radiologics	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Gross Alpha	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	GEL
SVOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Conductivity	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL

QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name: _____

Notes: Arrived on site at 0915. Tanner, Deen, Garrin all present to collect samples. DEQ & DOH all present to observe sampling. Samples collected at 0920. Left site at 0924

Field Data Record-Tailings Solutions, LDS and Slimes Drain Sampling

Location: Cell 3 Resample **Sampling Personnel:** Tanner Holliday, Deen Lyman

9/5/2018

Is this a Slimes Drain? ☐ Yes ☒ No

If this is a Slimes Drain, measure depth to wastewater immediately before sampling.

DTW immediately before sampling (slimes only): N/A

Weather Conditions at Time of Sampling: Sunny

Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			Lab Name
					Peristaltic Pump	Bailer	Ladle	
VOCs	☐ Yes	☐ No	☐ Yes	☐ No	☐	☐	☐	
Metals	☐ Yes	☐ No	☐ Yes	☐ No	☐	☐	☐	
Nutrients	☐ Yes	☐ No	☐ Yes	☐ No	☐	☐	☐	
Other Non Radiologics	☐ Yes	☐ No	☐ Yes	☐ No	☐	☐	☐	
Gross Alpha	☐ Yes	☐ No	☐ Yes	☐ No	☐	☐	☐	
SVOCs	☒ Yes	☐ No	☐ Yes	☒ No	☐	☐	☒	AWAL
Conductivity	☐ Yes	☐ No	☐ Yes	☐ No	☐	☐	☐	

QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name: _____

Notes: Arrived on site at 1357. Samples collected with a ladle at 1400. not much solution in cell. Left site at 1405

Field Data Record-Tailings Solutions, LDS and Slimes Drain Sampling

Location: Cell 4A **Sampling Personnel:** Tanner Holliday, Deen Lyman, Garrin Palmer

Is this a Slimes Drain? ☐ Yes ☒ No 8/1/2018

If this is a Slimes Drain, measure depth to wastewater immediately before sampling.

DTW immediately before sampling (slimes only): N/A

Weather Conditions at Time of Sampling: Partly Cloudy, Smoke Haze

Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			Lab Name
					Peristaltic Pump	Bailer	Ladle	
VOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Metals	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Nutrients	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Other Non Radiologics	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Gross Alpha	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	GEL
SVOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Conductivity	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL

QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name: _____

Notes: Arrived on site at 0930. Tanner, Garrin, Deen, all present to collect samples. DEQ & DOH present to observe ~~and~~ sampling event. Samples collected at 0938. Left site at 0939

Field Data Record-Tailings Solutions, LDS and Slimes Drain Sampling

Location: Cell 4A LDS **Sampling Personnel:** Tanner Holliday, Deen Lyman, Garrin Palmer

Is this a Slimes Drain? ☐ Yes ☒ No 8/1/2018

If this is a Slimes Drain, measure depth to wastewater immediately before sampling.

DTW immediately before sampling (slimes only): N/A

Weather Conditions at Time of Sampling: Partly Cloudy, Smoke Haze

Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			Lab Name
					Peristaltic Pump	Bailer	Ladle	
VOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Metals	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Nutrients	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Other Non Radiologics	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Gross Alpha	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	GEL
SVOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Conductivity	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL

QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name: _____

Notes: Arrived on site at 0939 Tanner, Garrin, Deen all present to collect Samples DEQ & DOH on site to observe and split samples. Samples collected at 0945. Left site at 0957

Field Data Record-Tailings Solutions, LDS and Slimes Drain Sampling

Location: Cell 4b **Sampling Personnel:** Tanner Holliday, Deen Lyman, Garrin Palmer

Is this a Slimes Drain? ☐ Yes ☒ No 8/1/2018

If this is a Slimes Drain, measure depth to wastewater immediately before sampling.

DTW immediately before sampling (slimes only): N/A

Weather Conditions at Time of Sampling: Partly Cloudy, Smoke Haze

Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			Lab Name
					Peristaltic Pump	Bailer	Ladle	
VOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Metals	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Nutrients	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Other Non Radiologics	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Gross Alpha	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	GEL
SVOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Conductivity	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL

QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name: _____

Notes: Arrived on site at 1000. Tanner, Garrin, Deen all present to collect samples. DEQ & DOH all present to observe sampling. Samples collected at 1005. Left site at 1011

Field Data Record-Tailings Solutions, LDS and Slimes Drain Sampling

Location: Cell 4b LDS **Sampling Personnel:** Tanner Holliday, Deen Lyman, Garrin Palmer

Is this a Slimes Drain? ☐ Yes ☒ No 8/1/2018

If this is a Slimes Drain, measure depth to wastewater immediately before sampling.

DTW immediately before sampling (slimes only): N/A

Weather Conditions at Time of Sampling: Partly Cloudy, Smoke Haze

Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			Lab Name
					Peristaltic Pump	Bailer	Ladle	
VOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Metals	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Nutrients	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Other Non Radiologics	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Gross Alpha	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	GEL
SVOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL
Conductivity	☑ Yes	☐ No	☐ Yes	☑ No	☐	☐	☒	AWAL

QC Samples Associated with this Location:

☐ Rinsate Blank

☐ Duplicate

Duplicate Sample Name: _____

Notes: Arrived on site at 1015. Tanner, Garrin, Deen all present to collect samples. DEQ & DOH present to observe sampling. Samples collected at 1020. Left site at 1025

Field Data Record-Tailings Solutions, LDS and Slimes Drain Sampling

Location: Cell 65 **Sampling Personnel:** Tanner Holliday, Deen Lyman, Garrin Palmer

Is this a Slimes Drain? ☐ Yes ☐ No 8/1/2018

If this is a Slimes Drain, measure depth to wastewater immediately before sampling.

DTW immediately before sampling (slimes only): _____

Weather Conditions at Time of Sampling: Partly Cloudy, Smoke Haze

Analytical Parameters/Sample Collection Method:

Parameter	Sample Taken		Filtered		Sampling Method			Lab Name
					Peristaltic Pump	Bailer	Ladle	
VOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	AWAL
Metals	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	AWAL
Nutrients	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	AWAL
Other Non Radiologics	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	AWAL
Gross Alpha	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	GEL
SVOCs	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	AWAL
Conductivity	☑ Yes	☐ No	☐ Yes	☑ No	☐	☒	☐	AWAL

QC Samples Associated with this Location:

☐ Rinsate Blank

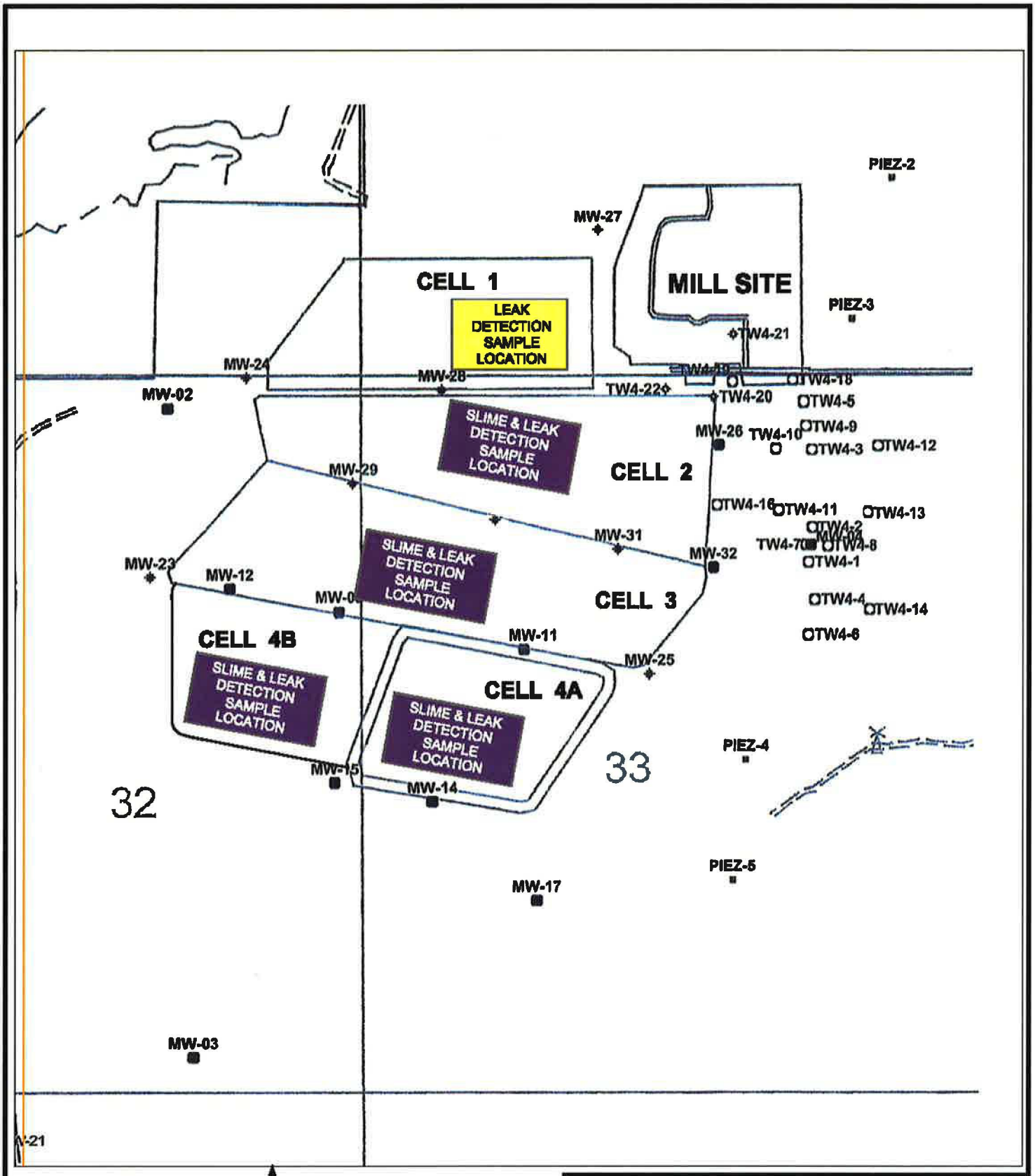
☐ Duplicate

Duplicate Sample Name: _____

Notes: Duplicate of Slimes #2

Tab B

Sample Location Figures



S:\Source\UT\WhiteMesaMill\Maps\Tailings Management\Annual Tails Report Figures.dwg Page8 RElle

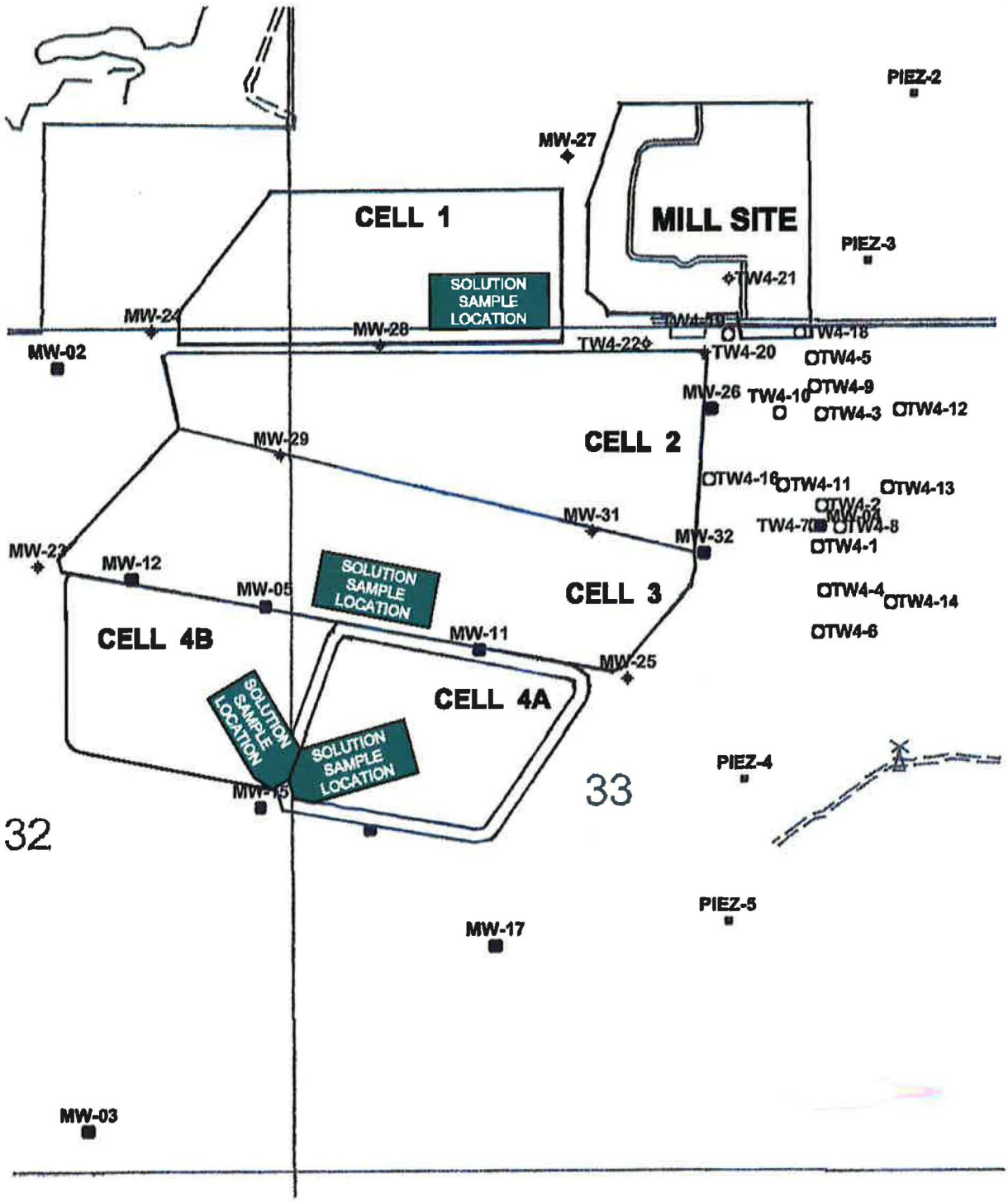
Energy Fuels Resources (USA) Inc.

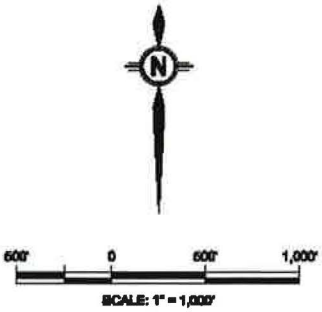
REVISIONS	
Date	By
10/8/14	RE
11/24/15	RE

Project: White Mesa Mill
County: San Juan State: Utah
Location: T37S, R22E

Annual Tailings System Slimes and Leak Detection Sample Locations

Author: ---- Date: 11/24/15 Drafted By:





Energy Fuels Resources (USA) Inc.

REVISIONS	
Date	By
10/8/14	RE
11/24/15	RE

Project: White Mesa Mill
County: San Juan | State: Utah
Location: T37S, R22E

Annual Tailings System, Cell Solution Sample Locations

Author: ____ | Date: 11/24/15 | Drafted By:

S:\Source\UT\WhiteMesaMill\Maps\Tailings Management\Annual Tails Report Figures.dwg Page7 REIs

Tab C

Laboratory Analytical Reports

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-001
Client Sample ID: Cell 1
Collection Date: 8/1/2018 845h
Received Date: 8/2/2018 926h

Analytical Results DISSOLVED METALS

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/L	8/6/2018 645h	8/16/2018 1602h	E200.8	20.0	**641**	2
Beryllium	mg/L	8/6/2018 645h	8/16/2018 1426h	E200.8	0.200	**1.51**	1
Cadmium	mg/L	8/6/2018 645h	8/16/2018 1426h	E200.8	0.0500	**14.0**	2
Calcium	mg/L	8/6/2018 645h	8/15/2018 1647h	E200.7	200	**518**	2
Chromium	mg/L	8/6/2018 645h	8/16/2018 1426h	E200.8	0.200	**21.1**	2
Cobalt	mg/L	8/6/2018 645h	8/16/2018 1426h	E200.8	0.730	**113**	2
Copper	mg/L	8/6/2018 645h	8/16/2018 1602h	E200.8	20.0	**4,550**	2
Iron	mg/L	8/6/2018 645h	8/16/2018 1602h	E200.8	1,000	**12,200**	2
Lead	mg/L	8/6/2018 645h	8/16/2018 1426h	E200.8	0.200	**41.0**	2
Magnesium	mg/L	8/6/2018 645h	8/15/2018 1624h	E200.7	2,000	**20,800**	2
Manganese	mg/L	8/6/2018 645h	8/16/2018 1602h	E200.8	20.0	**936**	2
Mercury	mg/L	8/8/2018 1800h	8/9/2018 906h	E245.1	0.00500	**0.0168**	
Molybdenum	mg/L	8/6/2018 645h	8/16/2018 1602h	E200.8	20.0	**239**	2
Nickel	mg/L	8/6/2018 645h	8/16/2018 1426h	E200.8	0.200	**167**	2
Potassium	mg/L	8/6/2018 645h	8/15/2018 1647h	E200.7	200	**4,790**	2
Selenium	mg/L	8/6/2018 645h	8/16/2018 1426h	E200.8	0.200	**10.7**	2
Silver	mg/L	8/6/2018 645h	8/16/2018 1426h	E200.8	0.200	**2.32**	
Sodium	mg/L	8/6/2018 645h	8/15/2018 1624h	E200.7	2,000	**53,500**	2
Thallium	mg/L	8/6/2018 645h	8/16/2018 1426h	E200.8	0.200	**0.442**	
Tin	mg/L	8/17/2018 1057h	8/17/2018 1514h	E200.8	17.0	< 17.0	
Uranium	mg/L	8/6/2018 645h	8/16/2018 1602h	E200.8	20.0	**248**	2
Vanadium	mg/L	8/6/2018 645h	8/15/2018 1128h	E200.7	5.00	**2,440**	2
Zinc	mg/L	8/6/2018 645h	8/16/2018 1602h	E200.8	50.0	**948**	2

** - The reporting limits were raised due to sample matrix interferences.*

[1] - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

[2] - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.

Analysis performed on a portion of the sample filtered at the laboratory upon receipt. The sample was received after the filtration holding time had expired for dissolved analysis.

American West ANALYTICAL LABORATORIES
3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686
Toll Free: (888) 263-8686
Fax: (801) 263-8687
e-mail: awal@awal-labs.com
web: www.awal-labs.com
Kyle F. Gross
Laboratory Director
Jose Rocha
QA Officer

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-001
Client Sample ID: Cell 1
Collection Date: 8/1/2018 845h
Received Date: 8/2/2018 926h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Ammonia (as N)	mg/L	8/13/2018 830h	8/13/2018 1444h	E350.1	50.0	**9,810**	
Bicarbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Carbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Chloride	mg/L		8/14/2018 1214h	E300.0	10,000	**39,300**	
Conductivity	µmhos/cm		8/6/2018 700h	SM2510B	2.00	**110,000**	
Fluoride	mg/L		8/14/2018 1645h	E300.0	200	**5,020**	
Ion Balance	%		8/15/2018 1731h	Calc.	-100	**-13.6**	
Nitrate/Nitrite (as N)	mg/L		8/6/2018 1556h	E353.2	2.00	**328**	
pH @ 25° C	pH Units		8/2/2018 1452h	SW9040C	1.00	< 1.00	H
Sulfate	mg/L		8/16/2018 1009h	E300.0	20,000	**253,000**	
Total Anions, Measured	meq/L		8/15/2018 1731h	Calc.		**6,380**	
Total Cations, Measured	meq/L		8/15/2018 1731h	Calc.		**4,840**	
Total Dissolved Solids	mg/L		8/5/2018 1115h	SM2540C	500	**361,000**	
Total Dissolved Solids Ratio, Measured/Calculated			8/15/2018 1731h	Calc.		**0.940**	
Total Dissolved Solids, Calculated	mg/L		8/15/2018 1731h	Calc.		**384,000**	

H - Sample was received outside of the holding time.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-001F
Client Sample ID: Cell 1
Collection Date: 8/1/2018 845h
Received Date: 8/2/2018 926h
Test Code: 8270-W-3511

Analytical Results SVOA by GC/MS Method 8270D/3511

Analyzed: 8/6/2018 2047h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 20 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,2,4-Trichlorobenzene	120-82-1	148	< 148	
1,2-Dichlorobenzene	95-50-1	148	< 148	
1,3-Dichlorobenzene	541-73-1	148	< 148	
1,4-Dichlorobenzene	106-46-7	148	< 148	
1-Methylnaphthalene	90-12-0	148	< 148	
2,4,5-Trichlorophenol	95-95-4	148	< 148	
2,4,6-Trichlorophenol	88-06-2	148	< 148	*
2,4-Dichlorophenol	120-83-2	148	< 148	
2,4-Dimethylphenol	105-67-9	148	< 148	
2,4-Dinitrophenol	51-28-5	148	< 148	
2,4-Dinitrotoluene	121-14-2	148	< 148	
2,6-Dinitrotoluene	606-20-2	148	< 148	
2-Chloronaphthalene	91-58-7	148	< 148	
2-Chlorophenol	95-57-8	148	< 148	
2-Methylnaphthalene	91-57-6	148	< 148	
2-Methylphenol	95-48-7	148	< 148	
2-Nitrophenol	88-75-5	148	< 148	
3&4-Methylphenol		148	< 148	
3,3´-Dichlorobenzidine	91-94-1	148	< 148	
4,6-Dinitro-2-methylphenol	534-52-1	148	< 148	
4-Bromophenyl phenyl ether	101-55-3	148	< 148	
4-Chloro-3-methylphenol	59-50-7	148	< 148	
4-Chlorophenyl phenyl ether	7005-72-3	148	< 148	
4-Nitrophenol	100-02-7	148	< 148	
Acenaphthene	83-32-9	148	< 148	
Acenaphthylene	208-96-8	148	< 148	
Anthracene	120-12-7	148	< 148	
Azobenzene	103-33-3	148	< 148	
Benz(a)anthracene	56-55-3	148	< 148	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-001F
Client Sample ID: Cell 1

Analyzed: 8/6/2018 2047h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 20 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzidine	92-87-5	148	< 148	
Benzo(a)pyrene	50-32-8	148	< 148	
Benzo(b)fluoranthene	205-99-2	148	< 148	
Benzo(g,h,i)perylene	191-24-2	148	< 148	
Benzo(k)fluoranthene	207-08-9	148	< 148	
Bis(2-chloroethoxy)methane	111-91-1	148	< 148	
Bis(2-chloroethyl) ether	111-44-4	148	< 148	
Bis(2-chloroisopropyl) ether	108-60-1	148	< 148	
Bis(2-ethylhexyl) phthalate	117-81-7	148	< 148	
Butyl benzyl phthalate	85-68-7	148	< 148	
Chrysene	218-01-9	148	< 148	
Dibenz(a,h)anthracene	53-70-3	148	< 148	
Diethyl phthalate	84-66-2	148	< 148	
Dimethyl phthalate	131-11-3	148	< 148	
Di-n-butyl phthalate	84-74-2	148	< 148	
Di-n-octyl phthalate	117-84-0	148	< 148	
Fluoranthene	206-44-0	148	< 148	
Fluorene	86-73-7	148	< 148	
Hexachlorobenzene	118-74-1	148	< 148	
Hexachlorobutadiene	87-68-3	148	< 148	
Hexachlorocyclopentadiene	77-47-4	148	< 148	
Hexachloroethane	67-72-1	148	< 148	
Indeno(1,2,3-cd)pyrene	193-39-5	148	< 148	
Isophorone	78-59-1	148	< 148	
Naphthalene	91-20-3	148	< 148	
Nitrobenzene	98-95-3	148	< 148	
N-Nitrosodimethylamine	62-75-9	148	< 148	
N-Nitrosodi-n-propylamine	621-64-7	148	< 148	
N-Nitrosodiphenylamine	86-30-6	148	< 148	
Pentachlorophenol	87-86-5	148	< 148	
Phenanthrene	85-01-8	148	< 148	
Phenol	108-95-2	148	< 148	
Pyrene	129-00-0	148	< 148	
Pyridine	110-86-1	148	< 148	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-001F
Client Sample ID: Cell 1

Analyzed: 8/6/2018 2047h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 20 **Method:** SW8270D

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	0	36.89	0	10-310	S
Surr: 2-Fluorobiphenyl		321-60-8	0	18.45	0	10-230	S
Surr: 2-Fluorophenol		367-12-4	21.6	36.89	58.7	10-120	
Surr: Nitrobenzene-d5		4165-60-0	3.32	18.45	18.0	10-253	
Surr: Phenol-d6		13127-88-3	2.07	36.89	5.60	10-110	S
Surr: Terphenyl-d14		1718-51-0	0.251	18.45	1.36	10-255	S

** - High LCS recoveries indicate possible bias high. Data deemed acceptable as the analyte was not observed in the field sample.*
S - Surrogate recoveries outside the control limits. Historical data yielded similar results indicating matrix interference.
The reporting limits were raised due to sample matrix interferences. Sample extract solidified.
This sample was analyzed for 4-Chlorophenol as a TIC and none was detected.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1809117-001A
Client Sample ID: Cell 1
Collection Date: 9/5/2018 1335h
Received Date: 9/7/2018 855h

Test Code: 8270-W-3511

Analytical Results SVOA by GC/MS Method 8270D/3511

Analyzed: 9/13/2018 1430h **Extracted:** 9/11/2018 1340h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,2,4-Trichlorobenzene	120-82-1	8.04	< 8.04	
1,2-Dichlorobenzene	95-50-1	8.04	< 8.04	
1,3-Dichlorobenzene	541-73-1	8.04	< 8.04	
1,4-Dichlorobenzene	106-46-7	8.04	< 8.04	
1-Methylnaphthalene	90-12-0	8.04	< 8.04	
2,4,5-Trichlorophenol	95-95-4	8.04	< 8.04	
2,4,6-Trichlorophenol	88-06-2	8.04	< 8.04	
2,4-Dichlorophenol	120-83-2	8.04	< 8.04	
2,4-Dimethylphenol	105-67-9	8.04	< 8.04	
2,4-Dinitrophenol	51-28-5	8.04	< 8.04	
2,4-Dinitrotoluene	121-14-2	8.04	< 8.04	
2,6-Dinitrotoluene	606-20-2	8.04	< 8.04	
2-Chloronaphthalene	91-58-7	8.04	< 8.04	
2-Chlorophenol	95-57-8	8.04	< 8.04	
2-Methylnaphthalene	91-57-6	8.04	< 8.04	
2-Methylphenol	95-48-7	8.04	< 8.04	
2-Nitrophenol	88-75-5	8.04	< 8.04	
3&4-Methylphenol		8.04	< 8.04	
3,3′-Dichlorobenzidine	91-94-1	8.04	< 8.04	
4,6-Dinitro-2-methylphenol	534-52-1	8.04	< 8.04	
4-Bromophenyl phenyl ether	101-55-3	8.04	< 8.04	
4-Chloro-3-methylphenol	59-50-7	8.04	< 8.04	
4-Chlorophenyl phenyl ether	7005-72-3	8.04	< 8.04	
4-Nitrophenol	100-02-7	8.04	< 8.04	
Acenaphthene	83-32-9	8.04	< 8.04	
Acenaphthylene	208-96-8	8.04	< 8.04	
Anthracene	120-12-7	8.04	< 8.04	
Azobenzene	103-33-3	8.04	< 8.04	
Benz(a)anthracene	56-55-3	8.04	< 8.04	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1809117-001A
Client Sample ID: Cell 1

Analyzed: 9/13/2018 1430h **Extracted:** 9/11/2018 1340h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzidine	92-87-5	8.04	< 8.04	
Benzo(a)pyrene	50-32-8	8.04	< 8.04	
Benzo(b)fluoranthene	205-99-2	8.04	< 8.04	
Benzo(g,h,i)perylene	191-24-2	8.04	< 8.04	
Benzo(k)fluoranthene	207-08-9	8.04	< 8.04	
Bis(2-chloroethoxy)methane	111-91-1	8.04	< 8.04	
Bis(2-chloroethyl) ether	111-44-4	8.04	< 8.04	
Bis(2-chloroisopropyl) ether	108-60-1	8.04	< 8.04	
Bis(2-ethylhexyl) phthalate	117-81-7	8.04	< 8.04	
Butyl benzyl phthalate	85-68-7	8.04	< 8.04	
Chrysene	218-01-9	8.04	< 8.04	
Dibenz(a,h)anthracene	53-70-3	8.04	< 8.04	
Diethyl phthalate	84-66-2	8.04	< 8.04	
Dimethyl phthalate	131-11-3	8.04	< 8.04	
Di-n-butyl phthalate	84-74-2	8.04	< 8.04	
Di-n-octyl phthalate	117-84-0	8.04	< 8.04	
Fluoranthene	206-44-0	8.04	< 8.04	
Fluorene	86-73-7	8.04	< 8.04	
Hexachlorobenzene	118-74-1	8.04	< 8.04	
Hexachlorobutadiene	87-68-3	8.04	< 8.04	
Hexachlorocyclopentadiene	77-47-4	8.04	< 8.04	
Hexachloroethane	67-72-1	8.04	< 8.04	
Indeno(1,2,3-cd)pyrene	193-39-5	8.04	< 8.04	
Isophorone	78-59-1	8.04	< 8.04	
Naphthalene	91-20-3	8.04	< 8.04	
Nitrobenzene	98-95-3	8.04	< 8.04	
N-Nitrosodimethylamine	62-75-9	8.04	< 8.04	
N-Nitrosodi-n-propylamine	621-64-7	8.04	< 8.04	
N-Nitrosodiphenylamine	86-30-6	8.04	< 8.04	
Pentachlorophenol	87-86-5	8.04	< 8.04	
Phenanthrene	85-01-8	8.04	< 8.04	
Phenol	108-95-2	8.04	< 8.04	
Pyrene	129-00-0	8.04	< 8.04	
Pyridine	110-86-1	8.04	< 8.04	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1809117-001A
Client Sample ID: Cell 1

Analyzed: 9/13/2018 1430h **Extracted:** 9/11/2018 1340h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	77.1	40.22	192	10-310	
Surr: 2-Fluorobiphenyl		321-60-8	32.6	20.11	162	10-230	
Surr: 2-Fluorophenol		367-12-4	9.57	40.22	23.8	10-120	
Surr: Nitrobenzene-d5		4165-60-0	35.9	20.11	179	10-253	
Surr: Phenol-d6		13127-88-3	72.8	40.22	181	10-110	S
Surr: Terphenyl-d14		1718-51-0	37.4	20.11	186	10-255	

Internal standard areas were outside of the QC limits. Prior experience with these same samples yielded similar results indicating matrix interference.

S - Surrogate recoveries outside the control limits. Prior experience with these same samples yielded similar results indicating matrix interference.

This sample was analyzed for 4-chlorophenol as a TIC. None was detected.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-001A
Client Sample ID: Cell 1
Collection Date: 8/1/2018 845h
Received Date: 8/2/2018 926h

Test Code: 8260-W-DEN100

Analytical Results VOAs by GC/MS Method 8260C/5030C

Analyzed: 8/3/2018 1304h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
2-Butanone	78-93-3	20.0	< 20.0	
Acetone	67-64-1	20.0	**50.4**	
Benzene	71-43-2	1.00	< 1.00	
Carbon tetrachloride	56-23-5	1.00	< 1.00	
Chloroform	67-66-3	1.00	**114**	
Chloromethane	74-87-3	1.00	**1.16**	
Naphthalene	91-20-3	1.00	< 1.00	1
Tetrahydrofuran	109-99-9	1.00	**4.93**	1
Toluene	108-88-3	1.00	< 1.00	
Xylenes, Total	1330-20-7	1.00	< 1.00	

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	59.4	50.00	119	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	49.4	50.00	98.8	80-152	
Surr: Dibromofluoromethane	1868-53-7	55.8	50.00	112	72-135	
Surr: Toluene-d8	2037-26-5	49.4	50.00	98.9	80-124	

1 - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

Analyzed: 8/6/2018 2259h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Methylene chloride	75-09-2	1.00	**2.41**	

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	59.2	50.00	118	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	50.2	50.00	100	80-152	
Surr: Dibromofluoromethane	1868-53-7	60.2	50.00	120	72-135	
Surr: Toluene-d8	2037-26-5	49.4	50.00	98.9	80-124	

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: September 4, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Cell 1	Project:	DNMI00107
Sample ID:	456584001	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 08:45		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
High Rad Testing													
Alphaspec Th, Liquid "As Received"													
Thorium-228	U	645	+/-583	1880	1.00	pCi/L			AXM6	09/03/18	1309	1794758	1
Thorium-230		8.56E+05	+/-11800	3000	1.00	pCi/L							
Thorium-232		8410	+/-1190	762	1.00	pCi/L							
GFPC,Total Alpha Radium, Liquid "As Received"													
Gross Radium Alpha		5.50E+05	+/-2990	173	1.00	pCi/L			AXM6	08/31/18	1154	1794759	2
Lucas Cell, Ra226, liquid "As Received"													
Radium-226		443	+/-26.4	20.4	1.00	pCi/L			PCW	09/04/18	1040	1794760	3
U- 233/234,U-235/236 and U-238 "As Received"													
Uranium-233/234		97300	+/-8370	5920	1.00	pCi/L			AXM6	09/01/18	1025	1794761	4
Uranium-235/236		6970	+/-2780	5720	1.00	pCi/L							
Uranium-238		97200	+/-8350	5190	1.00	pCi/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE EML HASL-300, Th-01-RC Modified	
2	EPA 900.1 Mod/ EPA 903.0 Mod	
3	EPA 903.1 Modified	
4	DOE EML HASL-300, U-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Thorium-229 Tracer	Alphaspec Th, Liquid "As Received"			90.1	(15%-125%)
Barium Carrier	GFPC,Total Alpha Radium, Liquid "As Received"			99.6	(25%-125%)
Uranium-232 Tracer	U- 233/234,U-235/236 and U-238 "As Received"			84.5	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 27, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Cell 1	Project:	DNMI00107
Sample ID:	456584001	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 08:45		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Hazardous Waste												
ASTM D 5057 Specific Gravity "As Received"												
Specific Gravity		1.16	0.010	0.100	none		1	VH1	08/21/18	0935	1794741	

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	ASTM D 5057	

Notes:

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-002
Client Sample ID: Cell 2 Slimes
Collection Date: 8/1/2018 900h
Received Date: 8/2/2018 926h

Analytical Results DISSOLVED METALS

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/L	8/6/2018 645h	8/16/2018 1435h	E200.8	0.200	**19.6**	
Beryllium	mg/L	8/6/2018 645h	8/16/2018 1435h	E200.8	0.200	**0.241**	
Cadmium	mg/L	8/6/2018 645h	8/16/2018 1435h	E200.8	0.0500	**6.38**	
Calcium	mg/L	8/6/2018 645h	8/15/2018 1658h	E200.7	100	**538**	
Chromium	mg/L	8/6/2018 645h	8/16/2018 1435h	E200.8	0.200	**2.10**	
Cobalt	mg/L	8/6/2018 645h	8/16/2018 1435h	E200.8	0.730	**46.9**	
Copper	mg/L	8/6/2018 645h	8/16/2018 1620h	E200.8	5.00	**136**	
Iron	mg/L	8/6/2018 645h	8/16/2018 1620h	E200.8	250	**3,030**	
Lead	mg/L	8/6/2018 645h	8/16/2018 1435h	E200.8	0.200	**0.589**	
Magnesium	mg/L	8/6/2018 645h	8/15/2018 1658h	E200.7	100	**4,470**	
Manganese	mg/L	8/6/2018 645h	8/16/2018 1435h	E200.8	0.800	**137**	
Mercury	mg/L	8/8/2018 1800h	8/9/2018 839h	E245.1	0.00200	< 0.00200	
Molybdenum	mg/L	8/6/2018 645h	8/16/2018 1435h	E200.8	0.200	**3.34**	
Nickel	mg/L	8/6/2018 645h	8/16/2018 1435h	E200.8	0.200	**121**	
Potassium	mg/L	8/6/2018 645h	8/15/2018 1658h	E200.7	100	**774**	
Selenium	mg/L	8/6/2018 645h	8/16/2018 1435h	E200.8	0.200	**0.635**	
Silver	mg/L	8/17/2018 1057h	8/17/2018 1517h	E200.8	0.100	< 0.100	*
Sodium	mg/L	8/6/2018 645h	8/15/2018 1658h	E200.7	100	**5,290**	
Thallium	mg/L	8/6/2018 645h	8/16/2018 1435h	E200.8	0.200	**0.374**	
Tin	mg/L	8/17/2018 1057h	8/17/2018 1517h	E200.8	17.0	< 17.0	*
Uranium	mg/L	8/6/2018 645h	8/16/2018 1435h	E200.8	0.200	**25.2**	
Vanadium	mg/L	8/6/2018 645h	8/15/2018 1134h	E200.7	5.00	**516**	
Zinc	mg/L	8/6/2018 645h	8/16/2018 1620h	E200.8	12.5	**728**	

** - The reporting limits were raised due to sample matrix interferences.*

Analysis performed on a portion of the sample filtered at the laboratory upon receipt. The sample was received after the filtration holding time had expired for dissolved analysis.

American West ANALYTICAL LABORATORIES
3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686
Toll Free: (888) 263-8686
Fax: (801) 263-8687
e-mail: awal@awal-labs.com
web: www.awal-labs.com
Kyle F. Gross
Laboratory Director
Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-002
Client Sample ID: Cell 2 Slimes
Collection Date: 8/1/2018 900h
Received Date: 8/2/2018 926h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Ammonia (as N)	mg/L	8/13/2018 830h	8/13/2018 1445h	E350.1	50.0	**5,620**	
Bicarbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Carbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Chloride	mg/L		8/14/2018 1701h	E300.0	1,000	**4,310**	
Conductivity	µmhos/cm		8/6/2018 700h	SM2510B	2.00	**58,200**	
Fluoride	mg/L		8/14/2018 1933h	E300.0	10.0	**116**	
Ion Balance	%		8/15/2018 1731h	Calc.	-100	**-28.1**	
Nitrate/Nitrite (as N)	mg/L		8/6/2018 1557h	E353.2	0.100	**12.1**	
pH @ 25° C	pH Units		8/2/2018 1452h	SW9040C	1.00	**2.89**	H
Sulfate	mg/L		8/14/2018 1305h	E300.0	10,000	**63,300**	
Total Anions, Measured	meq/L		8/15/2018 1731h	Calc.		**1,440**	
Total Cations, Measured	meq/L		8/15/2018 1731h	Calc.		**808**	
Total Dissolved Solids	mg/L		8/5/2018 1115h	SM2540C	500	**99,900**	
Total Dissolved Solids Ratio, Measured/Calculated			8/15/2018 1731h	Calc.		**1.22**	
Total Dissolved Solids, Calculated	mg/L		8/15/2018 1731h	Calc.		**81,700**	

H - Sample was received outside of the holding time.

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-002F
Client Sample ID: Cell 2 Slimes
Collection Date: 8/1/2018 900h
Received Date: 8/2/2018 926h

Test Code: 8270-W-3511

Analytical Results SVOA by GC/MS Method 8270D/3511

Analyzed: 8/6/2018 2108h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,2,4-Trichlorobenzene	120-82-1	9.03	< 9.03	
1,2-Dichlorobenzene	95-50-1	9.03	< 9.03	
1,3-Dichlorobenzene	541-73-1	9.03	< 9.03	
1,4-Dichlorobenzene	106-46-7	9.03	< 9.03	
1-Methylnaphthalene	90-12-0	9.03	< 9.03	
2,4,5-Trichlorophenol	95-95-4	9.03	< 9.03	
2,4,6-Trichlorophenol	88-06-2	9.03	< 9.03	*
2,4-Dichlorophenol	120-83-2	9.03	< 9.03	
2,4-Dimethylphenol	105-67-9	9.03	< 9.03	
2,4-Dinitrophenol	51-28-5	9.03	< 9.03	
2,4-Dinitrotoluene	121-14-2	9.03	< 9.03	
2,6-Dinitrotoluene	606-20-2	9.03	< 9.03	
2-Chloronaphthalene	91-58-7	9.03	< 9.03	
2-Chlorophenol	95-57-8	9.03	< 9.03	
2-Methylnaphthalene	91-57-6	9.03	< 9.03	
2-Methylphenol	95-48-7	9.03	< 9.03	
2-Nitrophenol	88-75-5	9.03	< 9.03	
3&4-Methylphenol		9.03	< 9.03	
3,3′-Dichlorobenzidine	91-94-1	9.03	< 9.03	
4,6-Dinitro-2-methylphenol	534-52-1	9.03	< 9.03	
4-Bromophenyl phenyl ether	101-55-3	9.03	< 9.03	
4-Chloro-3-methylphenol	59-50-7	9.03	< 9.03	
4-Chlorophenyl phenyl ether	7005-72-3	9.03	< 9.03	
4-Nitrophenol	100-02-7	9.03	< 9.03	
Acenaphthene	83-32-9	9.03	< 9.03	
Acenaphthylene	208-96-8	9.03	< 9.03	
Anthracene	120-12-7	9.03	< 9.03	
Azobenzene	103-33-3	9.03	< 9.03	
Benz(a)anthracene	56-55-3	9.03	< 9.03	

American West ANALYTICAL LABORATORIES
3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686
Toll Free: (888) 263-8686
Fax: (801) 263-8687
e-mail: awal@awal-labs.com
web: www.awal-labs.com
Kyle F. Gross
Laboratory Director
Jose Rocha
QA Officer

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-002F
Client Sample ID: Cell 2 Slimes

Analyzed: 8/6/2018 2108h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzidine	92-87-5	9.03	< 9.03	
Benzo(a)pyrene	50-32-8	9.03	< 9.03	
Benzo(b)fluoranthene	205-99-2	9.03	< 9.03	
Benzo(g,h,i)perylene	191-24-2	9.03	< 9.03	
Benzo(k)fluoranthene	207-08-9	9.03	< 9.03	
Bis(2-chloroethoxy)methane	111-91-1	9.03	< 9.03	
Bis(2-chloroethyl) ether	111-44-4	9.03	< 9.03	
Bis(2-chloroisopropyl) ether	108-60-1	9.03	< 9.03	
Bis(2-ethylhexyl) phthalate	117-81-7	9.03	< 9.03	
Butyl benzyl phthalate	85-68-7	9.03	< 9.03	
Chrysene	218-01-9	9.03	< 9.03	
Dibenz(a,h)anthracene	53-70-3	9.03	< 9.03	
Diethyl phthalate	84-66-2	9.03	< 9.03	
Dimethyl phthalate	131-11-3	9.03	< 9.03	
Di-n-butyl phthalate	84-74-2	9.03	< 9.03	
Di-n-octyl phthalate	117-84-0	9.03	< 9.03	
Fluoranthene	206-44-0	9.03	< 9.03	
Fluorene	86-73-7	9.03	< 9.03	
Hexachlorobenzene	118-74-1	9.03	< 9.03	
Hexachlorobutadiene	87-68-3	9.03	< 9.03	
Hexachlorocyclopentadiene	77-47-4	9.03	< 9.03	
Hexachloroethane	67-72-1	9.03	< 9.03	
Indeno(1,2,3-cd)pyrene	193-39-5	9.03	< 9.03	
Isophorone	78-59-1	9.03	< 9.03	
Naphthalene	91-20-3	9.03	< 9.03	
Nitrobenzene	98-95-3	9.03	< 9.03	
N-Nitrosodimethylamine	62-75-9	9.03	< 9.03	
N-Nitrosodi-n-propylamine	621-64-7	9.03	< 9.03	
N-Nitrosodiphenylamine	86-30-6	9.03	< 9.03	
Pentachlorophenol	87-86-5	9.03	< 9.03	
Phenanthrene	85-01-8	9.03	< 9.03	
Phenol	108-95-2	9.03	< 9.03	
Pyrene	129-00-0	9.03	< 9.03	
Pyridine	110-86-1	9.03	< 9.03	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-002F
Client Sample ID: Cell 2 Slimes

Analyzed: 8/6/2018 2108h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	6.11	45.17	13.5	10-310	
Surr: 2-Fluorobiphenyl		321-60-8	7.77	22.58	34.4	10-230	
Surr: 2-Fluorophenol		367-12-4	4.99	45.17	11.0	10-120	
Surr: Nitrobenzene-d5		4165-60-0	0.536	22.58	2.37	10-253	S
Surr: Phenol-d6		13127-88-3	25.8	45.17	57.2	10-110	
Surr: Terphenyl-d14		1718-51-0	4.63	22.58	20.5	10-255	

** - High LCS recoveries indicate possible bias high. Data deemed acceptable as the analyte was not observed in the field sample.*
S - Surrogate recoveries outside the control limits. Historical data yielded similar results indicating matrix interference.
This sample was analyzed for 4-Chlorophenol as a TIC and none was detected.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-002A
Client Sample ID: Cell 2 Slimes
Collection Date: 8/1/2018 900h
Received Date: 8/2/2018 926h

Test Code: 8260-W-DEN100

Analytical Results VOAs by GC/MS Method 8260C/5030C

Analyzed: 8/6/2018 2340h
Units: µg/L **Dilution Factor:** 10 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Acetone	67-64-1	200	**551**	~

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4		17060-07-0	497	500.0	99.4	72-151	
Surr: 4-Bromofluorobenzene		460-00-4	499	500.0	99.8	80-152	
Surr: Dibromofluoromethane		1868-53-7	534	500.0	107	72-135	
Surr: Toluene-d8		2037-26-5	511	500.0	102	80-124	

~ - The reporting limits were raised due to high analyte concentrations.

Analyzed: 8/3/2018 1405h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
2-Butanone	78-93-3	20.0	**58.4**	
Benzene	71-43-2	1.00	< 1.00	
Carbon tetrachloride	56-23-5	1.00	< 1.00	
Chloroform	67-66-3	1.00	**17.1**	
Chloromethane	74-87-3	1.00	**1.46**	
Naphthalene	91-20-3	1.00	**10.1**	
Tetrahydrofuran	109-99-9	1.00	**2.88**	
Toluene	108-88-3	1.00	**3.20**	
Xylenes, Total	1330-20-7	1.00	< 1.00	

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4		17060-07-0	54.1	50.00	108	72-151	
Surr: 4-Bromofluorobenzene		460-00-4	49.0	50.00	97.9	80-152	
Surr: Dibromofluoromethane		1868-53-7	44.6	50.00	89.1	72-135	
Surr: Toluene-d8		2037-26-5	51.5	50.00	103	80-124	

Analyzed: 8/6/2018 2319h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-002A
Client Sample ID: Cell 2 Slimes

Analyzed: 8/6/2018 2319h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Methylene chloride	75-09-2	1.00	**1.02**	

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	55.0	50.00	110	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	51.0	50.00	102	80-152	
Surr: Dibromofluoromethane	1868-53-7	53.0	50.00	106	72-135	
Surr: Toluene-d8	2037-26-5	51.3	50.00	103	80-124	

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: September 4, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Slimes # 2	Project:	DNMI00107
Sample ID:	456584002	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 09:00		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
High Rad Testing													
Alphaspec Th, Liquid "As Received"													
Thorium-228	U	-748	+/-1270	4820	1.00	pCi/L			AXM6	09/03/18	1309	1794758	1
Thorium-230		7390	+/-1400	3070	1.00	pCi/L							
Thorium-232	U	305	+/-953	3460	1.00	pCi/L							
GFPC,Total Alpha Radium, Liquid "As Received"													
Gross Radium Alpha		7520	+/-397	207	1.00	pCi/L			AXM6	08/31/18	1154	1794759	2
Lucas Cell, Ra226, liquid "As Received"													
Radium-226		36.2	+/-8.87	17.3	1.00	pCi/L			PCW	09/04/18	1040	1794760	3
U- 233/234,U-235/236 and U-238 "As Received"													
Uranium-233/234		14900	+/-3280	5440	1.00	pCi/L			AXM6	09/01/18	1025	1794761	4
Uranium-235/236	U	2860	+/-1720	3640	1.00	pCi/L							
Uranium-238		12500	+/-3050	5500	1.00	pCi/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE EML HASL-300, Th-01-RC Modified	
2	EPA 900.1 Mod/ EPA 903.0 Mod	
3	EPA 903.1 Modified	
4	DOE EML HASL-300, U-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Thorium-229 Tracer	Alphaspec Th, Liquid "As Received"			86.6	(15%-125%)
Barium Carrier	GFPC,Total Alpha Radium, Liquid "As Received"			85.3	(25%-125%)
Uranium-232 Tracer	U- 233/234,U-235/236 and U-238 "As Received"			102	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 27, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Slimes # 2	Project:	DNMI00107
Sample ID:	456584002	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 09:00		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Hazardous Waste												
ASTM D 5057 Specific Gravity "As Received"												
Specific Gravity		1.07	0.010	0.100	none		1	VH1	08/21/18	0937	1794741	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	ASTM D 5057	

Notes:

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-003
Client Sample ID: Cell 3
Collection Date: 8/1/2018 920h
Received Date: 8/2/2018 926h

Analytical Results DISSOLVED METALS

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/L	8/6/2018 645h	8/16/2018 1438h	E200.8	0.200	**20.9**	
Beryllium	mg/L	8/6/2018 645h	8/16/2018 1438h	E200.8	0.200	**2.95**	
Cadmium	mg/L	8/6/2018 645h	8/16/2018 1438h	E200.8	0.0500	**52.1**	
Calcium	mg/L	8/6/2018 645h	8/15/2018 1700h	E200.7	100	**498**	
Chromium	mg/L	8/6/2018 645h	8/16/2018 1623h	E200.8	20.0	**25.1**	
Cobalt	mg/L	8/6/2018 645h	8/16/2018 1623h	E200.8	40.0	**120**	
Copper	mg/L	8/6/2018 645h	8/16/2018 1623h	E200.8	20.0	**515**	
Iron	mg/L	8/6/2018 645h	8/16/2018 1623h	E200.8	1,000	**13,300**	
Lead	mg/L	8/6/2018 645h	8/16/2018 1438h	E200.8	0.200	**20.5**	
Magnesium	mg/L	8/6/2018 645h	8/15/2018 1631h	E200.7	1,000	**22,000**	
Manganese	mg/L	8/6/2018 645h	8/16/2018 1623h	E200.8	20.0	**4,070**	
Mercury	mg/L	8/8/2018 1800h	8/9/2018 908h	E245.1	0.0250	**0.430**	
Molybdenum	mg/L	8/6/2018 645h	8/16/2018 1438h	E200.8	0.200	**3.74**	
Nickel	mg/L	8/6/2018 645h	8/16/2018 1623h	E200.8	20.0	**113**	
Potassium	mg/L	8/6/2018 645h	8/15/2018 1700h	E200.7	100	**1,480**	
Selenium	mg/L	8/6/2018 645h	8/16/2018 1438h	E200.8	0.200	**3.68**	
Silver	mg/L	8/6/2018 645h	8/16/2018 1438h	E200.8	0.200	**3.77**	
Sodium	mg/L	8/6/2018 645h	8/15/2018 1631h	E200.7	1,000	**46,900**	
Thallium	mg/L	8/6/2018 645h	8/16/2018 1438h	E200.8	0.200	**0.376**	
Tin	mg/L	8/17/2018 1057h	8/17/2018 1520h	E200.8	17.0	< 17.0	*
Uranium	mg/L	8/6/2018 645h	8/16/2018 1623h	E200.8	20.0	**1,110**	
Vanadium	mg/L	8/6/2018 645h	8/15/2018 1136h	E200.7	5.00	**2,420**	
Zinc	mg/L	8/6/2018 645h	8/16/2018 1623h	E200.8	50.0	**2,100**	

** - The reporting limits were raised due to sample matrix interferences.*

Analysis performed on a portion of the sample filtered at the laboratory upon receipt. The sample was received after the filtration holding time had expired for dissolved analysis.

American West ANALYTICAL LABORATORIES
3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686
Toll Free: (888) 263-8686
Fax: (801) 263-8687
e-mail: awal@awal-labs.com
web: www.awal-labs.com
Kyle F. Gross
Laboratory Director
Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-003
Client Sample ID: Cell 3
Collection Date: 8/1/2018 920h
Received Date: 8/2/2018 926h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Ammonia (as N)	mg/L	8/13/2018 830h	8/13/2018 1446h	E350.1	50.0	**9,490**	
Bicarbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Carbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Chloride	mg/L		8/14/2018 1322h	E300.0	10,000	**55,200**	
Conductivity	µmhos/cm		8/6/2018 700h	SM2510B	2.00	**104,000**	
Fluoride	mg/L		8/14/2018 1718h	E300.0	100	**7,400**	
Ion Balance	%		8/15/2018 1731h	Calc.	-100	**-12.1**	
Nitrate/Nitrite (as N)	mg/L		8/6/2018 1612h	E353.2	4.00	**710**	
pH @ 25° C	pH Units		8/2/2018 1452h	SW9040C	1.00	**1.32**	H
Sulfate	mg/L		8/14/2018 1553h	E300.0	50,000	**208,000**	
Total Anions, Measured	meq/L		8/15/2018 1731h	Calc.		**5,900**	
Total Cations, Measured	meq/L		8/15/2018 1731h	Calc.		**4,630**	
Total Dissolved Solids	mg/L		8/5/2018 1115h	SM2540C	500	**327,000**	
Total Dissolved Solids Ratio, Measured/Calculated			8/15/2018 1731h	Calc.		**0.939**	
Total Dissolved Solids, Calculated	mg/L		8/15/2018 1731h	Calc.		**348,000**	

H - Sample was received outside of the holding time.

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-003F
Client Sample ID: Cell 3
Collection Date: 8/1/2018 920h
Received Date: 8/2/2018 926h
Test Code: 8270-W-3511

Analytical Results SVOA by GC/MS Method 8270D/3511

Analyzed: 8/6/2018 2130h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 200 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,2,4-Trichlorobenzene	120-82-1	1,490	< 1,490	
1,2-Dichlorobenzene	95-50-1	1,490	< 1,490	
1,3-Dichlorobenzene	541-73-1	1,490	< 1,490	
1,4-Dichlorobenzene	106-46-7	1,490	< 1,490	
1-Methylnaphthalene	90-12-0	1,490	< 1,490	
2,4,5-Trichlorophenol	95-95-4	1,490	< 1,490	
2,4,6-Trichlorophenol	88-06-2	1,490	< 1,490	*
2,4-Dichlorophenol	120-83-2	1,490	< 1,490	
2,4-Dimethylphenol	105-67-9	1,490	< 1,490	
2,4-Dinitrophenol	51-28-5	1,490	< 1,490	
2,4-Dinitrotoluene	121-14-2	1,490	< 1,490	
2,6-Dinitrotoluene	606-20-2	1,490	< 1,490	
2-Chloronaphthalene	91-58-7	1,490	< 1,490	
2-Chlorophenol	95-57-8	1,490	< 1,490	
2-Methylnaphthalene	91-57-6	1,490	< 1,490	
2-Methylphenol	95-48-7	1,490	< 1,490	
2-Nitrophenol	88-75-5	1,490	< 1,490	
3&4-Methylphenol		1,490	< 1,490	
3,3´-Dichlorobenzidine	91-94-1	1,490	< 1,490	
4,6-Dinitro-2-methylphenol	534-52-1	1,490	< 1,490	
4-Bromophenyl phenyl ether	101-55-3	1,490	< 1,490	
4-Chloro-3-methylphenol	59-50-7	1,490	< 1,490	
4-Chlorophenyl phenyl ether	7005-72-3	1,490	< 1,490	
4-Nitrophenol	100-02-7	1,490	< 1,490	
Acenaphthene	83-32-9	1,490	< 1,490	
Acenaphthylene	208-96-8	1,490	< 1,490	
Anthracene	120-12-7	1,490	< 1,490	
Azobenzene	103-33-3	1,490	< 1,490	
Benz(a)anthracene	56-55-3	1,490	< 1,490	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-003F
Client Sample ID: Cell 3

Analyzed: 8/6/2018 2130h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 200 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzidine	92-87-5	1,490	< 1,490	
Benzo(a)pyrene	50-32-8	1,490	< 1,490	
Benzo(b)fluoranthene	205-99-2	1,490	< 1,490	
Benzo(g,h,i)perylene	191-24-2	1,490	< 1,490	
Benzo(k)fluoranthene	207-08-9	1,490	< 1,490	
Bis(2-chloroethoxy)methane	111-91-1	1,490	< 1,490	
Bis(2-chloroethyl) ether	111-44-4	1,490	< 1,490	
Bis(2-chloroisopropyl) ether	108-60-1	1,490	< 1,490	
Bis(2-ethylhexyl) phthalate	117-81-7	1,490	< 1,490	
Butyl benzyl phthalate	85-68-7	1,490	< 1,490	
Chrysene	218-01-9	1,490	< 1,490	
Dibenz(a,h)anthracene	53-70-3	1,490	< 1,490	
Diethyl phthalate	84-66-2	1,490	< 1,490	
Dimethyl phthalate	131-11-3	1,490	< 1,490	
Di-n-butyl phthalate	84-74-2	1,490	< 1,490	
Di-n-octyl phthalate	117-84-0	1,490	< 1,490	
Fluoranthene	206-44-0	1,490	< 1,490	
Fluorene	86-73-7	1,490	< 1,490	
Hexachlorobenzene	118-74-1	1,490	< 1,490	
Hexachlorobutadiene	87-68-3	1,490	< 1,490	
Hexachlorocyclopentadiene	77-47-4	1,490	< 1,490	
Hexachloroethane	67-72-1	1,490	< 1,490	
Indeno(1,2,3-cd)pyrene	193-39-5	1,490	< 1,490	
Isophorone	78-59-1	1,490	< 1,490	
Naphthalene	91-20-3	1,490	< 1,490	
Nitrobenzene	98-95-3	1,490	< 1,490	
N-Nitrosodimethylamine	62-75-9	1,490	< 1,490	
N-Nitrosodi-n-propylamine	621-64-7	1,490	< 1,490	
N-Nitrosodiphenylamine	86-30-6	1,490	< 1,490	
Pentachlorophenol	87-86-5	1,490	< 1,490	
Phenanthrene	85-01-8	1,490	< 1,490	
Phenol	108-95-2	1,490	< 1,490	
Pyrene	129-00-0	1,490	< 1,490	
Pyridine	110-86-1	1,490	< 1,490	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-003F
Client Sample ID: Cell 3

Analyzed: 8/6/2018 2130h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 200 **Method:** SW8270D

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	0	37.16	0	10-310	S
Surr: 2-Fluorobiphenyl		321-60-8	0	18.58	0	10-230	S
Surr: 2-Fluorophenol		367-12-4	0	37.16	0	10-120	S
Surr: Nitrobenzene-d5		4165-60-0	8.77	18.58	47.2	10-253	
Surr: Phenol-d6		13127-88-3	0	37.16	0	10-110	S
Surr: Terphenyl-d14		1718-51-0	0.595	18.58	3.20	10-255	S

** - High LCS recoveries indicate possible bias high. Data deemed acceptable as the analyte was not observed in the field sample.*
S - Surrogate recoveries outside the control limits. Historical data yielded similar results indicating matrix interference.
The reporting limits were raised due to sample matrix interferences. Sample extract solidified.
This sample was analyzed for 4-Chlorophenol as a TIC and none was detected.

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1809117-002A
Client Sample ID: Cell 3
Collection Date: 9/5/2018 1400h
Received Date: 9/7/2018 855h
Test Code: 8270-W-3511

Analytical Results SVOA by GC/MS Method 8270D/3511

Analyzed: 9/13/2018 1452h **Extracted:** 9/11/2018 1340h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,2,4-Trichlorobenzene	120-82-1	7.78	< 7.78	
1,2-Dichlorobenzene	95-50-1	7.78	< 7.78	
1,3-Dichlorobenzene	541-73-1	7.78	< 7.78	
1,4-Dichlorobenzene	106-46-7	7.78	< 7.78	
1-Methylnaphthalene	90-12-0	7.78	< 7.78	
2,4,5-Trichlorophenol	95-95-4	7.78	< 7.78	
2,4,6-Trichlorophenol	88-06-2	7.78	< 7.78	
2,4-Dichlorophenol	120-83-2	7.78	< 7.78	
2,4-Dimethylphenol	105-67-9	7.78	< 7.78	
2,4-Dinitrophenol	51-28-5	7.78	< 7.78	
2,4-Dinitrotoluene	121-14-2	7.78	< 7.78	
2,6-Dinitrotoluene	606-20-2	7.78	< 7.78	
2-Chloronaphthalene	91-58-7	7.78	< 7.78	
2-Chlorophenol	95-57-8	7.78	< 7.78	
2-Methylnaphthalene	91-57-6	7.78	< 7.78	
2-Methylphenol	95-48-7	7.78	< 7.78	
2-Nitrophenol	88-75-5	7.78	< 7.78	
3&4-Methylphenol		7.78	< 7.78	
3,3′-Dichlorobenzidine	91-94-1	7.78	< 7.78	
4,6-Dinitro-2-methylphenol	534-52-1	7.78	< 7.78	
4-Bromophenyl phenyl ether	101-55-3	7.78	< 7.78	
4-Chloro-3-methylphenol	59-50-7	7.78	< 7.78	
4-Chlorophenyl phenyl ether	7005-72-3	7.78	< 7.78	
4-Nitrophenol	100-02-7	7.78	< 7.78	
Acenaphthene	83-32-9	7.78	< 7.78	
Acenaphthylene	208-96-8	7.78	< 7.78	
Anthracene	120-12-7	7.78	< 7.78	
Azobenzene	103-33-3	7.78	< 7.78	
Benz(a)anthracene	56-55-3	7.78	< 7.78	

American West ANALYTICAL LABORATORIES
3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686
Toll Free: (888) 263-8686
Fax: (801) 263-8687
e-mail: awal@awal-labs.com
web: www.awal-labs.com
Kyle F. Gross
Laboratory Director
Jose Rocha
QA Officer

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1809117-002A
Client Sample ID: Cell 3

Analyzed: 9/13/2018 1452h **Extracted:** 9/11/2018 1340h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzidine	92-87-5	7.78	< 7.78	
Benzo(a)pyrene	50-32-8	7.78	< 7.78	
Benzo(b)fluoranthene	205-99-2	7.78	< 7.78	
Benzo(g,h,i)perylene	191-24-2	7.78	< 7.78	
Benzo(k)fluoranthene	207-08-9	7.78	< 7.78	
Bis(2-chloroethoxy)methane	111-91-1	7.78	< 7.78	
Bis(2-chloroethyl) ether	111-44-4	7.78	< 7.78	
Bis(2-chloroisopropyl) ether	108-60-1	7.78	< 7.78	
Bis(2-ethylhexyl) phthalate	117-81-7	7.78	< 7.78	
Butyl benzyl phthalate	85-68-7	7.78	< 7.78	
Chrysene	218-01-9	7.78	< 7.78	
Dibenz(a,h)anthracene	53-70-3	7.78	< 7.78	
Diethyl phthalate	84-66-2	7.78	< 7.78	
Dimethyl phthalate	131-11-3	7.78	< 7.78	
Di-n-butyl phthalate	84-74-2	7.78	< 7.78	
Di-n-octyl phthalate	117-84-0	7.78	< 7.78	
Fluoranthene	206-44-0	7.78	< 7.78	
Fluorene	86-73-7	7.78	< 7.78	
Hexachlorobenzene	118-74-1	7.78	< 7.78	
Hexachlorobutadiene	87-68-3	7.78	< 7.78	
Hexachlorocyclopentadiene	77-47-4	7.78	< 7.78	
Hexachloroethane	67-72-1	7.78	< 7.78	
Indeno(1,2,3-cd)pyrene	193-39-5	7.78	< 7.78	
Isophorone	78-59-1	7.78	< 7.78	
Naphthalene	91-20-3	7.78	< 7.78	
Nitrobenzene	98-95-3	7.78	< 7.78	
N-Nitrosodimethylamine	62-75-9	7.78	< 7.78	
N-Nitrosodi-n-propylamine	621-64-7	7.78	< 7.78	
N-Nitrosodiphenylamine	86-30-6	7.78	< 7.78	
Pentachlorophenol	87-86-5	7.78	< 7.78	
Phenanthrene	85-01-8	7.78	< 7.78	
Phenol	108-95-2	7.78	< 7.78	
Pyrene	129-00-0	7.78	< 7.78	
Pyridine	110-86-1	7.78	< 7.78	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1809117-002A
Client Sample ID: Cell 3

Analyzed: 9/13/2018 1452h **Extracted:** 9/11/2018 1340h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	8.20	38.92	21.1	10-310	
Surr: 2-Fluorobiphenyl		321-60-8	40.6	19.46	209	10-230	
Surr: 2-Fluorophenol		367-12-4	3.13	38.92	8.04	10-120	S
Surr: Nitrobenzene-d5		4165-60-0	31.3	19.46	161	10-253	
Surr: Phenol-d6		13127-88-3	26.2	38.92	67.4	10-110	
Surr: Terphenyl-d14		1718-51-0	45.4	19.46	233	10-255	

S - Surrogate recoveries outside the control limits. Prior experience with these same samples yielded similar results indicating matrix interference.

This sample was analyzed for 4-chlorophenol as a TIC. None was detected.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-003A
Client Sample ID: Cell 3
Collection Date: 8/1/2018 920h
Received Date: 8/2/2018 926h
Test Code: 8260-W-DEN100

Analytical Results VOAs by GC/MS Method 8260C/5030C

Analyzed: 8/3/2018 1425h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
2-Butanone	78-93-3	20.0	< 20.0	
Acetone	67-64-1	20.0	**135**	
Benzene	71-43-2	1.00	< 1.00	
Carbon tetrachloride	56-23-5	1.00	< 1.00	
Chloroform	67-66-3	1.00	**5.02**	
Chloromethane	74-87-3	1.00	**5.36**	
Naphthalene	91-20-3	1.00	< 1.00	
Tetrahydrofuran	109-99-9	1.00	**3.01**	
Toluene	108-88-3	1.00	< 1.00	
Xylenes, Total	1330-20-7	1.00	< 1.00	

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	58.1	50.00	116	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	50.2	50.00	100	80-152	
Surr: Dibromofluoromethane	1868-53-7	46.3	50.00	92.7	72-135	
Surr: Toluene-d8	2037-26-5	49.7	50.00	99.4	80-124	

Analyzed: 8/7/2018 020h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Methylene chloride	75-09-2	1.00	**10.4**	

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	58.7	50.00	117	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	50.0	50.00	99.9	80-152	
Surr: Dibromofluoromethane	1868-53-7	61.3	50.00	123	72-135	
Surr: Toluene-d8	2037-26-5	49.1	50.00	98.3	80-124	

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: September 4, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Cell 3	Project:	DNMI00107
Sample ID:	456584003	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 09:20		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
High Rad Testing													
Alphaspec Th, Liquid "As Received"													
Thorium-228	U	620	+/-561	1810	1.00	pCi/L			AXM6	09/03/18	1309	1794758	1
Thorium-230		28100	+/-2200	2540	1.00	pCi/L							
Thorium-232		2310	+/-751	1760	1.00	pCi/L							
GFPC,Total Alpha Radium, Liquid "As Received"													
Gross Radium Alpha		19700	+/-616	146	1.00	pCi/L			AXM6	08/31/18	1154	1794759	2
Lucas Cell, Ra226, liquid "As Received"													
Radium-226		79.8	+/-13.8	24.6	1.00	pCi/L			PCW	09/04/18	1115	1794760	3
U- 233/234,U-235/236 and U-238 "As Received"													
Uranium-233/234		3.98E+05	+/-16300	6350	1.00	pCi/L			AXM6	09/01/18	1025	1794761	4
Uranium-235/236		24000	+/-4590	5020	1.00	pCi/L							
Uranium-238		4.68E+05	+/-17700	3680	1.00	pCi/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE EML HASL-300, Th-01-RC Modified	
2	EPA 900.1 Mod/ EPA 903.0 Mod	
3	EPA 903.1 Modified	
4	DOE EML HASL-300, U-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Thorium-229 Tracer	Alphaspec Th, Liquid "As Received"			91.1	(15%-125%)
Barium Carrier	GFPC,Total Alpha Radium, Liquid "As Received"			92.6	(25%-125%)
Uranium-232 Tracer	U- 233/234,U-235/236 and U-238 "As Received"			90.5	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 27, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Cell 3	Project:	DNMI00107
Sample ID:	456584003	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 09:20		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Hazardous Waste												
ASTM D 5057 Specific Gravity "As Received"												
Specific Gravity		1.21	0.010	0.100	none		1	VH1	08/21/18	0938	1794741	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	ASTM D 5057	

Notes:

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is he greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-004
Client Sample ID: Cell 4A
Collection Date: 8/1/2018 935h
Received Date: 8/2/2018 926h

Analytical Results DISSOLVED METALS

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/L	8/6/2018 645h	8/16/2018 1440h	E200.8	0.200	**125**	
Beryllium	mg/L	8/6/2018 645h	8/16/2018 1440h	E200.8	0.200	**0.538**	
Cadmium	mg/L	8/6/2018 645h	8/16/2018 1440h	E200.8	0.0500	**3.85**	
Calcium	mg/L	8/6/2018 645h	8/15/2018 1702h	E200.7	100	**707**	
Chromium	mg/L	8/6/2018 645h	8/16/2018 1440h	E200.8	0.200	**9.35**	
Cobalt	mg/L	8/6/2018 645h	8/16/2018 1440h	E200.8	0.730	**41.0**	
Copper	mg/L	8/6/2018 645h	8/16/2018 1626h	E200.8	10.0	**683**	
Iron	mg/L	8/6/2018 645h	8/16/2018 1626h	E200.8	500	**5,320**	
Lead	mg/L	8/6/2018 645h	8/16/2018 1440h	E200.8	0.200	**16.4**	
Magnesium	mg/L	8/6/2018 645h	8/15/2018 1633h	E200.7	1,000	**7,030**	
Manganese	mg/L	8/6/2018 645h	8/16/2018 1626h	E200.8	10.0	**307**	
Mercury	mg/L	8/8/2018 1800h	8/9/2018 848h	E245.1	0.00200	**0.00252**	
Molybdenum	mg/L	8/6/2018 645h	8/16/2018 1440h	E200.8	0.200	**59.1**	
Nickel	mg/L	8/6/2018 645h	8/16/2018 1440h	E200.8	0.200	**71.9**	
Potassium	mg/L	8/6/2018 645h	8/15/2018 1702h	E200.7	100	**2,020**	
Selenium	mg/L	8/6/2018 645h	8/16/2018 1440h	E200.8	0.200	**5.87**	
Silver	mg/L	8/6/2018 645h	8/16/2018 1440h	E200.8	0.200	**0.521**	
Sodium	mg/L	8/6/2018 645h	8/15/2018 1633h	E200.7	1,000	**17,600**	
Thallium	mg/L	8/6/2018 645h	8/16/2018 1440h	E200.8	0.200	**0.727**	
Tin	mg/L	8/17/2018 1057h	8/17/2018 1523h	E200.8	17.0	< 17.0	*
Uranium	mg/L	8/6/2018 645h	8/16/2018 1626h	E200.8	10.0	**244**	
Vanadium	mg/L	8/6/2018 645h	8/15/2018 1138h	E200.7	5.00	**1,080**	
Zinc	mg/L	8/6/2018 645h	8/16/2018 1626h	E200.8	25.0	**406**	

** - The reporting limits were raised due to sample matrix interferences.*

Analysis performed on a portion of the sample filtered at the laboratory upon receipt. The sample was received after the filtration holding time had expired for dissolved analysis.

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-004
Client Sample ID: Cell 4A
Collection Date: 8/1/2018 935h
Received Date: 8/2/2018 926h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Ammonia (as N)	mg/L	8/13/2018 830h	8/13/2018 1447h	E350.1	50.0	**9,060**	
Bicarbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Carbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Chloride	mg/L		8/14/2018 1735h	E300.0	2,000	**10,100**	
Conductivity	µmhos/cm		8/6/2018 700h	SM2510B	2.00	**115,000**	
Fluoride	mg/L		8/14/2018 1735h	E300.0	200	**2,000**	
Ion Balance	%		8/15/2018 1731h	Calc.	-100	**-22.3**	
Nitrate/Nitrite (as N)	mg/L		8/6/2018 1559h	E353.2	1.00	**73.4**	
pH @ 25° C	pH Units		8/2/2018 1452h	SW9040C	1.00	**1.25**	H
Sulfate	mg/L		8/14/2018 1339h	E300.0	10,000	**116,000**	
Total Anions, Measured	meq/L		8/15/2018 1731h	Calc.		**2,710**	
Total Cations, Measured	meq/L		8/15/2018 1731h	Calc.		**1,720**	
Total Dissolved Solids	mg/L		8/5/2018 1115h	SM2540C	500	**147,000**	
Total Dissolved Solids Ratio, Measured/Calculated			8/15/2018 1731h	Calc.		**0.926**	
Total Dissolved Solids, Calculated	mg/L		8/15/2018 1731h	Calc.		**159,000**	

H - Sample was received outside of the holding time.

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-004F
Client Sample ID: Cell 4A
Collection Date: 8/1/2018 935h
Received Date: 8/2/2018 926h

Test Code: 8270-W-3511

Analytical Results SVOA by GC/MS Method 8270D/3511

Analyzed: 8/6/2018 2152h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,2,4-Trichlorobenzene	120-82-1	8.57	< 8.57	
1,2-Dichlorobenzene	95-50-1	8.57	< 8.57	
1,3-Dichlorobenzene	541-73-1	8.57	< 8.57	
1,4-Dichlorobenzene	106-46-7	8.57	< 8.57	
1-Methylnaphthalene	90-12-0	8.57	< 8.57	
2,4,5-Trichlorophenol	95-95-4	8.57	< 8.57	
2,4,6-Trichlorophenol	88-06-2	8.57	< 8.57	
2,4-Dichlorophenol	120-83-2	8.57	< 8.57	
2,4-Dimethylphenol	105-67-9	8.57	< 8.57	
2,4-Dinitrophenol	51-28-5	8.57	< 8.57	
2,4-Dinitrotoluene	121-14-2	8.57	< 8.57	
2,6-Dinitrotoluene	606-20-2	8.57	< 8.57	
2-Chloronaphthalene	91-58-7	8.57	< 8.57	
2-Chlorophenol	95-57-8	8.57	< 8.57	
2-Methylnaphthalene	91-57-6	8.57	< 8.57	
2-Methylphenol	95-48-7	8.57	< 8.57	
2-Nitrophenol	88-75-5	8.57	< 8.57	
3&4-Methylphenol		8.57	< 8.57	
3,3´-Dichlorobenzidine	91-94-1	8.57	< 8.57	
4,6-Dinitro-2-methylphenol	534-52-1	8.57	< 8.57	
4-Bromophenyl phenyl ether	101-55-3	8.57	< 8.57	
4-Chloro-3-methylphenol	59-50-7	8.57	< 8.57	
4-Chlorophenyl phenyl ether	7005-72-3	8.57	< 8.57	
4-Nitrophenol	100-02-7	8.57	< 8.57	
Acenaphthene	83-32-9	8.57	< 8.57	
Acenaphthylene	208-96-8	8.57	< 8.57	
Anthracene	120-12-7	8.57	< 8.57	
Azobenzene	103-33-3	8.57	< 8.57	
Benz(a)anthracene	56-55-3	8.57	< 8.57	

American West ANALYTICAL LABORATORIES
3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686
Toll Free: (888) 263-8686
Fax: (801) 263-8687
e-mail: awal@awal-labs.com
web: www.awal-labs.com
Kyle F. Gross
Laboratory Director
Jose Rocha
QA Officer

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-004F
Client Sample ID: Cell 4A

Analyzed: 8/6/2018 2152h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzidine	92-87-5	8.57	< 8.57	
Benzo(a)pyrene	50-32-8	8.57	< 8.57	
Benzo(b)fluoranthene	205-99-2	8.57	< 8.57	
Benzo(g,h,i)perylene	191-24-2	8.57	< 8.57	
Benzo(k)fluoranthene	207-08-9	8.57	< 8.57	
Bis(2-chloroethoxy)methane	111-91-1	8.57	< 8.57	
Bis(2-chloroethyl) ether	111-44-4	8.57	< 8.57	
Bis(2-chloroisopropyl) ether	108-60-1	8.57	< 8.57	
Bis(2-ethylhexyl) phthalate	117-81-7	8.57	< 8.57	
Butyl benzyl phthalate	85-68-7	8.57	< 8.57	
Chrysene	218-01-9	8.57	< 8.57	
Dibenz(a,h)anthracene	53-70-3	8.57	< 8.57	
Diethyl phthalate	84-66-2	8.57	< 8.57	
Dimethyl phthalate	131-11-3	8.57	< 8.57	
Di-n-butyl phthalate	84-74-2	8.57	< 8.57	
Di-n-octyl phthalate	117-84-0	8.57	< 8.57	
Fluoranthene	206-44-0	8.57	< 8.57	
Fluorene	86-73-7	8.57	< 8.57	
Hexachlorobenzene	118-74-1	8.57	< 8.57	
Hexachlorobutadiene	87-68-3	8.57	< 8.57	
Hexachlorocyclopentadiene	77-47-4	8.57	< 8.57	
Hexachloroethane	67-72-1	8.57	< 8.57	
Indeno(1,2,3-cd)pyrene	193-39-5	8.57	< 8.57	
Isophorone	78-59-1	8.57	< 8.57	
Naphthalene	91-20-3	8.57	< 8.57	
Nitrobenzene	98-95-3	8.57	< 8.57	
N-Nitrosodimethylamine	62-75-9	8.57	< 8.57	
N-Nitrosodi-n-propylamine	621-64-7	8.57	< 8.57	
N-Nitrosodiphenylamine	86-30-6	8.57	< 8.57	
Pentachlorophenol	87-86-5	8.57	< 8.57	
Phenanthrene	85-01-8	8.57	< 8.57	
Phenol	108-95-2	8.57	< 8.57	
Pyrene	129-00-0	8.57	< 8.57	
Pyridine	110-86-1	8.57	**34.0**	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-004F
Client Sample ID: Cell 4A

Analyzed: 8/6/2018 2152h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	26.7	42.86	62.4	10-310	
Surr: 2-Fluorobiphenyl		321-60-8	12.7	21.43	59.4	10-230	
Surr: 2-Fluorophenol		367-12-4	16.9	42.86	39.5	10-120	
Surr: Nitrobenzene-d5		4165-60-0	1.81	21.43	8.42	10-253	S
Surr: Phenol-d6		13127-88-3	43.2	42.86	101	10-110	
Surr: Terphenyl-d14		1718-51-0	12.7	21.43	59.1	10-255	

** - High LCS recoveries indicate possible bias high. Data deemed acceptable as the analyte was not observed in the field sample.*
S - Surrogate recoveries outside the control limits. Historical data yielded similar results indicating matrix interference.
This sample was analyzed for 4-Chlorophenol as a TIC and none was detected.

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-004A
Client Sample ID: Cell 4A
Collection Date: 8/1/2018 935h
Received Date: 8/2/2018 926h

Test Code: 8260-W-DEN100

Analytical Results VOAs by GC/MS Method 8260C/5030C

Analyzed: 8/3/2018 1446h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
2-Butanone	78-93-3	20.0	< 20.0	
Acetone	67-64-1	20.0	**42.7**	
Benzene	71-43-2	1.00	< 1.00	
Carbon tetrachloride	56-23-5	1.00	< 1.00	
Chloroform	67-66-3	1.00	**1.91**	
Chloromethane	74-87-3	1.00	**1.76**	
Methylene chloride	75-09-2	1.00	< 1.00	B
Naphthalene	91-20-3	1.00	< 1.00	
Tetrahydrofuran	109-99-9	1.00	< 1.00	
Toluene	108-88-3	1.00	< 1.00	
Xylenes, Total	1330-20-7	1.00	< 1.00	

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	54.9	50.00	110	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	50.2	50.00	100	80-152	
Surr: Dibromofluoromethane	1868-53-7	45.2	50.00	90.3	72-135	
Surr: Toluene-d8	2037-26-5	50.6	50.00	101	80-124	

B - Analyte(s) were observed above the reporting limit in the method blank. The method blank was acceptable, as any associated samples do not have results above the reporting limit/PQL.

American West ANALYTICAL LABORATORIES
3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686
Toll Free: (888) 263-8686
Fax: (801) 263-8687
e-mail: awal@awal-labs.com
web: www.awal-labs.com
Kyle F. Gross
Laboratory Director
Jose Rocha
QA Officer

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: September 4, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Cell 4a	Project:	DNMI00107
Sample ID:	456584004	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 09:35		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
High Rad Testing													
Alphaspec Th, Liquid "As Received"													
Thorium-228		1970	+/-699	1770	1.00	pCi/L			AXM6	09/03/18	1309	1794758	1
Thorium-230		5.39E+05	+/-8660	2480	1.00	pCi/L							
Thorium-232		8230	+/-1170	1870	1.00	pCi/L							
GFPC,Total Alpha Radium, Liquid "As Received"													
Gross Radium Alpha		5.16E+05	+/-3520	344	1.00	pCi/L			AXM6	08/31/18	1154	1794759	2
Lucas Cell, Ra226, liquid "As Received"													
Radium-226		59.2	+/-10.8	18.7	1.00	pCi/L			PCW	09/04/18	1115	1794760	3
U- 233/234,U-235/236 and U-238 "As Received"													
Uranium-233/234		88700	+/-8720	7890	1.00	pCi/L			AXM6	09/01/18	1025	1794761	4
Uranium-235/236		9900	+/-3550	7090	1.00	pCi/L							
Uranium-238		86300	+/-8560	7090	1.00	pCi/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE EML HASL-300, Th-01-RC Modified	
2	EPA 900.1 Mod/ EPA 903.0 Mod	
3	EPA 903.1 Modified	
4	DOE EML HASL-300, U-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Thorium-229 Tracer	Alphaspec Th, Liquid "As Received"			105	(15%-125%)
Barium Carrier	GFPC,Total Alpha Radium, Liquid "As Received"			98.9	(25%-125%)
Uranium-232 Tracer	U- 233/234,U-235/236 and U-238 "As Received"			79.2	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 27, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Cell 4a	Project:	DNMI00107
Sample ID:	456584004	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 09:35		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Hazardous Waste												
ASTM D 5057 Specific Gravity "As Received"												
Specific Gravity		1.10	0.010	0.100	none		1	VH1	08/21/18	0938	1794741	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	ASTM D 5057	

Notes:

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-005
Client Sample ID: Cell 4A LDS
Collection Date: 8/1/2018 945h
Received Date: 8/2/2018 926h

Analytical Results DISSOLVED METALS

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/L	8/17/2018 1057h	8/17/2018 1526h	E200.8	0.200	**42.4**	2
Beryllium	mg/L	8/17/2018 1057h	8/20/2018 1218h	E200.8	0.200	**0.298**	
Cadmium	mg/L	8/17/2018 1057h	8/17/2018 1526h	E200.8	0.0500	**3.74**	
Calcium	mg/L	8/6/2018 645h	8/15/2018 1704h	E200.7	100	**516**	
Chromium	mg/L	8/17/2018 1057h	8/17/2018 1526h	E200.8	0.200	**3.93**	
Cobalt	mg/L	8/17/2018 1057h	8/17/2018 1526h	E200.8	0.730	**30.6**	2
Copper	mg/L	8/17/2018 1057h	8/20/2018 1147h	E200.8	2.00	**376**	2
Iron	mg/L	8/17/2018 1057h	8/20/2018 1157h	E200.8	200	**2,090**	2
Lead	mg/L	8/17/2018 1057h	8/20/2018 1236h	E200.8	0.100	**0.118**	
Magnesium	mg/L	8/6/2018 645h	8/15/2018 1635h	E200.7	1,000	**3,820**	
Manganese	mg/L	8/17/2018 1057h	8/17/2018 1526h	E200.8	0.800	**136**	2
Mercury	mg/L	8/8/2018 1800h	8/9/2018 826h	E245.1	0.00200	< 0.00200	'@
Molybdenum	mg/L	8/17/2018 1057h	8/17/2018 1526h	E200.8	0.200	**2.35**	
Nickel	mg/L	8/17/2018 1057h	8/17/2018 1526h	E200.8	0.200	**70.9**	2
Potassium	mg/L	8/6/2018 645h	8/15/2018 1704h	E200.7	100	**539**	
Selenium	mg/L	8/17/2018 1057h	8/17/2018 1526h	E200.8	0.200	**1.55**	
Silver	mg/L	8/17/2018 1057h	8/20/2018 1236h	E200.8	0.100	< 0.100	*
Sodium	mg/L	8/6/2018 645h	8/15/2018 1635h	E200.7	1,000	**6,780**	
Thallium	mg/L	8/17/2018 1057h	8/17/2018 1526h	E200.8	0.200	**0.281**	
Tin	mg/L	8/17/2018 1057h	8/17/2018 1526h	E200.8	17.0	< 17.0	*
Uranium	mg/L	8/17/2018 1057h	8/20/2018 1147h	E200.8	2.00	**78.6**	2
Vanadium	mg/L	8/6/2018 645h	8/15/2018 1147h	E200.7	5.00	**475**	
Zinc	mg/L	8/17/2018 1057h	8/20/2018 1147h	E200.8	5.00	**446**	2

** - The reporting limits were raised due to sample matrix interferences.*

@ - High RPD due to suspected sample non-homogeneity or matrix interference.

[1] - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

[2] - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.

Analysis performed on a portion of the sample filtered at the laboratory upon receipt. The sample was received after the filtration holding time had expired for dissolved analysis.

American West ANALYTICAL LABORATORIES
3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686
Toll Free: (888) 263-8686
Fax: (801) 263-8687
e-mail: awal@awal-labs.com
web: www.awal-labs.com
Kyle F. Gross
Laboratory Director
Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-005
Client Sample ID: Cell 4A LDS
Collection Date: 8/1/2018 945h
Received Date: 8/2/2018 926h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Ammonia (as N)	mg/L	8/15/2018 1350h	8/16/2018 1028h	E350.1	50.0	**4,580**	
Bicarbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Carbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Chloride	mg/L		8/14/2018 1752h	E300.0	1,000	**4,360**	
Conductivity	µmhos/cm		8/6/2018 700h	SM2510B	2.00	**63,400**	
Fluoride	mg/L		8/14/2018 1752h	E300.0	100	**716**	
Ion Balance	%		8/15/2018 1731h	Calc.	-100	**-34.1**	
Nitrate/Nitrite (as N)	mg/L		8/6/2018 1601h	E353.2	1.00	**44.0**	2
pH @ 25° C	pH Units		8/2/2018 1452h	SW9040C	1.00	**1.88**	H
Sulfate	mg/L		8/16/2018 1419h	E300.0	10,000	**68,600**	
Total Anions, Measured	meq/L		8/15/2018 1731h	Calc.		**1,550**	
Total Cations, Measured	meq/L		8/15/2018 1731h	Calc.		**762**	
Total Dissolved Solids	mg/L		8/5/2018 1115h	SM2540C	500	**75,300**	
Total Dissolved Solids Ratio, Measured/Calculated			8/15/2018 1731h	Calc.		**0.868**	
Total Dissolved Solids, Calculated	mg/L		8/15/2018 1731h	Calc.		**86,700**	

² - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.
H - Sample was received outside of the holding time.

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-005F
Client Sample ID: Cell 4A LDS
Collection Date: 8/1/2018 945h
Received Date: 8/2/2018 926h

Test Code: 8270-W-3511

Analytical Results SVOA by GC/MS Method 8270D/3511

Analyzed: 8/6/2018 2214h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,2,4-Trichlorobenzene	120-82-1	9.08	< 9.08	
1,2-Dichlorobenzene	95-50-1	9.08	< 9.08	
1,3-Dichlorobenzene	541-73-1	9.08	< 9.08	
1,4-Dichlorobenzene	106-46-7	9.08	< 9.08	
1-Methylnaphthalene	90-12-0	9.08	< 9.08	
2,4,5-Trichlorophenol	95-95-4	9.08	< 9.08	
2,4,6-Trichlorophenol	88-06-2	9.08	< 9.08	S@
2,4-Dichlorophenol	120-83-2	9.08	< 9.08	
2,4-Dimethylphenol	105-67-9	9.08	**11.1**	'@
2,4-Dinitrophenol	51-28-5	9.08	< 9.08	
2,4-Dinitrotoluene	121-14-2	9.08	< 9.08	'
2,6-Dinitrotoluene	606-20-2	9.08	< 9.08	
2-Chloronaphthalene	91-58-7	9.08	< 9.08	
2-Chlorophenol	95-57-8	9.08	< 9.08	
2-Methylnaphthalene	91-57-6	9.08	< 9.08	
2-Methylphenol	95-48-7	9.08	< 9.08	
2-Nitrophenol	88-75-5	9.08	< 9.08	
3&4-Methylphenol		9.08	< 9.08	
3,3´-Dichlorobenzidine	91-94-1	9.08	< 9.08	
4,6-Dinitro-2-methylphenol	534-52-1	9.08	< 9.08	
4-Bromophenyl phenyl ether	101-55-3	9.08	< 9.08	
4-Chloro-3-methylphenol	59-50-7	9.08	< 9.08	'@
4-Chlorophenyl phenyl ether	7005-72-3	9.08	< 9.08	
4-Nitrophenol	100-02-7	9.08	< 9.08	
Acenaphthene	83-32-9	9.08	< 9.08	'
Acenaphthylene	208-96-8	9.08	< 9.08	
Anthracene	120-12-7	9.08	< 9.08	
Azobenzene	103-33-3	9.08	< 9.08	
Benz(a)anthracene	56-55-3	9.08	< 9.08	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-005F
Client Sample ID: Cell 4A LDS

Analyzed: 8/6/2018 2214h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzidine	92-87-5	9.08	< 9.08	
Benzo(a)pyrene	50-32-8	9.08	< 9.08	
Benzo(b)fluoranthene	205-99-2	9.08	< 9.08	
Benzo(g,h,i)perylene	191-24-2	9.08	< 9.08	
Benzo(k)fluoranthene	207-08-9	9.08	< 9.08	
Bis(2-chloroethoxy)methane	111-91-1	9.08	< 9.08	
Bis(2-chloroethyl) ether	111-44-4	9.08	< 9.08	
Bis(2-chloroisopropyl) ether	108-60-1	9.08	< 9.08	
Bis(2-ethylhexyl) phthalate	117-81-7	9.08	< 9.08	
Butyl benzyl phthalate	85-68-7	9.08	< 9.08	
Chrysene	218-01-9	9.08	< 9.08	
Dibenz(a,h)anthracene	53-70-3	9.08	< 9.08	
Diethyl phthalate	84-66-2	9.08	< 9.08	
Dimethyl phthalate	131-11-3	9.08	< 9.08	
Di-n-butyl phthalate	84-74-2	9.08	< 9.08	
Di-n-octyl phthalate	117-84-0	9.08	< 9.08	
Fluoranthene	206-44-0	9.08	< 9.08	
Fluorene	86-73-7	9.08	< 9.08	
Hexachlorobenzene	118-74-1	9.08	< 9.08	
Hexachlorobutadiene	87-68-3	9.08	< 9.08	
Hexachlorocyclopentadiene	77-47-4	9.08	< 9.08	
Hexachloroethane	67-72-1	9.08	< 9.08	
Indeno(1,2,3-cd)pyrene	193-39-5	9.08	< 9.08	
Isophorone	78-59-1	9.08	< 9.08	
Naphthalene	91-20-3	9.08	< 9.08	
Nitrobenzene	98-95-3	9.08	< 9.08	
N-Nitrosodimethylamine	62-75-9	9.08	< 9.08	
N-Nitrosodi-n-propylamine	621-64-7	9.08	< 9.08	
N-Nitrosodiphenylamine	86-30-6	9.08	< 9.08	
Pentachlorophenol	87-86-5	9.08	< 9.08	
Phenanthrene	85-01-8	9.08	< 9.08	
Phenol	108-95-2	9.08	< 9.08	
Pyrene	129-00-0	9.08	< 9.08	
Pyridine	110-86-1	9.08	**12.9**	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-005F
Client Sample ID: Cell 4A LDS

Analyzed: 8/6/2018 2214h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	7.62	45.38	16.8	10-310	
Surr: 2-Fluorobiphenyl		321-60-8	14.9	22.69	65.6	10-230	
Surr: 2-Fluorophenol		367-12-4	9.62	45.38	21.2	10-120	
Surr: Nitrobenzene-d5		4165-60-0	5.35	22.69	23.6	10-253	
Surr: Phenol-d6		13127-88-3	6.50	45.38	14.3	10-110	
Surr: Terphenyl-d14		1718-51-0	13.2	22.69	58.1	10-255	

@ - High RPD due to suspected sample non-homogeneity or matrix interference.
' - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.
S - High LCS recoveries indicate possible bias high. Data deemed acceptable as the analyte was not observed in the field sample.
This sample was analyzed for 4-Chlorophenol as a TIC and none was detected.

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-005A
Client Sample ID: Cell 4A LDS
Collection Date: 8/1/2018 945h
Received Date: 8/2/2018 926h

Test Code: 8260-W-DEN100

Analytical Results VOAs by GC/MS Method 8260C/5030C

Analyzed: 8/3/2018 1506h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
2-Butanone	78-93-3	20.0	< 20.0	
Acetone	67-64-1	20.0	**108**	
Benzene	71-43-2	1.00	< 1.00	
Carbon tetrachloride	56-23-5	1.00	< 1.00	
Chloroform	67-66-3	1.00	**33.8**	
Chloromethane	74-87-3	1.00	**2.41**	
Naphthalene	91-20-3	1.00	< 1.00	
Tetrahydrofuran	109-99-9	1.00	**19.7**	
Toluene	108-88-3	1.00	< 1.00	
Xylenes, Total	1330-20-7	1.00	< 1.00	

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	52.1	50.00	104	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	50.3	50.00	101	80-152	
Surr: Dibromofluoromethane	1868-53-7	44.0	50.00	88.0	72-135	
Surr: Toluene-d8	2037-26-5	50.9	50.00	102	80-124	

Analyzed: 8/7/2018 121h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Methylene chloride	75-09-2	1.00	**1.05**	

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	53.5	50.00	107	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	49.6	50.00	99.2	80-152	
Surr: Dibromofluoromethane	1868-53-7	51.2	50.00	102	72-135	
Surr: Toluene-d8	2037-26-5	50.0	50.00	100	80-124	

American West ANALYTICAL LABORATORIES
3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686
Toll Free: (888) 263-8686
Fax: (801) 263-8687
e-mail: awal@awal-labs.com
web: www.awal-labs.com
Kyle F. Gross
Laboratory Director
Jose Rocha
QA Officer

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: September 4, 2018

Company : Energy Fuels Resources (USA), Inc.
Address : 225 Union Boulevard
Suite 600
Lakewood, Colorado 80228
Contact: Ms. Kathy Weinel
Project: Tailings 2018 Characterization

Client Sample ID: Cell 4a LDS
Sample ID: 456584005
Matrix: Ground Water
Collect Date: 01-AUG-18 09:45
Receive Date: 07-AUG-18
Collector: Client

Project: DNMI00107
Client ID: DNMI001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
High Rad Testing													
Alphaspec Th, Liquid "As Received"													
Thorium-228	U	165	+/-638	2380	1.00	pCi/L			AXM6	09/03/18	1309	1794758	1
Thorium-230		76000	+/-3800	1990	1.00	pCi/L							
Thorium-232	U	1070	+/-744	2310	1.00	pCi/L							
GFPC,Total Alpha Radium, Liquid "As Received"													
Gross Radium Alpha		51000	+/-1030	227	1.00	pCi/L			AXM6	08/31/18	1154	1794759	2
Lucas Cell, Ra226, liquid "As Received"													
Radium-226		38.2	+/-12.4	34.3	1.00	pCi/L			PCW	09/04/18	1115	1794760	3
U- 233/234,U-235/236 and U-238 "As Received"													
Uranium-233/234		28800	+/-4630	5610	1.00	pCi/L			AXM6	09/01/18	1025	1794761	4
Uranium-235/236	U	2990	+/-1930	4710	1.00	pCi/L							
Uranium-238		30500	+/-4800	6160	1.00	pCi/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE EML HASL-300, Th-01-RC Modified	
2	EPA 900.1 Mod/ EPA 903.0 Mod	
3	EPA 903.1 Modified	
4	DOE EML HASL-300, U-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Thorium-229 Tracer	Alphaspec Th, Liquid "As Received"			82.6	(15%-125%)
Barium Carrier	GFPC,Total Alpha Radium, Liquid "As Received"			87.7	(25%-125%)
Uranium-232 Tracer	U- 233/234,U-235/236 and U-238 "As Received"			79.4	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 27, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Cell 4a LDS	Project:	DNMI00107
Sample ID:	456584005	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 09:45		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Hazardous Waste												
ASTM D 5057 Specific Gravity "As Received"												
Specific Gravity		1.05	0.010	0.100	none		1	VH1	08/21/18	0940	1794741	

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	ASTM D 5057	

Notes:

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-006
Client Sample ID: Cell 4B
Collection Date: 8/1/2018 1005h
Received Date: 8/2/2018 926h

Analytical Results DISSOLVED METALS

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/L	8/6/2018 645h	8/16/2018 1446h	E200.8	0.200	**97.8**	
Beryllium	mg/L	8/6/2018 645h	8/16/2018 1446h	E200.8	0.200	**0.407**	
Cadmium	mg/L	8/6/2018 645h	8/16/2018 1446h	E200.8	0.0500	**2.52**	
Calcium	mg/L	8/6/2018 645h	8/15/2018 1707h	E200.7	100	**664**	
Chromium	mg/L	8/6/2018 645h	8/16/2018 1446h	E200.8	0.200	**8.63**	
Cobalt	mg/L	8/6/2018 645h	8/16/2018 1446h	E200.8	0.730	**32.9**	
Copper	mg/L	8/6/2018 645h	8/16/2018 1632h	E200.8	5.00	**539**	
Iron	mg/L	8/6/2018 645h	8/16/2018 1632h	E200.8	250	**4,400**	
Lead	mg/L	8/6/2018 645h	8/16/2018 1446h	E200.8	0.200	**12.5**	
Magnesium	mg/L	8/6/2018 645h	8/15/2018 1637h	E200.7	1,000	**5,790**	
Manganese	mg/L	8/6/2018 645h	8/16/2018 1632h	E200.8	5.00	**242**	
Mercury	mg/L	8/8/2018 1800h	8/9/2018 850h	E245.1	0.00200	< 0.00200	
Molybdenum	mg/L	8/6/2018 645h	8/16/2018 1446h	E200.8	0.200	**27.4**	
Nickel	mg/L	8/6/2018 645h	8/16/2018 1446h	E200.8	0.200	**57.8**	
Potassium	mg/L	8/6/2018 645h	8/15/2018 1707h	E200.7	100	**1,660**	
Selenium	mg/L	8/6/2018 645h	8/16/2018 1446h	E200.8	0.200	**4.51**	
Silver	mg/L	8/17/2018 1057h	8/20/2018 1245h	E200.8	0.100	**0.160**	
Sodium	mg/L	8/6/2018 645h	8/15/2018 1637h	E200.7	1,000	**15,700**	
Thallium	mg/L	8/17/2018 1057h	8/20/2018 1450h	E200.8	0.0200	**0.0337**	
Tin	mg/L	8/17/2018 1057h	8/17/2018 1556h	E200.8	17.0	< 17.0	*
Uranium	mg/L	8/6/2018 645h	8/16/2018 1446h	E200.8	0.200	**28.1**	
Vanadium	mg/L	8/6/2018 645h	8/15/2018 1149h	E200.7	5.00	**828**	
Zinc	mg/L	8/6/2018 645h	8/16/2018 1632h	E200.8	12.5	**323**	

** - The reporting limits were raised due to sample matrix interferences.*

Analysis performed on a portion of the sample filtered at the laboratory upon receipt. The sample was received after the filtration holding time had expired for dissolved analysis.

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-006
Client Sample ID: Cell 4B
Collection Date: 8/1/2018 1005h
Received Date: 8/2/2018 926h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Ammonia (as N)	mg/L	8/13/2018 830h	8/13/2018 1454h	E350.1	50.0	**7,590**	
Bicarbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Carbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Chloride	mg/L		8/14/2018 1809h	E300.0	1,000	**7,860**	
Conductivity	µmhos/cm		8/6/2018 700h	SM2510B	2.00	**107,000**	
Fluoride	mg/L		8/14/2018 1809h	E300.0	100	**1,410**	
Ion Balance	%		8/15/2018 1731h	Calc.	-100	**-21.3**	
Nitrate/Nitrite (as N)	mg/L		8/6/2018 1604h	E353.2	1.00	**42.2**	
pH @ 25° C	pH Units		8/2/2018 1452h	SW9040C	1.00	**1.24**	H
Sulfate	mg/L		8/14/2018 1412h	E300.0	10,000	**98,400**	
Total Anions, Measured	meq/L		8/15/2018 1731h	Calc.		**2,270**	
Total Cations, Measured	meq/L		8/15/2018 1731h	Calc.		**1,470**	
Total Dissolved Solids	mg/L		8/5/2018 1115h	SM2540C	500	**117,000**	
Total Dissolved Solids Ratio, Measured/Calculated			8/15/2018 1731h	Calc.		**0.871**	
Total Dissolved Solids, Calculated	mg/L		8/15/2018 1731h	Calc.		**134,000**	

H - Sample was received outside of the holding time.

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-006F
Client Sample ID: Cell 4B
Collection Date: 8/1/2018 1005h
Received Date: 8/2/2018 926h

Test Code: 8270-W-3511

Analytical Results SVOA by GC/MS Method 8270D/3511

Analyzed: 8/7/2018 1227h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,2,4-Trichlorobenzene	120-82-1	8.72	< 8.72	
1,2-Dichlorobenzene	95-50-1	8.72	< 8.72	
1,3-Dichlorobenzene	541-73-1	8.72	< 8.72	
1,4-Dichlorobenzene	106-46-7	8.72	< 8.72	
1-Methylnaphthalene	90-12-0	8.72	< 8.72	
2,4,5-Trichlorophenol	95-95-4	8.72	< 8.72	
2,4,6-Trichlorophenol	88-06-2	8.72	< 8.72	S
2,4-Dichlorophenol	120-83-2	8.72	< 8.72	
2,4-Dimethylphenol	105-67-9	8.72	< 8.72	
2,4-Dinitrophenol	51-28-5	8.72	< 8.72	
2,4-Dinitrotoluene	121-14-2	8.72	< 8.72	
2,6-Dinitrotoluene	606-20-2	8.72	< 8.72	
2-Chloronaphthalene	91-58-7	8.72	< 8.72	
2-Chlorophenol	95-57-8	8.72	< 8.72	
2-Methylnaphthalene	91-57-6	8.72	< 8.72	
2-Methylphenol	95-48-7	8.72	< 8.72	
2-Nitrophenol	88-75-5	8.72	< 8.72	
3&4-Methylphenol		8.72	< 8.72	
3,3′-Dichlorobenzidine	91-94-1	8.72	< 8.72	
4,6-Dinitro-2-methylphenol	534-52-1	8.72	< 8.72	
4-Bromophenyl phenyl ether	101-55-3	8.72	< 8.72	
4-Chloro-3-methylphenol	59-50-7	8.72	< 8.72	
4-Chlorophenyl phenyl ether	7005-72-3	8.72	< 8.72	
4-Nitrophenol	100-02-7	8.72	< 8.72	
Acenaphthene	83-32-9	8.72	< 8.72	
Acenaphthylene	208-96-8	8.72	< 8.72	
Anthracene	120-12-7	8.72	< 8.72	
Azobenzene	103-33-3	8.72	< 8.72	
Benz(a)anthracene	56-55-3	8.72	< 8.72	

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-006F
Client Sample ID: Cell 4B

Analyzed: 8/7/2018 1227h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzidine	92-87-5	8.72	< 8.72	
Benzo(a)pyrene	50-32-8	8.72	< 8.72	
Benzo(b)fluoranthene	205-99-2	8.72	< 8.72	
Benzo(g,h,i)perylene	191-24-2	8.72	< 8.72	
Benzo(k)fluoranthene	207-08-9	8.72	< 8.72	
Bis(2-chloroethoxy)methane	111-91-1	8.72	< 8.72	
Bis(2-chloroethyl) ether	111-44-4	8.72	< 8.72	
Bis(2-chloroisopropyl) ether	108-60-1	8.72	< 8.72	
Bis(2-ethylhexyl) phthalate	117-81-7	8.72	< 8.72	
Butyl benzyl phthalate	85-68-7	8.72	< 8.72	
Chrysene	218-01-9	8.72	< 8.72	
Dibenz(a,h)anthracene	53-70-3	8.72	< 8.72	
Diethyl phthalate	84-66-2	8.72	< 8.72	
Dimethyl phthalate	131-11-3	8.72	< 8.72	
Di-n-butyl phthalate	84-74-2	8.72	< 8.72	
Di-n-octyl phthalate	117-84-0	8.72	< 8.72	
Fluoranthene	206-44-0	8.72	< 8.72	
Fluorene	86-73-7	8.72	< 8.72	
Hexachlorobenzene	118-74-1	8.72	< 8.72	
Hexachlorobutadiene	87-68-3	8.72	< 8.72	
Hexachlorocyclopentadiene	77-47-4	8.72	< 8.72	
Hexachloroethane	67-72-1	8.72	< 8.72	
Indeno(1,2,3-cd)pyrene	193-39-5	8.72	< 8.72	
Isophorone	78-59-1	8.72	< 8.72	
Naphthalene	91-20-3	8.72	< 8.72	
Nitrobenzene	98-95-3	8.72	< 8.72	
N-Nitrosodimethylamine	62-75-9	8.72	< 8.72	
N-Nitrosodi-n-propylamine	621-64-7	8.72	< 8.72	
N-Nitrosodiphenylamine	86-30-6	8.72	< 8.72	
Pentachlorophenol	87-86-5	8.72	< 8.72	
Phenanthrene	85-01-8	8.72	< 8.72	
Phenol	108-95-2	8.72	< 8.72	
Pyrene	129-00-0	8.72	< 8.72	
Pyridine	110-86-1	8.72	**31.7**	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-006F
Client Sample ID: Cell 4B

Analyzed: 8/7/2018 1227h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	26.7	43.58	61.2	10-310	
Surr: 2-Fluorobiphenyl		321-60-8	14.3	21.79	65.7	10-230	
Surr: 2-Fluorophenol		367-12-4	17.9	43.58	41.0	10-120	
Surr: Nitrobenzene-d5		4165-60-0	7.56	21.79	34.7	10-253	
Surr: Phenol-d6		13127-88-3	19.3	43.58	44.3	10-110	
Surr: Terphenyl-d14		1718-51-0	13.9	21.79	63.7	10-255	

S - High LCS recoveries indicate possible bias high. Data deemed acceptable as the analyte was not observed in the field sample.
This sample was analyzed for 4-Chlorophenol as a TIC and none was detected.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-006A
Client Sample ID: Cell 4B
Collection Date: 8/1/2018 1005h
Received Date: 8/2/2018 926h

Test Code: 8260-W-DEN100

Analytical Results VOAs by GC/MS Method 8260C/5030C

Analyzed: 8/3/2018 1526h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
2-Butanone	78-93-3	20.0	**27.4**	
Acetone	67-64-1	20.0	**56.8**	
Benzene	71-43-2	1.00	< 1.00	
Carbon tetrachloride	56-23-5	1.00	< 1.00	
Chloroform	67-66-3	1.00	**2.17**	
Chloromethane	74-87-3	1.00	**1.72**	
Naphthalene	91-20-3	1.00	< 1.00	
Tetrahydrofuran	109-99-9	1.00	**1.87**	
Toluene	108-88-3	1.00	< 1.00	
Xylenes, Total	1330-20-7	1.00	< 1.00	

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	52.6	50.00	105	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	45.6	50.00	91.2	80-152	
Surr: Dibromofluoromethane	1868-53-7	43.6	50.00	87.2	72-135	
Surr: Toluene-d8	2037-26-5	49.7	50.00	99.5	80-124	

Analyzed: 8/7/2018 141h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Methylene chloride	75-09-2	1.00	< 1.00	

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	55.3	50.00	111	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	49.0	50.00	97.9	80-152	
Surr: Dibromofluoromethane	1868-53-7	52.6	50.00	105	72-135	
Surr: Toluene-d8	2037-26-5	50.5	50.00	101	80-124	

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: September 4, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Cell 4b	Project:	DNMI00107
Sample ID:	456584006	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 10:05		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
High Rad Testing													
Alphaspec Th, Liquid "As Received"													
Thorium-228	U	1890	+/-1080	3400	1.00	pCi/L			AXM6	09/03/18	1309	1794758	1
Thorium-230		4.61E+05	+/-9270	2620	1.00	pCi/L							
Thorium-232		7360	+/-1250	1810	1.00	pCi/L							
GFPC,Total Alpha Radium, Liquid "As Received"													
Gross Radium Alpha		3.20E+05	+/-2730	300	1.00	pCi/L			AXM6	08/31/18	1154	1794759	2
Lucas Cell, Ra226, liquid "As Received"													
Radium-226		307	+/-26.3	23.9	1.00	pCi/L			PCW	09/04/18	1115	1794760	3
U- 233/234,U-235/236 and U-238 "As Received"													
Uranium-233/234		13700	+/-3550	6940	1.00	pCi/L			AXM6	09/01/18	1025	1794761	4
Uranium-235/236	U	3870	+/-2260	5520	1.00	pCi/L							
Uranium-238		8420	+/-2650	4050	1.00	pCi/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE EML HASL-300, Th-01-RC Modified	
2	EPA 900.1 Mod/ EPA 903.0 Mod	
3	EPA 903.1 Modified	
4	DOE EML HASL-300, U-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Thorium-229 Tracer	Alphaspec Th, Liquid "As Received"			75.8	(15%-125%)
Barium Carrier	GFPC,Total Alpha Radium, Liquid "As Received"			95.8	(25%-125%)
Uranium-232 Tracer	U- 233/234,U-235/236 and U-238 "As Received"			78.9	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 27, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Cell 4b	Project:	DNMI00107
Sample ID:	456584006	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 10:05		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Hazardous Waste												
ASTM D 5057 Specific Gravity "As Received"												
Specific Gravity		1.08	0.010	0.100	none		1	VH1	08/21/18	0941	1794741	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	ASTM D 5057	

Notes:

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-007
Client Sample ID: Cell 4B LDS
Collection Date: 8/1/2018 1020h
Received Date: 8/2/2018 926h

Analytical Results DISSOLVED METALS

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/L	8/6/2018 645h	8/16/2018 1449h	E200.8	0.200	**94.1**	
Beryllium	mg/L	8/6/2018 645h	8/16/2018 1449h	E200.8	0.200	**0.416**	
Cadmium	mg/L	8/6/2018 645h	8/16/2018 1449h	E200.8	0.0500	**2.61**	
Calcium	mg/L	8/6/2018 645h	8/15/2018 1715h	E200.7	100	**592**	
Chromium	mg/L	8/6/2018 645h	8/16/2018 1449h	E200.8	0.200	**8.98**	
Cobalt	mg/L	8/6/2018 645h	8/16/2018 1449h	E200.8	0.730	**31.7**	
Copper	mg/L	8/6/2018 645h	8/16/2018 1635h	E200.8	5.00	**497**	
Iron	mg/L	8/6/2018 645h	8/16/2018 1635h	E200.8	250	**4,190**	
Lead	mg/L	8/6/2018 645h	8/16/2018 1449h	E200.8	0.200	**8.77**	
Magnesium	mg/L	8/6/2018 645h	8/15/2018 1639h	E200.7	1,000	**5,580**	
Manganese	mg/L	8/6/2018 645h	8/16/2018 1635h	E200.8	5.00	**239**	
Mercury	mg/L	8/8/2018 1800h	8/9/2018 852h	E245.1	0.00200	< 0.00200	
Molybdenum	mg/L	8/6/2018 645h	8/16/2018 1449h	E200.8	0.200	**25.9**	
Nickel	mg/L	8/6/2018 645h	8/16/2018 1449h	E200.8	0.200	**56.1**	
Potassium	mg/L	8/6/2018 645h	8/15/2018 1715h	E200.7	100	**1,620**	
Selenium	mg/L	8/6/2018 645h	8/16/2018 1449h	E200.8	0.200	**4.50**	
Silver	mg/L	8/17/2018 1057h	8/20/2018 1248h	E200.8	0.100	**0.156**	
Sodium	mg/L	8/6/2018 645h	8/15/2018 1639h	E200.7	1,000	**14,500**	
Thallium	mg/L	8/6/2018 645h	8/16/2018 1449h	E200.8	0.200	**0.245**	
Tin	mg/L	8/17/2018 1057h	8/17/2018 1559h	E200.8	17.0	< 17.0	*
Uranium	mg/L	8/6/2018 645h	8/16/2018 1449h	E200.8	0.200	**54.2**	
Vanadium	mg/L	8/6/2018 645h	8/15/2018 1151h	E200.7	5.00	**811**	
Zinc	mg/L	8/6/2018 645h	8/16/2018 1635h	E200.8	12.5	**303**	

** - The reporting limits were raised due to sample matrix interferences.*

Analysis performed on a portion of the sample filtered at the laboratory upon receipt. The sample was received after the filtration holding time had expired for dissolved analysis.

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-007
Client Sample ID: Cell 4B LDS
Collection Date: 8/1/2018 1020h
Received Date: 8/2/2018 926h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Ammonia (as N)	mg/L	8/13/2018 830h	8/13/2018 1455h	E350.1	50.0	**7,510**	
Bicarbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Carbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Chloride	mg/L		8/14/2018 1826h	E300.0	1,000	**8,060**	
Conductivity	µmhos/cm		8/6/2018 700h	SM2510B	2.00	**104,000**	
Fluoride	mg/L		8/14/2018 1826h	E300.0	100	**1,480**	
Ion Balance	%		8/15/2018 1731h	Calc.	-100	**-25.0**	
Nitrate/Nitrite (as N)	mg/L		8/6/2018 1605h	E353.2	1.00	**47.4**	
pH @ 25° C	pH Units		8/2/2018 1452h	SW9040C	1.00	**1.35**	H
Sulfate	mg/L		8/14/2018 1503h	E300.0	10,000	**100,000**	
Total Anions, Measured	meq/L		8/15/2018 1731h	Calc.		**2,320**	
Total Cations, Measured	meq/L		8/15/2018 1731h	Calc.		**1,390**	
Total Dissolved Solids	mg/L		8/5/2018 1115h	SM2540C	500	**132,000**	
Total Dissolved Solids Ratio, Measured/Calculated			8/15/2018 1731h	Calc.		**0.977**	
Total Dissolved Solids, Calculated	mg/L		8/15/2018 1731h	Calc.		**135,000**	

H - Sample was received outside of the holding time.

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-007F
Client Sample ID: Cell 4B LDS
Collection Date: 8/1/2018 1020h
Received Date: 8/2/2018 926h
Test Code: 8270-W-3511

Analytical Results SVOA by GC/MS Method 8270D/3511

Analyzed: 8/7/2018 1249h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,2,4-Trichlorobenzene	120-82-1	8.79	< 8.79	
1,2-Dichlorobenzene	95-50-1	8.79	< 8.79	
1,3-Dichlorobenzene	541-73-1	8.79	< 8.79	
1,4-Dichlorobenzene	106-46-7	8.79	< 8.79	
1-Methylnaphthalene	90-12-0	8.79	< 8.79	
2,4,5-Trichlorophenol	95-95-4	8.79	< 8.79	
2,4,6-Trichlorophenol	88-06-2	8.79	< 8.79	S
2,4-Dichlorophenol	120-83-2	8.79	< 8.79	
2,4-Dimethylphenol	105-67-9	8.79	< 8.79	
2,4-Dinitrophenol	51-28-5	8.79	< 8.79	
2,4-Dinitrotoluene	121-14-2	8.79	< 8.79	
2,6-Dinitrotoluene	606-20-2	8.79	< 8.79	
2-Chloronaphthalene	91-58-7	8.79	< 8.79	
2-Chlorophenol	95-57-8	8.79	< 8.79	
2-Methylnaphthalene	91-57-6	8.79	< 8.79	
2-Methylphenol	95-48-7	8.79	< 8.79	
2-Nitrophenol	88-75-5	8.79	< 8.79	
3&4-Methylphenol		8.79	< 8.79	
3,3′-Dichlorobenzidine	91-94-1	8.79	< 8.79	
4,6-Dinitro-2-methylphenol	534-52-1	8.79	< 8.79	
4-Bromophenyl phenyl ether	101-55-3	8.79	< 8.79	
4-Chloro-3-methylphenol	59-50-7	8.79	< 8.79	
4-Chlorophenyl phenyl ether	7005-72-3	8.79	< 8.79	
4-Nitrophenol	100-02-7	8.79	< 8.79	
Acenaphthene	83-32-9	8.79	< 8.79	
Acenaphthylene	208-96-8	8.79	< 8.79	
Anthracene	120-12-7	8.79	< 8.79	
Azobenzene	103-33-3	8.79	< 8.79	
Benz(a)anthracene	56-55-3	8.79	< 8.79	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-007F
Client Sample ID: Cell 4B LDS

Analyzed: 8/7/2018 1249h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzidine	92-87-5	8.79	< 8.79	
Benzo(a)pyrene	50-32-8	8.79	< 8.79	
Benzo(b)fluoranthene	205-99-2	8.79	< 8.79	
Benzo(g,h,i)perylene	191-24-2	8.79	< 8.79	
Benzo(k)fluoranthene	207-08-9	8.79	< 8.79	
Bis(2-chloroethoxy)methane	111-91-1	8.79	< 8.79	
Bis(2-chloroethyl) ether	111-44-4	8.79	< 8.79	
Bis(2-chloroisopropyl) ether	108-60-1	8.79	< 8.79	
Bis(2-ethylhexyl) phthalate	117-81-7	8.79	**65.9**	
Butyl benzyl phthalate	85-68-7	8.79	< 8.79	
Chrysene	218-01-9	8.79	< 8.79	
Dibenz(a,h)anthracene	53-70-3	8.79	< 8.79	
Diethyl phthalate	84-66-2	8.79	< 8.79	
Dimethyl phthalate	131-11-3	8.79	< 8.79	
Di-n-butyl phthalate	84-74-2	8.79	< 8.79	
Di-n-octyl phthalate	117-84-0	8.79	< 8.79	
Fluoranthene	206-44-0	8.79	< 8.79	
Fluorene	86-73-7	8.79	< 8.79	
Hexachlorobenzene	118-74-1	8.79	< 8.79	
Hexachlorobutadiene	87-68-3	8.79	< 8.79	
Hexachlorocyclopentadiene	77-47-4	8.79	< 8.79	
Hexachloroethane	67-72-1	8.79	< 8.79	
Indeno(1,2,3-cd)pyrene	193-39-5	8.79	< 8.79	
Isophorone	78-59-1	8.79	< 8.79	
Naphthalene	91-20-3	8.79	< 8.79	
Nitrobenzene	98-95-3	8.79	< 8.79	
N-Nitrosodimethylamine	62-75-9	8.79	< 8.79	
N-Nitrosodi-n-propylamine	621-64-7	8.79	< 8.79	
N-Nitrosodiphenylamine	86-30-6	8.79	< 8.79	
Pentachlorophenol	87-86-5	8.79	< 8.79	
Phenanthrene	85-01-8	8.79	< 8.79	
Phenol	108-95-2	8.79	< 8.79	
Pyrene	129-00-0	8.79	< 8.79	
Pyridine	110-86-1	8.79	**29.1**	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-007F
Client Sample ID: Cell 4B LDS

Analyzed: 8/7/2018 1249h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	16.7	43.95	37.9	10-310	
Surr: 2-Fluorobiphenyl		321-60-8	11.9	21.97	54.2	10-230	
Surr: 2-Fluorophenol		367-12-4	10.4	43.95	23.7	10-120	
Surr: Nitrobenzene-d5		4165-60-0	11.4	21.97	51.9	10-253	
Surr: Phenol-d6		13127-88-3	37.1	43.95	84.4	10-110	
Surr: Terphenyl-d14		1718-51-0	13.3	21.97	60.5	10-255	

S - High LCS recoveries indicate possible bias high. Data deemed acceptable as the analyte was not observed in the field sample.
This sample was analyzed for 4-Chlorophenol as a TIC and none was detected.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-007A
Client Sample ID: Cell 4B LDS
Collection Date: 8/1/2018 1020h
Received Date: 8/2/2018 926h

Test Code: 8260-W-DEN100

Analytical Results VOAs by GC/MS Method 8260C/5030C

Analyzed: 8/3/2018 1546h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
2-Butanone	78-93-3	20.0	**34.6**	
Acetone	67-64-1	20.0	**147**	
Benzene	71-43-2	1.00	< 1.00	
Carbon tetrachloride	56-23-5	1.00	< 1.00	
Chloroform	67-66-3	1.00	**4.74**	
Chloromethane	74-87-3	1.00	**2.40**	
Methylene chloride	75-09-2	1.00	< 1.00	B
Naphthalene	91-20-3	1.00	< 1.00	
Tetrahydrofuran	109-99-9	1.00	**17.3**	
Toluene	108-88-3	1.00	< 1.00	
Xylenes, Total	1330-20-7	1.00	< 1.00	

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	51.9	50.00	104	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	48.9	50.00	97.7	80-152	
Surr: Dibromofluoromethane	1868-53-7	43.4	50.00	86.8	72-135	
Surr: Toluene-d8	2037-26-5	49.8	50.00	99.5	80-124	

B - Analyte(s) were observed above the reporting limit in the method blank. The method blank was acceptable, as any associated samples do not have results above the reporting limit/PQL.

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: September 4, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Cell 4b LDS	Project:	DNMI00107
Sample ID:	456584007	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 10:20		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
High Rad Testing													
Alphaspec Th, Liquid "As Received"													
Thorium-228		1520	+/-581	1370	1.00	pCi/L			AXM6	09/03/18	1309	1794758	1
Thorium-230		4.24E+05	+/-7620	1730	1.00	pCi/L							
Thorium-232		5130	+/-860	659	1.00	pCi/L							
GFPC,Total Alpha Radium, Liquid "As Received"													
Gross Radium Alpha		3.05E+05	+/-2380	196	1.00	pCi/L			AXM6	08/31/18	1154	1794759	2
Lucas Cell, Ra226, liquid "As Received"													
Radium-226		88.3	+/-12.5	19.1	1.00	pCi/L			PCW	09/04/18	1115	1794760	3
U- 233/234,U-235/236 and U-238 "As Received"													
Uranium-233/234		14300	+/-3900	8430	1.00	pCi/L			AXM6	09/01/18	1025	1794761	4
Uranium-235/236	U	4130	+/-2410	5890	1.00	pCi/L							
Uranium-238		18400	+/-4100	6770	1.00	pCi/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	DOE EML HASL-300, Th-01-RC Modified	
2	EPA 900.1 Mod/ EPA 903.0 Mod	
3	EPA 903.1 Modified	
4	DOE EML HASL-300, U-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Thorium-229 Tracer	Alphaspec Th, Liquid "As Received"			96.4	(15%-125%)
Barium Carrier	GFPC,Total Alpha Radium, Liquid "As Received"			99.3	(25%-125%)
Uranium-232 Tracer	U- 233/234,U-235/236 and U-238 "As Received"			72.1	(15%-125%)

Notes:
Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 27, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Cell 4b LDS	Project:	DNMI00107
Sample ID:	456584007	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 10:20		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Hazardous Waste												
ASTM D 5057 Specific Gravity "As Received"												
Specific Gravity		1.09	0.010	0.100	none		1	VH1	08/21/18	0942	1794741	

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	ASTM D 5057	

Notes:

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-008
Client Sample ID: Cell 65
Collection Date: 8/1/2018 900h
Received Date: 8/2/2018 926h

Analytical Results DISSOLVED METALS

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Arsenic	mg/L	8/6/2018 645h	8/16/2018 1452h	E200.8	0.200	**20.9**	
Beryllium	mg/L	8/6/2018 645h	8/16/2018 1452h	E200.8	0.200	**0.249**	
Cadmium	mg/L	8/6/2018 645h	8/16/2018 1452h	E200.8	0.0500	**6.76**	
Calcium	mg/L	8/6/2018 645h	8/15/2018 1717h	E200.7	100	**513**	
Chromium	mg/L	8/6/2018 645h	8/16/2018 1452h	E200.8	0.200	**2.39**	
Cobalt	mg/L	8/6/2018 645h	8/16/2018 1452h	E200.8	0.730	**52.2**	
Copper	mg/L	8/6/2018 645h	8/16/2018 1638h	E200.8	5.00	**148**	
Iron	mg/L	8/6/2018 645h	8/16/2018 1638h	E200.8	250	**3,320**	
Lead	mg/L	8/6/2018 645h	8/16/2018 1452h	E200.8	0.200	**0.626**	
Magnesium	mg/L	8/6/2018 645h	8/15/2018 1717h	E200.7	100	**4,270**	
Manganese	mg/L	8/6/2018 645h	8/16/2018 1452h	E200.8	0.800	**151**	
Mercury	mg/L	8/8/2018 1800h	8/9/2018 854h	E245.1	0.00200	< 0.00200	
Molybdenum	mg/L	8/6/2018 645h	8/16/2018 1452h	E200.8	0.200	**3.48**	
Nickel	mg/L	8/6/2018 645h	8/16/2018 1452h	E200.8	0.200	**135**	
Potassium	mg/L	8/6/2018 645h	8/15/2018 1717h	E200.7	100	**743**	
Selenium	mg/L	8/6/2018 645h	8/16/2018 1452h	E200.8	0.200	**0.715**	
Silver	mg/L	8/17/2018 1057h	8/17/2018 1602h	E200.8	0.100	< 0.100	*
Sodium	mg/L	8/6/2018 645h	8/15/2018 1717h	E200.7	100	**5,060**	
Thallium	mg/L	8/6/2018 645h	8/16/2018 1452h	E200.8	0.200	**0.401**	
Tin	mg/L	8/17/2018 1057h	8/17/2018 1602h	E200.8	17.0	< 17.0	*
Uranium	mg/L	8/6/2018 645h	8/16/2018 1452h	E200.8	0.200	**27.3**	
Vanadium	mg/L	8/6/2018 645h	8/15/2018 1153h	E200.7	5.00	**501**	
Zinc	mg/L	8/6/2018 645h	8/16/2018 1638h	E200.8	12.5	**790**	

** - The reporting limits were raised due to sample matrix interferences.*

Analysis performed on a portion of the sample filtered at the laboratory upon receipt. The sample was received after the filtration holding time had expired for dissolved analysis.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

INORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-008
Client Sample ID: Cell 65
Collection Date: 8/1/2018 900h
Received Date: 8/2/2018 926h

Analytical Results

Compound	Units	Date Prepared	Date Analyzed	Method Used	Reporting Limit	Analytical Result	Qual
Ammonia (as N)	mg/L	8/13/2018 830h	8/13/2018 1456h	E350.1	50.0	**4,650**	
Bicarbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Carbonate (as CaCO3)	mg/L		8/6/2018 900h	SM2320B	1.00	< 1.00	
Chloride	mg/L		8/14/2018 1843h	E300.0	1,000	**3,920**	
Conductivity	µmhos/cm		8/6/2018 700h	SM2510B	2.00	**61,400**	
Fluoride	mg/L		8/15/2018 1215h	E300.0	2.00	**53.4**	
Ion Balance	%		8/15/2018 1731h	Calc.	-100	**-26.8**	
Nitrate/Nitrite (as N)	mg/L		8/6/2018 1606h	E353.2	1.00	**33.7**	
pH @ 25° C	pH Units		8/2/2018 1452h	SW9040C	1.00	**2.91**	H
Sulfate	mg/L		8/14/2018 1520h	E300.0	10,000	**60,900**	
Total Anions, Measured	meq/L		8/15/2018 1731h	Calc.		**1,380**	
Total Cations, Measured	meq/L		8/15/2018 1731h	Calc.		**795**	
Total Dissolved Solids	mg/L		8/5/2018 1115h	SM2540C	500	**87,700**	
Total Dissolved Solids Ratio, Measured/Calculated			8/15/2018 1731h	Calc.		**1.11**	
Total Dissolved Solids, Calculated	mg/L		8/15/2018 1731h	Calc.		**78,700**	

H - Sample was received outside of the holding time.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-008F
Client Sample ID: Cell 65
Collection Date: 8/1/2018 900h
Received Date: 8/2/2018 926h

Test Code: 8270-W-3511

Analytical Results SVOA by GC/MS Method 8270D/3511

Analyzed: 8/7/2018 1310h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
1,2,4-Trichlorobenzene	120-82-1	9.20	< 9.20	
1,2-Dichlorobenzene	95-50-1	9.20	< 9.20	
1,3-Dichlorobenzene	541-73-1	9.20	< 9.20	
1,4-Dichlorobenzene	106-46-7	9.20	< 9.20	
1-Methylnaphthalene	90-12-0	9.20	< 9.20	
2,4,5-Trichlorophenol	95-95-4	9.20	< 9.20	
2,4,6-Trichlorophenol	88-06-2	9.20	< 9.20	*
2,4-Dichlorophenol	120-83-2	9.20	< 9.20	
2,4-Dimethylphenol	105-67-9	9.20	< 9.20	
2,4-Dinitrophenol	51-28-5	9.20	< 9.20	
2,4-Dinitrotoluene	121-14-2	9.20	< 9.20	
2,6-Dinitrotoluene	606-20-2	9.20	< 9.20	
2-Chloronaphthalene	91-58-7	9.20	< 9.20	
2-Chlorophenol	95-57-8	9.20	< 9.20	
2-Methylnaphthalene	91-57-6	9.20	< 9.20	
2-Methylphenol	95-48-7	9.20	< 9.20	
2-Nitrophenol	88-75-5	9.20	< 9.20	
3&4-Methylphenol		9.20	< 9.20	
3,3´-Dichlorobenzidine	91-94-1	9.20	< 9.20	
4,6-Dinitro-2-methylphenol	534-52-1	9.20	< 9.20	
4-Bromophenyl phenyl ether	101-55-3	9.20	< 9.20	
4-Chloro-3-methylphenol	59-50-7	9.20	< 9.20	
4-Chlorophenyl phenyl ether	7005-72-3	9.20	< 9.20	
4-Nitrophenol	100-02-7	9.20	< 9.20	
Acenaphthene	83-32-9	9.20	< 9.20	
Acenaphthylene	208-96-8	9.20	< 9.20	
Anthracene	120-12-7	9.20	< 9.20	
Azobenzene	103-33-3	9.20	< 9.20	
Benz(a)anthracene	56-55-3	9.20	< 9.20	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-008F
Client Sample ID: Cell 65

Analyzed: 8/7/2018 1310h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzidine	92-87-5	9.20	< 9.20	
Benzo(a)pyrene	50-32-8	9.20	< 9.20	
Benzo(b)fluoranthene	205-99-2	9.20	< 9.20	
Benzo(g,h,i)perylene	191-24-2	9.20	< 9.20	
Benzo(k)fluoranthene	207-08-9	9.20	< 9.20	
Bis(2-chloroethoxy)methane	111-91-1	9.20	< 9.20	
Bis(2-chloroethyl) ether	111-44-4	9.20	< 9.20	
Bis(2-chloroisopropyl) ether	108-60-1	9.20	< 9.20	
Bis(2-ethylhexyl) phthalate	117-81-7	9.20	< 9.20	
Butyl benzyl phthalate	85-68-7	9.20	< 9.20	
Chrysene	218-01-9	9.20	< 9.20	
Dibenz(a,h)anthracene	53-70-3	9.20	< 9.20	
Diethyl phthalate	84-66-2	9.20	< 9.20	
Dimethyl phthalate	131-11-3	9.20	< 9.20	
Di-n-butyl phthalate	84-74-2	9.20	< 9.20	
Di-n-octyl phthalate	117-84-0	9.20	< 9.20	
Fluoranthene	206-44-0	9.20	< 9.20	
Fluorene	86-73-7	9.20	< 9.20	
Hexachlorobenzene	118-74-1	9.20	< 9.20	
Hexachlorobutadiene	87-68-3	9.20	< 9.20	
Hexachlorocyclopentadiene	77-47-4	9.20	< 9.20	
Hexachloroethane	67-72-1	9.20	< 9.20	
Indeno(1,2,3-cd)pyrene	193-39-5	9.20	< 9.20	
Isophorone	78-59-1	9.20	< 9.20	
Naphthalene	91-20-3	9.20	< 9.20	
Nitrobenzene	98-95-3	9.20	< 9.20	
N-Nitrosodimethylamine	62-75-9	9.20	< 9.20	
N-Nitrosodi-n-propylamine	621-64-7	9.20	< 9.20	
N-Nitrosodiphenylamine	86-30-6	9.20	< 9.20	
Pentachlorophenol	87-86-5	9.20	< 9.20	
Phenanthrene	85-01-8	9.20	< 9.20	
Phenol	108-95-2	9.20	< 9.20	
Pyrene	129-00-0	9.20	< 9.20	
Pyridine	110-86-1	9.20	< 9.20	

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-008F
Client Sample ID: Cell 65

Analyzed: 8/7/2018 1310h **Extracted:** 8/3/2018 1728h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8270D

Surrogate	Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 2,4,6-Tribromophenol		118-79-6	19.9	46.02	43.2	10-310	
Surr: 2-Fluorobiphenyl		321-60-8	8.35	23.01	36.3	10-230	
Surr: 2-Fluorophenol		367-12-4	18.8	46.02	40.9	10-120	
Surr: Nitrobenzene-d5		4165-60-0	0.175	23.01	0.760	10-253	S
Surr: Phenol-d6		13127-88-3	21.0	46.02	45.6	10-110	
Surr: Terphenyl-d14		1718-51-0	4.72	23.01	20.5	10-255	

** - High LCS recoveries indicate possible bias high. Data deemed acceptable as the analyte was not observed in the field sample.*
S - Surrogate recoveries outside the control limits. Historical data yielded similar results indicating matrix interference.
This sample was analyzed for 4-Chlorophenol as a TIC and none was detected.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-008A
Client Sample ID: Cell 65
Collection Date: 8/1/2018 900h
Received Date: 8/2/2018 926h

Test Code: 8260-W-DEN100

Analytical Results VOAs by GC/MS Method 8260C/5030C

Analyzed: 8/7/2018 221h
Units: µg/L **Dilution Factor:** 10 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Acetone	67-64-1	200	**684**	~

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	521	500.0	104	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	499	500.0	99.8	80-152	
Surr: Dibromofluoromethane	1868-53-7	500	500.0	100	72-135	
Surr: Toluene-d8	2037-26-5	502	500.0	101	80-124	

~ - The reporting limits were raised due to high analyte concentrations.

Analyzed: 8/3/2018 1607h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
2-Butanone	78-93-3	20.0	**58.2**	
Benzene	71-43-2	1.00	< 1.00	
Carbon tetrachloride	56-23-5	1.00	< 1.00	
Chloroform	67-66-3	1.00	**13.6**	
Chloromethane	74-87-3	1.00	**1.50**	
Naphthalene	91-20-3	1.00	**8.64**	
Tetrahydrofuran	109-99-9	1.00	**2.64**	
Toluene	108-88-3	1.00	**2.81**	
Xylenes, Total	1330-20-7	1.00	< 1.00	

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	51.6	50.00	103	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	46.3	50.00	92.7	80-152	
Surr: Dibromofluoromethane	1868-53-7	44.2	50.00	88.3	72-135	
Surr: Toluene-d8	2037-26-5	49.8	50.00	99.6	80-124	

Analyzed: 8/7/2018 201h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID: 1808037-008A
Client Sample ID: Cell 65

Analyzed: 8/7/2018 201h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Methylene chloride	75-09-2	1.00	< 1.00	

Surrogate (Units: µg/L)	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	54.4	50.00	109	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	49.7	50.00	99.5	80-152	
Surr: Dibromofluoromethane	1868-53-7	51.1	50.00	102	72-135	
Surr: Toluene-d8	2037-26-5	51.1	50.00	102	80-124	

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: September 4, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Cell 65	Project:	DNMI00107
Sample ID:	456584008	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 09:00		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
High Rad Testing													
Alphaspec Th, Liquid "As Received"													
Thorium-228	U	676	+/-746	2540	1.00	pCi/L			AXM6	09/03/18	1309	1794758	1
Thorium-230		6860	+/-1250	2430	1.00	pCi/L							
Thorium-232	U	-722	+/-537	2470	1.00	pCi/L							
GFPC,Total Alpha Radium, Liquid "As Received"													
Gross Radium Alpha		6330	+/-336	153	1.00	pCi/L			AXM6	08/31/18	1154	1794759	2
Lucas Cell, Ra226, liquid "As Received"													
Radium-226		29.8	+/-8.14	19.3	1.00	pCi/L			PCW	09/04/18	1115	1794760	3
U- 233/234,U-235/236 and U-238 "As Received"													
Uranium-233/234		10700	+/-2970	5200	1.00	pCi/L			AXM6	09/01/18	1025	1794761	4
Uranium-235/236		3440	+/-1930	2580	1.00	pCi/L							
Uranium-238		12600	+/-3130	4580	1.00	pCi/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	DOE EML HASL-300, Th-01-RC Modified	
2	EPA 900.1 Mod/ EPA 903.0 Mod	
3	EPA 903.1 Modified	
4	DOE EML HASL-300, U-02-RC Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Thorium-229 Tracer	Alphaspec Th, Liquid "As Received"			90.9	(15%-125%)
Barium Carrier	GFPC,Total Alpha Radium, Liquid "As Received"			94.7	(25%-125%)
Uranium-232 Tracer	U- 233/234,U-235/236 and U-238 "As Received"			91.2	(15%-125%)

Notes:

Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: August 27, 2018

Company :	Energy Fuels Resources (USA), Inc.
Address :	225 Union Boulevard Suite 600 Lakewood, Colorado 80228
Contact:	Ms. Kathy Weinel
Project:	Tailings 2018 Characterization

Client Sample ID:	Cell 65	Project:	DNMI00107
Sample ID:	456584008	Client ID:	DNMI001
Matrix:	Ground Water		
Collect Date:	01-AUG-18 09:00		
Receive Date:	07-AUG-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Hazardous Waste												
ASTM D 5057 Specific Gravity "As Received"												
Specific Gravity		1.06	0.010	0.100	none		1	VH1	08/21/18	0943	1794741	

The following Analytical Methods were performed:

Method	Description	Analyst Comments
	ASTM D 5057	

Notes:

SRL = Sample Reporting Limit. For metals analysis only. When the sample is U qualified and ND, the SRL column reports the value which is the greater of either the adjusted MDL or the CRDL.

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

ORGANIC ANALYTICAL REPORT

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Sample ID: 1808037-009A
Client Sample ID: Trip Blank
Collection Date: 8/1/2018 845h
Received Date: 8/2/2018 926h

Test Code: 8260-W-DEN100

Analytical Results VOAs by GC/MS Method 8260C/5030C

Analyzed: 8/3/2018 1244h
Units: µg/L **Dilution Factor:** 1 **Method:** SW8260C

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
2-Butanone	78-93-3	20.0	< 20.0	
Acetone	67-64-1	20.0	< 20.0	
Benzene	71-43-2	1.00	< 1.00	
Carbon tetrachloride	56-23-5	1.00	< 1.00	
Chloroform	67-66-3	1.00	< 1.00	
Chloromethane	74-87-3	1.00	< 1.00	
Methylene chloride	75-09-2	1.00	< 1.00	B
Naphthalene	91-20-3	1.00	< 1.00	
Tetrahydrofuran	109-99-9	1.00	< 1.00	
Toluene	108-88-3	1.00	< 1.00	
Xylenes, Total	1330-20-7	1.00	< 1.00	

Surrogate Units: µg/L	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: 1,2-Dichloroethane-d4	17060-07-0	51.6	50.00	103	72-151	
Surr: 4-Bromofluorobenzene	460-00-4	47.7	50.00	95.4	80-152	
Surr: Dibromofluoromethane	1868-53-7	51.0	50.00	102	72-135	
Surr: Toluene-d8	2037-26-5	50.0	50.00	100	80-124	

B - Analyte(s) were observed above the reporting limit in the method blank. The method blank was acceptable, as any associated samples do not have results above the reporting limit/PQL.

American West
ANALYTICAL LABORATORIES

Garrin Palmer
Energy Fuels Resources, Inc.
6425 S. Hwy 191
Blanding, UT 84511

RE: Annual Tailings 2018

Dear Garrin Palmer: Lab Set ID: 1808037

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

American West Analytical Laboratories received sample(s) on 8/2/2018 for the analyses presented in the following report.

American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, Wyoming, and Missouri.

All analyses were performed in accordance to the NELAP protocols unless noted otherwise. Accreditation scope documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

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: Jose G. Rocha

Digitally signed by Jose G. Rocha
DN: cn=Jose G. Rocha, o=American West Analytical Laboratories, ou, email=jose@awal-labs.com, c=US
Date: 2018.08.21 13:14:45 -06'00'

Laboratory Director or designee

SAMPLE SUMMARY

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Set ID: 1808037
Date Received: 8/2/2018 926h

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Lab Sample ID	Client Sample ID	Date Collected		Matrix	Analysis
1808037-001A	Cell 1	8/1/2018	845h	Aqueous	VOA by GC/MS Method 8260C/5030C
1808037-001B	Cell 1	8/1/2018	845h	Aqueous	Anions, E300.0
1808037-001B	Cell 1	8/1/2018	845h	Aqueous	Conductivity (Specific Conductance)
1808037-001B	Cell 1	8/1/2018	845h	Aqueous	pH by 9040C
1808037-001B	Cell 1	8/1/2018	845h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, Low Level
1808037-001C	Cell 1	8/1/2018	845h	Aqueous	Total Dissolved Solids, A2540C
1808037-001D	Cell 1	8/1/2018	845h	Aqueous	Ammonia, Aqueous
1808037-001D	Cell 1	8/1/2018	845h	Aqueous	Nitrite/Nitrate (as N), E353.2
1808037-001E	Cell 1	8/1/2018	845h	Aqueous	ICP Metals, Dissolved
1808037-001E	Cell 1	8/1/2018	845h	Aqueous	ICPMS Metals, Dissolved
1808037-001E	Cell 1	8/1/2018	845h	Aqueous	Mercury, Drinking Water Dissolved
1808037-001E	Cell 1	8/1/2018	845h	Aqueous	Ion Balance
1808037-001F	Cell 1	8/1/2018	845h	Aqueous	SVOAs by GC/MS Method 8270D/3511
1808037-002A	Cell 2 Slimes	8/1/2018	900h	Aqueous	VOA by GC/MS Method 8260C/5030C
1808037-002B	Cell 2 Slimes	8/1/2018	900h	Aqueous	Conductivity (Specific Conductance)
1808037-002B	Cell 2 Slimes	8/1/2018	900h	Aqueous	pH by 9040C
1808037-002B	Cell 2 Slimes	8/1/2018	900h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, Low Level
1808037-002B	Cell 2 Slimes	8/1/2018	900h	Aqueous	Anions, E300.0
1808037-002C	Cell 2 Slimes	8/1/2018	900h	Aqueous	Total Dissolved Solids, A2540C
1808037-002D	Cell 2 Slimes	8/1/2018	900h	Aqueous	Ammonia, Aqueous
1808037-002D	Cell 2 Slimes	8/1/2018	900h	Aqueous	Nitrite/Nitrate (as N), E353.2
1808037-002E	Cell 2 Slimes	8/1/2018	900h	Aqueous	ICP Metals, Dissolved
1808037-002E	Cell 2 Slimes	8/1/2018	900h	Aqueous	ICPMS Metals, Dissolved
1808037-002E	Cell 2 Slimes	8/1/2018	900h	Aqueous	Mercury, Drinking Water Dissolved
1808037-002E	Cell 2 Slimes	8/1/2018	900h	Aqueous	Ion Balance
1808037-002F	Cell 2 Slimes	8/1/2018	900h	Aqueous	SVOAs by GC/MS Method 8270D/3511
1808037-003A	Cell 3	8/1/2018	920h	Aqueous	VOA by GC/MS Method 8260C/5030C

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Set ID: 1808037
Date Received: 8/2/2018 926h

Lab Sample ID	Client Sample ID	Date Collected		Matrix	Analysis
1808037-003B	Cell 3	8/1/2018	920h	Aqueous	Anions, E300.0
1808037-003B	Cell 3	8/1/2018	920h	Aqueous	Conductivity (Specific Conductance)
1808037-003B	Cell 3	8/1/2018	920h	Aqueous	pH by 9040C
1808037-003B	Cell 3	8/1/2018	920h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, Low Level
1808037-003C	Cell 3	8/1/2018	920h	Aqueous	Total Dissolved Solids, A2540C
1808037-003D	Cell 3	8/1/2018	920h	Aqueous	Ammonia, Aqueous
1808037-003D	Cell 3	8/1/2018	920h	Aqueous	Nitrite/Nitrate (as N), E353.2
1808037-003E	Cell 3	8/1/2018	920h	Aqueous	ICP Metals, Dissolved
1808037-003E	Cell 3	8/1/2018	920h	Aqueous	ICPMS Metals, Dissolved
1808037-003E	Cell 3	8/1/2018	920h	Aqueous	Mercury, Drinking Water Dissolved
1808037-003E	Cell 3	8/1/2018	920h	Aqueous	Ion Balance
1808037-003F	Cell 3	8/1/2018	920h	Aqueous	SVOAs by GC/MS Method 8270D/3511
1808037-004A	Cell 4A	8/1/2018	935h	Aqueous	VOA by GC/MS Method 8260C/5030C
1808037-004B	Cell 4A	8/1/2018	935h	Aqueous	Conductivity (Specific Conductance)
1808037-004B	Cell 4A	8/1/2018	935h	Aqueous	pH by 9040C
1808037-004B	Cell 4A	8/1/2018	935h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, Low Level
1808037-004B	Cell 4A	8/1/2018	935h	Aqueous	Anions, E300.0
1808037-004C	Cell 4A	8/1/2018	935h	Aqueous	Total Dissolved Solids, A2540C
1808037-004D	Cell 4A	8/1/2018	935h	Aqueous	Ammonia, Aqueous
1808037-004D	Cell 4A	8/1/2018	935h	Aqueous	Nitrite/Nitrate (as N), E353.2
1808037-004E	Cell 4A	8/1/2018	935h	Aqueous	ICP Metals, Dissolved
1808037-004E	Cell 4A	8/1/2018	935h	Aqueous	ICPMS Metals, Dissolved
1808037-004E	Cell 4A	8/1/2018	935h	Aqueous	Mercury, Drinking Water Dissolved
1808037-004E	Cell 4A	8/1/2018	935h	Aqueous	Ion Balance
1808037-004F	Cell 4A	8/1/2018	935h	Aqueous	SVOAs by GC/MS Method 8270D/3511
1808037-005A	Cell 4A LDS	8/1/2018	945h	Aqueous	VOA by GC/MS Method 8260C/5030C
1808037-005B	Cell 4A LDS	8/1/2018	945h	Aqueous	Anions, E300.0
1808037-005B	Cell 4A LDS	8/1/2018	945h	Aqueous	Conductivity (Specific Conductance)

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Set ID: 1808037
Date Received: 8/2/2018 926h

Lab Sample ID	Client Sample ID	Date Collected		Matrix	Analysis
1808037-005B	Cell 4A LDS	8/1/2018	945h	Aqueous	pH by 9040C
1808037-005B	Cell 4A LDS	8/1/2018	945h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, Low Level
1808037-005C	Cell 4A LDS	8/1/2018	945h	Aqueous	Total Dissolved Solids, A2540C
1808037-005D	Cell 4A LDS	8/1/2018	945h	Aqueous	Ammonia, Aqueous
1808037-005D	Cell 4A LDS	8/1/2018	945h	Aqueous	Nitrite/Nitrate (as N), E353.2
1808037-005E	Cell 4A LDS	8/1/2018	945h	Aqueous	ICP Metals, Dissolved
1808037-005E	Cell 4A LDS	8/1/2018	945h	Aqueous	ICPMS Metals, Dissolved
1808037-005E	Cell 4A LDS	8/1/2018	945h	Aqueous	Mercury, Drinking Water Dissolved
1808037-005E	Cell 4A LDS	8/1/2018	945h	Aqueous	Ion Balance
1808037-005F	Cell 4A LDS	8/1/2018	945h	Aqueous	SVOAs by GC/MS Method 8270D/3511
1808037-006A	Cell 4B	8/1/2018	1005h	Aqueous	VOA by GC/MS Method 8260C/5030C
1808037-006B	Cell 4B	8/1/2018	1005h	Aqueous	Conductivity (Specific Conductance)
1808037-006B	Cell 4B	8/1/2018	1005h	Aqueous	pH by 9040C
1808037-006B	Cell 4B	8/1/2018	1005h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, Low Level
1808037-006B	Cell 4B	8/1/2018	1005h	Aqueous	Anions, E300.0
1808037-006C	Cell 4B	8/1/2018	1005h	Aqueous	Total Dissolved Solids, A2540C
1808037-006D	Cell 4B	8/1/2018	1005h	Aqueous	Ammonia, Aqueous
1808037-006D	Cell 4B	8/1/2018	1005h	Aqueous	Nitrite/Nitrate (as N), E353.2
1808037-006E	Cell 4B	8/1/2018	1005h	Aqueous	ICP Metals, Dissolved
1808037-006E	Cell 4B	8/1/2018	1005h	Aqueous	ICPMS Metals, Dissolved
1808037-006E	Cell 4B	8/1/2018	1005h	Aqueous	Mercury, Drinking Water Dissolved
1808037-006E	Cell 4B	8/1/2018	1005h	Aqueous	Ion Balance
1808037-006F	Cell 4B	8/1/2018	1005h	Aqueous	SVOAs by GC/MS Method 8270D/3511
1808037-007A	Cell 4B LDS	8/1/2018	1020h	Aqueous	VOA by GC/MS Method 8260C/5030C
1808037-007B	Cell 4B LDS	8/1/2018	1020h	Aqueous	Anions, E300.0
1808037-007B	Cell 4B LDS	8/1/2018	1020h	Aqueous	Conductivity (Specific Conductance)
1808037-007B	Cell 4B LDS	8/1/2018	1020h	Aqueous	pH by 9040C
1808037-007B	Cell 4B LDS	8/1/2018	1020h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, Low Level

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Set ID: 1808037
Date Received: 8/2/2018 926h

Lab Sample ID	Client Sample ID	Date Collected		Matrix	Analysis
1808037-007C	Cell 4B LDS	8/1/2018	1020h	Aqueous	Total Dissolved Solids, A2540C
1808037-007D	Cell 4B LDS	8/1/2018	1020h	Aqueous	Ammonia, Aqueous
1808037-007D	Cell 4B LDS	8/1/2018	1020h	Aqueous	Nitrite/Nitrate (as N), E353.2
1808037-007E	Cell 4B LDS	8/1/2018	1020h	Aqueous	ICP Metals, Dissolved
1808037-007E	Cell 4B LDS	8/1/2018	1020h	Aqueous	ICPMS Metals, Dissolved
1808037-007E	Cell 4B LDS	8/1/2018	1020h	Aqueous	Mercury, Drinking Water Dissolved
1808037-007E	Cell 4B LDS	8/1/2018	1020h	Aqueous	Ion Balance
1808037-007F	Cell 4B LDS	8/1/2018	1020h	Aqueous	SVOAs by GC/MS Method 8270D/3511
1808037-008A	Cell 65	8/1/2018	900h	Aqueous	VOA by GC/MS Method 8260C/5030C
1808037-008B	Cell 65	8/1/2018	900h	Aqueous	Conductivity (Specific Conductance)
1808037-008B	Cell 65	8/1/2018	900h	Aqueous	pH by 9040C
1808037-008B	Cell 65	8/1/2018	900h	Aqueous	Alkalinity/ Bicarbonate/ Carbonate, Low Level
1808037-008B	Cell 65	8/1/2018	900h	Aqueous	Anions, E300.0
1808037-008C	Cell 65	8/1/2018	900h	Aqueous	Total Dissolved Solids, A2540C
1808037-008D	Cell 65	8/1/2018	900h	Aqueous	Ammonia, Aqueous
1808037-008D	Cell 65	8/1/2018	900h	Aqueous	Nitrite/Nitrate (as N), E353.2
1808037-008E	Cell 65	8/1/2018	900h	Aqueous	ICP Metals, Dissolved
1808037-008E	Cell 65	8/1/2018	900h	Aqueous	ICPMS Metals, Dissolved
1808037-008E	Cell 65	8/1/2018	900h	Aqueous	Mercury, Drinking Water Dissolved
1808037-008E	Cell 65	8/1/2018	900h	Aqueous	Ion Balance
1808037-008F	Cell 65	8/1/2018	900h	Aqueous	SVOAs by GC/MS Method 8270D/3511
1808037-009A	Trip Blank	8/1/2018	845h	Aqueous	VOA by GC/MS Method 8260C/5030C

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Inorganic Case Narrative

Client: Energy Fuels Resources, Inc.
Contact: Garrin Palmer
Project: Annual Tailings 2018
Lab Set ID: 1808037

Sample Receipt Information:

Date of Receipt: 8/2/2018
Date of Collection: 8/1/2018
Sample Condition: Intact
C-O-C Discrepancies: See Chain of Custody

Holding Time and Preservation Requirements: The analysis and preparation for the samples were performed within the method holding times, with the following exceptions: all of the samples for pH analysis by method SW9040C and for filtration were received outside of the holding time. The samples were properly preserved.

Preparation and Analysis Requirements: The samples were analyzed 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, DUP:

Method Blanks (MB): No target analytes were detected above reporting limits.

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

Matrix Spike / Matrix Spike Duplicates (MS/MSD): All percent recoveries and RPDs (Relative Percent Differences) were inside established limits, with the following exceptions:

Sample ID	Analyte	QC	Explanation
1808037-005D	Ammonia	MS/MSD	Sample matrix interference
1808037-005D	Nitrate/Nitrite	MS	High analyte concentration
1808037-001E	As, Cd, Ca, Cr, Co, Cu, Fe, PB, Mg, Mn, Mo, Ni, K, Se, Na, U, V, Zn	MS and/or MSD	High analyte concentration
1808037-001E	Be	MS/MSD	Sample matrix interference
1808037-005E	Mercury	MS/MSD/RPD	Sample matrix interference and/or sample non-homogeneity
1808037-005E	As, Co, Cu, Fe, Mn, Ni, U, Zn	MS and/or MSD	High analyte concentration

Duplicate (DUP): The parameters that required a duplicate analysis had RPDs within the control limits.

Corrective Action: None required.

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Semivolatile Case Narrative

Client:	Energy Fuels Resources, Inc.
Contact:	Garrin Palmer
Project:	Annual Tailings 2018
Lab Set ID:	1808037

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Sample Receipt Information:

Date of Receipt:	8/2/2018
Date of Collection:	8/1/2018
Sample Condition:	Intact
C-O-C Discrepancies:	See Chain of Custody
Method:	SW-846 8270D/3510C
Analysis:	Semivolatile Organics

General Set Comments: One or more target analytes were observed above their reporting limits.

Holding Time Requirements: The preparations and analyses of the samples were performed within respective holding times.

Preparation Requirements: The samples were prepared and analyzed 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: No target analytes were detected above reporting limits, indicating that the procedure was free from contamination.

Laboratory Control Sample (LCS): All LCS recoveries were within control limits, indicating that the preparation and analysis were in control, with the following exceptions: the LCS percent recovery for 2,4,6-Trichlorophenol was outside of the control limits indicating possible bias high in LCS-57329. The data was deemed acceptable as the analyte was not observed in the field samples.

Matrix Spike / Matrix Spike Duplicate (MS/MSD): All percent recoveries and RPDs (Relative Percent Differences) were inside established limits, with the following exceptions: The MS percent recovery, MSD percent recovery, and/or RPD were outside of the control limits for multiple analytes on sample 1808037-005F due to sample matrix interference or sample non-homogeneity.

Surrogates: All surrogate percent recoveries were within the control limits, with the following exceptions: the surrogate percent recoveries for multiple surrogates on samples 1808037-001F, -002F, -003F, -004F, and -008F were outside of the control limits. Historical data yielded similar results indicating matrix interference.

Corrective Action: None required.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Volatile Case Narrative

Client:	Energy Fuels Resources, Inc.
Contact:	Garrin Palmer
Project:	Annual Tailings 2018
Lab Set ID:	1808037

Sample Receipt Information:

Date of Receipt:	8/2/2018
Date of Collection:	8/1/2018
Sample Condition:	Intact
C-O-C Discrepancies:	See Chain of Custody
Method:	SW-846 8260C/5030C
Analysis:	Volatile Organic Compounds

General Set Comments: One or more target analytes were 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, with the following exception: in MB VOC-3 080218A Methylene chloride was observed above the reporting limit. The method blank was acceptable, as any associated samples do not have results above the reporting limit/PQL.

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, with the following exceptions: the MS and/or MSD percent recovery for multiple compounds on sample 1808037-001A due to sample matrix interference.

Surrogates: All surrogate recoveries were within established limits.

Corrective Action: None required.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: ME
QC Type: LCS

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	**LCS-57348**	Date Analyzed:	08/15/2018 1126h											
Test Code:	200.7-DIS	Date Prepared:	08/06/2018 645h											
Vanadium		0.187	mg/L	E200.7	0.00113	0.00500	0.2000	0	93.5	85 - 115				
Lab Sample ID:	**LCS-57348**	Date Analyzed:	08/15/2018 1621h											
Test Code:	200.7-DIS	Date Prepared:	08/06/2018 645h											
Calcium		10.2	mg/L	E200.7	0.0729	1.00	10.00	0	102	85 - 115				
Magnesium		10.5	mg/L	E200.7	0.0575	1.00	10.00	0	105	85 - 115				
Potassium		10.2	mg/L	E200.7	0.176	1.00	10.00	0	102	85 - 115				
Sodium		10.3	mg/L	E200.7	0.194	1.00	10.00	0	103	85 - 115				
Lab Sample ID:	**LCS-57350**	Date Analyzed:	08/07/2018 934h											
Test Code:	200.8-DIS	Date Prepared:	08/06/2018 645h											
Arsenic		0.193	mg/L	E200.8	0.000338	0.00200	0.2000	0	96.3	85 - 115				
Cadmium		0.199	mg/L	E200.8	0.0000898	0.000500	0.2000	0	99.6	85 - 115				
Chromium		0.195	mg/L	E200.8	0.00124	0.00200	0.2000	0	97.3	85 - 115				
Copper		0.189	mg/L	E200.8	0.00196	0.00200	0.2000	0	94.7	85 - 115				
Iron		0.919	mg/L	E200.8	0.0324	0.100	1.000	0	91.9	85 - 115				
Lead		0.194	mg/L	E200.8	0.000524	0.00200	0.2000	0	97.0	85 - 115				
Manganese		0.200	mg/L	E200.8	0.00148	0.00200	0.2000	0	99.9	85 - 115				
Nickel		0.192	mg/L	E200.8	0.000924	0.00200	0.2000	0	96.1	85 - 115				
Selenium		0.204	mg/L	E200.8	0.000296	0.00200	0.2000	0	102	85 - 115				
Silver		0.196	mg/L	E200.8	0.000155	0.00200	0.2000	0	97.9	85 - 115				
Thallium		0.189	mg/L	E200.8	0.000288	0.00200	0.2000	0	94.7	85 - 115				
Uranium		0.197	mg/L	E200.8	0.000628	0.00200	0.2000	0	98.4	85 - 115				
Zinc		0.977	mg/L	E200.8	0.00486	0.00500	1.000	0	97.7	85 - 115				
Lab Sample ID:	**LCS-57350**	Date Analyzed:	08/14/2018 1338h											
Test Code:	200.8-DIS	Date Prepared:	08/06/2018 645h											
Beryllium		0.171	mg/L	E200.8	0.000256	0.00200	0.2000	0	85.4	85 - 115				

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: ME
QC Type: LCS

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	**LCS-57350**	Date Analyzed:	08/14/2018 1338h											
Test Code:	200.8-DIS	Date Prepared:	08/06/2018 645h											
Cobalt		0.175	mg/L	E200.8	0.000188	0.00400	0.2000	0	87.6	85 - 115				
Molybdenum		0.171	mg/L	E200.8	0.000702	0.00200	0.2000	0	85.5	85 - 115				
Lab Sample ID:	**LCS-57603**	Date Analyzed:	08/17/2018 1508h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Arsenic		0.190	mg/L	E200.8	0.000338	0.00200	0.2000	0	95.1	85 - 115				
Cadmium		0.187	mg/L	E200.8	0.0000898	0.000500	0.2000	0	93.6	85 - 115				
Chromium		0.188	mg/L	E200.8	0.00124	0.00200	0.2000	0	94.0	85 - 115				
Cobalt		0.185	mg/L	E200.8	0.000188	0.00400	0.2000	0	92.7	85 - 115				
Iron		0.938	mg/L	E200.8	0.0324	0.100	1.000	0	93.8	85 - 115				
Lead		0.191	mg/L	E200.8	0.000524	0.00200	0.2000	0	95.6	85 - 115				
Manganese		0.190	mg/L	E200.8	0.00148	0.00200	0.2000	0	95.0	85 - 115				
Molybdenum		0.192	mg/L	E200.8	0.000702	0.00200	0.2000	0	96.0	85 - 115				
Nickel		0.187	mg/L	E200.8	0.000924	0.00200	0.2000	0	93.7	85 - 115				
Selenium		0.185	mg/L	E200.8	0.000296	0.00200	0.2000	0	92.5	85 - 115				
Silver		0.193	mg/L	E200.8	0.000155	0.00200	0.2000	0	96.5	85 - 115				
Thallium		0.190	mg/L	E200.8	0.000288	0.00200	0.2000	0	95.1	85 - 115				
Tin		0.952	mg/L	E200.8	0.00302	0.00400	1.000	0	95.2	85 - 115				
Lab Sample ID:	**LCS-57603-Sn**	Date Analyzed:	08/17/2018 1511h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Tin		0.190	mg/L	E200.8	0.00302	0.00400	0.2000	0	94.9	85 - 115				
Lab Sample ID:	**LCS-57603**	Date Analyzed:	08/20/2018 1144h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Beryllium		0.185	mg/L	E200.8	0.000256	0.00200	0.2000	0	92.7	85 - 115				
Copper		0.189	mg/L	E200.8	0.00196	0.00200	0.2000	0	94.7	85 - 115				
Uranium		0.194	mg/L	E200.8	0.000628	0.00200	0.2000	0	97.1	85 - 115				

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: ME
QC Type: LCS

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	**LCS-57603**	Date Analyzed:	08/20/2018 1144h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Zinc		0.975	mg/L	E200.8	0.00486	0.00500	1.000	0	97.5	85 - 115				
Lab Sample ID:	**LCS-57427**	Date Analyzed:	08/09/2018 820h											
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/08/2018 1800h											
Mercury		0.00346	mg/L	E245.1	0.0000307	0.000150	0.003330	0	104	85 - 115				

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: ME
QC Type: MBLK

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	**MB-57348**	Date Analyzed:	08/15/2018 1124h											
Test Code:	200.7-DIS	Date Prepared:	08/06/2018 645h											
Vanadium		< 0.00500	mg/L	E200.7	0.00113	0.00500								
Lab Sample ID:	**MB-57348**	Date Analyzed:	08/15/2018 1619h											
Test Code:	200.7-DIS	Date Prepared:	08/06/2018 645h											
Calcium		< 1.00	mg/L	E200.7	0.0729	1.00								
Magnesium		< 1.00	mg/L	E200.7	0.0575	1.00								
Potassium		< 1.00	mg/L	E200.7	0.176	1.00								
Sodium		< 1.00	mg/L	E200.7	0.194	1.00								
Lab Sample ID:	**MB-57350**	Date Analyzed:	08/07/2018 931h											
Test Code:	200.8-DIS	Date Prepared:	08/06/2018 645h											
Arsenic		< 0.000500	mg/L	E200.8	0.0000845	0.000500								
Cadmium		< 0.000125	mg/L	E200.8	0.0000224	0.000125								
Chromium		< 0.000500	mg/L	E200.8	0.000310	0.000500								
Copper		< 0.000500	mg/L	E200.8	0.000491	0.000500								
Iron		< 0.0250	mg/L	E200.8	0.00810	0.0250								
Lead		< 0.000500	mg/L	E200.8	0.000131	0.000500								
Manganese		< 0.000500	mg/L	E200.8	0.000370	0.000500								
Nickel		< 0.000500	mg/L	E200.8	0.000231	0.000500								
Selenium		< 0.000500	mg/L	E200.8	0.0000740	0.000500								
Silver		< 0.000500	mg/L	E200.8	0.0000388	0.000500								
Thallium		< 0.000500	mg/L	E200.8	0.0000720	0.000500								
Uranium		< 0.000500	mg/L	E200.8	0.000157	0.000500								
Lab Sample ID:	**MB-57350**	Date Analyzed:	08/14/2018 1335h											
Test Code:	200.8-DIS	Date Prepared:	08/06/2018 645h											
Beryllium		< 0.000500	mg/L	E200.8	0.0000640	0.000500								
Cobalt		< 0.00100	mg/L	E200.8	0.0000470	0.00100								

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: ME
QC Type: MBLK

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	**MB-57350**	Date Analyzed:	08/14/2018 1335h											
Test Code:	200.8-DIS	Date Prepared:	08/06/2018 645h											
Molybdenum		< 0.000500	mg/L	E200.8	0.000176	0.000500								
Zinc		< 0.00125	mg/L	E200.8	0.00122	0.00125								
Lab Sample ID:	**MB-57603**	Date Analyzed:	08/17/2018 1505h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Arsenic		< 0.00200	mg/L	E200.8	0.000338	0.00200								
Cadmium		< 0.000500	mg/L	E200.8	0.0000898	0.000500								
Chromium		< 0.00200	mg/L	E200.8	0.00124	0.00200								
Cobalt		< 0.00400	mg/L	E200.8	0.000188	0.00400								
Iron		< 0.100	mg/L	E200.8	0.0324	0.100								
Lead		< 0.00200	mg/L	E200.8	0.000524	0.00200								
Manganese		< 0.00200	mg/L	E200.8	0.00148	0.00200								
Molybdenum		< 0.00200	mg/L	E200.8	0.000702	0.00200								
Nickel		< 0.00200	mg/L	E200.8	0.000924	0.00200								
Selenium		< 0.00200	mg/L	E200.8	0.000296	0.00200								
Silver		< 0.00200	mg/L	E200.8	0.000155	0.00200								
Thallium		< 0.00200	mg/L	E200.8	0.000288	0.00200								
Tin		< 0.00400	mg/L	E200.8	0.00302	0.00400								
Lab Sample ID:	**MB-FILTER-57332**	Date Analyzed:	08/17/2018 1605h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Arsenic		< 0.00200	mg/L	E200.8	0.000338	0.00200								
Chromium		< 0.00200	mg/L	E200.8	0.00124	0.00200								
Cobalt		< 0.00400	mg/L	E200.8	0.000188	0.00400								
Iron		< 0.100	mg/L	E200.8	0.0324	0.100								
Lead		< 0.00200	mg/L	E200.8	0.000524	0.00200								
Manganese		< 0.00200	mg/L	E200.8	0.00148	0.00200								
Molybdenum		< 0.00200	mg/L	E200.8	0.000702	0.00200								

American West ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: ME
QC Type: MBLK

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	**MB-FILTER-57332**	Date Analyzed:	08/17/2018 1605h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Nickel		< 0.00200	mg/L	E200.8	0.000924	0.00200								
Selenium		< 0.00200	mg/L	E200.8	0.000296	0.00200								
Silver		< 0.00200	mg/L	E200.8	0.000155	0.00200								
Thallium		< 0.00200	mg/L	E200.8	0.000288	0.00200								
Tin		< 0.00400	mg/L	E200.8	0.00302	0.00400								
Lab Sample ID:	**MB-57603**	Date Analyzed:	08/20/2018 1141h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Beryllium		< 0.00200	mg/L	E200.8	0.000256	0.00200								
Copper		< 0.00200	mg/L	E200.8	0.00196	0.00200								
Uranium		< 0.00200	mg/L	E200.8	0.000628	0.00200								
Zinc		< 0.00500	mg/L	E200.8	0.00486	0.00500								
Lab Sample ID:	**MB-FILTER-57332**	Date Analyzed:	08/20/2018 1206h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Beryllium		< 0.00200	mg/L	E200.8	0.000256	0.00200								
Cadmium		< 0.000500	mg/L	E200.8	0.0000898	0.000500								
Copper		< 0.00200	mg/L	E200.8	0.00196	0.00200								
Uranium		< 0.00200	mg/L	E200.8	0.000628	0.00200								
Zinc		< 0.00500	mg/L	E200.8	0.00486	0.00500								
Lab Sample ID:	**MB-57427**	Date Analyzed:	08/09/2018 818h											
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/08/2018 1800h											
Mercury		< 0.000150	mg/L	E245.1	0.0000307	0.000150								
Lab Sample ID:	**MB-FILTER-57332**	Date Analyzed:	08/09/2018 856h											
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/08/2018 1800h											
Mercury		< 0.000150	mg/L	E245.1	0.0000307	0.000150								

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: ME
QC Type: MS

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	**1808037-001EMS**	Date Analyzed:	08/15/2018 1130h											
Test Code:	200.7-DIS	Date Prepared:	08/06/2018 645h											
Vanadium		2,360	mg/L	E200.7	1.13	5.00	2.000	2440	-4,130	70 - 130				2
Lab Sample ID:	**1808037-001EMS**	Date Analyzed:	08/15/2018 1626h											
Test Code:	200.7-DIS	Date Prepared:	08/06/2018 645h											
Magnesium		20,400	mg/L	E200.7	115	2,000	100.0	20800	-404	70 - 130				2
Sodium		54,700	mg/L	E200.7	388	2,000	100.0	53500	1,210	70 - 130				2
Lab Sample ID:	**1808037-001EMS**	Date Analyzed:	08/15/2018 1653h											
Test Code:	200.7-DIS	Date Prepared:	08/06/2018 645h											
Calcium		600	mg/L	E200.7	14.6	200	100.0	518	81.4	70 - 130				
Potassium		4,800	mg/L	E200.7	35.2	200	100.0	4790	7.20	70 - 130				2
Lab Sample ID:	**1808037-001EMS**	Date Analyzed:	08/16/2018 1429h											
Test Code:	200.8-DIS	Date Prepared:	08/06/2018 645h											
Beryllium		3.00	mg/L	E200.8	0.0256	0.200	2.000	1.51	74.1	75 - 125				1
Cadmium		14.9	mg/L	E200.8	0.00898	0.0500	2.000	14	47.2	75 - 125				2
Chromium		21.6	mg/L	E200.8	0.124	0.200	2.000	21.1	23.4	75 - 125				2
Cobalt		109	mg/L	E200.8	0.0188	0.400	2.000	113	-228	75 - 125				2
Lead		39.2	mg/L	E200.8	0.0524	0.200	2.000	41	-90.1	75 - 125				2
Nickel		159	mg/L	E200.8	0.0924	0.200	2.000	167	-376	75 - 125				2
Selenium		11.9	mg/L	E200.8	0.0296	0.200	2.000	10.7	60.8	75 - 125				2
Silver		4.05	mg/L	E200.8	0.0155	0.200	2.000	2.32	86.7	75 - 125				
Thallium		2.16	mg/L	E200.8	0.0288	0.200	2.000	0.442	85.7	75 - 125				
Lab Sample ID:	**1808037-001EMS**	Date Analyzed:	08/16/2018 1605h											
Test Code:	200.8-DIS	Date Prepared:	08/06/2018 645h											
Arsenic		593	mg/L	E200.8	3.38	20.0	2.000	641	-2,380	75 - 125				2
Copper		4,180	mg/L	E200.8	19.6	20.0	2.000	4550	-18,200	75 - 125				2

American West ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: ME
QC Type: MS

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	**1808037-001EMS**	Date Analyzed:	08/16/2018 1605h											
Test Code:	200.8-DIS	Date Prepared:	08/06/2018 645h											
Iron		11,300	mg/L	E200.8	324	1,000	10.00	12200	-8,450	75 - 125				2
Manganese		851	mg/L	E200.8	14.8	20.0	2.000	936	-4,220	75 - 125				2
Molybdenum		227	mg/L	E200.8	7.02	20.0	2.000	239	-643	75 - 125				2
Uranium		238	mg/L	E200.8	6.28	20.0	2.000	248	-497	75 - 125				2
Zinc		913	mg/L	E200.8	48.6	50.0	10.00	948	-346	75 - 125				2
Lab Sample ID:	**1808037-005EMS**	Date Analyzed:	08/17/2018 1544h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Arsenic		42.2	mg/L	E200.8	0.0338	0.200	2.000	42.4	-13.1	75 - 125				2
Cadmium		5.43	mg/L	E200.8	0.00898	0.0500	2.000	3.74	84.5	75 - 125				
Chromium		5.46	mg/L	E200.8	0.124	0.200	2.000	3.93	76.7	75 - 125				
Cobalt		31.5	mg/L	E200.8	0.0188	0.400	2.000	30.6	45.3	75 - 125				2
Manganese		133	mg/L	E200.8	0.148	0.200	2.000	136	-114	75 - 125				2
Molybdenum		4.04	mg/L	E200.8	0.0702	0.200	2.000	2.35	84.4	75 - 125				
Nickel		70.7	mg/L	E200.8	0.0924	0.200	2.000	70.9	-12.6	75 - 125				2
Selenium		3.26	mg/L	E200.8	0.0296	0.200	2.000	1.55	85.7	75 - 125				
Thallium		2.02	mg/L	E200.8	0.0288	0.200	2.000	0.281	86.8	75 - 125				
Lab Sample ID:	**1808037-005EMS-Sn**	Date Analyzed:	08/17/2018 1550h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Tin		1.78	mg/L	E200.8	0.302	0.400	2.000	0	89.1	75 - 125				
Lab Sample ID:	**1808037-005EMS**	Date Analyzed:	08/20/2018 1150h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Copper		372	mg/L	E200.8	1.96	2.00	2.000	376	-176	75 - 125				2
Uranium		79.7	mg/L	E200.8	0.628	2.00	2.000	78.6	51.7	75 - 125				2
Zinc		458	mg/L	E200.8	4.86	5.00	10.00	446	120	75 - 125				

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: ME
QC Type: MS

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	**1808037-005EMS**	Date Analyzed:	08/20/2018 1200h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Iron		2,010	mg/L	E200.8	64.8	200	10.00	2090	-833	75 - 125				2
Lab Sample ID:	**1808037-005EMS**	Date Analyzed:	08/20/2018 1221h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Beryllium		2.05	mg/L	E200.8	0.0256	0.200	2.000	0.298	87.8	75 - 125				
Lab Sample ID:	**1808037-005EMS**	Date Analyzed:	08/20/2018 1239h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Lead		2.00	mg/L	E200.8	0.0262	0.100	2.000	0.118	93.8	75 - 125				
Silver		1.99	mg/L	E200.8	0.00775	0.100	2.000	0.0866	95.3	75 - 125				
Lab Sample ID:	**1808037-005EMS**	Date Analyzed:	08/09/2018 828h											
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/08/2018 1800h											
Mercury		0.00272	mg/L	E245.1	0.0000307	0.000150	0.003330	0.0000417	80.5	85 - 115				1

[1] - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

[2] - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: ME
QC Type: MSD

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	**1808037-001EMSD**	Date Analyzed:	08/15/2018 1132h											
Test Code:	200.7-DIS	Date Prepared:	08/06/2018 645h											
Vanadium		2,440	mg/L	E200.7	1.13	5.00	2.000	2440	-48.0	70 - 130	2360	3.41	20	2
Lab Sample ID:	**1808037-001EMSD**	Date Analyzed:	08/15/2018 1629h											
Test Code:	200.7-DIS	Date Prepared:	08/06/2018 645h											
Magnesium		20,500	mg/L	E200.7	115	2,000	100.0	20800	-257	70 - 130	20400	0.717	20	2
Sodium		54,900	mg/L	E200.7	388	2,000	100.0	53500	1,420	70 - 130	54700	0.380	20	2
Lab Sample ID:	**1808037-001EMSD**	Date Analyzed:	08/15/2018 1656h											
Test Code:	200.7-DIS	Date Prepared:	08/06/2018 645h											
Calcium		585	mg/L	E200.7	14.6	200	100.0	518	66.4	70 - 130	600	2.54	20	2
Potassium		4,640	mg/L	E200.7	35.2	200	100.0	4790	-154	70 - 130	4800	3.42	20	2
Lab Sample ID:	**1808037-001EMSD**	Date Analyzed:	08/16/2018 1432h											
Test Code:	200.8-DIS	Date Prepared:	08/06/2018 645h											
Beryllium		2.96	mg/L	E200.8	0.0256	0.200	2.000	1.51	72.3	75 - 125	3	1.17	20	1
Cadmium		14.7	mg/L	E200.8	0.00898	0.0500	2.000	14	34.6	75 - 125	14.9	1.70	20	2
Chromium		21.3	mg/L	E200.8	0.124	0.200	2.000	21.1	9.89	75 - 125	21.6	1.26	20	2
Cobalt		107	mg/L	E200.8	0.0188	0.400	2.000	113	-299	75 - 125	109	1.31	20	2
Lead		38.7	mg/L	E200.8	0.0524	0.200	2.000	41	-114	75 - 125	39.2	1.24	20	2
Nickel		157	mg/L	E200.8	0.0924	0.200	2.000	167	-467	75 - 125	159	1.15	20	2
Selenium		11.7	mg/L	E200.8	0.0296	0.200	2.000	10.7	47.8	75 - 125	11.9	2.20	20	2
Silver		3.99	mg/L	E200.8	0.0155	0.200	2.000	2.32	83.7	75 - 125	4.05	1.47	20	
Thallium		2.13	mg/L	E200.8	0.0288	0.200	2.000	0.442	84.4	75 - 125	2.16	1.25	20	
Lab Sample ID:	**1808037-001EMSD**	Date Analyzed:	08/16/2018 1608h											
Test Code:	200.8-DIS	Date Prepared:	08/06/2018 645h											
Arsenic		589	mg/L	E200.8	3.38	20.0	2.000	641	-2,600	75 - 125	593	0.757	20	2
Copper		4,220	mg/L	E200.8	19.6	20.0	2.000	4550	-16,400	75 - 125	4180	0.843	20	2

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: ME
QC Type: MSD

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	**1808037-001EMSD**	Date Analyzed:	08/16/2018 1608h											
Test Code:	200.8-DIS	Date Prepared:	08/06/2018 645h											
Iron		11,500	mg/L	E200.8	324	1,000	10.00	12200	-6,980	75 - 125	11300	1.28	20	2
Manganese		859	mg/L	E200.8	14.8	20.0	2.000	936	-3,840	75 - 125	851	0.892	20	2
Molybdenum		231	mg/L	E200.8	7.02	20.0	2.000	239	-397	75 - 125	227	2.15	20	2
Uranium		236	mg/L	E200.8	6.28	20.0	2.000	248	-566	75 - 125	238	0.581	20	2
Zinc		901	mg/L	E200.8	48.6	50.0	10.00	948	-465	75 - 125	913	1.31	20	2
Lab Sample ID:	**1808037-005EMSD**	Date Analyzed:	08/17/2018 1547h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Arsenic		43.6	mg/L	E200.8	0.0338	0.200	2.000	42.4	56.9	75 - 125	42.2	3.27	20	2
Cadmium		5.49	mg/L	E200.8	0.00898	0.0500	2.000	3.74	87.4	75 - 125	5.43	1.08	20	
Chromium		5.52	mg/L	E200.8	0.124	0.200	2.000	3.93	79.5	75 - 125	5.46	1.03	20	
Cobalt		31.6	mg/L	E200.8	0.0188	0.400	2.000	30.6	52.1	75 - 125	31.5	0.432	20	2
Manganese		136	mg/L	E200.8	0.148	0.200	2.000	136	-4.36	75 - 125	133	1.62	20	2
Molybdenum		4.14	mg/L	E200.8	0.0702	0.200	2.000	2.35	89.4	75 - 125	4.04	2.40	20	
Nickel		71.4	mg/L	E200.8	0.0924	0.200	2.000	70.9	21.2	75 - 125	70.7	0.951	20	2
Selenium		3.39	mg/L	E200.8	0.0296	0.200	2.000	1.55	92.2	75 - 125	3.26	3.90	20	
Thallium		2.12	mg/L	E200.8	0.0288	0.200	2.000	0.281	91.8	75 - 125	2.02	4.87	20	
Lab Sample ID:	**1808037-005EMSD-Sn**	Date Analyzed:	08/17/2018 1553h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Tin		1.88	mg/L	E200.8	0.302	0.400	2.000	0	94.1	75 - 125	1.78	5.47	20	
Lab Sample ID:	**1808037-005EMSD**	Date Analyzed:	08/20/2018 1153h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Copper		309	mg/L	E200.8	1.96	2.00	2.000	376	-3,340	75 - 125	372	18.6	20	2
Uranium		70.3	mg/L	E200.8	0.628	2.00	2.000	78.6	-417	75 - 125	79.7	12.5	20	2
Zinc		379	mg/L	E200.8	4.86	5.00	10.00	446	-674	75 - 125	458	19.0	20	2

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: ME
QC Type: MSD

Analyte		Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID:	**1808037-005EMSD**	Date Analyzed:	08/20/2018 1203h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Iron		1,740	mg/L	E200.8	64.8	200	10.00	2090	-3,550	75 - 125	2010	14.5	20	[2]
Lab Sample ID:	**1808037-005EMSD**	Date Analyzed:	08/20/2018 1224h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Beryllium		1.83	mg/L	E200.8	0.0256	0.200	2.000	0.298	76.5	75 - 125	2.05	11.6	20	
Lab Sample ID:	**1808037-005EMSD**	Date Analyzed:	08/20/2018 1242h											
Test Code:	200.8-DIS	Date Prepared:	08/17/2018 1057h											
Lead		1.92	mg/L	E200.8	0.0262	0.100	2.000	0.118	90.2	75 - 125	1.82	5.42	20	
Silver		1.90	mg/L	E200.8	0.00775	0.100	2.000	0.0866	90.5	75 - 125	1.89	0.223	20	
Lab Sample ID:	**1808037-005EMSD**	Date Analyzed:	08/09/2018 830h											
Test Code:	HG-DW-DIS-245.1	Date Prepared:	08/08/2018 1800h											
Mercury		0.00199	mg/L	E245.1	0.0000307	0.000150	0.003330	0.0000417	58.6	85 - 115	0.00272	31.0	20	[1]@

@ - High RPD due to suspected sample non-homogeneity or matrix interference.

[1] - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

[2] - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: WC
QC Type: DUP

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1808037-005BDUP Date Analyzed: 08/06/2018 700h Test Code: COND-W-2510B													
Conductivity	63,200	µmhos/cm	SM2510B	0.733	2.00					63400	0.316	5	
Lab Sample ID: 1808037-001BDUP Date Analyzed: 08/02/2018 1452h Test Code: PH-9040C													
pH @ 25° C	< 1.00	pH Units	SW9040C	1.00	1.00					0	0	10	H
Lab Sample ID: 1808037-001CDUP Date Analyzed: 08/05/2018 1115h Test Code: TDS-W-2540C													
Total Dissolved Solids	364,000	mg/L	SM2540C	400	500					361000	0.855	5	

H - Sample was received outside of the holding time.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: WC
QC Type: LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCS-R116578 Date Analyzed: 08/14/2018 1157h													
Test Code: 300.0-W													
Chloride	5.30	mg/L	E300.0	0.0581	0.100	5.000	0	106	90 - 110				
Fluoride	4.85	mg/L	E300.0	0.0353	0.100	5.000	0	97.0	90 - 110				
Sulfate	5.09	mg/L	E300.0	0.102	0.750	5.000	0	102	90 - 110				
Lab Sample ID: LCS-R116644 Date Analyzed: 08/15/2018 1158h													
Test Code: 300.0-W													
Fluoride	4.82	mg/L	E300.0	0.0353	0.100	5.000	0	96.5	90 - 110				
Lab Sample ID: LCS-R116649 Date Analyzed: 08/16/2018 951h													
Test Code: 300.0-W													
Sulfate	4.85	mg/L	E300.0	0.102	0.750	5.000	0	96.9	90 - 110				
Lab Sample ID: LCS-R116277 Date Analyzed: 08/06/2018 900h													
Test Code: ALK-W-2320B-LL													
Alkalinity (as CaCO3)	250	mg/L	SM2320B	0.965	1.00	250.0	0	99.8	90 - 110				
Lab Sample ID: LCS-R116254 Date Analyzed: 08/06/2018 700h													
Test Code: COND-W-2510B													
Conductivity	996	µmhos/cm	SM2510B	0.733	2.00	1,000	0	99.6	98 - 102				
Lab Sample ID: LCS-57496 Date Analyzed: 08/13/2018 1441h													
Test Code: NH3-W-350.1 Date Prepared: 08/13/2018 830h													
Ammonia (as N)	9.62	mg/L	E350.1	0.0492	0.0500	10.00	0	96.2	90 - 110				
Lab Sample ID: LCS-57548 Date Analyzed: 08/16/2018 1027h													
Test Code: NH3-W-350.1 Date Prepared: 08/15/2018 1350h													
Ammonia (as N)	9.10	mg/L	E350.1	0.0492	0.0500	10.00	0	91.0	90 - 110				

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: WC
QC Type: LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCS-R116290 Date Analyzed: 08/06/2018 1534h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	1.04	mg/L	E353.2	0.00538	0.0100	1.000	0	104	90 - 110				
Lab Sample ID: LCS-R116153 Date Analyzed: 08/02/2018 1452h													
Test Code: PH-9040C													
pH @ 25° C	8.93	pH Units	SW9040C	1.00	1.00	9.000	0	99.2	98 - 102				
Lab Sample ID: LCS-R116284 Date Analyzed: 08/05/2018 1115h													
Test Code: TDS-W-2540C													
Total Dissolved Solids	200	mg/L	SM2540C	8.00	10.0	205.0	0	97.6	80 - 120				

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: WC
QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-R116578 Date Analyzed: 08/14/2018 1141h													
Test Code: 300.0-W													
Chloride	< 0.100	mg/L	E300.0	0.0581	0.100								
Fluoride	< 0.100	mg/L	E300.0	0.0353	0.100								
Sulfate	< 0.750	mg/L	E300.0	0.102	0.750								
Lab Sample ID: MB-R116644 Date Analyzed: 08/15/2018 1141h													
Test Code: 300.0-W													
Fluoride	< 0.100	mg/L	E300.0	0.0353	0.100								
Lab Sample ID: MB-R116649 Date Analyzed: 08/16/2018 934h													
Test Code: 300.0-W													
Sulfate	< 0.750	mg/L	E300.0	0.102	0.750								
Lab Sample ID: MB-R116277 Date Analyzed: 08/06/2018 900h													
Test Code: ALK-W-2320B-LL													
Bicarbonate (as CaCO3)	< 1.00	mg/L	SM2320B	0.965	1.00								
Carbonate (as CaCO3)	< 1.00	mg/L	SM2320B	0.965	1.00								
Lab Sample ID: MB-R116254 Date Analyzed: 08/06/2018 700h													
Test Code: COND-W-2510B													
Conductivity	< 2.00	µmhos/cm	SM2510B	0.733	2.00								
Lab Sample ID: MB-57496 Date Analyzed: 08/13/2018 1440h													
Test Code: NH3-W-350.1 Date Prepared: 08/13/2018 830h													
Ammonia (as N)	< 0.0500	mg/L	E350.1	0.0492	0.0500								
Lab Sample ID: MB-57548 Date Analyzed: 08/16/2018 1030h													
Test Code: NH3-W-350.1 Date Prepared: 08/15/2018 1350h													
Ammonia (as N)	< 0.0500	mg/L	E350.1	0.0492	0.0500								

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: WC
QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-R116290 Date Analyzed: 08/06/2018 1533h Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	< 0.0100	mg/L	E353.2	0.00538	0.0100								
Lab Sample ID: MB-R116284 Date Analyzed: 08/05/2018 1115h Test Code: TDS-W-2540C													
Total Dissolved Solids	< 10.0	mg/L	SM2540C	8.00	10.0								

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: WC
QC Type: MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1808037-001BMS Date Analyzed: 08/14/2018 1231h													
Test Code: 300.0-W													
Chloride	300,000	mg/L	E300.0	2,900	5,000	250,000	39300	104	90 - 110				
Fluoride	267,000	mg/L	E300.0	1,760	5,000	250,000	5020	105	90 - 110				
Sulfate	516,000	mg/L	E300.0	5,100	37,500	250,000	253000	105	90 - 110				
Lab Sample ID: 1808037-008BMS Date Analyzed: 08/15/2018 1232h													
Test Code: 300.0-W													
Fluoride	304	mg/L	E300.0	1.76	5.00	250.0	53.4	100	90 - 110				
Lab Sample ID: 1808037-005BMS Date Analyzed: 08/16/2018 1437h													
Test Code: 300.0-W													
Sulfate	160,000	mg/L	E300.0	2,040	15,000	100,000	68600	91.2	90 - 110				
Lab Sample ID: 1808037-005BMS Date Analyzed: 08/06/2018 900h													
Test Code: ALK-W-2320B-LL													
Alkalinity (as CaCO3)	49.1	mg/L	SM2320B	0.965	1.00	50.00	0	98.2	80 - 120				
Lab Sample ID: 1808037-005DMS Date Analyzed: 08/13/2018 1453h													
Test Code: NH3-W-350.1 Date Prepared: 08/13/2018 830h													
Ammonia (as N)	14,600	mg/L	E350.1	49.2	50.0	10,000	4580	100	90 - 110				
Lab Sample ID: 1808037-005DMS Date Analyzed: 08/16/2018 1029h													
Test Code: NH3-W-350.1 Date Prepared: 08/15/2018 1350h													
Ammonia (as N)	15,500	mg/L	E350.1	49.2	50.0	10,000	4580	109	90 - 110				
Lab Sample ID: 1808037-005DMS Date Analyzed: 08/06/2018 1602h													
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	130	mg/L	E353.2	0.538	1.00	100.0	44	85.5	90 - 110				2

[2] - Analyte concentration is too high for accurate matrix spike recovery and/or RPD.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: WC
QC Type: MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1808037-001BMSD	Date Analyzed:	08/14/2018 1248h											
Test Code: 300.0-W													
Chloride	294,000	mg/L	E300.0	2,900	5,000	250,000	39300	102	90 - 110	300000	1.82	20	
Fluoride	264,000	mg/L	E300.0	1,760	5,000	250,000	5020	104	90 - 110	267000	1.17	20	
Sulfate	511,000	mg/L	E300.0	5,100	37,500	250,000	253000	103	90 - 110	516000	0.928	20	
Lab Sample ID: 1808037-008BMSD	Date Analyzed:	08/15/2018 1249h											
Test Code: 300.0-W													
Fluoride	299	mg/L	E300.0	1.76	5.00	250.0	53.4	98.1	90 - 110	304	1.80	20	
Lab Sample ID: 1808037-005BMSD	Date Analyzed:	08/16/2018 1454h											
Test Code: 300.0-W													
Sulfate	158,000	mg/L	E300.0	2,040	15,000	100,000	68600	89.8	90 - 110	160000	0.858	20	§
Lab Sample ID: 1808037-005BMSD	Date Analyzed:	08/06/2018 900h											
Test Code: ALK-W-2320B-LL													
Alkalinity (as CaCO3)	50.1	mg/L	SM2320B	0.965	1.00	50.00	0	100	80 - 120	49.1	2.02	10	
Lab Sample ID: 1808037-005DMSD	Date Analyzed:	08/13/2018 1454h											
Test Code: NH3-W-350.1	Date Prepared:	08/13/2018 830h											
Ammonia (as N)	15,400	mg/L	E350.1	49.2	50.0	10,000	4580	108	90 - 110	14600	5.27	10	
Lab Sample ID: 1808037-005DMSD	Date Analyzed:	08/16/2018 1029h											
Test Code: NH3-W-350.1	Date Prepared:	08/15/2018 1350h											
Ammonia (as N)	14,800	mg/L	E350.1	49.2	50.0	10,000	4580	103	90 - 110	15500	4.35	10	
Lab Sample ID: 1808037-005DMSD	Date Analyzed:	08/06/2018 1603h											
Test Code: NO2/NO3-W-353.2													
Nitrate/Nitrite (as N)	139	mg/L	E353.2	0.538	1.00	100.0	44	94.8	90 - 110	130	6.93	10	

§ - QC limits are set with an accuracy of two significant figures, therefore the recovery rounds to an acceptable value within the control limits.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSSV
QC Type: LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCS-57329	Date Analyzed:	08/07/2018 1205h											
Test Code: 8270-W-3511	Date Prepared:	08/03/2018 1728h											
1,2,4-Trichlorobenzene	31.1	µg/L	SW8270D	8.93	10.0	50.00	0	62.1	31 - 135				
1,4-Dichlorobenzene	28.9	µg/L	SW8270D	8.76	10.0	50.00	0	57.9	16 - 124				
2,4,6-Trichlorophenol	66.4	µg/L	SW8270D	7.62	10.0	50.00	0	133	21 - 132				S
2,4-Dimethylphenol	67.1	µg/L	SW8270D	8.99	10.0	50.00	0	134	36 - 151				
2,4-Dinitrotoluene	72.5	µg/L	SW8270D	4.64	10.0	50.00	0	145	38 - 176				
2-Chloronaphthalene	43.4	µg/L	SW8270D	9.27	10.0	50.00	0	86.8	52 - 172				
2-Chlorophenol	53.0	µg/L	SW8270D	9.11	10.0	50.00	0	106	24 - 128				
4,6-Dinitro-2-methylphenol	57.0	µg/L	SW8270D	7.12	10.0	50.00	0	114	10 - 156				
4-Chloro-3-methylphenol	51.6	µg/L	SW8270D	6.31	10.0	50.00	0	103	10 - 155				
4-Nitrophenol	36.2	µg/L	SW8270D	4.68	10.0	50.00	0	72.4	10 - 100				
Acenaphthene	49.5	µg/L	SW8270D	5.67	10.0	50.00	0	99.1	45 - 132				
Benzo(a)pyrene	64.8	µg/L	SW8270D	5.58	10.0	50.00	0	130	57 - 195				
N-Nitrosodi-n-propylamine	44.0	µg/L	SW8270D	5.67	10.0	50.00	0	87.9	39 - 180				
Pentachlorophenol	49.8	µg/L	SW8270D	9.76	10.0	50.00	0	99.6	10 - 158				
Phenol	27.2	µg/L	SW8270D	7.95	10.0	50.00	0	54.5	21 - 110				
Pyrene	64.0	µg/L	SW8270D	5.40	10.0	50.00	0	128	41 - 159				
Surr: 2,4,6-Tribromophenol	64.3	µg/L	SW8270D			50.00		129	36 - 195				
Surr: 2-Fluorobiphenyl	14.8	µg/L	SW8270D			25.00		59.1	46 - 129				
Surr: 2-Fluorophenol	34.4	µg/L	SW8270D			50.00		68.8	10 - 105				
Surr: Nitrobenzene-d5	26.1	µg/L	SW8270D			25.00		104	55 - 147				
Surr: Phenol-d6	21.4	µg/L	SW8270D			50.00		42.8	10 - 100				
Surr: Terphenyl-d14	26.5	µg/L	SW8270D			25.00		106	68 - 155				

S - High LCS recoveries indicate possible bias high. Data deemed acceptable as the analyte was not observed in the field sample.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSSV
QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-57329	Date Analyzed:	08/06/2018 1814h											
Test Code: 8270-W-3511	Date Prepared:	08/03/2018 1728h											
1,2,4-Trichlorobenzene	< 10.0	µg/L	SW8270D	8.93	10.0								
1,2-Dichlorobenzene	< 10.0	µg/L	SW8270D	8.78	10.0								
1,3-Dichlorobenzene	< 10.0	µg/L	SW8270D	8.01	10.0								
1,4-Dichlorobenzene	< 10.0	µg/L	SW8270D	8.76	10.0								
1-Methylnaphthalene	< 10.0	µg/L	SW8270D	9.39	10.0								
2,4,5-Trichlorophenol	< 10.0	µg/L	SW8270D	9.98	10.0								
2,4,6-Trichlorophenol	< 10.0	µg/L	SW8270D	7.62	10.0								
2,4-Dichlorophenol	< 10.0	µg/L	SW8270D	8.88	10.0								
2,4-Dimethylphenol	< 10.0	µg/L	SW8270D	8.99	10.0								
2,4-Dinitrophenol	< 10.0	µg/L	SW8270D	8.62	10.0								
2,4-Dinitrotoluene	< 10.0	µg/L	SW8270D	4.64	10.0								
2,6-Dinitrotoluene	< 10.0	µg/L	SW8270D	6.53	10.0								
2-Chloronaphthalene	< 10.0	µg/L	SW8270D	9.27	10.0								
2-Chlorophenol	< 10.0	µg/L	SW8270D	9.11	10.0								
2-Methylnaphthalene	< 10.0	µg/L	SW8270D	3.20	10.0								
2-Methylphenol	< 10.0	µg/L	SW8270D	7.38	10.0								
2-Nitrophenol	< 10.0	µg/L	SW8270D	7.15	10.0								
3&4-Methylphenol	< 10.0	µg/L	SW8270D	8.66	10.0								
3,3'-Dichlorobenzidine	< 10.0	µg/L	SW8270D	7.05	10.0								
4,6-Dinitro-2-methylphenol	< 10.0	µg/L	SW8270D	7.12	10.0								
4-Bromophenyl phenyl ether	< 10.0	µg/L	SW8270D	6.88	10.0								
4-Chloro-3-methylphenol	< 10.0	µg/L	SW8270D	6.31	10.0								
4-Chlorophenyl phenyl ether	< 10.0	µg/L	SW8270D	9.28	10.0								
4-Nitrophenol	< 10.0	µg/L	SW8270D	4.68	10.0								
Acenaphthene	< 10.0	µg/L	SW8270D	5.67	10.0								
Acenaphthylene	< 10.0	µg/L	SW8270D	6.41	10.0								
Anthracene	< 10.0	µg/L	SW8270D	6.14	10.0								

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSSV
QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-57329	Date Analyzed:	08/06/2018 1814h											
Test Code: 8270-W-3511	Date Prepared:	08/03/2018 1728h											
Azobenzene	< 10.0	µg/L	SW8270D	6.96	10.0								
Benz(a)anthracene	< 10.0	µg/L	SW8270D	5.78	10.0								
Benzidine	< 10.0	µg/L	SW8270D	6.77	10.0								
Benzo(a)pyrene	< 10.0	µg/L	SW8270D	5.58	10.0								
Benzo(b)fluoranthene	< 10.0	µg/L	SW8270D	7.29	10.0								
Benzo(g,h,i)perylene	< 10.0	µg/L	SW8270D	7.61	10.0								
Benzo(k)fluoranthene	< 10.0	µg/L	SW8270D	5.42	10.0								
Bis(2-chloroethoxy)methane	< 10.0	µg/L	SW8270D	8.51	10.0								
Bis(2-chloroethyl) ether	< 10.0	µg/L	SW8270D	6.13	10.0								
Bis(2-chloroisopropyl) ether	< 10.0	µg/L	SW8270D	7.73	10.0								
Bis(2-ethylhexyl) phthalate	< 10.0	µg/L	SW8270D	7.40	10.0								
Butyl benzyl phthalate	< 10.0	µg/L	SW8270D	7.83	10.0								
Chrysene	< 10.0	µg/L	SW8270D	5.89	10.0								
Dibenz(a,h)anthracene	< 10.0	µg/L	SW8270D	7.64	10.0								
Diethyl phthalate	< 10.0	µg/L	SW8270D	7.84	10.0								
Dimethyl phthalate	< 10.0	µg/L	SW8270D	3.00	10.0								
Di-n-butyl phthalate	< 10.0	µg/L	SW8270D	7.31	10.0								
Di-n-octyl phthalate	< 10.0	µg/L	SW8270D	5.51	10.0								
Fluoranthene	< 10.0	µg/L	SW8270D	6.37	10.0								
Fluorene	< 10.0	µg/L	SW8270D	8.79	10.0								
Hexachlorobenzene	< 10.0	µg/L	SW8270D	7.32	10.0								
Hexachlorobutadiene	< 10.0	µg/L	SW8270D	7.95	10.0								
Hexachlorocyclopentadiene	< 10.0	µg/L	SW8270D	8.83	10.0								
Hexachloroethane	< 10.0	µg/L	SW8270D	7.80	10.0								
Indeno(1,2,3-cd)pyrene	< 10.0	µg/L	SW8270D	7.58	10.0								
Isophorone	< 10.0	µg/L	SW8270D	9.94	10.0								
Naphthalene	< 10.0	µg/L	SW8270D	9.25	10.0								

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSSV
QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-57329	Date Analyzed:	08/06/2018 1814h											
Test Code: 8270-W-3511	Date Prepared:	08/03/2018 1728h											
Nitrobenzene	< 10.0	µg/L	SW8270D	4.64	10.0								
N-Nitrosodimethylamine	< 10.0	µg/L	SW8270D	4.04	10.0								
N-Nitrosodi-n-propylamine	< 10.0	µg/L	SW8270D	5.67	10.0								
N-Nitrosodiphenylamine	< 10.0	µg/L	SW8270D	6.04	10.0								
Pentachlorophenol	< 10.0	µg/L	SW8270D	9.76	10.0								
Phenanthrene	< 10.0	µg/L	SW8270D	5.73	10.0								
Phenol	< 10.0	µg/L	SW8270D	7.95	10.0								
Pyrene	< 10.0	µg/L	SW8270D	5.40	10.0								
Pyridine	< 10.0	µg/L	SW8270D	8.71	10.0								
Surr: 2,4,6-Tribromophenol	26.5	µg/L	SW8270D			50.00		53.0	36 - 195				
Surr: 2-Fluorobiphenyl	15.9	µg/L	SW8270D			25.00		63.4	50 - 137				
Surr: 2-Fluorophenol	51.1	µg/L	SW8270D			50.00		102	10 - 105				
Surr: Nitrobenzene-d5	30.8	µg/L	SW8270D			25.00		123	55 - 147				
Surr: Phenol-d6	21.9	µg/L	SW8270D			50.00		43.7	10 - 100				
Surr: Terphenyl-d14	23.6	µg/L	SW8270D			25.00		94.4	68 - 155				

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSSV
QC Type: MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1808037-005FMS	Date Analyzed:	08/06/2018 2235h											
Test Code: 8270-W-3511	Date Prepared:	08/03/2018 1728h											
1,2,4-Trichlorobenzene	27.5	µg/L	SW8270D	8.27	9.26	46.32	0	59.3	51 - 182				
1,4-Dichlorobenzene	19.0	µg/L	SW8270D	8.11	9.26	46.32	0	41.0	24 - 173				
2,4,6-Trichlorophenol	8.93	µg/L	SW8270D	7.06	9.26	46.32	0	19.3	14 - 191				
2,4-Dimethylphenol	53.6	µg/L	SW8270D	8.33	9.26	46.32	11.1	91.7	50 - 132				
2,4-Dinitrotoluene	25.6	µg/L	SW8270D	4.30	9.26	46.32	0	55.4	95 - 190				1
2-Chloronaphthalene	34.6	µg/L	SW8270D	8.59	9.26	46.32	0	74.7	70 - 175				
2-Chlorophenol	13.1	µg/L	SW8270D	8.44	9.26	46.32	0	28.2	27 - 136				
4,6-Dinitro-2-methylphenol	9.49	µg/L	SW8270D	6.60	9.26	46.32	0	20.5	10 - 156				
4-Chloro-3-methylphenol	17.6	µg/L	SW8270D	5.85	9.26	46.32	0	38.0	50 - 144				1
4-Nitrophenol	12.9	µg/L	SW8270D	4.34	9.26	46.32	0	27.8	10 - 80				
Acenaphthene	35.1	µg/L	SW8270D	5.25	9.26	46.32	0	75.7	80 - 172				1
Benzo(a)pyrene	30.3	µg/L	SW8270D	5.17	9.26	46.32	0	65.5	80 - 195				1
N-Nitrosodi-n-propylamine	55.5	µg/L	SW8270D	5.25	9.26	46.32	0	120	20 - 180				
Pentachlorophenol	15.9	µg/L	SW8270D	9.04	9.26	46.32	0	34.3	20 - 172				
Phenol	< 9.26	µg/L	SW8270D	7.36	9.26	46.32	0	0	10 - 80				1
Pyrene	31.8	µg/L	SW8270D	5.00	9.26	46.32	0	68.7	81 - 179				1
Surr: 2,4,6-Tribromophenol	9.12	µg/L	SW8270D			46.32		19.7	10 - 310				
Surr: 2-Fluorobiphenyl	12.1	µg/L	SW8270D			23.16		52.1	10 - 230				
Surr: 2-Fluorophenol	8.82	µg/L	SW8270D			46.32		19.0	10 - 120				
Surr: Nitrobenzene-d5	11.6	µg/L	SW8270D			23.16		50.3	10 - 253				
Surr: Phenol-d6	8.18	µg/L	SW8270D			46.32		17.7	10 - 110				
Surr: Terphenyl-d14	12.2	µg/L	SW8270D			23.16		52.5	10 - 255				

[1] - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSSV
QC Type: MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1808037-005FMSD	Date Analyzed:	08/06/2018 2257h											
Test Code: 8270-W-3511	Date Prepared:	08/03/2018 1728h											
1,2,4-Trichlorobenzene	33.0	µg/L	SW8270D	8.01	8.97	44.85	0	73.7	51 - 182	27.5	18.5	25	
1,4-Dichlorobenzene	19.8	µg/L	SW8270D	7.86	8.97	44.85	0	44.2	24 - 173	19	4.25	25	
2,4,6-Trichlorophenol	14.5	µg/L	SW8270D	6.84	8.97	44.85	0	32.4	14 - 191	8.93	47.7	25	@
2,4-Dimethylphenol	94.4	µg/L	SW8270D	8.06	8.97	44.85	11.1	186	50 - 132	53.6	55.2	25	I@
2,4-Dinitrotoluene	31.5	µg/L	SW8270D	4.16	8.97	44.85	0	70.2	95 - 190	25.6	20.4	25	I
2-Chloronaphthalene	43.5	µg/L	SW8270D	8.32	8.97	44.85	0	97.1	70 - 175	34.6	22.9	25	
2-Chlorophenol	12.8	µg/L	SW8270D	8.17	8.97	44.85	0	28.6	27 - 136	13.1	2.06	25	
4,6-Dinitro-2-methylphenol	9.75	µg/L	SW8270D	6.39	8.97	44.85	0	21.7	10 - 156	9.49	2.66	25	
4-Chloro-3-methylphenol	61.4	µg/L	SW8270D	5.66	8.97	44.85	0	137	50 - 144	17.6	111	25	@
4-Nitrophenol	11.4	µg/L	SW8270D	4.20	8.97	44.85	0	25.3	10 - 80	12.9	12.4	25	
Acenaphthene	44.4	µg/L	SW8270D	5.09	8.97	44.85	0	99.0	80 - 172	35.1	23.4	25	
Benzo(a)pyrene	38.2	µg/L	SW8270D	5.01	8.97	44.85	0	85.1	80 - 195	30.3	22.9	25	
N-Nitrosodi-n-propylamine	62.0	µg/L	SW8270D	5.09	8.97	44.85	0	138	20 - 180	55.5	11.1	25	
Pentachlorophenol	19.8	µg/L	SW8270D	8.76	8.97	44.85	0	44.3	20 - 172	15.9	22.3	25	
Phenol	< 8.97	µg/L	SW8270D	7.13	8.97	44.85	0	0	10 - 80	0	0	25	I
Pyrene	40.4	µg/L	SW8270D	4.84	8.97	44.85	0	90.0	81 - 179	31.8	23.7	25	
Surr: 2,4,6-Tribromophenol	16.2	µg/L	SW8270D			44.85		36.2	10 - 310				
Surr: 2-Fluorobiphenyl	14.9	µg/L	SW8270D			22.43		66.6	10 - 230				
Surr: 2-Fluorophenol	12.6	µg/L	SW8270D			44.85		28.0	10 - 120				
Surr: Nitrobenzene-d5	11.8	µg/L	SW8270D			22.43		52.5	10 - 253				
Surr: Phenol-d6	13.3	µg/L	SW8270D			44.85		29.6	10 - 110				
Surr: Terphenyl-d14	14.7	µg/L	SW8270D			22.43		65.6	10 - 255				

@ - High RPD due to suspected sample non-homogeneity or matrix interference.

I - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSVOA
QC Type: LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCS VOC-3 080218A Date Analyzed: 08/03/2018 1126h													
Test Code: 8260-W-DEN100													
Benzene	17.8	µg/L	SW8260C	0.0956	1.00	20.00	0	88.8	82 - 132				
Chloroform	20.8	µg/L	SW8260C	0.0998	1.00	20.00	0	104	85 - 124				
Methylene chloride	22.5	µg/L	SW8260C	0.400	1.00	20.00	0	113	65 - 154				
Naphthalene	16.4	µg/L	SW8260C	0.159	1.00	20.00	0	82.2	63 - 129				
Tetrahydrofuran	23.0	µg/L	SW8260C	0.681	1.00	20.00	0	115	59 - 125				
Toluene	17.0	µg/L	SW8260C	0.0858	1.00	20.00	0	85.2	69 - 129				
Xylenes, Total	48.3	µg/L	SW8260C	0.310	1.00	60.00	0	80.5	66 - 124				
Surr: 1,2-Dichloroethane-d4	50.9	µg/L	SW8260C			50.00		102	80 - 136				
Surr: 4-Bromofluorobenzene	46.7	µg/L	SW8260C			50.00		93.4	85 - 121				
Surr: Dibromofluoromethane	52.3	µg/L	SW8260C			50.00		105	78 - 132				
Surr: Toluene-d8	49.5	µg/L	SW8260C			50.00		99.1	81 - 123				
Lab Sample ID: LCS VOC-3 080618B Date Analyzed: 08/06/2018 2159h													
Test Code: 8260-W-DEN100													
Methylene chloride	18.9	µg/L	SW8260C	0.400	1.00	20.00	0	94.3	65 - 154				
Surr: 1,2-Dichloroethane-d4	50.9	µg/L	SW8260C			50.00		102	80 - 136				
Surr: 4-Bromofluorobenzene	48.5	µg/L	SW8260C			50.00		97.0	85 - 121				
Surr: Dibromofluoromethane	50.4	µg/L	SW8260C			50.00		101	78 - 132				
Surr: Toluene-d8	49.6	µg/L	SW8260C			50.00		99.2	81 - 123				

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSVOA
QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB VOC-3 080218A Date Analyzed: 08/03/2018 1206h													
Test Code: 8260-W-DEN100													
2-Butanone	< 20.0	µg/L	SW8260C	0.587	20.0								
Acetone	< 20.0	µg/L	SW8260C	1.13	20.0								
Benzene	< 1.00	µg/L	SW8260C	0.0956	1.00								
Carbon tetrachloride	< 1.00	µg/L	SW8260C	0.178	1.00								
Chloroform	< 1.00	µg/L	SW8260C	0.0998	1.00								
Chloromethane	< 1.00	µg/L	SW8260C	0.836	1.00								
Methylene chloride	1.07	µg/L	SW8260C	0.400	1.00								B
Naphthalene	< 1.00	µg/L	SW8260C	0.159	1.00								
Tetrahydrofuran	< 1.00	µg/L	SW8260C	0.681	1.00								
Toluene	< 1.00	µg/L	SW8260C	0.0858	1.00								
Xylenes, Total	< 1.00	µg/L	SW8260C	0.310	1.00								
Surr: 1,2-Dichloroethane-d4	53.3	µg/L	SW8260C			50.00		107	80 - 136				
Surr: 4-Bromofluorobenzene	49.0	µg/L	SW8260C			50.00		98.1	85 - 121				
Surr: Dibromofluoromethane	46.8	µg/L	SW8260C			50.00		93.5	78 - 132				
Surr: Toluene-d8	50.4	µg/L	SW8260C			50.00		101	81 - 123				
Lab Sample ID: MB VOC-3 080616B Date Analyzed: 08/06/2018 2239h													
Test Code: 8260-W-DEN100													
Acetone	< 20.0	µg/L	SW8260C	1.13	20.0								
Methylene chloride	< 1.00	µg/L	SW8260C	0.400	1.00								
Surr: 1,2-Dichloroethane-d4	60.0	µg/L	SW8260C			50.00		120	80 - 136				
Surr: 4-Bromofluorobenzene	50.7	µg/L	SW8260C			50.00		101	85 - 121				
Surr: Dibromofluoromethane	58.0	µg/L	SW8260C			50.00		116	78 - 132				
Surr: Toluene-d8	51.2	µg/L	SW8260C			50.00		102	81 - 123				

B - Analyte(s) were observed above the reporting limit in the method blank. The method blank was acceptable, as any associated samples do not have results above the reporting limit/PQL.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSVOA
QC Type: MS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1808037-001AMS Date Analyzed: 08/03/2018 1324h													
Test Code: 8260-W-DEN100													
Benzene	39.6	µg/L	SW8260C	0.0956	1.00	50.00	0	79.1	66 - 145				
Chloroform	158	µg/L	SW8260C	0.0998	1.00	50.00	114	87.3	50 - 146				
Methylene chloride	55.2	µg/L	SW8260C	0.400	1.00	50.00	2.41	106	30 - 192				
Naphthalene	67.6	µg/L	SW8260C	0.159	1.00	50.00	0	135	41 - 131				1
Tetrahydrofuran	125	µg/L	SW8260C	0.681	1.00	50.00	4.93	240	43 - 146				1
Toluene	41.4	µg/L	SW8260C	0.0858	1.00	50.00	0	82.9	18 - 192				
Xylenes, Total	125	µg/L	SW8260C	0.310	1.00	150.0	0	83.1	42 - 167				
Surr: 1,2-Dichloroethane-d4	57.5	µg/L	SW8260C			50.00		115	72 - 151				
Surr: 4-Bromofluorobenzene	47.4	µg/L	SW8260C			50.00		94.8	80 - 152				
Surr: Dibromofluoromethane	54.8	µg/L	SW8260C			50.00		110	72 - 135				
Surr: Toluene-d8	49.0	µg/L	SW8260C			50.00		98.1	80 - 124				
Lab Sample ID: 1808037-003AMS Date Analyzed: 08/07/2018 040h													
Test Code: 8260-W-DEN100													
Methylene chloride	58.4	µg/L	SW8260C	0.400	1.00	50.00	10.4	96.0	30 - 192				
Surr: 1,2-Dichloroethane-d4	58.9	µg/L	SW8260C			50.00		118	72 - 151				
Surr: 4-Bromofluorobenzene	49.5	µg/L	SW8260C			50.00		99.1	80 - 152				
Surr: Dibromofluoromethane	53.6	µg/L	SW8260C			50.00		107	72 - 135				
Surr: Toluene-d8	48.8	µg/L	SW8260C			50.00		97.7	80 - 124				

1 - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1808037
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSVOA
QC Type: MSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: 1808037-001AMSD Date Analyzed: 08/03/2018 1345h													
Test Code: 8260-W-DEN100													
Benzene	37.6	µg/L	SW8260C	0.0956	1.00	50.00	0	75.2	66 - 145	39.6	5.13	25	
Chloroform	148	µg/L	SW8260C	0.0998	1.00	50.00	114	68.8	50 - 146	158	6.07	25	
Methylene chloride	53.3	µg/L	SW8260C	0.400	1.00	50.00	2.41	102	30 - 192	55.2	3.45	25	
Naphthalene	61.8	µg/L	SW8260C	0.159	1.00	50.00	0	124	41 - 131	67.6	8.94	25	
Tetrahydrofuran	105	µg/L	SW8260C	0.681	1.00	50.00	4.93	200	43 - 146	125	17.5	25	'
Toluene	37.8	µg/L	SW8260C	0.0858	1.00	50.00	0	75.6	18 - 192	41.4	9.22	25	
Xylenes, Total	115	µg/L	SW8260C	0.310	1.00	150.0	0	76.6	42 - 167	125	8.07	25	
Surr: 1,2-Dichloroethane-d4	57.2	µg/L	SW8260C			50.00		114	72 - 151				
Surr: 4-Bromofluorobenzene	47.0	µg/L	SW8260C			50.00		94.0	80 - 152				
Surr: Dibromofluoromethane	46.0	µg/L	SW8260C			50.00		92.1	72 - 135				
Surr: Toluene-d8	48.0	µg/L	SW8260C			50.00		96.1	80 - 124				
Lab Sample ID: 1808037-003AMSD Date Analyzed: 08/07/2018 100h													
Test Code: 8260-W-DEN100													
Methylene chloride	49.9	µg/L	SW8260C	0.400	1.00	50.00	10.4	79.1	30 - 192	58.4	15.7	25	
Surr: 1,2-Dichloroethane-d4	59.1	µg/L	SW8260C			50.00		118	72 - 151				
Surr: 4-Bromofluorobenzene	48.8	µg/L	SW8260C			50.00		97.6	80 - 152				
Surr: Dibromofluoromethane	53.4	µg/L	SW8260C			50.00		107	72 - 135				
Surr: Toluene-d8	47.4	µg/L	SW8260C			50.00		94.7	80 - 124				

' - Matrix spike recovery indicates matrix interference. The method is in control as indicated by the LCS.

American West Analytical Laboratories

Rpt Emailed: UL Denison

WORK ORDER Summary

Work Order: **1808037**

Client: Energy Fuels Resources, Inc. Due Date: 8/16/2018

Client ID: ENE300 **Contact:** Garrin Palmer

Project: **Annual Tailings 2018** **QC Level:** III WO Type: Project

Comments: QC 3 (Summary/No chromatograms). MS/MSD on sample #5. Footnote report, pH & metals filter prep received outside of hold. Use CAUTION when handling these samples. Project specific DL's: see COC. Run 200.8 on the Agilent. 8270 LIBRARY SEARCH: 4-Chlorophenol. EDD-Denison. Email Group; ch/VNS

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1808037-001A	**Cell 1**	8/1/2018 0845h	8/2/2018 0926h	**8260-W-DEN100**	Aqueous	☑	VOCFridge	3
				Test Group: 8260-W-DEN100; # of Analytes: 11 / # of Surr: 4				
1808037-001B				**300.0-W**		☑	DF - wc	1
				3 SEL Analytes: CL F SO4				
				ALK-W-2320B-LL		☑	DF - wc	
				2 SEL Analytes: ALKB ALKC				
				COND-W-2510B		☐	DF - wc	
				PH-9040C		☐	DF - wc	
1808037-001C				**TDS-W-2540C**		☑	ww - tds	
				1 SEL Analytes: TDS				
1808037-001D				**NH3-W-350.1**		☑	DF - no2/no3 & nh3	
				1 SEL Analytes: NH3N				
				NH3-W-PR		☑	DF - no2/no3 & nh3	
				NO2/NO3-W-353.2		☑	DF - no2/no3 & nh3	
				1 SEL Analytes: NO3NO2N				
1808037-001E				**200.7-DIS**		☑	DIS MET/HG	2
				5 SEL Analytes: CA MG K NA V				
				200.7-DIS-PR		☑	DIS MET/HG	
				200.8-DIS		☑	DIS MET/HG	
				17 SEL Analytes: AS BE CD CR CO CU FE PB MN MO NI SE AG TL SN U ZN				
				200.8-DIS-PR		☑	DIS MET/HG	
				FILTER-PR		☐	DIS MET/HG	
				HG-DW-DIS-245.1		☑	DIS MET/HG	
				1 SEL Analytes: HG				
				HG-DW-DIS-PR		☑	DIS MET/HG	
				IONBALANCE		☑	DIS MET/HG	
				5 SEL Analytes: BALANCE Anions Cations TDS-Balance TDS-Calc				
1808037-001F				**3510-SVOA-PR**		☐	Walkin-Semi	3
				8270-W		☑	Walkin-Semi	
				Test Group: 8270-W-Custom; # of Analytes: 63 / # of Surr: 6				

Printed: 08/03/18 16:48 LABORATORY CHECK: %M [ ] RT [ ] CN [ ] TAT [ ] QC [ ] LUO [ ] HOK VNS HOK_____ HOK_____ COC Emailed_____

WORK ORDER Summary

Work Order: **1808037**

Client: Energy Fuels Resources, Inc. Due Date: 8/16/2018

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1808037-002A	**Cell 2 Slimes**	8/1/2018 0900h	8/2/2018 0926h	**8260-W-DEN100**	Aqueous		VOCFridge	3
				Test Group: 8260-W-DEN100; # of Analytes: 11 / # of Surr: 4				
1808037-002B				**300.0-W**			DF - wc	1
				3 SEL Analytes: CL F SO4				
				ALK-W-2320B-LL			DF - wc	
				2 SEL Analytes: ALKB ALKC				
				COND-W-2510B			DF - wc	
				PH-9040C			DF - wc	
1808037-002C				**TDS-W-2540C**			ww - tds	
				1 SEL Analytes: TDS				
1808037-002D				**NH3-W-350.1**			DF - no2/no3 & nh3	
				1 SEL Analytes: NH3N				
				NH3-W-PR			DF - no2/no3 & nh3	
				NO2/NO3-W-353.2			DF - no2/no3 & nh3	
				1 SEL Analytes: NO3NO2N				
1808037-002E				**200.7-DIS**			DIS MET/HG	2
				5 SEL Analytes: CA MG K NA V				
				200.7-DIS-PR			DIS MET/HG	
				200.8-DIS			DIS MET/HG	
				17 SEL Analytes: AS BE CD CR CO CU FE PB MN MO NI SE AG TL SN U ZN				
				200.8-DIS-PR			DIS MET/HG	
				FILTER-PR			DIS MET/HG	
				HG-DW-DIS-245.1			DIS MET/HG	
				1 SEL Analytes: HG				
				HG-DW-DIS-PR			DIS MET/HG	
				IONBALANCE			DIS MET/HG	
				5 SEL Analytes: BALANCE Anions Cations TDS-Balance TDS-Calc				
1808037-002F				**3510-SVOA-PR**			Walkin-Semi	3
				8270-W			Walkin-Semi	
				Test Group: 8270-W-Custom; # of Analytes: 63 / # of Surr: 6				
1808037-003A	**Cell 3**	8/1/2018 0920h	8/2/2018 0926h	**8260-W-DEN100**	Aqueous		VOCFridge	3
				Test Group: 8260-W-DEN100; # of Analytes: 11 / # of Surr: 4				
1808037-003B				**300.0-W**			DF - wc	1
				3 SEL Analytes: CL F SO4				
				ALK-W-2320B-LL			DF - wc	
				2 SEL Analytes: ALKB ALKC				
				COND-W-2510B			DF - wc	

LABORATORY CHECK: %M ☐ RT ☐ CN ☐ TAT ☐ QC ☐ LUO ☐ HOK_____ HOK_____ HOK_____ COC Emailed_____

WORK ORDER Summary

Work Order: **1808037**

Client: Energy Fuels Resources, Inc. Due Date: 8/16/2018

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1808037-003B	**Cell 3**	8/1/2018 0920h	8/2/2018 0926h	**PH-9040C**	Aqueous		DF - wc	1
1808037-003C				**TDS-W-2540C**			ww - tds	
				1 SEL Analytes: TDS				
1808037-003D				**NH3-W-350.1**			DF - no2/no3 & nh3	
				1 SEL Analytes: NH3N				
				NH3-W-PR			DF - no2/no3 & nh3	
				NO2/NO3-W-353.2			DF - no2/no3 & nh3	
				1 SEL Analytes: NO3NO2N				
1808037-003E				**200.7-DIS**			DIS MET/HG	2
				5 SEL Analytes: CA MG K NA V				
				200.7-DIS-PR			DIS MET/HG	
				200.8-DIS			DIS MET/HG	
				17 SEL Analytes: AS BE CD CR CO CU FE PB MN MO NI SE AG TL SN U ZN				
				200.8-DIS-PR			DIS MET/HG	
				FILTER-PR			DIS MET/HG	
				HG-DW-DIS-245.1			DIS MET/HG	
				1 SEL Analytes: HG				
				HG-DW-DIS-PR			DIS MET/HG	
				IONBALANCE			DIS MET/HG	
				5 SEL Analytes: BALANCE Anions Cations TDS-Balance TDS-Calc				
1808037-003F				**3510-SVOA-PR**			Walkin-Semi	3
				8270-W			Walkin-Semi	
				Test Group: 8270-W-Custom; # of Analytes: 63 / # of Surr: 6				
1808037-004A	**Cell 4A**	8/1/2018 0935h	8/2/2018 0926h	**8260-W-DEN100**	Aqueous		VOCFridge	3
				Test Group: 8260-W-DEN100; # of Analytes: 11 / # of Surr: 4				
1808037-004B				**300.0-W**			DF - wc	1
				3 SEL Analytes: CL F SO4				
				ALK-W-2320B-LL			DF - wc	
				2 SEL Analytes: ALKB ALKC				
				COND-W-2510B			DF - wc	
				PH-9040C			DF - wc	
1808037-004C				**TDS-W-2540C**			ww - tds	
				1 SEL Analytes: TDS				
1808037-004D				**NH3-W-350.1**			DF - no2/no3 & nh3	
				1 SEL Analytes: NH3N				
				NH3-W-PR			DF - no2/no3 & nh3	

WORK ORDER Summary

Work Order: **1808037**

Client: Energy Fuels Resources, Inc. Due Date: 8/16/2018

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1808037-004D	**Cell 4A**	8/1/2018 0935h	8/2/2018 0926h	**NO2/NO3-W-353.2**	Aqueous		DF - no2/no3 & nh3	1
				1 SEL Analytes: NO3NO2N				
1808037-004E				**200.7-DIS**			DIS MET/HG	2
				5 SEL Analytes: CA MG K NA V				
				200.7-DIS-PR			DIS MET/HG	
				200.8-DIS			DIS MET/HG	
				17 SEL Analytes: AS BE CD CR CO CU FE PB MN MO NI SE AG TL SN U ZN				
				200.8-DIS-PR			DIS MET/HG	
				FILTER-PR			DIS MET/HG	
				HG-DW-DIS-245.1			DIS MET/HG	
				1 SEL Analytes: HG				
				HG-DW-DIS-PR			DIS MET/HG	
				IONBALANCE			DIS MET/HG	
				5 SEL Analytes: BALANCE Anions Cations TDS-Balance TDS-Calc				
1808037-004F				**3510-SVOA-PR**			Walkin-Semi	3
				8270-W			Walkin-Semi	
				Test Group: 8270-W-Custom; # of Analytes: 63 / # of Surr: 6				
1808037-005A	**Cell 4A LDS**	8/1/2018 0945h	8/2/2018 0926h	**8260-W-DEN100**	Aqueous		VOCFridge	3
				Test Group: 8260-W-DEN100; # of Analytes: 11 / # of Surr: 4				
1808037-005B				**300.0-W**			DF - wc	1
				3 SEL Analytes: CL F SO4				
				ALK-W-2320B-LL			DF - wc	
				2 SEL Analytes: ALKB ALKC				
				COND-W-2510B			DF - wc	
				PH-9040C			DF - wc	
1808037-005C				**TDS-W-2540C**			ww - tds	
				1 SEL Analytes: TDS				
1808037-005D				**NH3-W-350.1**			DF - no2/no3 & nh3	
				1 SEL Analytes: NH3N				
				NH3-W-PR			DF - no2/no3 & nh3	
				NO2/NO3-W-353.2			DF - no2/no3 & nh3	
				1 SEL Analytes: NO3NO2N				
1808037-005E				**200.7-DIS**			DIS MET/HG	2
				5 SEL Analytes: CA MG K NA V				
				200.7-DIS-PR			DIS MET/HG	
				200.8-DIS			DIS MET/HG	
				17 SEL Analytes: AS BE CD CR CO CU FE PB MN MO NI SE AG TL SN U ZN				

WORK ORDER Summary

Work Order: **1808037**

Client: Energy Fuels Resources, Inc. Due Date: 8/16/2018

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1808037-005E	**Cell 4A LDS**	8/1/2018 0945h	8/2/2018 0926h	**200.8-DIS-PR**	Aqueous		DIS MET/HG	2
				FILTER-PR			DIS MET/HG	
				HG-DW-DIS-245.1			DIS MET/HG	
				1 SEL Analytes: HG				
				HG-DW-DIS-PR			DIS MET/HG	
				IONBALANCE			DIS MET/HG	
				5 SEL Analytes: BALANCE Anions Cations TDS-Balance TDS-Calc				
1808037-005F				**3510-SVOA-PR**			Walkin-Semi	3
				8270-W			Walkin-Semi	
				Test Group: 8270-W-Custom; # of Analytes: 63 / # of Surr: 6				
1808037-006A	**Cell 4B**	8/1/2018 1005h	8/2/2018 0926h	**8260-W-DEN100**	Aqueous		VOCFridge	3
				Test Group: 8260-W-DEN100; # of Analytes: 11 / # of Surr: 4				
1808037-006B				**300.0-W**			DF - wc	1
				3 SEL Analytes: CL F SO4				
				ALK-W-2320B-LL			DF - wc	
				2 SEL Analytes: ALKB ALKC				
				COND-W-2510B			DF - wc	
				PH-9040C			DF - wc	
1808037-006C				**TDS-W-2540C**			ww - tds	
				1 SEL Analytes: TDS				
1808037-006D				**NH3-W-350.1**			DF - no2/no3 & nh3	
				1 SEL Analytes: NH3N				
				NH3-W-PR			DF - no2/no3 & nh3	
				NO2/NO3-W-353.2			DF - no2/no3 & nh3	
				1 SEL Analytes: NO3NO2N				
1808037-006E				**200.7-DIS**			DIS MET/HG	2
				5 SEL Analytes: CA MG K NA V				
				200.7-DIS-PR			DIS MET/HG	
				200.8-DIS			DIS MET/HG	
				17 SEL Analytes: AS BE CD CR CO CU FE PB MN MO NI SE AG TL SN U ZN				
				200.8-DIS-PR			DIS MET/HG	
				FILTER-PR			DIS MET/HG	
				HG-DW-DIS-245.1			DIS MET/HG	
				1 SEL Analytes: HG				
				HG-DW-DIS-PR			DIS MET/HG	
				IONBALANCE			DIS MET/HG	
				5 SEL Analytes: BALANCE Anions Cations TDS-Balance TDS-Calc				

WORK ORDER Summary

Work Order: **1808037**

Client: Energy Fuels Resources, Inc.

Due Date: 8/16/2018

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1808037-006F	**Cell 4B**	8/1/2018 1005h	8/2/2018 0926h	**3510-SVOA-PR**	Aqueous		Walkin-Semi	3
				8270-W			Walkin-Semi	
				Test Group: 8270-W-Custom; # of Analytes: 63 / # of Surr: 6				
1808037-007A	**Cell 4B LDS**	8/1/2018 1020h	8/2/2018 0926h	**8260-W-DEN100**	Aqueous		VOCFridge	3
				Test Group: 8260-W-DEN100; # of Analytes: 11 / # of Surr: 4				
1808037-007B				**300.0-W**			DF - wc	1
				3 SEL Analytes: CL F SO4				
				ALK-W-2320B-LL			DF - wc	
				2 SEL Analytes: ALKB ALKC				
				COND-W-2510B			DF - wc	
				PH-9040C			DF - wc	
1808037-007C				**TDS-W-2540C**			ww - tds	
				1 SEL Analytes: TDS				
1808037-007D				**NH3-W-350.1**			DF - no2/no3 & nh3	
				1 SEL Analytes: NH3N				
				NH3-W-PR			DF - no2/no3 & nh3	
				NO2/NO3-W-353.2			DF - no2/no3 & nh3	
				1 SEL Analytes: NO3NO2N				
1808037-007E				**200.7-DIS**			DIS MET/HG	2
				5 SEL Analytes: CA MG K NA V				
				200.7-DIS-PR			DIS MET/HG	
				200.8-DIS			DIS MET/HG	
				17 SEL Analytes: AS BE CD CR CO CU FE PB MN MO NI SE AG TL SN U ZN				
				200.8-DIS-PR			DIS MET/HG	
				FILTER-PR			DIS MET/HG	
				HG-DW-DIS-245.1			DIS MET/HG	
				1 SEL Analytes: HG				
				HG-DW-DIS-PR			DIS MET/HG	
				IONBALANCE			DIS MET/HG	
				5 SEL Analytes: BALANCE Anions Cations TDS-Balance TDS-Calc				
1808037-007F				**3510-SVOA-PR**			Walkin-Semi	3
				8270-W			Walkin-Semi	
				Test Group: 8270-W-Custom; # of Analytes: 63 / # of Surr: 6				
1808037-008A	**Cell 65**	8/1/2018 0900h	8/2/2018 0926h	**8260-W-DEN100**	Aqueous		VOCFridge	3
				Test Group: 8260-W-DEN100; # of Analytes: 11 / # of Surr: 4				
1808037-008B				**300.0-W**			DF - wc	1
				3 SEL Analytes: CL F SO4				

WORK ORDER Summary

Work Order: **1808037**

Client: Energy Fuels Resources, Inc. Due Date: 8/16/2018

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1808037-008B	**Cell 65**	8/1/2018 0900h	8/2/2018 0926h	**ALK-W-2320B-LL**	Aqueous		DF - wc	1
				2 SEL Analytes: ALKB ALKC				
				COND-W-2510B			DF - wc	
				PH-9040C			DF - wc	
1808037-008C				**TDS-W-2540C**			ww - tds	
				1 SEL Analytes: TDS				
1808037-008D				**NH3-W-350.1**			DF - no2/no3 & nh3	
				1 SEL Analytes: NH3N				
				NH3-W-PR			DF - no2/no3 & nh3	
				NO2/NO3-W-353.2			DF - no2/no3 & nh3	
				1 SEL Analytes: NO3NO2N				
1808037-008E				**200.7-DIS**			DIS MET/HG	2
				5 SEL Analytes: CA MG K NA V				
				200.7-DIS-PR			DIS MET/HG	
				200.8-DIS			DIS MET/HG	
				17 SEL Analytes: AS BE CD CR CO CU FE PB MN MO NI SE AG TL SN U ZN				
				200.8-DIS-PR			DIS MET/HG	
				FILTER-PR			DIS MET/HG	
				HG-DW-DIS-245.1			DIS MET/HG	
				1 SEL Analytes: HG				
				HG-DW-DIS-PR			DIS MET/HG	
				IONBALANCE			DIS MET/HG	
				5 SEL Analytes: BALANCE Anions Cations TDS-Balance TDS-Calc				
1808037-008F				**3510-SVOA-PR**			Walkin-Semi	3
				8270-W			Walkin-Semi	
				Test Group: 8270-W-Custom; # of Analytes: 63 / # of Surr: 6				
1808037-009A	**Trip Blank**	8/1/2018 0845h	8/2/2018 0926h	**8260-W-DEN100**	Aqueous		VOCFridge	3
				Test Group: 8260-W-DEN100; # of Analytes: 11 / # of Surr: 4				

AWAL Use Only - One or more samples expired upon receipt:

Test Code
FILTER-PR
PH-9040C

American West
Analytical Laboratories
463 W. 3600 S. Salt Lake City, UT 84115
Phone # (801) 263-8686 Toll Free # (888) 263-8686
Fax # (801) 263-8687 Email awal@awal-labs.com
www.awal-labs.com

CHAIN OF CUSTODY

1808037
AWAL Lab Sample Set #
Page 1 of 1

All analysis will be conducted using NELAP accredited methods and all data will be reported using AWAL's standard analyte lists and reporting limits (PQL) unless specifically requested otherwise on this Chain of Custody and/or attached documentation.

QC Level:	Turn Around Time:	Unless other arrangements have been made, signed reports will be emailed by 5:00 pm on the day they are due.	Due Date:
3	Standard		

Client: **Energy Fuels Resources, Inc.**
Address: **6425 S. Hwy. 191**
Blanding, UT 84511
Contact: **Garrin Palmer**
Phone #: **(435) 678-2221** Cell #:
Email: **gpalmer@energyfuels.com; KWeinel@energyfuels.com; dturk@energyfuels.com**
Project Name: **Annual Tailings 2018**
Project #:
PO #:
Sampler Name: Tanner Holliday

X Include EDD:
NO LOCUS UPLOAD EXCEL ONLY
Field Filtered For:
NOT FIELD FILTERED

For Compliance With:
☐ NELAP
☐ RCRA
☐ CWA
☐ SDWA
☐ ELAP / A2LA
☐ NLLAP
☐ Non-Compliance
☐ Other:

Known Hazards & Sample Comments

	Sample ID:	Date Sampled	Time Sampled	# of Containers	Sample Matrix	NO2/NO3 (353.2)	NH3 (4500G or 350.1)	Fl, Cl, SO4 (4500 or 300.0)	TDS (2540C)	Carb/Bicarb (2320B)	Dissolved Metals (200.7/200.8/245.1)	As, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo,	Ni, Se, Ag, Tl, Sn, U, V, Zn, Na, K, Mg, Ca	Ion Balance	SVOCs (8270D)	pH	Conductivity	VOCs (8260C)	Known Hazards & Sample Comments
1	Cell 1	8/1/2018	0845	10	Waste Water	X	X	X	X	X	X	X	X	X	X	X	X	X	
2	Cell 2 Slimes		0900	10		X	X	X	X	X	X	X	X	X	X	X	X	X	
3	Cell 3		0920	10		X	X	X	X	X	X	X	X	X	X	X	X	X	
4	Cell 4A		0935	10		X	X	X	X	X	X	X	X	X	X	X	X	X	
5	Cell 4A LDS		0945	10		X	X	X	X	X	X	X	X	X	X	X	X	X	
6	Cell 4B		1005	10		X	X	X	X	X	X	X	X	X	X	X	X	X	
7	Cell 4 B LDS		1020	10		X	X	X	X	X	X	X	X	X	X	X	X	X	
8	Cell 65		0900	10		X	X	X	X	X	X	X	X	X	X	X	X	X	
9	Trip Blank	8/1/2018	0845	3														X	
10																			
11																			
12																			

Laboratory Use Only

Samples Were:
1 Shipped or hand delivered
2 Ambient or Chilled
3 Temperature 0.4 °C
4 Received Broken/Leaking (Improperly Sealed) Y (N)
5 Properly Preserved (Y) N
Checked at bench Y N
6 Received Within Holding Times (N) + metals Filter prep
pH not outside of 4/q

COC Tape Was:
1 Present on Outer Package Y N (NA)
2 Unbroken on Outer Package Y N (NA)
3 Present on Sample Y N (NA)
4 Unbroken on Sample Y N (NA)

Discrepancies Between Sample Labels and COC Record? Y (N)

Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name: Tanner Holliday	Time: 0926	Print Name: Elaine Hyer	Time: 926
Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name:	Time:	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name:	Time:	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name:	Time:	Print Name:	Time:

Special Instructions:

Sample containers for metals were ***NOT*** field filtered. PLEASE FILTER UPON RECEIPT! See the Analytical Scope of Work for Reporting Limits and VOC analyte list. Reporting Limits are the UTAH GWQS - See Pat Noteboom for questions

MS MSD collected at Cell 4A LDS

Lab Set ID: 1808037

pH Lot #: 5603

Preservation Check Sheet

Sample Set Extension and pH

Analysis	Preservative	1	2	3	4	5	6	7	8										
Ammonia	pH <2 H_2SO_4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes										
COD	pH <2 H_2SO_4																		
Cyanide	pH >12 NaOH																		
Metals	pH <2 HNO_3	~~Yes~~	~~Yes~~	~~Yes~~	~~Yes~~	~~Yes~~	~~Yes~~	~~Yes~~	~~Yes~~		ek	8/6/18							
NO_2/NO_3	pH <2 H_2SO_4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes										
O & G	pH <2 HCL																		
Phenols	pH <2 H_2SO_4																		
Sulfide	pH >9 NaOH, Zn Acetate																		
TKN	pH <2 H_2SO_4																		
T PO_4	pH <2 H_2SO_4																		
Cr VI+	pH >9 $(NH_4)_2SO_4$																		

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, notify client if requested
6) Place client conversation on COC
7) Samples may be adjusted

Frequency: All samples requiring preservation

* The sample required additional preservative upon receipt.

\+ The sample was received unpreserved.

▲ The sample was received unpreserved and therefore preserved upon receipt.

\# The sample pH was unadjustable to a pH < 2 due to the sample matrix.

• The sample pH was unadjustable to a pH > ____ due to the sample matrix interference.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Garrin Palmer
Energy Fuels Resources, Inc.
6425 S. Hwy 191
Blanding, UT 84511

RE: Annual Tailings 2018

Dear Garrin Palmer: Lab Set ID: 1809117

American West Analytical Laboratories received sample(s) on 9/7/2018 for the analyses presented in the following report.

American West Analytical Laboratories (AWAL) is accredited by The National Environmental Laboratory Accreditation Program (NELAP) in Utah and Texas; and is state accredited in Colorado, Idaho, New Mexico, Wyoming, and Missouri.

All analyses were performed in accordance to the NELAP protocols unless noted otherwise. Accreditation scope documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

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: Jose G. Rocha
Digitally signed by Jose G. Rocha
DN: cn=Jose G. Rocha, o=American West Analytical Laboratories, ou, email=jose@awal-labs.com, c=US
Date: 2018.09.18 09:42:01 -06'00'

Laboratory Director or designee

SAMPLE SUMMARY

Client: Energy Fuels Resources, Inc. **Contact:** Garrin Palmer
Project: Annual Tailings 2018
Lab Set ID: 1809117
Date Received: 9/7/2018 855h

Lab Sample ID	Client Sample ID	Date Collected		Matrix	Analysis
1809117-001A	Cell 1	9/5/2018	1335h	Aqueous	SVOAs by GC/MS Method 8270D/3511
1809117-002A	Cell 3	9/5/2018	1400h	Aqueous	SVOAs by GC/MS Method 8270D/3511

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Semivolatile Case Narrative

Client:	Energy Fuels Resources, Inc.
Contact:	Garrin Palmer
Project:	Annual Tailings 2018
Lab Set ID:	1809117

3440 South 700 West
Salt Lake City, UT 84119

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

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Sample Receipt Information:

Date of Receipt:	9/7/2018
Date of Collection:	9/5/2018
Sample Condition:	Intact
C-O-C Discrepancies:	See Chain of Custody
Method:	SW-846 8270D/3510C
Analysis:	Semivolatile Organics

General Set Comments: No target analytes were observed above their reporting limits.

Holding Time Requirements: The preparations and analyses of the samples were performed within respective holding times.

Preparation Requirements: The samples were prepared and analyzed 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, with the following exception: the internal standard areas were outside of the QC limits on sample 1809117-001A. Prior experience with these samples yielded similar results indicating matrix interference.

Batch QC Requirements: MB, LCS, LCSD, RPD, and Surrogates:

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

Laboratory Control Sample/Duplicate (LCS/LCSD): All LCS/LCSD percent recoveries were within control limits, indicating that the preparation and analysis were in control.

Surrogates: All surrogate percent recoveries were within the control limits, with the following exceptions: the surrogate percent recoveries for one or more surrogates on samples 1809117-001A and 1809117-002A were outside of the control limits. Prior experience with these samples yielded similar results indicating matrix interference.

Corrective Action: None required.

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1809117
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSSV
QC Type: LCS

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCS-58021	Date Analyzed:	09/12/2018 905h											
Test Code: 8270-W-3511	Date Prepared:	09/11/2018 1340h											
1,2,4-Trichlorobenzene	51.5	µg/L	SW8270D	8.93	10.0	50.00	0	103	31 - 135				
1,4-Dichlorobenzene	48.9	µg/L	SW8270D	8.76	10.0	50.00	0	97.8	16 - 124				
2,4,6-Trichlorophenol	44.0	µg/L	SW8270D	7.62	10.0	50.00	0	87.9	21 - 132				
2,4-Dimethylphenol	46.5	µg/L	SW8270D	8.99	10.0	50.00	0	93.1	36 - 151				
2,4-Dinitrotoluene	46.2	µg/L	SW8270D	4.64	10.0	50.00	0	92.4	38 - 176				
2-Chloronaphthalene	51.2	µg/L	SW8270D	9.27	10.0	50.00	0	102	52 - 172				
2-Chlorophenol	39.5	µg/L	SW8270D	9.11	10.0	50.00	0	78.9	24 - 128				
4,6-Dinitro-2-methylphenol	39.0	µg/L	SW8270D	7.12	10.0	50.00	0	77.9	10 - 156				
4-Chloro-3-methylphenol	40.5	µg/L	SW8270D	6.31	10.0	50.00	0	81.1	10 - 155				
4-Nitrophenol	17.6	µg/L	SW8270D	4.68	10.0	50.00	0	35.2	10 - 100				
Acenaphthene	49.6	µg/L	SW8270D	5.67	10.0	50.00	0	99.1	45 - 132				
Benzo(a)pyrene	52.2	µg/L	SW8270D	5.58	10.0	50.00	0	104	57 - 195				
N-Nitrosodi-n-propylamine	45.9	µg/L	SW8270D	5.67	10.0	50.00	0	91.7	39 - 180				
Pentachlorophenol	37.4	µg/L	SW8270D	9.76	10.0	50.00	0	74.8	10 - 158				
Phenol	25.2	µg/L	SW8270D	7.95	10.0	50.00	0	50.3	21 - 110				
Pyrene	51.7	µg/L	SW8270D	5.40	10.0	50.00	0	103	41 - 159				
Surr: 2,4,6-Tribromophenol	49.0	µg/L	SW8270D			50.00		97.9	36 - 195				
Surr: 2-Fluorobiphenyl	32.2	µg/L	SW8270D			25.00		129	50 - 137				
Surr: 2-Fluorophenol	38.7	µg/L	SW8270D			50.00		77.4	10 - 105				
Surr: Nitrobenzene-d5	32.1	µg/L	SW8270D			25.00		128	55 - 147				
Surr: Phenol-d6	26.8	µg/L	SW8270D			50.00		53.5	10 - 100				
Surr: Terphenyl-d14	33.2	µg/L	SW8270D			25.00		133	68 - 155				

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1809117
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSSV
QC Type: LCSD

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: LCSD-58021	Date Analyzed:	09/12/2018 927h											
Test Code: 8270-W-3511	Date Prepared:	09/11/2018 1340h											
1,2,4-Trichlorobenzene	52.0	µg/L	SW8270D	8.93	10.0	50.00	0	104	31 - 135	0	0	25	
1,4-Dichlorobenzene	48.4	µg/L	SW8270D	8.76	10.0	50.00	0	96.9	16 - 124	0	0	25	
2,4,6-Trichlorophenol	52.2	µg/L	SW8270D	7.62	10.0	50.00	0	104	21 - 132	0	0	25	
2,4-Dimethylphenol	49.9	µg/L	SW8270D	8.99	10.0	50.00	0	99.7	36 - 151	0	0	25	
2,4-Dinitrotoluene	46.5	µg/L	SW8270D	4.64	10.0	50.00	0	93.0	38 - 176	0	0	25	
2-Chloronaphthalene	52.7	µg/L	SW8270D	9.27	10.0	50.00	0	105	52 - 172	0	0	25	
2-Chlorophenol	43.5	µg/L	SW8270D	9.11	10.0	50.00	0	87.1	24 - 128	0	0	25	
4,6-Dinitro-2-methylphenol	45.8	µg/L	SW8270D	7.12	10.0	50.00	0	91.6	10 - 156	0	0	25	
4-Chloro-3-methylphenol	45.1	µg/L	SW8270D	6.31	10.0	50.00	0	90.2	10 - 155	0	0	25	
4-Nitrophenol	19.0	µg/L	SW8270D	4.68	10.0	50.00	0	38.0	10 - 100	0	0	25	
Acenaphthene	50.0	µg/L	SW8270D	5.67	10.0	50.00	0	100	45 - 132	0	0	25	
Benzo(a)pyrene	51.7	µg/L	SW8270D	5.58	10.0	50.00	0	103	57 - 195	0	0	25	
N-Nitrosodi-n-propylamine	45.4	µg/L	SW8270D	5.67	10.0	50.00	0	90.9	39 - 180	0	0	25	
Pentachlorophenol	44.4	µg/L	SW8270D	9.76	10.0	50.00	0	88.9	10 - 158	0	0	25	
Phenol	25.4	µg/L	SW8270D	7.95	10.0	50.00	0	50.8	21 - 110	0	0	25	
Pyrene	51.9	µg/L	SW8270D	5.40	10.0	50.00	0	104	41 - 159	0	0	25	
Surr: 2,4,6-Tribromophenol	59.1	µg/L	SW8270D			50.00		118	36 - 195				
Surr: 2-Fluorobiphenyl	32.0	µg/L	SW8270D			25.00		128	50 - 137				
Surr: 2-Fluorophenol	40.9	µg/L	SW8270D			50.00		81.9	10 - 105				
Surr: Nitrobenzene-d5	31.6	µg/L	SW8270D			25.00		126	55 - 147				
Surr: Phenol-d6	27.8	µg/L	SW8270D			50.00		55.7	10 - 100				
Surr: Terphenyl-d14	32.6	µg/L	SW8270D			25.00		130	68 - 155				

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1809117
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSSV
QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-58021	Date Analyzed:	09/12/2018 844h											
Test Code: 8270-W-3511	Date Prepared:	09/11/2018 1340h											
1,2,4-Trichlorobenzene	< 10.0	µg/L	SW8270D	8.93	10.0								
1,2-Dichlorobenzene	< 10.0	µg/L	SW8270D	8.78	10.0								
1,3-Dichlorobenzene	< 10.0	µg/L	SW8270D	8.01	10.0								
1,4-Dichlorobenzene	< 10.0	µg/L	SW8270D	8.76	10.0								
1-Methylnaphthalene	< 10.0	µg/L	SW8270D	9.39	10.0								
2,4,5-Trichlorophenol	< 10.0	µg/L	SW8270D	9.98	10.0								
2,4,6-Trichlorophenol	< 10.0	µg/L	SW8270D	7.62	10.0								
2,4-Dichlorophenol	< 10.0	µg/L	SW8270D	8.88	10.0								
2,4-Dimethylphenol	< 10.0	µg/L	SW8270D	8.99	10.0								
2,4-Dinitrophenol	< 10.0	µg/L	SW8270D	8.62	10.0								
2,4-Dinitrotoluene	< 10.0	µg/L	SW8270D	4.64	10.0								
2,6-Dinitrotoluene	< 10.0	µg/L	SW8270D	6.53	10.0								
2-Chloronaphthalene	< 10.0	µg/L	SW8270D	9.27	10.0								
2-Chlorophenol	< 10.0	µg/L	SW8270D	9.11	10.0								
2-Methylnaphthalene	< 10.0	µg/L	SW8270D	3.20	10.0								
2-Methylphenol	< 10.0	µg/L	SW8270D	7.38	10.0								
2-Nitrophenol	< 10.0	µg/L	SW8270D	7.15	10.0								
3&4-Methylphenol	< 10.0	µg/L	SW8270D	8.66	10.0								
3,3'-Dichlorobenzidine	< 10.0	µg/L	SW8270D	7.05	10.0								
4,6-Dinitro-2-methylphenol	< 10.0	µg/L	SW8270D	7.12	10.0								
4-Bromophenyl phenyl ether	< 10.0	µg/L	SW8270D	6.88	10.0								
4-Chloro-3-methylphenol	< 10.0	µg/L	SW8270D	6.31	10.0								
4-Chlorophenyl phenyl ether	< 10.0	µg/L	SW8270D	9.28	10.0								
4-Nitrophenol	< 10.0	µg/L	SW8270D	4.68	10.0								
Acenaphthene	< 10.0	µg/L	SW8270D	5.67	10.0								
Acenaphthylene	< 10.0	µg/L	SW8270D	6.41	10.0								
Anthracene	< 10.0	µg/L	SW8270D	6.14	10.0								

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1809117
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSSV
QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-58021	Date Analyzed:	09/12/2018 844h											
Test Code: 8270-W-3511	Date Prepared:	09/11/2018 1340h											
Azobenzene	< 10.0	µg/L	SW8270D	6.96	10.0								
Benz(a)anthracene	< 10.0	µg/L	SW8270D	5.78	10.0								
Benzidine	< 10.0	µg/L	SW8270D	6.77	10.0								
Benzo(a)pyrene	< 10.0	µg/L	SW8270D	5.58	10.0								
Benzo(b)fluoranthene	< 10.0	µg/L	SW8270D	7.29	10.0								
Benzo(g,h,i)perylene	< 10.0	µg/L	SW8270D	7.61	10.0								
Benzo(k)fluoranthene	< 10.0	µg/L	SW8270D	5.42	10.0								
Bis(2-chloroethoxy)methane	< 10.0	µg/L	SW8270D	8.51	10.0								
Bis(2-chloroethyl) ether	< 10.0	µg/L	SW8270D	6.13	10.0								
Bis(2-chloroisopropyl) ether	< 10.0	µg/L	SW8270D	7.73	10.0								
Bis(2-ethylhexyl) phthalate	< 10.0	µg/L	SW8270D	7.40	10.0								
Butyl benzyl phthalate	< 10.0	µg/L	SW8270D	7.83	10.0								
Chrysene	< 10.0	µg/L	SW8270D	5.89	10.0								
Dibenz(a,h)anthracene	< 10.0	µg/L	SW8270D	7.64	10.0								
Diethyl phthalate	< 10.0	µg/L	SW8270D	7.84	10.0								
Dimethyl phthalate	< 10.0	µg/L	SW8270D	3.00	10.0								
Di-n-butyl phthalate	< 10.0	µg/L	SW8270D	7.31	10.0								
Di-n-octyl phthalate	< 10.0	µg/L	SW8270D	5.51	10.0								
Fluoranthene	< 10.0	µg/L	SW8270D	6.37	10.0								
Fluorene	< 10.0	µg/L	SW8270D	8.79	10.0								
Hexachlorobenzene	< 10.0	µg/L	SW8270D	7.32	10.0								
Hexachlorobutadiene	< 10.0	µg/L	SW8270D	7.95	10.0								
Hexachlorocyclopentadiene	< 10.0	µg/L	SW8270D	8.83	10.0								
Hexachloroethane	< 10.0	µg/L	SW8270D	7.80	10.0								
Indeno(1,2,3-cd)pyrene	< 10.0	µg/L	SW8270D	7.58	10.0								
Isophorone	< 10.0	µg/L	SW8270D	9.94	10.0								
Naphthalene	< 10.0	µg/L	SW8270D	9.25	10.0								

American West
ANALYTICAL LABORATORIES

3440 South 700 West
Salt Lake City, UT 84119
Phone: (801) 263-8686, Toll Free: (888) 263-8686, Fax: (801) 263-8687
e-mail: awal@awal-labs.com, web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

QC SUMMARY REPORT

Client: Energy Fuels Resources, Inc.
Lab Set ID: 1809117
Project: Annual Tailings 2018

Contact: Garrin Palmer
Dept: MSSV
QC Type: MBLK

Analyte	Result	Units	Method	MDL	Reporting Limit	Amount Spiked	Spike Ref. Amount	%REC	Limits	RPD Ref. Amt	% RPD	RPD Limit	Qual
Lab Sample ID: MB-58021	Date Analyzed:	09/12/2018 844h											
Test Code: 8270-W-3511	Date Prepared:	09/11/2018 1340h											
Nitrobenzene	< 10.0	µg/L	SW8270D	4.64	10.0								
N-Nitrosodimethylamine	< 10.0	µg/L	SW8270D	4.04	10.0								
N-Nitrosodi-n-propylamine	< 10.0	µg/L	SW8270D	5.67	10.0								
N-Nitrosodiphenylamine	< 10.0	µg/L	SW8270D	6.04	10.0								
Pentachlorophenol	< 10.0	µg/L	SW8270D	9.76	10.0								
Phenanthrene	< 10.0	µg/L	SW8270D	5.73	10.0								
Phenol	< 10.0	µg/L	SW8270D	7.95	10.0								
Pyrene	< 10.0	µg/L	SW8270D	5.40	10.0								
Pyridine	< 10.0	µg/L	SW8270D	8.71	10.0								
Surr: 2,4,6-Tribromophenol	71.1	µg/L	SW8270D			100.0		71.1	36 - 195				
Surr: 2-Fluorobiphenyl	41.4	µg/L	SW8270D			50.00		82.7	50 - 137				
Surr: 2-Fluorophenol	49.6	µg/L	SW8270D			100.0		49.6	10 - 105				
Surr: Nitrobenzene-d5	41.3	µg/L	SW8270D			50.00		82.5	55 - 147				
Surr: Phenol-d6	33.2	µg/L	SW8270D			100.0		33.2	10 - 100				
Surr: Terphenyl-d14	45.0	µg/L	SW8270D			50.00		90.1	68 - 155				

American West Analytical Laboratories

Rpt Emailed: UL Denison

WORK ORDER Summary

Work Order: **1809117**

Client: Energy Fuels Resources, Inc. Due Date: 9/21/2018

Client ID: ENE300 **Contact:** Garrin Palmer

Project: **Annual Tailings 2018** **QC Level:** III WO Type: Project

Comments: QC 3 (Summary/No chromatograms). Use CAUTION when handling these samples. Project specific DL's: see COC. 8270 LIBRARY SEARCH: 4-Chlorophenol. EDD-Denison. Email Group.;

Sample ID	Client Sample ID	Collected Date	Received Date	Test Code	Matrix	Sel	Storage	
1809117-001A	**Cell 1**	9/5/2018 1335h	9/7/2018 0855h	**3511-SVOA-PR**	Aqueous		Walkin-Semi	5
				8270-W-3511			Walkin-Semi	
				Test Group: 8270-W-3511-Custom; # of Analytes: 63 / # of Surr: 6				
1809117-002A	**Cell 3**	9/5/2018 1400h	9/7/2018 0855h	**3511-SVOA-PR**	Aqueous		Walkin-Semi	5
				8270-W-3511			Walkin-Semi	
				Test Group: 8270-W-3511-Custom; # of Analytes: 63 / # of Surr: 6				

American West
Analytical Laboratories
463 W. 3600 S. Salt Lake City, UT 84115
Phone # (801) 263-8686 Toll Free # (888) 263-8686
Fax # (801) 263-8687 Email awal@awal-labs.com
www.awal-labs.com

CHAIN OF CUSTODY

All analysis will be conducted using NELAP accredited methods and all data will be reported using AWAL's standard analyte lists and reporting limits (PQL) unless specifically requested otherwise on this Chain of Custody and/or attached documentation.

1809117
AWAL Lab Sample Set #
Page 1 of 1

QC Level:	Turn Around Time:	Unless other arrangements have been made, signed reports will be emailed by 5:00 pm on the day they are due.	Due Date:
3	Standard		

Client: **Energy Fuels Resources, Inc.**
Address: **6425 S. Hwy. 191**
Blanding, UT 84511
Contact: **Tanner Holliday**
Phone #: **(435) 678-2221** Cell #:
Email: **gpalmer@energyfuels.com; KWeinel@energyfuels.com; dturk@energyfuels.com**
Project Name: **Annual Tailings 2018**
Project #:
PO #:
Sampler Name: **Tanner Holliday**

X Include EDD:
NO LOCUS UPLOAD
EXCEL ONLY
Field Filtered For:
NOT FIELD FILTERED

For Compliance With:
☐ NELAP
☐ RCRA
☐ CWA
☐ SDWA
☐ ELAP / A2LA
☐ NLLAP
☐ Non-Compliance
☐ Other:

Laboratory Use Only

Samples Were:
1 Shipped or hand delivered
2 Ambient or Chilled
3 Temperature 2.3 °C
4 Received Broken/Leaking (Improperly Sealed) Y (N)
5 Properly Preserved (Y) N
Checked at bench Y N
6 Received Within Holding Times (Y) N

	Sample ID:	Date Sampled	Time Sampled	# of Containers	Sample Matrix	NO2/NO3 (353.2)	NH3 (4500G or 350.1)	Fl, Cl, SO4 (4500 or 300.0)	TDS (2540C)	Carb/Bicarb (2320B)	Dissolved Metals (200.7/200.8/245.1)	As, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Hg, Mo,	Ni, Se, Ag, Tl, Sn, U, V, Zn, Na, K, Mg, Ca	Ion Balance	SVOCs (8270D)	pH	Conductivity	VOCs (8260C)	Known Hazards & Sample Comments
1	**Cell 1**	**9/5/2018**	**1335**	5	ww										X				MS & MSD
2	**Cell 3**	**9/5/2018**	**1400**	3	ww										X				
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

COC Tape Was:
1 Present on Outer Package (Y) N NA
2 Unbroken on Outer Package (Y) N NA
3 Present on Sample Y N (NA)
4 Unbroken on Sample Y N (NA)

Discrepancies Between Sample Labels and COC Record? Y (N)

Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name: Deen Lyman	Time: 855	Print Name: Elena Hay	Time: 855
Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name:	Time:	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name:	Time:	Print Name:	Time:
Relinquished by: Signature	Date:	Received by: Signature	Date:
Print Name:	Time:	Print Name:	Time:

Special Instructions:

Sample containers for metals were ***NOT*** field filtered. PLEASE FILTER UPON RECEIPT! See the Analytical Scope of Work for Reporting Limits and VOC analyte list. Reporting Limits are the UTAH GWQS - See Pat Noteboom for questions

Cell 1 has 2 extra SVOC's for MS & MSD

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

September 05, 2018

Ms. Kathy Weinel
Energy Fuels Resources (USA), Inc.
225 Union Boulevard
Suite 600
Lakewood, Colorado 80228

Re: Tailings 2018 Characterization
Work Order: 456584

Dear Ms. Weinel:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on August 07, 2018. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4289.

Sincerely,

Julie Robinson

Julie Robinson
Project Manager

Purchase Order: DW16138
Enclosures

Energy Fuels Resources (USA), Inc.
Tailings 2018 Characterization
SDG: 456584

Receipt Narrative
for
Energy Fuels Resources (USA), Inc.
SDG: 456584

September 05, 2018

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on August 07, 2018 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
456584001	Cell 1
456584002	Slimes # 2
456584003	Cell 3
456584004	Cell 4a
456584005	Cell 4a LDS
456584006	Cell 4b
456584007	Cell 4b LDS
456584008	Cell 65

Case Narrative:

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: General Chemistry and Radiochemistry.

Julie Robinson

Julie Robinson
Project Manager

456584

Sheet 1 of 1

CHAIN OF CUSTODY

Samples Shipped to: Gel Laboratories
2040 Savage Road
Charleston, SC 29407

Contact: Tanner Holliday
Ph: 435 678 4115
thollidayenergyfuels.com

Project	Samplers Name	Samplers Signature
Annual Tailings 2018	Tanner Holliday	

Sample ID	Date Collected	Time Collected	Laboratory Analysis Requested
Cell 1	8/1/2018	845	Dissolved Gross Alpha, Thorium (228, 230, 232) Uranium (233/234, 235/236, 238), Ra-226, specific gravity
Cell 2 Slimes	8/1/2018	900	Dissolved Gross Alpha, Thorium (228, 230, 232) Uranium (233/234, 235/236, 238), Ra-226, specific gravity
Cell 3	8/1/2018	920	Dissolved Gross Alpha, Thorium (228, 230, 232) Uranium (233/234, 235/236, 238), Ra-226, specific gravity
Cell 4A	8/1/2018	935	Dissolved Gross Alpha, Thorium (228, 230, 232) Uranium (233/234, 235/236, 238), Ra-226, specific gravity
Cell 4A LDS	8/1/2018	945	Dissolved Gross Alpha, Thorium (228, 230, 232) Uranium (233/234, 235/236, 238), Ra-226, specific gravity
Cell 4B	8/1/2018	1005	Dissolved Gross Alpha, Thorium (228, 230, 232) Uranium (233/234, 235/236, 238), Ra-226, specific gravity
Cell 4B LDS	8/1/2018	1020	Dissolved Gross Alpha, Thorium (228, 230, 232) Uranium (233/234, 235/236, 238), Ra-226, specific gravity
Cell 65	8/1/2018	900	Dissolved Gross Alpha, Thorium (228, 230, 232) Uranium (233/234, 235/236, 238), Ra-226, specific gravity
Specific gravity is to be run on UNFILTERED sample aliquot			

Comments: SAMPLES ARE NOT FIELD FILTERED - PLEASE FILTER UPON RECEIPT! SAMPLES ARE NOT PRESERVED - pH is as collected! See Julie Robinson for technical questions. No LOCUS UPLOAD. *Methods used = same as 432537*

Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time
			8/7/18 10:20
Relinquished By:(Signature)	Date/Time	Received By:(Signature)	Date/Time

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: DNMI	SDG/AR/COC/Work Order: 456594
Received By: Stacy Boone	Date Received: 8/7/18 JR
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 1Z 187 Y4Y 01 9132 3014

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
COC/Samples marked or classified as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
Is package, COC, and/or Samples marked HAZ?		✓	If yes, select Hazards below, and contact the GEL Safety Group. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		✓		Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 2 C
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR3-17 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, Are Encores or Soil Kits present? Yes___ No___ (If yes, take to VOA Freezer) Do VOA vials contain acid preservation? Yes No___ N/A (If unknown, select No) VOA vials free of headspace? Yes___ No___ N/A___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?	✓			
13	COC form is properly signed in relinquished/received sections?	✓			

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials TMC Date 8/8/18 Page 1 of 1

GEL Laboratories LLC – Login Review Report

GEL Work Order/SDG: 456584 Annual Tails 2018
Client SDG: 456584
Project Manager: Julie Robinson
Project Name: DNMI00107 Tailings 2018 Characterization
Purchase Order: DW16138
Package Level: LEVEL3
EDD Format: EIM_DNMI

Work Order Due Date: 05-SEP-18
Package Due Date: 03-SEP-18
EDD Due Date: 05-SEP-18
Due Date: 05-SEP-18
TXC4

Collector: C
Prelogin #: 20150631907
Project Workdef ID: 1330584
SDG Status: Closed
Logged by:

GEL ID	Client Sample ID	Client Sample Desc.	Collect Date & Time	Receive Date & Time	Time Zone	# of Cont.	Lab Matrix	Fax Due Date	Days to Process	CofC #	Prelog Group	Lab QC	Field QC
456584001	Cell 1		01-AUG-18 08:45	07-AUG-18 10:20	-2	1	GROUND WATER		20		1		
456584002	Slimes # 2		01-AUG-18 09:00	07-AUG-18 10:20	-2	1	GROUND WATER		20		1		
456584003	Cell 3		01-AUG-18 09:20	07-AUG-18 10:20	-2	1	GROUND WATER		20		1		
456584004	Cell 4a		01-AUG-18 09:35	07-AUG-18 10:20	-2	1	GROUND WATER		20		1		
456584005	Cell 4a LDS		01-AUG-18 09:45	07-AUG-18 10:20	-2	1	GROUND WATER		20		1		
456584006	Cell 4b		01-AUG-18 10:05	07-AUG-18 10:20	-2	1	GROUND WATER		20		1		
456584007	Cell 4b LDS		01-AUG-18 10:20	07-AUG-18 10:20	-2	1	GROUND WATER		20		1		
456584008	Cell 65		01-AUG-18 09:00	07-AUG-18 10:20	-2	1	GROUND WATER		20		1		

Client Sample ID	Status	Tests/Methods	Product Reference	Fax Date	PM Comments	Aux Data	Receive Codes
-001 Cell 1	REVW	Alphaspec Th, Liquid					RAD2
	REVW	U- 233/234,U-235/236 and U-238	U-233/234,U-235/236				
	REVW	GFPC,Total Alpha Radium, Liquid	Gross Alpha				
	REVW	Laboratory Composite	RAD2				
	REVW	Lucas Cell, Ra226, liquid					
	REVW	ASTM D 5057 Specific Gravity					
	REVW	Rad 2 Aliquot for distribution throughout the lab					
-002 Slimes # 2	REVW	Alphaspec Th, Liquid					RAD2
	REVW	U- 233/234,U-235/236 and U-238	U-233/234,U-235/236				
	REVW	GFPC,Total Alpha Radium, Liquid	Gross Alpha				
	REVW	Laboratory Composite	RAD2				
	REVW	Lucas Cell, Ra226, liquid					
	REVW	ASTM D 5057 Specific Gravity					
	REVW	Rad 2 Aliquot for distribution throughout the lab					
-003 Cell 3	REVW	Alphaspec Th, Liquid					RAD2
	REVW	U- 233/234,U-235/236 and U-238	U-233/234,U-235/236				
	REVW	GFPC,Total Alpha Radium,	Gross Alpha				

		Liquid		
	REVW	Laboratory Composite	RAD2	
	REVW	Lucas Cell, Ra226, liquid		
	REVW	ASTM D 5057 Specific Gravity		
	REVW	Rad 2 Aliquot for distribution throughout the lab		
-004 Cell 4a	REVW	Alphaspec Th, Liquid		RAD2
	REVW	U- 233/234,U-235/236 and U-238	U-233/234,U-235/236	
	REVW	GFPC,Total Alpha Radium, Liquid	Gross Alpha	
	REVW	Laboratory Composite	RAD2	
	REVW	Lucas Cell, Ra226, liquid		
	REVW	ASTM D 5057 Specific Gravity		
	REVW	Rad 2 Aliquot for distribution throughout the lab		
-005 Cell 4a LDS	REVW	Alphaspec Th, Liquid		RAD2
	REVW	U- 233/234,U-235/236 and U-238	U-233/234,U-235/236	
	REVW	GFPC,Total Alpha Radium, Liquid	Gross Alpha	
	REVW	Laboratory Composite	RAD2	
	REVW	Lucas Cell, Ra226, liquid		
	REVW	ASTM D 5057 Specific Gravity		
	REVW	Rad 2 Aliquot for distribution throughout the lab		
-006 Cell 4b	REVW	Alphaspec Th, Liquid		RAD2
	REVW	U- 233/234,U-235/236 and U-238	U-233/234,U-235/236	
	REVW	GFPC,Total Alpha Radium, Liquid	Gross Alpha	
	REVW	Laboratory Composite	RAD2	
	REVW	Lucas Cell, Ra226, liquid		
	REVW	ASTM D 5057 Specific Gravity		
	REVW	Rad 2 Aliquot for distribution throughout the lab		
-007 Cell 4b LDS	REVW	Alphaspec Th, Liquid		RAD2
	REVW	U- 233/234,U-235/236 and U-238	U-233/234,U-235/236	
	REVW	GFPC,Total Alpha Radium, Liquid	Gross Alpha	
	REVW	Laboratory Composite	RAD2	
	REVW	Lucas Cell, Ra226, liquid		
	REVW	ASTM D 5057 Specific Gravity		
	REVW	Rad 2 Aliquot for distribution throughout the lab		
-008 Cell 65	REVW	Alphaspec Th, Liquid		RAD2
	REVW	U- 233/234,U-235/236 and U-238	U-233/234,U-235/236	

REVW	GFPC,Total Alpha Radium, Liquid	Gross Alpha
REVW	Laboratory Composite	RAD2
REVW	Lucas Cell, Ra226, liquid	
REVW	ASTM D 5057 Specific Gravity	
REVW	Rad 2 Aliquot for distribution throughout the lab	

Product: ASP__THL **Workdef ID:** 1371096 **In Product Group?** No **Group Name:** **Group Reference:**

Method: DOE EML HASL-300, Th-01-RC Modified
Product Description: Alphaspec Th, Liquid
Samples: 001, 002, 003, 004, 005, 006, 007, 008
Parmname Check: All parmnames scheduled properly
Path: High Rad
Product Reference:
Moisture Correction: "As Received"

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
14274-82-9	Thorium-228	1	pCi/L	REG	Y	Y	No
14269-63-7	Thorium-230	1	pCi/L	REG	Y	Y	
7440-29-1	Thorium-232	1	pCi/L	REG	Y	Y	

Product: ASP__UUL **Workdef ID:** 1371097 **In Product Group?** No **Group Name:** **Group Reference:**

Method: DOE EML HASL-300, U-02-RC Modified
Product Description: U- 233/234,U-235/236 and U-238
Samples: 001, 002, 003, 004, 005, 006, 007, 008
Parmname Check: All parmnames scheduled properly
Path: High Rad
Product Reference: U-233/234,U-235/236
Moisture Correction: "As Received"

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
13968-55-3/13966-	Uranium-233/234	1	pCi/L	REG	Y	Y	No
15117-96-1/13982-	Uranium-235/236	1	pCi/L	REG	Y	Y	
7440-61-1	Uranium-238	1	pCi/L	REG	Y	Y	

Product: GFCTORAL **Workdef ID:** 1371098 **In Product Group?** No **Group Name:** **Group Reference:**

Method: EPA 900.1 Mod/ EPA 903.0 Mod
Product Description: GFPC,Total Alpha Radium, Liquid
Samples: 001, 002, 003, 004, 005, 006, 007, 008
Parmname Check: All parmnames scheduled properly
Path: High Rad
Product Reference: Gross Alpha
Moisture Correction: "As Received"

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
	Gross Radium Alpha	1	pCi/L	REG	Y	Y	No

Product: LUC26RAL **Workdef ID:** 1371099 **In Product Group?** No **Group Name:** **Group Reference:**

Method: EPA 903.1 Modified
Product Description: Lucas Cell, Ra226, liquid
Samples: 001, 002, 003, 004, 005, 006, 007, 008
Parmname Check: All parmnames scheduled properly

Path: High Rad
Product Reference:
Moisture Correction: "As Received"

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
13982-63-3	Radium-226	1	pCi/L	REG	Y	Y	No

Product: LABCOMP_L **Workdef ID:** 1371213 **In Product Group?** No **Group Name:** **Group Reference:**

Method:
Product Description: Laboratory Composite
Samples: 001, 002, 003, 004, 005, 006, 007, 008
Parmname Check: All parmnames scheduled properly

Path: High Rad
Product Reference: RAD2
Moisture Correction: "As Received"

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?

No

Product: MISSGAS_L **Workdef ID:** 1370067 **In Product Group?** No **Group Name:** **Group Reference:**

Method: ASTM D 5057
Product Description: ASTM D 5057 Specific Gravity
Samples: 001, 002, 003, 004, 005, 006, 007, 008
Parmname Check: All parmnames scheduled properly

Path: Standard
Product Reference:
Moisture Correction: "As Received"

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?
	Specific Gravity	.1 none	none	REG	Y	Y	No

Product: RADALQT_L **Workdef ID:** 1371095 **In Product Group?** No **Group Name:** **Group Reference:**

Method:
Product Description: Rad 2 Aliquot for distribution throughout the lab
Samples: 001, 002, 003, 004, 005, 006, 007, 008
Parmname Check: All parmnames scheduled properly

Path: Standard
Product Reference:
Moisture Correction: "As Received"

CAS #	Parmname	Client RDL or PQL & Unit	Reporting Units	Parm Function	Included in Sample?	Included in QC?	Custom List?

No

GEL Laboratories LLC – Login Review Report

Action	Product Name	Description	Samples

Contingent Tests

Login Requirements:

Requirement	Include?	Comments

Peer Review by:_____ Work Order (SDG#), PO# Checked?_____ C of C signed in receiver location? _____

List of current GEL Certifications as of 05 September 2018

State	Certification
Alaska	17-018
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA180011
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122018-1
New Hampshire NELAP	205415
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-18-13
Utah NELAP	SC000122018-26
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

General Chemistry
Technical Case Narrative
Energy Fuels Resources (DNMI)
SDG #: 456584

Product: Specific Gravity
Analytical Method: ASTM D 5057
Analytical Procedure: GL-GC-E-065 REV# 7
Analytical Batch: 1794741

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
456584001	Cell 1
456584002	Slimes # 2
456584003	Cell 3
456584004	Cell 4a
456584005	Cell 4a LDS
456584006	Cell 4b
456584007	Cell 4b LDS
456584008	Cell 65

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

DNMI001 Energy Fuels Resources (USA), Inc.

Client SDG: 456584 GEL Work Order: 456584

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Aubrey Kingsbury**

Date: 27 AUG 2018 **Title: Data Validator**

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: August 27, 2018

Energy Fuels Resources (USA), Inc.
225 Union Boulevard
Suite 600
Lakewood, Colorado

Contact: **Ms. Kathy Weinel**

Workorder: **456584**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

Notes:

The Qualifiers in this report are defined as follows:

**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
A	The TIC is a suspected aldol-condensation product
B	For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
E	General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
F	Estimated Value
H	Analytical holding time was exceeded
M	Matrix Related Failure
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the CRDL.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
d	5-day BOD--The 2:1 depletion requirement was not met for this sample
h	Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Radiochemistry
Technical Case Narrative
Energy Fuels Resources (DNMI)
SDG #: 456584

Product: **Alphaspec Th, Liquid**
Analytical Method: DOE EML HASL-300, Th-01-RC Modified
Analytical Procedure: GL-RAD-A-038 REV# 17
Analytical Batch: 1794758

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
456584001	Cell 1
456584002	Slimes # 2
456584003	Cell 3
456584004	Cell 4a
456584005	Cell 4a LDS
456584006	Cell 4b
456584007	Cell 4b LDS
456584008	Cell 65
1204097046	Method Blank (MB)
1204097047	456584001(Cell 1) Sample Duplicate (DUP)
1204097048	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Duplication Criteria between QC Sample and Duplicate Sample
The Sample and the Duplicate, (See Below), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with the value listed below.

Sample	Analyte	Value
1204097047 (Cell 1DUP)	Thorium-232	RPD 20.3* (0.00%-20.00%) RER 0.9 (0-3)

RDL Met
The blank (See Below) did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots.

Sample	Analyte	Value
1204097046 (MB)	Thorium-228	Result -179 < MDA 2470 > RDL 1 pCi/L
	Thorium-230	Result 1030 < MDA 2470 > RDL 1 pCi/L

	Thorium-232	Result 1320 < MDA 1490 > RDL 1 pCi/L

The following detection limits were not achieved due to high sample activity.

Sample	Analyte	Value
1204097047 (Cell 1DUP)	Thorium-228	Result -27.6 < MDA 3370 > RDL 1 pCi/L
456584001 (Cell 1)	Thorium-228	Result 645 < MDA 1880 > RDL 1 pCi/L
456584002 (Slimes # 2)	Thorium-228	Result -748 < MDA 4820 > RDL 1 pCi/L
	Thorium-232	Result 305 < MDA 3460 > RDL 1 pCi/L
456584003 (Cell 3)	Thorium-228	Result 620 < MDA 1810 > RDL 1 pCi/L
456584005 (Cell 4a LDS)	Thorium-228	Result 165 < MDA 2380 > RDL 1 pCi/L
	Thorium-232	Result 1070 < MDA 2310 > RDL 1 pCi/L
456584006 (Cell 4b)	Thorium-228	Result 1890 < MDA 3400 > RDL 1 pCi/L
456584008 (Cell 65)	Thorium-228	Result 676 < MDA 2540 > RDL 1 pCi/L
	Thorium-232	Result -722 < MDA 2470 > RDL 1 pCi/L

Technical Information

Recounts
Samples 1204097046 (MB), 1204097047 (Cell 1DUP), 456584001 (Cell 1), 456584002 (Slimes # 2), 456584003 (Cell 3), 456584004 (Cell 4a), 456584005 (Cell 4a LDS), 456584006 (Cell 4b), 456584007 (Cell 4b LDS) and 456584008 (Cell 65) were recounted for the maximum count time of 1000 minutes in order to achieve the best possible MDC's.

Product: **U- 233/234,U-235/236 and U-238**
Analytical Method: DOE EML HASL-300, U-02-RC Modified
Analytical Procedure: GL-RAD-A-011 REV# 26
Analytical Batch: 1794761

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
456584001	Cell 1
456584002	Slimes # 2
456584003	Cell 3
456584004	Cell 4a
456584005	Cell 4a LDS
456584006	Cell 4b
456584007	Cell 4b LDS
456584008	Cell 65
1204097058	Method Blank (MB)
1204097059	456584001(Cell 1) Sample Duplicate (DUP)
1204097060	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Duplication Criteria between QC Sample and Duplicate Sample
The Sample and the Duplicate, (See Below), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with the value listed below.

Sample	Analyte	Value
1204097059 (Cell 1DUP)	Uranium-238	RPD 26.6* (0.00%-20.00%) RER 1.64 (0-3)

RDL Met
The blank (See Below) did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots.

Sample	Analyte	Value
1204097058 (MB)	Uranium-233/234	Result 678 < MDA 4530 > RDL 1 pCi/L
	Uranium-235/236	Result 204 < MDA 4450 > RDL 1 pCi/L
	Uranium-238	Result 1930 < MDA 3600 > RDL 1 pCi/L

Samples (See Below) did not meet the detection limits due to the small sample aliquots used. The aliquots were reduced due to the high activity of other isotopes and in attempt to minimize interference.

Sample	Analyte	Value
1204097059 (Cell 1DUP)	Uranium-235/236	Result 4550 < MDA 4570 > RDL 1 pCi/L
456584002 (Slimes # 2)	Uranium-235/236	Result 2860 < MDA 3640 > RDL 1 pCi/L
456584005 (Cell 4a LDS)	Uranium-235/236	Result 2990 < MDA 4710 > RDL 1 pCi/L
456584006 (Cell 4b)	Uranium-235/236	Result 3870 < MDA 5520 > RDL 1 pCi/L
456584007 (Cell 4b LDS)	Uranium-235/236	Result 4130 < MDA 5890 > RDL 1 pCi/L

Product: Laboratory Composite
Composite Preparation Method: GL-RAD-A-026
Composite Preparation Procedure: GL-RAD-A-026 REV# 17
Composite Preparation Batch: 1793677

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
456584001	Cell 1
456584002	Slimes # 2
456584003	Cell 3
456584004	Cell 4a
456584005	Cell 4a LDS
456584006	Cell 4b
456584007	Cell 4b LDS
456584008	Cell 65

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments
50 mLs of each sample filtered through 50mL tube top 0.45um cellulose acetate filter and saved for subsequent analysis.

Product: **GFPC,Total Alpha Radium, Liquid**
Analytical Method: EPA 900.1 Mod/ EPA 903.0 Mod
Analytical Procedure: GL-RAD-A-010 REV# 17
Analytical Batch: 1794759

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
456584001	Cell 1
456584002	Slimes # 2
456584003	Cell 3
456584004	Cell 4a
456584005	Cell 4a LDS
456584006	Cell 4b
456584007	Cell 4b LDS
456584008	Cell 65
1204097049	Method Blank (MB)
1204097050	456584001(Cell 1) Sample Duplicate (DUP)
1204097051	456584001(Cell 1) Matrix Spike (MS)
1204097052	456584001(Cell 1) Matrix Spike Duplicate (MSD)
1204097053	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Matrix Spike (MS) Recovery
The Matrix Spike did not meet recovery requirements due to the sample activity being greater than four times the spiked nominal concentration.

Sample	Analyte	Value
1204097051 (Cell 1MS)	Gross Radium Alpha	-175* (75%-125%)
1204097052 (Cell 1MSD)	Gross Radium Alpha	-158* (75%-125%)

Duplication Criteria between QC Sample and Duplicate Sample
The Sample and the Duplicate, (See Below), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with the value listed below.

Sample	Analyte	Value
1204097050 (Cell 1DUP)	Gross Radium Alpha	RPD 27.7* (0.00%-20.00%) RER 2.18 (0-3)

RDL Met
The blank (See Below) did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots.

Sample	Analyte	Value
1204097049 (MB)	Gross Radium Alpha	Result 110 < MDA 220 > RDL 1 pCi/L

Technical Information

Recounts
Samples 1204097051 (Cell 1MS), 1204097052 (Cell 1MSD) and 1204097053 (LCS) were recounted due to low recovery. The recounts are reported.

Miscellaneous Information

Additional Comments
Sample aliquots and count times were reduced due to high activity in the samples.

Product: **Lucas Cell, Ra226, liquid**
Analytical Method: EPA 903.1 Modified
Analytical Procedure: GL-RAD-A-008 REV# 15
Analytical Batch: 1794760

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
456584001	Cell 1
456584002	Slimes # 2
456584003	Cell 3
456584004	Cell 4a
456584005	Cell 4a LDS
456584006	Cell 4b
456584007	Cell 4b LDS
456584008	Cell 65
1204097054	Method Blank (MB)
1204097055	456584001(Cell 1) Sample Duplicate (DUP)
1204097056	456584001(Cell 1) Matrix Spike (MS)
1204097057	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Duplication Criteria between QC Sample and Duplicate Sample
The Sample and the Duplicate, (See Below), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with the value listed below.

Sample	Analyte	Value
1204097055 (Cell 1DUP)	Radium-226	RPD 24.3* (0.00%-20.00%) RER 1.63 (0-3)

RDL Met
The blank (See Below) did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots.

Sample	Analyte	Value
1204097054 (MB)	Radium-226	Result -4.76 < MDA 25.6 > RDL 1 pCi/L

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

DNMI001 Energy Fuels Resources (USA), Inc.

Client SDG: 456584 GEL Work Order: 456584

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
U Analyte was analyzed for, but not detected above the CRDL.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Heather McCarty **Name: Heather McCarty**

Date: 04 SEP 2018 **Title: Analyst II**

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: September 4, 2018

Energy Fuels Resources (USA), Inc.
225 Union Boulevard
Suite 600
Lakewood, Colorado
Contact: **Ms. Kathy Weinel**

Workorder: **456584**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
High Rad Testing										
Batch 1794758										
QC1204097047 456584001 DUP										
Thorium-228	U	645	U	-27.6	pCi/L	N/A		N/A	AXM6	09/03/18 13:0
	Uncertainty	+/-583		+/-887						
Thorium-230		8.56E+05		7.86E+05	pCi/L	8.63		(0%-20%)		
	Uncertainty	+/-11800		+/-12300						
Thorium-232		8410		10300	pCi/L	20.3*		(0%-20%)		
	Uncertainty	+/-1190		+/-1580						
QC1204097048 LCS										
Thorium-228				2.14E+05	pCi/L					09/01/18 10:4
	Uncertainty			+/-11500						
Thorium-230				21300	pCi/L			(75%-125%)		
	Uncertainty			+/-3790						
Thorium-232	1.99E+05			1.95E+05	pCi/L		98.1	(75%-125%)		
	Uncertainty			+/-10900						
QC1204097046 MB										
Thorium-228			U	-179	pCi/L					09/03/18 13:0
	Uncertainty			+/-629						
Thorium-230			U	1030	pCi/L					
	Uncertainty			+/-760						
Thorium-232			U	1320	pCi/L					
	Uncertainty			+/-587						
Batch 1794759										
QC1204097050 456584001 DUP										
Gross Radium Alpha		5.50E+05		7.27E+05	pCi/L	27.7*		(0%-20%)	AXM6	08/31/18 11:5
	Uncertainty	+/-2990		+/-4140						
QC1204097053 LCS										
Gross Radium Alpha	1.11E+05			90300	pCi/L		81.4	(75%-125%)		09/04/18 07:3
	Uncertainty			+/-863						

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 456584

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
High Rad Testing										
Batch 1794759										
QC1204097049 MB										
Gross Radium Alpha			U	110	pCi/L				AXM6	08/31/18 11:5
	Uncertainty			+/-67.7						
QC1204097051 456584001 MS										
Gross Radium Alpha	1.13E+05	5.50E+05		3.53E+05	pCi/L		0*	(75%-125%)		09/04/18 07:3
	Uncertainty	+/-2990		+/-1730						
QC1204097052 456584001 MSD										
Gross Radium Alpha	1.13E+05	5.50E+05		3.73E+05	pCi/L	5.48	0*	(0%-20%)		09/04/18 07:3
	Uncertainty	+/-2990		+/-1780						
Batch 1794760										
QC1204097055 456584001 DUP										
Radium-226		443		347	pCi/L	24.3*		(0%-20%)	PCW	09/04/18 11:1
	Uncertainty	+/-26.4		+/-23.6						
QC1204097057 LCS										
Radium-226	1300			1110	pCi/L		85.7	(75%-125%)		09/04/18 11:5
	Uncertainty			+/-43.6						
QC1204097054 MB										
Radium-226			U	-4.76	pCi/L					09/04/18 11:1
	Uncertainty			+/-5.72						
QC1204097056 456584001 MS										
Radium-226	1300	443		1440	pCi/L		76.7	(75%-125%)		09/04/18 11:5
	Uncertainty	+/-26.4		+/-47.4						
Batch 1794761										
QC1204097059 456584001 DUP										
Uranium-233/234		97300		93800	pCi/L	3.69		(0%-20%)	AXM6	09/01/18 10:2
	Uncertainty	+/-8370		+/-8020						
Uranium-235/236		6970	U	4550	pCi/L	41.7		(0% - 100%)		
	Uncertainty	+/-2780		+/-2210						
Uranium-238		97200		74400	pCi/L	26.6*		(0%-20%)		
	Uncertainty	+/-8350		+/-7130						
QC1204097060 LCS										
Uranium-233/234				2.35E+05	pCi/L					09/01/18 10:2
	Uncertainty			+/-13100						
Uranium-235/236				17700	pCi/L					
	Uncertainty			+/-4120						

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 456584

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
High Rad Testing										
Batch 1794761										
Uranium-238	2.70E+05			2.65E+05	pCi/L		98	(75%-125%)	AXM6	09/01/18 10:2
	Uncertainty			+/-13900						
QC1204097058 MB										
Uranium-233/234			U	678	pCi/L					09/01/18 10:2
	Uncertainty			+/-1210						
Uranium-235/236			U	204	pCi/L					
	Uncertainty			+/-1090						
Uranium-238			U	1930	pCi/L					
	Uncertainty			+/-1350						

Notes:

Counting Uncertainty is calculated at the 68% confidence level (1-sigma).

The Qualifiers in this report are defined as follows:

**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
A	The TIC is a suspected aldol-condensation product
B	For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
F	Estimated Value
H	Analytical holding time was exceeded
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
M	M if above MDC and less than LLD
M	Matrix Related Failure
N/A	RPD or %Recovery limits do not apply.
N1	See case narrative
ND	Analyte concentration is not detected above the detection limit
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
R	Sample results are rejected
U	Analyte was analyzed for, but not detected above the CRDL.
UI	Gamma Spectroscopy--Uncertain identification

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 456584

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

UJ Gamma Spectroscopy--Uncertain identification

UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y QC Samples were not spiked with this compound

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.

h Preparation or preservation holding time was exceeded

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Tab D

Chemical and Radiological Summary Tables

Cell 1
Chemical and Radiological Characteristics

Constituent	1987	2003 (Avg)	2007 (Avg)	2008	2009	2010	2011	2012	2013	2013 Resample	2014	2015	2016	2017	2018	2018 Resample
Major Ions (mg/l)																
Carbonate	<5	<1	ND	ND	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	NS
Bicarbonate	<5	NA	ND	ND	<1	<1	<1	<1	<1	NS	<1	<1	<1	<1	<1	NS
Calcium	630	307	483.8	604	635	711	577	426	768	NS	404	573	647	581	518	NS
Chloride	8000	6728	37340	9830	20700	7440	33800	78000	9900	NS	11600	25500	19200	19900	39300	NS
Fluoride	<100	3005	31.72	0.3	0.4	28.4	69.2	62.9	4130	NS	2380	5880	2980	4290	5020	NS
Magnesium	7900	5988	21220	6550	16200	5410	14300	16000	4470	NS	5530	12400	9210	9380	20800	NS
Nitrogen-Ammonia	7800	3353	10628	5250	15200	8120	12900	9750	3900	NS	5700	5.4	7090	1040	9810	NS
Nitrogen-Nitrate	<100	41.8	269.4	64.9	142	58	212	556	128	NS	53	192	124	152	328	NS
Potassium	NA	647	5698	1880	4140	1840	4510	9750	6580	NS	3010	7330	1970	2700	4790	NS
Sodium	10000	8638	62600	13200	39000	16700	29500	41700	15900	NS	12200	32100	18900	23900	53500	NS
Sulfate	190000	63667	287600	118000	232000	107000	182000	158000	100000	NS	124000	204000	212000	165000	253000	NS
pH (s.u.)	0.7	1.88	0.8	1.53	1.15	2.73	2.23	1.9	2.74	NS	1.3	1.01	<1.00	<1.00	<1.00	NS
TDS	120000	94700	357400	131000	140000	130000	216000	342000	149000	NS	159000	334000	242000	231000	361000	NS
Conductivity (umhos/cm)	NA	NA	NA	NA	365000	110000	112000	136000	94200	NS	113000	131000	123000	57600	110000	NS
Metals (ug/l)																
Arsenic	440000	121267	849000	271000	436000	74400	299000	25500	9800	NS	249000	377000	407000	391000	641000	NS
Beryllium	780	475	2262	500	410	338	1270	3180	415	NS	448	1290	1030	749	1510	NS
Cadmium	6600	3990	29320	8790	9120	2940	13700	30700	2380	NS	3060	7710	6320	6730	14000	NS
Chromium	13000	6365	29940	6760	18700	5620	22700	12100	8350	NS	13200	19600	14000	15900	21100	NS
Cobalt	120000	NA	88240	23500	97500	16200	56000	53100	25500	NS	56500	82000	77200	91400	113000	NS
Copper	740000	196667	881000	360000	168000	125000	483000	885000	544000	NS	3420000	3560000	4730000	3440000	4550000	NS
Iron	3400000	2820000	13480000	3280000	2390000	3400000	8940000	840000	1420000	NS	2520000	6680000	5650000	2300000	12200000	NS
Lead	<20000	3393	27420	11200	10600	9240	23600	17000	2810	NS	13500	16800	22500	23000	41000	NS
Manganese	140000	162500	990200	206000	723000	173000	735000	1560000	188000	NS	162000	515000	713000	510000	936000	NS
Mercury	NA	NA	ND	ND	7.61	7.2	61.4	117	6.16	NS	12.5	24.6	8.59	7.86	16.8	NS
Molybdenum	240000	50550	415600	106000	142000	35300	235000	434000	16800	NS	68800	127000	97100	128000	239000	NS
Nickel	370000	36950	40860	32000	156000	27500	43700	15000	39100	NS	129000	130000	170000	183000	167000	NS
Selenium	<20000	1862	15420	13000	14800	5220	11600	8090	2690	NS	3970	7070	3950	5070	10700	NS
Silver	<5000	NA	1559.2	449	558	155	1110	4310	329	NS	336	1390	1240	1240	2320	NS
Thallium	45000	NA	407.8	165	387	193	560	13	63.3	NS	876	1130	754	155	442	NS
Tin	<5000	NA	6512	1240	2290	263	1500	<100	<100	NS	<17000	<100	<17000	<17000	<17000	NS
Uranium	105000	134517	788600	416000	578000	159000	838000	1450000	140000	NS	137000	363000	131000	102000	248000	NS
Vanadium	280000	348000	2208200	1200000	773000	752000	2500000	1940000	98200	NS	485000	1130000	746000	1520000	2440000	NS
Zinc	1300000	NA	642940	476000	229000	171000	398000	811000	228000	NS	229000	638000	448000	515000	948000	NS

Cell 1
Chemical and Radiological Characteristics

Constituent	1987	2003 (Avg)	2007 (Avg)	2008	2009	2010	2011	2012	2013	2013 Resample	2014	2015	2016	2017	2018	2018 Resample
Radiologics (pCi/l)																
Gross Alpha	NA	1693331	29380	21900	16500	11300	3610	12600	32700	NS	331000	735000 (8/4/2015) 73800 (5/28/2015)	420000	191000	550000	NS
VOCS (ug/L)																
Acetone	35	NA	66.5	110	710	260	80	310	41.1	NS	<700	56	40.6	28	50.4	NS
Benzene	<5	NA	ND	ND	<1	<1	<1	<1	<1	NS	<5.0	<1	<1	<1	<1	NS
Carbon tetrachloride	<5	NA	ND	ND	<1	<1	<1	<1	<1	NS	<5.0	<1	<1	<1	<1	NS
Chloroform	8	NA	6.7	6.6	16	4.9	13	19	7.62	NS	<70.0	5.54	<1	3.42	114	NS
Chloromethane	NA	NA	ND	9.4	11	4.4	3.6	4	5	NS	<30.0	1.93	<1	1.13	1.16	NS
MEK	NA	NA	ND	ND	120	65	<1	200	<20	NS	<4000	<20	<20	<20	<20	NS
Methylene Chloride	11	NA	ND	ND	2	<1	<1	2	<1	NS	<5.0	1.83	<1	1.09	2.41	NS
Naphthalene	<10000	NA	<10	ND	1.1	5.4	2	3	<1	NS	<100	<1	<1	<1	<1	NS
Tetrahydrofuran	NA	NA	150	<20	<100	<10	<500	2.9	<1	NS	<46.0	<1	<1	<1	4.93	NS
Toluene	<5	NA	ND	ND	<1	<1	<1	<1	<1	NS	<1000	<1	<1	<1	<1	NS
Xylenes	<5	NA	ND	ND	<1	<1	<1	<1	<1	NS	<10000	<1	<1	<1	<1	NS
SVOCS (ug/L)																
1,2,4-Trichlorobenzene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
1,2-Dichlorobenzene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
1,3-Dichlorobenzene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
1,4-Dichlorobenzene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
1-Methyl-naphthalene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
2,4,5-Trichlorophenol	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
2,4,6-Trichlorophenol	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
2,4-Dichlorophenol	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
2,4-Dimethylphenol	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
2,4-Dinitrophenol	NA	NA	NA	NA	<250	<20	<20	<20	<21.6	<20	<20	<20	<10	<10	<148	<8.04
2,4-Dinitrotoluene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
2,6-Dinitrotoluene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04

Cell 1
Chemical and Radiological Characteristics

Constituent	1987	2003 (Avg)	2007 (Avg)	2008	2009	2010	2011	2012	2013	2013 Resample	2014	2015	2016	2017	2018	2018 Resample
2-Chloro - naphthalene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
2-Chlorophenol	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
2-Methyl - naphthalene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
2-Methylphenol	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
2-Nitrophenol	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
3&4-Methylphenol	NA	NA	NA	NA	<22	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
3,3-Dichlorobenzidine	NA	NA	NA	NA	<100	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	<250	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
4-Bromophenyl phenyl ether	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
4-Chloro-3-methylphenol	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
4-Nitrophenol	NA	NA	NA	NA	<250	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Acenaphthene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Acenaphthylene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Anthracene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Azobenzene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Benz(a)anthracene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Benzidine	NA	NA	NA	NA	<100	<10	<10	<10	<10.8	<10	41	<10	<10	<10	<148	<8.04
Benzo(a)pyrene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Benzo(b) fluoranthene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Benzo(g,h,i) perylene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Benzo(k) fluoranthene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Bis(2-chloroethoxy) methane	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Bis(2-chloroethyl) ether	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Bis(2-chloroisopropyl) ether	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04

Cell 1
Chemical and Radiological Characteristics

Constituent	1987	2003 (Avg)	2007 (Avg)	2008	2009	2010	2011	2012	2013	2013 Resample	2014	2015	2016	2017	2018	2018 Resample
Bis(2-ethylhexyl) phthalate	NA	NA	NA	NA	<50	27	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Butyl benzyl phthalate	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Chrysene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Dibenz(a,h) anthracene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Diethyl phthalate	NA	NA	NA	NA	170	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Dimethyl phthalate	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Di-n-butyl phthalate	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Di-n-octyl phthalate	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Fluoranthene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Fluorene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Hexachloro - benzene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Hexachloro - butadiene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Hexachloro - cyclopentadiene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Hexachloroethane	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Isophorone	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Naphthalene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Nitrobenzene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
N-Nitrosodi - methylamine	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
N-Nitrosodi-n-propylamine	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
N-Nitrosodi - phenylamine	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Pentachloro - phenol	NA	NA	NA	NA	<250	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Phenanthrene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Phenol	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04

Cell 1

Chemical and Radiological Characteristics

Constituent	1987	2003 (Avg)	2007 (Avg)	2008	2009	2010	2011	2012	2013	2013 Resample	2014	2015	2016	2017	2018	2018 Resample
Pyrene	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04
Pyridine	NA	NA	NA	NA	<50	<10	<10	<10	<10.8	<10	<10	<10	<10	<10	<148	<8.04

[1] Historic values reported for Gross Alpha from 1987 and 2003 are total gross alpha reported in pCi/L. All other gross alpha data are reported as Gross Alpha minus Rn & U.

Cell 2 Slimes Drain
Chemical and Radiological Characteristics

Constituents	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Major Ions (mg/l)												
Carbonate	ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate	ND	ND	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Calcium	572	528	508	496	474	462	465	322	524	402	477	538
Chloride	3700	3860	2750	3510	3110	3730	3270	3720	3850	4040	3820	4310
Fluoride	3.3	ND	<0.1	2.4	2.1	1.32	161	130	204	48.4	110	116
Magnesium	4100	4030	3750	3790	3640	3760	3320	2780	3810	3570	3630	4470
Nitrogen-Ammonia	4020	3620	3240	3820	2940	3540	1880	3500	367	3800	500	5620
Nitrogen-Nitrate	30.9	20.3	38	126	38	27	47.2	35	1.06	12.7	13.7	12.1
Potassium	636	560	689	620	636	611	622	489	659	512	668	774
Sodium	4050	4600	4410	4770	4590	4380	3980	3130	4800	4690	4810	5290
Sulfate	60600	74000	72200	63700	64200	58300	83700	62200	57800	83900	58300	63300
pH (s.u.)	3.18	3.24	3.11	3.39	3.18	3	3.02	3.1	3.1	2.99	3.08	2.89
TDS	84300	74600	84100	79900	80200	83800	92200	87000	88200	93100	85900	99900
Conductivity (umhos/cm)	NA	NA	88700	60200	51400	52900	51100	54100	58800	44500	52600	58200
Metals (ug/l)												
Arsenic	26900	19300	14200	23500	17800	19400	21000	19800	13300	16900	21100	19600
Beryllium	298	245	271	267	231	251	262	197	275	259	261	241
Cadmium	5500	5840	5510	6370	5580	5290	5780	6480	6260	6610	6790	6380
Chromium	2750	2450	2230	2510	2380	2350	2290	1630	1840	1630	2290	2100
Cobalt	46500	43800	38700	48200	42500	48700	44900	46700	46000	46100	50600	46900
Copper	106000	154000	170000	148000	132000	138000	137000	126000	143000	156000	148000	136000
Iron	2770000	3310000	3230000	2720000	2960000	2850000	2810000	2180000	3000000	3410000	3430000	3030000
Lead	566	528	403	586	501	619	515	638	268	484	593	589
Manganese	117000	130000	160000	144000	123000	141000	122000	98000	136000	149000	151000	137000
Mercury	ND	ND	<0.5	<4	11.1	1.9	<0.5	<0.0020	<0.5	<2.00	<2.00	<2.00
Molybdenum	4080	3190	2240	4630	3510	3610	3650	4250	2010	3360	4060	3340
Nickel	123000	122000	108000	126000	111000	125000	108000	127000	120000	134000	133000	121000
Selenium	422	647	726	844	714	711	678	1020	631	615	683	635
Silver	ND	ND	<10	<10	<10	<10	<10	<100	<20	<100	<100	<100
Thallium	361	703	368	470	371	338	278	402	233	212	373	374
Tin	ND	ND	<100	<100	<100	<100	<100	<17000	<100	<17000	<17000	<17000
Uranium	23000	29200	29900	30600	27100	33400	22800	26400	27200	27300	28600	25200
Vanadium	409000	463000	536000	469000	454000	475000	452000	497000	513000	497000	534000	516000
Zinc	767000	750000	582000	652000	574000	639000	631000	405000	702000	764000	760000	728000

Cell 2 Slimes Drain
Chemical and Radiological Characteristics

Constituents	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Gross Alpha	1290	1570	1580	1000	1230	1370 (2400)*	2270	6890	7210	5660	4570	7520
VOCS (ug/L)												
Acetone	550	410	570	460	690	600	384	<700	599	473	551	551
Benzene	ND	ND	<1	<1	<1	<1	<1	<5.0	<1	<1	<1	<1
Carbon tetrachloride	ND	ND	<1	<1	<1	<1	<1	<5.0	<1	<1	<1	<1
Chloroform	20	17	16	15	20	16	21.4	<70.0	18.6	15	17.1	17.1
Chloromethane	1.8	ND	2.2	2.3	2	3	2.04	<30.0	<1	<1	1.46	1.46
MEK	65	ND	100	83	130	100	95.5	<4000	102	80.3	58.4	58.4
Methylene Chloride	ND	ND	<1	<1	<1	<1	<1	<5.0	<1	<1	1.02	1.02
Naphthalene	14	7.5	16	17	13	12	16.8	<100	16.2	11.9	10.1	10.1
Tetrahydrofuran	15	NA	<100	<10	<10	3.2	3.98	<46.0	2.16	<1	2.88	2.88
Toluene	1.7	ND	2.6	2.6	3	2	3.23	<1000	3.74	2.94	3.20	3.20
Xylenes	1.5	ND	<1	2.2	<1	2	5.97	<10000	<1	<1	<1	<1
SVOCS (ug/L)												
1,2,4-Trichlorobenzene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
1,2-Dichlorobenzene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
1,3-Dichlorobenzene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
1,4-Dichlorobenzene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
1-Methylnaphthalene	NA	NA	<11	<10	<10	<10	<10	11	<10	<10	<10	<9.03
2,4,5-Trichlorophenol	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
2,4,6-Trichlorophenol	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
2,4-Dichlorophenol	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
2,4-Dimethylphenol	NA	NA	<51	<20	<20	<10	<10	<10	<10	<10	<10	<9.03
2,4-Dinitrophenol	NA	NA	<11	<10	<10	<20	<20	<20	<20	<10	<10	<9.03
2,4-Dinitrotoluene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
2,6-Dinitrotoluene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
2-Chloronaphthalene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
2-Chlorophenol	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
2-Methylnaphthalene	NA	NA	<11	<10	<10	<10	<10	11	<10	11.1	<10	<9.03
2-Methylphenol	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
2-Nitrophenol	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
3&4-Methylphenol	NA	NA	<21	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
3,3´-Dichlorobenzidine	NA	NA	<51	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
4,6-Dinitro-2-methylphenol	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
4-Bromophenyl phenyl ether	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03

Cell 2 Slimes Drain
Chemical and Radiological Characteristics

Constituents	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
4-Chloro-3-methylphenol	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
4-Chlorophenyl phenyl ether	NA	NA	<51	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
4-Nitrophenol	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Acenaphthene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Acenaphthylene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Anthracene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Azobenzene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Benz(a)anthracene	NA	NA	<21	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Benzidine	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Benzo(a)pyrene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Benzo(b)fluoranthene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Benzo(g,h,i)perylene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Benzo(k)fluoranthene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Bis(2-chloroethoxy)methane	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Bis(2-chloroethyl) ether	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Bis(2-chloroisopropyl) ether	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Bis(2-ethylhexyl) phthalate	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Butyl benzyl phthalate	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Chrysene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Dibenz(a,h)anthracene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Diethyl phthalate	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Dimethyl phthalate	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Di-n-butyl phthalate	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Di-n-octyl phthalate	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Fluoranthene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Fluorene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Hexachlorobenzene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Hexachlorobutadiene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Hexachlorocyclopentadiene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Hexachloroethane	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Indeno(1,2,3-cd)pyrene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Isophorone	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Naphthalene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Nitrobenzene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
N-Nitrosodimethylamine	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
N-Nitrosodi-n-propylamine	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
N-Nitrosodiphenylamine	NA	NA	<51	<10	<10	<10	<10	<10	<10	<10	<10	<9.03

Cell 2 Slimes Drain
Chemical and Radiological Characteristics

Constituents	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Pentachlorophenol	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Phenanthrene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Phenol	NA	NA	<11	10.7	<10	<10	<10	<10	<10	<10	<10	<9.03
Pyrene	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03
Pyridine	NA	NA	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.03

* Sample was reanalyzed due to comparability with the duplicate sample. The reanalysis data are in (parenthesis).

Cell 2 LDS
Chemical and Radiological Characteristics

Constituent	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Major Ions (mg/l)										
Carbonate	<1	<1	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Bicarbonate	168	324								
Calcium	711	615								
Chloride	1750	1360								
Fluoride	0.4	0.4								
Magnesium	596	454								
Nitrogen-Ammonia	32.6	0.7								
Nitrogen-Nitrate	2.8	2.2								
Potassium	22	13								
Sodium	412	318								
Sulfate	2700	1780								
pH (s.u.)	6.6	7.36								
TDS	6750	5310								
Conductivity (umhos/cm)	11000	6500								
Metals (ug/l)										
Arsenic	<5	<5	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Beryllium	<0.50	<0.50								
Cadmium	33.4	1.1								
Chromium	<25	<25								
Cobalt	314	<10								
Copper	59	12								
Iron	208	37								
Lead	<1.0	<1.0								
Manganese	1810	395								
Mercury	<0.50	0.52								
Molybdenum	21	13								
Nickel	948	<20								
Selenium	7.9	9.4								
Silver	<10	<10								
Thallium	0.92	<0.50								
Tin	<100	<100								
Uranium	83.8	79.6								
Vanadium	22	<15								
Zinc	4220	78								
Radiologics (pCi/l)										
Gross Alpha	13.5	7.3	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled

Cell 2 LDS
Chemical and Radiological Characteristics

Constituent	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
VOCS (ug/L)										
Acetone	<20	<20	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Benzene	<1	<1								
Carbon tetrachloride	<1	<1								
Chloroform	<1	<1								
Chloromethane	<1	<1								
MEK	<20	<20								
Methylene Chloride	<1	<1								
Naphthalene	<1	<1								
Tetrahydrofuran	<100	6.13								
Toluene	<1	<1								
Xylenes	<1	<1								
SVOCS (ug/L)										
1,2,4-Trichlorobenzene	NA	<10	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
1,2-Dichlorobenzene	NA	<10								
1,3-Dichlorobenzene	NA	<10								
1,4-Dichlorobenzene	NA	<10								
1-Methylnaphthalene	NA	<10								
2,4,5-Trichlorophenol	NA	<10								
2,4,6-Trichlorophenol	NA	<10								
2,4-Dichlorophenol	NA	<10								
2,4-Dimethylphenol	NA	<10								
2,4-Dinitrophenol	NA	<20								
2,4-Dinitrotoluene	NA	<10								
2,6-Dinitrotoluene	NA	<10								
2-Chloronaphthalene	NA	<10								
2-Chlorophenol	NA	<10								
2-Methylnaphthalene	NA	<10								
2-Methylphenol	NA	<10								
2-Nitrophenol	NA	<10								
3&4-Methylphenol	NA	<10								
3,3´-Dichlorobenzidine	NA	<10								
4,6-Dinitro-2-methylphenol	NA	<10								
4-Bromophenyl phenyl ether	NA	<10								
4-Chloro-3-methylphenol	NA	<10								
4-Chlorophenyl phenyl ether	NA	<10								
4-Nitrophenol	NA	<10								

Cell 2 LDS
Chemical and Radiological Characteristics

Constituent	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Acenaphthene	NA	<10	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Acenaphthylene	NA	<10								
Anthracene	NA	<10								
Azobenzene	NA	<10								
Benz(a)anthracene	NA	<10								
Benzidine	NA	<10								
Benzo(a)pyrene	NA	<10								
Benzo(b)fluoranthene	NA	<10								
Benzo(g,h,i)perylene	NA	<10								
Benzo(k)fluoranthene	NA	<10								
Bis(2-chloroethoxy)methane	NA	<10								
Bis(2-chloroethyl) ether	NA	<10								
Bis(2-chloroisopropyl) ether	NA	<10								
Bis(2-ethylhexyl) phthalate	NA	<10								
Butyl benzyl phthalate	NA	<10								
Chrysene	NA	<10								
Dibenz(a,h)anthracene	NA	<10								
Diethyl phthalate	NA	<10								
Dimethyl phthalate	NA	<10								
Di-n-butyl phthalate	NA	<10								
Di-n-octyl phthalate	NA	<10								
Fluoranthene	NA	<10								
Fluorene	NA	<10								
Hexachlorobenzene	NA	<10								
Hexachlorobutadiene	NA	<10								
Hexachlorocyclopentadiene	NA	<10								
Hexachloroethane	NA	<10								
Indeno(1,2,3-cd)pyrene	NA	<10								
Isophorone	NA	<10								
Naphthalene	NA	<10								
Nitrobenzene	NA	<10								
N-Nitrosodimethylamine	NA	<10								
N-Nitrosodi-n-propylamine	NA	<10								
N-Nitrosodiphenylamine	NA	<10								
Pentachlorophenol	NA	<10								
Phenanthrene	NA	<10								

Cell 2 LDS
Chemical and Radiological Characteristics

Constituent	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Phenol	NA	<10	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
Pyrene	NA	<10								
Pyridine	NA	<10								

Cell 3
Chemical and Radiological Characteristics

Constituent	1987	2003 (Avg)	2007 (Avg)	2008	2009	2010	2011	2012	2013	2013 Re-Sample	2014	2015	2016	2017	2018	2018 Re-Sample
Major Ions (mg/l)																
Carbonate	NA	<1	ND	ND	<1	<1	<1	<1	<1	NS	<1	<1	<1.00	<1.00	<1.00	NS
Bicarbonate	<5	NA	ND	ND	<1	<1	<1	<1	<1	NS	<1	<1	<1.00	<1.00	<1.00	NS
Calcium	300	418	887	478	628	560	200	591	586	NS	294	713	148	526	498	NS
Chloride	NA	2460	15965	15400	17200	3470	40400	8880	38400	NS	7200	22800	115000	2720	55200	NS
Fluoride	<100	667	42.8	1.4	0.6	54.8	64.1	2300	12400	NS	1330	5410	46500	189	7400	NS
Magnesium	5400	3386	15767	13100	17100	2500	22100	5680	15400	NS	1910	12700	31000	84400	22000	NS
Nitrogen-Ammonia	13900	1302	13867	9010	21600	2650	6470	6840	100	NS	3030	8.91	6270	88.5	9490	NS
Nitrogen-Nitrate	<100	20	102	44	142	26	261	64	277	NS	59.5	26.6	582	107	710	NS
Potassium	NA	254	6657	4760	3820	782	2590	1190	2110	NS	386	1620	3120	133	1480	NS
Sodium	5900	3198	25583	22900	28600	5620	47900	6660	34400	NS	3630	23800	59800	2120	46900	NS
Sulfate	180000	33400	173667	167000	214000	40400	197000	80000	440000	NS	37000	158000	834000	9970	208000	NS
pH (s.u.)	0.82	2.28	1.6	1.79	1.4	2.18	1.27	2.4	1.05	NS	2.2	1.72	<1.00	3.63	1.32	NS
TDS	189000	51633	228500	193000	243000	56200	296000	120000	410000	NS	70100	238000	887000	17300	327000	NS
Conductivity (umhos/cm)	NA	NA	NA	NA	304000	59800	86400	80300	84300	NS	56200	121000	13600	20300	104000	NS
Metals (ug/l)																
Arsenic	163000	32867	256500	489000	ND	52900	263000	4340	66000	NS	2920	21500	194000	870	20900	NS
Beryllium	540	430	913	840	905	206	1570	678	2570	NS	222	1520	12500	590	2950	NS
Cadmium	2600	1958	9260	15400	ND	1960	12200	3460	24000	NS	2550	14800	41000	1190	52100	NS
Chromium	12000	3742	14883	12800	ND	3360	22800	10900	30600	NS	2380	15300	76200	<100	25100	NS
Cobalt	48000	NA	82783	57000	ND	13000	76000	76100	99700	NS	20800	72500	74200	4440	120000	NS
Copper	360000	87333	505000	345000	ND	89000	768000	379000	954000	NS	139000	511000	3000000	9720	515000	NS
Iron	2100000	1278333	4874500	4400000	5970000	1460000	10200000	3400000	9700000	NS	688000	4570000	15400000	262000	13300000	NS
Lead	<20000	2507	9647	16900	ND	17200	16700	1860	14400	NS	1900	9090	4030	15.8	20500	NS
Manganese	82000	144000	496833	313000	ND	101000	587000	3110000	2470000	NS	214000	1270000	5690000	102000	4070000	NS
Mercury	ND	NA	ND	16	ND	<4	30.9	9.6	21.6	NS	2.4	7.01	873	<2.00	430	NS
Molybdenum	52000	12250	122167	209000	14	21300	96200	790	56100	NS	2930	12500	133000	70.1	3740	NS
Nickel	170000	20917	131833	241000	ND	23800	75800	150000	122000	NS	44900	121000	29200	7220	113000	NS
Selenium	<2000	910	5856	10200	ND	3080	6900	2460	7060	NS	1370	4330	3170	306	3680	NS
Silver	<2500	NA	305	1010	ND	101	792	1850	3380	NS	329	1790	6780	<100	3770	NS
Thallium	4700	NA	446	1200	ND	190	518	1080	694	NS	290	602	2160	21.3	3760	NS
Tin	NA	NA	1090	1070	ND	155	325	<100	<100	NS	<17000	<100	<17000	<17000	<17000	NS
Uranium	118000	67833	332333	636000	3690	180000	458000	835000	1200000	NS	134000	530000	5360000	9630	1110000	NS
Vanadium	210000	158333	935000	1130000	ND	692000	2370000	836000	3220000	NS	454000	1720000	10300000	5600	2420000	NS
Zinc	590000	NA	748833	515000	ND	134000	726000	652000	1430000	NS	155000	899000	7810000	68100	2100000	NS

Cell 3
Chemical and Radiological Characteristics

Constituent	1987	2003 (Avg)	2007 (Avg)	2008	2009	2010	2011	2012	2013	2013 Re-Sample	2014	2015	2016	2017	2018	2018 Re-Sample
Radiologics (pCi/l)																
Gross Alpha	NA	1015831	16533	21700	17000	4030	11100	1530	81900	NS	19700	94900 (8/4/2015) 8780 (5/28/2015)	86000	292	19700	NS
VOCS (ug/L)																
Acetone	28	NA	80	100	67	37	330	64	302	159	<700	82.8	<200	48.4	135	NS
Benzene	<5	NA	ND	ND	<1	<1	<1	<1	<5	<1	<5.0	<1	<1	<1	<1	NS
Carbon tetrachloride	<5	NA	ND	ND	<1	<1	<1	<1	<5	<1	<5.0	<1	<1	<1	<1	NS
Chloroform	6	NA	ND	11	4.2	2.6	31	2	56.3	21	<70.0	1.75	13.2	<1	5.02	NS
Chloromethane	NA	NA	ND	ND	1.4	1.8	3.5	1	<5	2.58	<30.0	1.03	19.8	<1	5.36	NS
MEK	NA	NA	ND	ND	<1	<1	67	<20	<100	24.5	<4000	<20	<20	<20	<20	NS
Methylene Chloride	10	NA	ND	ND	<1	<1	7.4	<1	6.95	<1	<5.0	<1	<1	<1	10.4	NS
Naphthalene	<10000	NA	ND	<10	<1	2.1	1.2	<1	<5	<1	<100	<1	<1	<1	<1	NS
Tetrahydrofuran	NA	NA	150	<20	<100	<10	<10	<1	<5	<1	<46.0	<1	<1	<1	3.01	NS
Toluene	<5	NA	ND	ND	<1	<1	<1	<1	<5	<1	<1000	<1	<1	<1	<1	NS
Xylenes	<5	NA	ND	ND	<1	<1	<1	<1	<5	<1	<10000	<1	<1	<1	<1	NS
SVOCS (ug/L)																
1,2,4-Trichlorobenzene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
1,2-Dichlorobenzene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
1,3-Dichlorobenzene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
1,4-Dichlorobenzene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
1-Methylnaphthalene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
2,4,5-Trichlorophenol	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
2,4,6-Trichlorophenol	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
2,4-Dichlorophenol	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
2,4-Dimethylphenol	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
2,4-Dinitrophenol	NA	NA	NA	NA	<53	<20	<20	<20	<21.1	<20	<20	<20	<10	<10	<1,490	<7.78
2,4-Dinitrotoluene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
2,6-Dinitrotoluene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
2-Chloronaphthalene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
2-Chlorophenol	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
2-Methylnaphthalene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
2-Methylphenol	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
2-Nitrophenol	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
3&4-Methylphenol	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78

Cell 3
Chemical and Radiological Characteristics

Constituent	1987	2003 (Avg)	2007 (Avg)	2008	2009	2010	2011	2012	2013	2013 Re-Sample	2014	2015	2016	2017	2018	2018 Re-Sample
3,3´-Dichlorobenzidine	NA	NA	NA	NA	<21	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
4,6-Dinitro-2-methylphenol	NA	NA	NA	NA	<53	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
4-Bromophenyl phenyl ether	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
4-Chloro-3-methylphenol	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
4-Chlorophenyl phenyl ether	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
4-Nitrophenol	NA	NA	NA	NA	<53	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Acenaphthene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Acenaphthylene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Anthracene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Azobenzene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Benz(a)anthracene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Benzidine	NA	NA	NA	NA	<21	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Benzo(a)pyrene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Benzo(b)fluoranthene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Benzo(g,h,i)perylene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Benzo(k)fluoranthene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Bis(2-chloroethoxy)methane	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Bis(2-chloroethyl) ether	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Bis(2-chloroisopropyl) ether	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Bis(2-ethylhexyl) phthalate	NA	NA	NA	NA	<11	10.6	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Butyl benzyl phthalate	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Chrysene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Dibenz(a,h)anthracene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Diethyl phthalate	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Dimethyl phthalate	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Di-n-butyl phthalate	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Di-n-octyl phthalate	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Fluoranthene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Fluorene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Hexachlorobenzene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Hexachlorobutadiene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Hexachlorocyclopentadiene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Hexachloroethane	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Isophorone	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Naphthalene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78

Cell 3
Chemical and Radiological Characteristics

Constituent	1987	2003 (Avg)	2007 (Avg)	2008	2009	2010	2011	2012	2013	2013 Re-Sample	2014	2015	2016	2017	2018	2018 Re-Sample
Nitrobenzene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
N-Nitrosodimethylamine	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
N-Nitrosodi-n-propylamine	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
N-Nitrosodiphenylamine	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Pentachlorophenol	NA	NA	NA	NA	<53	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Phenanthrene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Phenol	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Pyrene	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78
Pyridine	NA	NA	NA	NA	<11	<10	<10	<10	<10.5	<10	<10	<10	<10	<10	<1,490	<7.78

[1] Historic values reported for Gross Alpha from 1987 and 2003 are total gross alpha reported in pCi/L. All other gross alpha data are reported as Gross Alpha minus Rn & U.

Cell 4A

Chemical and Radiological Characteristics

Constituent	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Major Ions (mg/l)										
Carbonate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Calcium	627	598	558	591	668	445	604	632	607	707
Chloride	4650	7350	5870	4980	4530	5900	6410	7040	8060	10100
Fluoride	0.3	21.6	30.6	43	1130	1290	1660	2030	1420	2000
Magnesium	3250	4940	4720	2230	3660	2990	3910	3550	4360	7030
Nitrogen-Ammonia	3140	5230	4930	1540	1340	2730	11	4770	924	9060
Nitrogen-Nitrate	28	52	44	27	38.2	39.5	19.9	41.9	53.4	73.4
Potassium	980	1440	1450	558	773	724	1020	915	1500	2020
Sodium	5980	11300	11400	7130	6860	7190	9760	9580	12000	17600
Sulfate	67600	87100	267000	64900	83300	64900	77200	126000	77800	116000
pH (s.u.)	1.4	1.99	1.73	1.2	1.47	1.7	1.51	1.59	1.53	1.25
TDS	81400	107000	108000	76000	90000	97000	104000	124000	120000	147000
Conductivity (umhos/cm)	131000	101000	82100	78100	66300	73000	89600	81300	89800	115000
Metals (ug/l)										
Arsenic	626000	109000	86600	60500	73700	70000	82600	94400	104000	125000
Beryllium	296	215	323	167	247	190	281	320	440	538
Cadmium	1920	3670	2190	844	1450	1780	2090	2850	3360	3850
Chromium	3220	7500	5900	5990	5220	4620	5460	7920	8520	9350
Cobalt	9440	26500	22500	22900	22900	27500	26100	32800	37900	41000
Copper	99200	168000	181000	433000	540000	556000	477000	566000	578000	683000
Iron	2360000	2920000	3390000	3190000	2620000	2280000	3090000	3850000	4480000	5320000
Lead	5360	11800	11000	5270	11500	14800	11700	14000	15100	16400
Manganese	178000	209000	131000	112000	143000	120000	181000	225000	261000	307000
Mercury	1.19	<4	15.2	2.4	0.786	2.5	0.99	<2	2.30	2.52
Molybdenum	24300	43800	24200	58200	25500	40600	35400	43900	40800	59100
Nickel	17100	40900	43500	41300	43300	54100	48700	61300	66800	71900
Selenium	4620	5810	4460	1310	2080	2000	2400	2820	4450	5870
Silver	78	193	216	127	144	197	186	305	379	521
Thallium	162	350	410	250	256	376	436	568	169	727
Tin	257	378	319	169	118	<17000	142	<17000	<17000	<17000
Uranium	118000	217000	153000	91000	112000	159000	171000	214000	193000	244000
Vanadium	918000	1090000	730000	237000	461000	535000	577000	715000	972000	1080000
Zinc	142000	224000	286000	200000	183000	169000	237000	318000	344000	406000

Cell 4A

Chemical and Radiological Characteristics

Constituent	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Radiologics (pCi/l)										
Gross Alpha	8910	3400	8290	16300	15800	240000	176000 (8/4/2015) 37800 (5/28/2015)	292000	133000	516000
VOCS (ug/L)										
Acetone	60	55	100	25	28.4	<700	42.5	45.1	21.4	42.7
Benzene	<1	<1	<1	<1	<1	<5.0	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<5.0	<1	<1	<1	<1
Chloroform	4	8.5	10	<1	<1	<70.0	<1	<1	<1	1.91
Chloromethane	3.4	5.5	7.9	<1	<1	<30.0	<1	<1	1.35	1.76
MEK	<1	<1	<1	<1	<20	<4000	<20	<20	<20	<20
Methylene Chloride	<1	<1	<1	<20	<1	<5.0	<1	<1	<1	<1
Naphthalene	1.8	<1	<1	<1	<1	<100	<1	<1	<1	<1
Tetrahydrofuran	<100	<10	<10	1.36	<1	<46.0	<1	12.6	<1	<1
Toluene	<1	<1	<1	<1	<1	<1000	<1	<1	<1	<1
Xylenes	<1	<1	<1	<1	<1	<10000	<1	<1	<1	<1
SVOCS (ug/L)										
1,2,4-Trichlorobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
1,2-Dichlorobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
1,3-Dichlorobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
1,4-Dichlorobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
1-Methylnaphthalene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
2,4,5-Trichlorophenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
2,4,6-Trichlorophenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
2,4-Dichlorophenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
2,4-Dimethylphenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
2,4-Dinitrophenol	<53	<20	<20	<20	<20	<20	<20	<10	<10	<8.57
2,4-Dinitrotoluene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
2,6-Dinitrotoluene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
2-Chloronaphthalene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
2-Chlorophenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
2-Methylnaphthalene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
2-Methylphenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
2-Nitrophenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
3&4-Methylphenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
3,3´-Dichlorobenzidine	<21	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
4,6-Dinitro-2-methylphenol	<53	<10	<10	<10	<10	<10	<10	<10	<10	<8.57

Cell 4A

Chemical and Radiological Characteristics

Constituent	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
4-Bromophenyl phenyl ether	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
4-Chloro-3-methylphenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
4-Chlorophenyl phenyl ether	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
4-Nitrophenol	<53	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Acenaphthene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Acenaphthylene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Anthracene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Azobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Benz(a)anthracene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Benzidine	<21	<10	<10	<10	<10	<10,	<10	<10	<10	<8.57
Benzo(a)pyrene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Benzo(b)fluoranthene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Benzo(g,h,i)perylene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Benzo(k)fluoranthene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Bis(2-chloroethoxy)methane	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Bis(2-chloroethyl) ether	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Bis(2-chloroisopropyl) ether	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Bis(2-ethylhexyl) phthalate	<11	19.6	<10	<10	<10	<10	<10	<10	<10	<8.57
Butyl benzyl phthalate	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Chrysene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Dibenz(a,h)anthracene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Diethyl phthalate	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Dimethyl phthalate	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Di-n-butyl phthalate	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Di-n-octyl phthalate	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Fluoranthene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Fluorene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Hexachlorobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Hexachlorobutadiene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Hexachlorocyclopentadiene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Hexachloroethane	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Indeno(1,2,3-cd)pyrene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Isophorone	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Naphthalene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Nitrobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
N-Nitrosodimethylamine	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
N-Nitrosodi-n-propylamine	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57

Cell 4A

Chemical and Radiological Characteristics

Constituent	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
N-Nitrosodiphenylamine	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Pentachlorophenol	<53	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Phenanthrene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Phenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Pyrene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<8.57
Pyridine	<11	<10	<10	<10	<10	<10	<10	<10	<10	34.0

Cell 4A LDS

Chemical and Radiological Characteristics

Constituent	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Major Ions (mg/l)										
Carbonate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Calcium	558	474	470	453	429	336	510	446	542	516
Chloride	7570	4670	6040	2710	1910	4200	2860	5200	8610	4360
Fluoride	0.7	39.4	46	27	1970	1320	282	1150	1370	716
Magnesium	6390	3240	5100	2070	1710	2690	2730	3940	4630	3820
Nitrogen-Ammonia	4480	2290	3480	1320	1010	2920	13.4	5050	846	4580
Nitrogen-Nitrate	69	183	94	15	28.9	39	27.4	40.9	63.1	44.0
Potassium	1960	934	1500	503	305	415	245	675	1710	539
Sodium	12600	6700	11000	3500	2930	4190	3490	8050	11500	6780
Sulfate	92400	41700	77400	39600	31400	56000	50500	91300	89100	68600
pH (s.u.)	1.98	2.53	2.32	2.1	2.32	2.4	2.29	2.04	1.50	1.88
TDS	117000	56900	93800	55400	49700	81900	65200	95400	142000	75300
Conductivity (umhos/cm)	150000	49000	66600	39600	31300	53600	50200	62200	97900	63400
Metals (ug/l)										
Arsenic	133000	54000	74700	44100	35700	51200	10400	43500	117000	42400
Beryllium	536	295	367	180	188	185	199	289	479	298
Cadmium	4010	2650	3160	921	1170	4720	4270	4500	4080	3740
Chromium	9140	3890	5940	3930	2630	2780	1760	4250	9410	3930
Cobalt	37300	15200	21700	22300	44300	41200	33700	32100	42700	30600
Copper	222000	116000	150000	481000	754000	439000	160000	331000	650000	376000
Iron	3940000	1420000	2530000	2460000	1370000	1850000	1320000	2330000	5140000	2090000
Lead	5270	3400	4520	2300	165	991	46.8	797	15500	118
Manganese	389000	157000	207000	95200	86300	98600	96700	184000	296000	136000
Mercury	2.66	6.2	14.7	0.7	<0.5	<0.0020	<0.5	<2.00	<2.00	<2.00
Molybdenum	49200	23900	29300	10200	1200	3970	278	10700	49900	2350
Nickel	43900	23900	29600	35000	54600	99300	86300	72700	74700	70900
Selenium	5250	2820	3780	1260	1020	2170	649	1590	4940	1550
Silver	204	62	127	44	24.8	<100	25.6	144	312	<100
Thallium	252	194	290	332	171	522	218	439	550	281
Tin	504	180	119	<100	<100	<17000	<100	<17000	<17000	<17000
Uranium	284000	145000	168000	90200	75000	82200	25000	116000	247000	78600
Vanadium	1150000	518000	770000	240000	157000	510000	253000	449000	1090000	475000
Zinc	298000	152000	204000	181000	163000	306000	510000	502000	385000	446000

Cell 4A LDS

Chemical and Radiological Characteristics

Constituent	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Radiologics (pCi/l)										
Gross Alpha	7020	3230	7440	4730	6930	61800	17200 (8/4/2015) 1670 (5/28/2015)	98700	176000	51000
VOCS (ug/L)										
Acetone	240	130	120	55	57	<700	84.7	61.5	79.8	108
Benzene	<1	<1	<1	<1	<1	<5.0	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<1	<1	<5.0	<1	<1	<1	<1
Chloroform	23	52	26	42	110	95	129	84.5	21.6	33.8
Chloromethane	7.9	13	3.8	6	9.93	<30.0	5.35	<1.00	3.00	2.41
MEK	78	50	82	36	<20	<4000	<20	<20	<20	<20
Methylene Chloride	<1	<1	<1	<1	<1	<5.0	<1	<1	<1	1.05
Naphthalene	<1	1.5	<1	1	2.35	<100	<1	<1	<1	<1
Tetrahydrofuran	140	158	102	117	39.1	<46.0	18.5	<1	15.7	19.7
Toluene	<1	<1	<1	<1	<1	<1000	<1	<1	<1	<1
Xylenes	<1	<1	<1	<1	<1	<10000	<1	<1	<1	<1
SVOCS (ug/L)										
1,2,4-Trichlorobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
1,2-Dichlorobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
1,3-Dichlorobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
1,4-Dichlorobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
1-Methylnaphthalene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
2,4,5-Trichlorophenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
2,4,6-Trichlorophenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
2,4-Dichlorophenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
2,4-Dimethylphenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	11.1
2,4-Dinitrophenol	<54	<20	<20	<20	<20	<20	<20	<10	<10	<9.08
2,4-Dinitrotoluene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
2,6-Dinitrotoluene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
2-Chloronaphthalene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
2-Chlorophenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
2-Methylnaphthalene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
2-Methylphenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
2-Nitrophenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
3&4-Methylphenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
3,3´-Dichlorobenzidine	<22	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
4,6-Dinitro-2-methylphenol	<54	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
4-Bromophenyl phenyl ether	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
4-Chloro-3-methylphenol	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
4-Chlorophenyl phenyl ether	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
4-Nitrophenol	<54	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Acenaphthene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Acenaphthylene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08

Cell 4A LDS

Chemical and Radiological Characteristics

Constituent	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Anthracene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Azobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Benz(a)anthracene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Benzidine	<22	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Benzo(a)pyrene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Benzo(b)fluoranthene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Benzo(g,h,i)perylene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Benzo(k)fluoranthene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Bis(2-chloroethoxy)methane	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Bis(2-chloroethyl) ether	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Bis(2-chloroisopropyl) ether	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Bis(2-ethylhexyl) phthalate	<11	54.9	54.9	16.6	<10	<10	<10	<10	<10	<9.08
Butyl benzyl phthalate	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Chrysene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Dibenz(a,h)anthracene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Diethyl phthalate	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Dimethyl phthalate	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Di-n-butyl phthalate	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Di-n-octyl phthalate	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Fluoranthene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Fluorene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Hexachlorobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Hexachlorobutadiene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Hexachlorocyclopentadiene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Hexachloroethane	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Indeno(1,2,3-cd)pyrene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Isophorone	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Naphthalene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Nitrobenzene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
N-Nitrosodimethylamine	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
N-Nitrosodi-n-propylamine	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
N-Nitrosodiphenylamine	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Pentachlorophenol	<54	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Phenanthrene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Phenol	33	23.5	<10	<10	<10	<10	<10	<10	<10	<9.08
Pyrene	<11	<10	<10	<10	<10	<10	<10	<10	<10	<9.08
Pyridine	<11	<10	<10	<10	<10	<10	<10	<10	<10	12.9

Cell 4B

Chemical and Radiological Characteristics

Constituent	2011	2012	2013	2014	2015	2016	2017	2018
Major Ions (mg/l)								
Carbonate	<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate	<1	<1	<1	<1	<1	<1	<1	<1
Calcium	570	580	662	366	655	523	473	664
Chloride	8290	8170	4570	7300	8500	12000	6930	7860
Fluoride	26.7	23.3	1050	1150	1210	1780	1170	1410
Magnesium	3910	4500	3560	3310	5530	5780	3550	5790
Nitrogen-Ammonia	5220	5580	2060	5380	1.09	8690	724	7590
Nitrogen-Nitrate	39	42	51.4	47	15.2	64.5	31.3	42.2
Potassium	1370	1650	1110	989	1700	1710	1230	1660
Sodium	9050	11700	3150	7100	12800	14100	10600	15700
Sulfate	134000	119000	98100	91500	108000	285000	708000	98400
pH (s.u.)	1.87	1.5	1.65	1.6	1.35	1.26	1.41	1.24
TDS	98000	128000	108000	131000	149000	172000	103000	117000
Conductivity (umhos/cm)	76900	86900	72800	90100	115000	116000	93800	107000
Metals (ug/l)								
Arsenic	67400	80000	65400	70400	106000	139000	82700	97800
Beryllium	311	356	334	275	430	557	347	407
Cadmium	1990	2540	1990	2290	2980	4260	2340	2520
Chromium	6860	8280	6390	6940	7450	11900	7800	8630
Cobalt	17800	29300	21300	24600	33700	46700	30300	32900
Copper	193000	340000	340000	368000	499000	684000	457000	539000
Iron	2960000	3580000	2830000	2480000	4340000	6340000	3690000	4400000
Lead	9960	11600	9820	10900	13400	17900	12200	12500
Manganese	128000	148000	154000	129000	231000	325000	207000	242000
Mercury	13.7	2.6	1.49	<0.0020	1.72	<2.00	<2.00	<2.00
Molybdenum	21400	27600	26100	29000	39800	55400	22600	27400
Nickel	33900	50500	35100	42000	56400	79600	53000	57800
Selenium	4670	4470	3900	5010	5600	7300	3740	4510
Silver	137	169	137	142	195	307	<100	160
Thallium	237	368	243	258	408	559	17.5	33.7
Tin	196	215	163	<17000	211	<17000	<17000	<17000
Uranium	133000	171000	110000	133000	200000	278000	23100	28100
Vanadium	660000	783000	163000	666000	881000	868000	746000	828000
Zinc	191000	270000	184000	144000	313000	476000	267000	323000

Cell 4B

Chemical and Radiological Characteristics

Constituent	2011	2012	2013	2014	2015	2016	2017	2018
Radiologics (pCi/l)								
Gross Alpha	8590	13600	14600	148000	267000 (8/4/2015) 42500 (5/28/2015)	262000	132000	320000
VOCS (ug/L)								
Acetone	130	94	43.5	<700	56.2	86.4	38.6	56.8
Benzene	<1	<1	<1	<5.0	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	<1	<5.0	<1	<1	<1	<1
Chloroform	9.4	4	8.06	<70.0	2.34	3.07	2.39	2.17
Chloromethane	8.5	8	7.12	<30.0	3.62	6.01	1.26	1.72
MEK	<1	<1	<20	<4000	<20	<20	<20	27.4
Methylene Chloride	<1	<1	<1	<5.0	<1	<1	<1	<1
Naphthalene	<1	<1	<1	<100	<1	<1	<1	<1
Tetrahydrofuran	<10	11.1	<1	<46.0	<1	<1	<1	1.87
Toluene	<1	<1	<1	<1000	<1	<1	<1	<1
Xylenes	<1	<1	<1	<10000	<1	<1	<1	<1
SVOCS (ug/L)								
1,2,4-Trichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<8.72
1,2-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<8.72
1,3-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<8.72
1,4-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<8.72
1-Methylnaphthalene	<10	<10	<10	<10	<10	<10	<10	<8.72
2,4,5-Trichlorophenol	<10	<10	<10	<10	<10	<10	<10	<8.72
2,4,6-Trichlorophenol	<10	<10	<10	<10	<10	<10	<10	<8.72
2,4-Dichlorophenol	<10	<10	<10	<10	<10	<10	<10	<8.72
2,4-Dimethylphenol	<10	<10	<10	<10	<10	<10	<10	<8.72
2,4-Dinitrophenol	<20	<20	<20	<20	<20	<10	<10	<8.72
2,4-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<8.72
2,6-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<8.72
2-Chloronaphthalene	<10	<10	<10	<10	<10	<10	<10	<8.72
2-Chlorophenol	<10	<10	<10	<10	<10	<10	<10	<8.72
2-Methylnaphthalene	<10	<10	<10	<10	<10	<10	<10	<8.72
2-Methylphenol	<10	<10	<10	<10	<10	<10	<10	<8.72
2-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<8.72
3&4-Methylphenol	<10	<10	<10	<10	<10	<10	<10	<8.72
3,3´-Dichlorobenzidine	<10	<10	<10	<10	<10	<10	<10	<8.72
4,6-Dinitro-2-methylphenol	<10	<10	<10	<10	<10	<10	<10	<8.72
4-Bromophenyl phenyl ether	<10	<10	<10	<10	<10	<10	<10	<8.72
4-Chloro-3-methylphenol	<10	<10	<10	<10	<10	<10	<10	<8.72
4-Chlorophenyl phenyl ether	<10	<10	<10	<10	<10	<10	<10	<8.72
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<8.72
Acenaphthene	<10	<10	<10	<10	<10	<10	<10	<8.72

Cell 4B

Chemical and Radiological Characteristics

Constituent	2011	2012	2013	2014	2015	2016	2017	2018
Acenaphthylene	<10	<10	<10	<10	<10	<10	<10	<8.72
Anthracene	<10	<10	<10	<10	<10	<10	<10	<8.72
Azobenzene	<10	<10	<10	<10	<10	<10	<10	<8.72
Benz(a)anthracene	<10	<10	<10	<10	<10	<10	<10	<8.72
Benzidine	<10	<10	<10	26	<10	<10	<10	<8.72
Benzo(a)pyrene	<10	<10	<10	<10	<10	<10	<10	<8.72
Benzo(b)fluoranthene	<10	<10	<10	<10	<10	<10	<10	<8.72
Benzo(g,h,i)perylene	<10	<10	<10	<10	<10	<10	<10	<8.72
Benzo(k)fluoranthene	<10	<10	<10	<10	<10	<10	<10	<8.72
Bis(2-chloroethoxy)methane	<10	<10	<10	<10	<10	<10	<10	<8.72
Bis(2-chloroethyl) ether	<10	<10	<10	<10	<10	<10	<10	<8.72
Bis(2-chloroisopropyl) ether	<10	<10	<10	<10	<10	<10	<10	<8.72
Bis(2-ethylhexyl) phthalate	410	19	<10	<10	<10	<10	<10	<8.72
Butyl benzyl phthalate	<10	<10	<10	<10	<10	<10	<10	<8.72
Chrysene	<10	<10	<10	<10	<10	<10	<10	<8.72
Dibenz(a,h)anthracene	<10	<10	<10	<10	<10	<10	<10	<8.72
Diethyl phthalate	<10	<10	<10	<10	<10	<10	<10	<8.72
Dimethyl phthalate	<10	<10	<10	<10	<10	<10	<10	<8.72
Di-n-butyl phthalate	<10	<10	<10	<10	<10	<10	<10	<8.72
Di-n-octyl phthalate	<10	<10	<10	<10	<10	<10	<10	<8.72
Fluoranthene	<10	<10	<10	<10	<10	<10	<10	<8.72
Fluorene	<10	<10	<10	<10	<10	<10	<10	<8.72
Hexachlorobenzene	<10	<10	<10	<10	<10	<10	<10	<8.72
Hexachlorobutadiene	<10	<10	<10	<10	<10	<10	<10	<8.72
Hexachlorocyclopentadiene	<10	<10	<10	<10	<10	<10	<10	<8.72
Hexachloroethane	<10	<10	<10	<10	<10	<10	<10	<8.72
Indeno(1,2,3-cd)pyrene	<10	<10	<10	<10	<10	<10	<10	<8.72
Isophorone	<10	<10	<10	<10	<10	<10	<10	<8.72
Naphthalene	<10	<10	<10	<10	<10	<10	<10	<8.72
Nitrobenzene	<10	<10	<10	<10	<10	<10	<10	<8.72
N-Nitrosodimethylamine	<10	<10	<10	<10	<10	<10	<10	<8.72
N-Nitrosodi-n-propylamine	<10	<10	<10	<10	<10	<10	<10	<8.72
N-Nitrosodiphenylamine	<10	<10	<10	<10	<10	<10	<10	<8.72
Pentachlorophenol	<10	<10	<10	<10	<10	<10	<10	<8.72
Phenanthrene	<10	<10	<10	<10	<10	<10	<10	<8.72
Phenol	<10	<10	<10	<10	<10	<10	<10	<8.72
Pyrene	<10	<10	<10	<10	<10	<10	<10	<8.72
Pyridine	<10	<10	<10	15	<10	<10	<10	31.7

Cell 4B LDS

Chemical and Radiological Characteristics

Constituent	2011	2012	2013	2014	2015	2016	2017	2018
Major Ions (mg/l)								
Carbonate	<1	<1	dry	<1	<1	<1	<1	<1
Bicarbonate	<1	<1	dry	<1	<1	<1	<1	<1
Calcium	486	456	dry	308	538	547	516	592
Chloride	3630	6850	dry	6900	7960	8510	10400	8060
Fluoride	28.4	22	dry	970	1150	1290	1050	1480
Magnesium	3230	3360	dry	3400	5190	4780	5370	5580
Nitrogen-Ammonia	4260	4090	dry	5240	2.43	7540	739	7510
Nitrogen-Nitrate	30	31	dry	43	16.6	49.6	63.9	47.4
Potassium	1130	1060	dry	952	1560	1360	2130	1620
Sodium	8240	8080	dry	6920	11900	10800	13200	14500
Sulfate	59900	99100	dry	82300	104000	163000	117000	100000
pH (s.u.)	2.23	2.4	dry	2.2	1.51	1.88	1.44	1.35
TDS	85800	90200	dry	129000	131000	133000	168000	132000
Conductivity (umhos/cm)	63000	62400	dry	76300	106000	68400	105000	104000
Metals (ug/l)								
Arsenic	54200	41200	dry	67800	98400	98800	135000	94100
Beryllium	274	271	dry	282	411	430	559	416
Cadmium	1670	1740	dry	2290	2790	3250	4500	2610
Chromium	6250	5930	dry	6160	7320	9470	13700	8980
Cobalt	15600	19000	dry	23300	31100	33600	48900	31700
Copper	176000	181000	dry	308000	458000	475000	681000	497000
Iron	2450000	2120000	dry	2590000	4180000	4680000	5910000	4190000
Lead	6060	4420	dry	4120	10100	5860	14000	8770
Manganese	118000	162000	dry	144000	222000	262000	346000	239000
Mercury	12.3	3	dry	0.002	1.47	<2.00	<2.00	<2.00
Molybdenum	16700	15000	dry	24300	36300	35500	52900	25900
Nickel	30700	33700	dry	40100	52600	58100	84400	56100
Selenium	3710	2880	dry	4080	5080	5310	6860	4500
Silver	111	117	dry	119	179	224	266	156
Thallium	179	175	dry	336	354	414	427	245
Tin	332	<100	dry	<17000	198	<17000	<17000	<17000
Uranium	111000	132000	dry	143000	185000	192000	269000	54200
Vanadium	518000	428000	dry	671000	817000	847000	1260000	811000
Zinc	172000	182000	dry	144000	296000	315000	443000	303000

Cell 4B LDS

Chemical and Radiological Characteristics

Constituent	2011	2012	2013	2014	2015	2016	2017	2018
Radiologics (pCi/l)								
Gross Alpha	6000	7500	dry	181000	375000 (8/4/2015) 52500 (5/28/2015)	185000	165000	305000
VOCS (ug/L)								
Acetone	390	370	dry	<700	218	266	479	147
Benzene	<1	<1	dry	<5.0	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	dry	<5.0	<1	<1	<1	<1
Chloroform	20	19	dry	<70.0	5.03	9.97	9.13	4.74
Chloromethane	11	11	dry	<30.0	9.72	10.8	7.16	2.40
MEK	240	180	dry	<4000	71.8	53.6	89.4	34.6
Methylene Chloride	<1	<1	dry	<5.0	<1	<1	1.01	<1
Naphthalene	<1	<1	dry	<100	<1	<1	<1	<1
Tetrahydrofuran	198	322	dry	75.6	36.6	75.9	51.2	17.3
Toluene	<1	<1	dry	<1000	<1	<1	<1	<1
Xylenes	<1	<1	dry	<10000	<1	<1	<1	<1
SVOCS (ug/L)								
1,2,4-Trichlorobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
1,2-Dichlorobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
1,3-Dichlorobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
1,4-Dichlorobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
1-Methylnaphthalene	<10	<10	dry	<10	<10	<10	<10	<8.79
2,4,5-Trichlorophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
2,4,6-Trichlorophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
2,4-Dichlorophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
2,4-Dimethylphenol	<10	<10	dry	<10	<10	<10	<10	<8.79
2,4-Dinitrophenol	<20	<20	dry	<20	<20	<20	<10	<8.79
2,4-Dinitrotoluene	<10	<10	dry	<10	<10	<10	<10	<8.79
2,6-Dinitrotoluene	<10	<10	dry	<10	<10	<10	<10	<8.79
2-Chloronaphthalene	<10	<10	dry	<10	<10	<10	<10	<8.79
2-Chlorophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
2-Methylnaphthalene	<10	<10	dry	<10	<10	<10	<10	<8.79
2-Methylphenol	<10	<10	dry	<10	<10	<10	<10	<8.79
2-Nitrophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
3&4-Methylphenol	<10	<10	dry	<10	<10	<10	<10	<8.79
3,3´-Dichlorobenzidine	<10	<10	dry	<10	<10	<10	<10	<8.79

Cell 4B LDS

Chemical and Radiological Characteristics

Constituent	2011	2012	2013	2014	2015	2016	2017	2018
4,6-Dinitro-2-methylphenol	<10	<10	dry	<10	<10	<10	<10	<8.79
4-Bromophenyl phenyl ether	<10	<10	dry	<10	<10	<10	<10	<8.79
4-Chloro-3-methylphenol	<10	<10	dry	<10	<10	<10	<10	<8.79
4-Chlorophenyl phenyl ether	<10	<10	dry	<10	<10	<10	<10	<8.79
4-Nitrophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
Acenaphthene	<10	<10	dry	<10	<10	<10	<10	<8.79
Acenaphthylene	<10	<10	dry	<10	<10	<10	<10	<8.79
Anthracene	<10	<10	dry	<10	<10	<10	<10	<8.79
Azobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
Benz(a)anthracene	<10	<10	dry	<10	<10	<10	<10	<8.79
Benzidine	<10	<10	dry	<10	<10	<10	<10	<8.79
Benzo(a)pyrene	<10	<10	dry	<10	<10	<10	<10	<8.79
Benzo(b)fluoranthene	<10	<10	dry	<10	<10	<10	<10	<8.79
Benzo(g,h,i)perylene	<10	<10	dry	<10	<10	<10	<10	<8.79
Benzo(k)fluoranthene	<10	<10	dry	<10	<10	<10	<10	<8.79
Bis(2-chloroethoxy)methane	<10	<10	dry	<10	<10	<10	<10	<8.79
Bis(2-chloroethyl) ether	<10	<10	dry	<10	<10	<10	<10	<8.79
Bis(2-chloroisopropyl) ether	<10	<10	dry	<10	<10	<10	<10	<8.79
Bis(2-ethylhexyl) phthalate	191	191	dry	27	<10	132	145	65.9
Butyl benzyl phthalate	<10	<10	dry	<10	<10	<10	<10	<8.79
Chrysene	<10	<10	dry	<10	<10	<10	<10	<8.79
Dibenz(a,h)anthracene	<10	<10	dry	<10	<10	<10	<10	<8.79
Diethyl phthalate	<10	<10	dry	<10	<10	<10	<10	<8.79
Dimethyl phthalate	<10	<10	dry	<10	<10	<10	<10	<8.79
Di-n-butyl phthalate	<10	<10	dry	<10	<10	<10	<10	<8.79
Di-n-octyl phthalate	<10	<10	dry	<10	<10	<10	<10	<8.79
Fluoranthene	<10	<10	dry	<10	<10	<10	<10	<8.79
Fluorene	<10	<10	dry	<10	<10	<10	<10	<8.79
Hexachlorobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
Hexachlorobutadiene	<10	<10	dry	<10	<10	<10	<10	<8.79
Hexachlorocyclopentadiene	<10	<10	dry	<10	<10	<10	<10	<8.79
Hexachloroethane	<10	<10	dry	<10	<10	<10	<10	<8.79
Indeno(1,2,3-cd)pyrene	<10	<10	dry	<10	<10	<10	<10	<8.79
Isophorone	<10	<10	dry	<10	<10	<10	<10	<8.79
Naphthalene	<10	<10	dry	<10	<10	<10	<10	<8.79
Nitrobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
N-Nitrosodimethylamine	<10	<10	dry	<10	<10	<10	<10	<8.79

Cell 4B LDS

Chemical and Radiological Characteristics

Constituent	2011	2012	2013	2014	2015	2016	2017	2018
N-Nitrosodi-n-propylamine	<10	<10	dry	<10	<10	<10	<10	<8.79
N-Nitrosodiphenylamine	<10	<10	dry	<10	<10	<10	<10	<8.79
Pentachlorophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
Phenanthrene	<10	<10	dry	<10	<10	<10	<10	<8.79
Phenol	<10	<10	dry	<10	<10	<10	<10	<8.79
Pyrene	<10	<10	dry	<10	<10	<10	<10	<8.79
Pyridine	<10	<10	dry	<10	<10	<10	<10	29.1

Cell 4B LDS

Chemical and Radiological Characteristics

Constituent	2011	2012	2013	2014	2015	2016	2017	2018
Major Ions (mg/l)								
Carbonate	<1	<1	dry	<1	<1	<1	<1	<1
Bicarbonate	<1	<1	dry	<1	<1	<1	<1	<1
Calcium	486	456	dry	308	538	547	516	592
Chloride	3630	6850	dry	6900	7960	8510	10400	8060
Fluoride	28.4	22	dry	970	1150	1290	1050	1480
Magnesium	3230	3360	dry	3400	5190	4780	5370	5580
Nitrogen-Ammonia	4260	4090	dry	5240	2.43	7540	739	7510
Nitrogen-Nitrate	30	31	dry	43	16.6	49.6	63.9	47.4
Potassium	1130	1060	dry	952	1560	1360	2130	1620
Sodium	8240	8080	dry	6920	11900	10800	13200	14500
Sulfate	59900	99100	dry	82300	104000	163000	117000	100000
pH (s.u.)	2.23	2.4	dry	2.2	1.51	1.88	1.44	1.35
TDS	85800	90200	dry	129000	131000	133000	168000	132000
Conductivity (umhos/cm)	63000	62400	dry	76300	106000	68400	105000	104000
Metals (ug/l)								
Arsenic	54200	41200	dry	67800	98400	98800	135000	94100
Beryllium	274	271	dry	282	411	430	559	416
Cadmium	1670	1740	dry	2290	2790	3250	4500	2610
Chromium	6250	5930	dry	6160	7320	9470	13700	8980
Cobalt	15600	19000	dry	23300	31100	33600	48900	31700
Copper	176000	181000	dry	308000	458000	475000	681000	497000
Iron	2450000	2120000	dry	2590000	4180000	4680000	5910000	4190000
Lead	6060	4420	dry	4120	10100	5860	14000	8770
Manganese	118000	162000	dry	144000	222000	262000	346000	239000
Mercury	12.3	3	dry	0.002	1.47	<2.00	<2.00	<2.00
Molybdenum	16700	15000	dry	24300	36300	35500	52900	25900
Nickel	30700	33700	dry	40100	52600	58100	84400	56100
Selenium	3710	2880	dry	4080	5080	5310	6860	4500
Silver	111	117	dry	119	179	224	266	156
Thallium	179	175	dry	336	354	414	427	245
Tin	332	<100	dry	<17000	198	<17000	<17000	<17000
Uranium	111000	132000	dry	143000	185000	192000	269000	54200
Vanadium	518000	428000	dry	671000	817000	847000	1260000	811000
Zinc	172000	182000	dry	144000	296000	315000	443000	303000

Cell 4B LDS

Chemical and Radiological Characteristics

Constituent	2011	2012	2013	2014	2015	2016	2017	2018
Radiologics (pCi/l)								
Gross Alpha	6000	7500	dry	181000	375000 (8/4/2015) 52500 (5/28/2015)	185000	165000	305000
VOCS (ug/L)								
Acetone	390	370	dry	<700	218	266	479	147
Benzene	<1	<1	dry	<5.0	<1	<1	<1	<1
Carbon tetrachloride	<1	<1	dry	<5.0	<1	<1	<1	<1
Chloroform	20	19	dry	<70.0	5.03	9.97	9.13	4.74
Chloromethane	11	11	dry	<30.0	9.72	10.8	7.16	2.4
MEK	240	180	dry	<4000	71.8	53.6	89.4	34.6
Methylene Chloride	<1	<1	dry	<5.0	<1	<1	1.01	<1
Naphthalene	<1	<1	dry	<100	<1	<1	<1	<1
Tetrahydrofuran	198	322	dry	75.6	36.6	75.9	51.2	17.3
Toluene	<1	<1	dry	<1000	<1	<1	<1	<1
Xylenes	<1	<1	dry	<10000	<1	<1	<1	<1
SVOCS (ug/L)								
1,2,4-Trichlorobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
1,2-Dichlorobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
1,3-Dichlorobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
1,4-Dichlorobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
1-Methylnaphthalene	<10	<10	dry	<10	<10	<10	<10	<8.79
2,4,5-Trichlorophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
2,4,6-Trichlorophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
2,4-Dichlorophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
2,4-Dimethylphenol	<10	<10	dry	<10	<10	<10	<10	<8.79
2,4-Dinitrophenol	<20	<20	dry	<20	<20	<20	<10	<8.79
2,4-Dinitrotoluene	<10	<10	dry	<10	<10	<10	<10	<8.79
2,6-Dinitrotoluene	<10	<10	dry	<10	<10	<10	<10	<8.79
2-Chloronaphthalene	<10	<10	dry	<10	<10	<10	<10	<8.79
2-Chlorophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
2-Methylnaphthalene	<10	<10	dry	<10	<10	<10	<10	<8.79
2-Methylphenol	<10	<10	dry	<10	<10	<10	<10	<8.79
2-Nitrophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
3&4-Methylphenol	<10	<10	dry	<10	<10	<10	<10	<8.79
3,3´-Dichlorobenzidine	<10	<10	dry	<10	<10	<10	<10	<8.79

Cell 4B LDS

Chemical and Radiological Characteristics

Constituent	2011	2012	2013	2014	2015	2016	2017	2018
4,6-Dinitro-2-methylphenol	<10	<10	dry	<10	<10	<10	<10	<8.79
4-Bromophenyl phenyl ether	<10	<10	dry	<10	<10	<10	<10	<8.79
4-Chloro-3-methylphenol	<10	<10	dry	<10	<10	<10	<10	<8.79
4-Chlorophenyl phenyl ether	<10	<10	dry	<10	<10	<10	<10	<8.79
4-Nitrophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
Acenaphthene	<10	<10	dry	<10	<10	<10	<10	<8.79
Acenaphthylene	<10	<10	dry	<10	<10	<10	<10	<8.79
Anthracene	<10	<10	dry	<10	<10	<10	<10	<8.79
Azobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
Benz(a)anthracene	<10	<10	dry	<10	<10	<10	<10	<8.79
Benzidine	<10	<10	dry	<10	<10	<10	<10	<8.79
Benzo(a)pyrene	<10	<10	dry	<10	<10	<10	<10	<8.79
Benzo(b)fluoranthene	<10	<10	dry	<10	<10	<10	<10	<8.79
Benzo(g,h,i)perylene	<10	<10	dry	<10	<10	<10	<10	<8.79
Benzo(k)fluoranthene	<10	<10	dry	<10	<10	<10	<10	<8.79
Bis(2-chloroethoxy)methane	<10	<10	dry	<10	<10	<10	<10	<8.79
Bis(2-chloroethyl) ether	<10	<10	dry	<10	<10	<10	<10	<8.79
Bis(2-chloroisopropyl) ether	<10	<10	dry	<10	<10	<10	<10	<8.79
Bis(2-ethylhexyl) phthalate	191	191	dry	27	<10	132	145	65.9
Butyl benzyl phthalate	<10	<10	dry	<10	<10	<10	<10	<8.79
Chrysene	<10	<10	dry	<10	<10	<10	<10	<8.79
Dibenz(a,h)anthracene	<10	<10	dry	<10	<10	<10	<10	<8.79
Diethyl phthalate	<10	<10	dry	<10	<10	<10	<10	<8.79
Dimethyl phthalate	<10	<10	dry	<10	<10	<10	<10	<8.79
Di-n-butyl phthalate	<10	<10	dry	<10	<10	<10	<10	<8.79
Di-n-octyl phthalate	<10	<10	dry	<10	<10	<10	<10	<8.79
Fluoranthene	<10	<10	dry	<10	<10	<10	<10	<8.79
Fluorene	<10	<10	dry	<10	<10	<10	<10	<8.79
Hexachlorobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
Hexachlorobutadiene	<10	<10	dry	<10	<10	<10	<10	<8.79
Hexachlorocyclopentadiene	<10	<10	dry	<10	<10	<10	<10	<8.79
Hexachloroethane	<10	<10	dry	<10	<10	<10	<10	<8.79
Indeno(1,2,3-cd)pyrene	<10	<10	dry	<10	<10	<10	<10	<8.79
Isophorone	<10	<10	dry	<10	<10	<10	<10	<8.79
Naphthalene	<10	<10	dry	<10	<10	<10	<10	<8.79
Nitrobenzene	<10	<10	dry	<10	<10	<10	<10	<8.79
N-Nitrosodimethylamine	<10	<10	dry	<10	<10	<10	<10	<8.79

Cell 4B LDS

Chemical and Radiological Characteristics

Constituent	2011	2012	2013	2014	2015	2016	2017	2018
N-Nitrosodi-n-propylamine	<10	<10	dry	<10	<10	<10	<10	<8.79
N-Nitrosodiphenylamine	<10	<10	dry	<10	<10	<10	<10	<8.79
Pentachlorophenol	<10	<10	dry	<10	<10	<10	<10	<8.79
Phenanthrene	<10	<10	dry	<10	<10	<10	<10	<8.79
Phenol	<10	<10	dry	<10	<10	<10	<10	<8.79
Pyrene	<10	<10	dry	<10	<10	<10	<10	<8.79
Pyridine	<10	<10	dry	<10	<10	<10	<10	29.1

Cell 1

Additional Radiological Analyses

	Thorium-228 (pCi/L)	Thorium-230 (pCi/L)	Thorium-232 (pCi/L)	Radium-226 (pCi/L)	Uranium-233/234 (pCi/L)	Uranium-235/236 (pCi/L)	Uranium-238 (pCi/L)	Specific Gravity
8/4/15	1310	991000	6150	1110	141000	8920	140000	1.21
5/28/15	204	782000	6730	829	96700	5980	100000	1.13
8/30/16	ND	677000	4480	497	45200	2380	45800	1.15
8/29/17	2890	8100000	76000	391	353000	20400	344000	1.17
8/1/18	ND	856000	8410	443	97300	6970	97200	1.16

Cell 2 Slimes Drain
Additional Radiological Analyses

	Thorium-228 (pCi/L)	Thorium-230 (pCi/L)	Thorium-232 (pCi/L)	Radium-226 (pCi/L)	Uranium-233/234 (pCi/L)	Uranium-235/236 (pCi/L)	Uranium-238 (pCi/L)	Specific Gravity
8/4/15	ND	6680	ND	36.6	11300	858	10500	1.09
8/30/16	ND	5050	ND	52.4	11700	599	10700	1.03
8/29/17	ND	38500	ND	51.2	111000	ND	75600	1.07
8/1/2018	ND	7390	ND	36.2	14900	ND	12500	1.07
8/1/2018 (cell 65 - Duplicate of Cell 2 Slimes)	ND	6860	ND	29.8	10700	3440	12600	1.06

Cell 3
Additional Radiological Analyses

	Thorium-228 (pCi/L)	Thorium-230 (pCi/L)	Thorium-232 (pCi/L)	Radium-226 (pCi/L)	Uranium-233/234 (pCi/L)	Uranium-235/236 (pCi/L)	Uranium-238 (pCi/L)	Specific Gravity
8/4/15	ND	123000	1640	448	184000	10300	191000	1.21
5/28/15	798	131000	1290	202	557000	37900	591000	1.29
8/30/16	983	72500	1670	584	1960000	130000	2060000	1.62
8/30/16 (cell 65 - Duplicate of Cell 3)	ND	67000	788	640	2520000	130000	2490000	1.53
8/29/17	ND	ND	ND	101	37600	ND	32800	0.989
8/1/18	ND	28100	2310	79.8	398000	24000	468000	1.21

Cell 4A
Additional Radiological Analyses

	Thorium-228 (pCi/L)	Thorium-230 (pCi/L)	Thorium-232 (pCi/L)	Radium-226 (pCi/L)	Uranium-233/234 (pCi/L)	Uranium-235/236 (pCi/L)	Uranium-238 (pCi/L)	Specific Gravity
8/4/15	ND	374000	3490	663	57500	3720	64400	1.11
5/28/15	327	405000	3440	ND	61200	4030	62700	1.07
5/28/2015 (Cell 65 - Duplicate of Cell 4A)	265	315000	3790	772	58600	3020	58300	NS
8/30/16	ND	466000	2870	1050	61100	3320	70900	1.10
8/29/17	ND	4450000	47700	759	637000	30600	692000	1.09
8/29/17 (Cell 65 - Duplicate of Cell 4A)	ND	4080000	11000	822	602000	44900	616000	1.12
8/1/18	1970	539000	8230	59.2	88700	9900	86300	1.10

Cell 4A LDS
Additional Radiological Analyses

	Thorium-228 (pCi/L)	Thorium-230 (pCi/L)	Thorium-232 (pCi/L)	Radium-226 (pCi/L)	Uranium-233/234 (pCi/L)	Uranium-235/236 (pCi/L)	Uranium-238 (pCi/L)	Specific Gravity
8/4/15	ND	25300	ND	19.3	9380	504	10800	1.07
5/28/15	ND	25300	ND	19.3	9380	504	10800	NS
8/30/16	ND	134000	1130	51.1	46200	1900	40400	1.10
8/29/17	ND	5410000	49200	286	852000	66200	851000	1.17
8/1/18	ND	76000	ND	38.2	28800	ND	30500	1.05

Cell 4B

Additional Radiological Analyses

	Thorium-228 (pCi/L)	Thorium-230 (pCi/L)	Thorium-232 (pCi/L)	Radium-226 (pCi/L)	Uranium-233/234 (pCi/L)	Uranium-235/236 (pCi/L)	Uranium-238 (pCi/L)	Specific Gravity
8/4/15	ND	410000	2210	611	63500	3710	67000	1.12
5/28/15	122	346000	3790	544	65000	3870	66100	1.08
8/30/16	ND	595000	3510	715	90200	4090	90100	1.13
8/29/17	ND	3390000	56000	489	76000	8100	92700	1.07
8/1/18	ND	461000	7360	307	13700	ND	8420	1.08

Cell 4B LDS

Additional Radiological Analyses

	Thorium-228 (pCi/L)	Thorium-230 (pCi/L)	Thorium-232 (pCi/L)	Radium-226 (pCi/L)	Uranium-233/234 (pCi/L)	Uranium-235/236 (pCi/L)	Uranium-238 (pCi/L)	Specific Gravity
8/4/15	ND	452000	3660	161	62600	3890	60900	1.12
8/4/15 (Cell 65 - Duplicate of Cell 4B LDS)	ND	436000	4000	125	62600	2680	61300	1.12
5/28/15	334	487000	5430	55.2	63500	3900	65500	NS
8/30/16	ND	368000	1010	104	78600	3820	78900	1.11
8/29/17	4680	5220000	43200	143	846000	64200	894000	1.07
8/1/18	1520	424000	5130	88.3	14300	ND	18400	1.09

Tab E

Quality Assurance and Data Validation Tables

Table E-1 Holding Time Evaluation**

	Required Holding Time	Cell 1 Solutions	Cell 2 Slimes Drain	Cell 3 Solutions	Cell 4A Solutions	Cell 4A LDS	Cell 4B Solutions	Cell 4B LDS	Cell 65 (Cell 2 Slimes)
Carbonate	14 days	OK	OK	OK	OK	OK	OK	OK	OK
Bicarbonate	14 days	OK	OK	OK	OK	OK	OK	OK	OK
Calcium	6 months	OK	OK	OK	OK	OK	OK	OK	OK
Chloride	28 days	OK	OK	OK	OK	OK	OK	OK	OK
Fluoride	28 days	OK	OK	OK	OK	OK	OK	OK	OK
Magnesium	6 months	OK	OK	OK	OK	OK	OK	OK	OK
Nitrogen-Ammonia	28 days	OK	OK	OK	OK	OK	OK	OK	OK
Nitrogen-Nitrate	28 days	OK	OK	OK	OK	OK	OK	OK	OK
Potassium	6 months	OK	OK	OK	OK	OK	OK	OK	OK
Sodium	6 months	OK	OK	OK	OK	OK	OK	OK	OK
Sulfate	28 days	OK	OK	OK	OK	OK	OK	OK	OK
pH (pH units)	Immediately	OK*	OK*	OK*	OK*	OK*	OK*	OK*	OK*
TDS	7 days	OK	OK	OK	OK	OK	OK	OK	OK
Conductivity (umhos/cm)	N/A	OK	OK	OK	OK	OK	OK	OK	OK
Metals	6 months (except mercury which is 28 days)	OK	OK	OK	OK	OK	OK	OK	OK
Radiologics	6 months	OK	OK	OK	OK	OK	OK	OK	OK
VOCS (including THF)	14 days	OK	OK	OK	OK	OK	OK	OK	OK
SVOCS	7 days to extraction/40 days for analysis	OK	OK	OK	OK	OK	OK	OK	OK

* Per the method, pH should be analyzed within 15 minutes of sample collection. Due to the nature of the solution matrix, sample handling in the field is minimized and pH is measured by the laboratory upon receipt. This procedure change was requested by and approved by DWMRC.

** - The voluntary analyses conducted for specific gravity, thorium isotopes, uranium isotopes, and radium-226 are for informational purposes only. These analyses do not have QAP required holding times, and therefore, are not included in the holding time evaluation.

E-2 Laboratory Receipt Temperature Check

Work Order Number/Lab Set ID	Receipt Temp
GEL - 456584	N/A
AWAL - 1808037	0.4
AWAL - 1809117	2.3

N/A = These shipments contained samples for the analysis of radionuclides only. Samples submitted for radionuclide 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	E350.1
Nitrate + Nitrite (as N)	E353.1 or E353.2	E353.2
Metals	E200.7 or E200.8	E200.7 and E200.8
Gross Alpha	E900.0 or E900.1	E900.1
VOCs	SW8260B or SW8260C	SW8260C
Chloride	A4500-Cl B or E300.0	E300.0
Fluoride	A4500-F C or E300.0	E300.0
Sulfate	A4500-SO4 E or E300.0	E300.0
TDS	A2540 C	SM2540C
Carbonate as CO3, Bicarbonate as HCO3	A2320 B	SM2320B
pH	Not Specified	SW9040C
Conductivity	Not Specified	SM2510B
SVOCs	SW8270D	SW8270D

** - The voluntary analyses conducted for specific gravity, thorium isotopes, uranium isotopes, and radium-226 are for informational purposes only. These analyses do not have QAP required methods, and therefore, are not included in the analytical method evaluation.

E-4 Reporting Limit Evaluation**

Parameter	Permit-Specified RL
Ammonia (as N)	25 mg/L
Nitrate + Nitrite (as N)	10 mg/L
Metals ug/L	
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
VOCs ug/L	
Acetone	700
Benzene	5
Carbon tetrachloride	5
Chloroform	70
Chloromethane	30
MEK	4000
Methylene Chloride	5
Naphthalene	100
Tetrahydrofuran	46
Toluene	1000
Xylenes	10000
Major Ions	
Chloride	1.0 mg/L
Fluoride	4 mg/L
Sulfate	1000 mg/L
TDS	1000 mg/L
Carbonate as CO3, Bicarbonate as HCO3	1*
Calcium, Magnesium, Potassium, Sodium	1*
SVOCs (from the 8270D LLD) ug/L	
1,2,4-Trichlorobenzene	10
1,2-Dichlorobenzene	10

E-4 Reporting Limit Evaluation**

Parameter	Permit-Specified RL
1,3-Dichlorobenzene	10
1,4-Dichlorobenzene	10
1-Methylnaphthalene	10
2,4,5-Trichlorophenol	10
2,4,6-Trichlorophenol	10
2,4-Dichlorophenol	10
2,4-Dimethylphenol	10
2,4-Dinitrophenol	50
2,4-Dinitrotoluene	10
2,6-Dinitrotoluene	10
2-Chloronaphthalene	10
2-Chlorophenol	10
2-Methylnaphthalene	10
2-Methylphenol	10
2-Nitrophenol	10
3&4-Methylphenol	10
3,3´-Dichlorobenzidine	20
4,6-Dinitro-2-methylphenol	50
4-Bromophenyl phenyl ether	10
4-Chloro-3-methylphenol	20
4-Chlorophenyl phenyl ether	10
4-Nitrophenol	50
Acenaphthene	10
Acenaphthylene	10
Anthracene	10
Azobenzene	10*
Benz(a)anthracene	10
Benzidine	10*
Benzo(a)pyrene	10
Benzo(b)fluoranthene	10
Benzo(g,h,i)perylene	10
Benzo(k)fluoranthene	10
Bis(2-chloroethoxy)methane	10
Bis(2-chloroethyl) ether	10
Bis(2-chloroisopropyl) ether	10
Bis(2-ethylhexyl) phthalate	10*
Butyl benzyl phthalate	10
Chrysene	10
Dibenz(a,h)anthracene	10
Diethyl phthalate	10
Dimethyl phthalate	10
Di-n-butyl phthalate	10
Di-n-octyl phthalate	10
Fluoranthene	10
Fluorene	10

E-4 Reporting Limit Evaluation**

Parameter	Permit-Specified RL
Hexachlorobenzene	10
Hexachlorobutadiene	10
Hexachlorocyclopentadiene	10
Hexachloroethane	10
Indeno(1,2,3-cd)pyrene	10
Isophorone	10
Naphthalene	10
Nitrobenzene	10
N-Nitrosodimethylamine	10*
N-Nitrosodi-n-propylamine	10
N-Nitrosodiphenylamine	10
Pentachlorophenol	50
Phenanthrene	10
Phenol	10
Pyrene	10
Pyridine	10*

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

* Reporting limits for these analytes are not specified in either the Permit or EPA Method 8270D. The reporting limits established by the laboratory are reported here. The reporting limits are comparable to other analytes in the same method.

** - The voluntary analyses conducted for specific gravity, thorium isotopes, uranium isotopes, and radium-226 are for informational purposes only. These analyses do not have QAP required reporting limits, and therefore, are not included in the reporting limit evaluation.

E-5: Trip Blank Evaluation

All trip blanks for the 2018 sampling program were nondetect.

Blank	Sample Date	Laboratory
1	8/1/2018	AWAL

E-6 Duplicate Sample Relative Percent Difference**

Major Ions (mg/l)	Cell 2 Slimes	Cell 65	RPD %
Carbonate	<1.00	<1.00	NC
Bicarbonate	<1.00	<1.00	NC
Calcium	538	513	4.8
Chloride	4310	3920	9.5
Fluoride	116	53.4	73.9
Magnesium	4470	4270	4.6
Nitrogen-Ammonia	5620	4650	18.9
Nitrogen-Nitrate	12.1	33.7	94.3
Potassium	774	743	4.1
Sodium	5290	5060	4.4
Sulfate	63300	60900	3.9
pH (s.u.)	2.89	2.91	0.7
TDS	99900	87700	13.0
Conductivity (umhos/cm)	58200	61400	5.4
Metals (mg/l)			
Arsenic	19.6	20.9	6.4
Beryllium	0.241	0.249	3.1
Cadmium	6.38	6.76	5.8
Chromium	2.10	2.39	12.9
Cobalt	46.9	52.2	10.7
Copper	136	148	8.5
Iron	3030	3320	9.1
Lead	0.589	0.626	6.1
Manganese	137	151	9.7
Mercury	<0.00200	<0.00200	NC
Molybdenum	3.34	3.48	4.1
Nickel	121	135	10.9
Selenium	0.635	0.715	11.9
Silver	<0.100	<0.100	NC
Thallium	0.374	0.401	7.0
Tin	<17.0	<17.0	NC
Uranium	25.2	27.3	8.0
Vanadium	516	501	2.9
Zinc	728	790	8.2
Radiologics (pCi/l)			
Gross Alpha*	7520	6330	2.288
VOCS (ug/L)			
Acetone	551	684	21.5
Benzene	<1.00	<1.00	NC
Carbon tetrachloride	<1.00	<1.00	NC
Chloroform	17.1	13.6	22.8
Chloromethane	1.46	1.50	2.7
MEK	58.4	58.2	0.3
Methylene Chloride	1.02	<1.00	NC
Naphthalene	10.1	8.64	15.6
Tetrahydrofuran	2.88	2.64	8.7
Toluene	3.20	2.81	13.0
Xylenes	<1.0	<1.00	NC

E-6 Duplicate Sample Relative Percent Difference**

Major Ions (mg/l)	Cell 2 Slimes	Cell 65	RPD %
SVOCS (ug/L)			
1,2,4-Trichlorobenzene	<9.03	<9.20	NC
1,2-Dichlorobenzene	<9.03	<9.20	NC
1,3-Dichlorobenzene	<9.03	<9.20	NC
1,4-Dichlorobenzene	<9.03	<9.20	NC
1-Methylnaphthalene	<9.03	<9.20	NC
2,4,5-Trichlorophenol	<9.03	<9.20	NC
2,4,6-Trichlorophenol	<9.03	<9.20	NC
2,4-Dichlorophenol	<9.03	<9.20	NC
2,4-Dimethylphenol	<9.03	<9.20	NC
2,4-Dinitrophenol	<9.03	<9.20	NC
2,4-Dinitrotoluene	<9.03	<9.20	NC
2,6-Dinitrotoluene	<9.03	<9.20	NC
2-Chloronaphthalene	<9.03	<9.20	NC
2-Chlorophenol	<9.03	<9.20	NC
2-Methylnaphthalene	<9.03	<9.20	NC
2-Methylphenol	<9.03	<9.20	NC
2-Nitrophenol	<9.03	<9.20	NC
3&4-Methylphenol	<9.03	<9.20	NC
3,3´-Dichlorobenzidine	<9.03	<9.20	NC
4,6-Dinitro-2-methylphenol	<9.03	<9.20	NC
4-Bromophenyl phenyl ether	<9.03	<9.20	NC
4-Chloro-3-methylphenol	<9.03	<9.20	NC
4-Chlorophenyl phenyl ether	<9.03	<9.20	NC
4-Nitrophenol	<9.03	<9.20	NC
Acenaphthene	<9.03	<9.20	NC
Acenaphthylene	<9.03	<9.20	NC
Anthracene	<9.03	<9.20	NC
Azobenzene	<9.03	<9.20	NC
Benz(a)anthracene	<9.03	<9.20	NC
Benzidine	<9.03	<9.20	NC
Benzo(a)pyrene	<9.03	<9.20	NC
Benzo(b)fluoranthene	<9.03	<9.20	NC
Benzo(g,h,i)perylene	<9.03	<9.20	NC
Benzo(k)fluoranthene	<9.03	<9.20	NC
Bis(2-chloroethoxy)methane	<9.03	<9.20	NC
Bis(2-chloroethyl) ether	<9.03	<9.20	NC
Bis(2-chloroisopropyl) ether	<9.03	<9.20	NC
Bis(2-ethylhexyl) phthalate	<9.03	<9.20	NC
Butyl benzyl phthalate	<9.03	<9.20	NC
Chrysene	<9.03	<9.20	NC
Dibenz(a,h)anthracene	<9.03	<9.20	NC
Diethyl phthalate	<9.03	<9.20	NC
Dimethyl phthalate	<9.03	<9.20	NC
Di-n-butyl phthalate	<9.03	<9.20	NC
Di-n-octyl phthalate	<9.03	<9.20	NC
Fluoranthene	<9.03	<9.20	NC
Fluorene	<9.03	<9.20	NC

E-6 Duplicate Sample Relative Percent Difference**

Major Ions (mg/l)	Cell 2 Slimes	Cell 65	RPD %
Hexachlorobenzene	<9.03	<9.20	NC
Hexachlorobutadiene	<9.03	<9.20	NC
Hexachlorocyclopentadiene	<9.03	<9.20	NC
Hexachloroethane	<9.03	<9.20	NC
Indeno(1,2,3-cd)pyrene	<9.03	<9.20	NC
Isophorone	<9.03	<9.20	NC
Naphthalene	<9.03	<9.20	NC
Nitrobenzene	<9.03	<9.20	NC
N-Nitrosodimethylamine	<9.03	<9.20	NC
N-Nitrosodi-n-propylamine	<9.03	<9.20	NC
N-Nitrosodiphenylamine	<9.03	<9.20	NC
Pentachlorophenol	<9.03	<9.20	NC
Phenanthrene	<9.03	<9.20	NC
Phenol	<9.03	<9.20	NC
Pyrene	<9.03	<9.20	NC
Pyridine	<9.03	<9.20	NC

Highlighted cells indicate an RPD that exceeded the 20% RPD criteria

Per the approved QAP, an RPD greater than 20% is acceptable if the reported results are less than 5 times the RL. These results are provided for information only.

* Duplicate checks reported for gross alpha minus RN and U are not %RPD. Calculated values are based on the formula in the approved QAP.

** - The voluntary analyses conducted for specific gravity, thorium isotopes, uranium isotopes, and radium-226 are for informational purposes only. These analyses do not have QAP required duplicate requirements, and therefore, are not included in the duplicate evaluation.

NC = Not Calculated.

E-7 Radiologics Counting Error

Sample ID	Gross Alpha minus Rn & U	Gross Alpha minus Rn & U Precision (±)	Counting Error ≤ 20%	GWQS	Within GWQS
Cell 1	550000	2990	Y	15	NA
Cell 2 Slimes	7520	397	Y	15	NA
Cell 3	19700	616	Y	15	NA
Cell 4A	516000	3520	Y	15	NA
Cell 4A LDS	51000	1030	Y	15	NA
Cell 4B	320000	2730	Y	15	NA
Cell 4B LDS	305000	2380	Y	15	NA
Cell 65 (Duplicate of Cell 2 Slime)	6330	336	Y	15	NA

GWQS = Groundwater Quality Standard

E-8: Laboratory Matrix QC

Matrix Spike % Recovery Comparison

Lab Report	Sample ID	Analyte	MS %REC	MSD %REC	REC Range	RPD
1808037	Cell 1	Vanadium*	NC	NC	70-130	NC
1808037	Cell 1	Magnesium*	NC	NC	70-130	NC
1808037	Cell 1	Sodium*	NC	NC	70-130	NC
1808037	Cell 1	Potassium*	NC	NC	70-130	NC
1808037	Cell 1	Calcium*	NC	NC	70-130	NC
1808037	Cell 1	Beryllium	74.1	72.3	75-125	1.17
1808037	Cell 1	Cadmium*	NC	NC	75-125	NC
1808037	Cell 1	Chromium*	NC	NC	75-125	NC
1808037	Cell 1	Cobalt*	NC	NC	75-125	NC
1808037	Cell 1	Lead*	NC	NC	75-125	NC
1808037	Cell 1	Nickel*	NC	NC	75-125	NC
1808037	Cell 1	Selenium*	NC	NC	75-125	NC
1808037	Cell 1	Silver*	NC	NC	75-125	NC
1808037	Cell 1	Thallium*	NC	NC	75-125	NC
1808037	Cell 1	Arsenic*	NC	NC	75-125	NC
1808037	Cell 1	Copper*	NC	NC	75-125	NC
1808037	Cell 1	Iron*	NC	NC	75-125	NC
1808037	Cell 1	Manganese*	NC	NC	75-125	NC
1808037	Cell 1	Molybdenum*	NC	NC	75-125	NC
1808037	Cell 1	Uranium*	NC	NC	75-125	NC
1808037	Cell 1	Zinc*	NC	NC	75-125	NC
1808037	Cell 1	Naphthalene	135	124	41-131	8.94
1808037	Cell 1	Tetrahydrofuran	240	200	43-146	17.5
1808037	Cell 4A LDS	Arsenic*	NC	NC	75-125	NC
1808037	Cell 4A LDS	Cobalt*	NC	NC	75-125	NC
1808037	Cell 4A LDS	Manganese*	NC	NC	75-125	NC
1808037	Cell 4A LDS	Nickel*	NC	NC	75-125	NC
1808037	Cell 4A LDS	Copper*	NC	NC	75-125	NC
1808037	Cell 4A LDS	Uranium*	NC	NC	75-125	NC
1808037	Cell 4A LDS	Iron*	NC	NC	75-125	NC
1808037	Cell 4A LDS	Zinc*	NC	NC	75-125	NC
1808037	Cell 4A LDS	Mercury	80.5	58.6	85-115	31.0
1808037	Cell 4A LDS	Nitrate/Nitrate (as N)*	NC	NC	90-110	NC
1808037	Cell 4A LDS	Sulfate	91.2	89.8	90-110	0.858
1808037	Cell 4A LDS	2,4-Dinitrotoluene	55.4	70.2	95-190	20.4
1808037	Cell 4A LDS	2,4,6-Trichlorophenol	19.3	32.4	14-191	47.7
1808037	Cell 4A LDS	2,4-Dimethylphenol	91.7	186	50-132	55.2
1808037	Cell 4A LDS	4-Chloro-3-methylphenol	38	137	50-144	111
1808037	Cell 4A LDS	Acenaphthene	75.7	99.0	80-172	23.4
1808037	Cell 4A LDS	Benzo(a)pyrene	65.5	85.1	80-195	22.9
1808037	Cell 4A LDS	Phenol	0	0	10-80	0
1808037	Cell 4A LDS	Pyrene	68.7	90.0	81-179	23.7
456584	Cell 1	Gross Alpha	0	0	75-125	5.48

NC = Not Calculated

*= Analyte concentration is too high for accurate matrix spike recovery and/or RPD.

N/A = QC was not performed on an EFRI sample.

E-8: Laboratory Matrix QC

LCS % Recovery

Lab Report	Analyte	LCS %REC	REC Range
1808037	2,4,6-Trichlorophenol	133	21-132

Surrogate % Recovery

Lab Report	Well/Sample	Analyte	Surrogate %REC	Lab Specified REC Range
1808037	Cell 1	2,4,6-Tribromophenol	0	10-310
1808037	Cell 1	2-Fluorobiphenyl	0	10-230
1808037	Cell 1	Phenol-d6	5.60	10-110
1808037	Cell 1	Terphenyl-d14	1.36	10-255
1808037	Cell 2 Slimes	Nitrobenzene-d5	2.37	10-253
1808037	Cell 3	2,4,6-Tribromophenol	0	10-310
1808037	Cell 3	2-Fluorobiphenyl	0	10-230
1808037	Cell 3	2-Fluorophenol	0	10-120
1808037	Cell 3	Phenol-d6	0	10-110
1808037	Cell 3	Terphenyl-d14	3.20	10-255
1808037	Cell 4A	Nitrobenzene-d5	8.42	10-253
1808037	Cell 65 (Duplicate of Cell 2 Slimes)	Nitrobenzene-d5	0.760	10-253
1809117	Cell 1	Phenol-d6	181	10-110
1809117	Cell 3	2-Fluorophenol	8.04	10-120

Laboratory Duplicate % Recovery Comparison

Lab Report	Well	Analyte	Sample Result	Lab Duplicate Result	RPD %	RPD Range %
456584	Cell 1	Gross Alpha	550000	727000	27.7	0-20

Method Blanks

Lab Report	Well	Analyte	Blank Result	Units
1808037	NA	Methylene chloride	1.07	ug/L